VANTRUNK

EXTREME CABLE MANAGEMENT

PRODUCT GUIDE

ENGINEERED FOR EXTREME ENVIRONMENTS

VANTRUNK

WELCOME TO THE VANTRUNK PRODUCT GUIDE

With our extensive range of trusted products, evolved Rapid Installation Systems and new user-friendly 3D visuals we can help you to find the solutions you need.

With over 50 years experience of pioneering solutions in the toughest global environments, Vantrunk is renowned for its design and manufacture of cable management solutions that embody technical excellence and quality that are Engineered for Extreme Environments.

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VANTRUNK

COMPANY PROFILE

Vantrunk is an internationally renowned manufacturer of engineered cable management products and associated support systems which are suitable for installation in the most extreme of environments. It's trusted and innovative solutions have been serving the Global Energy, Oil and Gas and Industrial Processing sector for over 50 years. Throughout this time Vantrunk has established itself as a leader in the development of proven and innovative cable management solutions engineered to thrive in extreme environments.

Our Cheshire, UK Production Site is purpose built for the manufacture of cable management solutions; it includes a 9290m² manufacturing and warehousing facility and an additional 6500m² marshalling and storage area which is ideal for consolidating and packing major project bulk materials. As the specialist division of the Unitrunk Group, the company has significantly increased its capacity and expertise through the utilisation of Unitrunk's 9300m² manufacturing facility in Northern Ireland.

At Vantrunk we believe that a manufacturing company must continuously invest to remain competitive in today's global market place. In recent year's substantial strategic investment has been made at both facilities updating the company's process lines using high specification machinery incorporating industry leading technology to ensure that product quality and delivery are consistently high.

VANTRUNK

ENGINEERED FOR EXTREME ENVIRONMENTS

In the toughest environments on earth engineers rely upon the tried and tested.

Knowing that you can depend on your Cable Management System is a key requirement for international Oil and Gas and industrial processing projects given the diverse and challenging geographical locations involved.

It is in these environments that you will find Vantrunk with our wealth of experience in providing both industrial onshore and offshore cable management systems that will meet the demands of even the harshest of environments.

Vantrunk's Extreme Cable Management solutions have been designed to stand up to a variety of extreme natural climatic and environmental conditions affecting corrosion, temperature variation and seismic elements.

Developers and engineers alike rely on Vantrunk to provide proven cable management solutions that have been Engineered For Extreme Environments, such as:

- **Arctic Circle @ -50C**
- **Desert conditions in the Middle East & North Africa @ +50c**
- **Category 5 Hurricane proof installation in Western Australia**
- **Areas of combined high salinity and humidity**

VANTRUNK

GLOBAL EXPERTISE

We believe that excellent working relationships are important for our business to develop and grow, this is why as your partner we are committed to adding value with the highest levels of service, support and innovative range of standard and bespoke cable management solutions.

Operators, engineers and design houses want to deal with companies that understand the challenge of operating in a global marketplace, from consolidating and shipping vast quantities of materials around the world to providing information to product inspectors and having the know how to complete the detailed documents required to support international shipments.

Thanks to our worldwide network of partners in key strategic locations including Australia, Azerbaijan, Brazil, Denmark, Kazakhstan, Korea, Netherlands, Oman, Qatar, Singapore, UAE and USA we deliver proven cable management solutions engineered for extreme environments, on time to major projects located around the world.

INTERNATIONAL PARTNERS

Partner Countries

Australia, Holland, Denmark, UAE, Oman, Qatar, Brazil, USA, Korea, Ireland, Singapore & The UK.

VANTRUNK

BEST PRACTICE

As a business committed to corporate responsible practices and continual improvement, Vantrunk is always exploring new horizons, going deeper, working harder and intelligently evolving its operations for the benefit of its clients and the sector.

Sustainability

At Vantrunk, we work hard to ensure our ability to operate safely and responsibly wherever we do business.

Our approach to sustainability covers issues relating to the environment and project life cycle. As an organisation we incorporate the lessons learned in these areas into our management processes and practices applicable to our global business.

Environment

As a manufacturing business we take every care to minimise scrap and to maximise material usage and with the investment in energy efficient machinery and manufacturing techniques to reduce our impact on the environment.

Project Life Cycle

As an organisation working in a global market we ensure an approach that is sensitive to our responsibilities throughout the life cycle of a project - from the beginning to the end of our operations.

Development of the Vantrunk range of Cable Management Systems is approached with sustainability at its core. Through innovative solutions such as the Speedlok Cover System and Integral Coupler, Vantrunk aims to reduce installation times wherever possible and with a wide range of materials and finishes ensure that products thrive throughout the lifetime of projects in some of the harshest environments on Earth.

HEALTH & SAFETY

Vantrunk employ a full time Group Health & Safety Officer who reports directly to the Board of Directors. Further to this, Vantrunk have a dedicated team of H&S champions who hold monthly meetings to monitor and discuss H&S related issues.

Our statement of general policy:

- **To comply with all applicable current health & safety legislation, ACOPs & guidance**
- **To provide adequate control of the Health & Safety risks arising from our work activities;**
- **To consult with our employees on matters affecting their health & safety;**
- **To provide and maintain safe plant and equipment;**
- **To ensure safe handling and use of substances;**
- **To provide adequate facilities for the welfare of the employees;**
- **To provide information, instruction and supervision for employees;**
- **To ensure that all employees are competent to do their tasks, and to give them all required / necessary training;**
- **To prevent accidents and cases of work-related ill health;**
- **To maintain safe & healthy working conditions;**
- **To review and revise this policy as necessary at regular intervals.**
- **To be committed to continual improvement of health & safety performance**

We believe that one of the major functions is the prevention of accidents and ill health and we do not wish our employees or any other person to suffer as a result of our activities or work processes. To this end we endeavour to comply with all statutory and moral requirements, codes of practice, best guidance and work methods.

The detailed policy of which this document is the general statement is the base plan on which all health & safety procedures, instructions, training, supervision and review & assessment, is founded.

It is also recognised that where we produce articles for use at work, we have a duty to ensure the health & safety of those who use them and make available all the required information for their health & safety.

Steve Davies
Managing Director

VANTRUNK

QUALITY & STRENGTH YOU CAN TRUST

We want our customers to have confidence in our products, our long term accreditation and compliance with ISO 9001 underscores this confidence.

We are members of the British Electrotechnical and Allied Manufacturers Association (BEAMA), the Energies Industry Council (EIC) and The Welding Institute and we are registered with FPAL and Achilles JQS. Vantrunk is represented on the IEC and European Standards cable management committees through its membership of BEAMA.

Memberships

beama

EIC Member

TWI

FPAL Registered

Achilles JQS Qualified 16364

Quality Mark: Products & Materials

CE

We work hard to make sure our entire range is safe, reliable and manufactured to exceed all relevant quality standards

International Standards and Specifications

VANTRUNK

BS EN 10111:2008
Continuously hot rolled low carbon steel sheet and strip for cold forming. Technical delivery conditions

BS EN 10130:2006
Cold-rolled low-carbon steel flat products for cold forming. Technical delivery conditions

BS EN 10025-2:2004
Hot rolled products of structural steels. Technical delivery conditions for non-alloy structural steels

BS EN 10149-2:2013
Specification for hot-rolled flat products made of high yield strength steels for cold forming. Delivery conditions for thermo mechanically rolled steels

BS IEC 61892-6:2013
Mobile and fixed offshore units. Electrical installations. Installation

BS EN 10025-5:2004
Hot rolled products of structural steels. Technical delivery conditions for structural steels with improved atmospheric corrosion resistance

BS EN 10088-2:2014
Stainless steels. Technical delivery conditions for sheet/ plate and strip of corrosion resisting steels for general purposes

BS EN 1461:2009
Hot dip galvanised coatings on fabricated iron and steel articles. Specifications and test methods

BS EN 10346:2015
Continuously hot-dip coated steel flat products. Technical delivery conditions

VANTRUNK SPEEDWAY®

VANTRUNK CABLE-TRAY

BS EN 61537:2007
Cable Tray systems and cable ladder systems

NEMA VE 1 2009
Metal Cable Tray Systems

VANTRUNK INTELOK®

BS 6946:1988
Specification for metal channel cable support systems for electrical installations

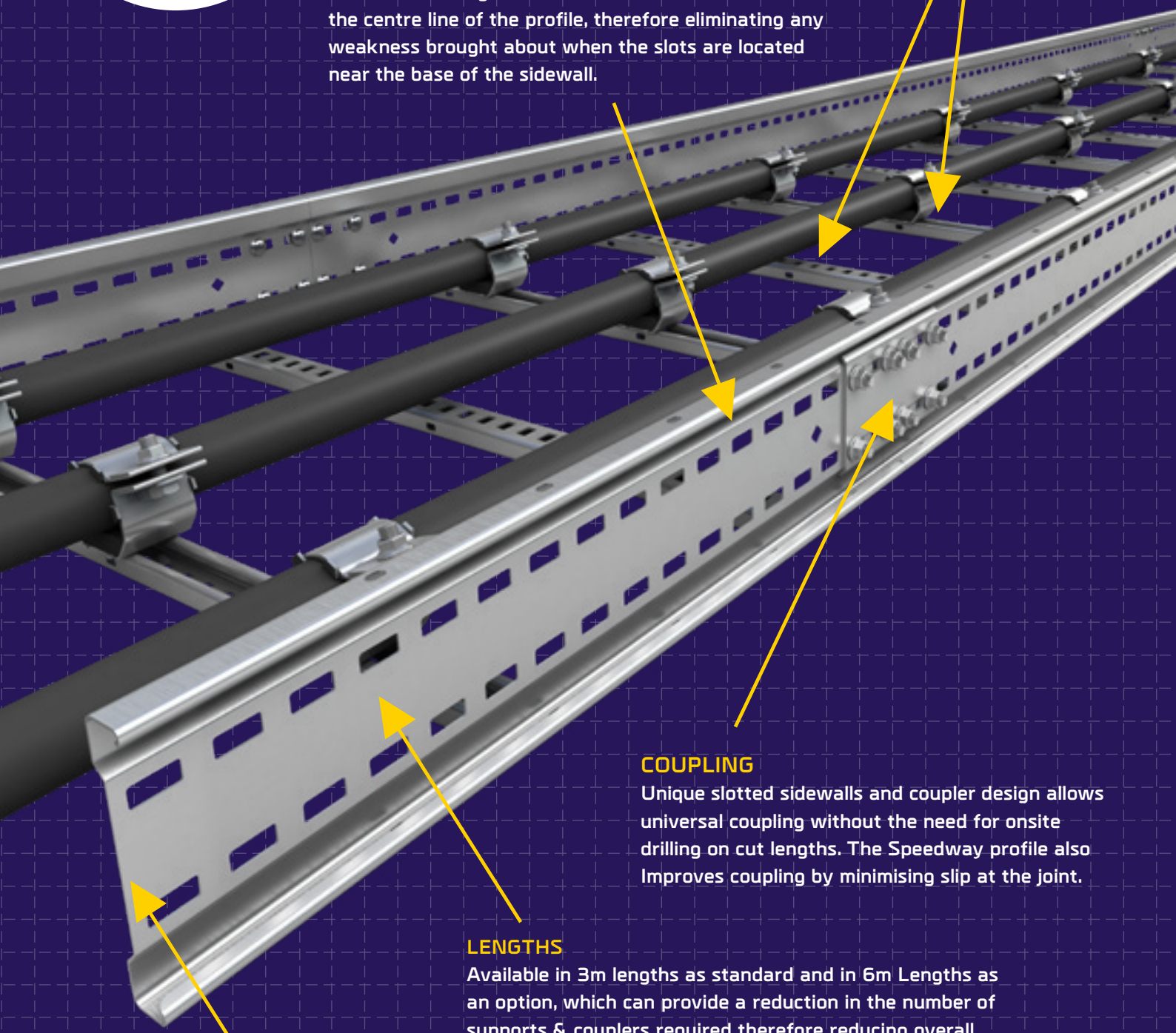
VANTRUNK SPEEDWAY®

RUNGS

Rungs are alternately inverted to allow flexibility of cable restraint and suspension of equipment from underside.

SLOTTED SIDEWALLS

Fully slotted sidewalls which enables faster installation and reduces weight. Sidewall slots are located close to the centre line of the profile, therefore eliminating any weakness brought about when the slots are located near the base of the sidewall.



COUPLING

Unique slotted sidewalls and coupler design allows universal coupling without the need for onsite drilling on cut lengths. The Speedway profile also Improves coupling by minimising slip at the joint.

LENGTHS

Available in 3m lengths as standard and in 6m Lengths as an option, which can provide a reduction in the number of supports & couplers required therefore reducing overall installation costs.

SPEEDWAY PROFILE

Unique profile featuring an offset web that:

- Maximises strength by acting similar to an I-Section
- Increases stability under loading
- Increases internal loading area by up to 7.5%
- Can reduce the number of supports required

VANTRUNK

INNOVATION DEPARTMENT

Continual investment in research and development has kept Vantrunk at the forefront of industry innovation throughout our history...

...placing us in the unique position to observe and influence industry requirements such as the operational lifetime of cable management systems.

As an organisation we provide more than just a product – we provide support for operators, engineers and design houses as they contend with the challenge of operating in a global marketplace.

The Team

Vantrunk's Innovation Department is a dynamic and forward thinking team of cable management professionals with over 100 years of combined cable containment, engineering and commercial experience.

As an authority in extreme cable management solutions Vantrunk actively contributes to the industry with key team members sitting on both the IEC and BEAMA cable management committees.

In line with our commitment to continual improvement for the benefit of our customers and the sector, Vantrunk contributed to the creation of the advisory regulations and guides for Cable Management in association with BEAMA – titled: Best Practice Guide to Cable Ladder and Cable Tray Systems - Channel support Systems and other Associated Supports. Please contact the Vantrunk sales team to obtain a copy of this very informative document.

Team skills include:

- **Technical specification**
- **Standards & legislation**
- **Client relationship**
- **Production**
- **Technical design**
- **CAD development**
- **Prototyping**
- **Testing**

For more information visit **vantrunk.com**

VANTRUNK

THE PROCESS

Through a focus on customer needs and the development of in-depth knowledge of their requirements and expectations, Vantrunk's dedicated Innovation Team are continually researching and adopting cutting edge finishes & materials, manufacturing techniques and design solutions.

As a team we rise to challenges and follow a structured innovation and development methodology, including version control for research, field-testing and proof of concept procedures & technologies such as 3D printing that allows us to take a holistic and thorough approach to R&D.

The Services

At Vantrunk, we offer a range of internationally renowned core cable management services and engineered systems. With nearly 50 years of industry experience we have honed our ability to innovate and deliver specialist cable management solutions that are tailored to meet the clients needs across the globe with solutions engineered for extreme environments

Services include:

- **Bespoke cable management solutions**
- **Product development**
- **Specialist environments**

The Product

Through years of development and careful product maturing, Vantrunk has evolved its trusted systems to cater for the progressive requirements of the international marketplace, providing an extended choice of safe and time-saving innovations designed to complement our core product systems, including:

- **RIS – Universality for Rapid Installation Systems**
- **QF – Quick Fit, time and cost saving assemblies**
- **Speedlok – Secure, safe and fast cable ladder assemblies**
- **Systemization – Flexibility and totality of core cable management products**
- **VXS - Vantrunk Extreme Steel**

VANTRUNK SPEEDLOK
Quick Assembly Cable Ladder

VANTRUNK FLEXIBLE FS SOLUTIONS
Flexible Solutions

VANTRUNK RIS
Rapid Installation Systems

VANTRUNK VXS
Extreme Steel

FACILITIES

Our purpose built 10,000m² production facility includes a manufacturing and warehousing facility and an additional marshalling and storage area ideal for major projects. Our resources and facilities also extend to include Unitrunk's 9300m² manufacturing facility in Northern Ireland. Both sites are equipped with state of the art industrial production and processing technology.

Facilities include:

- **R&D**
- **On site testing to industry standards**
- **Measurement**
- **Cutting edge production equipment**
- **Standards conformance**

Please consult our Innovative Design Solutions section for more bespoke products.

VANTRUNK

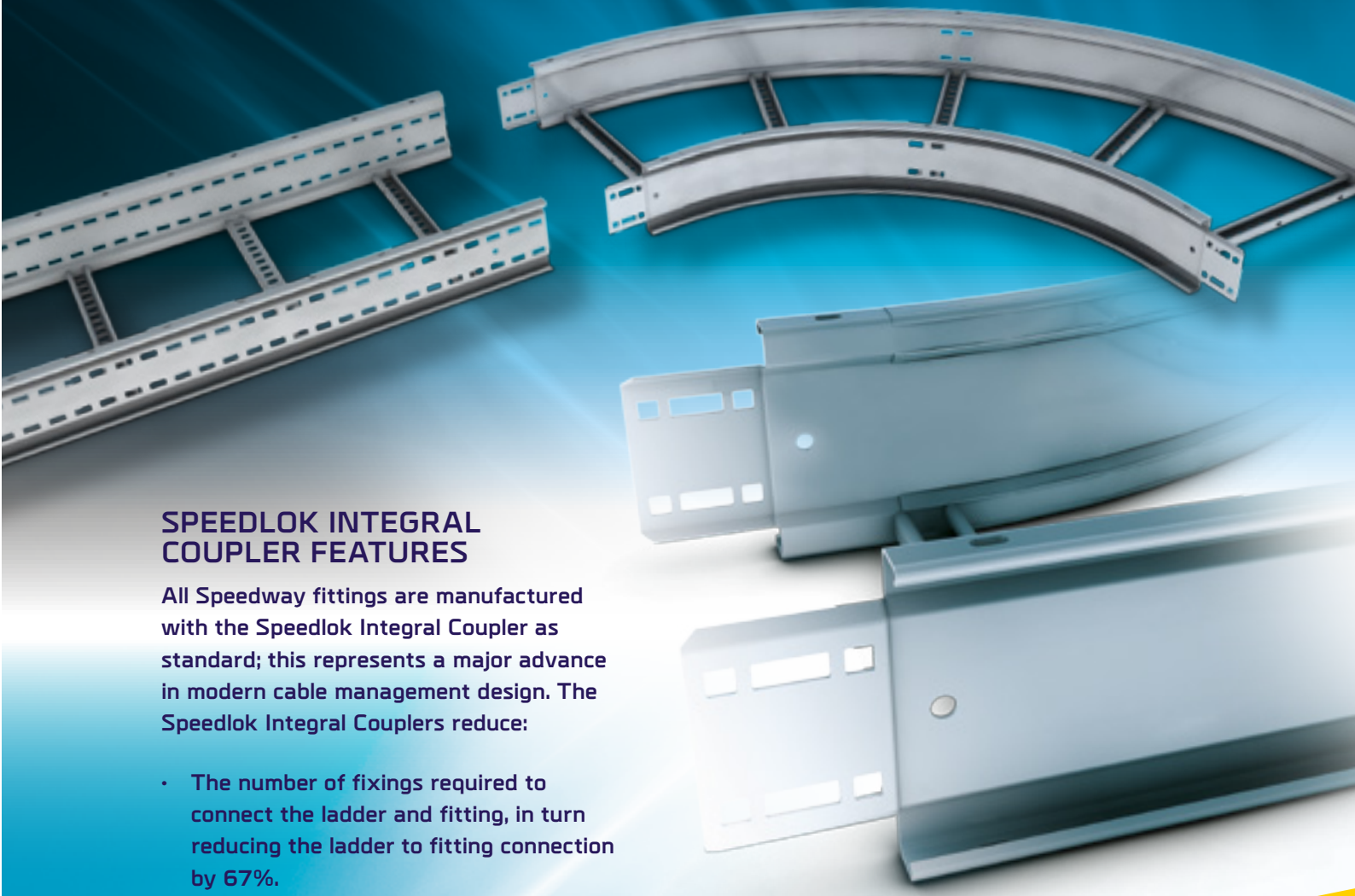
RAPID INSTALLATION SYSTEMS

You can slash the cost and time of installation by looking for our RIS logo. RIS, or Rapid Installation Systems, are designed by Vantrunk to make your life easier and provide substantial project cost savings. Innovative solutions such as the Speedlok Integral Coupler and IntelokQF brackets are part of the Rapid Installations System and these fast-fitting products let you complete jobs quicker than ever before.

You'll save time on installation, you'll save money on labour costs, and you'll be ready to start your next job well ahead of schedule. And you'll never have to worry about quality – RIS products are engineered to the same exceptional standards as all Vantrunk products.

VANTRUNK SPEEDLOK VANTRUNK INTELOK QF®

LOK DOWN WITH THE INTEGRAL COUPLER



SPEEDLOK INTEGRAL COUPLER FEATURES

All Speedway fittings are manufactured with the Speedlok Integral Coupler as standard; this represents a major advance in modern cable management design. The Speedlok Integral Couplers reduce:

- The number of fixings required to connect the ladder and fitting, in turn reducing the ladder to fitting connection by 67%.
- And therefore the overall installation time, weight and cost.

VANTRUNK SPEEDLOK QUICKFIT CABLE LADDER

VANTRUNK RIS

For more information on the Speedlok Integral Coupler visit **vantrunk.com**

VANTRUNK

PLANT DESIGN INTEGRATION

Vantrunk are fully committed in supporting engineers and designers to achieve maximum productivity and capability on all types of project, from the smallest brownfield upgrade to new build projects of unlimited size and complexity.

An example of this is the integration of our products in the latest plant design software such as AVEVA PDMS & Everything3D and Hexagon PPM Smart 3D (formally Intergraph SmartPlant 3D).

AVEVA

PDMS & E3D

To Access:
Included as standard in
PDMS 12.0.SP6 and E3D 1.1

HEXAGON PPM

Smart 3D

To Access:
Available to download from
Vantrunk.com

The benefits of using our product integrations are:

- **Clear identification of the weight of a Cable Management System**
- **Ensures accurate routing of cables and cable management**
- **Clash detection and integrity checking ensure higher quality designs and helps avoid costly on-site rework**
- **Full part code compatibility with Vantrunk's ordering system**
- **Drawings, reports and Bills of Materials (BoMs) are produced directly from the design software, ensuring their accuracy and compatibility with Vantrunk's product**

"Vantrunk cable management catalogues are fully integrated into the AVEVA PDMS modelling system.

Using the Vantrunk catalogue in the Aveva PDMS modelling system, during the Design phase, will prevent clashes with all items that have been modelled, thus significantly reducing any re-work during the construction phase.

The catalogue has an accuracy of modelling down to 1mm and the precise design produced enables enhanced scheduling and forward planning, the accurate production of MTO's and Isometric drawings for construction."

Mr. Gary Hastings,
Lead Electrical Design Engineer

For more information on using Vantrunk's product within plant design software please contact our Technical Team.

VANTRUNK

HOW TO USE

The Vantrunk Product Guide has been technically designed to deliver ease of use, clarity and speed of reference using the guide points below:

User-friendly tab navigation

Quickly flick to your preferred product sections using the colour coded product tabs and sub sections.

How to order guides

Product ordering is explained at the start of Speedway, Cable Tray and Intelok product sections.

Product Information

Each product is listed with a reference code supported by a table of variable dimensions, insert relevant values for the △ and ○ icons where necessary.

For any variations not shown please contact our technical team via eddy@vantrunk.co.uk or call +44(0)1928 564211.

Fixings

Supplied with:

FIXING SETS x16

A fixing set can include, a bolt, washer and nut and will vary depending on the application.

Finishes & Materials

Each product section includes a selection of the available finishes and materials.

GY	GW	GA	SS	GM	GX	QQ
Hot Dipped Galvanised Structural Steel	Deep Galvanised Structural Steel	Hot Dipped Galvanised Carbon Steel	Marine Grade Stainless Steel	Hot Dipped Galvanised Structural Steel	Deep Galvanised Silicon Rich Structural Steel	Pre Galvanised Structural Steel

Index All products listed alphabetically for ease of reference.

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FINISHES & MATERIALS

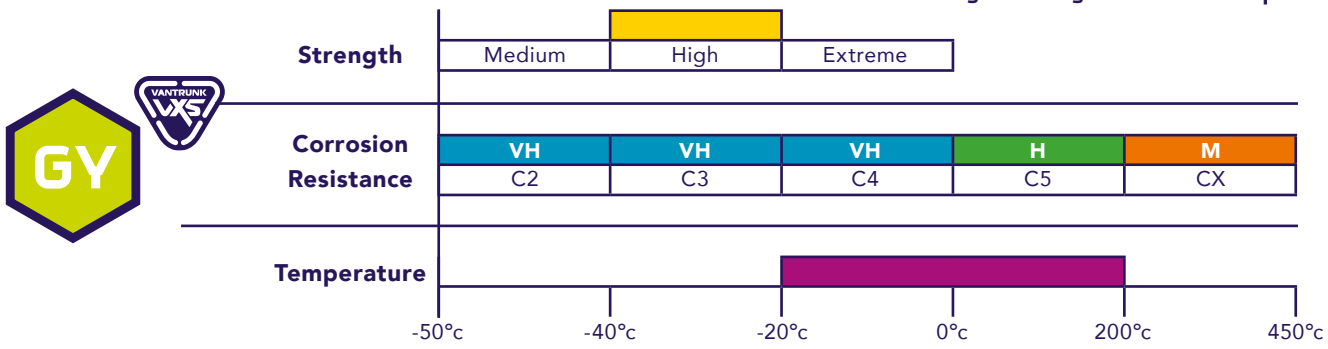
Vantrunk offers a wide selection of Finishes and Materials to suit a project's loading, corrosion resistance and environmental requirements.

ENVIRONMENT CATEGORIES

Category	Corrosivity		Typical Environment
C2	Low	Indoor	• Unheated spaces with varying temperature and relative humidity. Low frequency of condensation and low pollution, storage, sport halls
		Outdoor	• Temperate zone, atmospheric environment with low pollution (S02: < 5 µg/m3), e.g. rural areas, small towns • Dry or cold zone, atmospheric environment with short time of wetness, e.g. deserts, subarctic areas
C3	Medium	Indoor	• Spaces with moderate frequency of condensation and moderate pollution from production process, e.g. food-processing plants, laundries, breweries, dairies
		Outdoor	• Temperate zone, atmospheric environment with medium pollution (S02: 5 µg/m3 to 30 µg/m3) or some effect Of chlorides, e.g. urban areas, coastal areas with low deposition Of chlorides • Subtropical and tropical zone, atmosphere with low pollution
C4	High	Indoor	• Spaces with high frequency Of condensation and high pollution from production process, e.g. industrial processing plants, swimming pools
		Outdoor	• Temperate zone, atmospheric environment with high pollution (S02: 30 µg/m3 to 90 µg/m3) or substantial effect Of chlorides, e.g. polluted urban areas, industrial areas, coastal areas without spray Of salt water or, exposure to strong effect of de-icing salts • Subtropical and tropical zone, atmosphere with medium pollution
C5	Very High	Indoor	• Spaces with very high frequency Of condensation and/or with high pollution from production process, e.g. mines, caverns for industrial purposes, unventilated sheds in subtropical and tropical zones
		Outdoor	• Temperate and subtropical zone, atmospheric environment with very high pollution (S02: 90 µg/m3 to 250 µg/m3) and/or significant effect Of chlorides, e.g. industrial areas, coastal areas, sheltered positions on coastline
CX	Extreme	Indoor	• Spaces with almost permanent condensation or extensive periods Of exposure to extreme humidity effects and/or with high pollution from production process, e.g. unventilated sheds in humid tropical zones with penetration of outdoor pollution including airborne chlorides and corrosion-stimulating particulate matter
		Outdoor	• Subtropical and tropical zone (very high time Of wetness), atmospheric environment with very high S02 pollution (higher than 250 µg/m3) including accompanying and production factors and/or strong effect of chlorides, e.g. extreme industrial areas, coastal and offshore areas, occasional contact with salt spray

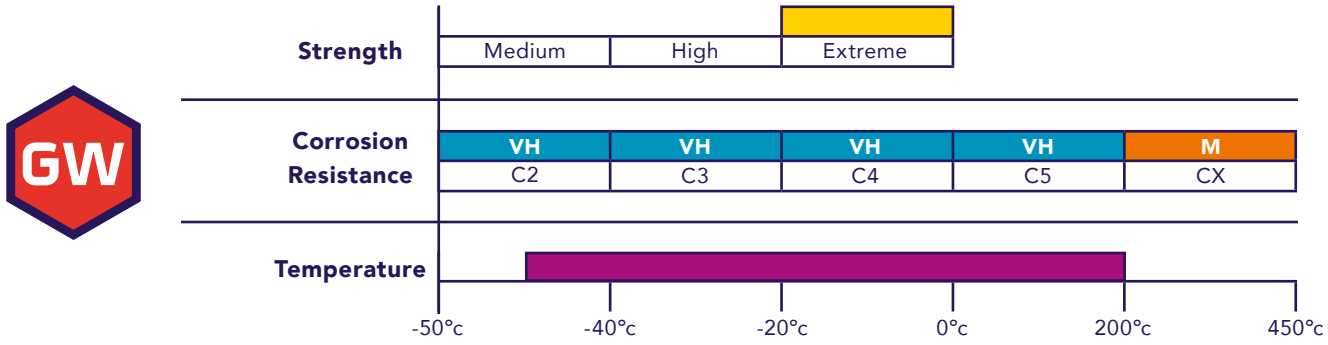
Hot Dipped Galvanised Structural Steel

BS EN 10025-2:2004
Minimum Average Coating Thickness = 85 µm



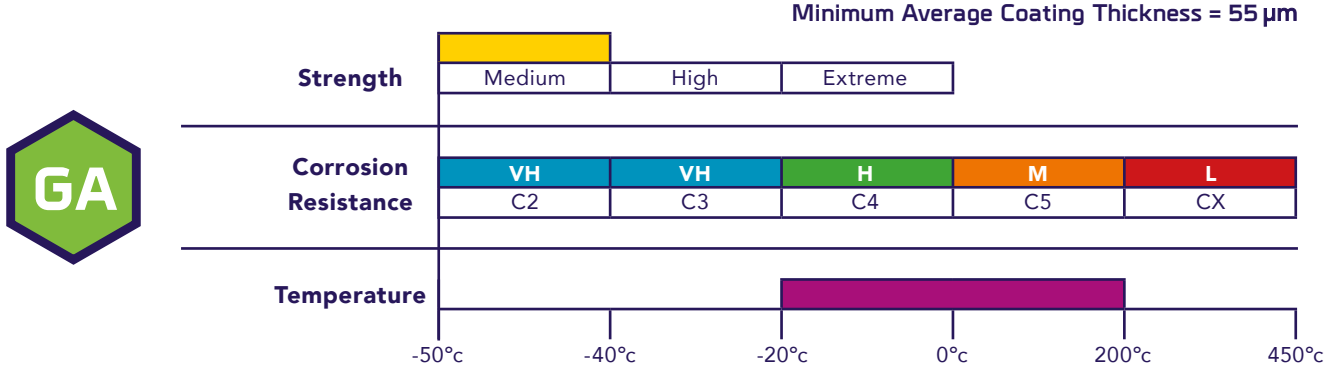
Deep Galvanised Structural Steel

BS EN 10025-2
Minimum Average Coating Thickness = 120 µm



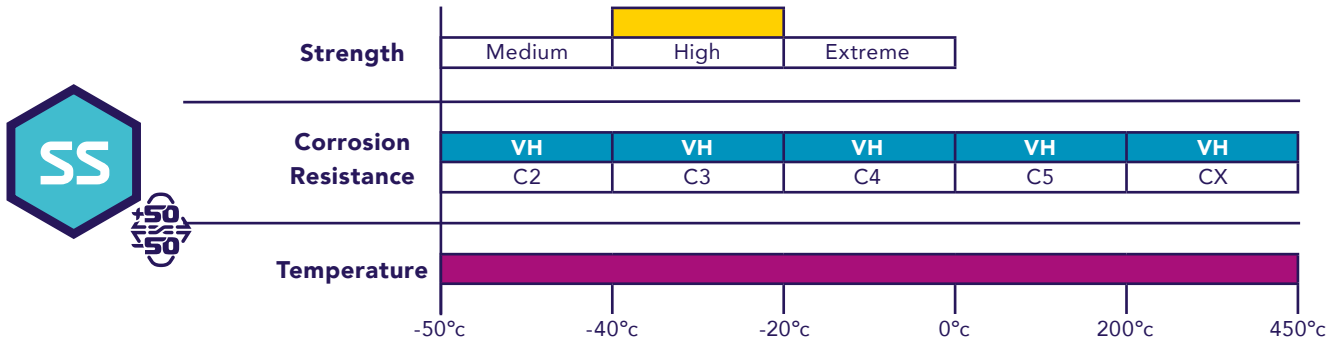
Hot Dipped Galvanised Carbon Steel

BS EN 10111:2008 / BS EN 10130:2006
Minimum Average Coating Thickness = 55 µm



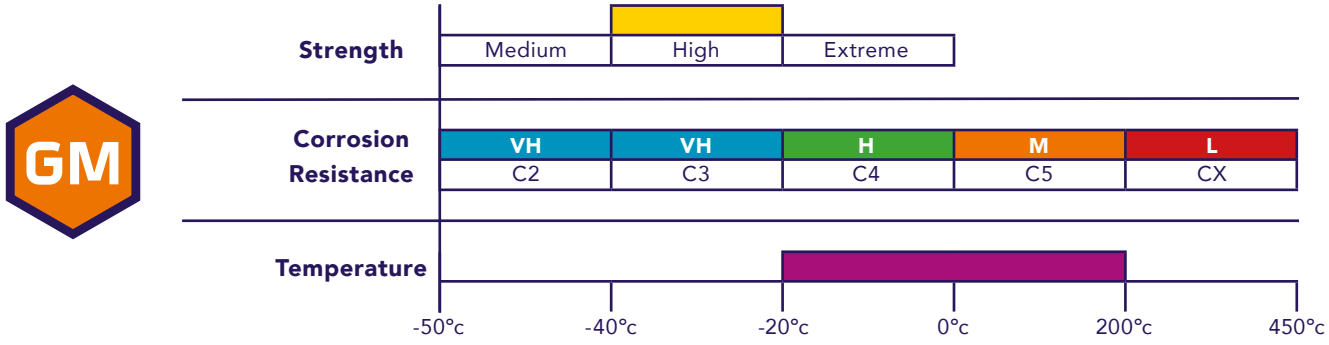
Marine Grade Stainless Steel

BS EN 1088-2:2005



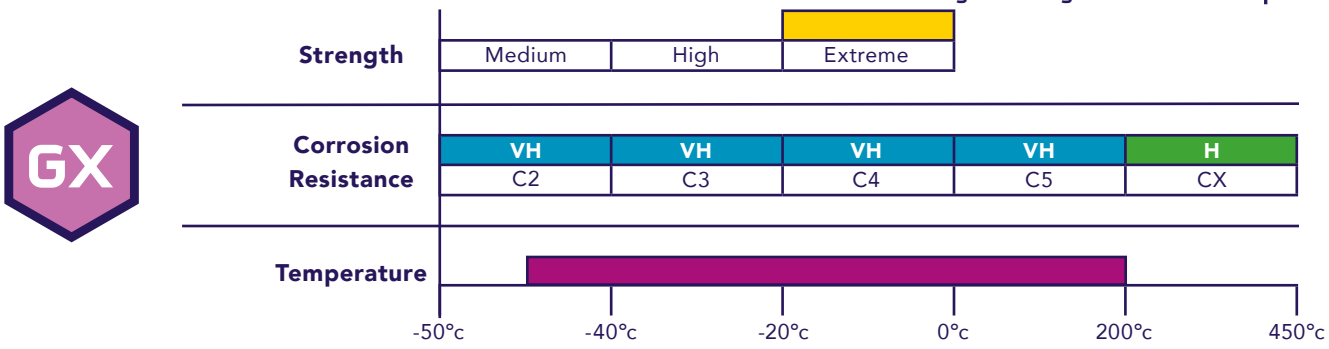
Hot Dipped Galvanised Structural Steel

BS EN 10025-2:2004
Minimum Average Coating Thickness = 55 µm



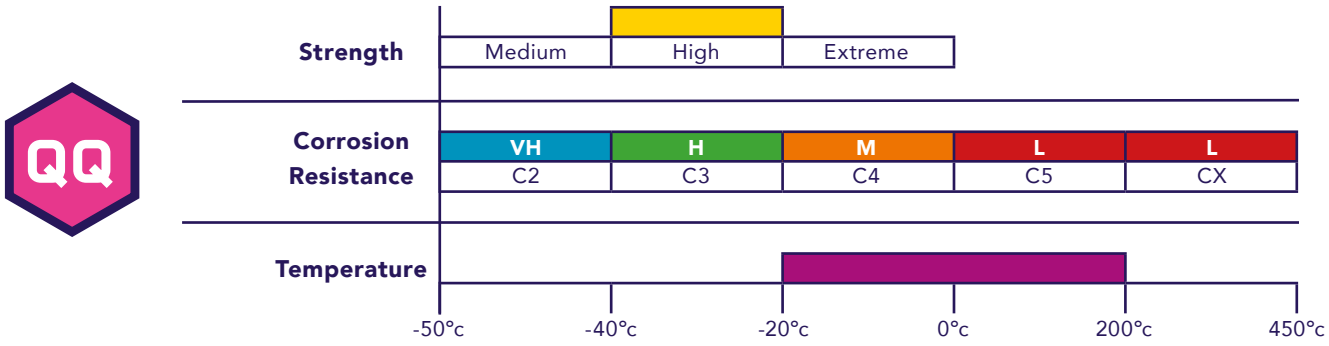
Deep Galvanised Silicon Rich Structural Steel

BS EN 10025-5:2004
Minimum Average Coating Thickness = 160 µm



Pre Galvanised Structural Steel

BS EN 10326:2004



LIFE EXPECTANCY CODE

L = Low - 2 to 5 Years	M = Medium - 5 to 10 Years	H = High - 10 to 20 Years	VH = Very High - Above 20 Years

Notes:

- Information from BS EN ISO 9223
- Hot Dip Galvanising carried out to BS EN 1461
- The operating temperatures stated in the table have been ascertained by using certified values as well as carrying out independent Charpy testing
- For more information on Finishes, Materials and Corrosion please consult the Engineering Data Section at the back of the Product Guide

VANTRUNK SPEEDWAY®

SECTION 01: SPEEDWAY CABLE LADDER SYSTEM

The speedway cable ladder system represents a major advance in cable ladder design, providing faster & easier installation, greater cable fill capacity and total flexibility.

VANTRUNK SPEEDLOK

Quick Assembly Cable Ladder

Flexible Solutions

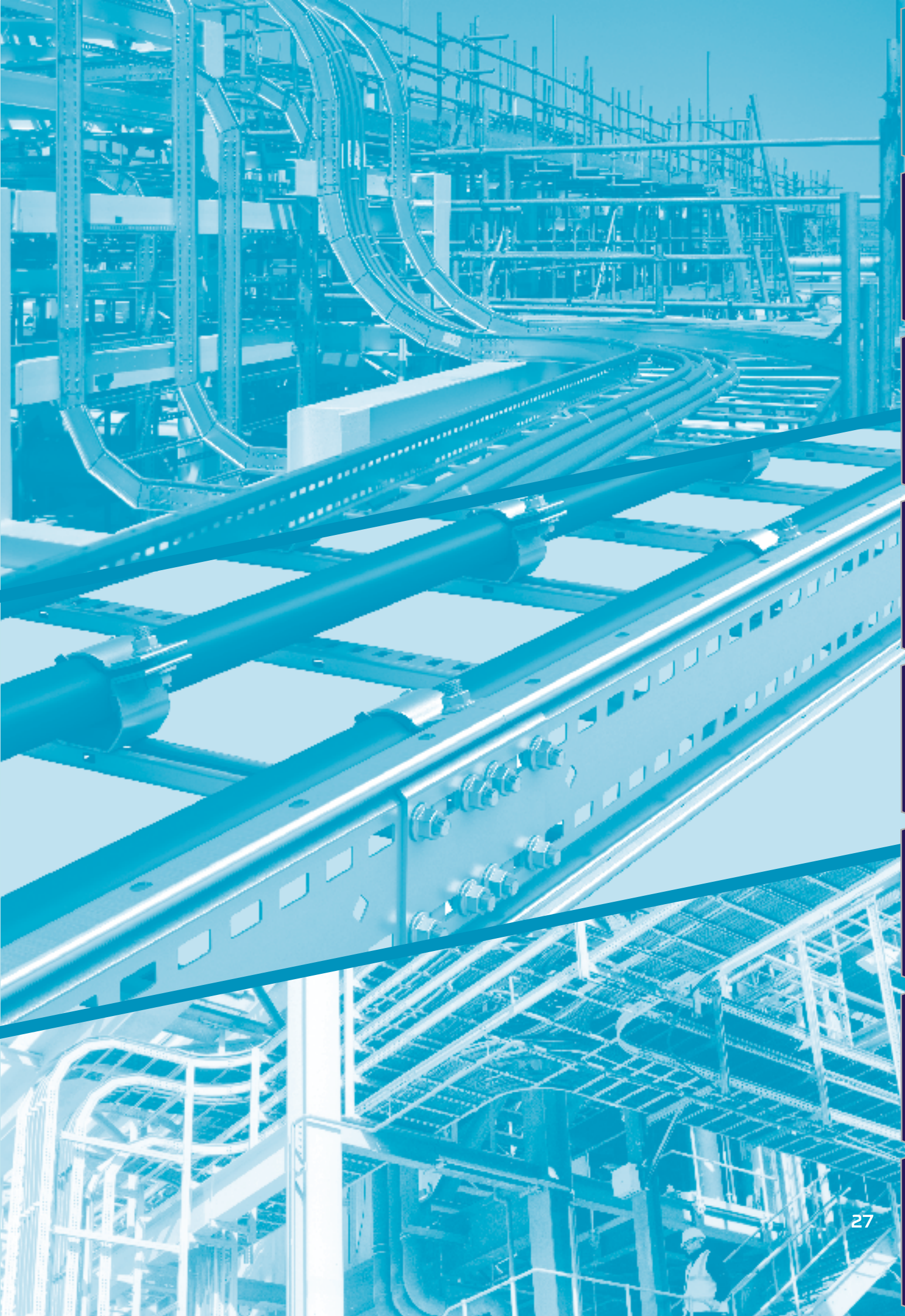
VANTRUNK RIS

Rapid Installation Systems

+50 -50

Withstands extreme temperatures (-50° to +50°C)

CE



HOW TO ORDER

CODE SYSTEM EXPLAINED

The information given on these pages should be used as a guide when ordering Speedway Cable Ladder, Fittings and Accessories. For more detailed information and examples refer to the relevant page within the catalogue.

Speedway Straight Ladder

System Type	Ladder Length	Width	Finish & Material	Sidewall Gauge	Rung Gauge
eg. SW6	– SL3	– 300	– GY	– 2.0W	– 2.0T

Speedway® SW6, Straight Ladder, 3000mm Long, 300mm Wide, Structural Steel, Hot Dip Galvanised - 2.0mm Wall, 2.0mm Rung

Speedway Fittings

System Type	Fitting Type	Width	Radius	Finish & Material	Sidewall Gauge	Rung Gauge
eg. SW5	– FE30	– 900	– 600R	– SS	– 1.5W	– 1.5T

Speedway® SW5 Flat Elbow 30°, 900mm Width, 600mm Radius, Grade 1.4404 (316L) Stainless Steel, P&P - 1.5mm Wall, 1.5mm Rung

Speedway Couplers

System Type	Coupler Type	Finish & Material
eg. SW6	– CS	– GX

Speedway® SW6, Straight Coupler, Silicon Rich Structural Steel, Deep Hot Dip Galvanised

Speedway Accessories

System Type	Accessory Type	Accessory Length	Finish & Material	Gauge
eg. SW6	– DIV	– SL1.5	– GA	– 1.2

Speedway® SW6, Straight Ladder Divider, 1500mm Long, Mild Steel, Hot Dip Galvanised

Speedway Straight Ladder Covers

System Type	Cover Type	Cover Length	Width	Finish & Material	Gauge
eg. SW	– CC	– SL1.5	– 300	– GA	– 1.2

Speedway® SW Closed Cover, Straight, 1500mm Long, 300mm Wide, Hot Dip Galvanised

Speedway Fitting Covers

System Type	Cover Type	Fitting Type	Width	Radius	Finish & Material	Gauge
eg. SW	– CL	– FE30	– 300	– 600R	– SS	– 1.0

Speedway® SW Louvered Cover, Flat Elbow 30°, 300mm Width, 600mm Radius, Grade 1.4404 (316L) Stainless

VANTRUNK SPEEDWAY®

System Type (▲)

Ladder Length

SL3	Straight ladder – 3m length
SL6	Straight ladder – 6m length

Fitting Type

Width (standard)

150mm, 300mm, 450mm, 600mm, 750mm, 900mm & 1050mm

Radius (standard)

300mm, 450mm, 600mm, 750mm, 900mm 1050mm & 1200mm

Coupler Type

Accessory Type

Supports

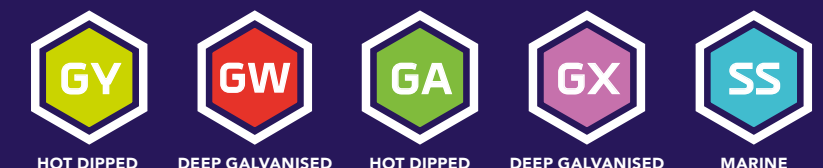
Cover Type

System type is SW unless indicated otherwise.

Further Guidance

Please contact our Sales Team for further advice and guidance on the correct ordering details for the full range of Speedway cable ladder, fittings and accessories.

Finish & Materials (⬢)

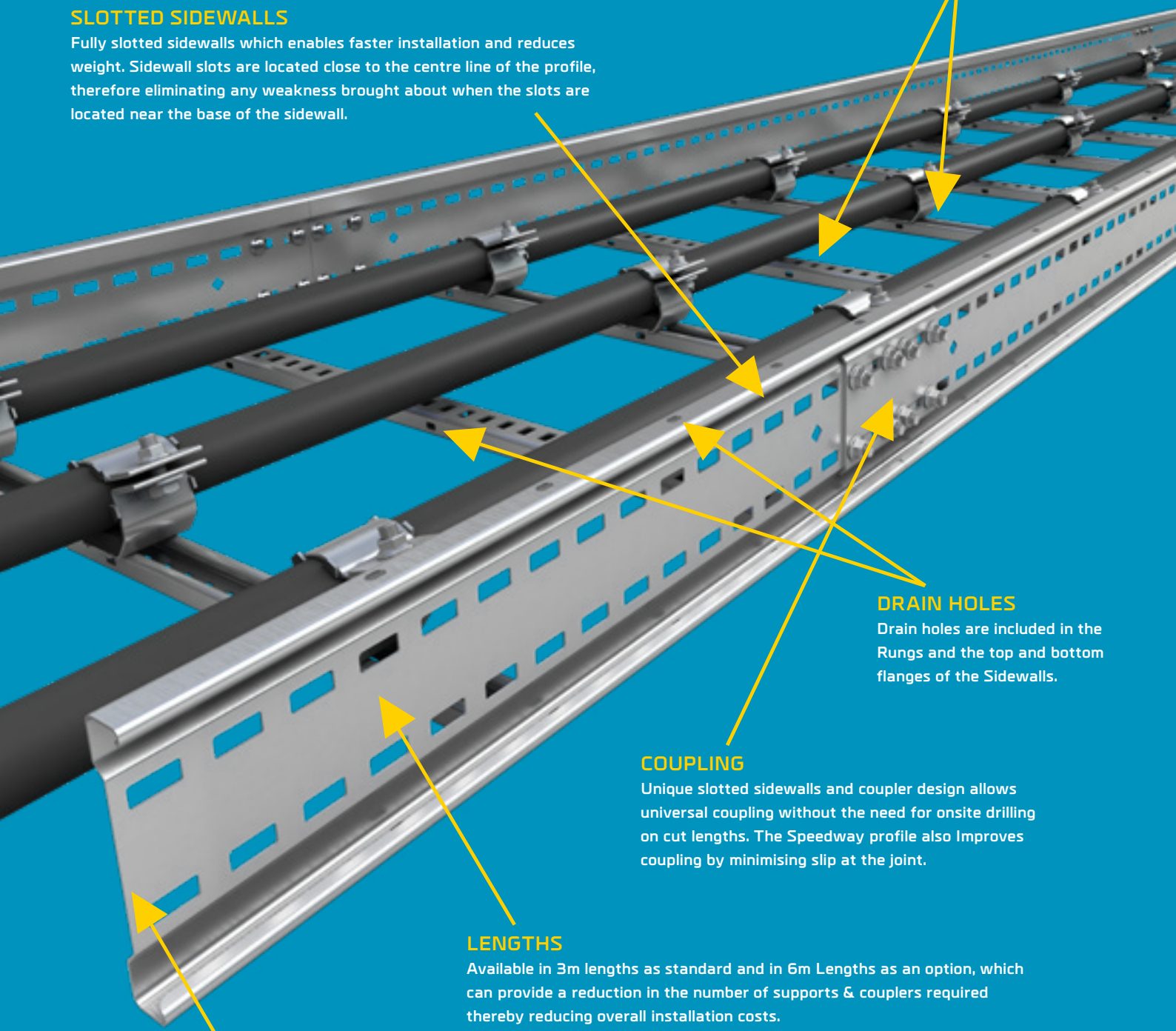


Details on the full range of standard Finishes and Materials are given in the Finish and Materials Section (page 23) and Engineering Data Section (page 210).

UNIQUELY VANTRUNK

RUNGS
Rungs are alternately inverted to allow flexibility of cable restraint and suspension of equipment from underside.

SLOTTED SIDEWALLS
Fully slotted sidewalls which enables faster installation and reduces weight. Sidewall slots are located close to the centre line of the profile, therefore eliminating any weakness brought about when the slots are located near the base of the sidewall.



DRAIN HOLES
Drain holes are included in the Rungs and the top and bottom flanges of the Sidewalls.

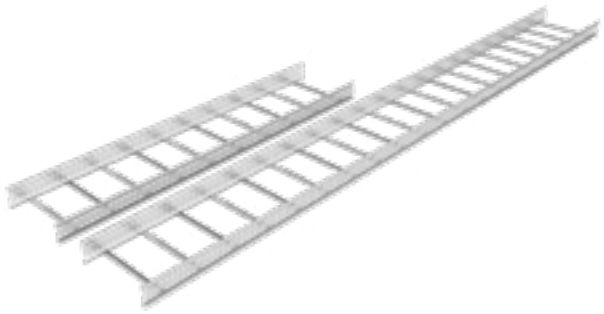
COUPLING
Unique slotted sidewalls and coupler design allows universal coupling without the need for onsite drilling on cut lengths. The Speedway profile also Improves coupling by minimising slip at the joint.

LENGTHS
Available in 3m lengths as standard and in 6m Lengths as an option, which can provide a reduction in the number of supports & couplers required thereby reducing overall installation costs.

SPEEDWAY PROFILE
Unique profile featuring an offset web that:
- Maximises strength by acting similar to an I-Section
- Increases stability under loading
- Increases internal loading area by up to 7.5%
- Can reduce the number of supports required

VANTRUNK SPEEDWAY®

STRAIGHT LENGTHS



- Straight lengths of ladder are available in both 3m and 6m lengths to suit project requirements.
- Using 6m Straight Ladder reduces the number of structural supports and couplers that are required whilst maintaining a high loading performance. These reductions contribute to cutting overall project costs and weight.

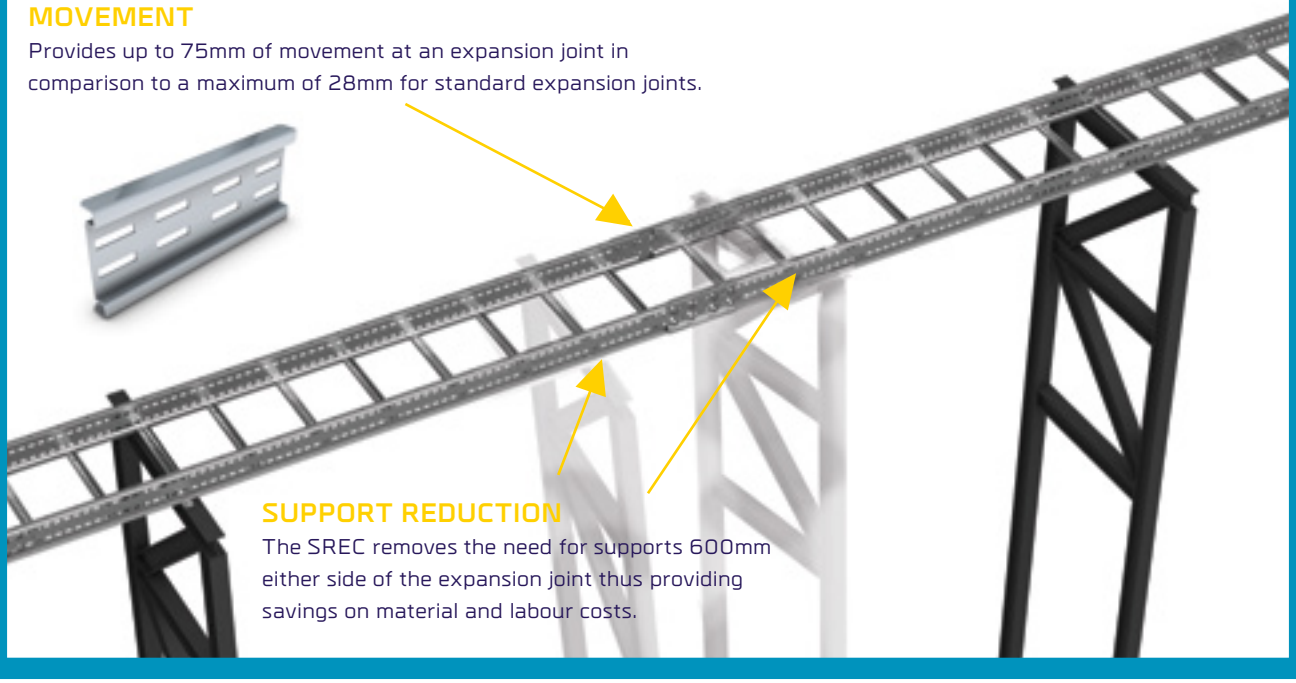
COVERS

- Speedway covers are available in Peaked, Louvered and Closed (Non-Louvered)
- All Covers fit directly onto the cable ladder thus providing additional mechanical protection to cables whilst maintaining ventilation when required
- Speedway cover widths of 450mm and above come supplied complete with Bracing Bars to further enhance strength in high wind environments (including hurricane force winds) and to reduce potential damage from any on site temporary imposed loads

SUPPORT REDUCTION EXPANSION COUPLER

MOVEMENT

Provides up to 75mm of movement at an expansion joint in comparison to a maximum of 28mm for standard expansion joints.



SUPPORT REDUCTION

The SREC removes the need for supports 600mm either side of the expansion joint thus providing savings on material and labour costs.

VANTRUNK SPEEDWAY®

STRAIGHT LADDER

Speedway Straight Cable Ladder is available in standard widths of 150mm, 300mm, 450mm, 600mm, 750mm and 900mm. Other widths from 100mm to 1500mm in 50mm increments are available to order. Ladders over 1050mm wide are only available in Heavy SW5 and Extra Heavy Duty SW6 systems.

Speedway Straight Cable Ladder is available in lengths of 3m and 6m. Unless otherwise specified 3m lengths are supplied as standard, 6m lengths are made to order.

All Speedway straight ladders are pre-punched with dedicated diamond earth bonding holes which facilitates earth continuity straps (thereby complying with European, IEC, and NEMA standards requirements) whilst maintaining a smooth cabling area through the use of the Vantrunk square shoulder round head bolt.

Speedway Cable Ladder sidewalls and rungs can be manufactured in either 1.5mm or 2.0mm material gauges. The supplied gauge combination is dependent on the application and desired performance capabilities, please consult our Sales Team for further details.

Rung spacing on straight ladders is at 300mm centres. As standard the Speedway rung is orientated alternately inverted to allow for cable cleat spacing at 600mm centres. Other orientations such as rungs all facing up or all facing down are available to order.

The Speedway Cable Ladder system has been independently tested and certified in accordance to BS EN & IEC 61537 and NEMA 20C, please contact our Sales team for further details.

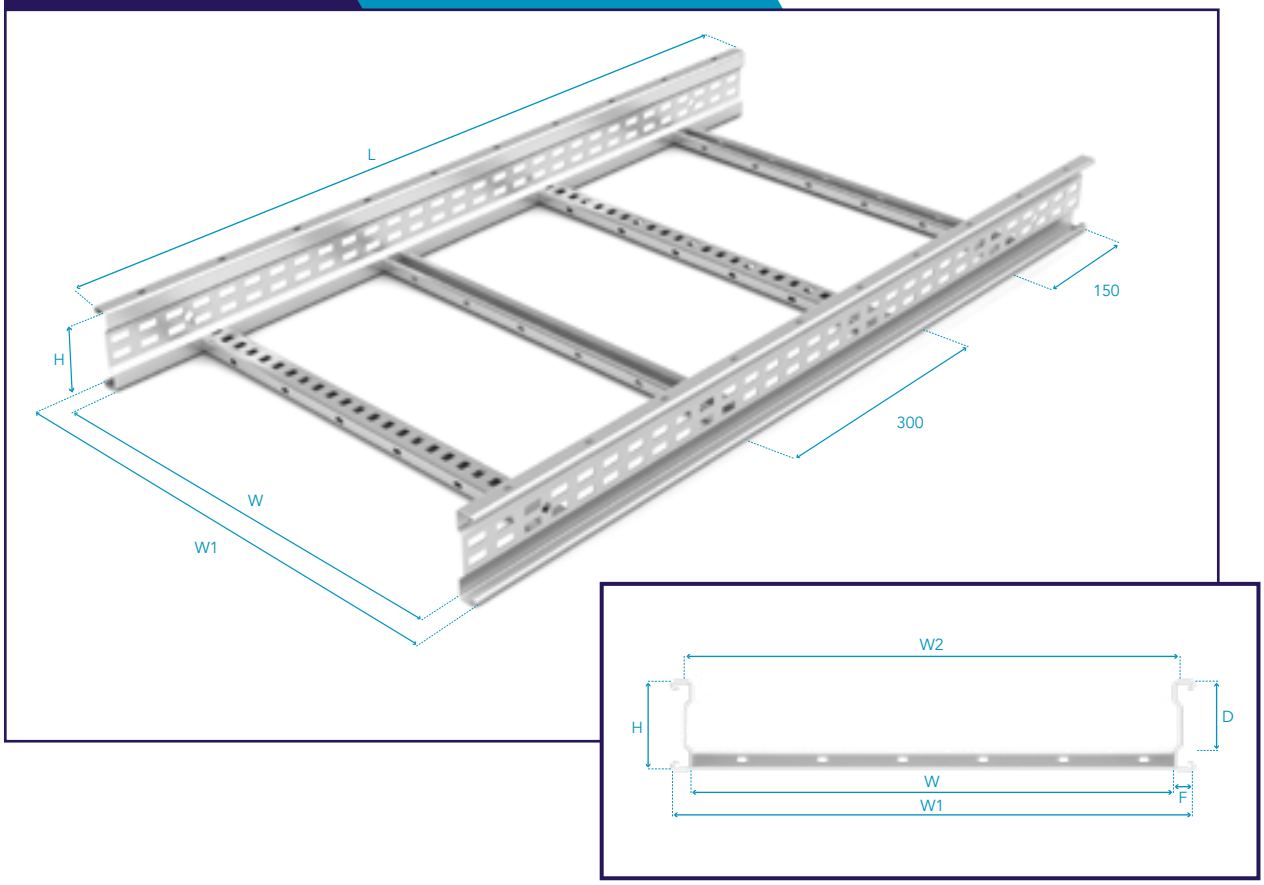
HOW TO ORDER

SW4	-	SL3	-	300	-	GY	-	1.5W	-	1.5T
System Type		Ladder Length		Width		Finish		Wall Gauge		Rung Gauge

Speedway SW4 Cable Ladder

Speedway 4 (SW4) Medium Duty Cable Ladder is manufactured in 3.0m lengths as standard with 6.0m lengths to order. The cable ladder is available in standard widths of 150mm, 300mm, 450mm, 600mm, 750mm and 900mm, widths of 100mm up to 1050mm, in 50mm increments, are available to order. Rung spacing is 300mm as standard.

System Type: SW4 SW4-SL LENGTH-WIDTH-⬡



Part Number	No. of Rungs	Dimensions (mm)				Weight (kg)
		W	W1	L	H	
SW4-SL3-150-⬡	10	150	200	3000	110	14.26
SW4-SL3-300-⬡		300	350			15.92
SW4-SL3-450-⬡		450	500			17.59
SW4-SL3-600-⬡		600	650			19.25
SW4-SL3-750-⬡		750	800			23.69
SW4-SL3-900-⬡		900	950			25.91

⬡ = Select a Finish & Material

Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

Height	H	110mm
Loading Depth	D	85mm
Ladder Width	W	100mm to 1050mm
Maximum Internal Width	W2	W + 14mm
Overall Width	W1	W + 50mm
Flange Width	F	25mm

Finishes & Materials:

GY GW SS GX

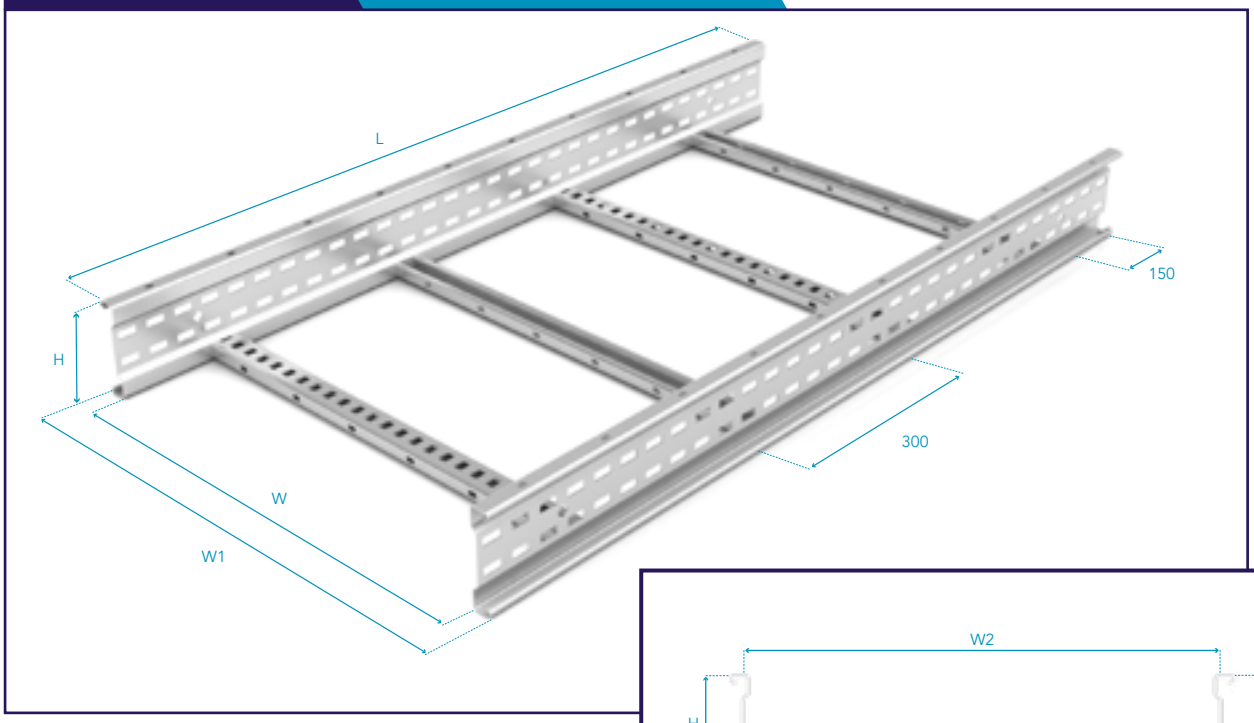
Supplied with:

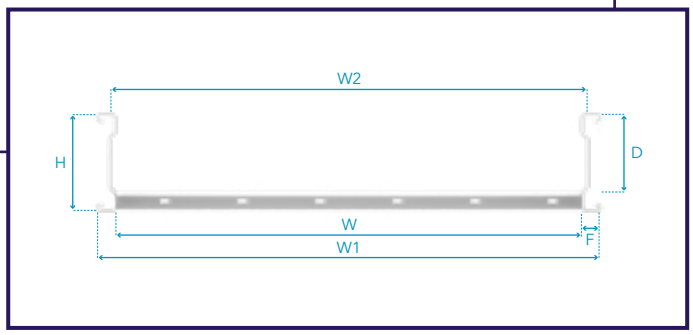
FIXING SETS x0

Speedway SW5 Cable Ladder

Speedway 5 (SW5) Heavy Duty Cable Ladder is manufactured in 3.0m lengths as standard with 6.0m lengths supplied to order. The cable ladder is available in standard widths of 150mm, 300mm, 450mm, 600mm, 750mm and 900mm, widths of 100mm up to 1500mm, in 50mm increments, are available to order. Rung spacing is 300mm as standard.

System Type: SW5 SW5-SL LENGTH-WIDTH-⬡





Part Number	No. of Rungs	Dimensions (mm)				Weight (kg)
		W	W1	L	H	
SW5-SL3-150-⬡	10	150	200	3000	125	15.3
SW5-SL3-300-⬡		300	350			16.96
SW5-SL3-450-⬡		450	500			18.63
SW5-SL3-600-⬡		600	650			20.29
SW5-SL3-750-⬡		750	800			24.73
SW5-SL3-900-⬡		900	950			26.95

⬡ = **Select a Finish & Material**

Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

Height	H	125mm
Loading Depth	D	100mm
Ladder Width	W	100mm to 1500mm
Maximum Internal Width	W2	W + 14mm
Overall Width	W1	W + 50mm
Flange Width	F	25mm

Finishes & Materials:

GY GW SS GX

Supplied with:

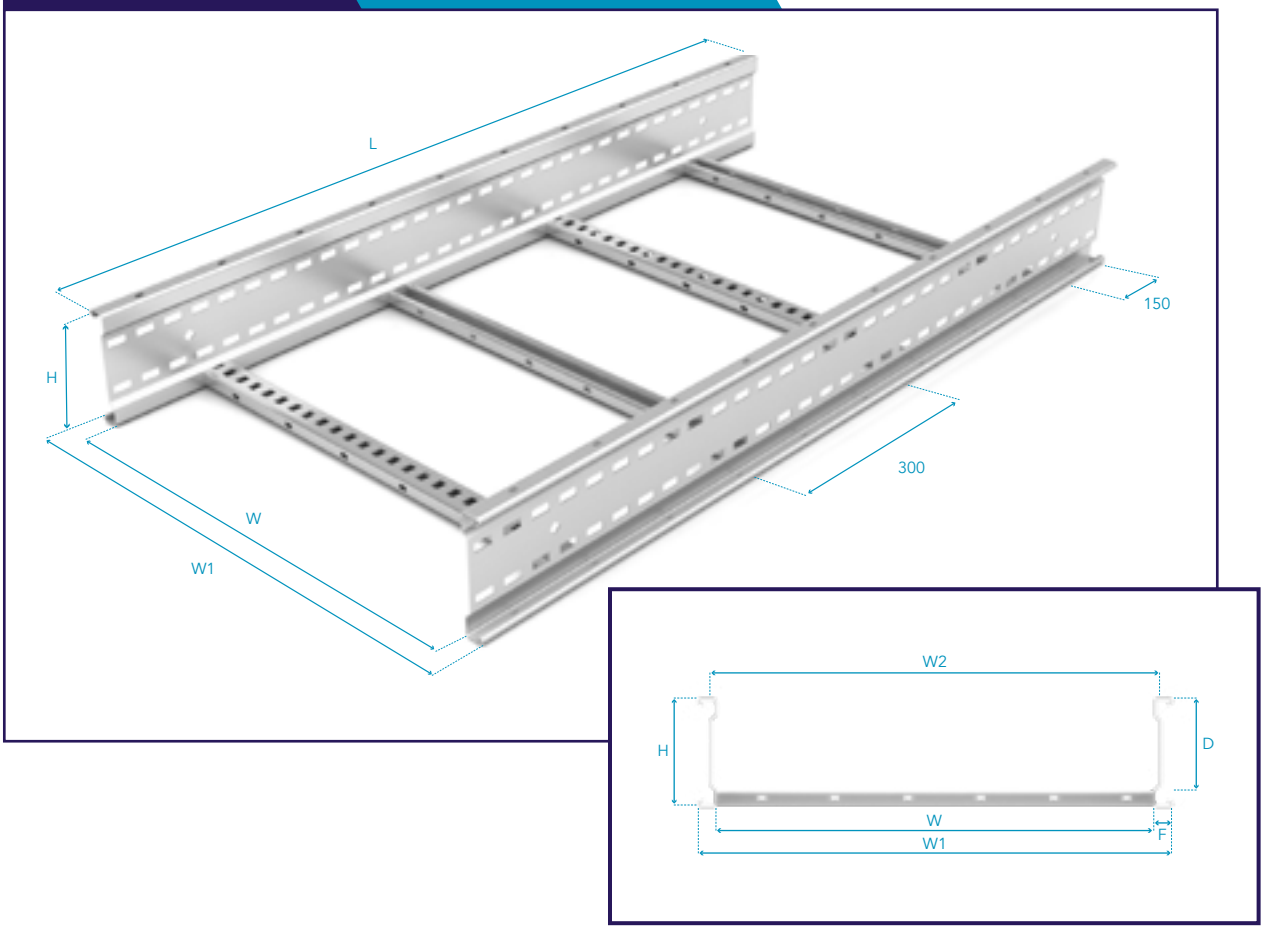
FIXING SETS x0

HOW TO ORDER SW6 - SL6* - 300 - GX - 2.0W - 2.0T
System Type | Ladder Length | Width | Finish | Wall Gauge | Rung Gauge

Speedway SW6 Cable Ladder

Speedway 6 (SW6) Extra Heavy Duty Cable Ladder is manufactured in 3.0m lengths as standard with 6.0m lengths supplied to order. The cable ladder is available in standard widths of 150mm, 300mm, 450mm, 600mm, 750mm and 900mm, widths of 100mm up to 1500mm, in 50mm increments, are available to order. Rung spacing is 300mm as standard.

System Type: SW6 SW6-SL LENGTH-WIDTH-⬡



Part Number	No. of Rungs	Dimensions (mm)				Weight (kg)
		W	W1	L	H	
SW6-SL3-150-⬡	10	150	200	3000	150	23.12
SW6-SL3-300-⬡		300	350			25.35
SW6-SL3-450-⬡		450	500			27.57
SW6-SL3-600-⬡		600	650			29.79
SW6-SL3-750-⬡		750	800			32.01
SW6-SL3-900-⬡		900	950			34.23

⬡ = Select a Finish & Material

Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

Height	H	150mm
Loading Depth	D	125mm
Ladder Width	W	100mm to 1500mm
Maximum Internal Width	W2	W + 14mm
Overall Width	W1	W + 50mm
Flange Width	F	25mm

Finishes & Materials:

GY GW SS GX

Supplied with:

FIXING SETS x0

*Straight Cable ladder is available in: SL3 (3000mm), SL6 (6000mm)
(For non-standard lengths please contact our Sales Team)

VANTRUNK SPEEDWAY®

FITTINGS

Vantrunk Speedway cable ladder fittings incorporate several features which enhance the systems ease of installation.

All Speedway fittings are manufactured with the Speedlok Integral Coupler, thereby removing the need for separate couplers and reducing the number of fixings required to connect the ladder and fitting and in turn reducing the ladder to fitting connection time by 67%. The substantial reduction in the number of fixings and reduction in the number of couplers required also helps to reduce top side weight in off-shore facilities.

As in the cable ladder side wall, the cable ladder fitting side wall has an offset central web to enhance stability when under load.

All radius sections in the Vantrunk Speedway range of fittings have a repeatable and true radius which eliminates the traditional "make it fit" approach during installation.

All Speedway fittings are pre-punched with dedicated diamond earth bonding holes which facilitates earth continuity straps (thereby complying with European, IEC, and NEMA standards requirements) whilst maintaining a smooth cabling area through the use of the Vantrunk square shoulder round head bolt.

VANTRUNK RIS

VANTRUNK SPEEDLOK QUICKFIT CABLE LADDER

Fitting to Fitting Coupler (FFC)

When joining one fitting to another to suit on-site installation requirements the use of a Fitting to Fitting Coupler (FFC) will be required. See Page 69 for further details.

Speedway Fittings

Speedway fittings are available in widths from 150mm to 900mm and in the case of Flat Elbows and Risers at angles of 30, 45, 60 and 90 degree as standard. Other widths between 100mm to 1500mm and radii, subject to cable ladder system type, are also available. The standard radii are 300mm, 450mm, 600mm, 750mm and 900mm.

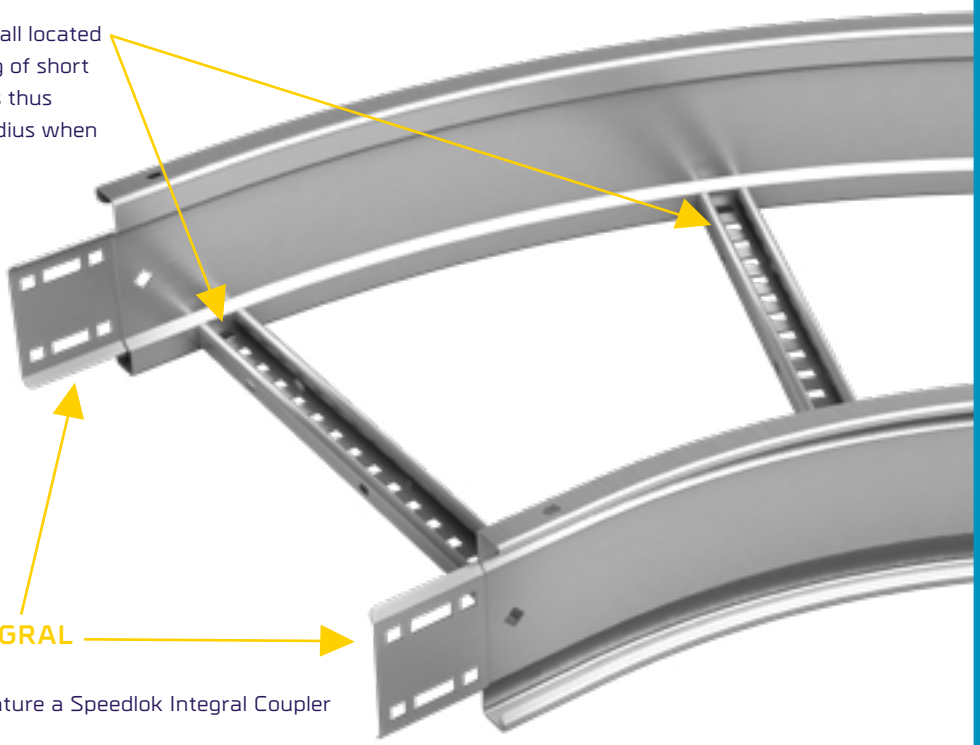
All fittings are supplied with all necessary fixings for connecting fittings to straight ladder.

The rungs are orientated with the open face uppermost to suit the use of cleats and similar cable restraint devices. This allows compliance with current recommendations for cable restraint, especially where cables are used which have a high potential fault current level.

SPEEDLOK INTEGRAL COUPLER

RUNGS

Rungs on fittings are all located face up to allow fixing of short circuit restraint cleats thus maintaining a true radius when changing direction.



SPEEDLOK INTEGRAL COUPLER

Speedway fittings feature a Speedlok Integral Coupler that:

- Eliminates the need for a separate coupler when connecting fittings to straight lengths
- Reduces the ladder to fitting installation time by 67%
- Decreases weight of installations by using less material in the coupler and also less fixings.

Part of the Rapid Installation System (RIS)

VANTRUNK SPEEDWAY®

FLAT ELBOWS

Flat Elbows (FE) are designed to create fixed angular coplanar connections between horizontal cable runs (cable ladder installed in horizontal plane) and between vertical cable runs (cable ladder installed in vertical plane).

The rungs in the Speedway Flat Elbows are located radially at either 0° or at 7½° incremental angles (or multiples thereof) and are positioned to give a maximum linear distance of no more than 465mm between adjacent rungs on adjacent Speedway Cable Ladder and Speedway Cable Ladder Fittings when measured along the outer radius.

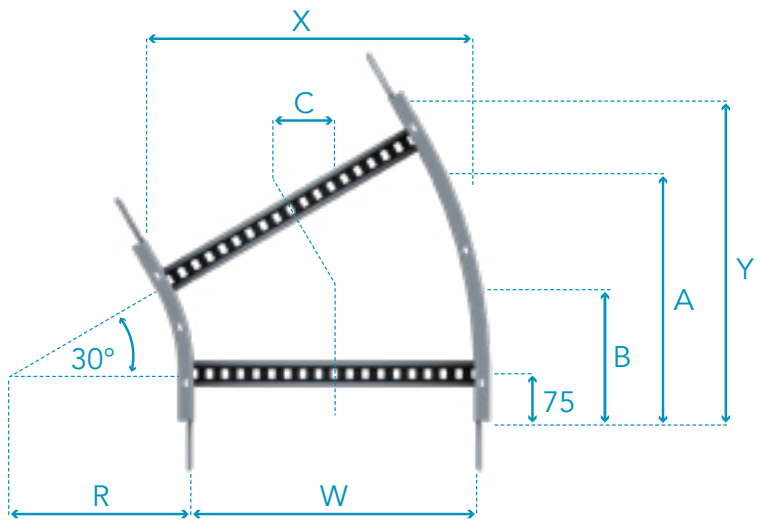
30° Flat Elbow	45° Flat Elbow	60° Flat Elbow	90° Flat Elbow
			

HOW TO ORDER

SW5 (System Type) - FE30 (Fitting Type) - 300 (Width) - 750R (Radius) - GY (Finish) - 1.5W (Wall Gauge) - 1.5T (Rung Gauge)

Speedway 30° Flat Elbows

Fitting Type: FE30 SW△-FE30-WIDTH-RADIUS-⬡



Part Number	No of Rungs	Dimensions (mm)							Weight (kg)		
		R	W	A	B	C	X	Y	SW4	SW5	SW6
SW△-FE30-150-300R-⬡	2	300	150	327	175	88	266	365	2.21	2.31	3.52
SW△-FE30-300-300R-⬡	2		300	365	196	98	416	440	2.73	2.84	4.27
SW△-FE30-450-300R-⬡	2		450	402	216	108	566	515	3.24	3.37	5
SW△-FE30-600-300R-⬡	2		600	440	236	118	716	590	3.76	3.9	5.75
SW△-FE30-750-300R-⬡	2		750	477	256	128	866	665	5.93	6.09	7.58
SW△-FE30-900-300R-⬡	3		900	515	276	138	1016	740	6.78	6.96	8.55
SW△-FE30-150-600R-⬡	2	600	150	477	256	128	306	515	2.93	3.09	4.69
SW△-FE30-300-600R-⬡	2		300	515	276	138	456	590	3.46	3.63	5.44
SW△-FE30-450-600R-⬡	2		450	552	296	148	606	665	4.46	4.65	6.83
SW△-FE30-600-600R-⬡	3		600	590	316	158	756	740	5.14	5.35	7.79
SW△-FE30-750-600R-⬡	3		750	627	336	168	906	815	6.66	6.86	8.75
SW△-FE30-900-600R-⬡	3		900	665	356	178	1056	890	7.51	7.73	9.72

VANTRUNK SPEEDLOK QUICKFIT CABLE LADDER

Finishes & Materials:

GY SS GX GW

Supplied with: FIXING SETS x16

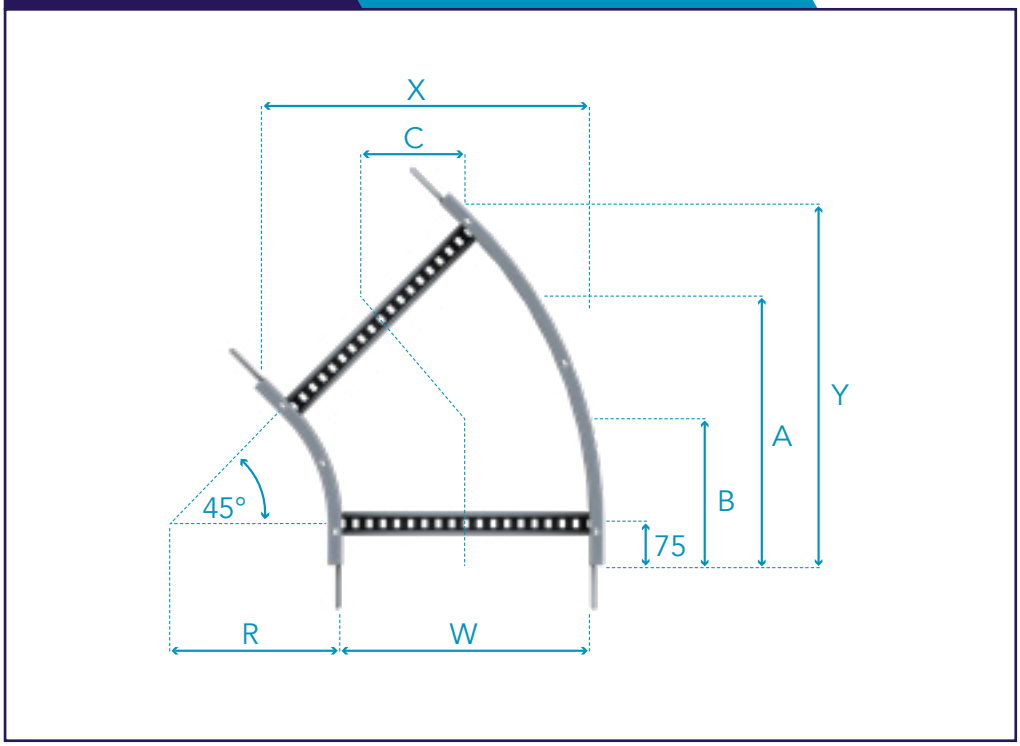
Not Required:

△ = Select a System Type ⬡ = Select a Finish & Material

Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

Speedway 45˚ Flat Elbows

Fitting Type: FE45 SW△-FE45-WIDTH-RADIUS-⬡



Part Number	No of Rungs	Dimensions (mm)							Weight (kg)		
		R	W	A	B	C	X	Y	SW4	SW5	SW6
SW△-FE45-150-300R-⬡	2	300	150	393	230	163	326	446	2.67	2.79	4.23
SW△-FE45-300-300R-⬡	2		300	446	261	185	476	552	3.28	3.43	5.13
SW△-FE45-450-300R-⬡	3		450	499	292	207	626	658	4.38	4.55	6.68
SW△-FE45-600-300R-⬡	3		600	552	324	229	776	764	5.15	5.35	7.78
SW△-FE45-750-300R-⬡	3		750	605	355	251	926	870	6.76	6.98	8.9
SW△-FE45-900-300R-⬡	3		900	658	386	273	1076	977	7.7	7.93	10.01
SW△-FE45-150-600R-⬡	3	600	150	605	355	251	413	658	3.91	4.13	6.24
SW△-FE45-300-600R-⬡	3		300	658	386	273	563	764	4.68	4.93	7.34
SW△-FE45-450-600R-⬡	3		450	711	417	295	713	870	5.46	5.73	8.46
SW△-FE45-600-600R-⬡	3		600	764	448	317	863	977	6.23	6.51	9.56
SW△-FE45-750-600R-⬡	4		750	817	479	339	1013	1083	8.93	9.24	11.79
SW△-FE45-900-600R-⬡	4		900	870	510	361	1163	1189	10.1	10.43	13.12

VANTRUNK SPEEDLOK QUICKFIT CABLE LADDER

Finishes & Materials:

GY SS GX GW

Supplied with: FIXING SETS x16

Not Required:

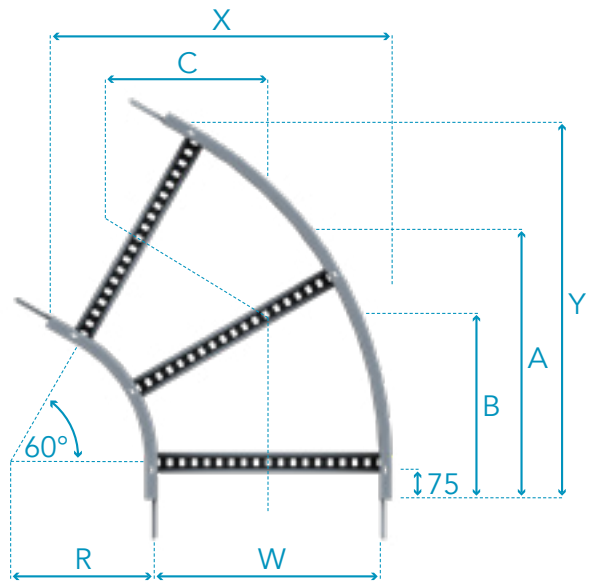
△ = Select a System Type ⬡ = Select a Finish & Material

Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

HOW TO ORDER SW6 - FE45 - 900 - 600R - SS - 1.5W - 1.5T
System Type - Fitting Type - Width - Radius - Finish - Wall Gauge - Rung Gauge

Speedway 60° Flat Elbows

Fitting Type: FE60 SW△-FE60-WIDTH-RADIUS-⬡



Part Number	No of Rungs	Dimensions (mm)							Weight (kg)		
		R	W	A	B	C	X	Y	SW4	SW5	SW6
SW△-FE60-150-300R-⬡	2	300	150	437	292	252	395	502	3.12	3.27	4.98
SW△-FE60-300-300R-⬡	2		300	502	335	290	545	632	4.15	4.34	6.46
SW△-FE60-450-300R-⬡	3		450	567	378	327	695	762	5.02	5.23	7.73
SW△-FE60-600-300R-⬡	3		600	632	421	365	845	892	5.89	6.11	8.97
SW△-FE60-750-300R-⬡	3		750	697	465	402	995	1022	9.79	10.06	12.45
SW△-FE60-900-300R-⬡	5		900	762	508	440	1145	1152	11.27	11.56	14.15
SW△-FE60-150-600R-⬡	3	600	150	697	465	402	545	762	4.74	5.02	7.58
SW△-FE60-300-600R-⬡	3		300	762	508	440	695	892	5.61	5.9	8.82
SW△-FE60-450-600R-⬡	3		450	827	551	477	845	1022	7.46	7.8	11.41
SW△-FE60-600-600R-⬡	5		600	892	595	515	995	1152	8.66	9.02	13.11
SW△-FE60-750-600R-⬡	5		750	957	638	552	1145	1282	11.23	11.63	14.81
SW△-FE60-900-600R-⬡	5		900	1022	681	590	1295	1412	12.71	13.14	10.01

VANTRUNK SPEEDLOK QUICKFIT CABLE LADDER

Finishes & Materials:

GY SS GX GW

Supplied with: FIXING SETS x16

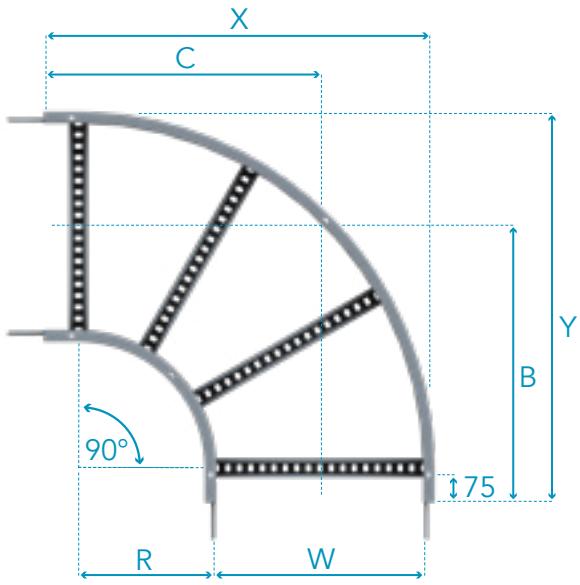
Not Required:

△ = Select a System Type ⬡ = Select a Finish & Material

Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

Speedway 90° Flat Elbows

Fitting Type: FE90 SW△-FE90-WIDTH-RADIUS-⬡



Part Number	No of Rungs	Dimensions (mm)						Weight (kg)		
		R	W	B	C	X	Y	SW4	SW5	SW6
SW△-FE90-150-300R-⬡	2	300	150	450	450	545	525	4.19	4.44	6.7
SW△-FE90-300-300R-⬡	3		300	525	525	695	675	5.23	5.51	8.23
SW△-FE90-450-300R-⬡	4		450	600	600	845	825	6.77	7.1	10.45
SW△-FE90-600-300R-⬡	4		600	675	675	995	975	7.97	8.35	12.22
SW△-FE90-750-300R-⬡	5		750	750	750	1145	1125	11.41	11.83	15.11
SW△-FE90-900-300R-⬡	5		900	825	825	1295	1275	13.06	13.53	17.11
SW△-FE90-150-600R-⬡	4	600	150	750	750	845	825	6.53	6.94	10.44
SW△-FE90-300-600R-⬡	4		300	825	825	995	975	7.73	8.19	12.21
SW△-FE90-450-600R-⬡	5		450	900	900	1145	1125	9.45	9.95	14.65
SW△-FE90-600-600R-⬡	5		600	975	975	1295	1275	10.82	11.37	16.65
SW△-FE90-750-600R-⬡	7		750	1050	1050	1445	1425	15.81	16.4	20.86
SW△-FE90-900-600R-⬡	7		900	1125	1125	1595	1575	17.9	18.53	23.29

VANTRUNK SPEEDLOK QUICKFIT CABLE LADDER

Finishes & Materials:

GY SS GX GW

Supplied with: FIXING SETS x16

Not Required:

△ = Select a System Type ⬡ = Select a Finish & Material

Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

HOW TO ORDER SW6 (System Type) - FE90 (Fitting Type) - 150 (Width) - 300R (Radius) - GW (Finish) - 2.0W (Wall Gauge) - 2.0T (Rung Gauge)

VANTRUNK

ENGINEERED FOR EXTREME ENVIRONMENTS

GOLDEN EAGLE PROJECT

The Nexen-operated Golden Eagle project produced first oil on October 30, 2014. Upon completion, the project had expended 17.9 million hours worked. Located 70 km northeast of Aberdeen, Golden Eagle is the second largest oil discovery in the UK North Sea since Buzzard was discovered in 2001.

LOCATION

NORTH SEA, UK
70km northeast of Aberdeen.

CLIENT

nexen

$4.8bn
OVERALL COST OF PROJECT

FACT 1

140 million
barrels of oil equivalent

FACT 2

21
development wells

15 production
6 water injectors

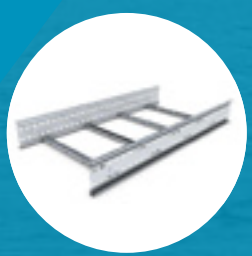
FACT 3

70,000 boe/d
production capacity

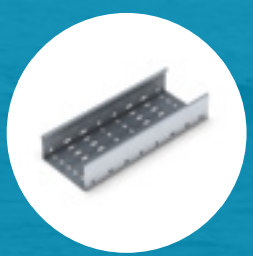
FACT 4

Fixed
wellhead platform structure

PRODUCTS SUPPLIED



SPEEDWAY



HEAVY DUTY CABLE TRAY

VANTRUNK SPEEDWAY® EXTREME CABLE LADDER

Vantrunk's Speedway Cable Ladder provides a strong, reliable, easy to install solution providing overall cost savings throughout the project lifespan.

VANTRUNK SPEEDWAY®

INSIDE & OUTSIDE RISERS

Inside Risers (IR) and Outside Risers (OR) are designed to create fixed angular non-coplanar connections between cable runs and can be used in both vertical and horizontal orientations.

Speedway Inside Risers (or vertical inside bends) create internal changes in direction; outside risers (or vertical outside bends) create external changes in direction. The rungs are located at the intersection of adjacent facets.

30° Inside Riser

45° Inside Riser

60° Inside Riser

90° Inside Riser

30° Outside Riser

45° Outside Riser

60° Outside Riser

90° Outside Riser

HOW TO ORDER SW4 – IR30 – 150 – 300R – GY – 1.5W – 1.5T

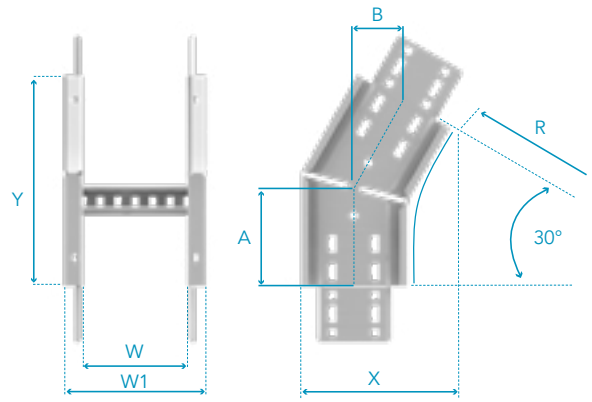
System Type – Fitting Type – Width – Radius – Finish – Wall Gauge – Rung Gauge

Speedway 30° Inside & Outside Risers

Fitting Type: IR30 / OR30

Part Number: SWΔ-*R30-WIDTH-RADIUS-⬡

For:
IR30: * = I
OR30: *= O



NOTE: Inside riser shown for illustrative purposes.

No. of Rungs 1 Radius R 300mm								No. of Rungs 2 Radius R 600mm							
Part Number	Dimensions (mm)						Weight (kg)	Part Number	Dimensions (mm)						Weight (kg)
	W	W1	A	B	X	Y			W	W1	A	B	X	Y	
SW4-IR30-150-300R-⬡	150	200	96	48	145	203	1.35	SW4-IR30-150-600R-⬡	150	200	176	88	185	353	2.17
SW4-IR30-300-300R-⬡	300	350	96	48	145	203	1.51	SW4-IR30-300-600R-⬡	300	350	176	88	185	353	2.51
SW4-IR30-450-300R-⬡	450	500	96	48	145	203	1.68	SW4-IR30-450-600R-⬡	450	500	176	88	185	353	2.84
SW4-IR30-600-300R-⬡	600	650	96	48	145	203	1.85	SW4-IR30-600-600R-⬡	600	650	176	88	185	353	3.17
SW4-IR30-750-300R-⬡	750	800	96	48	145	203	2.29	SW4-IR30-750-600R-⬡	750	800	176	88	185	353	4.06
SW4-IR30-900-300R-⬡	900	950	96	48	145	203	2.51	SW4-IR30-900-600R-⬡	900	950	176	88	185	353	4.5

No. of Rungs 1 Radius R 300mm								No. of Rungs 2 Radius R 600mm							
Part Number	Dimensions (mm)						Weight (kg)	Part Number	Dimensions (mm)						Weight (kg)
	W	W1	A	B	X	Y			W	W1	A	B	X	Y	
SW5-IR30-150-300R-⬡	150	200	98	49	165	213	1.39	SW5-IR30-150-600R-⬡	150	200	178	89	205	363	2.26
SW5-IR30-300-300R-⬡	300	350	98	49	165	213	1.55	SW5-IR30-300-600R-⬡	300	350	178	89	205	363	2.6
SW5-IR30-450-300R-⬡	450	500	98	49	165	213	1.72	SW5-IR30-450-600R-⬡	450	500	178	89	205	363	2.93
SW5-IR30-600-300R-⬡	600	650	98	49	165	213	1.89	SW5-IR30-600-600R-⬡	600	650	178	89	205	363	3.26
SW5-IR30-750-300R-⬡	750	800	98	49	165	213	2.33	SW5-IR30-750-600R-⬡	750	800	178	89	205	363	4.15
SW5-IR30-900-300R-⬡	900	950	98	49	165	213	2.55	SW5-IR30-900-600R-⬡	900	950	178	89	205	363	4.59

No. of Rungs 1 Radius R 300mm								No. of Rungs 2 Radius R 600mm							
Part Number	Dimensions (mm)						Weight (kg)	Part Number	Dimensions (mm)						Weight (kg)
	W	W1	A	B	X	Y			W	W1	A	B	X	Y	
SW6-IR30-150-300R-⬡	150	200	101	50	190	225	2.22	SW6-IR30-150-600R-⬡	150	200	181	91	230	375	3.53
SW6-IR30-300-300R-⬡	300	350	101	50	190	225	2.44	SW6-IR30-300-600R-⬡	300	350	181	91	230	375	3.98
SW6-IR30-450-300R-⬡	450	500	101	50	190	225	2.67	SW6-IR30-450-600R-⬡	450	500	181	91	230	375	4.42
SW6-IR30-600-300R-⬡	600	650	101	50	190	225	2.89	SW6-IR30-600-600R-⬡	600	650	181	91	230	375	4.87
SW6-IR30-750-300R-⬡	750	800	101	50	190	225	3.11	SW6-IR30-750-600R-⬡	750	800	181	91	230	375	5.31
SW6-IR30-900-300R-⬡	900	950	101	50	190	225	3.33	SW6-IR30-900-600R-⬡	900	950	181	91	230	375	5.75

VANTRUNK SPEEDLOK QUICKFIT CABLE LADDER

⬡ = Select a Finish & Material

Finishes & Materials: GV SS GX GW

Supplied with: FIXING SETS x16

Not Required: ~~COUPLER~~

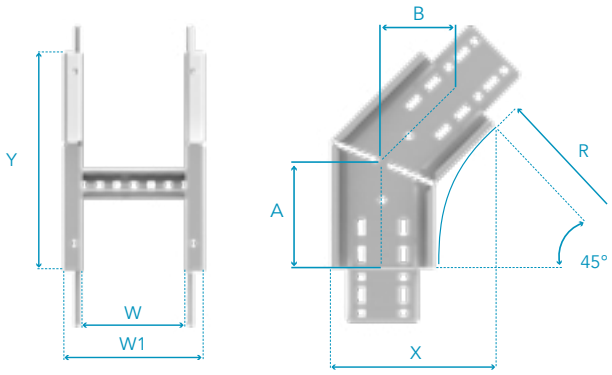
Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

Speedway 45° Inside & Outside Risers

Fitting Type: IR45 / OR45

Part Number: SW△-*R45-WIDTH-RADIUS-○

For:
IR45: * = I
OR45: *= O



NOTE: Inside riser shown for illustrative purposes.

No. of Rungs 1 Radius R 300mm								No. of Rungs 2 Radius R 600mm							
Part Number	Dimensions (mm)						Weight (kg)	Part Number	Dimensions (mm)						Weight (kg)
	W	W1	A	B	X	Y			W	W1	A	B	X	Y	
SW4-IR45-150-300R-○	150	200	148	104	193	286	1.86	SW4-IR45-150-600R-○	150	200	272	192	281	499	3.02
SW4-IR45-300-300R-○	300	350	148	104	193	286	2.02	SW4-IR45-300-600R-○	300	350	272	192	281	499	3.36
SW4-IR45-450-300R-○	450	500	148	104	193	286	2.19	SW4-IR45-450-600R-○	450	500	272	192	281	499	3.69
SW4-IR45-600-300R-○	600	650	148	104	193	286	2.36	SW4-IR45-600-600R-○	600	650	272	192	281	499	4.02
SW4-IR45-750-300R-○	750	800	148	104	193	286	2.8	SW4-IR45-750-600R-○	750	800	272	192	281	499	4.91
SW4-IR45-900-300R-○	900	950	148	104	193	286	3.02	SW4-IR45-900-600R-○	900	950	272	192	281	499	5.35

No. of Rungs 1 Radius R 300mm								No. of Rungs 2 Radius R 600mm							
Part Number	Dimensions (mm)						Weight (kg)	Part Number	Dimensions (mm)						Weight (kg)
	W	W1	A	B	X	Y			W	W1	A	B	X	Y	
SW5-IR45-150-300R-○	150	200	151	107	213	301	1.97	SW5-IR45-150-600R-○	150	200	275	194	301	513	3.22
SW5-IR45-300-300R-○	300	350	151	107	213	301	2.13	SW5-IR45-300-600R-○	300	350	275	194	301	513	3.56
SW5-IR45-450-300R-○	450	500	151	107	213	301	2.3	SW5-IR45-450-600R-○	450	500	275	194	301	513	3.89
SW5-IR45-600-300R-○	600	650	151	107	213	301	2.47	SW5-IR45-600-600R-○	600	650	275	194	301	513	4.22
SW5-IR45-750-300R-○	750	800	151	107	213	301	2.91	SW5-IR45-750-600R-○	750	800	275	194	301	513	5.11
SW5-IR45-900-300R-○	900	950	151	107	213	301	3.13	SW5-IR45-900-600R-○	900	950	275	194	301	513	5.55

No. of Rungs 1 Radius R 300mm								No. of Rungs 2 Radius R 600mm							
Part Number	Dimensions (mm)						Weight (kg)	Part Number	Dimensions (mm)						Weight (kg)
	W	W1	A	B	X	Y			W	W1	A	B	X	Y	
SW6-IR45-150-300R-○	150	200	156	110	238	318	3.11	SW6-IR45-150-600R-○	150	200	280	198	326	530	4.97
SW6-IR45-300-300R-○	300	350	156	110	238	318	3.33	SW6-IR45-300-600R-○	300	350	280	198	326	530	5.42
SW6-IR45-450-300R-○	450	500	156	110	238	318	3.56	SW6-IR45-450-600R-○	450	500	280	198	326	530	5.86
SW6-IR45-600-300R-○	600	650	156	110	238	318	3.78	SW6-IR45-600-600R-○	600	650	280	198	326	530	6.31
SW6-IR45-750-300R-○	750	800	156	110	238	318	4	SW6-IR45-750-600R-○	750	800	280	198	326	530	6.75
SW6-IR45-900-300R-○	900	950	156	110	238	318	4.22	SW6-IR45-900-600R-○	900	950	280	198	326	530	7.19

VANTRUNK SPEEDLOK QUICKFIT CABLE LADDER

○ = Select a Finish & Material

Finishes & Materials: GV SS GX GW

Supplied with: FIXING SETS x16

Not Required: Earth Bond

Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

HOW TO ORDER

SW6 - OR45 - 300 - 600R - GX - 2.0W - 2.0T

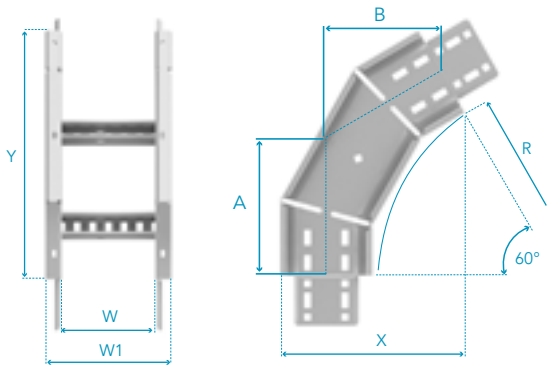
System Type - Fitting Type - Width - Radius - Finish - Wall Gauge - Rung Gauge

Speedway 60° Inside & Outside Risers

Fitting Type: IR60 / OR60

Part Number: SWΔ-*R60-WIDTH-RADIUS-⬡

For:
IR60: * = I
OR60: *= O



NOTE: Inside riser shown for illustrative purposes.

No. of Rungs 1 Radius R 300mm								No. of Rungs 2 Radius R 600mm							
Part Number	Dimensions (mm)						Weight (kg)	Part Number	Dimensions (mm)						Weight (kg)
	W	W1	A	B	X	Y			W	W1	A	B	X	Y	
SW4-IR60-150-300R-⬡	150	200	206	178	255	351	2.42	SW4-IR60-150-600R-⬡	150	200	379	328	405	611	3.96
SW4-IR60-300-300R-⬡	300	350	206	178	255	351	2.76	SW4-IR60-300-600R-⬡	300	350	379	328	405	611	4.46
SW4-IR60-450-300R-⬡	450	500	206	178	255	351	3.09	SW4-IR60-450-600R-⬡	450	500	379	328	405	611	4.96
SW4-IR60-600-300R-⬡	600	650	206	178	255	351	3.42	SW4-IR60-600-600R-⬡	600	650	379	328	405	611	5.46
SW4-IR60-750-300R-⬡	750	800	206	178	255	351	4.31	SW4-IR60-750-600R-⬡	750	800	379	328	405	611	6.79
SW4-IR60-900-300R-⬡	900	950	206	178	255	351	4.75	SW4-IR60-900-600R-⬡	900	950	379	328	405	611	7.46

No. of Rungs 1 Radius R 300mm								No. of Rungs 2 Radius R 600mm							
Part Number	Dimensions (mm)						Weight (kg)	Part Number	Dimensions (mm)						Weight (kg)
	W	W1	A	B	X	Y			W	W1	A	B	X	Y	
SW5-IR60-150-300R-⬡	150	200	210	182	275	368	2.55	SW5-IR60-150-600R-⬡	150	200	383	332	425	628	4.25
SW5-IR60-300-300R-⬡	300	350	210	182	275	368	2.89	SW5-IR60-300-600R-⬡	300	350	383	332	425	628	4.75
SW5-IR60-450-300R-⬡	450	500	210	182	275	368	3.22	SW5-IR60-450-600R-⬡	450	500	383	332	425	628	5.25
SW5-IR60-600-300R-⬡	600	650	210	182	275	368	3.55	SW5-IR60-600-600R-⬡	600	650	383	332	425	628	5.75
SW5-IR60-750-300R-⬡	750	800	210	182	275	368	4.44	SW5-IR60-750-600R-⬡	750	800	383	332	425	628	7.08
SW5-IR60-900-300R-⬡	900	950	210	182	275	368	4.88	SW5-IR60-900-600R-⬡	900	950	383	332	425	628	7.75

No. of Rungs 1 Radius R 300mm								No. of Rungs 2 Radius R 600mm							
Part Number	Dimensions (mm)						Weight (kg)	Part Number	Dimensions (mm)						Weight (kg)
	W	W1	A	B	X	Y			W	W1	A	B	X	Y	
SW6-IR60-150-300R-⬡	150	200	217	188	300	390	4.01	SW6-IR60-150-600R-⬡	150	200	390	338	450	650	6.53
SW6-IR60-300-300R-⬡	300	350	217	188	300	390	4.46	SW6-IR60-300-600R-⬡	300	350	390	338	450	650	7.19
SW6-IR60-450-300R-⬡	450	500	217	188	300	390	4.9	SW6-IR60-450-600R-⬡	450	500	390	338	450	650	7.86
SW6-IR60-600-300R-⬡	600	650	217	188	300	390	5.35	SW6-IR60-600-600R-⬡	600	650	390	338	450	650	8.52
SW6-IR60-750-300R-⬡	750	800	217	188	300	390	5.79	SW6-IR60-750-600R-⬡	750	800	390	338	450	650	9.19
SW6-IR60-900-300R-⬡	900	950	217	188	300	390	6.23	SW6-IR60-900-600R-⬡	900	950	390	338	450	650	9.86

VANTRUNK SPEEDLOK QUICKFIT CABLE LADDER

⬡ = Select a Finish & Material

Finishes & Materials: GY SS GX GW

Supplied with: FIXING SETS x16

Not Required:

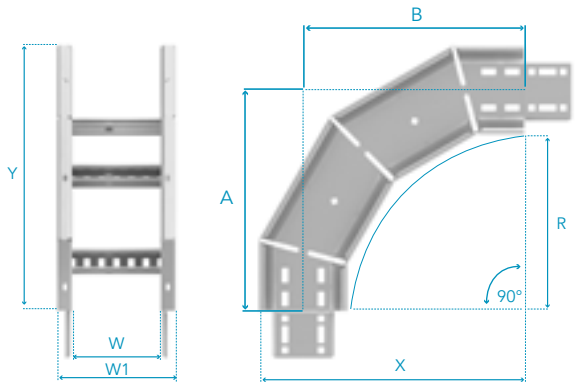
Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

Speedway 90° Inside & Outside Risers

Fitting Type: IR90 / OR90

Part Number: SW△-*R90-WIDTH-RADIUS-⬡

For:
IR90: * = I
OR90: *= O



NOTE: Inside riser shown for illustrative purposes.

No. of Rungs 1 Radius R 300mm								No. of Rungs 2 Radius R 600mm							
Part Number	Dimensions (mm)						Weight (kg)	Part Number	Dimensions (mm)						Weight (kg)
	W	W1	A	B	X	Y			W	W1	A	B	X	Y	
SW4-IR90-150-300R-⬡	150	200	356	356	405	405	3.47	SW4-IR90-150-600R-⬡	150	200	656	656	705	705	5.8
SW4-IR90-300-300R-⬡	300	350	356	356	405	405	3.97	SW4-IR90-300-600R-⬡	300	350	656	656	705	705	6.46
SW4-IR90-450-300R-⬡	450	500	356	356	405	405	4.47	SW4-IR90-450-600R-⬡	450	500	656	656	705	705	7.13
SW4-IR90-600-300R-⬡	600	650	356	356	405	405	4.97	SW4-IR90-600-600R-⬡	600	650	656	656	705	705	7.79
SW4-IR90-750-300R-⬡	750	800	356	356	405	405	6.3	SW4-IR90-750-600R-⬡	750	800	656	656	705	705	9.57
SW4-IR90-900-300R-⬡	900	950	356	356	405	405	6.97	SW4-IR90-900-600R-⬡	900	950	656	656	705	705	10.46

No. of Rungs 1 Radius R 300mm								No. of Rungs 2 Radius R 600mm							
Part Number	Dimensions (mm)						Weight (kg)	Part Number	Dimensions (mm)						Weight (kg)
	W	W1	A	B	X	Y			W	W1	A	B	X	Y	
SW5-IR90-150-300R-⬡	150	200	364	364	425	425	3.74	SW5-IR90-150-600R-⬡	150	200	664	664	725	725	6.22
SW5-IR90-300-300R-⬡	300	350	364	364	425	425	4.24	SW5-IR90-300-600R-⬡	300	350	664	664	725	725	6.88
SW5-IR90-450-300R-⬡	450	500	364	364	425	425	4.74	SW5-IR90-450-600R-⬡	450	500	664	664	725	725	7.55
SW5-IR90-600-300R-⬡	600	650	364	364	425	425	5.24	SW5-IR90-600-600R-⬡	600	650	664	664	725	725	8.21
SW5-IR90-750-300R-⬡	750	800	364	364	425	425	6.57	SW5-IR90-750-600R-⬡	750	800	664	664	725	725	9.99
SW5-IR90-900-300R-⬡	900	950	364	364	425	425	7.24	SW5-IR90-900-600R-⬡	900	950	664	664	725	725	10.88

No. of Rungs 1 Radius R 300mm								No. of Rungs 2 Radius R 600mm							
Part Number	Dimensions (mm)						Weight (kg)	Part Number	Dimensions (mm)						Weight (kg)
	W	W1	A	B	X	Y			W	W1	A	B	X	Y	
SW6-IR90-150-300R-⬡	150	200	376	376	450	450	5.82	SW6-IR90-150-600R-⬡	150	200	676	676	750	750	9.55
SW6-IR90-300-300R-⬡	300	350	376	376	450	450	6.48	SW6-IR90-300-600R-⬡	300	350	676	676	750	750	10.44
SW6-IR90-450-300R-⬡	450	500	376	376	450	450	7.15	SW6-IR90-450-600R-⬡	450	500	676	676	750	750	11.32
SW6-IR90-600-300R-⬡	600	650	376	376	450	450	7.81	SW6-IR90-600-600R-⬡	600	650	676	676	750	750	12.21
SW6-IR90-750-300R-⬡	750	800	376	376	450	450	8.48	SW6-IR90-750-600R-⬡	750	800	676	676	750	750	13.1
SW6-IR90-900-300R-⬡	900	950	376	376	450	450	9.15	SW6-IR90-900-600R-⬡	900	950	676	676	750	750	13.99

VANTRUNK SPEEDLOK QUICKFIT CABLE LADDER

⬡ = Select a Finish & Material

Finishes & Materials: GY SS GX GW

Supplied with: FIXING SETS x16

Not Required: CABLE TIES

Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

HOW TO ORDER

SW6 – IR90 – 300 – 600R – SS – 1.5W – 1.5T

System Type | Fitting Type | Width | Radius | Finish | Wall Gauge | Rung Gauge

ARTICULATED RISERS

Speedway Articulated Risers (AR) are designed to create adjustable angular non-coplanar connections between Speedway Cable runs.

Speedway Articulated Risers consist of pre-assembled units, each comprising of end connectors and one or more middle sections which can be adjusted on site to suit specific installation requirements.

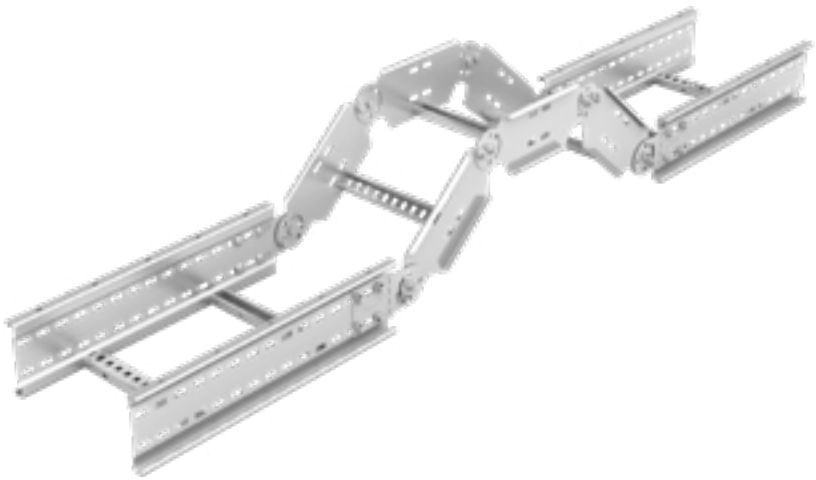
The articulated riser has a number of advantages over fixed risers:

- Universal application – there is no requirement to select both inside and outside risers.
- Any number of middle sections can be added to achieve very large radii and allow strong support along an undulating cable route.
- The pattern of fixing holes allows for infinite angle and radius adjustment.
- Can be used to form a bridge, an 'S' bend, or an offset to suit installation routing challenges on site.
- The end connectors are vertical adjustable couplers and, by using the easi-bend slots, can be adjusted on site to create combined horizontal & vertical offset connections, or combined riser-tee connections onto the side wall of a main cable ladder run.

Speedway Articulated Risers are available in widths from 150mm to 1050mm as standard. Other widths of 100mm up to 1500mm, in 50mm increments, are available to order.

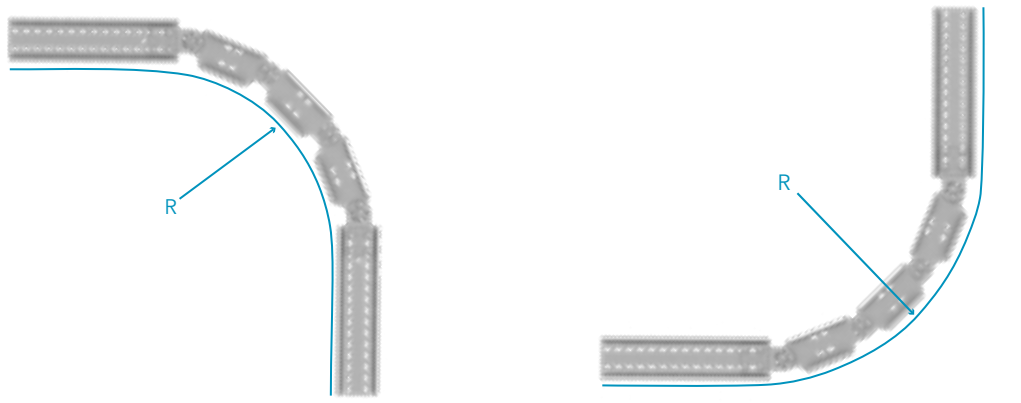
Intended to be locked into place after installation, the Speedway Articulated Riser is not designed to allow for relative movement between adjacent cable runs.

When joining one fitting to another to suit on site installation requirements the use of a Fitting to Fitting Coupler (FFC) will be required. Please refer to Page 69 for further details.



Articulated Risers

Fitting Type: AR (See table) | **Angle & Section Details**



The following table shows the combination of angle and radius which can be formed for a number of differing middle sections. The radius for both the inside and outside articulated riser is measured relative to the rung position.

Part Number	Angle	No. of Sections	Radius R mm			
			Inside Articulated Risers		Outside Articulated Risers	
			SW4 & SW5	SW6	SW4 & SW5	SW6
SW△-AR1-□-○	30	1	1148	1160	1070	1058
SW△-AR2-□-○		2	1718	1731	1640	1628
SW△-AR3-□-○		3	2327	2340	2250	2237
SW△-AR1-□-○	45	1	781	793	737	724
SW△-AR2-□-○		2	1163	1176	1122	1109
SW△-AR3-□-○		3	1562	1574	1484	1472
SW△-AR4-□-○		4	1945	1957	1867	1855
SW△-AR1-□-○	60	1	592	605	514	502
SW△-AR2-□-○		2	882	894	804	791
SW△-AR3-□-○		3	1178	1191	1100	1088
SW△-AR4-□-○		4	1466	1479	1388	1376
SW△-AR5-□-○		5	1753	1766	1676	1663
SW△-AR6-□-○		6	2041	2053	1963	1950
SW△-AR1-□-○	90	1	399	411	330	318
SW△-AR2-□-○		2	596	608	527	515
SW△-AR3-□-○		3	793	806	715	703
SW△-AR4-□-○		4	986	998	908	896
SW△-AR5-□-○		5	1178	1191	1100	1088
SW△-AR6-□-○		6	1370	1383	1292	1280
SW△-AR7-□-○		7	1562	1574	1484	1472
SW△-AR8-□-○		8	1753	1766	1676	1663

△ = Select a System Type □ = Select a Ladder Width ○ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x16

Not Required:

Consult our Technical Team for further offset dimensional information and guidance in the selection of the correct number of middle sections.

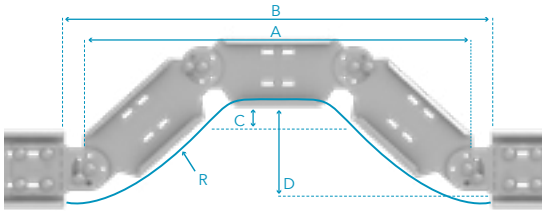
HOW TO ORDER SW6 - AR4 - 300 - SS - 2.0W - 1.5T
System Type | Fitting Type | Width | Finish | Wall Gauge | Rung Gauge

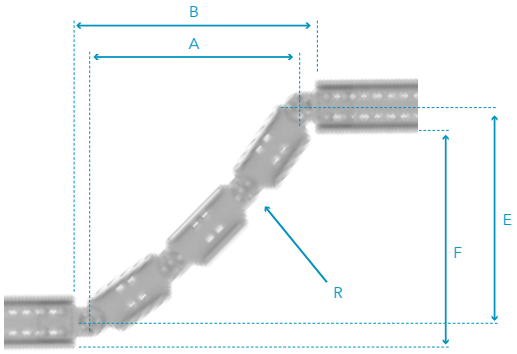
ARTICULATED RISERS

Articulated Risers

Fitting Type: AR (See table)

Bridge & Vertical Offset Dimensions





Bridge Dimensions

Vertical Offset Dimensions

When using the Speedway Articulated Riser as a bridge the following dimensions should be used as a guide.

Bridge Dimensions

Part Number	Radius R (mm)	No. of Sections	A (mm)	B (mm)	C (mm)	D (mm)	
						SW4-5	SW6
SW△-AR3-□-○	300	3	715	855	165	204	216
SW△-AR3-□-○	450	3	801	941	113	152	164
SW△-AR4-□-○		4	961	1101	242	251	293
SW△-AR3-□-○	600	3	840	980	80	118	131

△ = Select a System Type □ = Select a Ladder Width ○ = Select a Finish & Material

The following table gives the maximum horizontal and vertical offsets which can be achieved for articulated risers with 1 to 4 sections whilst maintaining a radius of 300mm relative to the rung position.

Vertical Offset Dimensions

Part Number	Radius R (mm)	No. of Sections	A (mm)	B (mm)	E (mm)	F (mm)	
						SW4-5	SW6
SW△-AR1-□-○	300	1	216	356	208	183	208
SW△-AR2-□-○		2	399	539	441	416	441
SW△-AR3-□-○		3	600	740	663	638	663
SW△-AR4-□-○		4	823	963	865	840	865

△ = Select a System Type □ = Select a Ladder Width ○ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x16

Not Required:

Consult our Technical Team for further offset dimensional information and guidance in the selection of the correct number of middle sections.

VANTRUNK SPEEDWAY®

EQUAL & UNEQUAL TEES

Equal Tees (ET) and Unequal Tees (UT) are designed to create perpendicular coplanar connections between horizontal cable runs (ladder installed in horizontal plane) and between vertical cable runs (ladder installed in vertical plane).

Tees have a primary or main width (Wm) and a secondary or branch width (Wb). Tees with the same primary and secondary widths are called equal tees. Tees with differing main and branch widths are called unequal tees.

The rungs in the Speedway Tees are spaced to give a maximum linear distance of no more than 465mm between adjacent rungs/rungs on adjacent ladder and fittings.

Equal Tee

Unequal Tee

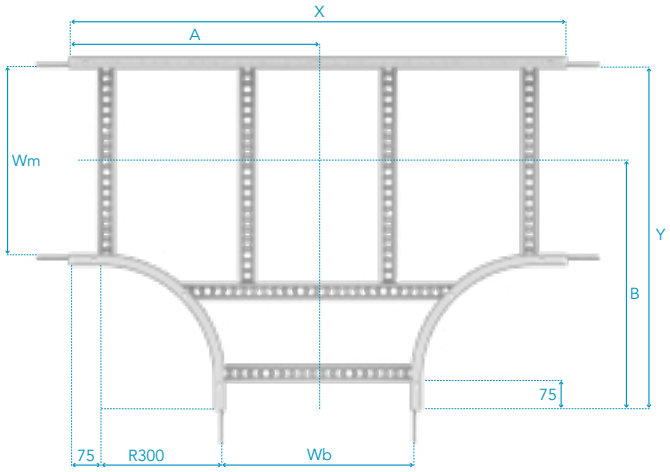
HOW TO ORDER SW4 (System Type) - ET (Fitting Type) - 750 (Width) - 300R (Radius) - GY (Finish) - 1.5W (Wall Gauge) - 2.0T (Rung Gauge)

Speedway 300mm Radius Tees

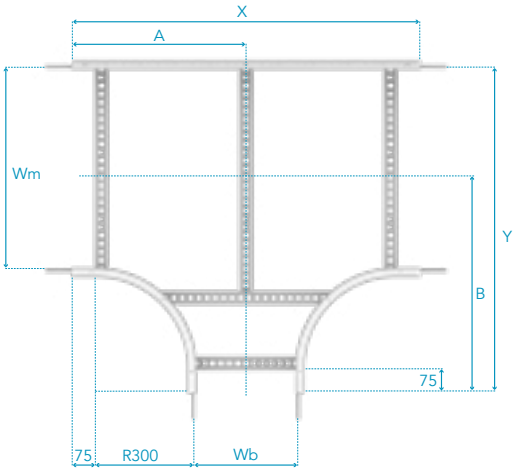
Fitting Type: ET (Equal Tee) UT (Unequal Tee)

SWΔ-*T-Wm-Wb-RADIUS-⬡

Equal Tee: * = E (include Wm only)



Unequal Tee: *= U (include both Wm and Wb)



150mm Branch										300mm Branch									
Part Number	Dimensions (mm)						Weight (kg)			Part Number	Dimensions (mm)						Weight (kg)		
	Wm	Wb	A	B	X	Y	SW4	SW5	SW6		Wm	Wb	A	B	X	Y	SW4	SW5	SW6
SWΔ-ET-150-300R-⬡	150	150	450	450	900	550	6.64	6.98	10.43	SWΔ-UT-150-300-300R-⬡	150	300	525	450	1050	550	7.32	7.7	11.43
SWΔ-UT-300-150-300R-⬡	300	150	450	525	900	700	7.15	7.49	11.09	SWΔ-ET-300-300R-⬡	300	300	525	525	1050	700	7.82	8.2	12.1
SWΔ-UT-450-150-300R-⬡	450	150	450	600	900	850	7.65	7.99	11.76	SWΔ-UT-450-300-300R-⬡	450	300	525	600	1050	850	8.31	8.69	12.76
SWΔ-UT-600-150-300R-⬡	600	150	450	675	900	1000	8.14	8.48	12.43	SWΔ-UT-600-300-300R-⬡	600	300	525	675	1050	1000	8.81	9.19	13.42
SWΔ-UT-750-150-300R-⬡	750	150	450	750	900	1150	8.65	8.99	13.09	SWΔ-UT-750-300-300R-⬡	750	300	525	750	1050	1150	9.32	9.7	14.09
SWΔ-UT-900-150-300R-⬡	900	150	450	825	900	1300	9.15	9.49	13.75	SWΔ-UT-900-300-300R-⬡	900	300	525	825	1050	1300	9.82	10.2	14.75

450mm Branch										600mm Branch									
Part Number	Dimensions (mm)						Weight (kg)			Part Number	Dimensions (mm)						Weight (kg)		
	Wm	Wb	A	B	X	Y	SW4	SW5	SW6		Wm	Wb	A	B	X	Y	SW4	SW5	SW6
SWΔ-UT-150-450-300R-⬡	150	450	600	450	1200	550	8.33	8.73	12.89	SWΔ-UT-150-600-300R-⬡	150	600	675	450	1350	550	9.01	9.45	13.9
SWΔ-UT-300-450-300R-⬡	300	450	600	525	1200	700	9	9.4	13.78	SWΔ-UT-300-600-300R-⬡	300	600	675	525	1350	700	9.68	10.12	14.79
SWΔ-ET-450-300R-⬡	450	450	600	600	1200	850	9.66	10.06	14.67	SWΔ-UT-450-600-300R-⬡	450	600	675	600	1350	850	10.34	10.78	15.67
SWΔ-UT-600-450-300R-⬡	600	450	600	675	1200	1000	10.33	10.73	15.56	SWΔ-ET-600-300R-⬡	600	600	675	675	1350	1000	11.01	11.45	16.56
SWΔ-UT-750-450-300R-⬡	750	450	600	750	1200	1150	11	11.4	16.44	SWΔ-UT-750-600-300R-⬡	750	600	675	750	1350	1150	11.68	12.12	17.46
SWΔ-UT-900-450-300R-⬡	900	450	600	825	1200	1300	11.66	12.06	17.33	SWΔ-UT-900-600-300R-⬡	900	600	675	825	1350	1300	12.34	12.78	18.35

750mm Branch										900mm Branch									
Part Number	Dimensions (mm)						Weight (kg)			Part Number	Dimensions (mm)						Weight (kg)		
	Wm	Wb	A	B	X	Y	SW4	SW5	SW6		Wm	Wb	A	B	X	Y	SW4	SW5	SW6
SWΔ-UT-150-750-300R-⬡	150	750	750	450	1500	550	9.69	10.15	14.89	SWΔ-UT-150-900-300R-⬡	150	900	825	450	1650	550	10.69	11.19	16.33
SWΔ-UT-300-750-300R-⬡	300	750	750	525	1500	700	10.36	10.82	15.78	SWΔ-UT-300-900-300R-⬡	300	900	825	525	1650	700	11.53	12.03	17.45
SWΔ-UT-450-750-300R-⬡	450	750	750	600	1500	850	11.02	11.48	16.67	SWΔ-UT-450-900-300R-⬡	450	900	825	600	1650	850	12.36	12.86	18.55
SWΔ-UT-600-750-300R-⬡	600	750	750	675	1500	1000	11.69	12.15	17.56	SWΔ-UT-600-900-300R-⬡	600	900	825	675	1650	1000	13.19	13.69	19.67
SWΔ-ET-750-300R-⬡	750	750	750	750	1500	1150	14.23	14.69	18.44	SWΔ-UT-750-900-300R-⬡	750	900	825	750	1650	1150	14.03	14.53	20.78
SWΔ-UT-900-750-300R-⬡	900	750	750	825	1500	1300	13.02	13.48	19.33	SWΔ-ET-900-300R-⬡	900	900	825	825	1650	1300	17.45	17.95	21.89

VANTRUNK SPEEDLOK QUICKFIT CABLE LADDER

⬡ = Select a Finish & Material

Finishes & Materials: GY SS GX GW

Supplied with: FIXING SETS x24

Not Required: Bonding Clip

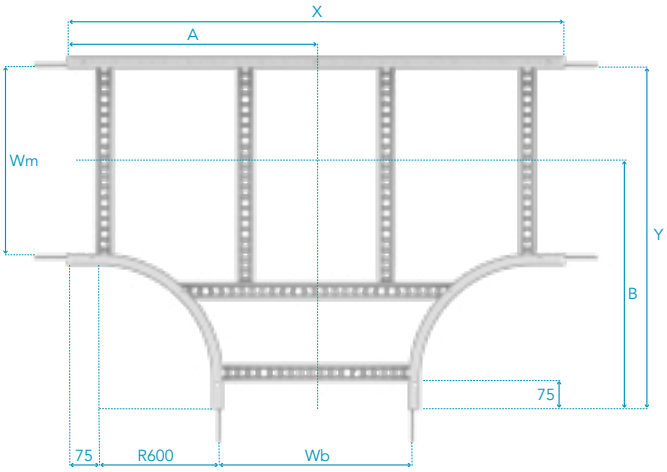
Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

Speedway 600mm Radius Tees

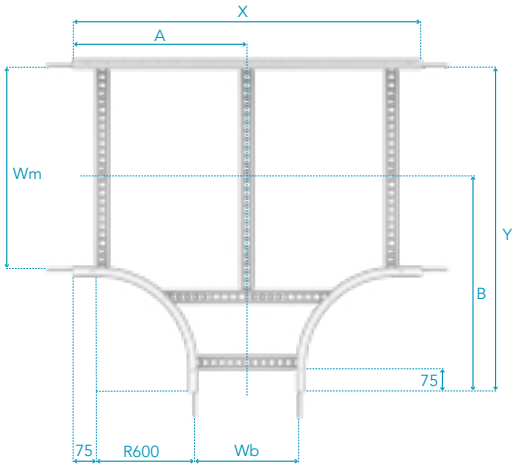
Fitting ET (Equal Tee) Type: UT (Unequal Tee)

SWΔ-*T-Wm-Wb-RADIUS-⬡

Equal Tee: * = E (include Wm only)



Unequal Tee: *= U (include both Wm and Wb)



150mm Branch										300mm Branch									
Part Number	Dimensions (mm)						Weight (kg)			Part Number	Dimensions (mm)						Weight (kg)		
	Wm	Wb	A	B	X	Y	SW4	SW5	SW6		Wm	Wb	A	B	X	Y	SW4	SW5	SW6
SWΔ-ET-150-600R-⬡	150	150	750	750	1500	850	11.03	11.65	17.32	SWΔ-UT-150-300-600R-⬡	150	300	825	750	1650	850	12.19	12.85	18.99
SWΔ-UT-300-150-600R-⬡	300	150	750	825	1500	1000	11.7	12.32	18.2	SWΔ-ET-300-600R-⬡	300	300	825	825	1650	1000	13.03	13.69	20.1
SWΔ-UT-450-150-600R-⬡	450	150	750	900	1500	1150	12.37	12.99	19.09	SWΔ-UT-450-300-600R-⬡	450	300	825	900	1650	1150	13.86	14.52	21.21
SWΔ-UT-600-150-600R-⬡	600	150	750	975	1500	1300	13.03	13.65	19.97	SWΔ-UT-600-300-600R-⬡	600	300	825	975	1650	1300	14.69	15.35	22.33
SWΔ-UT-750-150-600R-⬡	750	150	750	1050	1500	1450	13.7	14.32	20.87	SWΔ-UT-750-300-600R-⬡	750	300	825	1050	1650	1450	15.53	16.19	23.43
SWΔ-UT-900-150-600R-⬡	900	150	750	1125	1500	1600	14.36	14.98	21.73	SWΔ-UT-900-300-600R-⬡	900	300	825	1125	1650	1600	16.36	17.02	24.5

450mm Branch										600mm Branch									
Part Number	Dimensions (mm)						Weight (kg)			Part Number	Dimensions (mm)						Weight (kg)		
	Wm	Wb	A	B	X	Y	SW4	SW5	SW6		Wm	Wb	A	B	X	Y	SW4	SW5	SW6
SWΔ-UT-150-450-600R-⬡	150	450	900	750	1800	850	12.87	13.56	19.99	SWΔ-UT-150-600-600R-⬡	150	600	975	750	1950	850	13.56	14.27	21.01
SWΔ-UT-300-450-600R-⬡	300	450	900	825	1800	1000	13.71	14.4	21.11	SWΔ-UT-300-600-600R-⬡	300	600	975	825	1950	1000	14.39	15.1	22.12
SWΔ-ET-450-600R-⬡	450	450	900	900	1800	1150	14.54	15.23	22.22	SWΔ-UT-450-600-600R-⬡	450	600	975	900	1950	1150	15.23	15.94	23.23
SWΔ-UT-600-450-600R-⬡	600	450	900	975	1800	1300	15.37	16.06	23.34	SWΔ-ET-600-600R-⬡	600	600	975	975	1950	1300	16.06	16.77	24.34
SWΔ-UT-750-450-600R-⬡	750	450	900	1050	1800	1450	16.21	16.9	24.44	SWΔ-UT-750-600-600R-⬡	750	600	975	1050	1950	1450	16.89	17.6	25.46
SWΔ-UT-900-450-600R-⬡	900	450	900	1125	1800	1600	17.04	17.73	25.52	SWΔ-UT-900-600-600R-⬡	900	600	975	1125	1950	1600	17.73	18.44	26.52

750mm Branch										900mm Branch									
Part Number	Dimensions (mm)						Weight (kg)			Part Number	Dimensions (mm)						Weight (kg)		
	Wm	Wb	A	B	X	Y	SW4	SW5	SW6		Wm	Wb	A	B	X	Y	SW4	SW5	SW6
SWΔ-UT-150-750-600R-⬡	150	750	1050	750	2100	850	14.73	15.47	22.65	SWΔ-UT-150-900-600R-⬡	150	900	1125	750	2250	850	15.91	16.67	23.67
SWΔ-UT-300-750-600R-⬡	300	750	1050	825	2100	1000	15.73	16.47	23.99	SWΔ-UT-300-900-600R-⬡	300	900	1125	825	2250	1000	16.91	17.67	25.01
SWΔ-UT-450-750-600R-⬡	450	750	1050	900	2100	1150	16.73	17.47	25.32	SWΔ-UT-450-900-600R-⬡	450	900	1125	900	2250	1150	17.91	18.67	26.34
SWΔ-UT-600-750-600R-⬡	600	750	1050	975	2100	1300	17.73	18.47	26.66	SWΔ-UT-600-900-600R-⬡	600	900	1125	975	2250	1300	18.91	19.67	27.68
SWΔ-ET-750-600R-⬡	750	750	1050	1050	2100	1450	21.55	22.29	27.99	SWΔ-UT-750-900-600R-⬡	750	900	1125	1050	2250	1450	19.91	20.67	29.01
SWΔ-UT-900-750-600R-⬡	900	750	1050	1125	2100	1600	19.73	20.47	29.27	SWΔ-ET-900-600R-⬡	900	900	1125	1125	2250	1600	23.64	24.4	30.3

VANTRUNK SPEEDLOK QUICKFIT CABLE LADDER

⬡ = Select a Finish & Material

Finishes & Materials: GV SS GX GW

Supplied with: FIXING SETS x24

Not Required: Earth Bond

Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

HOW TO ORDER

SW5 - UT - 600 - 300 - 600R - GY - 1.5W - 1.5T

System Type - Fitting Type - Wm - Wb - Radius - Finish - Wall Gauge - Rung Gauge

VANTRUNK

ENGINEERED FOR EXTREME ENVIRONMENTS

GORGON LNG

Gorgon is a story of energy, the environment as well as technology and expertise. It is globally one of the largest natural gas projects ever undertaken, in a challenging and remote location, and the largest single-resource development in Australia's history.

LOCATION

WESTERN AUSTRALIA
Between 130 - 220km off the northwest coast.

CLIENT

Chevron

Kellogg Joint Venture Gorgon

$54bn
OVERALL COST OF PROJECT

FACT 1

15.6 million
tonne per annum (MTPA) liquefied natural gas plant

FACT 2

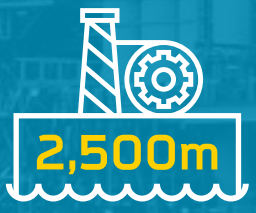
2.1 km
long loading jetty

FACT 3

12.9 tcf gas
in water depth of
220m

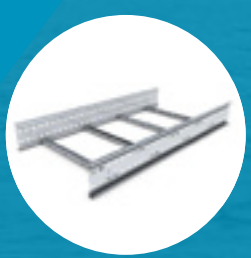
FACT 4

Carbon Capture Dupuy reservoir

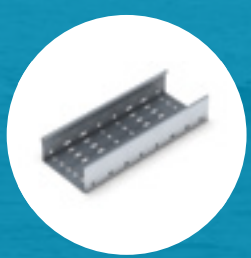


2,500m
below Barrow island

PRODUCTS SUPPLIED



SPEEDWAY



HEAVY DUTY CABLE TRAY

VANTRUNK SPEEDWAY® EXTREME CABLE LADDER

Vantrunk's Speedway Cable Ladder provides a strong, reliable, easy to install solution providing overall cost savings throughout the project lifespan.

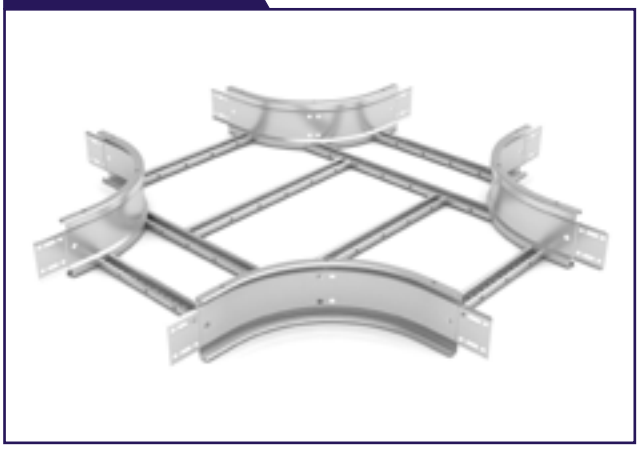
VANTRUNK SPEEDWAY®

EQUAL CROSSES

Equal Crosses (EC) are designed to create intersecting coplanar connections between horizontal cable runs (ladder installed in horizontal plane) and between vertical cable runs (ladder installed in vertical plane).

Equal Crosses, where the branches have identical widths, are supplied as standard. Consult our Sales Team on the availability of non-standard crosses where differing branch widths and differing radii are required to suit specific installation requirements.

Equal Cross

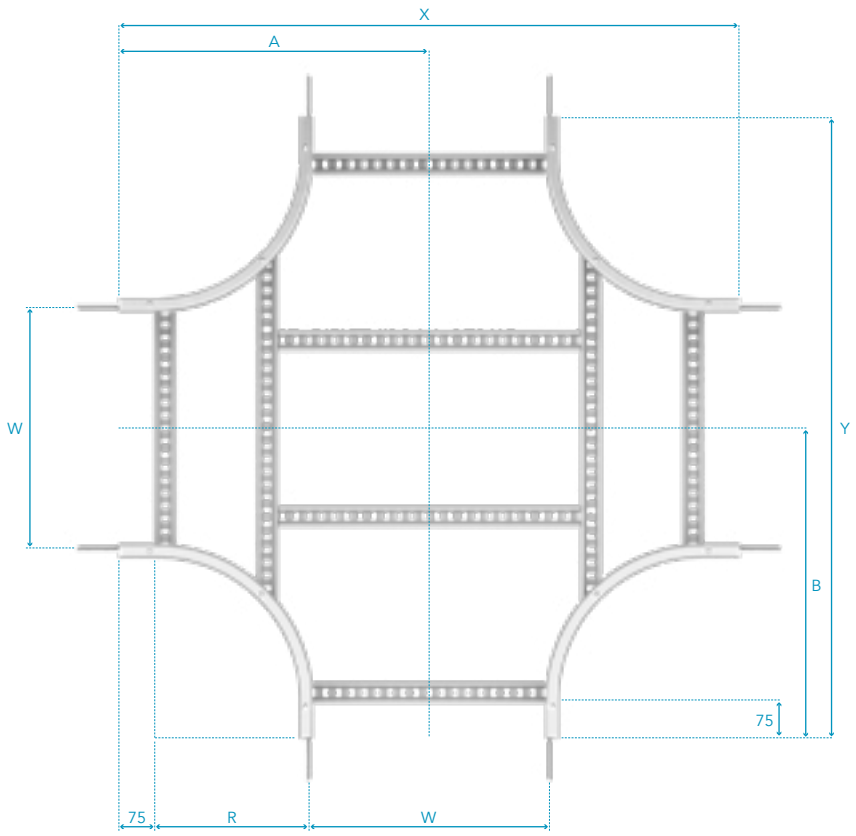


HOW TO ORDER

SW4	- EC	- 300	- 600R	- GY	- 1.5W	- 1.5T
System Type	Fitting Type	Width	Radius	Finish	Wall Gauge	Rung Gauge

Speedway Equal Crosses

Fitting Type: EC SWΔ-EC-WIDTH-RADIUS-⬡



Part Number	Dimensions (mm)						Weights (kg)		
	R	W	A	B	X	Y	SW4	SW5	SW6
SWΔ-EC-150-300R-⬡	300	150	450	450	900	900	8.17	8.57	12.74
SWΔ-EC-300-300R-⬡	300	300	525	525	1050	1050	9.33	9.73	14.31
SWΔ-EC-450-300R-⬡	300	450	600	600	1200	1200	11.17	11.57	16.74
SWΔ-EC-600-300R-⬡	300	600	675	675	1350	1350	12.5	12.9	18.51
SWΔ-EC-750-300R-⬡	300	750	750	750	1500	1500	16.38	16.78	20.29
SWΔ-EC-900-300R-⬡	300	900	825	825	1650	1650	19.69	20.09	23.6
SWΔ-EC-150-600R-⬡	600	150	750	750	1500	1500	13.85	14.56	21.58
SWΔ-EC-300-600R-⬡	600	300	825	825	1650	1650	16.01	16.72	24.47
SWΔ-EC-450-600R-⬡	600	450	900	900	1800	1800	17.52	18.23	26.46
SWΔ-EC-600-600R-⬡	600	600	975	975	1950	1950	19.01	19.72	28.46
SWΔ-EC-750-600R-⬡	600	750	1050	1050	2100	2100	25.55	26.26	32.17
SWΔ-EC-900-600R-⬡	600	900	1125	1125	2250	2250	27.77	28.48	34.39

Δ= Select a System Type ⬡ = Select a Finish & Material

Finishes & Materials: GV SS GX GW

Supplied with: FIXING SETS x32

Not Required:

VANTRUNK SPEEDLOK QUICKFIT CABLE LADDER

Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

VANTRUNK SPEEDWAY®

REDUCERS - STRAIGHT, LEFT & RIGHT

Speedway Reducers are used to create coplanar reductions in widths between adjoining straight ladders and between straight ladders and fittings of the same ladder type, fulfilling the same role as short and long adjustable couplers but using a purpose made fitting capable of self-support as part of a cable run.

Speedway Straight Reducers (RS reducer straight) are used to create a concentric reduction, having an equal width reduction along both sides. Left hand reducers (RL reducer left) and right hand reducers (RR reducer right) are used to create offset reductions to suit particular installation requirements. Left hand reducers have the width reduction on the left when viewed from the primary width. Right hand reducers have the width reduction on the right when viewed from the primary width.

The Speedway Reducer has an overall length of 500mm and feature two rungs as standard irrespective of ladder type and width reduction.

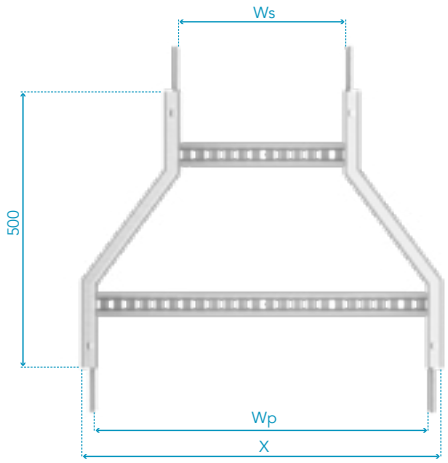
Reducer Straight	Reducer Left	Reducer Right
		

HOW TO ORDER SW6 - RS - 600 - 300 - GW - 2.0W - 2.0T

System Type | Fitting Type | Width Primary | Width Secondary | Finish | Wall Gauge | Rung Gauge

Reducer Straight

Fitting Type: RS SWΔ-RS-WIDTH PRIMARY-WIDTH SECONDARY-⬡



Part Number	Dimensions (mm)			Weight (kg)		
	Wp	Ws	X	SW4	SW5	SW6
SWΔ-RS-300-150-⬡	300	150	350	3.14	3.28	4.92
SWΔ-RS-450-150-⬡	450		500	3.47	3.62	5.44
SWΔ-RS-600-150-⬡	600		650	3.88	4.06	6.04
SWΔ-RS-750-150-⬡	750		800	4.64	4.84	6.7
SWΔ-RS-900-150-⬡	900		950	5.17	5.39	7.41
SWΔ-RS-450-300-⬡	450	300	500	3.47	3.61	5.37
SWΔ-RS-600-300-⬡	600		650	3.8	3.95	5.88
SWΔ-RS-750-300-⬡	750		800	4.59	4.77	6.48
SWΔ-RS-900-300-⬡	900		950	5.08	5.28	7.14
SWΔ-RS-600-450-⬡	600	450	650	3.81	3.95	5.82
SWΔ-RS-750-450-⬡	750		800	4.58	4.73	6.33
SWΔ-RS-900-450-⬡	900		950	5.04	5.22	6.93
SWΔ-RS-750-600-⬡	750	600	800	4.64	4.78	6.26
SWΔ-RS-900-600-⬡	900		950	5.02	5.17	6.77
SWΔ-RS-900-750-⬡	900	750	950	5.08	5.22	6.7

Δ = Select a System Type ⬡ = Select a Finish & Material

Finishes & Materials:

GV SS GX GW

Supplied with:

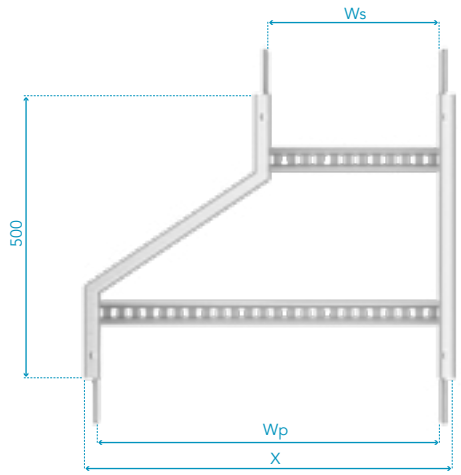
FIXING SETS x16

VANTRUNK SPEEDLOK QUICKFIT CABLE LADDER

Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

Reducer Left

Fitting Type: RL | SW△-RL-WIDTH PRIMARY-WIDTH SECONDARY-⬡



Part Number	Dimensions (mm)			Weight (kg)		
	Wp	Ws	X	SW4	SW5	SW6
SW△-RL-300-150-⬡	300	150	350	3.21	3.36	5.06
SW△-RL-450-150-⬡	450		500	3.63	3.8	5.7
SW△-RL-600-150-⬡	600		650	4.11	4.31	6.42
SW△-RL-750-150-⬡	750		800	4.93	5.14	7.16
SW△-RL-900-150-⬡	900		950	5.47	5.73	7.92
SW△-RL-450-300-⬡	450	300	500	3.54	7.82	5.51
SW△-RL-600-300-⬡	600		650	3.96	4.13	6.14
SW△-RL-750-300-⬡	750		800	4.82	5.02	6.86
SW△-RL-900-300-⬡	900		950	5.37	5.58	7.6
SW△-RL-600-450-⬡	600	450	650	3.88	4.03	5.96
SW△-RL-750-450-⬡	750		800	4.74	4.91	6.59
SW△-RL-900-450-⬡	900		950	5.27	5.47	7.31
SW△-RL-750-600-⬡	750	600	800	4.71	4.86	6.4
SW△-RL-900-600-⬡	900		950	5.18	5.35	7.03
SW△-RL-900-750-⬡	900	750	950	5.15	5.3	6.84

△ = Select a System Type ⬡ = Select a Finish & Material

Finishes & Materials:

GY SS GX GW

Supplied with:

FIXING SETS X16

VANTRUNK SPEEDLOK QUICKFIT CABLE LADDER

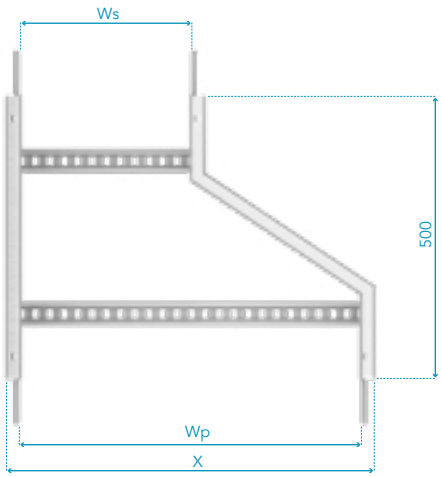
Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

HOW TO ORDER SW4 - RR - 900 - 750 - GY - 1.5W - 2.0T

System Type | Fitting Type | Width Primary | Width Secondary | Finish | Wall Gauge | Rung Gauge

Reducer Right

Fitting Type: RR SW△-RR-WIDTH PRIMARY-WIDTH SECONDARY-⬡



Part Number	Dimensions (mm)			Weight (kg)		
	Wp	Ws	X	SW4	SW5	SW6
SW△-RR-300-150-⬡	300	150	350	3.21	3.36	5.06
SW△-RR-450-150-⬡	450		500	3.63	3.8	5.7
SW△-RR-600-150-⬡	600		650	4.11	4.31	6.42
SW△-RR-750-150-⬡	750		800	4.93	5.14	7.16
SW△-RR-900-150-⬡	900		950	5.47	5.73	7.92
SW△-RR-450-300-⬡	450	300	500	3.54	3.69	5.51
SW△-RR-600-300-⬡	600		650	3.96	4.13	6.14
SW△-RR-750-300-⬡	750		800	4.82	5.02	6.86
SW△-RR-900-300-⬡	900		950	5.37	5.58	7.6
SW△-RR-600-450-⬡	600	450	650	3.88	4.03	5.96
SW△-RR-750-450-⬡	750		800	4.74	4.91	6.59
SW△-RR-900-450-⬡	900		950	5.27	5.47	7.31
SW△-RR-750-600-⬡	750	600	800	4.71	4.86	6.4
SW△-RR-900-600-⬡	900		950	5.18	5.35	7.03
SW△-RR-900-750-⬡	900	750	950	5.15	5.3	6.84

△ = Select a System Type ⬡ = Select a Finish & Material

Finishes & Materials:

GV SS GX GW

Supplied with:

FIXING SETS x16

VANTRUNK SPEEDLOK QUICKFIT CABLE LADDER

Weights shown are for standard hot dip galvanised finish only, for Stainless Steel and Silicon Rich Steel weight conversion factors please refer to the Engineering Data Section of our catalogue (Page 213).

VANTRUNK SPEEDWAY®

COUPLERS

The Speedway Coupling system has been designed to reduce the potential for slip to occur between connected components, a common problem for cable ladder systems when under load.

The slot pattern in the ladder sides can be combined with the slot pattern in the couplers and integral couplers to create a pattern of squares; these square patterns can also be formed irrespective of where straight ladders are cut to length to suit site installation requirements. The specially designed Vantrunk square shouldered bolt interlocks into this pattern of squares to create a slip-resistant connection.

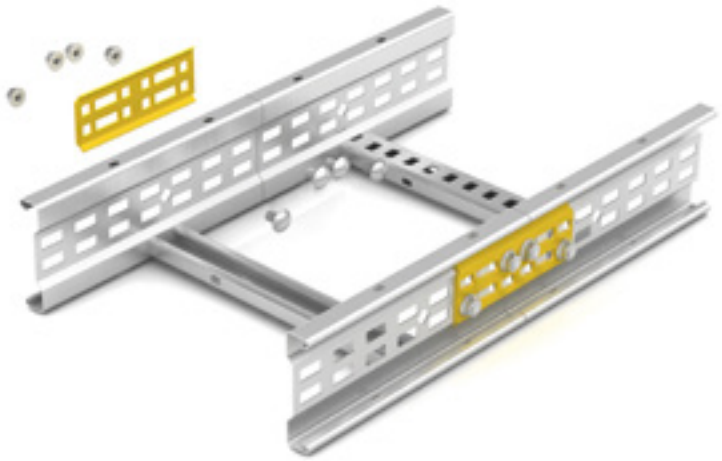
The Speedway Coupler has a profile which exactly matches the unique profile of the Speedway Ladder (& Fitting side walls) to give a high performance connection which securely holds the connected components together.

All standard Speedway Couplers are supplied singly and come complete with all necessary fixings. i.e. specially designed domed head M10X20 cup square bolts (eliminating sharp edges) and M10 Serrated Flange Nuts as standard.

HOW TO ORDER SW4 - CS - GA
System Type Coupler Type Finish

SW4 Straight Coupler

Coupler Type: SW4-CS | **Part Number: SW4-CS-⬡**



⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

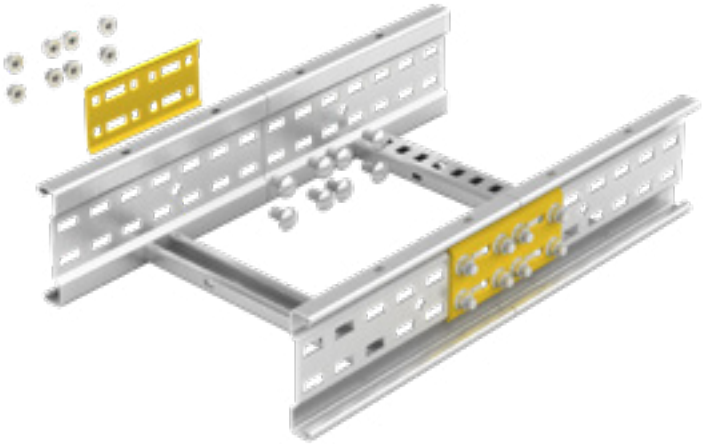
Supplied with: FIXING SETS x4

Not Required:

Showing assembly detail onto ladder. Supplied with 4 fixings per coupler

SW5 Straight Coupler

Coupler Type: SW5-CS | **Part Number: SW5-CS-⬡**



⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

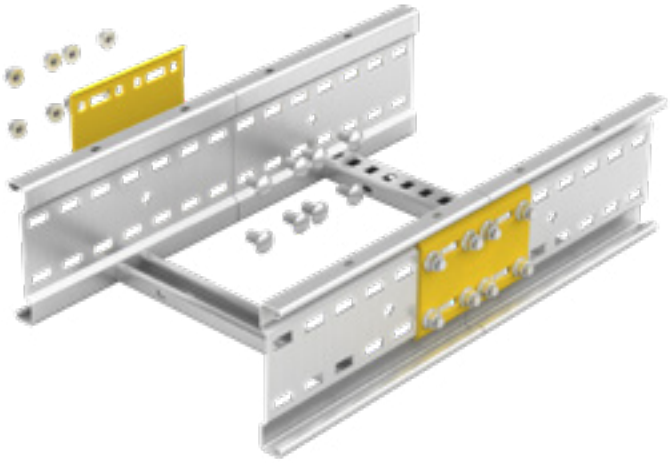
Supplied with: FIXING SETS x8

Not Required:

Showing assembly detail onto ladder. Supplied with 8 fixings per coupler

SW6 Straight Coupler

Coupler Type: SW6-CS | **Part Number: SW6-CS-⬡**



⬡ = Select a Finish & Material

Finishes & Materials:

GA SS GX GW

Supplied with:

FIXING SETS x8

Not Required:

Showing assembly detail onto ladder. Supplied with 8 fixings per coupler

HOW TO ORDER SW5 - HAC - GA
System Type Coupler Type Finish

Horizontal Adjustable Couplers

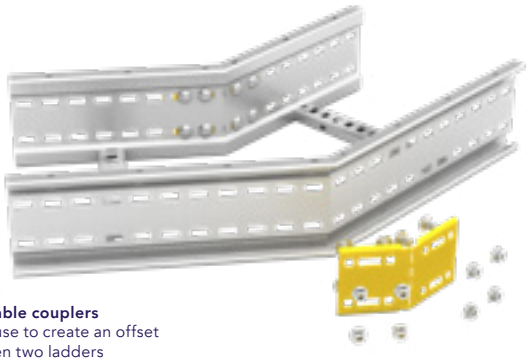
Speedway Horizontal Adjustable Couplers (HAC's) are used to join straight ladder and fittings where these need to be connected at offset angles in the same horizontal or vertical plane. When connecting a HAC to a cable ladder fitting please connect via a Fitting to Fitting Coupler (FFC), turn to Page 69 for details.

Speedway Horizontal Adjustable Couplers are supplied singly and come complete with all necessary ladder fixing sets.

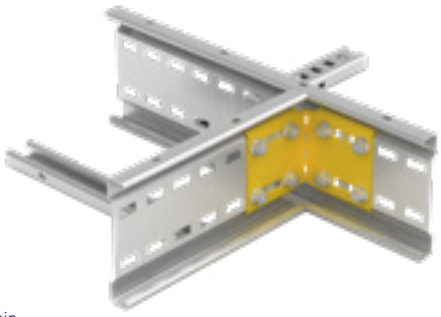
The Speedway Horizontal Adjustable Coupler is supplied flat and has easi-bend slots which allow the coupler to be bent on site to any angle to connect two cable ladder runs to form 'T' & 'Y' intersections.

Coupler Type: HAC

Part Number: SW△-HAC-⬡



Horizontal adjustable couplers
shown as a pair in use to create an offset connection between two ladders



Horizontal adjustable coupler
shown formed to 90° to join a ladder to a main run

△ = Select a System Type ⬡ = Select a Finish & Material

Finishes & Materials:

Supplied with:

Not Required:

Showing assembly detail onto ladder. Supplied with 8 fixings per coupler

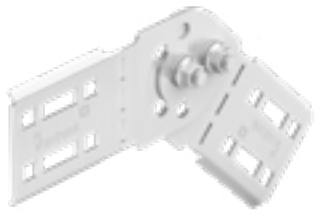
Vertical Adjustable Couplers

Speedway Vertical Adjustable couplers (VAC) are used to join straight ladder and fittings where these need to be connected at offset angles when these lie in different planes. When connecting a VAC to a cable ladder fitting please connect via a Fitting to Fitting Coupler (FFC), turn to Page 69 for details.

Speedway Vertical Adjustable couplers are supplied singly and come complete with all necessary ladder fixing sets. Each vertical adjustable coupler comprises of two half plates complete with all necessary pivot fixings.

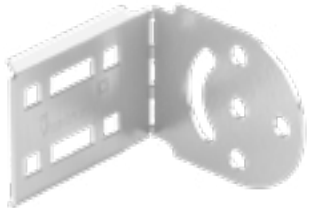
The arrangement of the pivot holes and elongated slots allows for infinite angular adjustment to suit specific site requirements. The vertical adjustable coupler features easi-bend slots which allow the couplers to be adjusted on site to create combined horizontal & vertical offset connections, ladder connections onto the side wall of a main run to form tees, or straight ladder & fitting connections directly to a floor or wall.

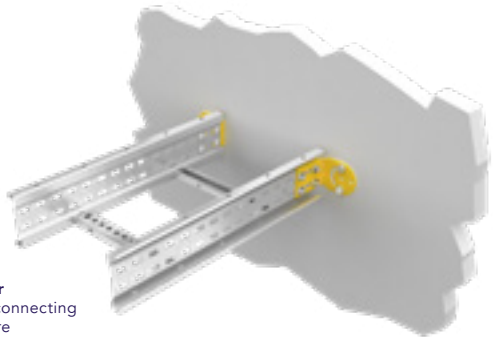
Coupler Type: VAC | **Part Number: SW△-VAC-⬡**



Vertical Adjustable Coupler
Shown connecting two ladders in the vertical plane

Vertical Adjustable Coupler
Shown bent to 90° and connecting an angled ladder to a horizontal ladder





Vertical Adjustable Coupler
Half shown bent to 90° and connecting a ladder to a vertical structure

△ = Select a System Type ⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x8

Not Required:

Showing assembly detail onto ladder. Supplied with 8 fixings per coupler

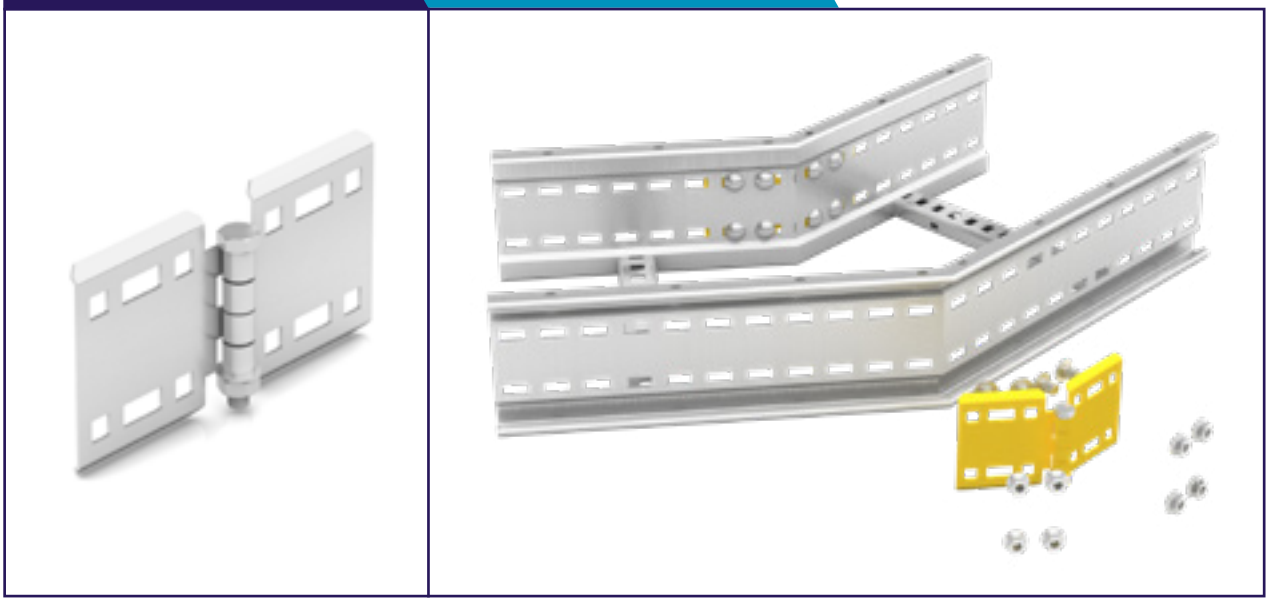
HOW TO ORDER SW6 - VAC - GX
System Type | Coupler Type | Finish

Horizontal Hinged Couplers

Speedway Horizontal Hinged Couplers (HHC's) are offered as an alternative to the HAC. Speedway Horizontal Hinged Couplers are supplied singly and come complete with all necessary ladder fixing sets.

The Speedway Horizontal Hinged Coupler is supplied as an assembly allowing the coupler to be hinged to any angle to connect two cable ladder runs to form 'T' & 'Y' intersections.

Coupler Type: HHC | **Part Number: SW△-HHC-⬡**



△ = Select a System Type ⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x8

Not Required:

Showing assembly detail onto ladder. Supplied with 8 fixings per coupler

Short & Long Adjustable Couplers

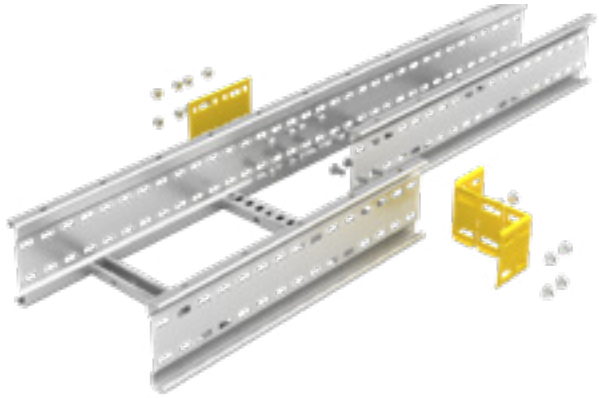
Speedway Short and Long Adjustable Couplers are used to create custom reductions in width during installation & to convert equal tees and crosses into unequal tees and crosses when used with a Fitting to Fitting Coupler (FFC).

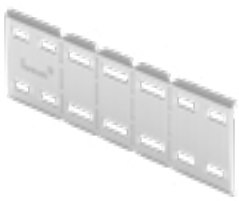
Speedway Short and Long Adjustable Couplers are supplied singly and come complete with all necessary ladder fixing sets. Each adjustable coupler has 50mm long segments with easibend slots which allow the couplers to be adjusted on site to suit specific installation requirements.

Short adjustable couplers allow reductions of up to & including 150mm per coupler. Long adjustable couplers allow reductions of up to & including 300mm per coupler.

A single short or long adjustable coupler can be used in conjunction with a standard coupler to create an offset connection between two ladders or fittings of differing widths. For concentric reductions, two short or long adjustable couplers are required.

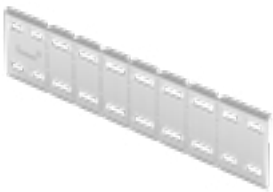
Coupler Type: SAC & LAC | **Part Number: SW△-LAC-⬡**





Short Adjustable Coupler SW△-SAC-⬡
Supplied flat

Shown bent to form 150mm width reduction



Long Adjustable Coupler SW△-LAC-⬡
Supplied flat

Shown bent to form 300mm width reduction

△ = Select a System Type ⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x8

HOW TO ORDER **SW4 - LAC - GY**
System Type | Coupler Type | Finish

Fitting to Fitting Coupler

Speedway Fitting to Fitting Coupler (FFC) facilitates the joining of two abutting cable ladder fittings with Speedlok Integral Couplers. The fitting to fitting coupler is also used when turning an equal cross into an unequal Cross.

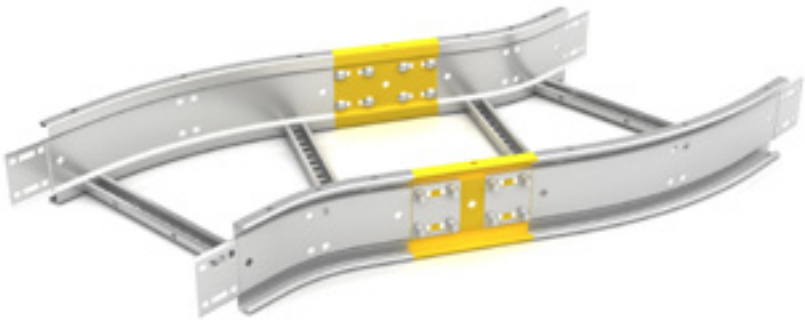
The Fitting to Fitting Coupler is based on the traditional Speedway Cable Ladder profile which is manufactured to a length of 200mm. The FFC is available across the Speedway product range in SW4, SW5 and SW6. To allow for two cable ladder fittings to be secured each FFC has 5 rows of slots, containing an 11mm hole in the middle row to allow fixing of an Earth Bonding Strap (ESB-01)

To join two ladder fittings, first loose fit the FFC to one of the abutting fittings. Once the FFC is in place it will allow the secondary fitting to be positioned and fixed easily, tighten the fixings allowing the integral couplers to clamp onto the FFC profile thus providing a secure joining mechanism between the fittings.

An FFC will also be required when turning an Equal Cross (EC) into an Unequal Cross using a Reducer. Firstly the FFC should be secured loosely to the Cross, when both FFCs are in place secure the reducer. When all fixing locations are tightened the reducer will provide an immediate reduction to the equal cross. Please refer to Equal Crosses for more details.

The Fitting to Fitting coupler is supplied singly. To allow for full mechanical and environmental protection of cables, a Fitting to Fitting Cover will be required.

Coupler Type: FFC | **Part Number: SW△-FFC-⬡**



△ = Select a System Type ⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x0

Expansion Coupler

Speedway Expansion Couplers (EXP) are recommended for those installations where the maximum and minimum temperatures are such that the expansion and contraction of the cable ladder installation is a consideration.

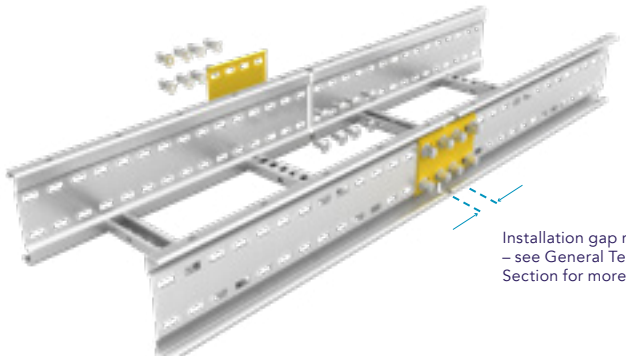
Each Expansion Coupler is designed to allow for a maximum movement of 28mm. Speedway expansion couplers are supplied singly and come complete with all necessary ladder fixings (8 fixings supplied with each coupler).

The Expansion Coupler should not be installed without a support either side of the expansion joint within 600mm.

Specific recommendations covering the spacing of expansion couplers and the setting gap at the time of installation are given in the General Technical Section.

Coupler Type: EXP

Part Number: SW△-EXP-⬡



SUPPORTS REQUIRED WITHIN 600mm OF THE JOINT

Expansion Guide (EFC-EXP)

When installed with expansion couplers, the Speedway Cable Ladder should be secured to the supporting structure using the Speedway Expansion Guide. Part Code: SW-EFC-EXP-⬡

△ = Select a System Type
⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x8

HOW TO ORDER SW5 - EXP - GX
System Type Coupler Type Finish

Support Reduction Expansion Coupler

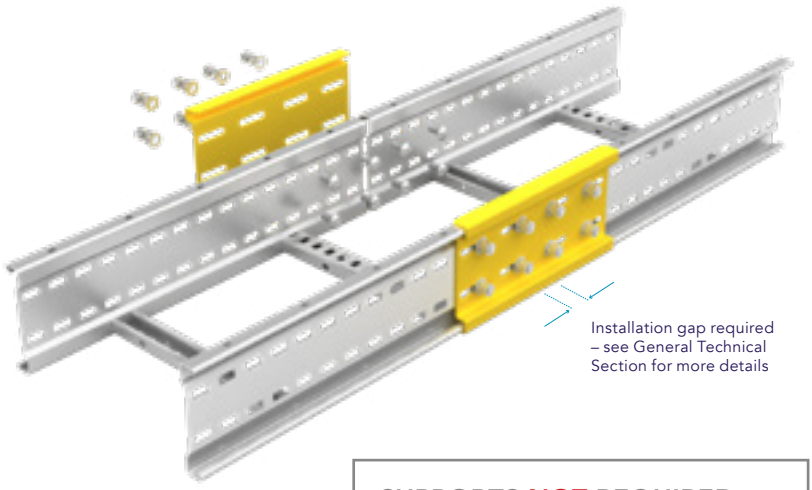
Speedway Support Reduction Expansion Couplers (SREC) are recommended for those installations where the maximum and minimum temperatures are such that the expansion and contraction of the cable ladder installation is a consideration and where it is not possible to provide support within 600mm of the expansion joint.

Capable of carrying the full load of the Speedway Cable Ladder at the expansion joint, each expansion coupler is designed to allow for a maximum movement of 75mm.

Speedway Support Reduction Expansion Couplers are supplied singly and come complete with all necessary ladder fixings (8 fixing sets per coupler).

Specific recommendations covering the spacing of expansion couplers and the setting gap at the time of installation are given in the General Technical Section of the catalogue.

Coupler Type: SREC | **Part Number: SW△-SREC-⬡**



SUPPORTS **NOT** REQUIRED
WITHIN 600mm OF THE JOINT

Expansion Guide (EFC-EXP)

When installed with expansion couplers, the Speedway Cable Ladder should be secured to the supporting structure using the Speedway Expansion Guide. Part Code: SW-EFC-EXP-⬡

△ = Select a System Type
⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x8

VANTRUNK SPEEDWAY®

ACCESSORIES

The Speedway Cable Ladder System is complemented by a range of accessories designed to aid installation and to add additional functionality & flexibility to the Speedway Cable Ladder System.

From versatile fixing clamps and brackets to junction box mounting plates and instrumentation tubing clamp plates, the Vantrunk range of Speedway Accessories have been designed over many years to represent cost-effective & practical solutions in the real installation environment.

HOW TO ORDER

SW - EFC - GA

System Type Accessory Type Finish

External Flange Clamp

The External Flange Clamp (EFC) forms a simple but effective means of connecting Speedway Cable Ladder and Fittings to the supporting structure.

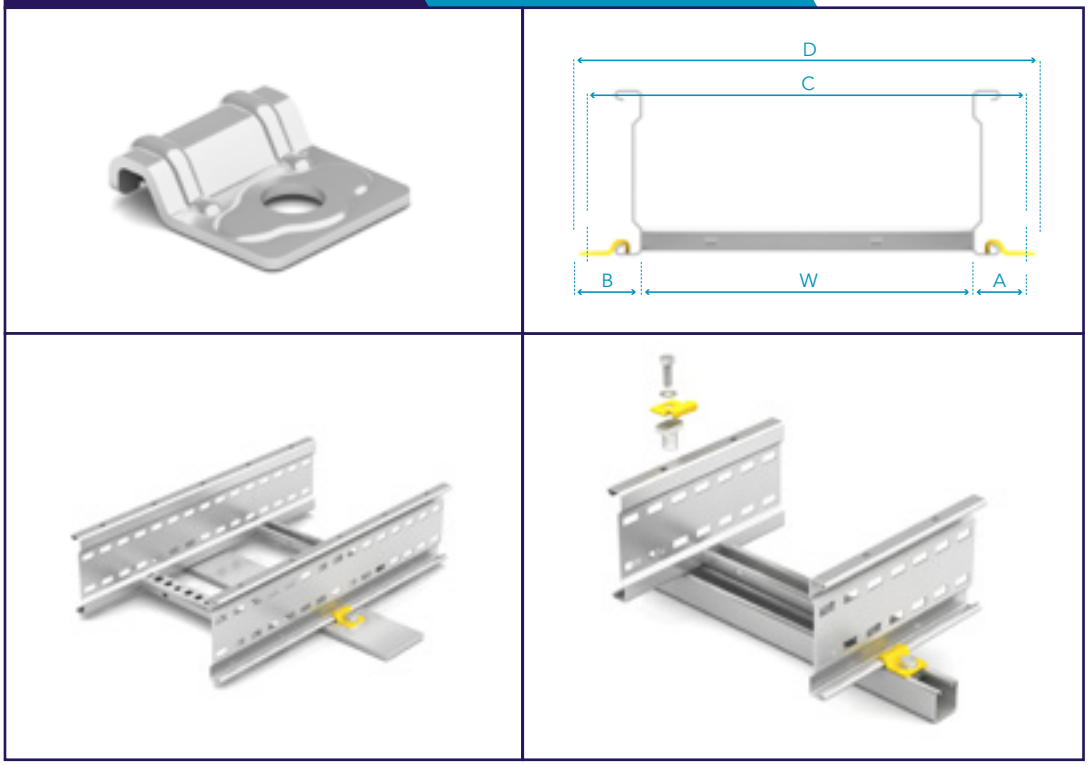
Designed for use with either channel (BS 6946 strut type) or structural steelwork, the external flange clamp has an M10 clearance hole.

Forming a secure clamping attachment onto the bottom flange of the Speedway profile, the external flange clamp can be used with all Speedway SW4, SW5, & SW6 cable ladder and fittings.

The External Flange Clamp is suitable for securing horizontal runs of Speedway Cable Ladder and Fittings in the horizontal plane.

External Flange Clamps are not suitable for supporting Speedway Cable Ladder installed as part of a vertical run.

Accessory Type: EFC | **Part Number: SW-EFC-⬡**



The following table gives the recommended fixing hole centres and general dimensions when using External Flange Clamps.

Dimensions (mm)			
A	B	C	D
44.5	56	W+89	W+116

W = System Width

The minimum thread length for the M10 fixing bolt is 22mm plus the thickness of the supporting steelwork. Refer to the table below for details of the fixing bolts.

Part Number	Thread Length	Description
M10x25-HS-⬡	25	M10 x 25 Hex Head Bolt
M10x30-HS-⬡	30	M10 x 30 Hex Head Bolt
M10x35-HS-⬡	35	M10 x 35 Hex Head Bolt
M10x40-HS-⬡	40	M10 x 40 Hex Head Bolt

⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x0

MOUNTING FIXINGS NOT INCLUDED

Adaptable Fixing Bracket

The Speedway Adaptable Fixing Bracket (AFB) provides a bolted connection between the supporting structure and the Speedway Cable Ladder & Fittings.

The adaptable fixing bracket is recommended for use in supporting vertical runs of Speedway Cable Ladder and Fittings and for applications where the Speedway Cable Ladder is edge-mounted (i.e. installed in the vertical plane running horizontally).

The adaptable fixing bracket gives multiple fixing options for attaching and securing Speedway Cable Ladder and Fittings.

Forming a secure bolted connection into the lower row of slots, the adaptable fixing bracket is suitable for use with Speedway SW4, SW5, & SW6 Cable Ladder and Fittings.

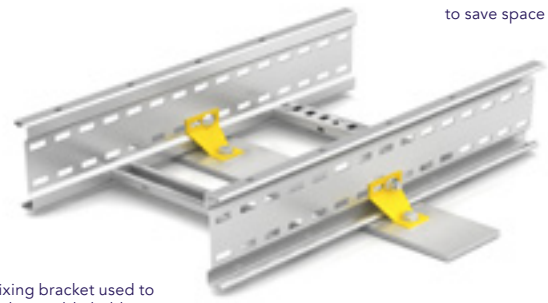
For those applications where space is limited, the Adaptable Fixing Bracket can be fitted internally within the Speedway Cable Ladder. The unique design of the Adaptable Fixing Bracket is such that there is no decrease in the effective loading area of the cable ladder when installed in this manner.

The adaptable fixing bracket can also be used singularly or in pairs to suspend Speedway Cable Ladder from threaded rod. For Speedway SW4 & SW5 Cable Ladder, the adaptable fixing bracket forms a simple but effective end connector to walls and floors.

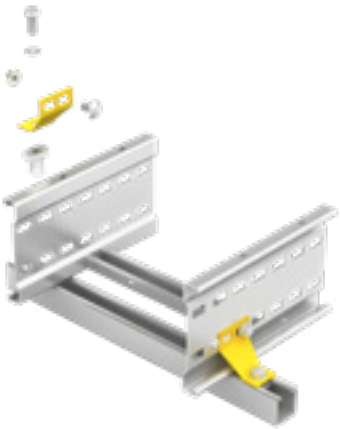
The adaptable fixing bracket is supplied with one ladder fixing as standard.

Accessory Type: AFB | **Part Number: SW-AFB-⬡**

Adaptable fixing bracket can be fitted internally to save space



Adaptable fixing bracket used to secure Speedway cable ladder to structural steelwork



Adaptable fixing bracket used to secure Speedway cable ladder to channel

HOW TO ORDER **SW - AFB - SS**
System Type Accessory Type Finish

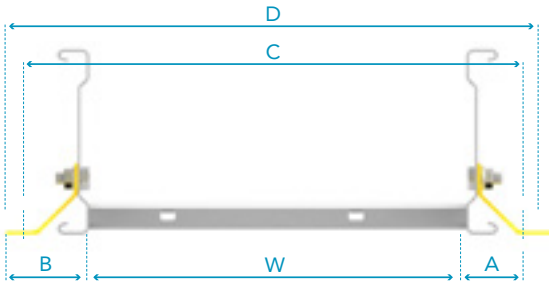
Accessory Type: AFB

Part Number: SW-AFB-⬡

Safe working load 300kg per pair of adaptable fixing brackets when supporting edge mounted Speedway cable ladder

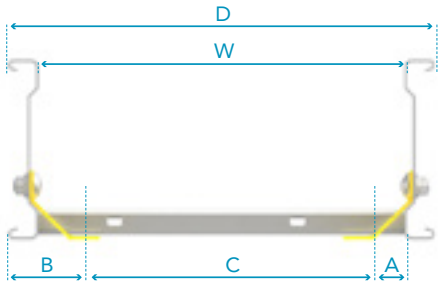
Safe working load 215kg per pair of adaptable fixing brackets when supporting Speedway cable ladder installed as part of a vertical run

External



Adaptable fixing bracket located externally on cable ladder

Internal



Adaptable fixing bracket located internally on cable ladder

These tables give the recommended fixing hole centres and general dimensions when using adaptable fixing brackets.

Installed Externally

Dimensions (mm)			
A	B	C	D
53.5	67	W+107	W+134

Installed Internally

Dimensions (mm)			
A	B	C	D
39.5	65	W-79	W+50

W = Ladder Width

The minimum thread length for the M10 fixing bolt is 22mm plus the thickness of the supporting steelwork. Refer to the table below for details of the fixing bolts.

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x1

MOUNTING FIXINGS NOT INCLUDED

Part Number	Thread Length	Description
M10x25-HS-O	25	M10 x 25 Hex Head Bolt
M10x30-HS-O	30	M10 x 30 Hex Head Bolt
M10x35-HS-O	35	M10 x 35 Hex Head Bolt
M10x40-HS-O	40	M10 x 40 Hex Head Bolt

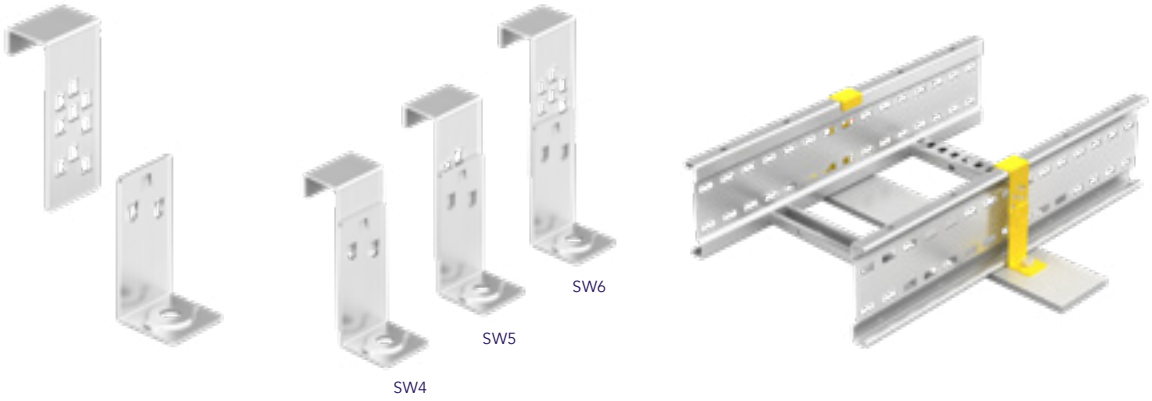
⬡ = Select a Finish & Material

Speedway Hold Down Bracket

The Speedway Hold Down Bracket (HDB) is a simple but effective means of securing Speedway Cable Ladder and Fittings to the supporting structure. The Hold Down Bracket has a single M10 clearance slot which allows for easy adjustment to suit predrilled fixing holes in the supporting structure. The Hold Down Bracket is equally suited for installation on channel (BS 6946 strut type) or steelwork.

Hold Down Brackets are not suitable for supporting Speedway Cable Ladder installed as part of a vertical run.

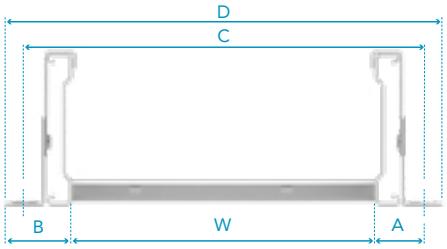
Accessory Type: HDB | **Part Number: SW△-HDB-⬡**



EE SS Supplied in two parts, omit System Type e.g. SW-HDB-⬡

GX GW Supplied as a single part, include System Type e.g. SW6-HDB-⬡

Speedway hold down bracket fitted onto Speedway cable ladder



Dimensions (mm)							
EE SS				GX GW			
A	B	C	D	A	B	C	D
47.5	67.5	W+95	W+135	45.5	65.5	W+91	W+131

W = Ladder Width

Finishes & Materials: EE SS GX GW

Supplied with: FIXING SETS x0

MOUNTING FIXINGS NOT INCLUDED

For GY Ladder Systems use EE material

Part Number	Thread Length	Description
M10x25-HS-⬡	25	M10 x 25 Hex Head Bolt
M10x30-HS-⬡	30	M10 x 30 Hex Head Bolt
M10x35-HS-⬡	35	M10 x 35 Hex Head Bolt
M10x40-HS-⬡	40	M10 x 40 Hex Head Bolt

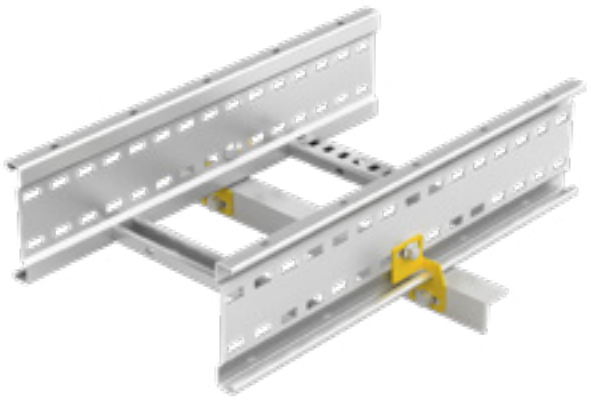
⬡ = Select a Finish & Material

The minimum thread length for the M10 fixing bolt is 22mm plus the thickness of the supporting steelwork. Refer to the table above for details of the fixing bolts.

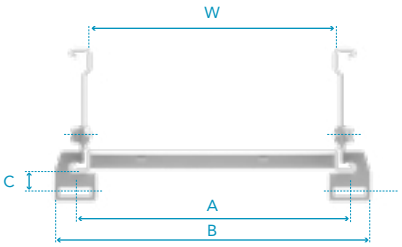
HOW TO ORDER SW - HDB - SS
System Type | Accessory Type | Finish

Angle Securing Bracket

Accessory Type: ASB | **Part Number: SW-ASB-⬡**



Speedway angle securing bracket fitted onto Speedway cable ladder



Dimensions (mm)		
A	B	C
W+36	W+86	24

W = Ladder Width

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x1

MOUNTING FIXINGS NOT INCLUDED

Part Number	Thread Length	Description
M10x25-HS-⬡	25	M10 x 25 Hex Head Bolt
M10x30-HS-⬡	30	M10 x 30 Hex Head Bolt
M10x35-HS-⬡	35	M10 x 35 Hex Head Bolt
M10x40-HS-⬡	40	M10 x 40 Hex Head Bolt

⬡ = Select a Finish & Material

The minimum thread length for the M10 fixing bolt is 22mm plus the thickness of the supporting steelwork. Refer to the table above for details of the fixing bolts.

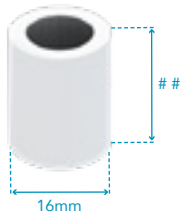
Insulating Assemblies

A comprehensive range of nylon insulating assemblies are available to suit those installations where there is a requirement to provide electrical separation between the Speedway Cable Ladder System and the support structure.

A typical example is a stainless steel Speedway Cable Ladder System mounted on galvanised or painted steel supports.

The insulating assembly is based on nylon base pads, nylon bushes and nylon washers which, when used with the Speedway External Flange Clamp, the Speedway Adaptable Fixing Bracket, or the Speedway Hold Down Bracket totally encapsulate the fixings and provide an insulation barrier between the Speedway Cable Ladder System and the supporting structure.

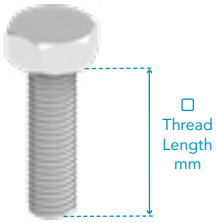
M10 Nylon Bush



315AN01-##: Nylon Bush Length ## = Steel Thickness (mm)

The length of the nylon bush is equal to the thickness of the supporting steelwork (##). The nylon bush requires a 17mm diameter hole in the supporting steelwork.

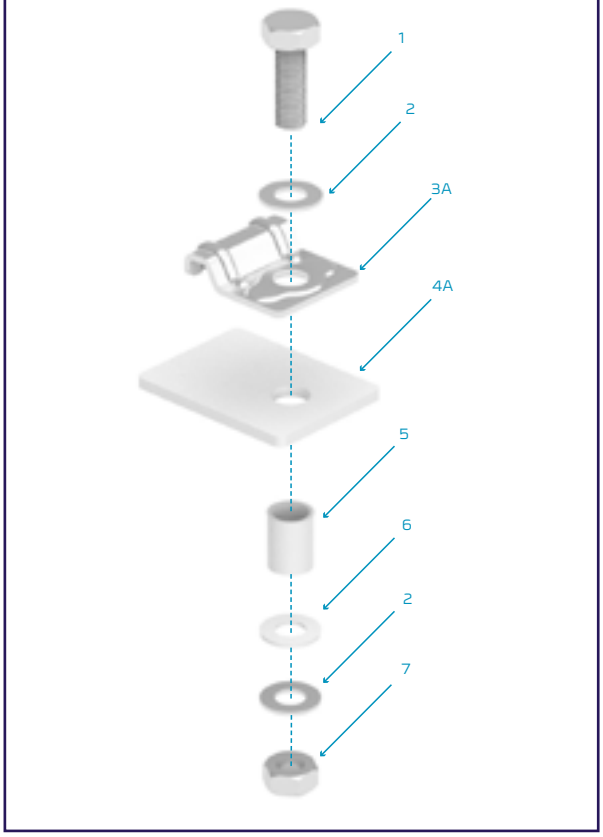
M10 Fixing Bolt



The minimum thread length for the fixing bolt (□) is 22mm plus the thickness of the supporting steelwork(##). Refer to the table below for details of the fixing bolts.

Part Number	Thread Length (□)	Description
M10x25-HS-SS-A4	25mm	M10 x 25 Hex Head Set Screw Stainless Steel
M10x30-HS-SS-A4	30mm	M10 x 30 Hex Head Set Screw Stainless Steel
M10x35-HS-SS-A4	35mm	M10 x 35 Hex Head Set Screw Stainless Steel
M10x40-HS-SS-A4	40mm	M10 x 40 Hex Head Set Screw Stainless Steel

Insulating Assembly Components for External Flange Clamp (EFC)



Part Number	Item	Description
M10x□-HS-SS-A4	1	M10 Hex Head Set Screw Stainless Steel - Length = □
M10-FW-SS-A4	2	M10 Flat Washer Stainless Steel
SW-EFC-SS	3A	Speedway External Flange Clamp Stainless Steel
PAD-66.5x50x4-NY	4A	Nylon Pad (66.5 x 50 x 4mm)
BUSH-16x##-NY	5	Nylon Bush - Length = ##
M10-FW-NY	6	M10 Flat Washer Nylon
M10-HN-SS-A4	7	M10 Hex Nut Stainless Steel

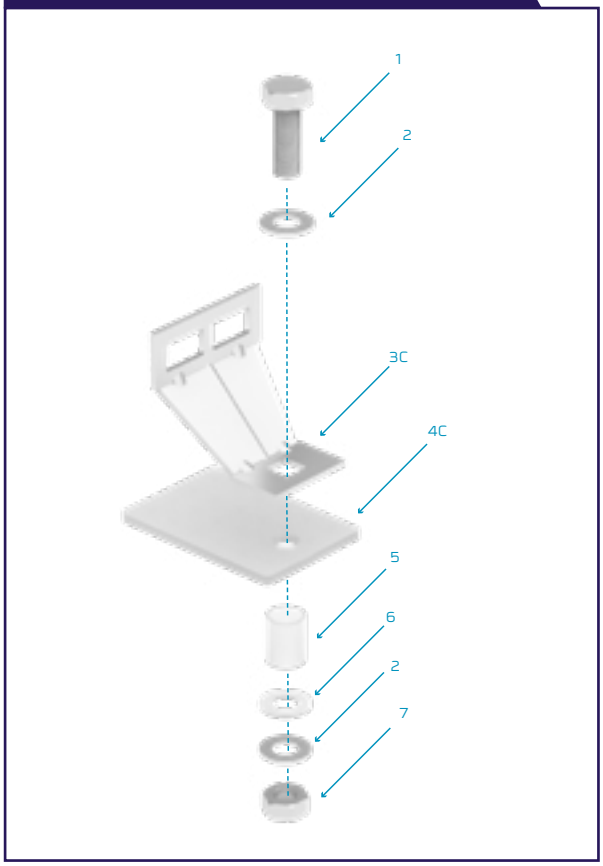
For Example:

If the thickness of the Steelwork = 12mm
The length of the Nylon Bush is also 12mm = 315AN01-12
This means that the Minimum Thread Length of the Fixing Bolt = 22 + 12 = 34mm
Rounding this figure up to the nearest standard bolt length of 35mm,
the supplied bolt = SSM10x35HS
If an AFB is to be used, order: SW-AFB-SS-INS12

HOW TO ORDER

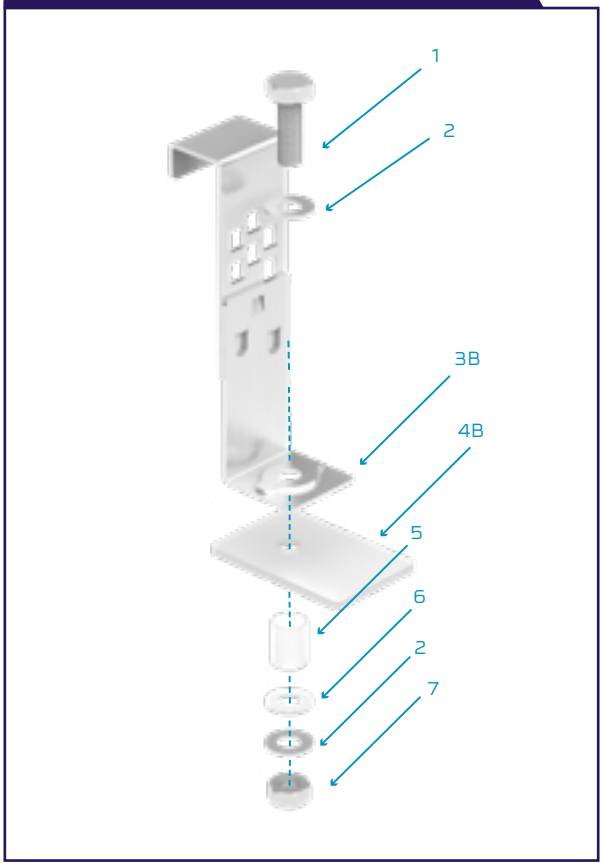
SW - EFC - SS - INS10
System Type Accessory Type Finish INS+Bush Length

Insulating Assembly Components for Adaptable Fixing Bracket (AFB)



Part Number	Item	Description
M10x□-HS-SS-A4	1	M10 Hex Head Set Screw Stainless Steel - Length = □
M10-FW-SS-A4	2	M10 Flat Washer Stainless Steel
SW-AFB-SS	3C	Speedway Adaptable Fixing Bracket (AFB)
PAD-80x55x4-NY	4C	Nylon Pad (80 x 55 x 4mm)
BUSH-16x##-NY	5	Nylon Bush - Length = ##
M10-FW-NY	6	M10 Flat Washer Nylon
M10-HN-SS-A4	7	M10 Hex Nut Stainless Steel

Insulating Assembly Components for Hold Down Bracket (HDB)



Part Number	Item	Description
M10x□-HS-SS-A4	1	M10 Hex Head Set Screw Stainless Steel - Length = □
M10-FW-SS-A4	2	M10 Flat Washer Stainless Steel
SW-HDB-SS	3B	Speedway Hold Down Bracket Stainless Steel
PAD-75x50x4-NY	4B	Nylon Pad (75 x 50 x 4mm)
BUSH-16x##-NY	5	Nylon Bush - Length = ##
M10-FW-NY	6	M10 Flat Washer Nylon
M10-HN-SS-A4	7	M10 Hex Nut Stainless Steel

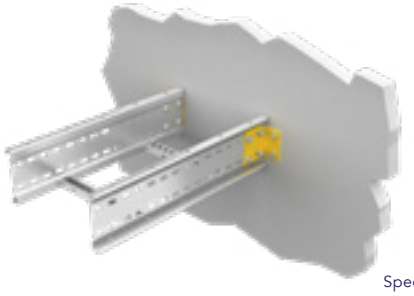
Structural Connector Bracket

As an alternative to using a vertical adjustable coupler, the Speedway Structural Connector Bracket (SCB) is specifically designed for connecting Speedway Cable Ladder runs to walls and floors.

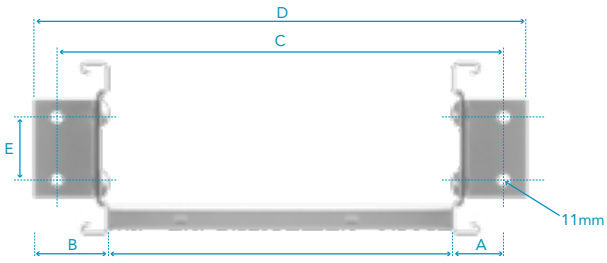
The Structural Connector Bracket has two 11mm diameter (M10 clearance) fixing holes and is supplied complete with all necessary ladder fixing sets

Accessory Type: SCB | **Part Number: SW△-SCB-⬡**

Speedway structural connecting bracket securing horizontal cable ladder to vertical channel support



Speedway structural connector bracket securing a horizontal cable ladder to a wall



System Type	Dimensions (mm)				
	A	B	C	D	E
Speedway SW4	47	67	W+94	W+134	33
Speedway SW5					
Speedway SW6					55

W = Ladder Width

△ = Select a System Type ⬡ = Select a Finish & Material

Finishes & Materials:

GA SS GX GW

Supplied with:

FIXING SETS x4

MOUNTING FIXINGS NOT INCLUDED

HOW TO ORDER **SW5 - DOB - SS**

System Type | Accessory Type | Finish

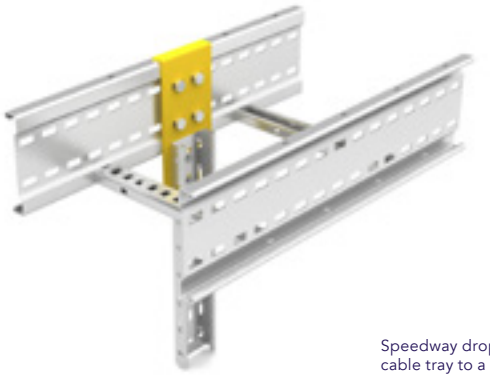
Drop Out Bracket

The Speedway Drop Out Bracket (DOB) facilitates connection of vertical ladder to horizontal ladder, allowing on-site use to form vertical tee connections.

Additional slots in the Drop Out Bracket allow secondary tray and other items to be attached to the cable ladder.

Accessory Type: DOB | **Part Number: SW△-DOB-⬡**

Speedway drop out bracket securing a vertical cable ladder to a horizontal cable ladder run



Speedway drop out bracket securing a vertical cable tray to a horizontal cable ladder run

△ = Select a System Type ⬡ = Select a Finish & Material

Finishes & Materials:

GA SS GX GW

Supplied with:

FIXING SETS x4

Straight Ladder Divider

Speedway Straight Ladder Dividers (DIV-SL1.5) are available for cable segregation and separation purposes along the length of a cable run.

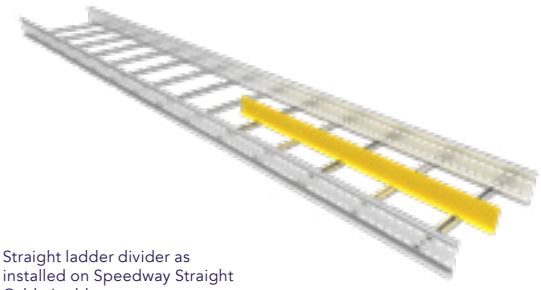
Straight Ladder Dividers are available in three heights to suit Speedway SW4, SW5, & SW6 cable ladder and are 1500mm in length.

Dividers are supplied with 3 fixing sets per divider:

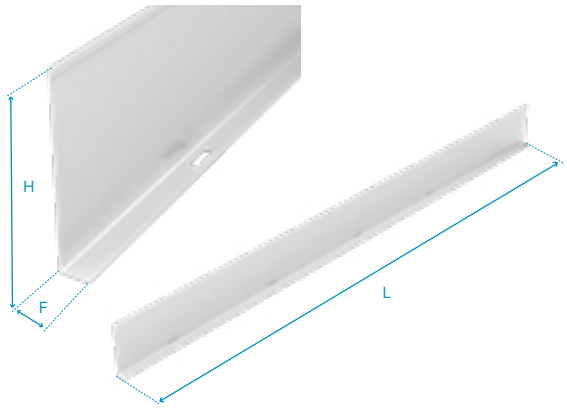
GA – M6x16 mushroom head bolt c-w plain channel nut.

SS – M6x16 pan head bolt c-w plain channel nut and flat washer.

Accessory Type: DIV-SL1.5



Straight ladder divider as installed on Speedway Straight Cable Ladder



Part Number	System Type	Dimensions (mm)		
		L	H	F
SW4-DIV-SL1.5-O	Speedway SW4	1500	70	20
SW5-DIV-SL1.5-O	Speedway SW5		85	
SW6-DIV-SL1.5-O	Speedway SW6		110	

O = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x3

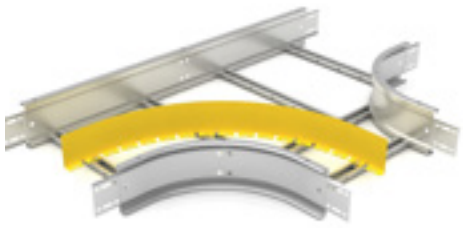
Hot Dip Galvanised Dividers are manufactured out of 1.2mm Gauge Material

Fitting Divider

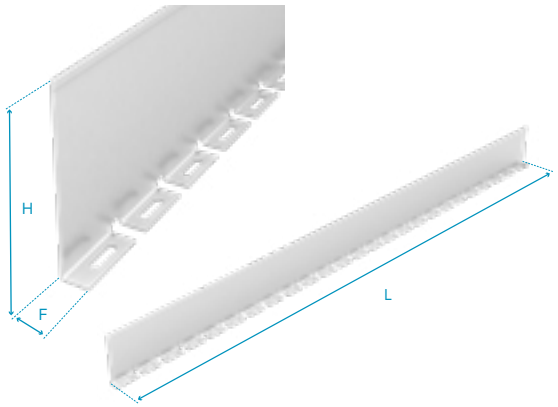
Speedway Fitting Dividers (DIV-FL1.5) are available for cable segregation and separation purposes on fittings. The Speedway Fitting Divider is supplied as a straight length and is notched to allow for forming around flat elbows, tees, crosses & reducers.

Speedway Fitting Dividers are available in three heights to suit Speedway SW4, SW5, & SW6 cable ladder and are 1500mm in length.

Accessory Type: DIV-FL1.5



Fitting divider as installed on a Speedway Equal Tee



Part Number	System Type	Dimensions (mm)		
		L	H	F
SW4-DIV-FL1.5-O	Speedway SW4	1500	70	20
SW5-DIV-FL1.5-O	Speedway SW5		85	
SW6-DIV-FL1.5-O	Speedway SW6		110	

O = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x3

Hot Dip Galvanised Dividers are manufactured out of 1.2mm Gauge Material

HOW TO ORDER SW – DIV – SL1.5 – SS – 1.0
System Type · Accessory Type · Ladder Type · Finish · Gauge

Riser Divider

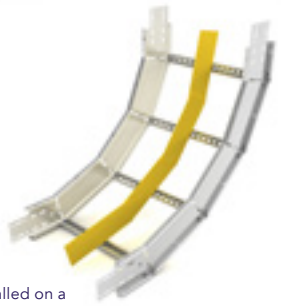
Speedway Riser Dividers (DIV-RL0.3) are available for cable segregation and separation purposes on riser fittings. The Speedway Riser Divider is suitable for use on inside and outside risers as well as the articulated riser. Speedway Riser Dividers are available in three heights to suit Speedway SW4, SW5, & SW6 Risers and are 300mm in length.

Speedway Riser Dividers are supplied with 1 fixing set per divider:

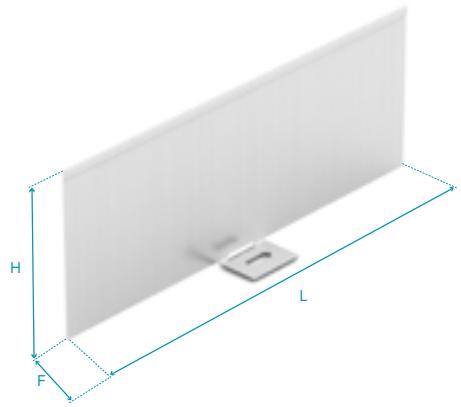
GA – M6x16 mushroom head bolt c-w plain channel nut.

SS – M6x16 pan head bolt c-w plain channel nut and flat washer.

Accessory Type: DIV-RL0.3



Riser divider installed on a Speedway 90° Inside Riser



Part Number	System Type	Dimensions (mm)		
		L	H	F
SW4-DIVRL0.3-○	Speedway SW4	300	70	20
SW5-DIV-RL0.3-○	Speedway SW5		85	
SW6-DIV-RL0.3-○	Speedway SW6		110	

○ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x1

Hot Dip Galvanised Dividers are manufactured out of 1.2mm Gauge Material

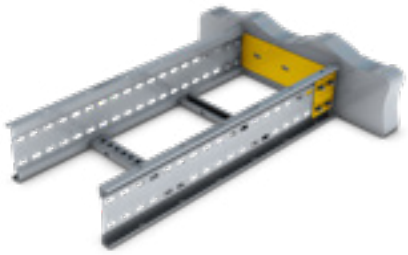
End Plate

Speedway End Plates (EP) provide a neat termination for open ends of cable ladders.

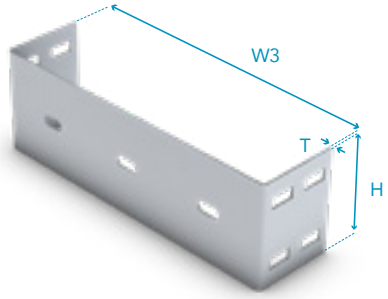
Speedway End Plates are available in widths from 150mm to 900mm as standard. Other widths are available – contact our Sales Team for details.

Each Speedway End Plate has 25mm x 11.5mm fixing slots at 100mm centres which allow the end plate to be used for securing the cable ladder to a wall or floor.

Accessory Type: EP



End plate shown securing cable ladder to wall (or floor for vertical installation)



Part Number	Dimensions (mm)						
	Ladder Width	W3	H			T	No. of fixing slots
			SW4	SW5	SW6		
SW△-EP-150-○	150	172	100	80	105	2	2
SW△-EP-300-○	300	322					3
SW△-EP-450-○	450	472					5
SW△-EP-600-○	600	622					6
SW△-EP-750-○	750	772					8
SW△-EP-900-○	900	922					9

△ = Select a System Type ○ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x8

Cable Drop Out

Speedway Cable Drop-Outs (CDO) are designed to provide a smooth transition for cable, particularly those with a small diameter, where these enter and leave the cable ladder.

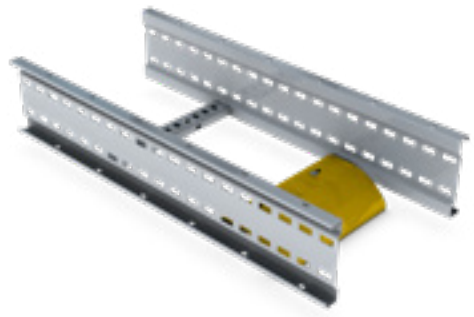
Cable Drop-Outs are available to suit Speedway Cable Ladder of widths from 150mm to 900mm as standard and are common to all Speedway Ladder types. Other widths are available – contact our Sales Team for details.

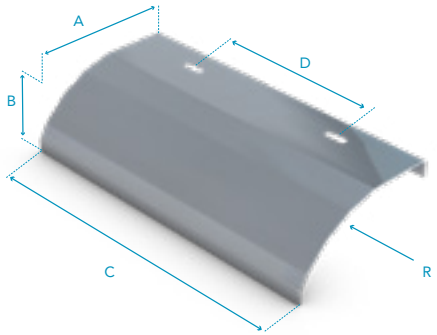
Cable Drop-Outs are supplied with 2 fixing sets*

GA – M6x16 mushroom head bolt c-w short spring channel nut .

SS – M6x16 pan head bolt c-w short spring channel nut and flat washer.

Accessory Type: CDO





Part Number	Dimensions (mm)				
	A	B	C	D	R
SW-CDO-150-O*	120	60	130	N-A	95
SW-CDO-300-O			280	150	
SW-CDO-450-O			430	300	
SW-CDO-600-O			580	450	
SW-CDO-750-O			730	600	
SW-CDO-900-O			880	750	

O = Select a Finish & Material

Finishes & Materials:

GA SS GX GW

Supplied with:

FIXING SETS x2*

*SW-CDO-150 has a single central fixing slot

Protective End Caps

Protective End Caps (PEC) are available for all Speedway profiles.

Manufactured in flexible yellow PVC material as standard, the protective end cap provides a visible and safe means of identifying & covering the open ends of Speedway Cable Ladder and Fittings.

Low smoke-zero halogen finish – contact our Technical Team for details.

Accessory Type: PEC

Protective end caps installed on a Speedway cable ladder

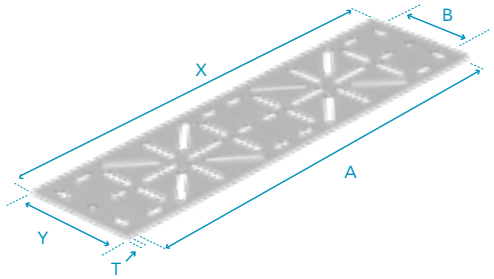
HOW TO ORDER SW4 - PEC
System Type Accessory Type

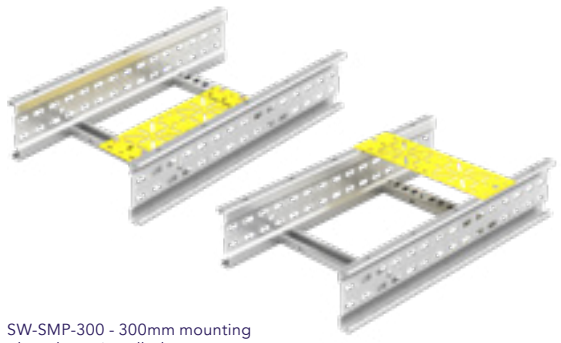
Speedway Mounting Plate

The Speedway Mounting Plate (SMP) provides a means of attaching junction boxes and other items to the speedway Cable Ladder System. Mounting plates are available to suit all Speedway Cable Ladder widths up to & including 900mm for attachment across the face of the cable ladder. The 300mm Speedway Mounting Plate (SW-SMP-300-#) can also be attached between rungs on all widths of Speedway Cable Ladder and can be mounted either within the cable space or below the cable ladder.

Alternative mounting plate designs can be made to order. Contact our Sales Team for more details.

Accessory Type: SMP





SW-SMP-300 - 300mm mounting plate shown installed across rungs

Part Number	Dimensions (mm)					
	Ladder Width	X	Y	A	B	T
SW-SMP-150-⬡	150	200	100	175	60	2
SW-SMP-300-⬡	300	350		325		
SW-SMP-450-⬡	450	500		475		
SW-SMP-600-⬡	600	650		625		
SW-SMP-750-⬡	750	800		775		
SW-SMP-900-⬡	900	950		925		

⬡ = Select a Finish & Material

Finishes & Materials:

GA SS GX GW

Supplied with:

FIXING SETS x0

Earth Bonding Strap

The Speedway Earth Bonding Strap (EBS-01) is designed for use in installations where an additional means of earthing or electrical bonding is specified.

The Speedway Earth Bonding Strap comprises of a 16mm² tinned copper braid crimped into M10 tinned copper end connectors.

The Speedway Earth Bonding Strap is common to Speedway SW4, SW5, & SW6.

Accessory Type: EBS-01

Speedway Earth Bonding Strap as installed on a Speedway Cable Ladder

Supplied with:

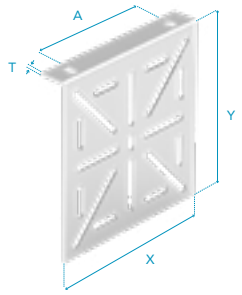
FIXING SETS x0

Junction Box Plates

Speedway Junction Box Plates (JBP) provide a versatile means of attaching junction boxes, switches and other equipment directly onto Speedway Cable Ladder and Fittings.

Junction Box Plates are available in five standard sizes to suit all secondary equipment mounting requirements. Junction Box Plates are not supplied with ladder fixings.

Accessory Type: JBP



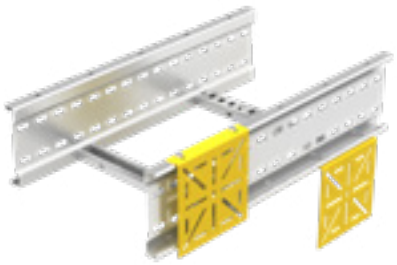
JBP01
Junction Box Plate

JBP02
Junction Box Plate

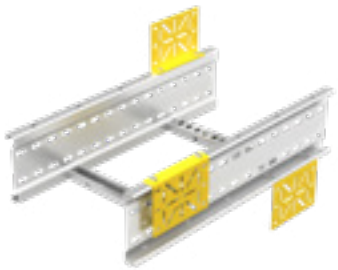
JBP03
Junction Box Plate

JBP04
Junction Box Plate

JBP05
Junction Box Plate



Junction Box Plate JBP01 shown mounted in two possible orientations on Speedway cable ladder



Junction Box Plate JBP05 shown mounted in three possible orientations on Speedway cable ladder

Part Number	Dimensions (mm)				No. of Fixings
	X	Y	A	T	
SW-JBP01-⬡	160	165	120	2	2
SW-JBP02-⬡	210	215	120	2	2
SW-JBP03-⬡	310	315	120	3	3
SW-JBP04-⬡	65	90	47	2	1
SW-JBP05-⬡	150	110	120	2	2

⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x0

HOW TO ORDER SW - JBP04 - GX
System Type | Accessory Type | Finish

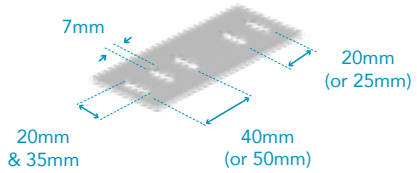
Tube Clamp Plates

Speedway Tube Clamp Plates (TCP) are specifically designed for use with tubing clamp systems which require 7mm wide fixing slots at 20mm or 40mm slot centres.

The tube clamp plates will allow easy and convenient routing of both instrumentation tubing and cables on the same Speedway Cable Ladder run.

Speedway Tube Clamp Plates are also available with fixing slots at 25mm or 50mm slot centres (to order these items replace the '0' in the part number with '5'). The slots in the tube clamp plates are either 20mm x 7mm (TCP01, TCP02, & TCP03) or 35mm x 7mm (TCP04, & TCP05).

Accessory Type: TCP



⬡ = Select a Finish & Material

Finishes & Materials:

GA SS GX GW

Tube Clamp Plate 01

Supplied with: FIXING SETS x2

Part Number: SW-TCP01

Tube Clamp Plate 02

Supplied with: FIXING SETS x2

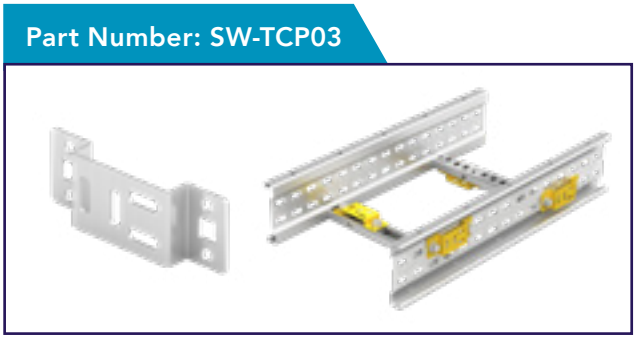
Part Number: SW-TCP02

Tube Clamp Plate 03

Supplied with: FIXING SETS x2

The TCP03 is also suitable for the attachment to the Speedway Channel rung and will allow routing of instrumentation tubing within the cable space or along the underside of the Speedway Cable Ladder.

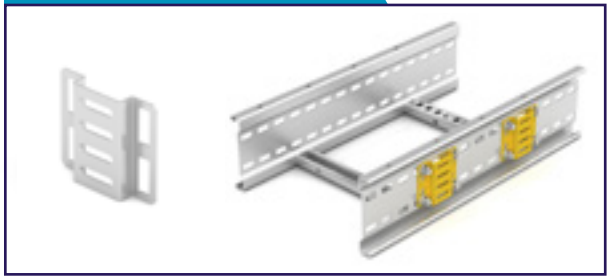
Part Number: SW-TCP03



Tube Clamp Plate 04

Supplied with: FIXING SETS x4

Part Number: SW-TCP04



Tube Clamp Plate 05

Supplied with: FIXING SETS x4

Part Number: SW6-TCP05

Speedway Tube Clamp Plate TCP05 is used for direct fixing or for use with Speedway SW6 only.

VANTRUNK SPEEDWAY®

SPEEDWAY SUPPORTS

A range of supports, including heavy duty cantilevers and trapeze hangers; designed to work in conjunction with Vantrunk's Speedway Cable Ladder System.

Vantrunk's Speedway Supports are also complemented by the comprehensive Intelok channel support system manufactured to BS 6946. Featuring channel cantilever arms, beam clamps and brackets, which offer solutions to suit all particular site requirements. See the Intelok section for further details.

HOW TO ORDER

SW	-	HDC	-	150	-	GA
System Type		Accessory Type		Length		Finish

Heavy Duty Cantilever

The Speedway Heavy Duty Cantilever (HDC) provides a specific means of supporting Speedway cable ladder on vertical fixed structures or channel (strut type) uprights. The heavy duty cantilevers are available to suit Speedway SW4, SW5 & SW6 Cable Ladders for all widths up to and including 900mm wide.

Each Heavy Duty Cantilever has fixing slots to accept the Speedway External Flange Clamps (SW-EFC-#), Adaptable Fixing Brackets (SW-AFB-#) and Hold Down Brackets (SW-HDB-#). The slot pattern allows the adaptable fixing bracket to be fitted either internally or externally on the Speedway cable ladder. The heavy duty cantilever arm back plate has a minimum of two 15mm diameter fixing holes (see table below for details) to accept fixings up to and including M14. The loading table below gives the recommended maximum load for each size of heavy duty cantilever arm for supporting uniformly distributed loads (UDL) such as or for supporting Speedway cable ladder (which should be uniformly loaded to apply two equal point loads onto the cantilever arm).

Speedway Heavy Duty Cantilevers - Safe Working Loads

Part Number	Ladder size	Arm Length mm	Maximum Load kg	
			UDL	Ladder
SW-HDC-150-⬡	150	300	629	315
SW-HDC-300-⬡	300	450	419	210
SW-HDC-450-⬡	450	600	496	248
SW-HDC-600-⬡	600	750	690	345
SW-HDC-750-⬡	750	900	871	435
SW-HDC-900-⬡	900	1050	1045	522

⬡ = Select a Finish & Material

Finishes & Materials:

GA SS GX GW

Heavy Duty Cantilevers with non-standard arm lengths and alternative fixing slot configurations are available – consult our Design Team for further information. Installation dimensions are given in the following table.

Speedway Heavy Duty Cantilevers - Installation Details

Part Number	Ladder Width mm	Maximum Load kg			
		L	No of Holes	A	B
SW-HDC-150-⬡	150	300	2	70	N/A
SW-HDC-300-⬡	300	450	2	70	N/A
SW-HDC-450-⬡	450	600	3	55	40
SW-HDC-600-⬡	600	750	3	105	40
SW-HDC-750-⬡	750	900	3	155	40
SW-HDC-900-⬡	900	1050	3	205	40

⬡ = Select a Finish & Material

Finishes & Materials:

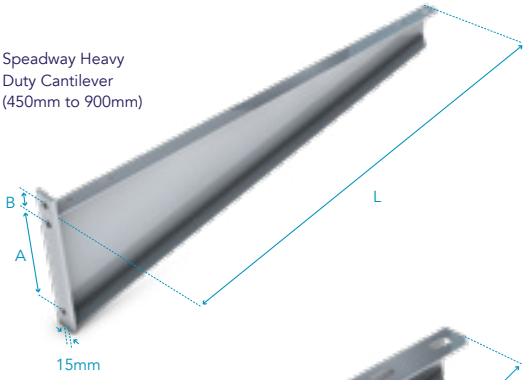
GA SS GX GW

VANTRUNK SPEEDWAY®

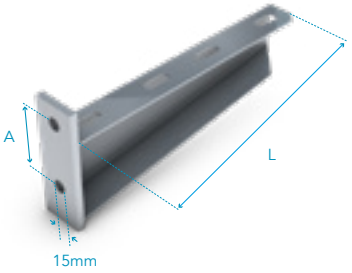
Speedway Heavy Duty Cantilever (HDC) (SW/HDC/600 shown)

Speedway Heavy Duty Cantilever (HDC) (SW/HDC/300 shown)

Speadway Heavy Duty Cantilever (450mm to 900mm)



Speadway Heavy Duty Cantilever (150mm to 300mm)



SW/HDC/600 Heavy Duty Cantilever shown supporting Speedway SW5/SL/600 cable ladder

Ladder Trapeze Hanger

The Speedway Ladder Trapeze Hanger (LTH) provides a dedicated and effective means of installing Speedway cable ladder using a trapeze support arrangement.

Each Ladder Trapeze Hanger has fixing slots to accept the Speedway External Flange Clamps (SW-EFC-#), Adaptable Fixing Brackets (SW-AFB-#) and Hold Down Brackets (SW-HDB-#). The slot pattern allows the Adaptable Fixing Bracket to be fitted either internally or externally on the cable ladder.

The Ladder Trapeze Hanger has 25 x 13.5 end slots to suit the use of M10 or M12 threaded rod hangers. M10 threaded rod hangers can also be utilised for securing the Speedway cable ladder using Speedway External Flange Clamps (SW-EFC), Adaptable Fixing Brackets (SW-AFB) and Hold Down Brackets (SW-HDB). The loading table below gives the recommended maximum load for each size of ladder trapeze hanger when used with Speedway cable ladder (which should be uniformly loaded to apply two equal point loads onto the ladder trapeze hanger).

Speedway Ladder Trapeze Hanger - Safe Working Loads

Part Number	Ladder Width mm	Ladder Load kg
SW-LTH-150-⬡	150	1193
SW-LTH-300-⬡	300	
SW-LTH-450-⬡	450	
SW-LTH-600-⬡	600	
SW-LTH-750-⬡	750	
SW-LTH-900-⬡	900	
SW-LTH-1050-⬡	1050	

Finishes & Materials: GA, SS, GX, GW

⬡ = Select a Finish & Material

Non-standard Ladder Trapeze Hangers and alternative fixing slot configurations are available – consult our Design Team for further information. Installation dimensions are given in the following table.

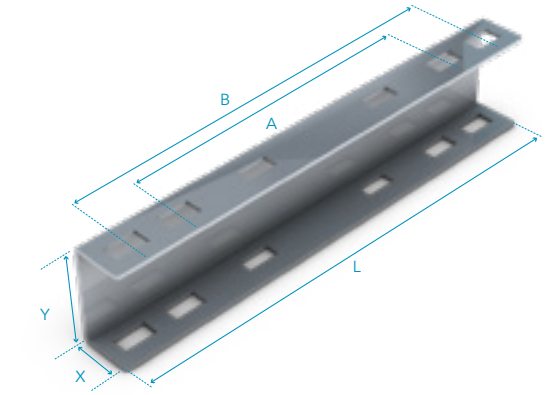
Speedway Ladder Trapeze Hanger - Installation Details

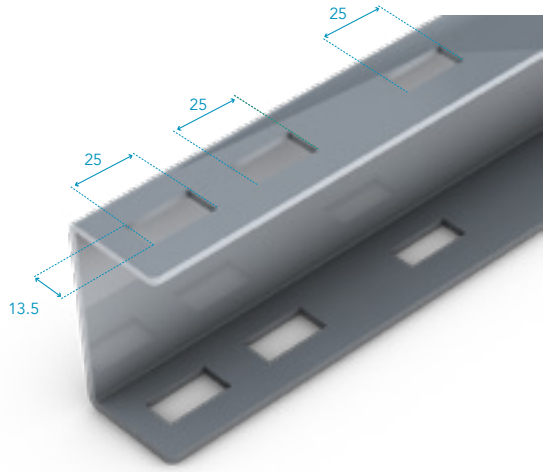
Part Number	Ladder Width mm	Maximum Load kg				
		L	X	Y	A	B
SW-LTH-150-⬡	150	370	40	75	243	325
SW-LTH-300-⬡	300	520	40	75	393	475
SW-LTH-450-⬡	450	670	40	75	543	625
SW-LTH-600-⬡	600	820	40	75	693	775
SW-LTH-750-⬡	750	970	40	75	843	925
SW-LTH-900-⬡	900	1120	40	75	993	1075
SW-LTH-1050-⬡	1050	1270	40	75	1143	1225

⬡ = Select a Finish & Material

Finishes & Materials: GA, SS, GX, GW

Speedway Ladder Trapeze Hanger (SW/LTH)





Ladder trapeze hanger suspended on M10 threaded rod. Adaptable fixing bracket (SW-AFB) secured using same threaded rod

Ladder trapeze hanger suspended on M12 threaded rod. Adaptable fixing bracket (SW/AFB) secured using M10 fixings

HOW TO ORDER

SW (System Type) - HDC (Accessory Type) - 150 (Length) - GA (Finish)

VANTRUNK

ENGINEERED FOR EXTREME ENVIRONMENTS

SANDBANK OFFSHORE WIND FARM

The Sandbank offshore wind farm is the second largest offshore wind farm project undertaken by Vattenfall in collaboration with Stadtwerke München. The wind farm extends over a total area of 66 square kilometres.

LOCATION

GERMAN NORTH SEA
90km off the coast of Sylt.

CLIENT

SEMCO maritime

$1.7bn
OVERALL COST OF PROJECT

FACT 1

288 MW
total installed capacity

FACT 2

72
turbines of 4MW class

FACT 3

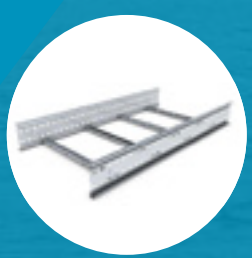
160m
total turbines height

130m
rotor diameter

FACT 4

Covers an area of
66 sq km
in German North Sea

PRODUCTS SUPPLIED



SPEEDWAY

INTELOK CHANNEL

VANTRUNK SPEEDWAY® EXTREME CABLE LADDER

Vantrunk's Speedway Cable Ladder and Intelok Support System provides a strong, reliable, easy to install solution providing overall cost savings throughout the project lifespan.

VANTRUNK SPEEDWAY®

COVERS

Speedway Covers provide mechanical and environmental protection for cables on the cable ladder. Speedway Covers can be supplied in either closed or louvered configurations.

Speedway straight ladder covers are supplied in 1.5m lengths for ease of handling during installation and are 'handed' (i.e. the cover has a different slot and fixing arrangement at each end) but can be installed in either direction as the design of cable ladder fittings covers allow for connection to either end of the straight ladder covers.

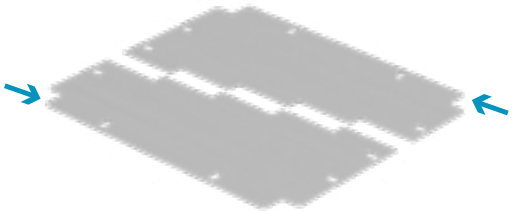
Speedway straight ladder covers have an integral joint strip at one end to facilitate connection to abutting straight cable ladder or cable ladder fitting covers. Pre-formed M6 threads are provided at the opposite end of the cover to allow for ease of installation using M6 threaded bolts. The integral joint strip is fully slotted to allow for adjustment during installation.

Speedway Cable Ladder fittings covers are dimensioned to be an exact fit to the Speedway Cable Ladder fitting and are fitted with integral joint strips on all ends of the cover. Covers for risers will be supplied with easi-bend slots to allow the cover to be formed on site for attachment to the riser fitting.

Straight Ladder Cover

Integral Joint Strip Detail - Straight
Ladder Covers for straight ladder have an integral joint strip on one end

Fittings Cover

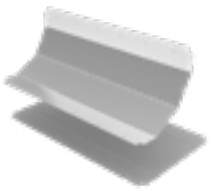


Integral Joint Strip Detail - Fittings
Covers for fittings have an integral joint strip on each end

Flat Elbow Cover

600mm Wide
300mm Radius
Flat Elbow Closed Cover

Riser Cover



Riser Closed Cover
Supplied flat for forming on site

Finish & Material	Gauge
SS Stainless Steel	1.0mm
GA Hot Dipped Galvanised Mild Steel	1.2mm
GX Deep Galvanised Silicon Rich Steel	1.5mm
GY Hot Dipped Galvanised Structrual Steel	1.5mm
GW Deep Galvanised Structrual Steel	1.5mm

Covers are supplied as standard in the gauges given in the above table.
Other gauges up to and including 2mm are available to order.

HOW TO ORDER

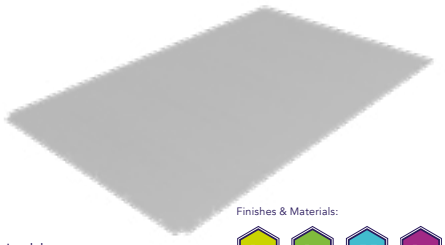
SW6 - CL - OR90 - 600 - 900R - SS - 1.0
System Type - Cover Type - Fitting Type - Width - Radius - Finish - Gauge

Closed Covers

Closed covers fit directly onto the side walls of the Speedway Ladder & fittings to provide mechanical protection and shielding for cables and other equipment within the cable space.

Closed covers of widths of 450mm and above are supplied with Bracing Kits (CBK) (see Bracing Kit Section). Closed Covers are punched with centreline slots to provide for water drainage.

Cover Type: CC



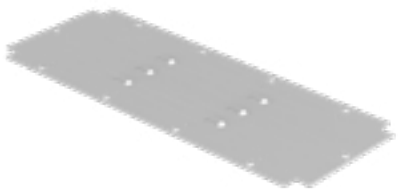
Straight Ladder
Closed Cover

Finishes & Materials: GY GA SS GX GW

Fitting to Fitting Cover

When joining two abutting cable ladder fittings with a Fitting to Fitting Coupler (FFC) a 200mm gap is created in the cover span. To ensure complete mechanical and environmental protection of the cables, a Fitting to Fitting Cover is required. Fitting to Fitting Covers will be fixed directly to the adjoining covers and will ensure complete protection of cables within the span.

Cover Type: CC-FFC or CL-FFC



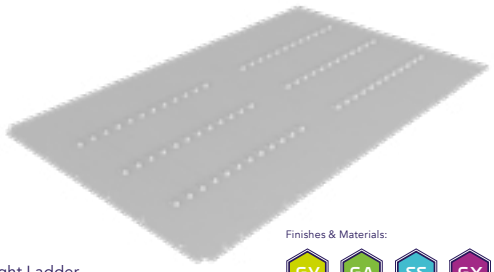
Finishes & Materials: GY GA SS GX GW

Louvered Covers

Louvered Covers are similar to closed covers but with the addition of louvres for improved air flow through the cable space. Louvered covers are particularly useful where heavy duty power cables are being used. Most traditional cable management systems offer a raised cover for ventilation.

Conventional raised covers have a number of considerations to be taken into account before installing them. First of which is that the cover will be susceptible to being lifted off in excessive winds, also the extra brackets and fixings will add to the installation time of each cover. Raised covers loading performance is far less than the loading performance of a close fitting louvered cover and due to the cover only being supported locally at the fixing point the raised cover is susceptible to sagging which will allow water and debris to build up. Louvered Covers of widths of 450mm and above are supplied with Bracing Kits (CBK) (see Bracing Kit Section).

Cover Type: CL



Straight Ladder
Louvered Cover

Finishes & Materials: GY GA SS GX GW

Peaked Covers

Peaked Covers are closed covers which are formed into a peak with an overall height of 50mm to shed sand, snow, water etc.

Cover Type: CP

Finishes & Materials: GY GA SS GX GW

Cover Fixing Kits

Speedway covers are supplied complete with the required number of cover fixing kits (VCF3). The cover fixing kits are common to closed, louvered and peaked covers. The covers are secured to the ladder using pre-punched slots which are incorporated into the flanges of all Speedway ladder and fittings.

VCF3-G Cover Fixing Kit

M6x12-BN-GA	M6x12mm Roofing Bolt & Nut
M6-SW-GA	M6 Internal Shake Proof Washer

VCF3-S Cover Fixing Kit

M6X12-PHS-SS-A4	M6x12mm Pan Head Screw
M6-FW-SS-A4	M6 Flat Washer
M6-SW-SS-A4	M6 Internal Shake Proof Washer
M6-HN-SS-A4	M6 Hex Nut

It is recommended that additional cover kits are ordered to suit contingency requirements during installation (5% is suggested).

The number of fixing kits for securing the cover to the ladder or fitting supplied with each type of cover is given in the following table:

Straight Ladder & Fitting Type	Quantity of Cover Fixing Kits
Straight Ladder	8
Flat Elbows	6
Inside & Outside Risers	1 per facet* with a minimum of 4
Equal & Unequal Tees	9
Crosses	12
Reducers	4

* N° of facets = N° of rungs plus 1. See Risers for details.

VCF3-SS Cover fixing kit shown securing cover to Speedway cable ladder

HOW TO ORDER

SW - CC - SL1.5 - 600 - GA - 1.2

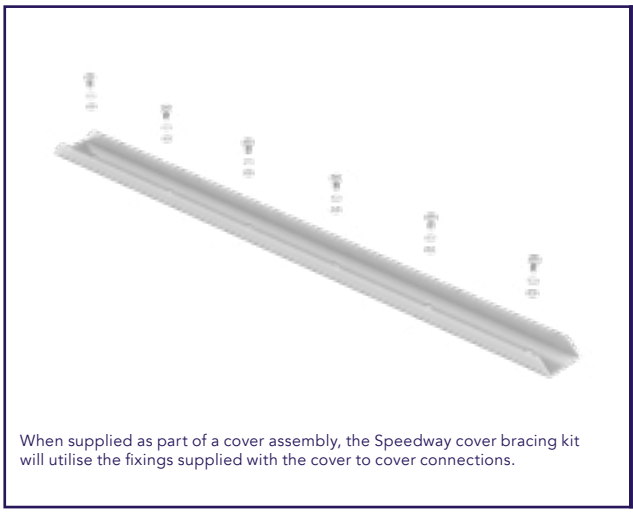
System Type | Cover Type | Ladder Type | Width | Finish | Gauge

Bracing Kits

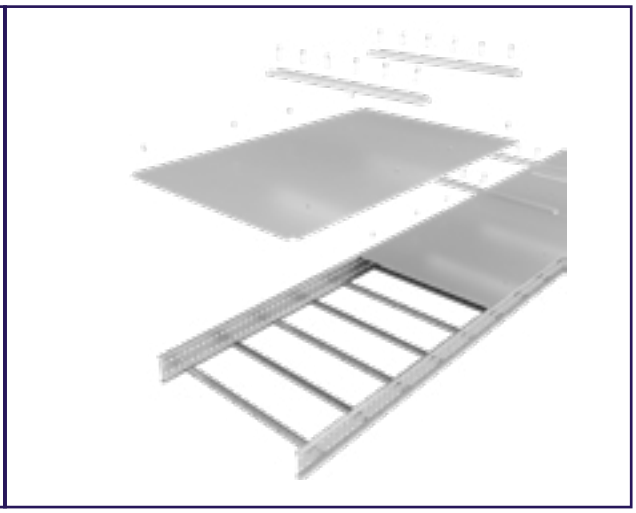
Bracing kits are provided for additional strengthening of closed and louvered covers for all widths of 450mm and above. Bracing kits are not required for covers of widths less than 300mm.

All closed and louvered covers of widths 450mm and above have pre-formed M6 threaded fixing holes as standard to accept the fixings for the bracing kits.

It is recommended that additional bracing fixing kits are ordered to suit contingency requirements during installation (10% is suggested).



When supplied as part of a cover assembly, the Speedway cover bracing kit will utilise the fixings supplied with the cover to cover connections.



VCF3-G Bracing Fixing Kit

M6x12-BN-GA	M6x12mm Roofing Bolt & Nut
M6-SW-GA	M6 Internal Shake Proof Washer

* = Supplied but not used

VCF8-S Bracing Fixing Kit

M6x12-PHS-SS-A4	M6x12mm Pan Head & Screw
M6-SW-SS-A4	M6 Internal Shake Proof Washer
M6-FW-SS-A4	M6 Flat Washer

The following table gives the number of bracing kits supplied for each type of ladder & fitting cover:

Ladder & Fitting Type	Number of Bracing Kits		
Straight ladder	Widths ≥ 450mm		2 per 1.5m cover
30° Flat Elbows	Widths ≥ 450mm	Radius ≤ 600mm	2 per cover
	Widths ≥ 450mm	Radius > 600mm	2 per cover
45° Flat Elbows	Widths ≥ 450mm	Radius ≤ 600mm	2 per cover
	Widths ≥ 450mm	Radius > 600mm	2 per cover
60° Flat Elbows	Widths ≥ 450mm	Radius ≤ 600mm	2 per cover
	Widths ≥ 450mm	Radius > 600mm	4 per cover
90° Flat Elbows	Widths ≥ 450mm	Radius ≤ 600mm	2 per cover
	Widths ≥ 450mm	Radius > 600mm	4 per cover
Inside Risers Outside Risers	Not Required		
Equal & Unequal Tees	All Widths ≥ 450mm	Radius ≤ 600mm	2 for Main Branch 1 for Side Branch
		Radius > 600mm	4 for Main Branch 2 for Side Branch
Crosses	All Widths ≥ 450mm	Radius ≤ 600mm	4 per cover
		Radius > 600mm	8 per cover
Reducers	Not Required		

It is recommended that additional bracing kits are ordered to suit contingency requirements during installation (5% is suggested).

VANTRUNK CABLE-TRAY

SECTION 02: THE FASTEST CABLE TRAY SYSTEM

A full range of perforated cable tray products manufactured to the highest standards, offering time saving and adaptable designs, practical slot patterns and versatile accessories.

Flexible Solutions

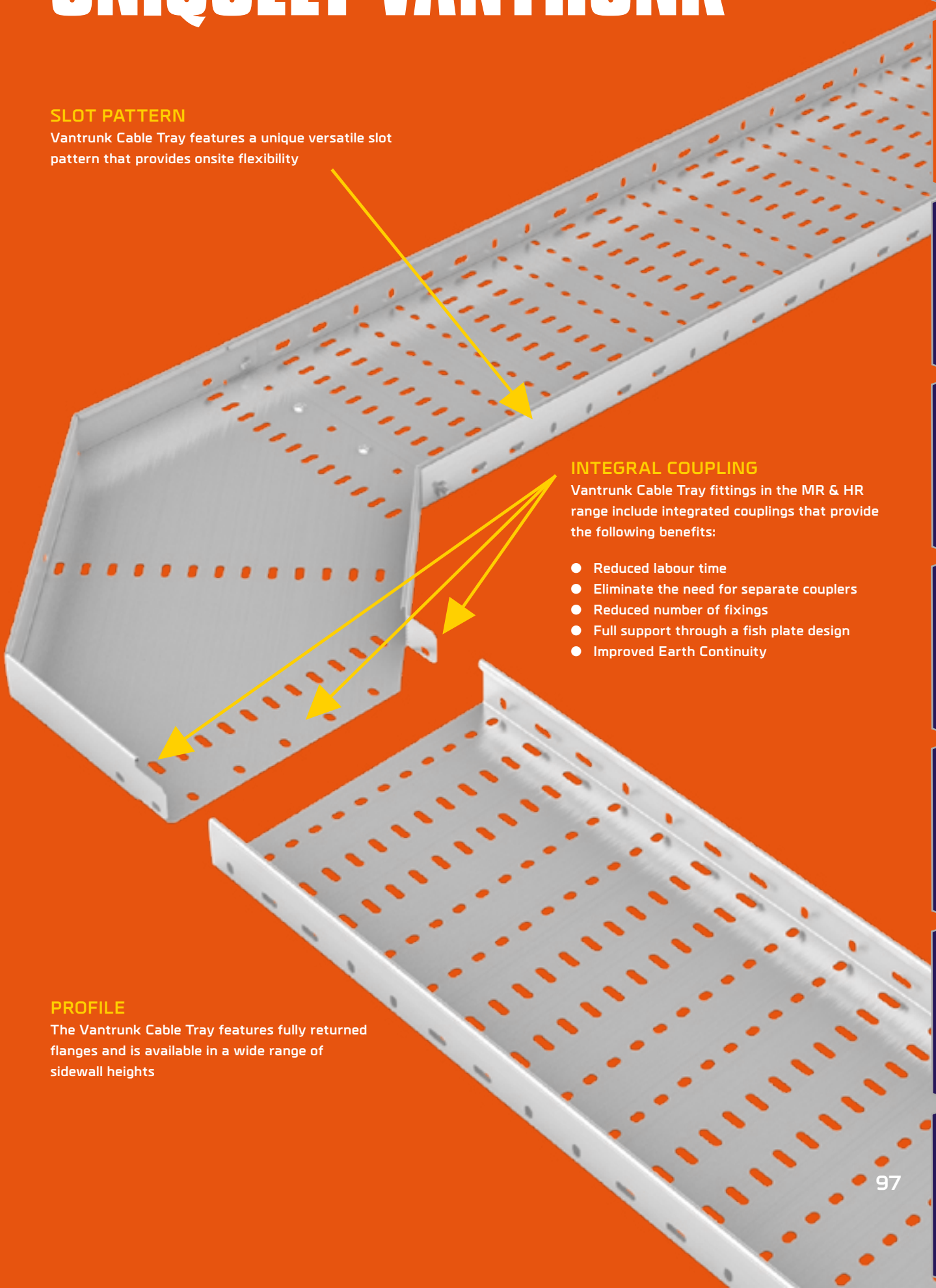
Rapid Installation Systems

Withstands extreme temperatures (-50° to +50°C)

UNIQUELY VANTRUNK

SLOT PATTERN

Vantrunk Cable Tray features a unique versatile slot pattern that provides onsite flexibility



INTEGRAL COUPLING

Vantrunk Cable Tray fittings in the MR & HR range include integrated couplings that provide the following benefits:

- Reduced labour time
- Eliminate the need for separate couplers
- Reduced number of fixings
- Full support through a fish plate design
- Improved Earth Continuity

PROFILE

The Vantrunk Cable Tray features fully returned flanges and is available in a wide range of sidewall heights

HOW TO ORDER

CODE SYSTEM EXPLAINED

The information given on these pages should be used as a guide when ordering cable tray, fittings, covers and accessories. For more detailed information and examples refer to the relevant page within the catalogue.

Straight Cable Tray

System Type	Tray Length	Width	Finish & Material	Gauge

eg. HR – SL3 – 050 – GA – 0.9

Cable Tray, Heavy Duty, Straight Length, 3000mm Long, 50mm Wide, Hot Dip Galvanised, 0.9mm.

Cable Tray Fittings

System Type	Fitting Type	Width(s)	Radius	Finish & Material	Gauge

eg. WO – FB90 – 200 – 150R – SS – 1.5

Cable Tray, 100mm SideWall, Flat Bend 90°, 200mm Wide, 150mm Rad, Grade 1.4404 (316L) Stainless Steel, 1.5mm.

Cable Tray Accessories

System Type	Accessory Type	Finish & Material	Gauge

eg. HR – DF – GA – 0.9

Cable Tray, Heavy Duty, Divider Straight Length, 3000mm Long, Hot Dip Galvanised.

Straight Cable Tray Covers

System Type	Cover Type	Tray Type	Width	Finish & Material	Gauge

eg. HR – CC – SL3 – 050 – GA – 0.9

Cable Tray, Heavy Duty, Closed Cover, Straight Length, 3000mm Long, 50mm Wide, Hot Dip Galvanised, 0.9mm.

Cable Tray Ftting Covers (Include the Radius detail if a non-standard radius fitting is required)

System Type	Cover Type	Cover Length	Width	Radius	Finish & Material	Gauge

eg. WO – CV – FB90 – 200 – 150R – SS – 1.5

Cable Tray, 100mm SideWall, Raised Cover, Flat Bend 90°, 200mm Wide, 150mm Rad, Grade 1.4404 (316L) Stainless Steel, 1.5mm.

Couplers

System Type	Coupler Type	Finish & Material	Gauge

eg. HR – FBC – GX – 3.0

Cable Tray, Heavy Duty, Flat Bar Coupler, Silicon Rich Structural Steel, Deep Hot Dip Galvanised.

VANTRUNK CABLE-TRAY SYSTEMS

System Type (▲)

		Page
TR	Compatible with all Tray systems	
MR	Medium Duty Return Flange Cable Tray	101
HR	Heavy Duty Return Flange Cable Tray	101

For HR Cable Tray with sidewall heights other than 50mm, please consult Page 226

Tray Length

		Page
SL3	Straight Length – 3m	101

Fitting Type

		Page
FB30	Flat Bend 30°	104
FB45	Flat Bend 45°	104
FB60	Flat Bend 60°	105
FB90	Flat Bend 90°	105
VR30	Variable Riser 30°	107
VR45	Variable Riser 45°	107
VR60	Variable Riser 60°	108
VR90	Variable Riser 90°	108
ET	Equal Tee	111
UT	Unequal Tee (add main width Wm & branch width Wb)	112
FW	Four Way (Equal Cross)	115
SR	Straight Reducer (add primary width Wp & secondary width Ws)	117
LR	Left Reducer (add primary width Wp & secondary width Ws)	118
RR	Right Reducer (add primary width wWp & secondary width Ws)	119

Width (standard)

50mm, 75mm, 100mm, 150mm, 200mm, 225mm, 300mm, 450mm, 600mm, 750mm, 900mm

Radius (standard)

75mm (for widths below 200mm)
150mm (for widths 200mm and above)
300mm (for risers)

Coupler Type

		Page
FBC	Flat Bar Coupler	121
SC	Straight coupler (wrap-over type)	121
FHAC	Flat Horizontal Adjustable Coupler	122
FVAC	Flat Vertical Adjustable Coupler	122
CC	Cranked Coupler	123
FP	Fish Plate coupler (add width)	123

Accessory Type

		Page
EBS-05	Earth Bonding Strap	125
HDB	Hold Down Bracket	126
CB	Conduit Take-Off Bracket (add size 20 = 20mm or 25 = 25mm)	129
EP	End plate (add width)	129
DF	Straight Tray Divider	130
DF-FL-0.6	Tray Fitting Divider	130
DF-VR	Tray Riser Divider (add angle)	131

Cover Type

		Page
CC	Closed cover (plain close-fitting cover)	132
CV	Ventilated cover (plain raised cover)	132

Supports

		Page
SOB	Stand-off Bracket	137
OHB	Overhead Hanger Bracket	137
FBH	Flat Bar Hanger	138
THB	Trapeze Hanger Bracket	139
TCA	Tray Cantilever Arm	140

Further Guidance

Please contact our Sales Team for further advice and guidance on the correct ordering details for the full range of Vantrunk Cable Tray, fittings and accessories.

Finish & Materials (⬢)

- **GW** — DEEP GALVANISED STRUCTURAL STEEL
- **GA** — HOT DIPPED GALVANISED CARBON STEEL
- **GX** — DEEP GALVANISED SILICON RICH STRUCTURAL STEEL
- **SS** — MARINE GRADE STAINLESS STEEL

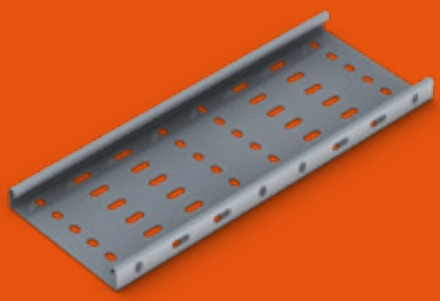
Details on the full range of standard Finishes and Materials are given in the Finish and Materials Section (page 23) and Engineering Data Section (page 210).

VANTRUNK CABLE-TRAY

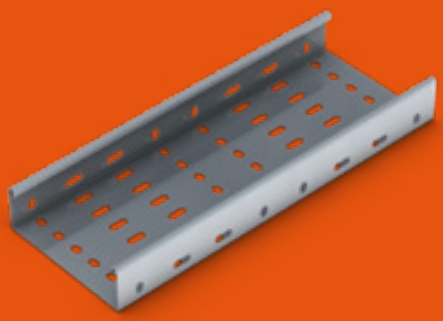
STRAIGHT LENGTHS

The Vantrunk Cable Tray System is manufactured in two profiles as standard based around two different side wall heights, each of which gives the cable tray its specific load carrying capabilities.

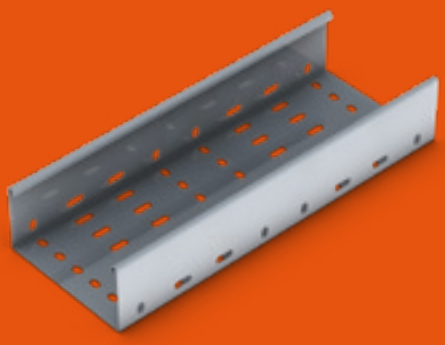
Medium Duty Return Flange Cable tray system has a side wall height of 25mm.

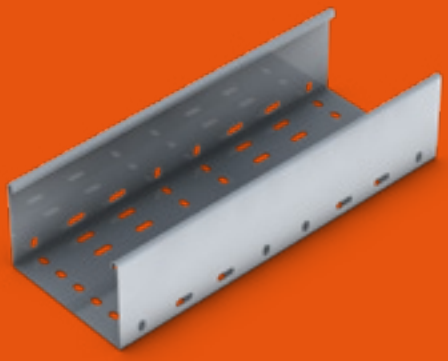


Heavy Duty Return Flange Cable tray system has a side wall height of 50mm as standard.



Other Heavy Duty sidewall heights from 30mm to 150mm are available to order – consult our Sales Team for details.





For further details on sidewall heights refer to the Engineering Data Section (Page 226) within this catalogue.

HOW TO ORDER

MR – SL3 – 050 – GA – 0.9

System Type | Tray Type | Width | Finish | Gauge

LENGTHS

Straight Tray

Vantrunk Cable Tray is available in widths from 50mm to 900mm. The width is measured internally between the side walls.

Vantrunk Straight Cable Tray is available in standard lengths of 3m.

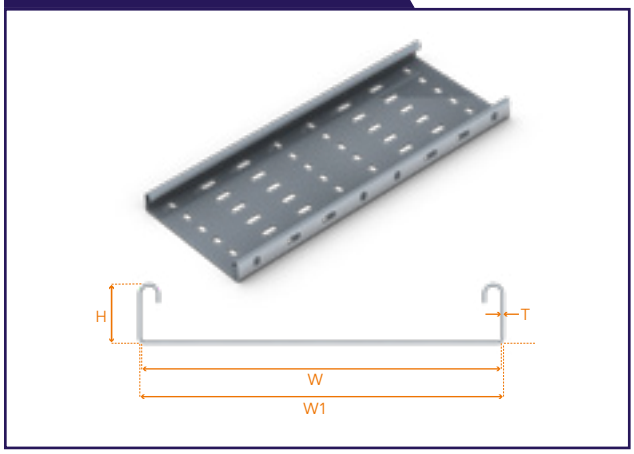
The Vantrunk Cable Tray features a slot pattern which is standard across the range of cable trays. Based on a repeating pattern of 12mm by 8mm width wise slots and 20mm by 8mm length wise, the Vantrunk Cable Tray slot pattern suits cable ties, banding and cable cleats with M6 fixings. See the Cable Tray Engineering Section for details.

Vantrunk Medium Duty return flange Cable Tray is suitable for applications where medium duty cable loads are to be supported over short to medium spans. Vantrunk Heavy Duty return flange cable tray is suitable for applications where heavy duty cable loads are to be supported over longer spans.

Medium Duty Return Flange Straight Tray

Gauge & weights are given for the hot dip galvanised mild steel cable tray. Refer to the Engineering Data Section (Page 227) for other materials and gauges.

System Type: MR-SL3



Part Number	Tray Width mm	W mm	W1 mm	H mm	T mm	Weight (kg)
MR-SL3-50-⬡	50	50	51.8	25	0.9	2.48
MR-SL3-75-⬡	75	75	76.8			3.00
MR-SL3-100-⬡	100	100	101.8			3.52
MR-SL3-150-⬡	150	150	151.8			4.56
MR-SL3-200-⬡	200	200	201.8			5.60
MR-SL3-225-⬡	225	225	226.8			6.12
MR-SL3-300-⬡	300	300	302.4		1.2	10.24

⬡ = Select a Finish & Material

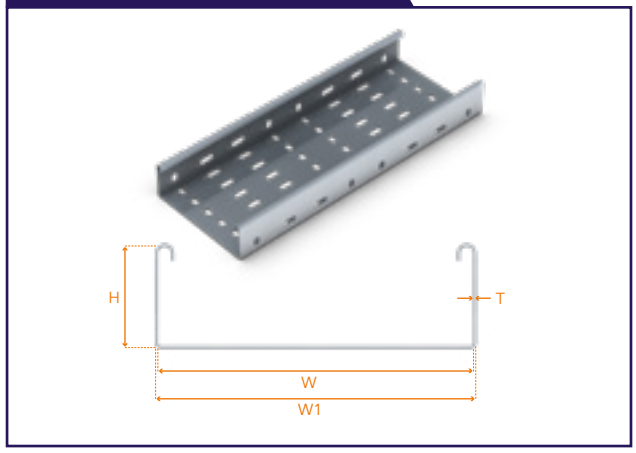
Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x0

Heavy Duty Return Flange Straight Tray

Gauge & weights are given for the hot dip galvanised mild steel cable tray, with a standard side wall height of 50mm. Refer to the Engineering Data Section (Page 227) for other materials and gauges.

System Type: HR-SL3



Part Number	Tray Width mm	W mm	W1 mm	H mm	T mm	Weight kg
HR-SL3-50-⬡	50	50	51.8	50	0.9	3.61
HR-SL3-75-⬡	75	75	76.8			4.13
HR-SL3-100-⬡	100	100	101.8			4.65
HR-SL3-150-⬡	150	150	151.8			5.69
HR-SL3-200-⬡	200	200	202.4		1.2	8.97
HR-SL3-225-⬡	225	225	227.4			9.67
HR-SL3-300-⬡	300	300	302.4			11.74

⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x0

VANTRUNK CABLE-TRAY

FITTINGS

The Vantrunk Cable Tray system comprises of a full range of perforated cable tray fittings that provide changes in direction, changes in width and can be used to create intersections between straight runs. Vantrunk cable tray fittings feature an integral coupler.

The range of Cable Tray fittings includes Flat Bends, Risers, Equal & Unequal Tees, Four Ways and Reducers.

Vantrunk Cable Tray fittings are available in widths of 50mm to 900mm. The width is measured externally between the side walls to facilitate the use of the integral coupler.

The Medium Duty Return Flange fittings have a nominal sidewall height of 25mm and standard Heavy Duty Return Flange fittings have a nominal sidewall height of 50mm. Other heavy duty sidewall heights from 30mm to 150mm are available to order.

Vantrunk Cable Tray Risers are supplied with a radius of 300mm as standard whereas all other fittings are supplied with a radius of 75mm for widths up to and including 150mm and a nominal internal radius of 150mm for widths of 200mm and above. Other radii are available to order.

VANTRUNK RIS

VANTRUNK CABLE-TRAY

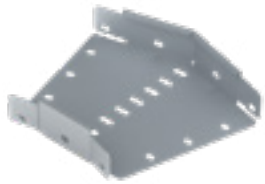
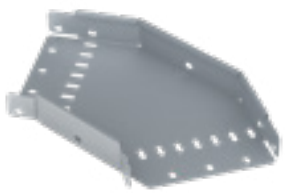
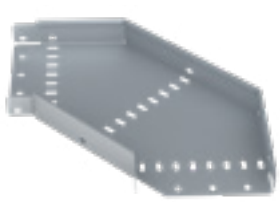
FLAT BENDS

Flat Bends are used to create fixed angular changes in direction in the same plane, between horizontal cable tray runs when the cable tray is installed in the horizontal plane and between vertical cable tray runs when the cable tray is installed in the vertical plane.

Vantrunk Cable Tray Flat Bends are available in fixed angles of 30°, 45°, 60° and 90° as standard.

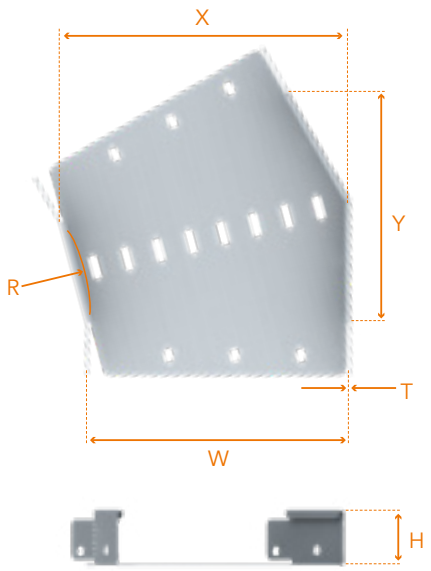
Vantrunk Cable Tray Flat Bends have a nominal internal radius of 75mm for widths up to and including 150mm and a nominal internal radius of 150mm for widths of 200mm and above. Other radii are available to order.

Information shown is for Heavy Duty Return Flange Flat Bends, data for other sidewall heights available on request.

HR-FB30	HR-FB45	HR-FB60	HR-FB90
			

Heavy Duty Return Flange 30° Flat Bend

Fitting Type: HR-FB30



Part Number	Width W mm	T mm	R mm	X mm	Y mm	Weight (kg)
HR-FB30-50-75R-⬡	50	0.9	75	61	63	0.12
HR-FB30-75-75R-⬡	75			86	75	0.16
HR-FB30-100-75R-⬡	100			111	88	0.19
HR-FB30-150-75R-⬡	150			161	113	0.27
HR-FB30-200-150R-⬡	200	1.2	150	221	175	0.61
HR-FB30-225-150R-⬡	225			246	188	0.67
HR-FB30-300-150R-⬡	300			321	225	0.92

Gauge & weights are given for the hot dip galvanised mild steel cable tray, with a nominal standard sidewall height of 50mm. Refer to the Engineering Data Section (Page 227) for other materials and gauges.

⬡ = Select a Finish & Material

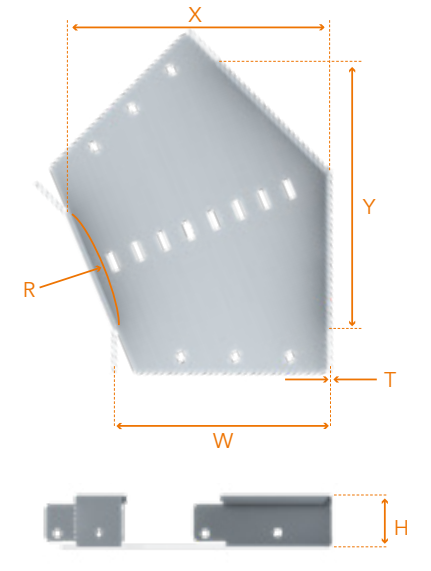
Finishes & Materials: GA SS GX GW

Supplied with: SEE ENGINEERING DATA FOR NUMBER OF FIXINGS

Not Required:

Heavy Duty 45° Flat Bend

Fitting Type: HR-FB45



Part Number	Width W mm	T mm	R mm	X mm	Y mm	Weight kg
HR-FB45-50-75R-⬡	50	0.9	75	72	89	0.16
HR-FB45-75-75R-⬡	75			97	107	0.2
HR-FB45-100-75R-⬡	100			122	124	0.25
HR-FB45-150-75R-⬡	150			172	160	0.35
HR-FB45-200-150R-⬡	200	1.2	150	224	248	0.83
HR-FB45-225-150R-⬡	225			269	266	0.94
HR-FB45-300-150R-⬡	300			344	319	1.29

Gauge & weights are given for the hot dip galvanised mild steel cable tray, with a nominal standard sidewall height of 50mm. Refer to the Engineering Data Section (Page 227) for other materials and gauges.

⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: SEE ENGINEERING DATA FOR NUMBER OF FIXINGS

Not Required:

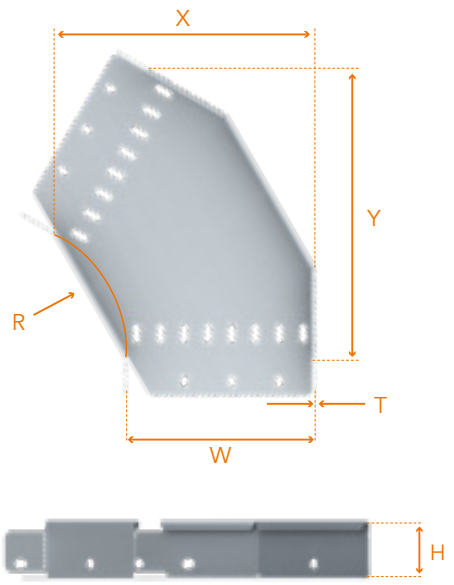
HOW TO ORDER

HR – FB30 – 050 – 075R – GA – 0.9

System Type | Fitting Type | Width | Radius | Finish | Gauge

Heavy Duty 60° Flat Bend

Fitting Type: HR-FB60



Part Number	Width W mm	T mm	R mm	X mm	Y mm	Weight (kg)
HR-FB60-50-75R-⬡	50	0.9	75	88	109	0.18
HR-FB60-75-75R-⬡	75			113	130	0.24
HR-FB60-100-75R-⬡	100			138	152	0.29
HR-FB60-150-75R-⬡	150			188	195	0.42
HR-FB60-200-150R-⬡	200	1.2	150	275	304	1.02
HR-FB60-225-150R-⬡	225			300	325	1.13
HR-FB60-300-150R-⬡	300			375	390	1.56

Gauge & weights are given for the hot dip galvanised mild steel cable tray, with a nominal standard sidewall height of 50mm. Refer to the Engineering Data Section (Page 227) for other materials and gauges.

⬡ = Select a Finish & Material

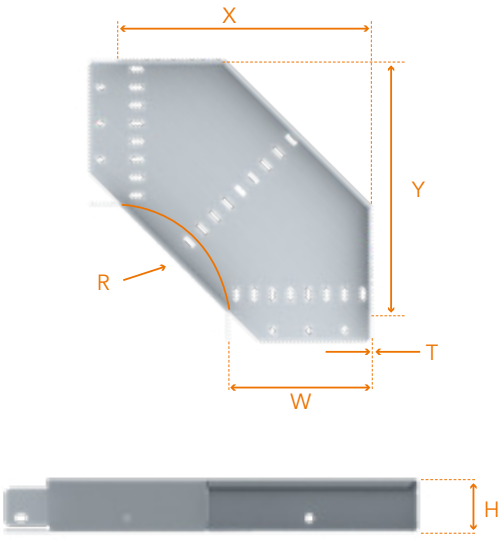
Finishes & Materials: GA SS GX GW

Supplied with: SEE ENGINEERING DATA FOR NUMBER OF FIXINGS

Not Required:

Heavy Duty 90° Flat Bend

Fitting Type: HR-FB90



Part Number	Width W mm	T mm	R mm	X mm	Y mm	Weight kg
HR-FB90-50-75R-⬡	50	0.9	75	125	125	0.25
HR-FB90-75-75R-⬡	75			150	150	0.32
HR-FB90-100-75R-⬡	100			175	175	0.41
HR-FB90-150-75R-⬡	150			225	225	0.59
HR-FB90-200-150R-⬡	200	1.2	150	350	350	1.5
HR-FB90-225-150R-⬡	225			375	375	1.69
HR-FB90-300-150R-⬡	300			450	450	2.32

Gauge & weights are given for the hot dip galvanised mild steel cable tray, with a nominal standard sidewall height of 50mm. Refer to the Engineering Data Section (Page 227) for other materials and gauges.

⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: SEE ENGINEERING DATA FOR NUMBER OF FIXINGS

Not Required:

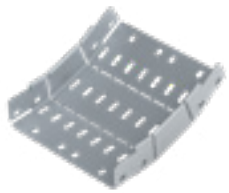
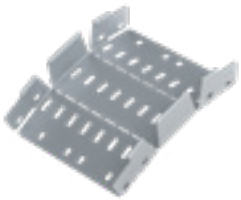
HOW TO ORDER: HR (System Type) - FB90 (Fitting Type) - 300 (Width) - 300R (Radius) - SS (Finish) - 1.5 (Gauge)

VANTRUNK CABLE-TRAY

RISERS

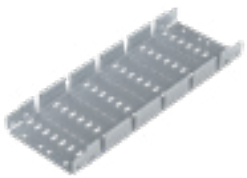
Risers are used to create angular changes in direction between cable tray runs in different planes and can be used in both the horizontal and vertical orientations.

Vantrunk Heavy Duty Return Flange Cable Tray Risers are specially designed to create angular changes in direction to a set angles of 30°, 45°, 60° or 90° at a radius of 300mm, other radii are available to order.

	VR30	VR45	VR60	VR90
Inside				
Outside				

Vantrunk Medium Duty Return Flange Cable Tray Risers are designed as a full variable riser that can be formed from 0° to over 90° as both an inside (internal) riser or outside (external) riser. When formed to 90°, Medium Duty cable tray risers have a nominal radius of 300mm. Other radii are available to order.

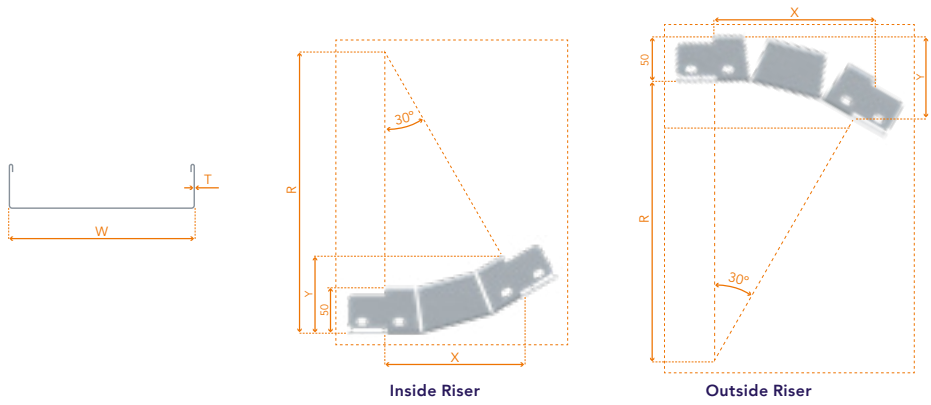
Depending on material and gauge Cable Tray Risers can be supplied flat as variable risers for forming to either an inside (internal) riser or an outside (external) riser or supplied as a pre-formed inside or outside riser to a fixed angle. Consult our Sales Team for further details.

Supplied Flat	Inside Riser	Outside Riser	Offset Riser
			

Variable risers can also be used to create offsets to suit particular site installation requirements. Information shown is for Heavy Duty Return Flange Risers, data for other sidewall heights available on request.

Heavy Duty 30° Variable Riser

Fitting Type: HR-VR30



Part Number	Width W mm	T mm	R mm	Inside Riser X	Inside Riser Y	Outside Riser X	Outside Riser Y	Weight (kg)
HR-VR30-50-300R-⬡	50	0.9	300	150	82	174	89	0.23
HR-VR30-75-300R-⬡	75							0.27
HR-VR30-100-300R-⬡	100							0.31
HR-VR30-150-300R-⬡	150							0.39
HR-VR30-200-300R-⬡	200	1.2						0.62
HR-VR30-225-300R-⬡	225							0.67
HR-VR30-300-300R-⬡	300							0.83

⬡ = Select a Finish & Material

Gauge & weights are given for the hot dip galvanised mild steel cable tray, with a nominal standard sidewall height of 50mm. Refer to the Engineering Data Section (Page 227) for other materials and gauges.

Finishes & Materials:

GA SS GX GW

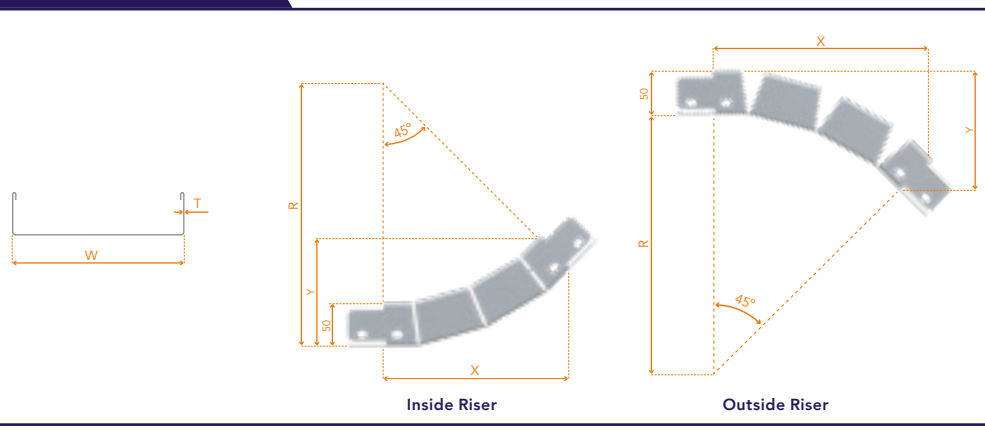
Supplied with:

SEE ENGINEERING DATA FOR NUMBER OF FIXINGS

Not Required:

Heavy Duty 45° Variable Riser

Fitting Type: HR-VR45



Part Number	Width W mm	T mm	R mm	Inside Riser X	Inside Riser Y	Outside Riser X	Outside Riser Y	Weight (kg)
HR-VR45-50-300R-⬡	50	0.9	300	213	122	246	136	0.31
HR-VR45-75-300R-⬡	75							0.37
HR-VR45-100-300R-⬡	100							0.42
HR-VR45-150-300R-⬡	150							0.52
HR-VR45-200-300R-⬡	200	1.2						0.84
HR-VR45-225-300R-⬡	225							0.91
HR-VR45-300-300R-⬡	300							1.12

⬡ = Select a Finish & Material

Gauge & weights are given for the hot dip galvanised mild steel cable tray, with a nominal standard sidewall height of 50mm. Refer to the Engineering Data Section (Page 227) for other materials and gauges.

Finishes & Materials:

GA SS GX GW

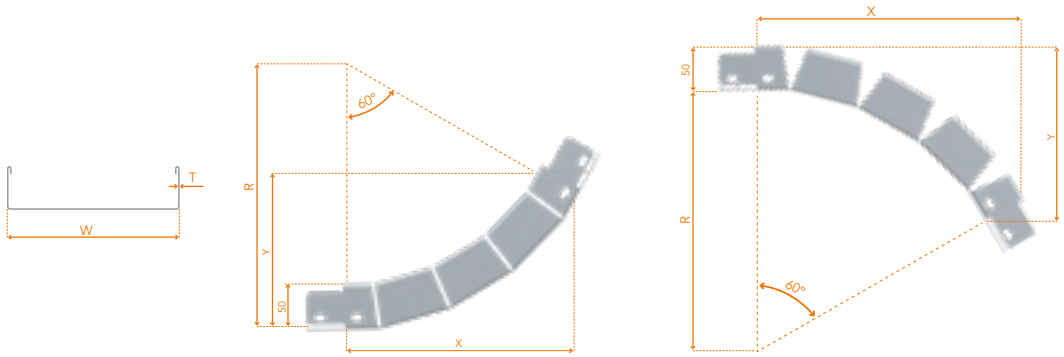
Supplied with:

SEE ENGINEERING DATA FOR NUMBER OF FIXINGS

Not Required:

Heavy Duty 60° Variable Riser

Fitting Type: HR-VR60



Part Number	Width W mm	T mm	R mm	Inside Riser X	Inside Riser Y	Outside Riser X	Outside Riser Y	Weight (kg)
HR-VR60-50-300R-⬡	50	0.9	300	261	175	301	198	0.40
HR-VR60-75-300R-⬡	75							0.46
HR-VR60-100-300R-⬡	100							0.53
HR-VR60-150-300R-⬡	150							0.66
HR-VR60-200-300R-⬡	200	1.2						1.05
HR-VR60-225-300R-⬡	225							1.14
HR-VR60-300-300R-⬡	300							1.41

⬡ = Select a Finish & Material

Gauge & weights are given for the hot dip galvanised mild steel cable tray, with a nominal standard sidewall height of 50mm. Refer to the Engineering Data Section (Page 227) for other materials and gauges.

Finishes & Materials:

GA SS GX GW

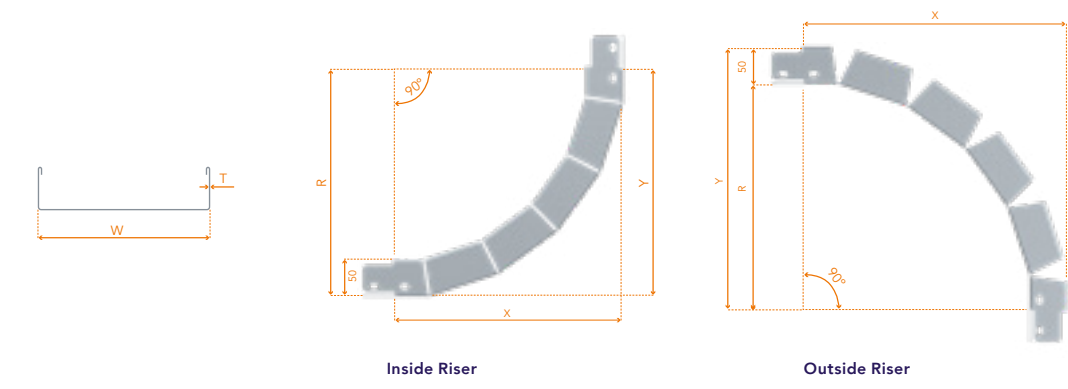
Supplied with:

SEE ENGINEERING DATA FOR NUMBER OF FIXINGS

Not Required:

Heavy Duty 90° Variable Riser

Fitting Type: HR-VR90



Part Number	Width W mm	T mm	R mm	Inside Riser X	Inside Riser Y	Outside Riser X	Outside Riser Y	Weight (kg)
HR-VR90-50-300R-⬡	50	0.9	300	300	300	350	350	0.57
HR-VR90-75-300R-⬡	75							0.67
HR-VR90-100-300R-⬡	100							0.76
HR-VR90-150-300R-⬡	150							0.95
HR-VR90-200-300R-⬡	200	1.2						1.51
HR-VR90-225-300R-⬡	225							1.64
HR-VR90-300-300R-⬡	300							2.02

⬡ = Select a Finish & Material

Gauge & weights are given for the hot dip galvanised mild steel cable tray, with a nominal standard sidewall height of 50mm. Refer to the Engineering Data Section (Page 227) for other materials and gauges.

Finishes & Materials:

GA SS GX GW

Supplied with:

SEE ENGINEERING DATA FOR NUMBER OF FIXINGS

Not Required:

HOW TO ORDER

HR - VR30 - 075 - 300R - GX - 1.5

System Type | Fitting Type | Width | Radius | Finish | Gauge

VANTRUNK

ENGINEERED FOR EXTREME ENVIRONMENTS

SANDBANK OFFSHORE WIND FARM

The Sandbank offshore wind farm is the second largest offshore wind farm project undertaken by Vattenfall in collaboration with Stadtwerke München. The wind farm extends over a total area of 66 square kilometres.

LOCATION

GERMAN NORTH SEA
90km off the coast of Sylt.

CLIENT

SEMCO maritime

$1.7bn
OVERALL COST OF PROJECT

FACT 1

288 MW
total installed capacity

FACT 2

72
turbines of 4MW class

FACT 3

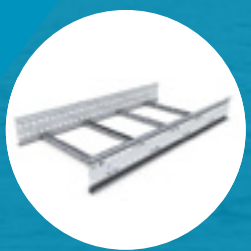
160m
total turbines height

130m
rotor diameter

FACT 4

Covers an area of
66 sq km
in German North Sea

PRODUCTS SUPPLIED



SPEEDWAY

INTELOK CHANNEL

VANTRUNK SPEEDWAY® EXTREME CABLE LADDER

Vantrunk's Speedway Cable Ladder and Intelok Support System provides a strong, reliable, easy to install solution providing overall cost savings throughout the project lifespan.

VANTRUNK CABLE-TRAY

CABLE TRAY TEES

Tees are used to create right angle connections in the same plane, between horizontal cable tray runs when the cable tray is installed in the horizontal plane and between vertical cable tray runs when the cable tray is installed in the vertical plane.

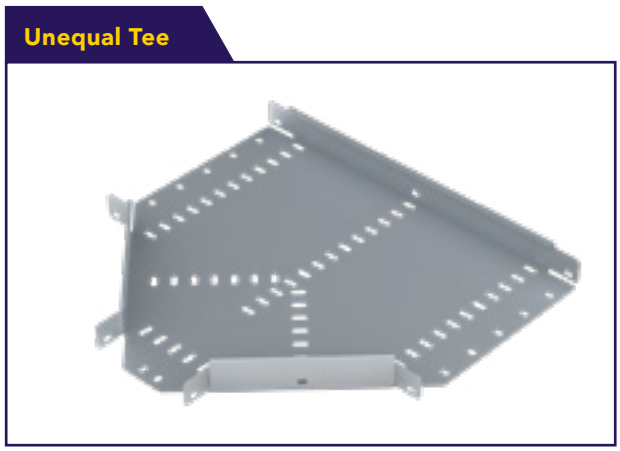
Vantrunk Cable Tray Tees are available in combinations of widths of 50mm to 900mm. Tees with the same main & branch width are called Equal Tees (ET). Tees which have a different main width to the branch width are called Unequal Tees (UT).

Unequal/unequal tees, where all three exits are different, are available to order. Consult our Sales Team for further details.

Information shown is for Heavy Duty Return Flange tees, data for other sidewall heights available on request.

Equal Tee

Unequal Tee



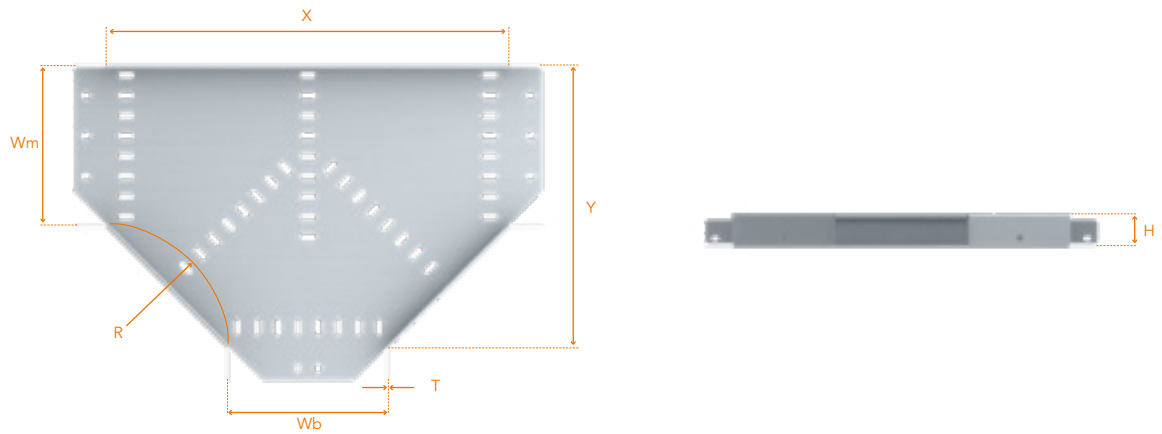
HOW TO ORDER HR – ET – 200 – 150R – SS – 1.0

System Type | Fitting Type | Width | Radius | Finish | Gauge

Heavy Duty Equal Tees

Vantrunk Heavy Duty Return Flange cable tray equal tees have a main width Wm and a branch width Wb which are identical.

Fitting Type: HR-ET



Part Number	Main Width Wm mm	Branch Width Wb mm	T mm	R mm	X mm	Y mm	Weight (kg)
HR-ET-50-75R-⬡	50	50	0.9	75	204	128	0.37
HR-ET-75-75R-⬡	75	75			229	153	0.47
HR-ET-100-75R-⬡	100	100			254	178	0.58
HR-ET-150-75R-⬡	150	150			304	228	0.8
HR-ET-200-150R-⬡	200	200	1.2	150	504	353	2.26
HR-ET-225-150R-⬡	225	225			529	378	2.51
HR-ET-300-150R-⬡	300	300			604	453	3.36

⬡ = Select a Finish & Material

Gauge & weights are given for the hot dip galvanised mild steel cable tray, with a nominal standard sidewall height of 50mm. Refer to the Engineering Data Section (Page 227) for other materials and gauges.

Finishes & Materials:

GA SS GX GW

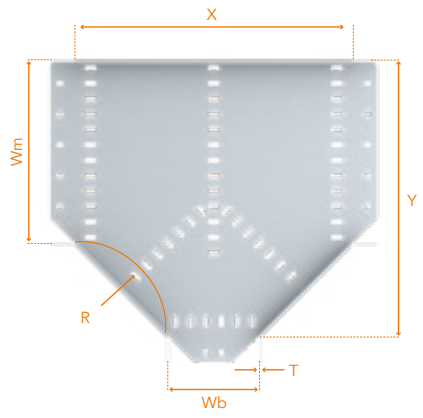
Supplied with:

SEE ENGINEERING DATA FOR NUMBER OF FIXINGS

Not Required:

Heavy Duty Unequal Tees

Fitting Type: HR-UT



Part Number	Main Width Wm mm	Branch Width Wb mm	T mm	R mm	X mm	Y mm	Weight (kg)
HR-UT-50-75-75R-⬡	50	75	0.9	75	229	128	0.42
HR-UT-50-100-75R-⬡		100			254	128	0.45
HR-UT-50-150-75R-⬡		150			304	128	0.54
HR-UT-50-200-150R-⬡		200	1.2	150	504	203	1.41
HR-UT-50-225-150R-⬡		225			529	203	1.49
HR-UT-50-300-150R-⬡		300			604	203	1.7
HR-UT-75-50-75R-⬡	75	50	0.9	75	204	153	0.43
HR-UT-75-100-75R-⬡		100			254	153	0.51
HR-UT-75-150-75R-⬡		150			304	153	0.6
HR-UT-75-200-150R-⬡		200	1.2	150	504	228	1.55
HR-UT-75-225-150R-⬡		225			529	228	1.64
HR-UT-75-300-150R-⬡		300			604	228	1.87
HR-UT-100-50-75R-⬡	100	50	0.9	75	204	178	0.48
HR-UT-100-75-75R-⬡		75			229	178	0.52
HR-UT-100-150-75R-⬡		150			304	178	0.66
HR-UT-100-200-150R-⬡		200	1.2	150	504	253	1.69
HR-UT-100-225-150-⬡		225			529	253	1.78
HR-UT-100-300-150R-⬡		300			604	253	2.03
HR-UT-150-50-75R-⬡	150	50	0.9	75	204	228	0.58
HR-UT-150-75-75R-⬡		75			229	228	0.63
HR-UT-150-100-75R-⬡		100			254	228	0.68
HR-UT-150-200-150R-⬡		200	1.2	150	504	303	1.98
HR-UT-150-225-150R-⬡		225			529	303	2.08
HR-UT-150-300-150R-⬡		300			604	303	2.35
HR-UT-200-50-150R-⬡	200	50	1.2	150	354	353	1.62
HR-UT-200-75-150R-⬡		75			379	353	1.72
HR-UT-200-100-150R-⬡		100			404	353	1.83
HR-UT-200-150-150R-⬡		200			454	353	2.04
HR-UT-200-225-150R-⬡		225			529	353	2.36
HR-UT-200-300-150R-⬡		300			604	353	2.69
HR-UT-225-50-150R-⬡	225	50	1.2	150	354	378	1.71
HR-UT-225-75-150R-⬡		75			379	378	1.83
HR-UT-225-100-150R-⬡		100			404	378	1.94
HR-UT-225-150-150R-⬡		150			454	378	2.17
HR-UT-225-200-150R-⬡		200			504	378	2.4
HR-UT-225-300-150R-⬡		300			604	378	2.86
HR-UT-300-50-150R-⬡	300	50	1.2	150	354	453	2.02
HR-UT-300-75-150R-⬡		75			379	453	2.15
HR-UT-300-100-150R-⬡		100			404	453	2.29
HR-UT-300-150-150R-⬡		150			454	453	2.56
HR-UT-300-200-150R-⬡		200			504	453	2.82
HR-UT-300-225-150R-⬡		225			529	453	2.95

Gauge & weights are given for the hot dip galvanised mild steel cable tray, with a nominal standard sidewall height of 50mm. Refer to the Engineering Data Section (Page 227) for other materials and gauges.

⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: SEE ENGINEERING DATA FOR NUMBER OF FIXINGS

Not Required:

HOW TO ORDER WO - UT - 200 - 050 - 150R - GA - 1.2

System Type | Fitting Type | Width | Branch Width | Radius | Finish | Gauge

VANTRUNK

ENGINEERED FOR EXTREME ENVIRONMENTS

SHAH DENIZ & SOUTH CAUCASUS PIPELINE EXPANSION

Shah Deniz Stage 2 Full Field Development is a giant project that will add a further 16 billion cubic metres per year (bcma) of gas production to the approximately 9 bcma produced by Shah Deniz Stage 1.

LOCATION

CASPIAN SEA
Azerbaijan & Georgia.

CLIENT

bp

$28bn
INVESTMENT

FACT 1

$28 billion
Investment for gas
production & transportation

FACT 2

Expansion of the existing Sangachal terminal and the addition of two new bridge linked offshore platforms

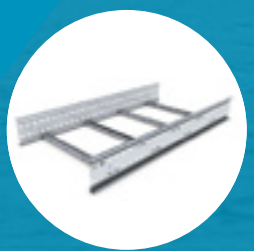
FACT 3

Construction of the South Caucasus Pipeline expansion scheme

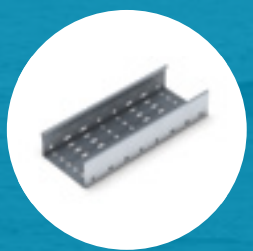
FACT 4

European energy security will be increased by Caspian gas in European markets for first time

PRODUCTS SUPPLIED



SPEEDWAY



HEAVY DUTY CABLE TRAY

VANTRUNK SPEEDWAY®
EXTREME CABLE LADDER

Vantrunk stainless Speedway cable ladder systems, cable tray systems and Intelok secondary support system.Vantrunk have supplied all five phases of the BP Azeri developments from 2002 to 2017.

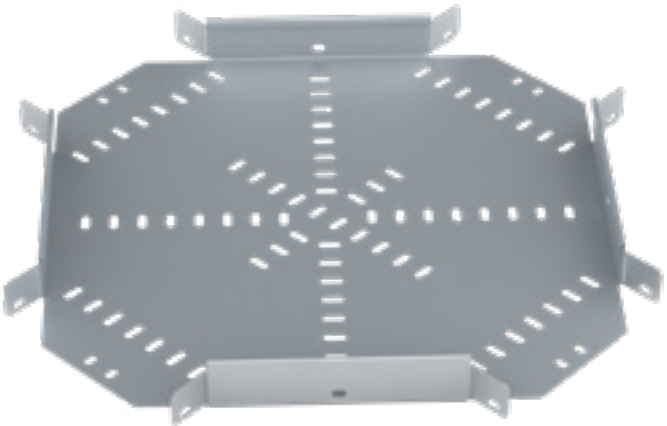
VANTRUNK CABLE-TRAY

FOUR WAYS

Four Ways are used to create right angle intersections in the same plane, between horizontal cable tray runs when the cable tray is installed in the horizontal plane and between vertical cable tray runs when the able tray is installed in the vertical plane.

Vantrunk Cable Tray Four Ways have a nominal internal radius of 75mm for widths up to and including 150mm and a nominal internal radius of 150mm for widths of 200mm and above. Other radii are available to order.

Information shown is for Heavy Duty Return Flange Four Ways, data for other sidewall heights available on request.



HOW TO ORDER

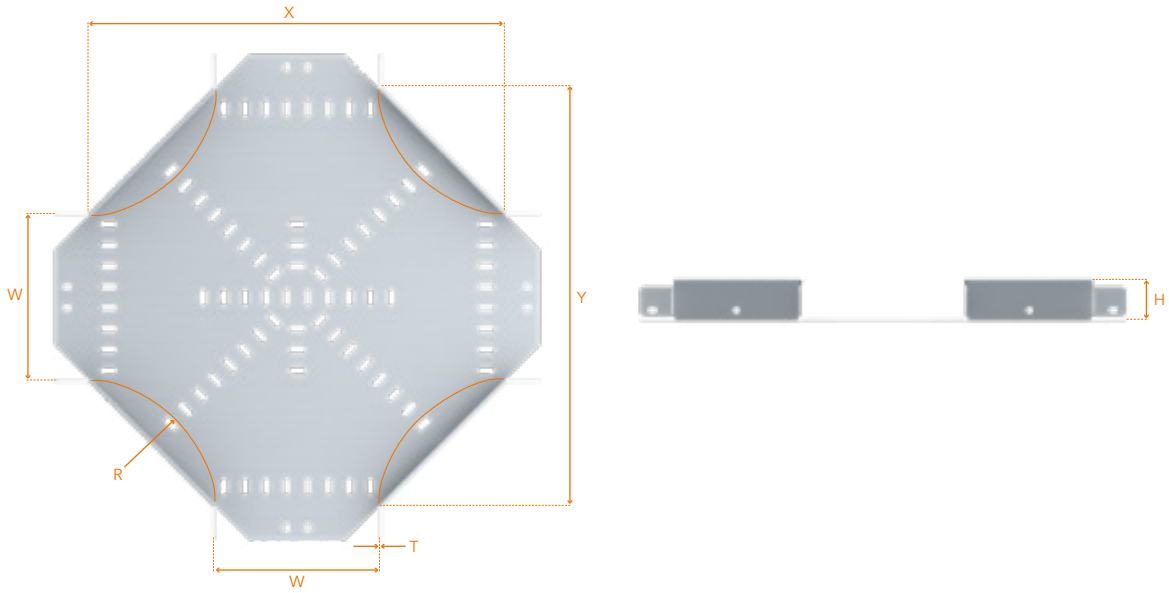
MR - EC - 100 - 75R - GA - 0.9

System Type | Fitting Type | Width | Radius | Finish | Gauge

Heavy Duty Four Ways

Vantrunk Heavy Duty Return Flange Cable Tray Four Ways have a main width W which is identical on all four cable entry/exit points.

Fitting Type: HR-FW



Part Number	Width W mm	T mm	R mm	X mm	Y mm	Weight (kg)
HR-FW-50-75R-⬡	50	0.9	75	210	210	0.46
HR-FW-75-75R-⬡	75				235	0.56
HR-FW-100-75R-⬡	100				260	0.66
HR-FW-150-75R-⬡	150				310	0.91
HR-FW-200-150R-⬡	200	1.2	150		510	2.77
HR-FW-225-150R-⬡	225				535	3.05
HR-FW-300-150R-⬡	300				610	3.98

⬡ = Select a Finish & Material

Gauge & weights are given for the hot dip galvanised mild steel cable tray, with a nominal standard sidewall height of 50mm. Refer to the Engineering Data Section (Page 227) for other materials and gauges.

Finishes & Materials:

GA SS GX GW

Supplied with:

SEE ENGINEERING DATA FOR NUMBER OF FIXINGS

Not Required:

REDUCERS - STRAIGHT, LEFT & RIGHT

Reducers are used to create a reduction in width along the cable tray run.

Straight reducers (SR) are used to create a concentric reduction, having an equal width reduction on both sides. Left hand reducers (LR) and right hand reducers (RR) are used to create offset reductions to suit particular site installation requirements.

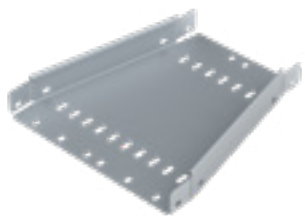
Left hand reducers have the width reduction on the left when viewed from the primary width and right hand reducers have the width reduction on the right when viewed from the primary width.

Vantrunk cable tray Straight reducers are available in any combination of widths from 900mm to 75mm and from 450mm to 50mm as standard. Offset reducers are available in any combination of widths, from 900mm to 50mm.

Vantrunk cable tray reducers have a standard length of 250mm.

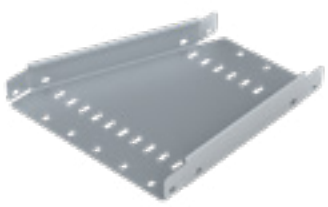
Information shown is for Heavy Duty Return Flange Reducers, data for other sidewall heights available on request.

Straight Reducers



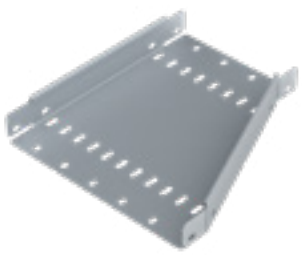
Vantrunk Heavy Duty Return Flange Cable Tray Straight Reducers

Left Hand Reducers



Vantrunk Heavy Duty Return Flange Cable Tray Left Hand Reducers

Right Hand Reducers



Vantrunk Heavy Duty Return Flange Cable Tray Right Hand Reducers

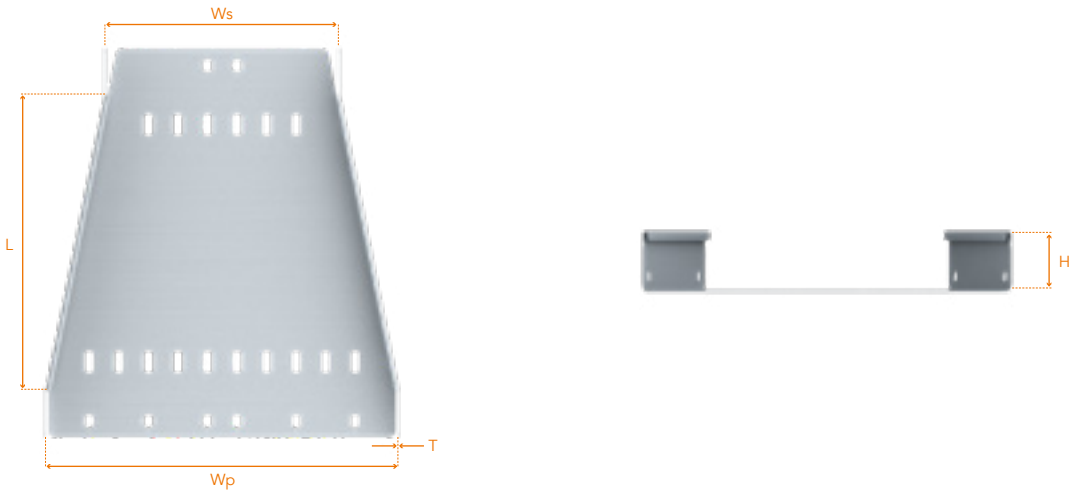
HOW TO ORDER HR - SR - 450 - 050 - GW - 1.5

System Type | Fitting Type | Primary Width | Secondary Width | Finish | Gauge

Heavy Duty Straight Reducer

Straight reducers (RS) are used to create a concentric reduction, having an equal width reduction along both sides.

Fitting Type: HR-SR



Part Number	Primary Width Wp mm	Secondary Width Ws mm	T mm	L mm	Weight (kg)
HR-SR-75-50⬡	75	50	0.9	250	0.39
HR-SR-100-50⬡	100	50	0.9	250	0.42
HR-SR-100-75⬡		75			0.45
HR-SR-150-50⬡	150	50	0.9	250	0.47
HR-SR-150-75⬡		75			0.5
HR-SR-150-100⬡		100			0.54
HR-SR-200-50⬡	200	50	1.2	250	0.72
HR-SR-200-75⬡		75			0.75
HR-SR-200-100⬡		100			0.79
HR-SR-200-150⬡		150			0.87
HR-SR-225-50⬡	225	50	1.2	250	0.76
HR-SR-225-75⬡		75			0.8
HR-SR-225-100⬡		100			0.83
HR-SR-225-150⬡		150			0.92
HR-SR-225-200⬡		200			1
HR-SR-300-50⬡	300	50	1.2	250	0.89
HR-SR-300-75⬡		75			0.93
HR-SR-300-100⬡		100			0.96
HR-SR-300-150⬡		150			1.04
HR-SR-300-200⬡		200			1.11
HR-SR-300-225⬡		225			1.14

⬡ = Select a Finish & Material

Gauge & weights are given for the hot dip galvanised mild steel cable tray, with a nominal standard sidewall height of 50mm. Refer to the Engineering Data Section (Page 227) for other materials and gauges.

Finishes & Materials:

GA SS GX GW

Supplied with:

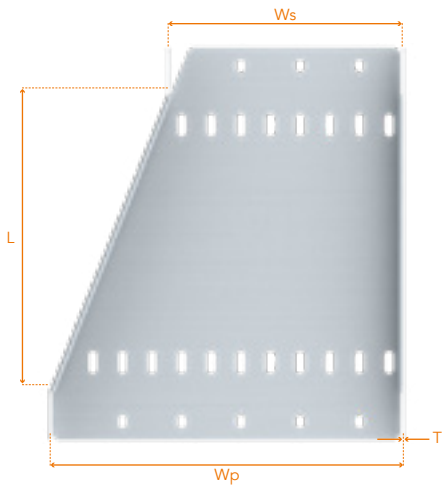
SEE ENGINEERING DATA FOR NUMBER OF FIXINGS

Not Required:

Heavy Duty Left Hand Reducer

Left hand reducers (LR) are used to create offset reductions to suit particular site installation requirements. Left hand reducers have the width reduction on the left when viewed from the primary width.

Fitting Type: HR-LR



Part Number	Primary Width Wp mm	Secondary Width Ws mm	T mm	L mm	Weight (kg)
HR-LR-75-50-⬡	75	50	0.9	250	0.4
HR-LR-100-50-⬡	100	50	0.9	250	0.43
HR-LR-100-75-⬡		75			0.46
HR-LR-150-50-⬡	150	50	0.9	250	0.49
HR-LR-150-75-⬡		75			0.52
HR-LR-150-100-⬡		100			0.55
HR-LR-200-50-⬡	200	50	1.2	250	0.75
HR-LR-200-75-⬡		75			0.78
HR-LR-200-100-⬡		100			0.81
HR-LR-200-150-⬡		150			0.89
HR-LR-225-50-⬡	225	50	1.2	250	0.79
HR-LR-225-75-⬡		75			0.82
HR-LR-225-100-⬡		100			0.86
HR-LR-225-150-⬡		150			0.93
HR-LR-225-200-⬡		200			1.01
HR-LR-300-50-⬡	300	50	1.2	250	0.94
HR-LR-300-75-⬡		75			0.97
HR-LR-300-100-⬡		100			1.01
HR-LR-300-150-⬡		150			1.07
HR-LR-300-200-⬡		200			1.13
HR-LR-300-225-⬡		225			1.17

⬡ = Select a Finish & Material

Gauge & weights are given for the hot dip galvanised mild steel cable tray, with a nominal standard sidewall height of 50mm. Refer to the Engineering Data Section (Page 227) for other materials and gauges.

Finishes & Materials:

GA SS GX GW

Supplied with:

SEE ENGINEERING DATA FOR NUMBER OF FIXINGS

Not Required:

HOW TO ORDER

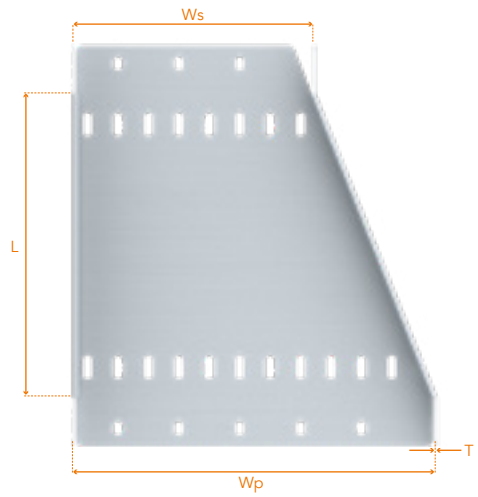
HR – RL – 300 – 050 – SS – 1.0

System Type | Fitting Type | Primary Width | Secondary Width | Finish | Gauge

Heavy Duty Right Hand Reducer

Right hand reducers (RR) are used to create offset reductions to suit particular site installation requirements. Right hand reducers have the width reduction on the right when viewed from the primary width.

Fitting Type: HR-RR



Part Number	Primary Width Wp mm	Secondary Width Ws mm	T mm	L mm	Weight (kg)
HR-RR-75-50-⬡	75	50	0.9	250	0.4
HR-RR-100-50-⬡	100	50	0.9	250	0.43
HR-RR-100-75-⬡		75			0.46
HR-RR-150-50-⬡	150	50	0.9	250	0.49
HR-RR-150-75-⬡		75			0.52
HR-RR-150-100-⬡		100			0.55
HR-RLR-200-50-⬡	200	50	1.2	250	0.75
HR-RR-200-75-⬡		75			0.78
HR-RR-200-100-⬡		100			0.81
HR-RR-200-150-⬡		150			0.89
HR-RR-225-50-⬡	225	50	1.2	250	0.79
HR-RR-225-75-⬡		75			0.82
HR-RR-225-100-⬡		100			0.86
HR-RR-225-150-⬡		150			0.93
HR-RR-225-200-⬡		200			1.01
HR-RR-300-50-⬡	300	50	1.2	250	0.94
HR-RR-300-75-⬡		75			0.97
HR-RR-300-100-⬡		100			1.01
HR-RR-300-150-⬡		150			1.07
HR-RR-300-200-⬡		200			1.13
HR-RR-300-225-⬡		225			1.17

⬡ = Select a Finish & Material

Gauge & weights are given for the hot dip galvanised mild steel cable tray, with a nominal standard sidewall height of 50mm. Refer to the Engineering Data Section (Page 227) for other materials and gauges.

Finishes & Materials:

GA SS GX GW

Supplied with:

SEE ENGINEERING DATA FOR NUMBER OF FIXINGS

Not Required:

VANTRUNK CABLE-TRAY

COUPLERS

A full range of couplers are available for the Vantrunk Cable Tray system, providing a secure and versatile means of connecting straight cable tray lengths.

Vantrunk supply two alternative methods of coupling straight lengths of tray together that both ensure a safe straight joint. Unless otherwise stated, the Flat Bar Coupler will be supplied as standard.

Vantrunk also supply a range of additional couplers including horizontal & vertical adjustable couplers which allow offsets to be made in cable tray runs to suit specific site installation requirements.

Information shown is for Heavy Duty Return Flange couplers, data for other sidewall heights is available on request.

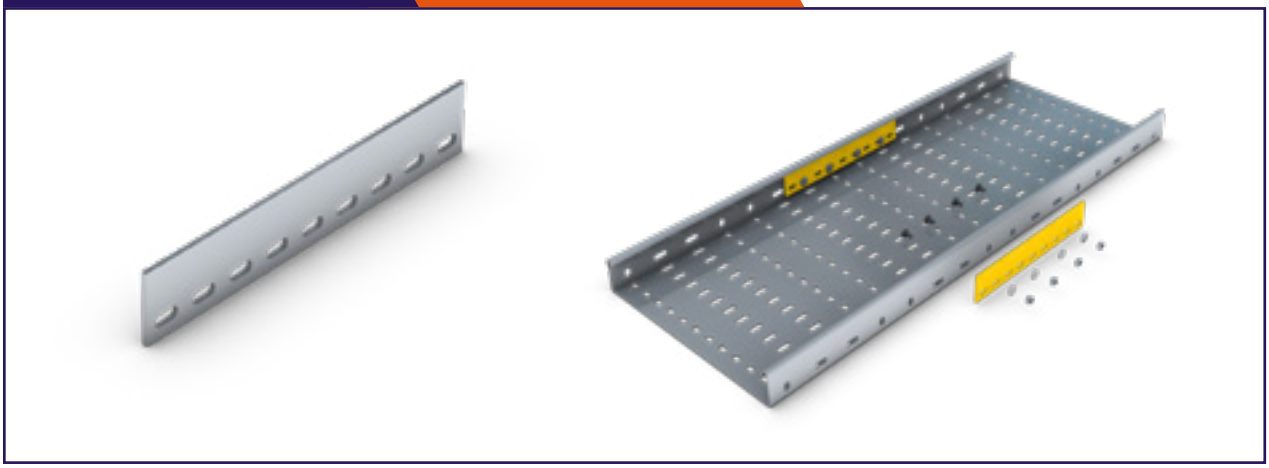
HOW TO ORDER

HR	-	FBC	-	SS	-	3.0
System Type		Coupler Type		Finish		Gauge

Heavy Duty Flat Bar Coupler

The Vantrunk Heavy Duty Return Flange cable tray flat bar coupler is the standard means of connecting straight lengths of cable tray and is available in the full range of sidewall heights to match that of the cable tray range. Unless otherwise specified, the flat bar coupler will be supplied as standard. Flat Bar Couplers are supplied individually and with fixings.

Fitting Type: HR-FBC | **Part Number: HR-FBC-⬡**



⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x4

Not Required:

Heavy Duty Straight Coupler

The Vantrunk heavy duty return flange cable tray straight coupler provides an effective means of connection between heavy duty return flange straight cable tray lengths. Straight Couplers are supplied as pairs and with fixings.

Fitting Type: HR-SC | **Part Number: HR-SC-⬡**

⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

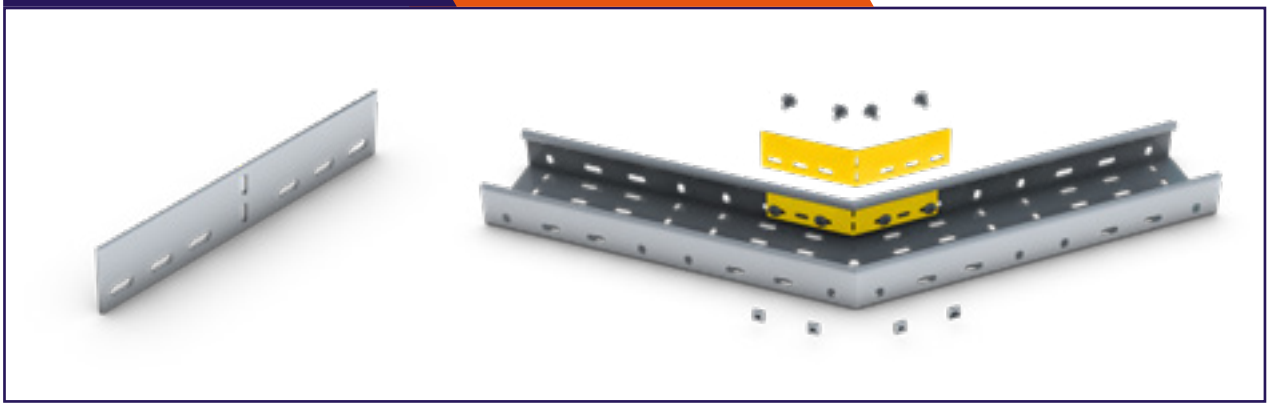
Supplied with: FIXING SETS x8

Not Required:

Heavy Duty Flat Horizontal Adjustable Coupler

The Vantrunk Heavy Duty Return Flange cable tray horizontal adjustable coupler allows horizontal adjustment between adjacent lengths of cable tray and is available in the full range of sidewall heights to match that of the Heavy Duty cable tray. Horizontal Adjustable Couplers are supplied individually and with fixings.

Fitting Type: HR-FHAC | **Part Number: HR-FHAC-⬡**



⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x4

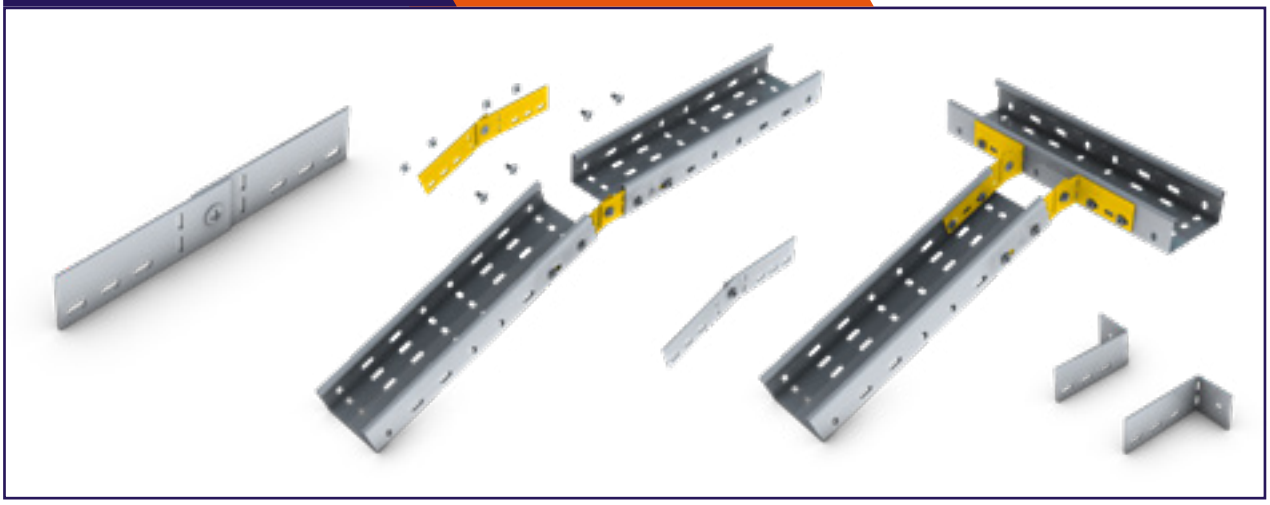
Not Required:

Heavy Duty Flat Vertical Adjustable Coupler

The Vantrunk Heavy Duty Return Flange cable tray vertical adjustable coupler is the standard means of allowing vertical adjustment between adjacent lengths of cable tray and is available in the full range of sidewall heights to match that of the Heavy Duty cable tray.

The vertical adjustable coupler features easi-bend slots which allow the couplers to be adjusted on site to create combined horizontal & vertical offset connections, tray connections onto the side of a cable tray run to form tee connections, or connections directly to a wall or floor. Vertical Adjustable Couplers are supplied individually and with fixings.

Fitting Type: HR-FVAC | **Part Number: HR-FVAC-⬡**



⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: FIXING SETS x4

Not Required:

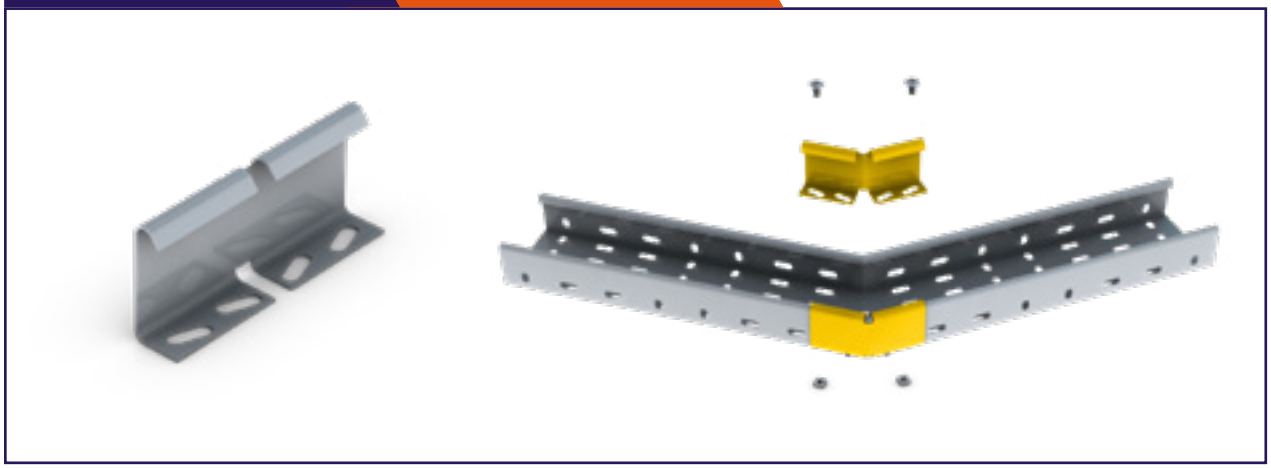
HOW TO ORDER AC - FP - 200 - GA - 1.5

System Type | Coupler Type | Width | Finish | Gauge

Heavy Duty Cranked Coupler

The Vantrunk Heavy Duty Return Flange cable tray adjustable coupler allows horizontal adjustment between adjacent lengths of cable tray. Cranked Couplers are supplied as pairs and with fixings.

Fitting Type: HR-CC | **Part Number: HR-CC-⬡**



⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

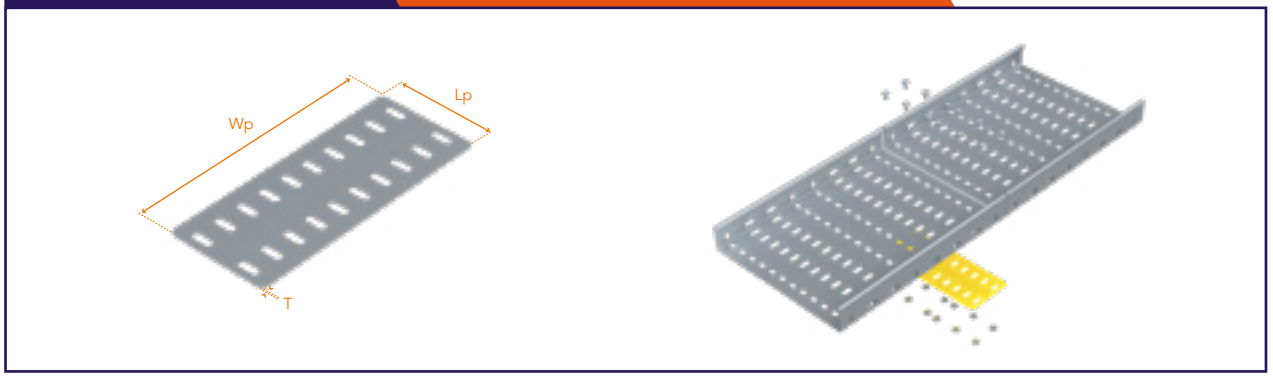
Supplied with: FIXING SETS x2

Not Required:

Fish Plate Coupler

The Vantrunk fish plate coupler gives support across the base of the cable tray and is available to suit cable tray of widths 50mm to 900mm. Fish plate couplers are recommended for connecting straight cable trays which are heavily loaded.

Fitting Type: AC-FP | **Part Number: AC-FP-TRAY WIDTH-⬡**



Part Number	Tray Width mm	Wp mm	Lp mm	Gauge T mm	Number of Fixings	Weight kg
NA	50	NA				
	75					
AC-FP-100-⬡	100	48	100	1.5	4	0.053
AC-FP-150-⬡	150	98				0.108
AC-FP-200-⬡	200	148			6	0.163
AC-FP-225-⬡	225	173				0.191
AC-FP-300-⬡	300	248				0.274

⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: PLEASE SEE TABLE FOR FIXING SETS

Not Required:

VANTRUNK CABLE-TRAY

ACCESSORIES

The Vantrunk cable tray system is complemented by a range of accessories deigned to aid installation and to add additional functionality & flexibility to the cable tray installation.

Where required the information shown is for Heavy Duty Return Flange accessories, data for other sidewall heights is available on request.

HOW TO ORDER **EBS - 05**
Accessory Type

Tray Earth Bonding Strap

The tray earth bonding strap for cable tray (EBS-05) is designed for use in electrical installations where an additional means of earthing or electrical bonding is specified. The earth bonding strap comprises of a 4mm^2 100mm long tinned copper braid with M6 tinned copper end connectors. The earth bonding strap is suitable for use with all types of Vantrunk cable tray.

Fitting Type: EBS-05 | **Part Number: EBS-05**

⬡ = **Select a Finish & Material**

Earth bonding straps are not supplied with fixings. Recommended fixings – two M6 x 12 pan head screws and M6 nuts (plus M6 flat washers for stainless steel). Consult our Sales Team for details.

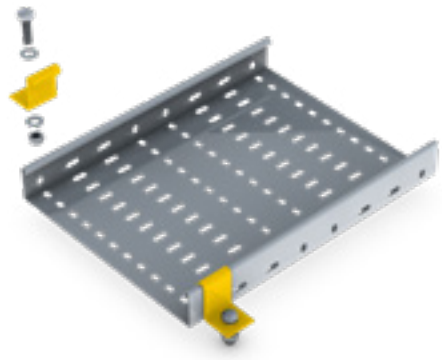
Supplied with:

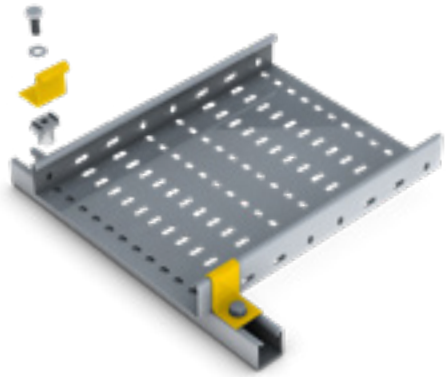
NO FIXING SETS

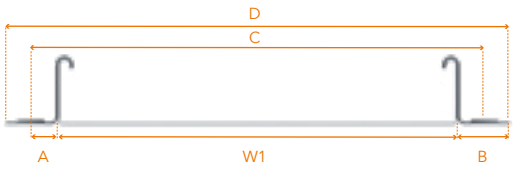
Hold Down Bracket

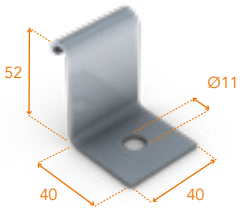
Hold down brackets provide an alternative means of securing cable tray to the support structure, particularly where the slots in the base of the cable tray do not coincide with the supports. Ideal for use with Intelok Channel type support systems, the hold down bracket is available for all cable tray profiles.

Fitting Type: HR-HDB | **Part Number: HR-HDB-⬡**









Tray Type	Dimensions mm			
	A	B	C	D
Heavy Duty HR	23	40	W1 + 46	W1 + 80

⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: NO FIXING SETS

HOW TO ORDER HR - HDB - SS - 2.0
System Type | Accessory Type | Finish | Gauge

Tray Insulating Assemblies

A comprehensive range of nylon insulating assemblies are available to suit those applications where there is a requirement to prevent bi-metallic corrosion occurring in either the Vantrunk cable tray system or the support structure. A typical example is a stainless steel Vantrunk cable tray system mounted on galvanised or painted steel supports.

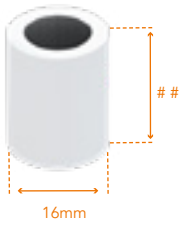
The insulating assembly is based on nylon base pads, nylon bushes and nylon washers which when used totally encapsulate the fixings and provide electrical separation between the Vantrunk cable tray system and the supporting structure.

M10 Nylon Bush

Part Number: BUSH-16x##-NY

Nylon Bush Length '##'= Steel Thickness (mm)

The length of the nylon bush is equal to the thickness of the supporting steelwork (##). The M10 nylon bush requires a 17mm diameter hole in the supporting steelwork.

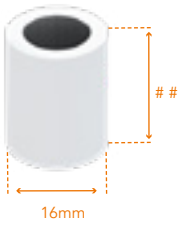


M6 Nylon Bush

Part Number: BUSH-6x##-NY

Nylon Bush Length '##'= Steel Thickness (mm)

The length of the nylon bush is equal to the thickness of the supporting steelwork (##). The M6 nylon bush requires a minimal 9mm diameter hole in the supporting steelwork.



M10 Fixing Bolt

Part Number: M10x☐-HS-SS-A4

Minimum Thread Length '☐'= 22 +

The minimum thread length for the fixing bolt is 22mm plus the thickness of the supporting steelwork. Refer to the table below for details of the fixing bolts.

M6 Fixing Bolt

Part Number: M6x☐-PHS-SS-A4

Minimum Thread Length '☐'= 22 +

The minimum thread length for the fixing bolt is 22mm plus the thickness of the supporting steelwork. Refer to the table below for details of the fixing bolts.

SSM10x☐HS Fixing Bolt Details

Part Number	Thread Length ☐	Description
M10x25-HS-SS-A4	25mm	M10 x 25 Hex Head Set Screw Stainless Steel
M10x30-HS-SS-A4	30mm	M10 x 30 Hex Head Set Screw Stainless Steel
M10x35-HS-SS-A4	35mm	M10 x 35 Hex Head Set Screw Stainless Steel
M10x40-HS-SS-A4	40mm	M10 x 40 Hex Head Set Screw Stainless Steel

M6x☐-PHS-SS-A4 Fixing Bolt Details

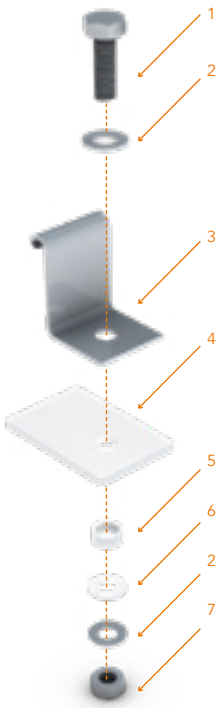
Part Number	Thread Length ☐	Description
M6x25-PHS-SS-A4	25mm	M6 x 25 Pan Head Screw Stainless Steel
M6x30-PHS-SS-A4	30mm	M6 x 30 Pan Head Screw Stainless Steel
M6x35-PHS-SS-A4	35mm	M6 x 35 Pan Head Screw Stainless Steel
M6x40-PHS-SS-A4	40mm	M6 x 40 Pan Head Screw Stainless Steel

'☐' - Fixing Bolt Tread Length (See table opposite)
'##' - Thickness of supporting steelwork in mm.

For Example:

If the tray is to be mounted to the steelwork without a HDB, order: TR-SS-INS12. If the thickness of the Steelwork = 12mm. The length of the Nylon Bush is also 12mm = BUSH-6x12-NY. This means that the Minimum Thread Length of the Fixing Bolt = 22 + 12 = 34mm. Rounding this figure up to the nearest standard bolt length of 35mm, the supplied bolt = M6x35-PHS-SS-A4

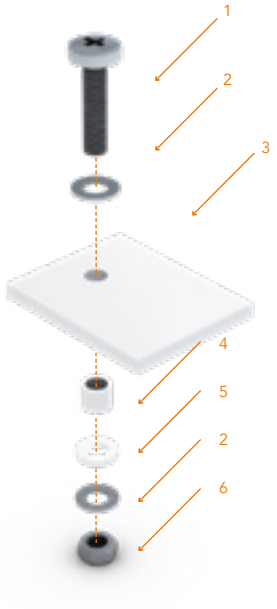
Insulating Assembly Components for Hold Down Bracket



Part Number	Item	Description
M10X□- HS-SS-A4	1	M10 Hex Head Set Screw Stainless Steel - Length = □
M10-FW-SS-A4	2	M10 Flat Washer Stainless Steel
HR-HDB-SS	3	Heavy Duty Cable Tray Hold Down Bracket, Stainless Steel
PAD-75x50x4-NY	4	Nylon Pad (75 x 50 x 4mm)
BUSH-16x##-NY	5	Nylon Bush - Length = ##
M10-FW-NY	6	M10 Flat Washer Nylon
M6-HN-SS-A4	7	M10 Hex Nut Stainless Steel

'□' - Fixing Bolt Tread Length (See table opposite)
'##' - Thickness of supporting steelwork in mm.

Insulating Assembly Components for Tray only insulation



Part Number	Item	Description
M6X□- PHS-SS-A4	1	M6 Pan Head Screw Stainless Steel - Length = □
M6-FW-SS-A4	2	M6 Flat Washer Stainless Steel
PAD-50x40x4-NY	3	Nylon Pad (50 x 40 x 4mm)
BUSH-6x##-NY	4	Nylon Bush - Length = ##
M6-FW-NY	5	M6 Flat Washer Nylon
M6-HN-SS-A4	6	M6 Hex Nut Stainless Steel

'□' - Fixing Bolt Tread Length (See table opposite)
'##' - Thickness of supporting steelwork in mm.

HOW TO ORDER

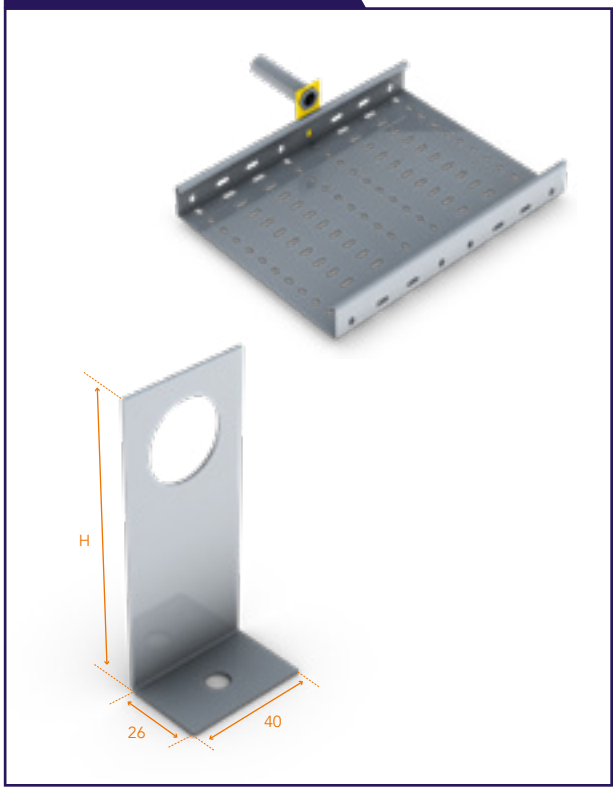
HR - HDB - SS - INS10

System Type | Accessory Type | Finish | INS+Bush Length

Conduit Take-off Bracket

Conduit Take-off Brackets are suitable for use with all types of Vantrunk cable tray and are available with clearance holes to suit either 20mm or 25mm conduit fittings.

Fitting Type: CB



Part Number	Dimensions mm	
	Hole Size	H
AC-CB-20-⬡	20	94
AC-CB-25-⬡	25	94

⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: NO FIXING SETS

Ordering example:

AC-CB-25-SS Vantrunk Cable Tray Conduit Take-off Plate, 25mm, Stainless Steel.

Ordering example:

To specify a conduit take-off bracket for Vantrunk heavy duty return flange cable tray with a side wall height above 50mm.

AC-CB-142-20-GA Insert the bracket height (in mm) after CB and before the hole size.

Conduit Take-off Plates are not supplied with fixings.

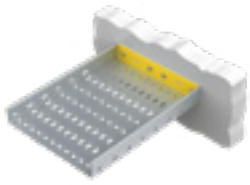
Recommended fixings – M6 x 12 pan head screw and M6 nut (plus M6 flat washer for stainless steel). Consult our Sales Team for details.

Tray End Plate

Vantrunk cable tray end plates provide an effective termination for open ends of cable trays.

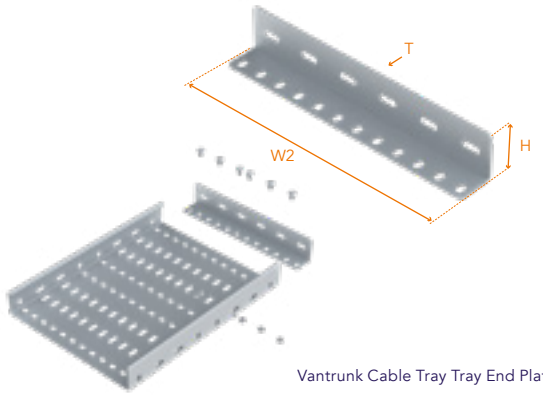
Cable tray end plates are available in widths from 50mm to 900mm as standard. Each end plate has 20mm x 7mm fixing slots at 50mm centres which allow use for securing the cable tray to a wall or floor.

Fitting Type: EP



Vantrunk Cable Tray Tray End Plate used as wall plate fixing

Vantrunk Cable Tray Tray End Plate used to support tray at wall aperture



Vantrunk Cable Tray Tray End Plate

Part Number	Dimensions mm				No of Fixing Slots
	Tray Width W	W2	H	T	
HR-EP-050-⬡	50	46	Heavy Duty = 50	1.0	1
HR-EP-075-⬡	75	71			1
HR-EP-100-⬡	100	96			2
HR-EP-150-⬡	150	146			2
HR-EP-200-⬡	200	196	Heavy Duty = 50	1.5	3
HR-EP-225-⬡	225	221			3
HR-EP-300-⬡	300	296			5

⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: NO FIXING SETS

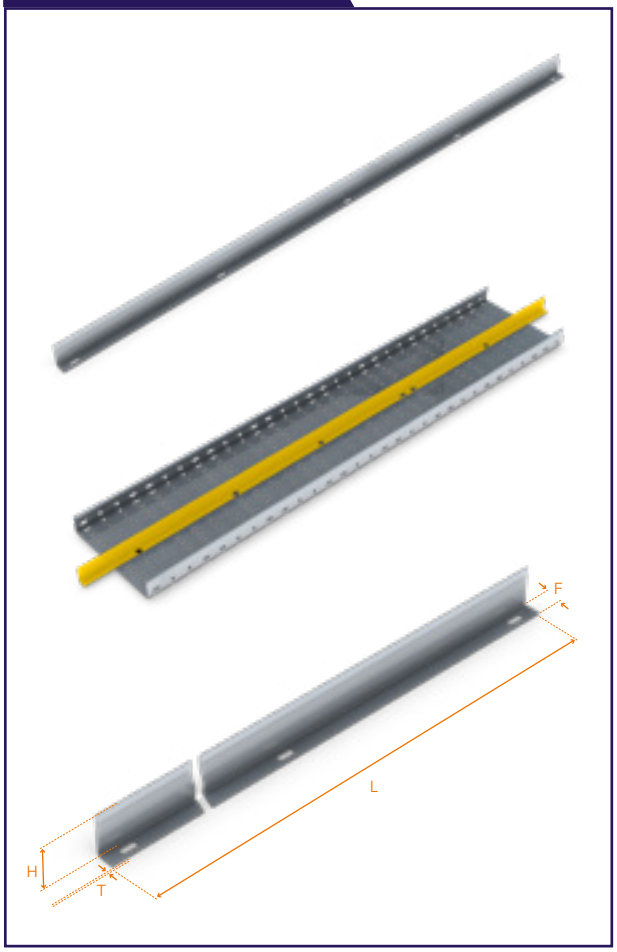
Tray end plates are not supplied with fixings.

Recommended fixings – M6 x 12 pan head screw and M6 nut (plus M6 flat washer for stainless steel). Consult our Sales Team for details.

Straight Tray Divider

Straight tray dividers are available for cable segregation and separation purposes along the length of the cable run. Straight tray dividers are available to suit all cable tray sections and are available in 3m lengths as standard.

Fitting Type: DF



Part Number	Dimensions mm			
	L	H	F	T
HR-DF-⬡-1.2	3000	47	20	1.2

⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: NO FIXING SETS

Information shown is for hot dip galvanised carbon steel in the standard gauge; other gauges are available, please consult our Sales Team for details.

Straight tray dividers are not supplied with fixings (3 fixings required per straight divider).

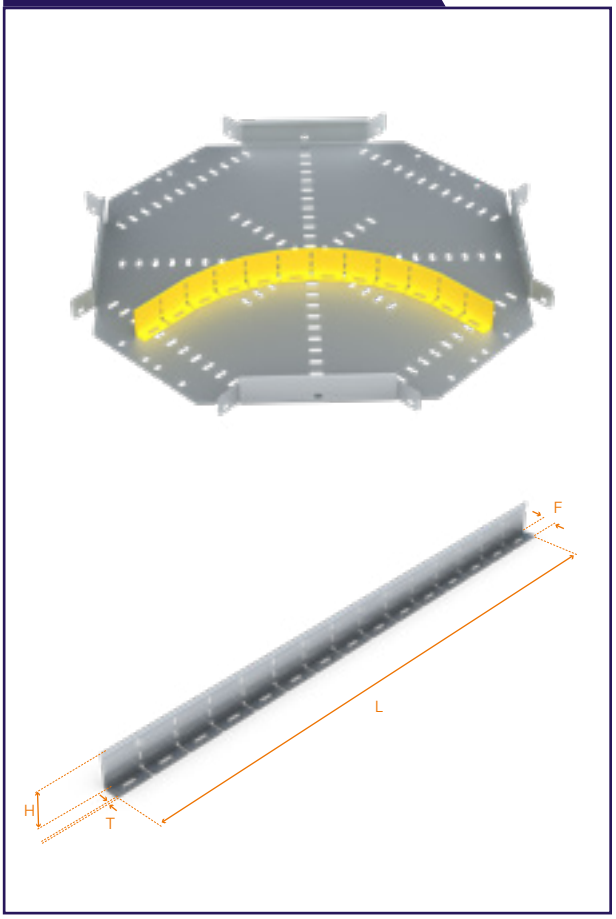
Recommended fixings – M6 x 12 pan head screw and M6 nut (plus M6 flat washer for stainless steel). Consult our Sales Team for details.

Subject to order requirements, straight tray dividers may be supplied in 1.5m lengths to suit delivery & shipping needs.

Tray Fitting Divider

Tray fitting dividers are availablefor cable segregation and separation purposes on fittings. The tray fitting divider is supplied as a 600mm straight length and is notched to allow for forming around flat bends, tees, crosses & reducers. Tray fitting dividers are available to suit all cable tray sections.

Fitting Type: DF-FL-0.6



Part Number	Dimensions mm			
	L	H	F	T
HR-DF-FL-0.6-⬡-1.2	600	47	20	1.2

⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: NO FIXING SETS

Information shown is for hot dip galvanised carbon steel in the standard gauge; other gauges are available, please consult our Sales Team for details.

Tray fitting dividers are not supplied with fixings (3 fixings required per fitting divider).

Recommended fixings – M6 x 12 pan head screw and M6 nut (plus M6 flat washer for stainless steel). Consult our Sales Team for details.

HOW TO ORDER

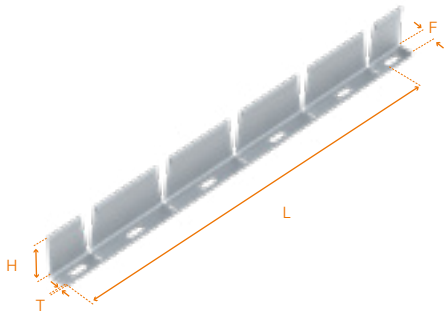
HR – DF-FL – 0.6 – GA – 1.2

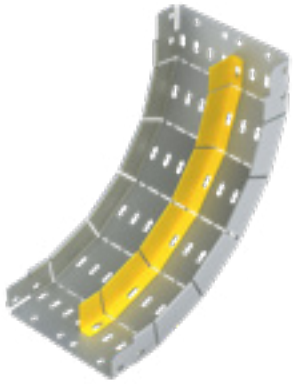
System Type | Accessory Type | Length | Finish | Gauge

Tray Riser Divider

Tray riser dividers are available for cable segregation and separation purposes on risers. Tray riser dividers are available to suit all cable tray sections and are supplied as variable riser dividers to suit both inside and outside riser fittings.

Fitting Type: DF-VR





Part Number	Dimensions mm			
	L	H	F	T
HR-DF-VR30-⬡-1.2	159	47	20	1.2
HR-DF-VR45-⬡-1.2	237			
HR-DF-VR60-⬡-1.2	316			
HR-DF-VR90-⬡-1.2	475			

⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX GW

Supplied with: NO FIXING SETS

Information shown is for hot dip galvanised carbon steel in the standard gauge; other gauges are available, please consult our Sales Team for details.

Tray riser dividers are not supplied with fixings (3 fixings required per fitting divider).

Recommended fixings – M6 x 12 pan head screw and M6 nut (plus M6 flat washer for stainless steel). Consult our Sales Team for details.

VANTRUNK CABLE-TRAY

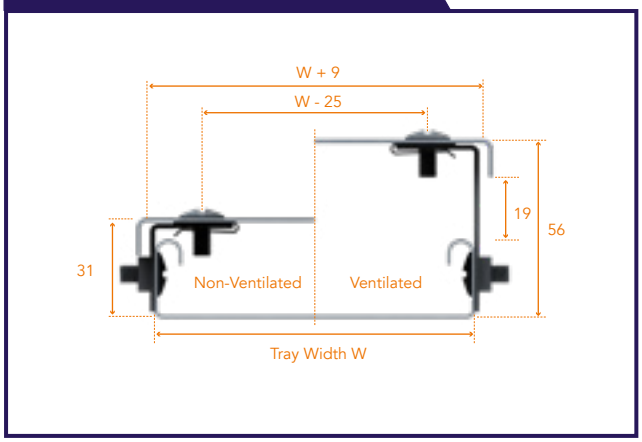
COVERS

The Vantrunk Cable Tray System is accompanied by an extensive range of covers that are used in conjunction with cable tray straight lengths and fittings in order to provide mechanical and environmental protection to the cables and other items installed on the cable tray.

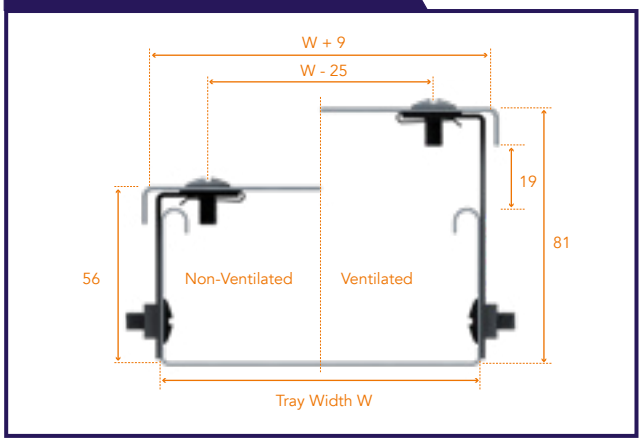
Covers are available to suit the Medium Duty Return Flange and Heavy Duty Return Flange Cable Tray Systems and can be installed as either closed (non-ventilated, plain and close-fitting) or ventilated (plain and raised cover) depending on the type of cover fixing kit supplied with each cover. Ventilated covers have a ventilation gap of 19mm.

Covers are available in standard and non-standard gauges to suit particular site installation requirements, consult our Sales Team for further details.

Medium Duty Cable Tray Covers



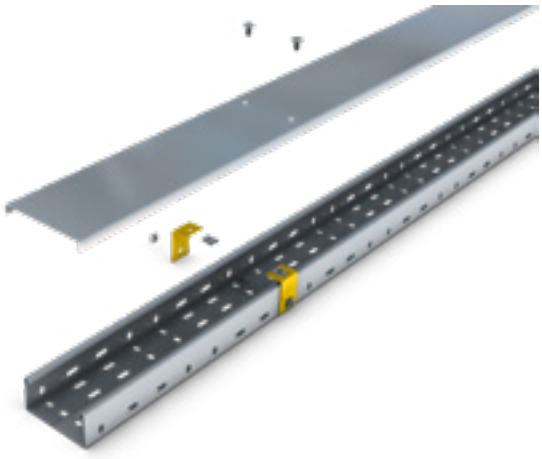
Heavy Duty Cable Tray Covers



Cover Fixing Kits

Vantrunk cable tray covers are supplied complete with all necessary fixing kits. Each fixing kit comprises of a preformed mounting bracket, a corrosion resistant M6 spire nut, two M6 screws and one M6 nut.

The general method of assembly for the Vantrunk cable tray cover is shown in the following image. This method is common to both medium and heavy duty cable trays and to cable tray fittings.



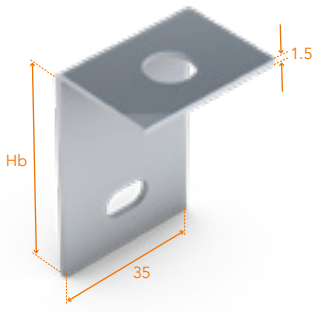
Covers for straight cable tray and cable tray fittings (standard radius) are supplied with the appropriate number of cover fixing kits as follows:

Tray Type	Width	
	50mm to 150mm	200mm to 300mm
Straight Tray	6	6

Fitting Type	Width		
	50mm to 75mm	100mm to 150mm	200mm to 300mm
30° Flat Elbows	2	3	3
45° Flat Elbows	2	3	3
60° Flat Elbows	3	3	4
90° Flat Elbows	3	3	4

Fitting Type	Width	
	50mm to 150mm	200mm to 300mm
Inside & Outside Risers	4	4
Equal & Unequal tees	3	4
Four Ways	4	4
Reducers	4	4

Each cover fixing kit is supplied with the appropriate cover mounting bracket for either a non-ventilated cover or ventilated cover based on the part number ordered. Dimensions for the cover mounting brackets are as follows:



Cover Type	Bracket Height Hb mm
Medium duty closed covers	28
Medium duty ventilated covers	53
Heavy duty closed covers	53
Heavy duty ventilated covers	78

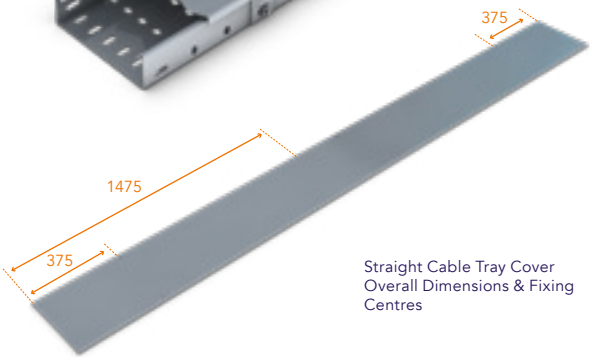
Straight Tray Covers

Vantrunk straight tray covers are 3m in length and are available in widths of 50mm to 900mm as standard. Covers are common for both closed and ventilated applications.

Fitting Type: CC-SL3 or CV-SL3

Straight Cable Tray Ventilated (Raised) Cover

Straight Cable Tray Closed (Non-Ventilated) Cover



Straight Cable Tray Cover Overall Dimensions & Fixing Centres

Tray Width mm	Cover Width Wc mm	Gauge T mm	Weight kg
50	59	1.2	2.51
75	84		3.17
100	109		3.92
150	159		5.43
200	209		6.74
225	234		7.70
300	309		9.96

Weights shown are for standard hot dip galvanised finish only, for Stainless Steel & Silicon Rich Steel weight conversion factors please refer to the Cable Tray technical section.

Fitting Covers

Vantrunk cable tray fitting covers are available in widths of 50mm to 900mm as standard. Covers are common for both closed and ventilated applications.

Fitting Type: CC-Fitting Type or CV-Fitting Type

Order details for all fittings except risers are as follows:

Tray Type - Cover Type - Tray Fitting Type - Width - Radius - Finish & Material - Gauge.

Omit the radius detail if the standard radius fitting is required.

Order example:

HR-CV-FE30-300-150R-GA-1.2 — Vantrunk Heavy Duty Return Flange Cable Tray Ventilated Cover, 30° Flat Elbow, 300mm Wide, 150mm Radius, c/w Cover Fixing Kits, Hot Dip Galvanised Mild Steel, 1.2mm material thickness.

Order example:

HR-CC-FE90-750-300R-SS-1.0 — Vantrunk Heavy Duty Return Flange Cable Tray Closed Cover, 90° Flat Elbow, 750mm Wide, 300mm Radius, c/w Cover Fixing Kits, Stainless Steel (316 Grade), 1.0mm material thickness.

Covers for inside and outside riser fittings are supplied pre-formed to angles of 30°, 45°, 60° or 90° to match the angle of the riser.

HOW TO ORDER HR (System Type) - CC (Cover Type) - SL3 (Tray Type) - 300 (Width) - SS (Finish) - 1.0 (Gauge)

VANTRUNK

ENGINEERED FOR EXTREME ENVIRONMENTS

GOLDEN EAGLE PROJECT

The Nexen-operated Golden Eagle project produced first oil on October 30, 2014. Upon completion, the project had expended 17.9 million hours worked. Located 70 km northeast of Aberdeen, Golden Eagle is the second largest oil discovery in the UK North Sea since Buzzard was discovered in 2001.

LOCATION

NORTH SEA, UK
70km northeast of Aberdeen.

CLIENT

nexen

$4.8bn
OVERALL COST OF PROJECT

FACT 1

140 million
barrels of oil equivalent

FACT 2

21
development wells

15 production
6 water injectors

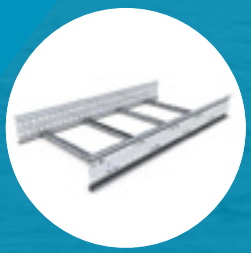
FACT 3

70,000 boe/d
production capacity

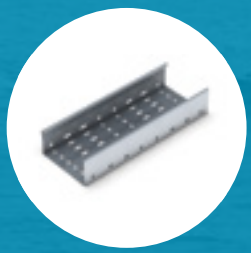
FACT 4

Fixed
wellhead platform structure

PRODUCTS SUPPLIED



SPEEDWAY



HEAVY DUTY CABLE TRAY

VANTRUNK SPEEDWAY® EXTREME CABLE LADDER

Vantrunk's Speedway Cable Ladder provides a strong, reliable, easy to install solution providing overall cost savings throughout the project lifespan.

visit us online at **vantrunk.com**

VANTRUNK CABLE-TRAY

CABLE TRAY SUPPORTS

A range of supports, including overhead brackets, cantilevers and trapeze hangers; designed to work in conjunction with Vantrunk's Cable Tray System.

Vantrunk's Cable Tray Supports are also complemented by the comprehensive Intelok channel support system manufactured to BS 6946. Featuring channel cantilever arms, beam clamps and brackets, which offer solutions to suit all particular site requirements. See the Intelok section for further details.

HOW TO ORDER

TR	-	FBH	-	100	-	GA	-	3.0
System Type		Accessory Type		Length		Finish		Gauge

Stand-off Bracket

The Vantrunk cable tray stand-off bracket (SOB) is used to raise the cable tray clear of the floor or wall, providing access to the underside of the cable tray for fitting of cable ties and the securing of nuts. Fully slotted to provide on-site adjustment, the stand-off bracket is common to the full range of Vantrunk cable tray systems.

The recommended maximum load given in the loading table below for each size of tray stand-off bracket is based on use with Vantrunk cable tray and with a uniformly distributed load (UDL) onto the tray stand-off bracket.

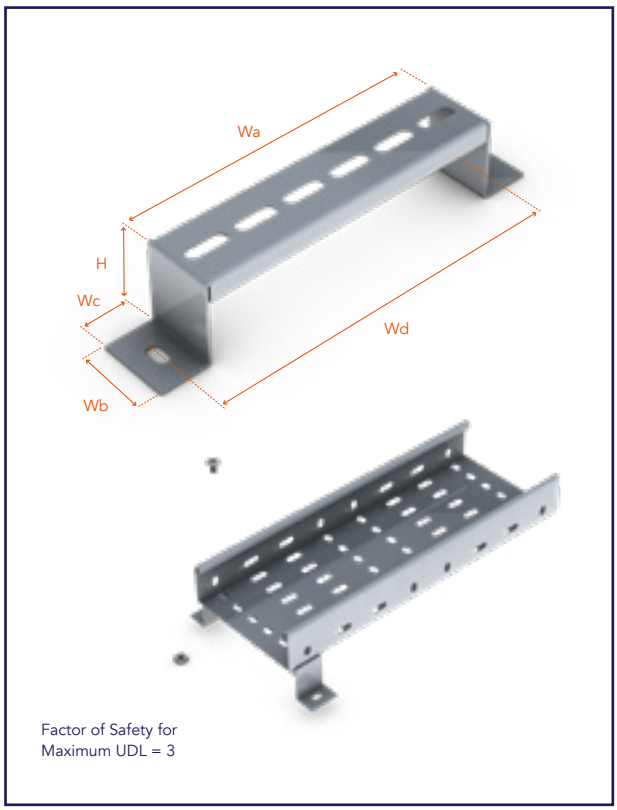
Stand-off Bracket

Part Number	Tray Width mm	Dimensions mm						Maximum UDL Kg
		Wa	Wb	Wc	Wd	H	T	
AC-SOB-50-⬡	50	61.0	35	25	86.0	41.5	1.2	50
AC-SOB-75-⬡	75	80.5	35	25	106.5	41.5	1.2	50
AC-SOB-100-⬡	100	105.0	35	25	131.0	41.5	1.2	50
AC-SOB-150-⬡	150	155..5	35	25	181.5	41.5	1.2	50
AC-SOB-225-⬡	225	233.0	35	25	259.0	41.5	1.2	100
AC-SOB-300-⬡	300	309.0	35	25	335.0	41.5	1.2	100

⬡ = Select a Finish & Material

Finishes & Materials:

GA SS GX GW



Factor of Safety for Maximum UDL = 3

Overhead Hanger Brackets

Overhead Hanger Brackets (OHB) are suitable for supporting narrower widths of cable tray using threaded rod. Available in widths from 75mm to 300mm, the tray overhead hangers are suitable for use with all types of Vantrunk cable tray.

The loading table below gives the recommended maximum load for each size of tray overhead hanger when used with Vantrunk cable tray and with a uniformly distributed load (UDL) onto the tray overhead bracket.

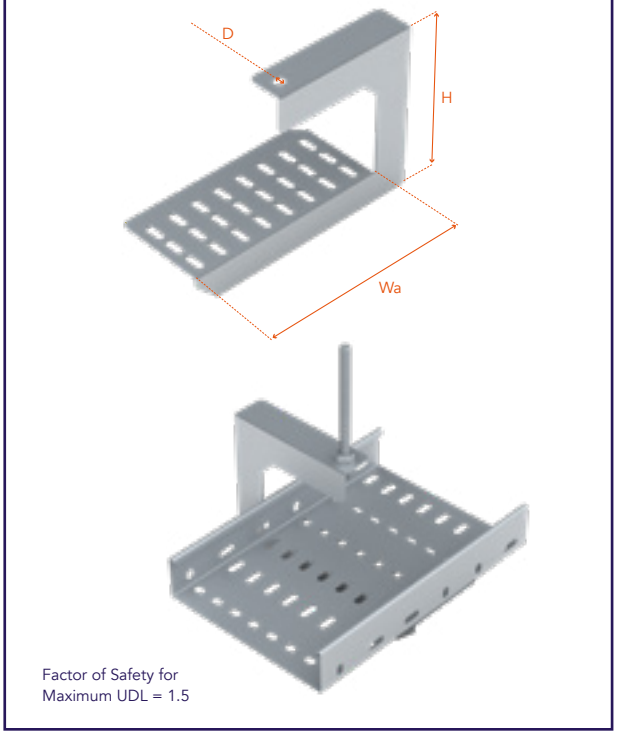
Overhead Hanger Brackets

Part Number	Tray Width mm	Dimensions mm				Maximum UDL Kg
		Wa	H	D	T	
AC-OHB-50-⬡	50	52	187	11	1.5	40
AC-OHB-75-⬡	75	77				78
AC-OHB-100-⬡	100	102				91
AC-OHB-150-⬡	150	152				76
AC-OHB-225-⬡	225	227			1.8	150
AC-OHB-300-⬡	300	302				150

⬡ = Select a Finish & Material

Finishes & Materials:

GA SS GX GW



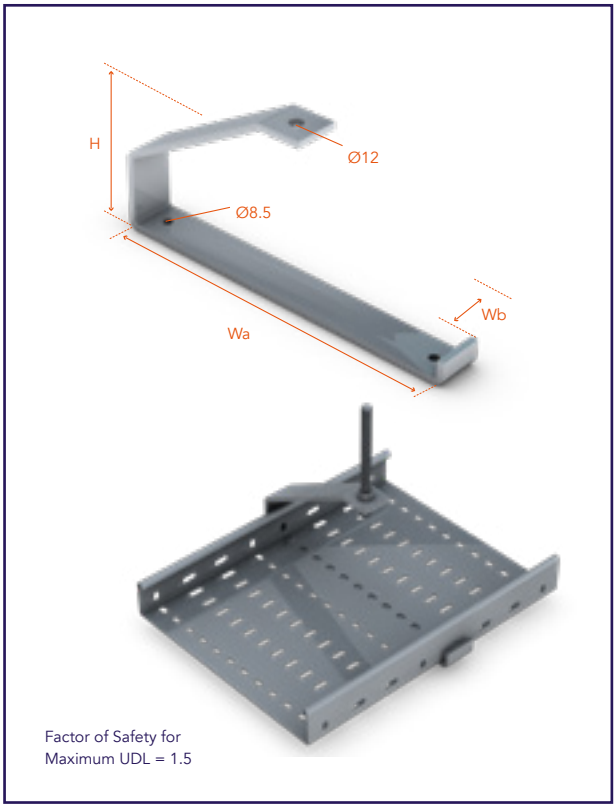
Factor of Safety for Maximum UDL = 1.5

Flat Bar Hanger

The Flat Bar Hanger (FBH) is an effective means of installing smaller widths of Vantrunk cable tray using a central threaded rod hanger.

The flat bar hanger has a central hole to suit the use of M10 or M12 threaded rod hangers. Each flat bar hanger has fixing slots for direct fixing through the bed of the cable tray.

The loading table below gives the recommended maximum load for each size of flat bar hanger when used with Vantrunk cable tray and with a uniformly distributed load (UDL) onto the flat bar hanger.



Factor of Safety for Maximum UDL = 1.5

Flat Bar Hanger

Part Number	Tray Width mm	Dimensions mm			Maximum UDL Kg
		Wa	Wb	H	
AC-FBH-50-⬡	50	66	40	150	125
AC-FBH-75-⬡	75	91	40	150	88
AC-FBH-100-⬡	100	116	40	150	86
AC-FBH-150-⬡	150	172	40	150	47
AC-FBH-225-⬡	225	247	40	150	32
AC-FBH-300-⬡	300	322	40	150	24

⬡ = Select a Finish & Material

Finishes & Materials:

GA SS GX GW

Trapeze Hanger Bracket

The Trapeze Hanger Bracket (THB) provides a dedicated and effective means of installing Vantrunk cable tray using a trapeze support arrangement with two threaded rod hangers.

The trapeze hanger bracket has 11mm holes to suit the use of M10 threaded rod hangers. Each trapeze hanger bracket has fixing holes for use with the tray hold down bracket (HDB) and elongated holes for direct fixing through the bed of the cable tray.

The loading table below gives the recommended maximum load for each size of trapeze hanger bracket when used with Vantrunk cable tray and with a uniformly distributed load (UDL) onto the trapeze hanger bracket.

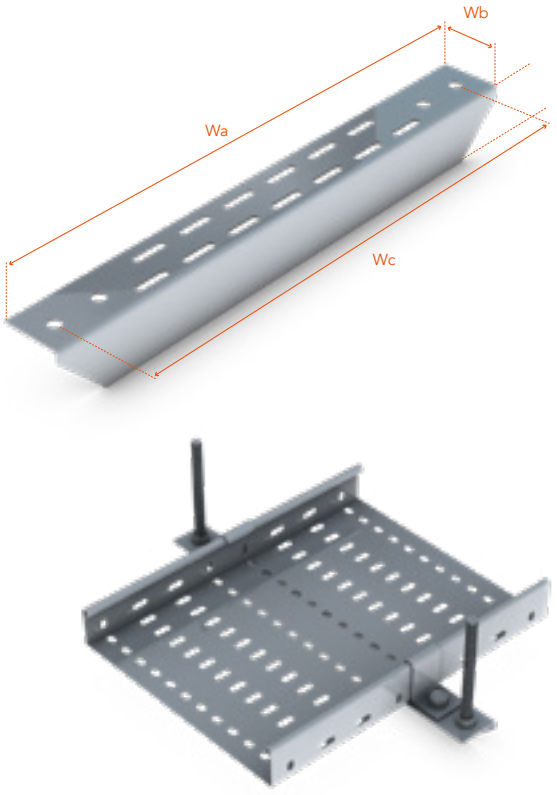
Tray Overhead Hanger

Part Number	Tray Width (mm)	Dimensions mm				Total Tray Load (kg)
		Wa	Wb	Wc	H	
AC-THB-50-⬡	50	214	50	174	20	5992
AC-THB-75-⬡	75	239		199		5186
AC-THB-100-⬡	100	264		224		4039
AC-THB-150-⬡	150	314		274		2857
AC-THB-200-⬡	200	364		324		2257
AC-THB-225-⬡	225	389		349		2023
AC-THB-300-⬡	300	464		424		1615

⬡ = Select a Finish & Material

Finishes & Materials:

GA SS GX GW



Factor of Safety for Maximum UDL = 1.5

Tray Cantilever Arm

Vantrunk Tray Cantilever Arms (TCA) are suitable for supporting cable tray from channel or flat surfaces. Available for cable tray of widths from 50mm to 900mm, the Vantrunk tray arms have M10 clearance holes for fixing to the supports and M6 clearance holes to allow for fixing through the bed of the cable tray.

Vantrunk tray cantilever arms have one fixing hole for arm lengths up to & including 100mm, and two fixing holes for arm lengths of 150mm and above. The Vantrunk tray cantilever arms are suitable for use with the full range of Vantrunk cable trays.

The loading table below gives the recommended maximum load for each size of trapeze hanger bracket when used with Vantrunk cable tray and with a uniformly distributed load (UDL) onto the tray cantilever arm.

Vantrunk Tray Arm

Part Number	Dimensions mm				Maximum UDL Kg
	Tray	La	Lb	A	
AC-TCA-50-⬡	50	60	50	N/A	100
AC-TCA-75-⬡	75	85	50	N/A	100
AC-TCA-100-⬡	100	110	50	N/A	100
AC-TCA-150-⬡	150	160	90	45	150
AC-TCA-225-⬡	225	235	90	45	150
AC-TCA-300-⬡	300	310	90	45	150

⬡ = Select a Finish & Material

Finishes & Materials:

GA SS GX GW

HOW TO ORDER

HR - CC - SL3 - 300 - SS - 1.0

System Type | Coupler Type | Tray Type | Width | Finish | Gauge

VANTRUNK

ENGINEERED FOR EXTREME ENVIRONMENTS

SANDBANK OFFSHORE WIND FARM

The Sandbank offshore wind farm is the second largest offshore wind farm project undertaken by Vattenfall in collaboration with Stadtwerke München. The wind farm extends over a total area of 66 square kilometres.

LOCATION

GERMAN NORTH SEA
90km off the coast of Sylt.

CLIENT

SEMCO maritime

$1.7bn
OVERALL COST OF PROJECT

FACT 1

288 MW
total installed capacity

FACT 2

72
turbines of 4MW class

FACT 3

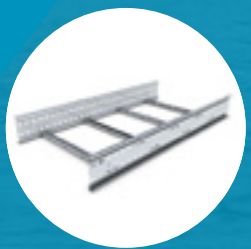
160m
total turbines height

130m
rotor diameter

FACT 4

Covers an area of
66 sq km
in German North Sea

PRODUCTS SUPPLIED



SPEEDWAY

INTELOK CHANNEL

VANTRUNK SPEEDWAY® EXTREME CABLE LADDER

Vantrunk's Speedway Cable Ladder and Intelok Support System provides a strong, reliable, easy to install solution providing overall cost savings throughout the project lifespan.

VANTRUNK INTELOK®

SECTION 03: SLIP RESISTANT INTELOK SERRATED CHANNEL

The Intelok steel framing system is a strong, easy to erect support system, ideal for supporting cable tray, cable ladders, trunking, pipes and ducting.

Rapid Installation Systems

Withstands extreme temperatures (-50° to +50°C)

Intelok Quickfit System

HOW TO ORDER

CODE SYSTEM EXPLAINED

The information given on this page should be used as a guide when ordering channel, fittings, covers and accessories. For more detailed information and examples refer to the relevant page within the catalogue.

Intelok Channel

System Type	Product Group	Channel Type	Slotting Type	Length	Finish & Material	Gauge
eg. IC	– CNL	– D	– P	– SL3	– GA	– 2.5

Intelok® Channel, Deep 41mm x 41mm, Plain, 3000mm Long, Structural Steel, Hot Dip Galvanised, 2.5mm

Intelok Brackets

System Type	Bracket Type	Finish & Material
eg. 325	– AM13	– SS

Intelok Channel, Heavy Duty Back to Back U-Bolt Beam Clamp, Stainless Steel

Intelok Quickfit Brackets

System Type	Bracket Type	Finish & Material	Quickfit Option
eg. 325	– AJ12	– GA	– QF10

Intelok Channel, Deep Normal Top Hat Bracket, Hot Dip Galvanised, M10 Quickfit

Concrete Inserts

System Type	Product Group	Channel Type	Length	Finish & Material
eg. IC	– CON	– D	– SL3	– SS

Intelok Channel, Concrete Insert, Deep, 3 metre length, Stainless Steel

VANTRUNK INTELOK®

System Type (▲)

		Page
IC	Intelok Channel	148
325	Intelok Brackets	161

Product Group

		Page
CNL	Channel	178
CON	Concrete Insert	183
PEC	Protective End Cap	188
COV	Cover Strip	188

Channel Type

		Page
S	Shallow Channel	150
D	Deep Channel	148
BBD	Back to Back Deep Channel	152
BBS	Back to Back Shallow Channel	153

Slotting Type

P	Plain
S	Slotted
TS	Triple Slotted

Length

SL3	3m length
SL6	6m length
SL#	# = Add length in mm*

* For Concrete Inserts, the length must be divisible by 200

Bracket Type

Various Use 4 character reference, see bracket section for details for further details

Colour

BLK	Black
WHT	White

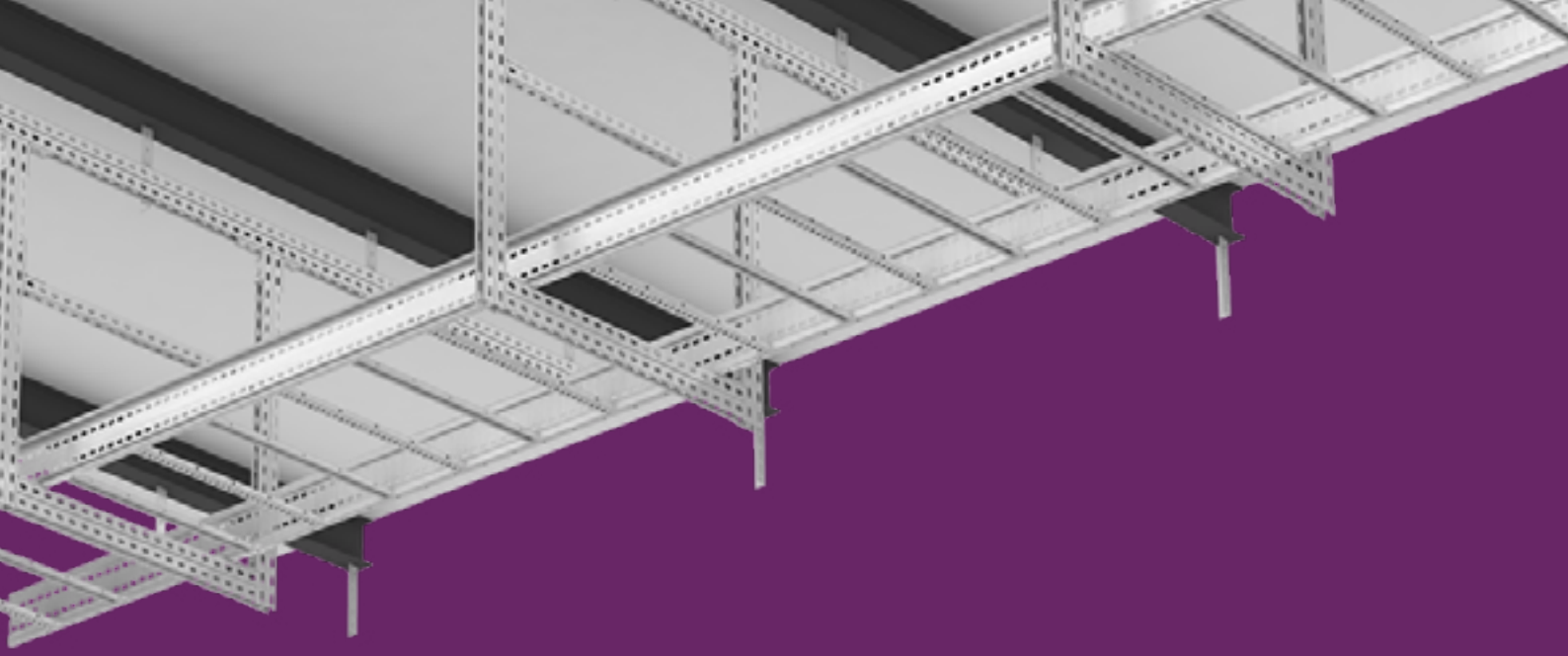
Further Guidance

Please contact our Sales Team for further advice and guidance on the correct ordering details for the full range of Vantrunk Intelok channel and accessories.

Finish & Materials (⬢)

HOT DIPPED Galvanised CARBON STEEL | **HOT DIPPED Galvanised STRUCTURAL** | **PRE Galvanised STRUCTURAL STEEL** | **MARINE GRADE STAINLESS STEEL**

Details on the full range of standard Finishes and Materials are given in the Finish and Materials section (page 23) and Engineering Data Section (page 210).



UNIQUELY VANTRUNK

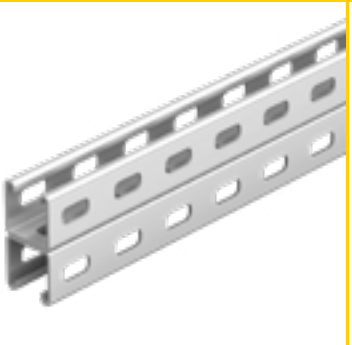
Vantrunk's innovation department has further strengthened the Intelok Steel Framing System with the introduction of the Triple Slotted Channel and Welded Starter Brackets.

These products are designed in order to increase flexibility during installation and to remove the need for on-site drilling when mounting to the existing structure.

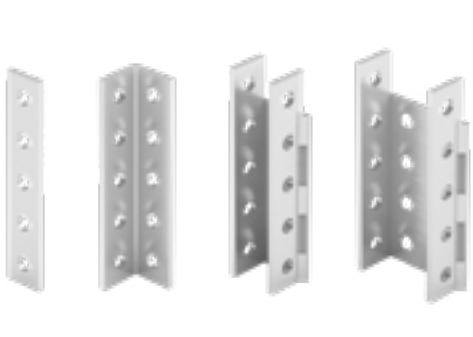
When used in conjunction with the Intelok Quickfit bracket range the system can provide substantial cost savings through a reduction in labour, parts and overall topside weight.

Deep Triple Slotted

Back to Back Channel



Welded Starter Brackets



QUICKFIT BRACKETS

Vantrunk's unique Intelok Quickfit system of brackets and cantilevers is a factory assembled, time saving, easy to fit alternative to separate nuts, bolts and washers

WHY QUICKFIT YOUR BRACKETS?

- Quick and simple to assemble, approximate 67% savings on installation time
- Fewer components to order
- Simplified stock control
- Easier estimating

VANTRUNK INTELOK QF® CHANNEL BRACKETRY

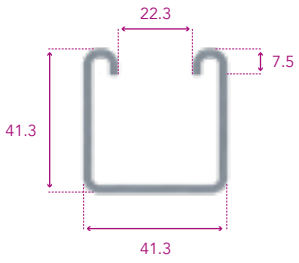
SLIP RESISTANT SERRATED CHANNEL

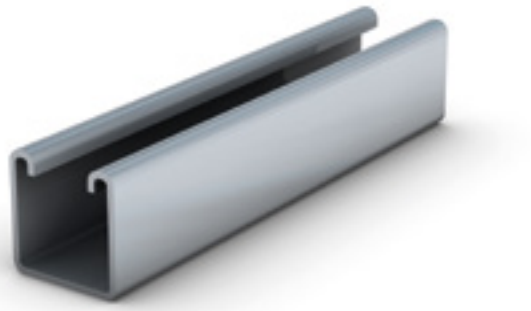
As standard Vantrunk Steel Framing Intelok Channel comes equipped with serrations on the return flange which significantly increases the resistance to slip. The Steel Framing Intelok Channel is tailor made for applications in areas of considerable vibrations such as offshore platforms and power plants.

Deep Channel Plain

- Steel with a Minimum yield strength 280 N/mm².
- Beams are assumed to be simply supported.
- Load and deflection are calculated using a safety factor of 1.6 and an allowable stress of 175 N/mm².
- Results given are for Pre-galvanised steel.
- Beam loads are calculated from the column face and effective length in BS5950.
- The tables show:
  1. The max safe working load,
  2. the load to give 1-200 deflection,
  3. load to give 1-360 deflection - the deflection used will depend on the installation designer.
- This also applies to Point and UDL loads.

Fitting Type: IC-CNL-D-P **Part Number: IC-CNL-D-P-SL□-○**





Sectional Properties

CSA (mm²)	Ixx (mm⁴)	Zxx (mm⁴)	Weight (kg/m)	Yield (N/mm²)
336.25	71450	3071	2.68	280

□ = Select a Channel Length* ○ = Select a Finish

Finishes & Materials:

QQ SS GM

Safe Working Load Table

Span (m)	Uniformally Distributed Load				Point Load				Column Load
	Safe Working Load		Deflection Limit		Safe Working Load		Deflection Limit		Safe Axial Load (kg)
	Load (kg/m)	Def (mm)	Span/200 (kg)	Span/360 (kg)	Load (kg)	Def (mm)	Span/200 (kg)	Span/360 (kg)	
0.8	840.23	2.92	840.23	638.61	336.09	2.34	336.09	319.31	1,953.12
1	536.89	4.56	536.89	325.69	268.45	3.66	268.45	203.55	1,805.89
1.2	372.12	6.57	339.36	187.37	223.27	5.27	223.27	140.52	1,639.63
1.4	272.77	8.95	212.74	117.02	190.94	7.18	186.14	102.39	1,448.32
1.6	208.28	11.69	141.65	77.52	166.62	9.38	141.65	77.52	1,272.88
1.8	164.07	14.81	98.7	53.66	147.66	11.89	111.04	60.37	1,118.52
2	132.45	18.29	71.24	38.41	132.45	14.7	89.05	48.01	985.47
2.2	109.05	22.13	52.87	28.2	119.95	17.81	72.69	38.78	871.72
2.4	91.25	26.35	40.12	21.12	109.5	21.23	60.18	31.68	774.62
2.6	77.4	30.94	30.99	16.05	100.63	24.96	50.36	26.08	691.56
2.8	66.42	35.91	24.29	12.32	92.98	29	42.51	21.57	620.24
3	57.55	41.24	19.26	9.53	86.32	33.36	36.11	17.87	558.71
3.2	50.29	46.95	15.4	7.39	80.47	38.03	30.81	14.78	505.37
3.4	44.28	53.04	12.4	5.72	75.28	43.03	26.36	12.16	458.87
3.6	39.24	59.5	10.03	4.41	70.63	48.35	22.58	9.91	418.14
3.8	34.98	66.35	8.14	3.35	66.46	54.01	19.33	7.96	382.29
4	31.34	73.57	6.6	2.5	62.67	60	16.51	6.25	350.57
4.2	28.2	81.18	5.34	1.8	59.22	66.33	14.03	4.72	322.39
4.4	25.49	89.17	4.31	1.22	56.07	73	11.84	3.36	297.23
4.6	23.12	97.54	3.44	0.74	53.17	80.03	9.89	2.13	274.69
4.8	21.04	106.3	2.71	0.34	50.49	87.41	8.14	1.01	254.41
5	19.2	115.45	2.1	—	48	95.15	6.55	—	236.1

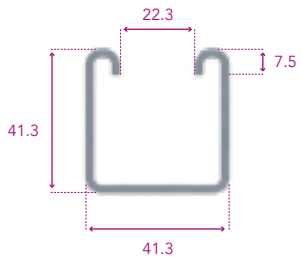
HOW TO ORDER IC – CNL – D – S – SL3* – GM
System Type | Product Group | Type | Slotting | Channel Length | Finish

*Straight Channel is available in: SL3 (3000mm), SL6 (6000mm) (For non-standard lengths please contact our sales team)

Deep Channel Slotted

- Steel with a Minimum yield strength 280 N/mm².
- Beams are assumed to be simply supported.
- Load and deflection are calculated using a safety factor of 1.6 and an allowable stress of 175 N/mm².
- Results given are for Pre-galvanised steel.
- Beam loads are calculated from the column face and effective length in BS5950.
- The tables show:
  1. The max safe working load,
  2. the load to give 1-200 deflection,
  3. load to give 1-360 deflection - the deflection used will depend on the installation designer.
- This also applies to Point and UDL loads.

Fitting Type: IC-CNL-D-S | **Part Number: IC-CNL-D-S-SL☐-⬡**



Slots 26 x 13 @ 50mm Pitch

Sectional Properties

CSA (mm²)	Ixx (mm⁴)	Zxx (mm⁴)	Weight (kg/m)	Yield (N/mm²)
248.7	60743	2860	2.59	280

☐ = Select a Channel Length* ⬡ = Select a Finish

Finishes & Materials:

QQ SS GM

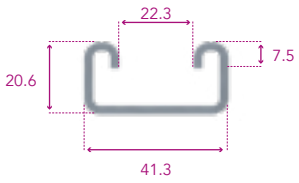
Safe Working Load Table

Span (m)	Uniformally Distributed Load				Point Load				Column Load
	Safe Working Load		Deflection Limit		Safe Working Load		Deflection Limit		Safe Axial Load (kg)
	Load (kg/m)	Def (mm)	Span/200 (kg)	Span/360 (kg)	Load (kg)	Def (mm)	Span/200 (kg)	Span/360 (kg)	
0.8	781.28	2.96	781.28	585.17	312.51	2.37	312.51	292.59	1608.53
1	499.17	4.63	499.17	298.32	249.58	3.71	249.58	186.45	1488.99
1.2	345.92	6.67	310.86	171.53	207.55	5.35	207.55	128.65	1352.75
1.4	253.52	9.08	194.79	107.05	177.46	7.28	170.44	93.67	1197.92
1.6	193.54	11.87	129.62	70.84	154.83	9.52	129.62	70.84	1055.63
1.8	152.43	15.02	90.26	48.97	137.18	12.07	101.54	55.09	930.01
2	123.01	18.56	65.08	34.99	123.01	14.92	81.35	43.73	821.31
2.2	101.25	22.46	48.24	25.63	111.38	18.08	66.33	35.24	728.01
2.4	84.70	26.74	36.56	19.14	101.64	21.56	54.83	28.71	648.06
2.6	71.82	31.40	28.19	14.49	93.37	25.34	45.81	23.55	579.44
2.8	61.60	36.44	22.05	11.08	86.24	29.45	38.58	19.39	520.34
3	53.36	41.86	17.43	8.51	80.04	33.88	32.68	15.97	469.22
3.2	46.61	47.66	13.90	6.55	74.57	38.63	27.80	13.11	424.79
3.4	41.02	53.84	11.15	5.03	69.73	43.72	23.70	10.68	385.97
3.6	36.33	60.40	8.98	3.82	65.39	49.14	20.20	8.59	351.90
3.8	32.36	67.35	7.24	2.85	61.49	54.89	17.20	6.78	321.85
4	28.98	74.69	5.83	2.07	57.95	60.99	14.58	5.18	295.21
4.2	26.06	82.41	4.68	1.43	54.73	67.44	12.29	3.75	271.51
4.4	23.54	90.53	3.73	0.90	51.78	74.24	10.25	2.48	250.32
4.6	21.33	99.04	2.93	0.46	49.07	81.41	8.43	1.32	231.30
4.8	19.40	107.94	2.27	0.09	46.56	88.93	6.80	0.27	214.17
5	17.69	117.25	1.70	—	44.23	96.83	5.32	—	198.68

Shallow Channel Plain

- Steel with a Minimum yield strength 280 N/mm².
- Beams are assumed to be simply supported.
- Load and deflection are calculated using a safety factor of 1.6 and an allowable stress of 175 N/mm² .
- Results given are for Pre-galvanised steel.
- Beam loads are calculated from the column face and effective length in BS5950.
- The tables show:
  1. The max safe working load,
  2. the load to give 1-200 deflection,
  3. load to give 1-360 deflection - the deflection used will depend on the installation designer.
- This also applies to Point and UDL loads.

Fitting Type: IC-CNL-S-P **Part Number: IC-CNL-S-P-SL☐-⬡**



Sectional Properties

CSA (mm²)	Ixx (mm⁴)	Zxx (mm⁴)	Weight (kg/m)	Yield (N/mm²)
234.0	11743	956	1.84	280

☐ = Select a Channel Length* ⬡ = Select a Finish

Finishes & Materials:

QQ SS GM

Safe Working Load Table

Span (m)	Uniformally Distributed Load				Point Load				Column Load
	Safe Working Load		Deflection Limit		Safe Working Load		Deflection Limit		Safe Axial Load (kg)
	Load (kg/m)	Def (mm)	Span/200 (kg)	Span/360 (kg)	Load (kg)	Def (mm)	Span/200 (kg)	Span/360 (kg)	
0.8	261.82	5.52	189.16	104.28	104.73	4.43	94.58	52.14	902.13
1	166.98	8.63	95.96	52.50	83.49	6.92	59.98	32.81	691.82
1.2	115.45	12.43	54.77	29.62	69.27	9.99	41.08	22.21	540.46
1.4	84.39	16.93	33.81	17.98	59.07	13.62	29.59	15.73	431.10
1.6	64.23	22.13	22.05	11.44	51.38	17.83	22.05	11.44	350.53
1.8	50.40	28.03	14.95	7.49	45.36	22.62	16.81	8.43	289.84
2	40.51	34.64	10.40	4.97	40.51	28.01	13.00	6.21	243.14
2.2	33.20	41.95	7.36	3.28	36.52	33.99	10.12	4.51	206.50
2.4	27.63	49.97	5.25	2.11	33.16	40.59	7.88	3.16	177.24
2.6	23.30	58.71	3.74	1.27	30.30	47.82	6.08	2.06	153.52
2.8	19.87	68.17	2.63	0.65	27.81	55.68	4.61	1.14	134.02
3	17.10	78.35	1.80	0.19	25.64	64.19	3.38	0.36	117.80

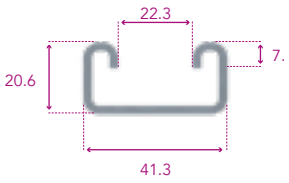
HOW TO ORDER IC (System Type) - CNL (Product Group) - S (Type) - S (Slotting) - SL3* (Channel Length) - GM (Finish)

*Straight Channel is available in: SL3 (3000mm), SL6 (6000mm) (For non-standard lengths please contact our sales team)

Shallow Channel Slotted

- Steel with a Minimum yield strength 280 N/mm².
- Beams are assumed to be simply supported.
- Load and deflection are calculated using a safety factor of 1.6 and an allowable stress of 175 N/mm².
- Results given are for Pre-galvanised steel
- Beam loads are calculated from the column face and effective length in BS5950.
- The tables show:
  1. The max safe working load,
  2. the load to give 1-200 deflection,
  3. load to give 1-360 deflection - the deflection used will depend on the installation designer.
- This also applies to Point and UDL loads.

Fitting Type: IC-CNL-S-S **Part Number: IC-CNL-S-S-SL☐-○**



Slots 26 x 13 @ 50mm Pitch

Sectional Properties

CSA (mm²)	Ixx (mm⁴)	Zxx (mm⁴)	Weight (kg/m)	Yield (N/mm²)
201.5	9669	880	1.72	280

☐ = Select a Channel Length* ○ = Select a Finish

Finishes & Materials:

QQ SS GM

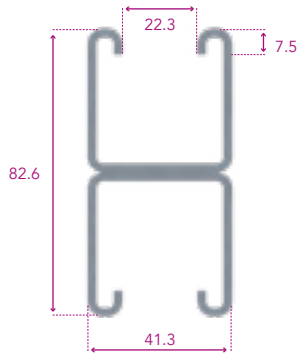
Safe Working Load Table

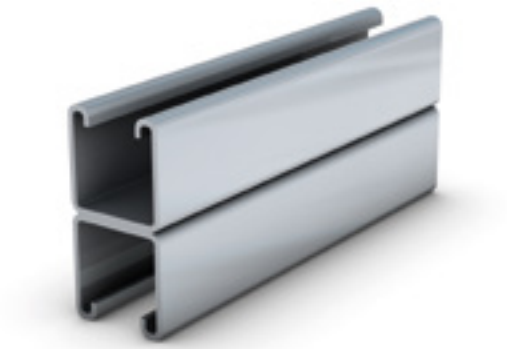
Span (m)	Uniformally Distributed Load				Point Load				Column Load
	Safe Working Load		Deflection Limit		Safe Working Load		Deflection Limit		Safe Axial Load (kg)
	Load (kg/m)	Def (mm)	Span/200 (kg)	Span/360 (kg)	Load (kg)	Def (mm)	Span/200 (kg)	Span/360 (kg)	
0.8	241.96	5.63	171.33	94.38	96.78	4.51	85.67	47.19	715.12
1	154.27	8.80	86.83	47.43	77.13	7.06	54.27	29.64	551.98
1.2	106.63	12.68	49.48	26.68	63.98	10.19	37.11	20.01	433.35
1.4	77.90	17.27	30.49	16.13	54.53	13.90	26.68	14.11	346.93
1.6	59.26	22.58	19.82	10.20	47.41	18.20	19.82	10.20	282.85
1.8	46.48	28.60	13.38	6.62	41.83	23.09	15.05	7.45	234.33
2	37.34	35.34	9.26	4.34	37.34	28.60	11.58	5.42	196.84
2.2	30.57	42.80	6.50	2.80	33.63	34.72	8.94	3.86	167.31
2.4	25.43	50.99	4.59	1.74	30.51	41.47	6.89	2.61	143.67
2.6	21.42	59.91	3.22	0.98	27.85	48.87	5.24	1.59	124.45
2.8	18.25	69.57	2.22	0.42	25.55	56.92	3.88	0.74	108.60
3	15.68	79.97	1.46	0.00	23.53	65.64	2.74	0.01	95.39

Deep Back to Back Channel

- Steel with a Minimum yield strength 280 N/mm².
- Beams are assumed to be simply supported.
- Load and deflection are calculated using a safety factor of 1.6 and an allowable stress of 175 N/mm².
- Results given are for Pre-galvanised steel.
- Beam loads are calculated from the column face and effective length in BS5950.
- The tables show:
  1. The max safe working load,
  2. the load to give 1-200 deflection,
  3. load to give 1-360 deflection - the deflection used will depend on the installation designer.
- This also applies to Point and UDL loads.

Fitting Type: IC-CNL-BBD-P | **Part Number: IC-CNL-BBD-P-SL☐-⬡**





Sectional Properties

CSA (mm²)	Ixx (mm⁴)	Zxx (mm⁴)	Weight (kg/m)	Yield (N/mm²)
672.5	375152	9083	5.35	280

☐ = Select a Channel Length* ⬡ = Select a Finish

Finishes & Materials:

QQ SS GM

Safe Working Load Table

Span (m)	Uniformally Distributed Load				Point Load				Column Load
	Safe Working Load		Deflection Limit		Safe Working Load		Deflection Limit		Safe Axial Load (kg)
	Load (kg/m)	Def (mm)	Span/200 (kg)	Span/360 (kg)	Load (kg)	Def (mm)	Span/200 (kg)	Span/360 (kg)	
0.8	2089.79	1.44	2089.79	2089.79	835.91	1.15	835.91	835.91	11796.81
1	1335.76	2.24	1335.76	1335.76	667.88	1.80	667.88	667.88	10406.84
1.2	926.16	3.23	926.16	926.16	555.70	2.59	555.70	555.70	8904.39
1.4	679.19	4.40	679.19	600.01	475.43	3.52	475.43	475.43	7435.66
1.6	518.89	5.75	518.89	400.22	415.12	4.61	415.12	400.22	6123.99
1.8	409.00	7.27	409.00	279.52	368.10	5.84	368.10	314.46	5043.75
2	330.39	8.98	330.39	202.35	330.39	7.21	330.39	252.93	4179.70
2.2	272.22	10.87	272.22	150.72	299.45	8.74	299.45	207.24	3493.94
2.4	227.99	12.94	211.00	114.88	273.59	10.41	273.59	172.32	2948.04
2.6	193.56	15.20	164.83	89.23	251.63	12.24	251.63	145.00	2510.05
2.8	166.24	17.63	130.92	70.40	232.74	14.21	229.12	123.19	2155.20
3	144.21	20.25	105.46	56.25	216.31	16.34	197.74	105.47	1864.79
3.2	126.17	23.05	85.97	45.42	201.87	18.62	171.94	90.84	1624.75
3.4	111.22	26.03	70.80	36.99	189.08	21.06	150.45	78.61	1424.49
3.6	98.70	29.20	58.81	30.33	177.65	23.66	132.33	68.25	1255.96
3.8	88.09	32.56	49.22	25.00	167.38	26.41	116.90	59.39	1113.00
4	79.04	36.10	41.45	20.69	158.09	29.33	103.62	51.72	990.83
4.2	71.25	39.82	35.09	17.15	149.63	32.41	92.11	45.03	885.71
4.4	64.50	43.73	29.83	14.23	141.91	35.65	82.04	39.14	794.69
4.6	58.61	47.83	25.45	11.80	134.81	39.06	73.17	33.92	715.44
4.8	53.44	52.12	21.77	9.75	128.27	42.63	65.31	29.26	646.06
5	48.88	56.60	18.65	8.02	122.21	46.38	58.29	25.07	585.02

HOW TO ORDER IC – CNL – BBS – S – SL3* – GM

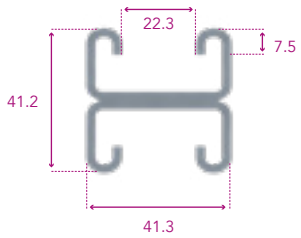
IC: System Type; CNL: Product Group; BBS: Type; S: Slotting; SL3*: Channel Length; GM: Finish

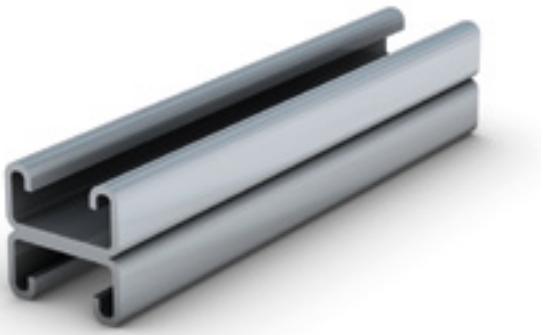
*Straight Channel is available in: SL3 (3000mm), SL6 (6000mm) (For non-standard lengths please contact our sales team)

Shallow Back to Back Channel

- Steel with a Minimum yield strength 280 N/mm².
- Beams are assumed to be simply supported.
- Load and deflection are calculated using a safety factor of 1.6 and an allowable stress of 175 N/mm².
- Results given are for Pre-galvanised steel.
- Beam loads are calculated from the column face and effective length in BS5950.
- The tables show:
  1. The max safe working load,
  2. the load to give 1-200 deflection,
  3. load to give 1-360 deflection - the deflection used will depend on the installation designer.
- This also applies to Point and UDL loads.

Fitting Type: IC-CNL-BBS-P | **Part Number: IC-CNL-BBS-SL☐-⬡**





Sectional Properties

☐ = Select a Channel Length* ⬡ = Select a Finish

Finishes & Materials: QQ SS GM

CSA (mm²)	Ixx (mm⁴)	Zxx (mm⁴)	Weight (kg/m)	Yield (N/mm²)
468	55923	2714	3.67	280

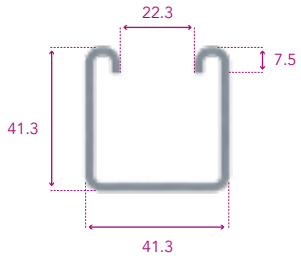
Safe Working Load Table

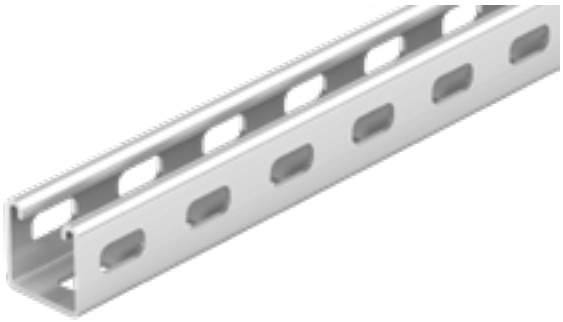
Span (m)	Uniformally Distributed Load				Point Load				Column Load
	Safe Working Load		Deflection Limit		Safe Working Load		Deflection Limit		Safe Axial Load (kg)
	Load (kg/m)	Def (mm)	Span/200 (kg)	Span/360 (kg)	Load (kg)	Def (mm)	Span/200 (kg)	Span/360 (kg)	
0.8	645.88	2.87	645.88	499.05	258.35	2.30	258.35	249.53	4246.45
1	412.18	4.49	412.18	253.74	206.09	3.60	206.09	158.59	3319.07
1.2	285.24	6.46	264.46	145.30	171.14	5.19	171.14	108.98	2582.71
1.4	208.69	8.80	165.19	90.15	146.08	7.07	144.54	78.89	2043.29
1.6	159.01	11.50	109.46	59.19	127.21	9.26	109.46	59.19	1648.02
1.8	124.95	14.57	75.80	40.49	112.46	11.74	85.27	45.55	1353.53
2	100.59	18.00	54.27	28.53	100.59	14.52	67.83	35.66	1129.60
2.2	82.56	21.79	39.87	20.53	90.82	17.62	54.82	28.23	955.86
2.4	68.85	25.96	29.87	14.98	82.62	21.03	44.81	22.46	818.55
2.6	58.18	30.49	22.72	11.00	75.64	24.75	36.91	17.88	708.24
2.8	49.71	35.40	17.46	8.08	69.60	28.80	30.56	14.14	618.30
3	42.88	40.67	13.52	5.89	64.33	33.18	25.34	11.04	544.02
3.2	37.29	46.33	10.50	4.21	59.67	37.89	20.99	8.42	481.94
3.4	32.66	52.36	8.14	2.91	55.52	42.94	17.31	6.18	429.53
3.6	28.78	58.77	6.29	1.87	51.80	48.34	14.15	4.22	384.86
3.8	25.49	65.57	4.80	1.05	48.44	54.09	11.40	2.49	346.47
4	22.69	72.75	3.60	0.38	45.38	60.21	8.99	0.95	313.21
4.2	20.27	80.32	2.61	—	42.58	66.70	6.85	—	284.20
4.4	18.18	88.28	1.80	—	40.00	73.57	4.94	—	258.73
4.6	16.36	96.64	1.12	—	37.62	80.83	3.21	—	236.23
4.8	14.75	105.40	0.55	—	35.41	88.49	1.64	—	216.25
5	13.34	114.55	0.06	—	33.35	96.56	0.20	—	198.42

Deep Channel Triple Slotted

- Steel with a Minimum yield strength 280 N/mm².
- Beams are assumed to be simply supported.
- Load and deflection are calculated using a safety factor of 1.6 and an allowable stress of 175 N/mm².
- Results given are for Pre-galvanised steel.
- Beam loads are calculated from the column face and effective length in BS5950.
- The tables show:
  1. The max safe working load,
  2. the load to give 1-200 deflection,
  3. load to give 1-360 deflection - the deflection used will depend on the installation designer.
- This also applies to Point and UDL loads.

Fitting Type: IC-CNL-D-TS | **Part Number: IC-CNL-D-TS-SL☐-⬡**





Slots 26 x 13 @ 50mm Pitch

Sectional Properties

☐ = Select a Channel Length* ⬡ = Select a Finish

CSA (mm²)	Ixx (mm⁴)	Zxx (mm⁴)	Weight (kg/m)	Yield (N/mm²)
284.55	65922	2843	2.41	280

Finishes & Materials:

QQ SS GM

Safe Working Load Table

Span (m)	Uniformally Distributed Load				Point Load				Column Load
	Safe Working Load		Deflection Limit		Safe Working Load		Deflection Limit		Safe Axial Load (kg)
	Load (kg/m)	Def (mm)	Span/200 (kg)	Span/360 (kg)	Load (kg)	Def (mm)	Span/200 (kg)	Span/360 (kg)	
0.8	761.90	2.91	761.90	580.95	304.76	2.33	304.76	290.47	1469.60
1	486.76	4.55	486.76	296.16	243.38	3.64	243.38	185.10	1363.38
1.2	337.31	6.55	308.61	170.28	202.38	5.25	202.38	127.71	1244.98
1.4	247.19	8.92	193.37	106.26	173.03	7.16	169.20	92.98	1105.97
1.6	188.70	11.66	128.67	70.32	150.96	9.36	128.67	70.32	974.47
1.8	148.60	14.76	89.59	48.60	133.74	11.86	100.79	54.68	857.69
2	119.91	18.23	64.60	34.72	119.91	14.66	80.75	43.40	756.41
2.2	98.69	22.07	47.88	25.43	108.56	17.77	65.83	34.97	669.47
2.4	82.55	26.27	36.27	18.98	99.06	21.18	54.41	28.47	595.04
2.6	69.99	30.85	27.97	14.37	90.98	24.90	45.45	23.35	531.24
2.8	60.02	35.80	21.87	10.98	84.03	28.94	38.27	19.21	476.38
3	51.98	41.12	17.29	8.43	77.97	33.30	32.41	15.81	428.99
3.2	45.40	46.82	13.78	6.49	72.64	37.97	27.56	12.97	387.85
3.4	39.94	52.89	11.05	4.97	67.90	42.97	23.49	10.56	351.96
3.6	35.37	59.34	8.90	3.77	63.67	48.30	20.02	8.49	320.50
3.8	31.50	66.17	7.17	2.81	59.86	53.96	17.03	6.68	292.77
4	28.20	73.38	5.77	2.04	56.40	59.96	14.43	5.09	268.23
4.2	25.36	80.98	4.63	1.40	53.26	66.30	12.15	3.68	246.40
4.4	22.90	88.95	3.68	0.88	50.37	73.00	10.13	2.41	226.90
4.6	20.75	97.32	2.89	0.44	47.72	80.04	8.32	1.26	209.42
4.8	18.86	106.07	2.23	0.07	45.27	87.45	6.69	0.21	193.68
5	17.20	115.21	1.67	—	42.99	95.23	5.22	—	179.45

HOW TO ORDER

IC - CNL - TS - SL3* - SS

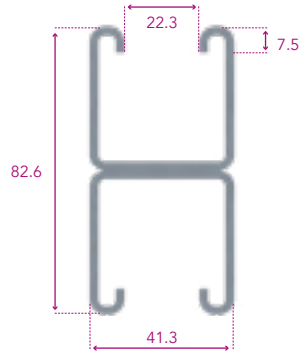
System Type | Product Group | Type | Channel Length | Finish

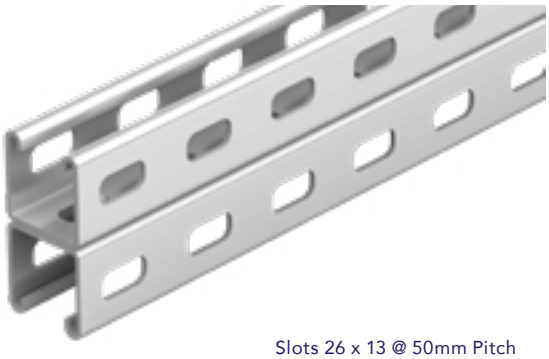
*Straight Channel is available in: SL3 (3000mm), SL6 (6000mm) (For non-standard lengths please contact our sales team)

Deep Back to Back Channel Triple Slotted

- Steel with a Minimum yield strength 280 N/mm².
- Beams are assumed to be simply supported.
- Load and deflection are calculated using a safety factor of 1.6 and an allowable stress of 175 N/mm²
- Results given are for Pre-galvanised steel.
- Beam loads are calculated from the column face and effective length in BS5950.
- The tables show:
  1. The max safe working load,
  2. the load to give 1-200 deflection,
  3. load to give 1-360 deflection - the deflection used will depend on the installation designer.
- This also applies to Point and UDL loads.

Fitting Type: IC-CNL-BBD-TS | **Part Number: IC-CNL-BBD-TS-SL☐-⬡**





Slots 26 x 13 @ 50mm Pitch

Sectional Properties

CSA (mm²)	Ixx (mm⁴)	Zxx (mm⁴)	Weight (kg/m)	Yield (N/mm²)
670.51	331156	8018	4.82	175

☐ = Select a Channel Length* ⬡ = Select a Finish

Finishes & Materials:

QQ SS GM

Safe Working Load Table

Span (m)	Uniformally Distributed Load				Point Load				Column Load
	Safe Working Load		Deflection Limit		Safe Working Load		Deflection Limit		Safe Axial Load (kg)
	Load (kg/m)	Def (mm)	Span/200 (kg)	Span/360 (kg)	Load (kg)	Def (mm)	Span/200 (kg)	Span/360 (kg)	
0.8	1759.09	1.33	1759.09	1759.09	703.64	1.06	703.64	703.64	8423.65
1	1124.11	2.08	1124.11	1124.11	562.06	1.66	562.06	562.06	7460.16
1.2	779.19	2.99	779.19	779.19	467.51	2.40	467.51	467.51	6407.77
1.4	571.21	4.07	571.21	544.98	399.85	3.27	399.85	399.85	5370.42
1.6	436.22	5.32	436.22	363.36	348.98	4.27	348.98	348.98	4435.76
1.8	343.67	6.74	343.67	253.63	309.31	5.41	309.31	285.34	3660.46
2	277.48	8.32	277.48	183.47	277.48	6.69	277.48	229.34	3037.14
2.2	228.50	10.07	228.50	136.54	251.35	8.10	251.35	187.74	2540.63
2.4	191.24	11.99	191.24	103.96	229.49	9.66	229.49	155.94	2144.32
2.6	162.25	14.08	149.37	80.64	210.93	11.36	210.93	131.04	1825.69
2.8	139.25	16.34	118.54	63.52	194.95	13.19	194.95	111.16	1567.13
3	120.69	18.77	95.39	50.66	181.04	15.17	178.87	94.98	1355.25
3.2	105.50	21.37	77.68	40.81	168.80	17.30	155.35	81.63	1179.93
3.4	92.91	24.14	63.88	33.15	157.95	19.57	135.75	70.45	1033.54
3.6	82.37	27.08	52.99	27.10	148.26	21.99	119.22	60.97	910.25
3.8	73.44	30.19	44.27	22.25	139.53	24.56	105.13	52.85	805.60
4	65.82	33.48	37.20	18.33	131.63	27.28	93.00	45.82	716.12
4.2	59.26	36.94	31.42	15.12	124.44	30.15	82.48	39.68	639.09
4.4	53.57	40.57	26.64	12.46	117.86	33.18	73.26	34.27	572.36
4.6	48.61	44.38	22.66	10.25	111.81	36.37	65.14	29.46	514.24
4.8	44.26	48.36	19.31	8.39	106.22	39.72	57.93	25.17	463.33
5	40.42	52.53	16.48	6.82	101.04	43.23	51.50	21.30	418.53

Channel Versatility

Due to the versatility of the Vantrunk Steel Framing Channel, a wide range of non-standard channel configurations can be offered. Contact Vantrunk's Sales Team for ordering information.

Fitting Type: IC-CNL-BBSD

Back to Back Deep and Shallow

Fitting Type: IC-CNL-BWD

Back to Side Deep Channel

Fitting Type: IC-CNL-WWD

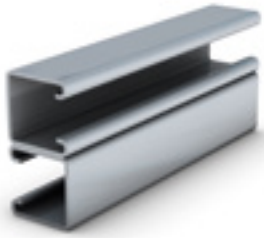
Side to Side Deep Channel

Fitting Type: IC-CNL-BWSD

Back to Side Deep Shallow Channel

Fitting Type: IC-CNL-WWID

Opposite Side to Side Deep Channel



Fitting Type: IC-CNL-RI

Radial Return Flange Inwards Deep Channel

Fitting Type: IC-CNL-RO

Radial Return Flange Outwards Deep Channel

HOW TO ORDER

IC – NUT – M6 – S – GM

System Type | Fitting Type | Thread | Spring Type | Finish

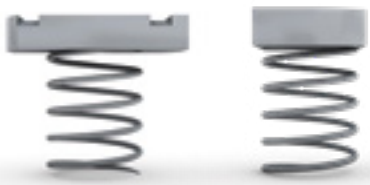
*Straight Channel is available in: SL3 (3000mm), SL6 (6000mm) (For non-standard lengths please contact our sales team)

Vantrunk Channel Nut

The Intelok Channel has serrated return flanges which provide greatly enhanced slip resistance, essential in areas of vibration and where close inspection of completed installations is not possible.

The Vantrunk Intelok Channel Nut can be supplied in plain, short and long spring configurations to suit the client's application.

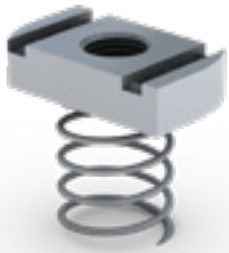
The Vantrunk Intelok Nut is stocked in a number of thread sizes including M6, M8, M10 and M12.



The Vantrunk Intelok Channel Nut can be supplied in three main material & finishes which are Zinc Plated, Galvanised and Stainless Steel.

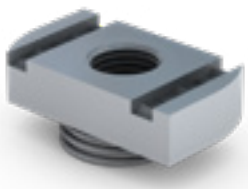
Long Spring Channel Nut

CHANNEL NUTS - LONG SPRING			
Thread Size	Part No. ZA	Part No. GA	Part No. SS
M6	IC-NUT-M6-L-ZD	IC-NUT-M6-L-GA	IC-NUT-M6-L-SS
M8	IC-NUT-M8-L-ZD	IC-NUT-M8-L-GA	IC-NUT-M8-L-SS
M10	IC-NUT-M10-L-ZD	IC-NUT-M10-L-GA	IC-NUT-M10-L-SS
M12	IC-NUT-M12-L-ZD	IC-NUT-M12-L-GA	IC-NUT-M12-L-SS



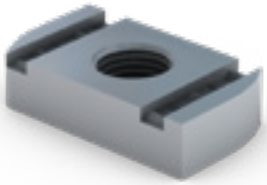
Short Spring Channel Nut

CHANNEL NUTS - SHORT SPRING			
Thread Size	Part No. ZA	Part No. GA	Part No. SS
M6	IC-NUT-M6-S-ZD	IC-NUT-M6-S-GA	IC-NUT-M6-S-SS
M8	IC-NUT-M8-S-ZD	IC-NUT-M8-S-GA	IC-NUT-M8-S-SS
M10	IC-NUT-M10-S-ZD	IC-NUT-M10-S-GA	IC-NUT-M10-S-SS
M12	IC-NUT-M12-S-ZD	IC-NUT-M12-S-GA	IC-NUT-M12-S-SS



No Spring Channel Nut

CHANNEL NUTS - NO SPRING			
Thread Size	Part No. ZA	Part No. GA	Part No. SS
M6	IC-NUT-M6-N-ZD	IC-NUT-M6-N-GA	IC-NUT-M6-N-SS
M8	IC-NUT-M8-N-ZD	IC-NUT-M8-N-GA	IC-NUT-M8-N-SS
M10	IC-NUT-M10-N-ZD	IC-NUT-M10-N-GA	IC-NUT-M10-N-SS
M12	IC-NUT-M12-N-ZD	IC-NUT-M12-N-GA	IC-NUT-M12-N-SS



VANTRUNK INTELOK®

INTELOK BRACKETRY & BEAM CLAMPS

Brackets are primarily designed to be used to provide mechanical strength and reinforcement to a joint when used to connect channel together. The Vantrunk Steel Framing System comes equipped with one of the industry's most comprehensive and versatile range of brackets. The Steel Framing Brackets allow for infinite varieties of permanent and temporary support structures.

Every Bracket in the Vantrunk Steel Framing Range comes complete with a 15.2mm fixing hole to accommodate fixings up to and including M12.

The Steel Framing Range of Brackets are manufactured in either Hot Dip Galvanised Mild Steel or Stainless Steel316 Marine Grade. Vantrunk Steel Framing Brackets manufactured in Carbon Steel have a material gauge of 6mm and brackets manufactured in Stainless Steel have a material gauge of 5mm.

All Steel Framing Brackets are manufactured out of steel with minimum yield strength of 170N/mm^2 in accordance with BS 6946.

The seven groups of brackets (see page 160) are all provided within the Steel Framing Brackets Range, which will accommodate all of our user's installation requirements. For more information on the Vantrunk Bracket Range please contact the Vantrunk Technical Team.

VANTRUNK RIS

Enhanced Option

VANTRUNK INTELOK QF® CHANNEL BRACKETRY

Vantrunk's unique Intelok Quickfit System of brackets and cantilevers are factory assembled with channel nuts, setscrews, washers & special plastic sleeves. The sleeves ensure that the correct spacing is maintained between the bracket and the channel nut enabling it to be easily located and quickly assembled and also ensures that the channel nut is held captive in transit whilst allowing rotation of the fixing assembly during installation.

To install the Intelok Quickfit system of brackets & cantilevers the nuts are aligned with the open slot of the channel. The assembly is placed in position, the setscrew turned by hand through 90° to locate the channel nut under the return flange of the channel and the setscrew tightened. The channel nuts ensure positive location within the channel. The entire assembly operation takes approximately one third of the time required to fix similar brackets and cantilevers by the conventional spring nut method.

Why Quickfit your Brackets?

- Easier and quicker to assemble.
- Less components to order.
- Approximate 65% savings on installation time.
- Simplified stock control.
- Easier estimating.

Conventional Bracket

- Number of individual components = 10
- Number of order items = 4
- Assembly time = 135 secs

Quickfit Bracket

QF

- Number of individual components = 1
- Number of order items = 1
- Assembly time = 45 secs **(66.6% saving)**

It couldn't be easier to order a Quickfit Bracket with our NEW Simplified Ordering System

1. All brackets with the QF symbol can be supplied as Quickfit.
2. Select the bracket part number required.
3. Add the suffix (QF10) for standard M10 Quickfit Brackets.

Quick Guide

Starter Brackets

Starter brackets are designed to be welded to the existing steel structure in order to avoid cold working.

Flat Plate Brackets

Flat Plate Brackets provide joint reinforcement between Steel Framing Channel on the same or on different planes.

90° Angle Brackets

90° Angled brackets allow for right angle joints within a channel framework.

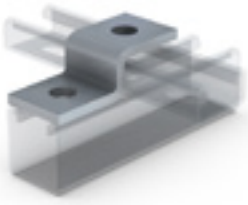
Angle Brackets

Angled brackets come in a range of angles to provide reinforcement to angular channel joints in a framework.

Support Brackets

Designed to offer support and mechanical strength to channels on many different planes.

Shaped & Top Hat Brackets



A captive fixing bracket used to secure channel side by side on the same plane or channel on a horizontal plane to channel on a vertical plane.

Base Brackets

Base Plates are to be used for securing channel to the floor or wall and will help to distribute the concentrated load over a larger area.

Beam Clamps

Beam Clamps are designed to secure Steel Framing Intelok Channel to secondary steelwork or building structures.

HOW TO ORDER 325AE10 – GA – QF10
System & Bracket Type | Finish | QF option

*Quickfit Optional on some products, just add - QF10 or QF12 to the appropriate finish

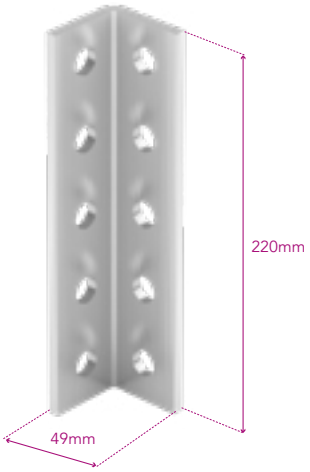
Starter Brackets

5 Hole Straight Bar

Part No. GA 325AY10-GA

Part No. SS 325AY10-SS

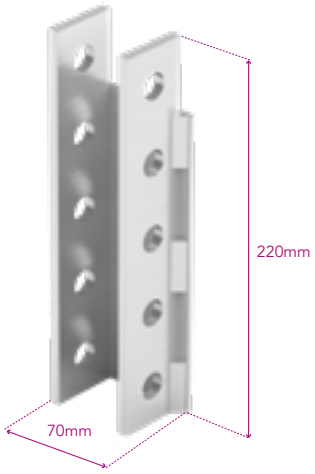
Right Angle Starter Bracket



Part No. GA 325AB12-GA

Part No. SS 325AB12-SS

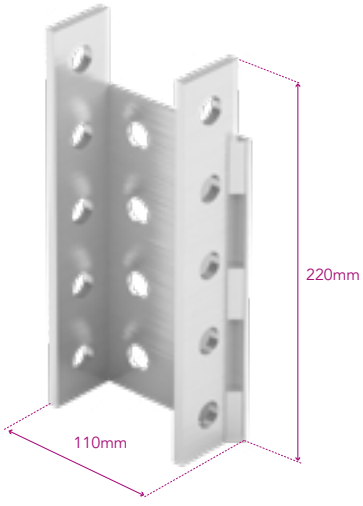
Deep Single Starter Bracket



Part No. GA 325AW05-GA

Part No. SS 325AW05-SS

Back to Back Starter Bracket

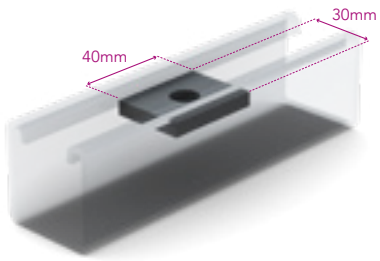


Part No. GA 325AW06-GA

Part No. SS 325AW06-SS

Flat Plate Brackets

Internal Washer

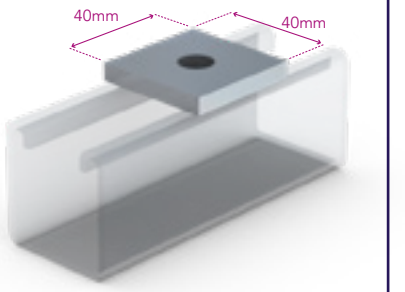


Part No. GA 325AJ02-GA
Part No. SS 325AJ02-SS

Square Washer

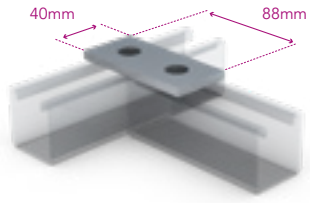
325XAJ10 also available QF

Available in: M6, M8, M10 & M12
Amend Code as Applicable.



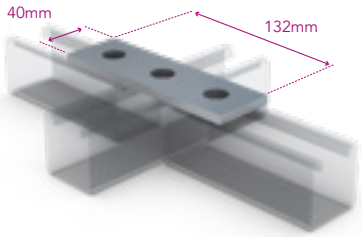
Part No. GA	Part No. SS	Hole Clearance
325AJ03-GA	325AJ03-SS	M6
325AJ05-GA	325AJ05-SS	M8
325AJ07-GA	325AJ07-SS	M10
325AJ10-GA	325AJ10-SS	M12

2 Hole Straight Bar



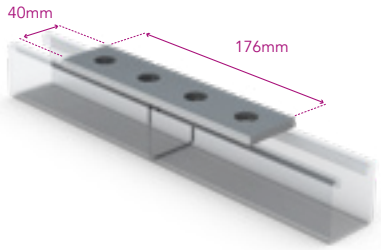
Part No. GA 325AD11-GA
Part No. SS 325AD11-SS QF

3 Hole Straight Bar



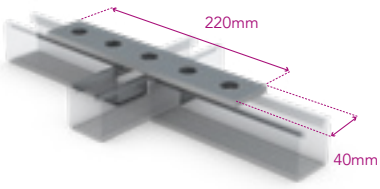
Part No. GA 325AC11-GA
Part No. SS 325AC11-SS QF

4 Hole Straight Bar



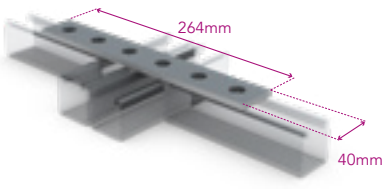
Part No. GA 325AC13-GA
Part No. SS 325AC13-SS QF

5 Hole Straight Bar



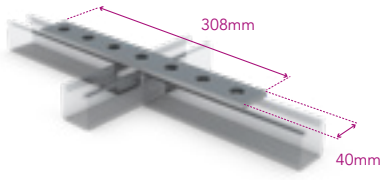
Part No. GA 325AY10-GA
Part No. SS 325AY10-SS QF

6 Hole Straight Bar



Part No. GA 325AY11-GA
Part No. SS 325AY11-SS QF

7 Hole Straight Bar



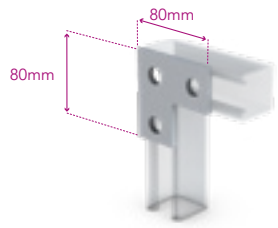
Part No. GA 325AY12-GA
Part No. SS 325AY12-SS QF

HOW TO ORDER 325AG10 – SS*
System & Bracket Type — Finish

*Quickfit Optional on some products, just add - QF10 or QF12 to the appropriate finish

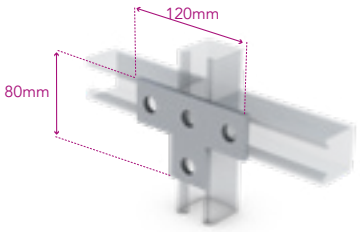
Flat Plate Brackets (cont.)

'L' Shaped Bracket



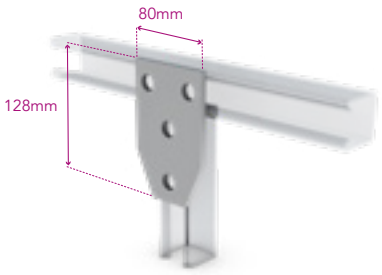
Part No. GA 325AG10-GA
Part No. SS 325AG10-SS

'T' Shaped Bracket



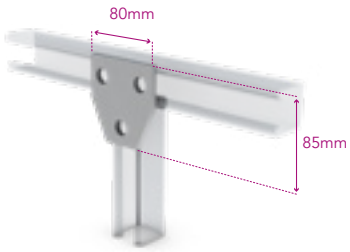
Part No. GA 325AF13-GA
Part No. SS 325AF13-SS

Fish Plate Joiner



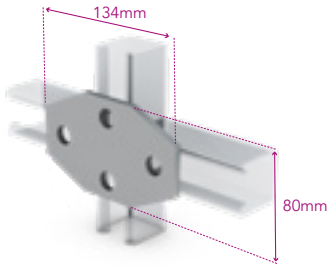
Part No. GA 325AF15-GA
Part No. SS 325AF15-SS

3 Hole Straight Bar



Part No. GA 325AF26-GA
Part No. SS 325AF26-SS

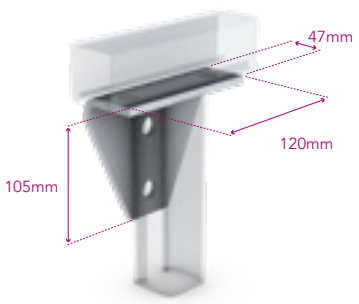
4 Hole Straight Bar



Part No. GA 325AF27-GA
Part No. SS 325AF27-SS

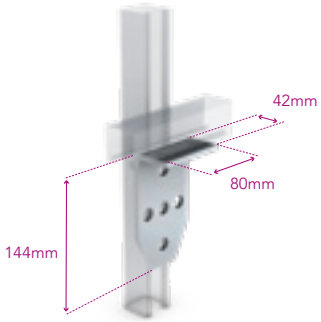
90° Angle Brackets

Wing 90° Angle Plate



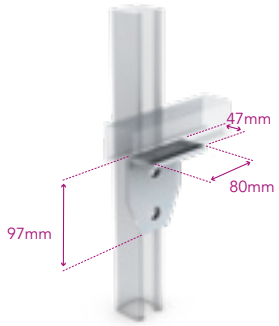
Part No. GA 325AQ10-GA
Part No. SS 325AQ10-SS

Large 90° Angle Plate



Part No. GA 325AQ11-GA
Part No. SS 325AQ11-SS

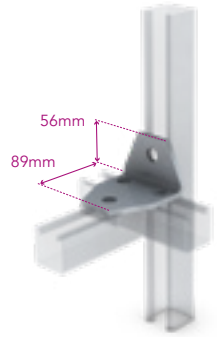
Medium 90° Angle Plate



Part No. GA 325AQ12-GA
Part No. SS 325AQ12-SS

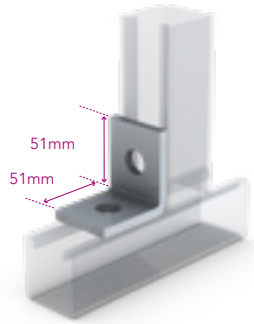
90° Angle Brackets (cont.)

Small 90° Angle Plate



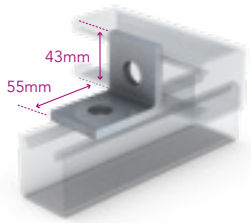
Part No. GA 325AQ14-GA
Part No. SS 325AQ14-SS

Linear Right Angle Bar 1x1



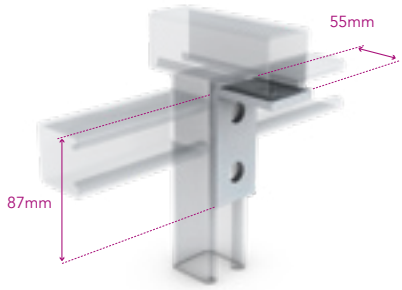
Part No. GA 325AS10-GA
Part No. SS 325AS10-SS

Perpendicular Right 1x1



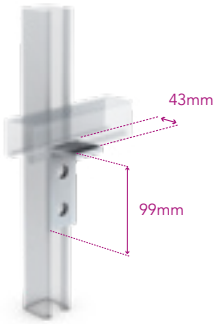
Part No. GA 325AD10-GA
Part No. SS 325AD10-SS

Linear Right Angle Bar 2x1



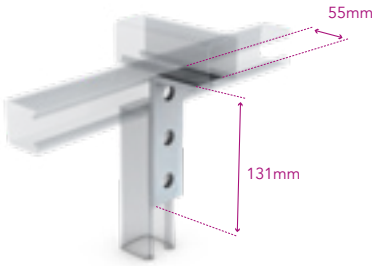
Part No. GA 325AC10-GA
Part No. SS 325AC10-SS

Perpendicular Right 2x1



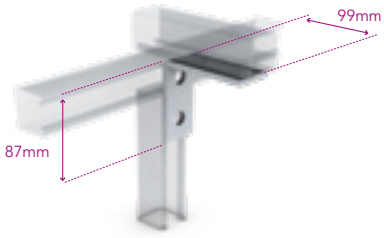
Part No. GA 325AC09-GA
Part No. SS 325AC09-SS

Linear Right Angle Bar 3x1



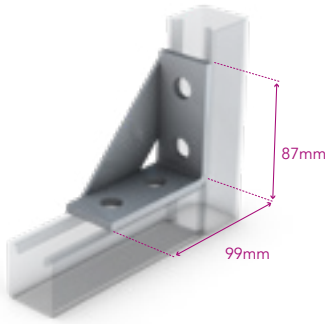
Part No. GA 325AE10-GA
Part No. SS 325AE10-SS

Linear Right Angle Bar 2x2



Part No. GA 325AE11-GA
Part No. SS 325AE11-SS

Right Angle Shelf Bracket



Part No. GA 325AE12-GA
Part No. SS 325AE12-SS

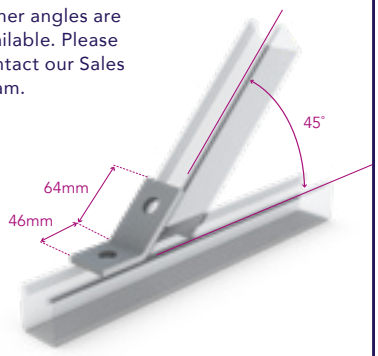
HOW TO ORDER 325AD17 – GA*
System & Bracket Type Finish

*Quickfit Optional on some products, just add - QF10 or QF12 to the appropriate finish

Angle Brackets

Obtuse Angle Bracket

Other angles are available. Please contact our Sales Team.

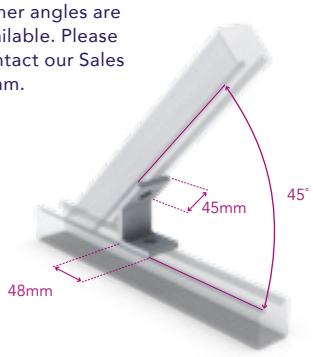


Part No. GA 325AD17-GA

Part No. SS 325AD17-SS

Acute Angle Bracket

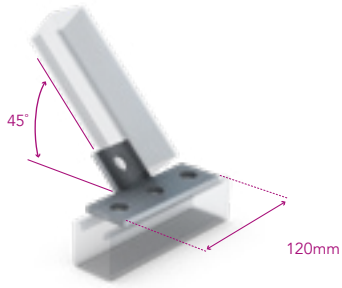
Other angles are available. Please contact our Sales Team.



Part No. GA 325AH11-GA

Part No. SS 325AH11-SS

45° Angle Tee Bracket

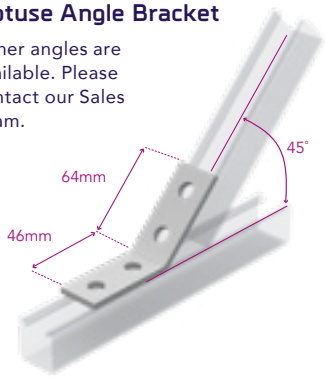


Part No. GA 325AF14-GA

Part No. SS 325AF14-SS

Obtuse Angle Bracket

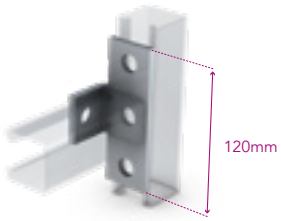
Other angles are available. Please contact our Sales Team.



Part No. GA 325AC14-GA

Part No. SS 325AC14-SS

90° Angle Tee Bracket

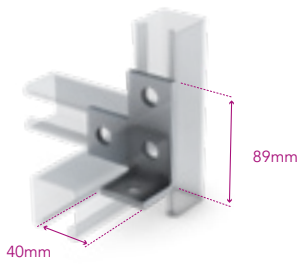


Part No. GA 325AF10-GA

Part No. SS 325AF10-SS

Support Brackets

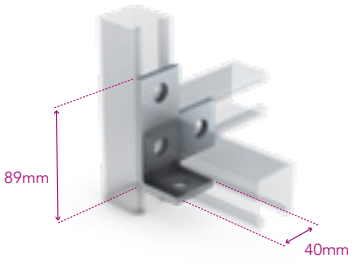
Left Handed Tee Support



Part No. GA 325AF11-GA

Part No. SS 325AF11-SS

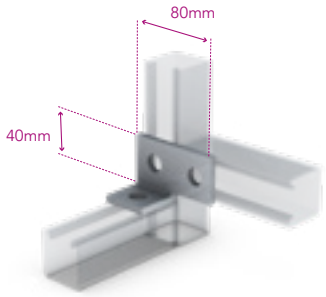
Right Handed Tee Support



Part No. GA 325AF12-GA

Part No. SS 325AF12-SS

Left Hand One Bend L Support

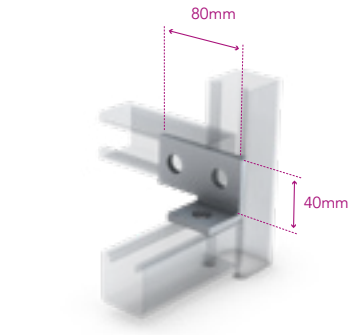


Part No. GA 325AG12-GA

Part No. SS 325AG12-SS

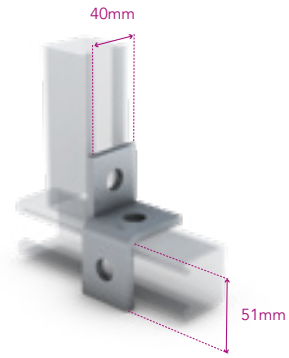
Support Brackets (cont.)

Right Hand One Bend L Support



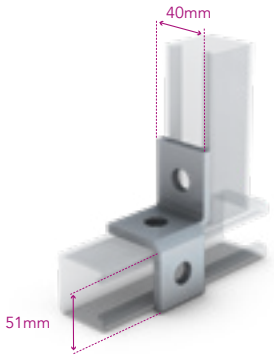
Part No. GA 325AG13-GA
Part No. SS 325AG13-SS

Left Hand Two Bend L Support



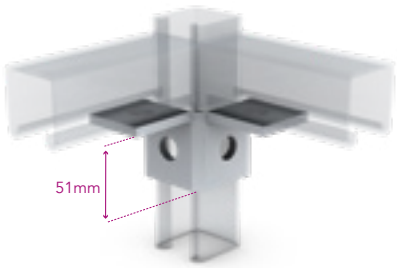
Part No. GA 325AG15-GA
Part No. SS 325AG15-SS

Right Hand Two Bend L Support



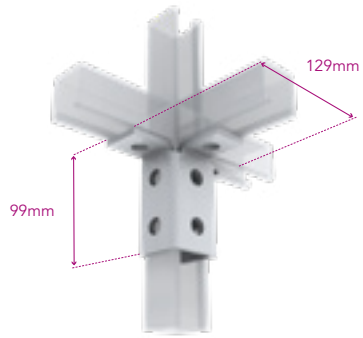
Part No. GA 325AG16-GA
Part No. SS 325AG16-SS

Three Way Corner



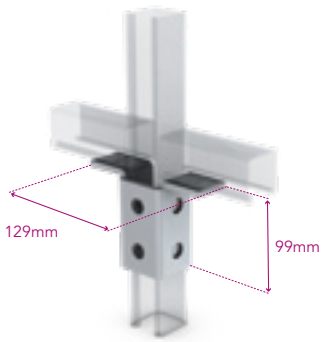
Part No. GA 325AV02-GA
Part No. SS 325AV02-SS

Three Leg Support



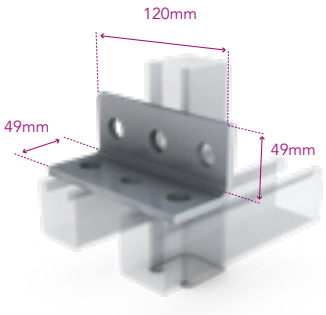
Part No. GA 325AV09-GA
Part No. SS 325AV09-SS

Two Leg Support



Part No. GA 325AV10-GA
Part No. SS 325AV10-SS

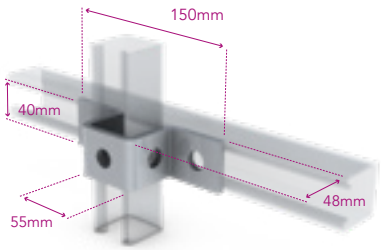
Cross Support



Part No. GA 325AB10-GA
Part No. SS 325AB10-SS

Shaped Brackets

Deep Normal Top Hat Bracket



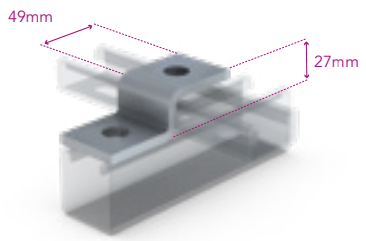
Part No. GA 325AJ12-GA
Part No. SS 325AJ12-SS

HOW TO ORDER 325AJ13 – GA – QF10
System & Bracket Type | Finish | QF option

*Quickfit Optional on some products, just add - QF10 or QF12 to the appropriate finish

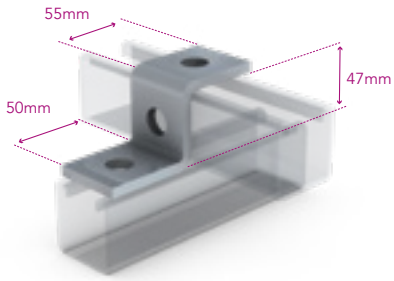
Shaped Brackets (cont.)

Shallow 'Z' Shaped Bracket



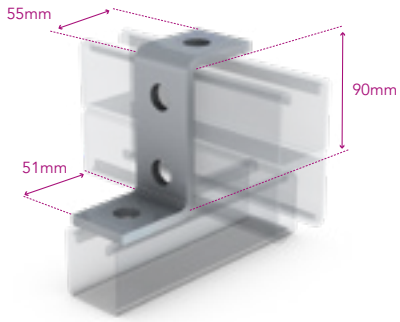
Part No. GA 325AD28-GA
Part No. SS 325AD28-SS

Deep 'Z' Shaped Bracket



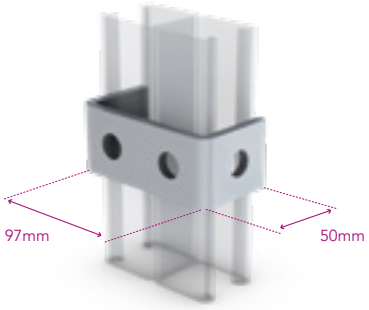
Part No. GA 325AC12-GA
Part No. SS 325AC12-SS

Deep Back to Back 'Z' Shaped Bar



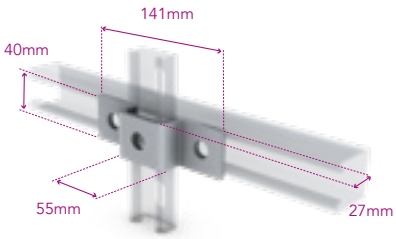
Part No. GA 325AU10-GA
Part No. SS 325AU10-SS

Back to Back Bracket



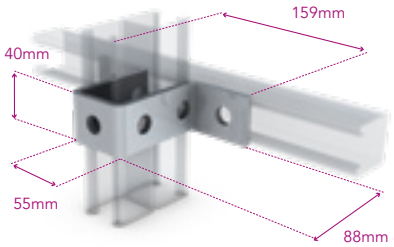
Part No. GA 325AT11-GA
Part No. SS 325AT11-SS

Shallow Normal Top Hat Bracket



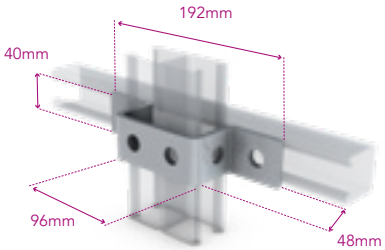
Part No. GA 325AJ13-GA
Part No. SS 325AJ13-SS

Back to Back Normal Top Hat Bracket



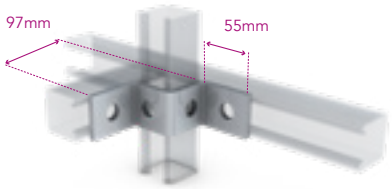
Part No. GA 325AJ14-GA
Part No. SS 325AJ14-SS

Back to Back Flat Top Hat Bracket



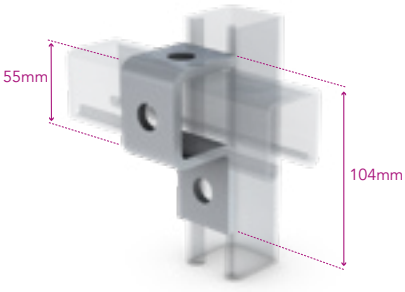
Part No. GA 325AJ11-GA
Part No. SS 325AJ11-SS

'W' Shaped Bracket



Part No. GA 325AU15-GA
Part No. SS 325AU15-SS

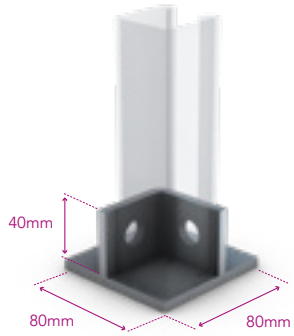
'U' Shaped Bracket



Part No. GA 325AJ15-GA
Part No. SS 325AJ15-SS

Base Plates

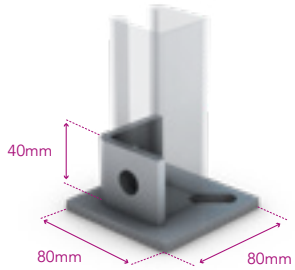
Deep Offset Base Plate



Part No. GA 325AR10-GA
Part No. SS 325AR10-SS

QF

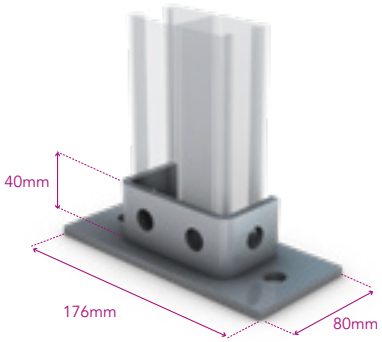
Deep Central Base Plate



Part No. GA 325AN10-GA
Part No. SS 325AN10-SS

QF

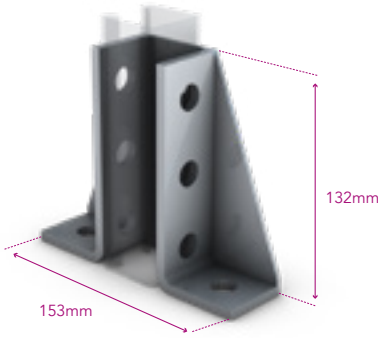
Back to Back Central Base Plate



Part No. GA 325AT10-GA
Part No. SS 325AT10-SS

QF

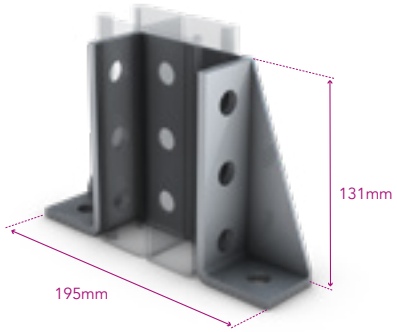
Deep Tall Gusset Wing Fitting



Part No. GA 325AW01-GA
Part No. SS 325AW01-SS

QF

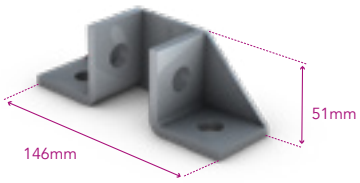
Back to Back Tall Gusset Wing Fitting



Part No. GA 325AW02-GA
Part No. SS 325AW02-SS

QF

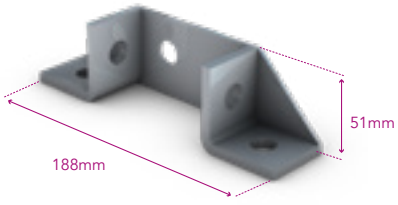
Deep Short Gusset Wing Fitting



Part No. GA 325AW03-GA
Part No. SS 325AW03-SS

QF

Back to Back Short Gusset Wing Fitting



Part No. GA 325AW04-GA
Part No. SS 325AW04-SS

QF

HOW TO ORDER 389AA07 – SS
System & Bracket Type Finish

*Quickfit Optional on some products, just add - QF10 or QF12 to the appropriate finish

Beam Clamps

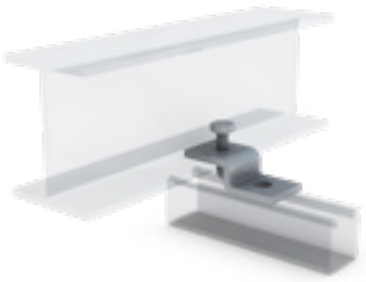
Purlin Beam Clamp

Part No. GA	389AH10-GA
Part No. SS	389AH10-SS

Beam Clamp

Part No. GA	Part No. SS	Thread Size	Max. Load GA
389AA07-GA	389AA07-SS	M10	114kg
389AA08-GA	389AA08-SS	M12	341kg

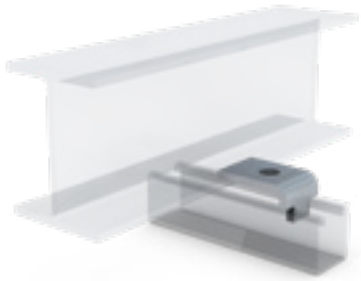
'Z' Shaped Beam Clamp



Flange range up to 17mm
Supplied with M10x40 Cone Point Screw

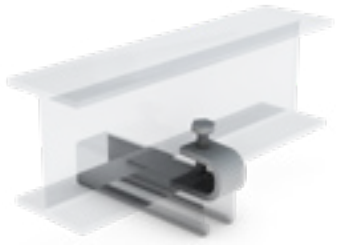
Part No. GA	325AP10-GA
Part No. SS	325AP10-SS
Max. Load as pair GA	300kg

'J' Shaped Beam Clamp



Part No. GA	325AP11-GA
Part No. SS	325AP11-SS
Max. Load as pair GA	300kg

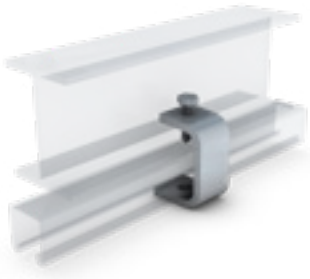
'C' Shaped Flange Beam Clamp



Flange range up to 17mm
Supplied with M10x40 Cone Point Screw

Part No. GA	325AX11-GA
Part No. SS	325AX11-SS
Max. Load as pair GA	250kg

'C' Shaped Base Beam Clamp



Flange range up to 18mm
Supplied with M12x40 Cone Point Screw

Part No. GA	Part No. SS	Max. Load as pair GA
325AX10-GA	325AX10-SS	300kg

Medium Duty 'U' Bolt Beam Clamp

Suitable for both Deep and Shallow Channel Flange range up to 25mm Supplied single and with M10x80 'U' Bolt, 2 x M10 Flat Washers and 2 M10 Hex Nuts

Part No. GA	Part No. SS	Max. Load as pair GA
325AM10-GA	325AM10-SS	300kg

Medium Duty Back to Back 'U' Bolt Beam Clamp

Flange range up to 25mm. Supplied single and with M10x128 'U' Bolt, 2 x M10 Flat Washers and 2 M10 Hex Nuts.

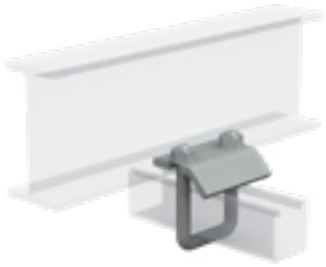
Part No. GA	Part No. SS	Max. Load as pair
325AM12-GA	325AM12-SS	1100kg

Heavy Duty Back to Back 'U' Bolt Beam Clamp

Flange range up to 25mm Supplied single and with M12x126 'U' Bolt, 2 x M12 Flat Washers and 2 M12 Hex Nuts.

Part No. GA	Part No. SS	Max. Load as pair
325AM13-GA	325AM13-SS	300kg

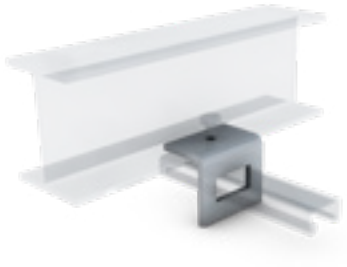
Extra Heavy Duty Back to Back 'U' Bolt Beam Clamp



Flange range 25mm - 40mmSupplied single and with M12x146 'U' Bolt, 2 x M12 Flat Washers and 2 M12 Hex Nuts.

Part No. GA	Part No. SS	Max. Load as pair
325AM14-GA	325AM14-SS	1800kg

Shallow Window Beam Clamp



Flange range up to 15mm
Supplied with M10x40 Cone Point Screw.

Part No. GA	Part No. SS	Max. Load as pair
325AL11-GA	325AL11-SS	500kg

Deep Window Beam Clamp

Flange range up to 15mm
Supplied with M10x40 Cone Point Screw.

Part No. GA	Part No. SS	Max. Load as pair
325AL10-GA	325AL10-SS	500kg

Deep Back to Back Window Beam Clamp

Flange range up to 15mm
Supplied with M10x40 Cone Point Screw.

Part No. GA	Part No. SS	Max. Load as pair
325AL09-GA	325AL09-SS	500kg

HOW TO ORDER 325AM12 – GA
System & Bracket Type — Finish

*Quickfit Optional on some products, just add - QF10 or QF12 to the appropriate finish

VANTRUNK

ENGINEERED FOR EXTREME ENVIRONMENTS

GOLDEN EAGLE PROJECT

The Nexen-operated Golden Eagle project produced first oil on October 30, 2014. Upon completion, the project had expended 17.9 million hours worked. Located 70 km northeast of Aberdeen, Golden Eagle is the second largest oil discovery in the UK North Sea since Buzzard was discovered in 2001.

LOCATION

NORTH SEA, UK
70km northeast of Aberdeen.

CLIENT

nexen

$4.8bn
OVERALL COST OF PROJECT

FACT 1

140 million
barrels of oil equivalent

FACT 2

21
development wells

15 production
6 water injectors

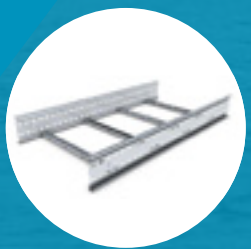
FACT 3

70,000 boe/d
production capacity

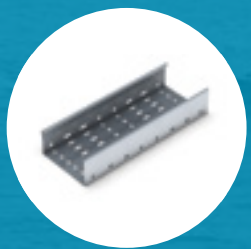
FACT 4

Fixed
wellhead platform structure

PRODUCTS SUPPLIED



SPEEDWAY



HEAVY DUTY CABLE TRAY

VANTRUNK SPEEDWAY® EXTREME CABLE LADDER

Vantrunk's Speedway Cable Ladder provides a strong, reliable, easy to install solution providing overall cost savings throughout the project lifespan.

VANTRUNK INTELOK®

INTELOK SUPPORTS

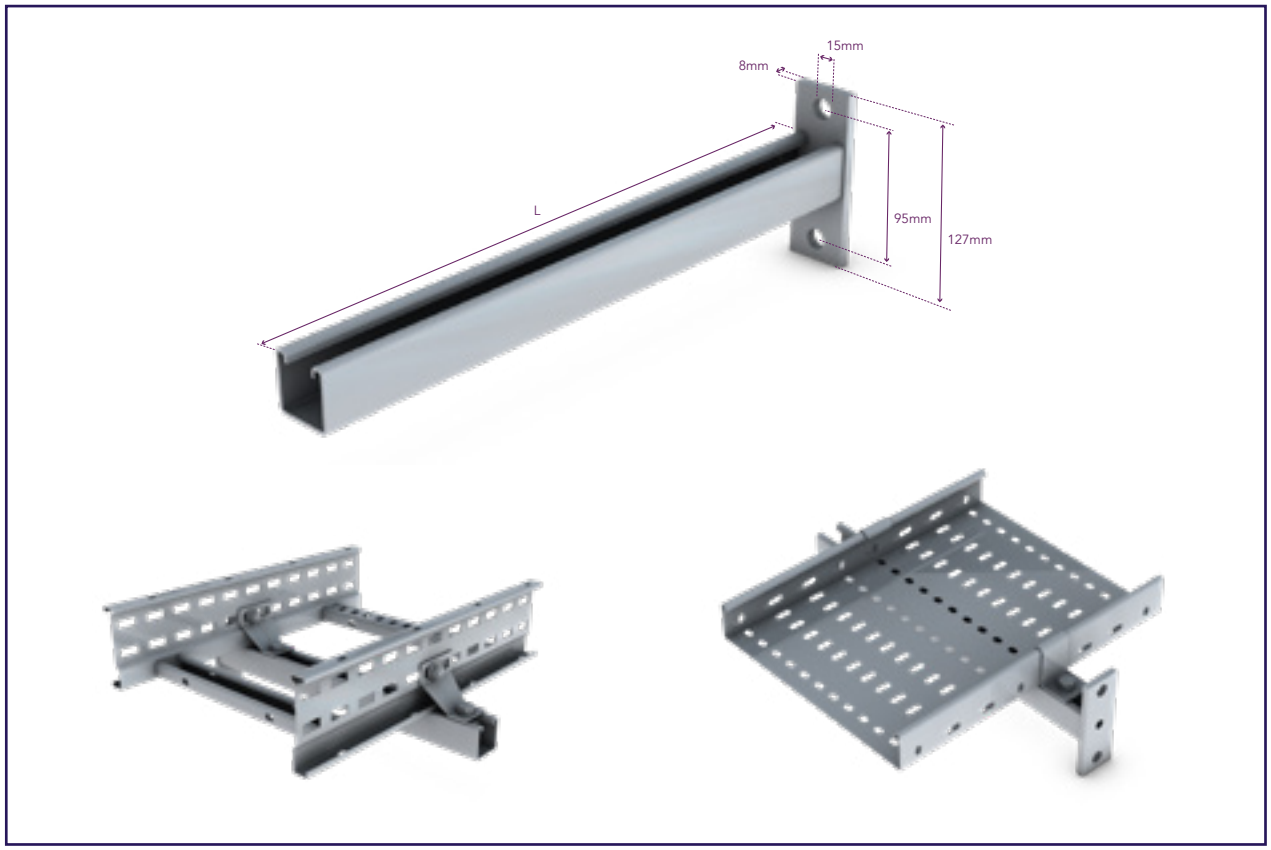
A range of supports and accessories complement Vantrunk's Cable Management Systems. General purpose single and double channel cantilevers, heavy duty cantilevers, overhead hangers and a comprehensive channel support system manufactured to BS 6946 in conjunction with Intelok Beam Clamps and Brackets offer solutions to suit all particular site requirements.

HOW TO ORDER

IC	-	CARM	-	SC	-	P	-	450	-	GM	-	2.5
System Type		Product Group		Channel Type		Slotting Type		Length		Finish		Gauge

Single Channel Cantilever Arm (150mm - 900mm)

The Single Channel Cantilever Arm Bracket (IC-CARM-SC) is suitable for supporting light to medium loads. The single channel cantilever arm bracket is available in lengths from 150mm to 900mm for supporting Speedway cable ladder and cable tray. Where heavier load carrying performance is required, the single channel cantilever arm bracket can be reinforced using a cantilever arm prop (IC-PROP-length-#) see page 177. The single channel cantilever arm bracket, based on a conventional strut profile, is suitable for use with both external flange clamps (SW-EFC-#), adaptable fixing brackets (SW-AFB-#) and hold down brackets (SW-HDB-#) for Speedway Cable Ladder and for Cable Tray is suitable for use with the tray hold down bracket (HDB) or for direct fixing through the bed of the cable tray using conventional M6 channel nuts.



Safety Factor of 3.
~ Not recommended without the use of additional support

The loading table below gives the recommended maximum load for each size of single channel cantilever arm bracket for supporting uniformly distributed loads (UDL) such as cable tray or for supporting Speedway cable ladder (which should be uniformly loaded to apply two equal point loads onto the cantilever arm).

Part Number	L (mm)	Max. UDL (kg)
IC-CARM-SC-P-150-⬡	150	363
IC-CARM-SC-P-300-⬡	300	182
IC-CARM-SC-P-450-⬡	450	121
IC-CARM-SC-P-600-⬡	600	91
IC-CARM-SC-P-750-⬡	750	59
IC-CARM-SC-P-900-⬡	900	41

⬡ = Select a Finish & Material

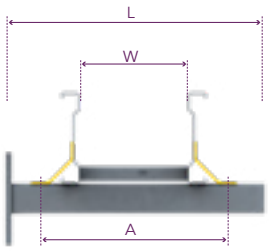
Finishes & Materials:

GM SS

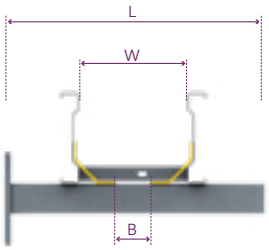
Single Channel Cantilever Arm (Continued)

Longer cantilever arm lengths are available for use as part of a pendant assembly where the single channel cantilever arm is suspended vertically to create a support system in conjunction with cantilever arm brackets as shown. Consult our Design Team for loading information.

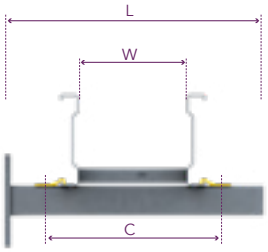
Typical pendant assembly comprising of IC-CARM-SC cantilever arm brackets



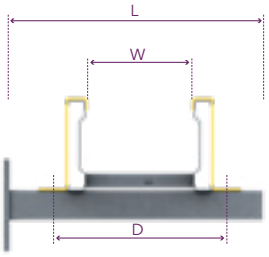
IC-CARM-SC-P Cantilever with Adaptable Fixing Brackets installed externally



IC-CARM-SC-P Cantilever with Adaptable Fixing Brackets installed internally



IC-CARM-SC-P Cantilever with External Flange Clamps



IC-CARM-SC-P Cantilever with Hold Down Brackets

Ladder Type	SW4	SW5	SW6
A	W + 102mm	W + 107mm	
B	W + 83mm	W - 79mm	
C	W + 79mm	W + 89mm	
D	W + 123mm	W + 134mm	
L	W + 150mm		

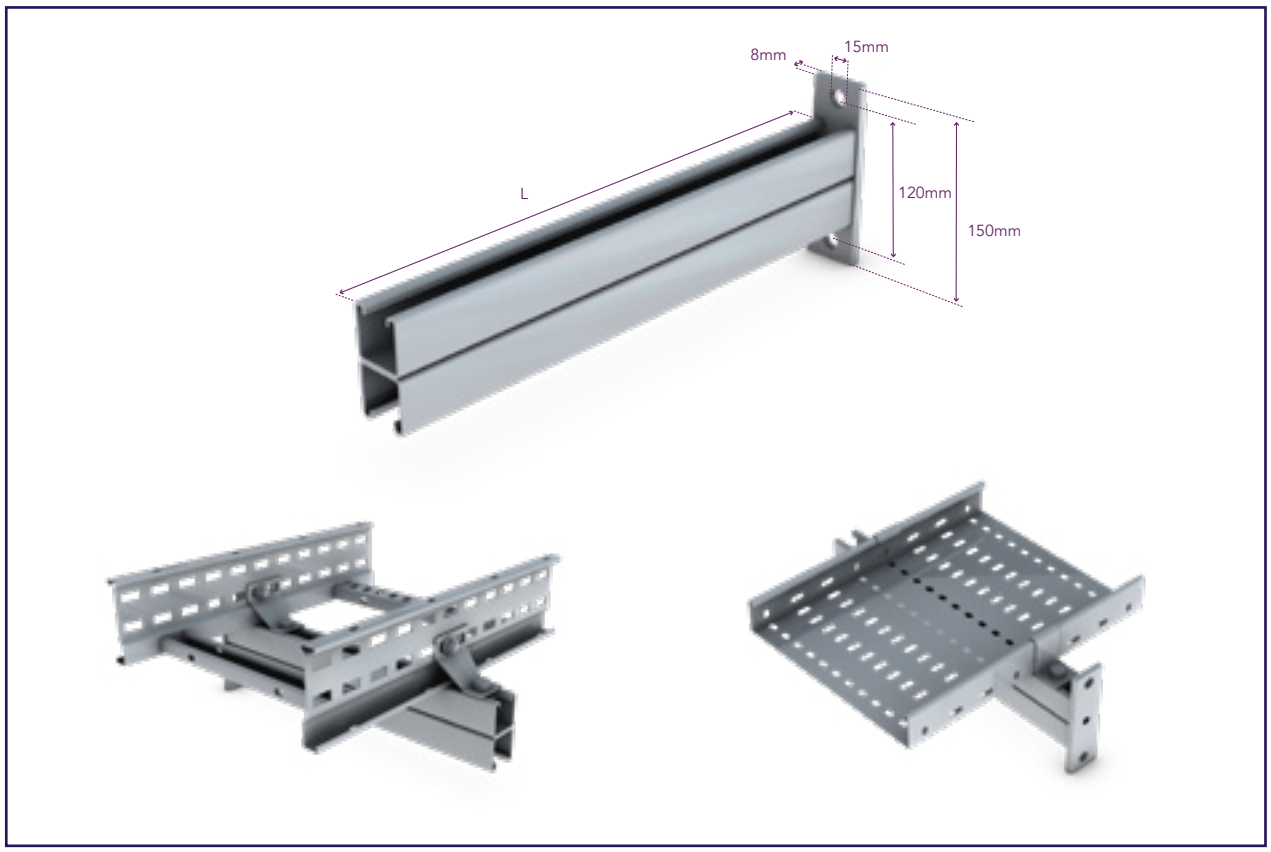
HOW TO ORDER

IC - CARM - BB - P - 750 - GM - 2.5

System Type | Product Group | Channel Type | Slotting Type | Length | Finish | Gauge

Back to Back Channel Cantilever Arm

The Double Channel Cantilever Arm Bracket (IC-CARM-BB) is suitable for supporting medium to heavy loads. The double channel cantilever arm bracket is available in lengths from 150mm to 1200mm for supporting Speedway cable ladder and cable tray. Where heavier load carrying performance is required, the double channel cantilever bracket can be reinforced using a cantilever arm prop (IC-CARM-BB). The double channel cantilever arm bracket, based on conventional back to back strut profiles, is suitable for use with Speedway External Flange Clamps (SW-EFC-#), Adaptable Fixing Brackets (SW-AFB-#) and Hold Down Brackets (SW-HDB-#) for Speedway Cable Ladder and for Cable Tray is suitable for use with the tray hold down bracket (HDB) or for direct fixing through the bed of the cable tray using conventional M6 channel nuts.



Safety Factor of 3.

The loading table below gives the recommended maximum load for each size of double channel cantilever arm bracket for supporting uniformly distributed loads (UDL) such as cable tray or for supporting Speedway Cable Ladder (which should be uniformly loaded to apply two equal point loads onto the cantilever arm).

Part Number	L (mm)	Max. UDL (kg)
IC-CARM-BB-P-150-⬡	150	398
IC-CARM-BB-P-300-⬡	300	398
IC-CARM-BB-P-450-⬡	450	285
IC-CARM-BB-P-600-⬡	600	221
IC-CARM-BB-P-750-⬡	750	181
IC-CARM-BB-P-900-⬡	900	153
IC-CARM-BB-P-1050-⬡	1050	133
IC-CARM-BB-P-1200-⬡	1200	117

⬡ = Select a Finish & Material

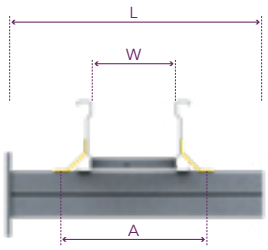
Finishes & Materials:

GM SS

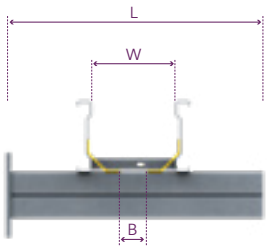
Back to Back Channel Cantilever Arm (Continued)

Longer cantilever arm lengths are available for use as part of a pendant assembly where the double channel cantilever arm bracket is suspended vertically to create a support system in conjunction with cantilever arms as shown. Consult our Design Team for loading information.

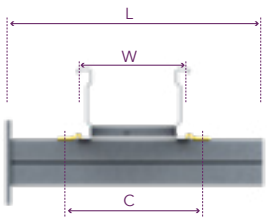
Typical pendant assembly comprising of IC-CARM-BB cantilever arm brackets



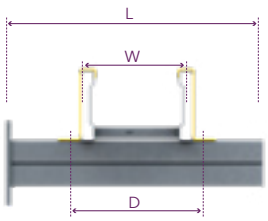
IC-CARM-BB Cantilever with Adaptable Fixing Brackets installed externally



IC-CARM-BB Cantilever with Adaptable Fixing Brackets installed internally



IC-CARM-BB Cantilever with External Flange Clamps



IC-CARM-BB Cantilever with Hold Down Brackets

Ladder Type	SW4	SW5	SW6
A	W + 102mm	W + 107mm	
B	W + 83mm	W - 79mm	
C	W + 79mm	W + 89mm	
D	W + 123mm	W + 134mm	
L	W + 150mm		

HOW TO ORDER IC – PROP – 300-450 – GM
System Type | Product Group | Length | Finish

Cantilever Arm Prop

VANTRUNK INTELOK® | VANTRUNK CABLE-TRAY | VANTRUNK SPEEDWAY®

A Cantilever Arm Prop (IC-PROP) is used where there is a requirement to increase the effective safe working loads of Single Channel Cantilever Arm Brackets (IC-CARM-SC) and Double Channel Cantilever Arm Brackets (IC-CARM-BB). The Cantilever Arm Prop is particularly effective when used to reinforce cantilever arm brackets carrying heavier duty Speedway Cable Ladders with their correspondingly higher load bearing capabilities.

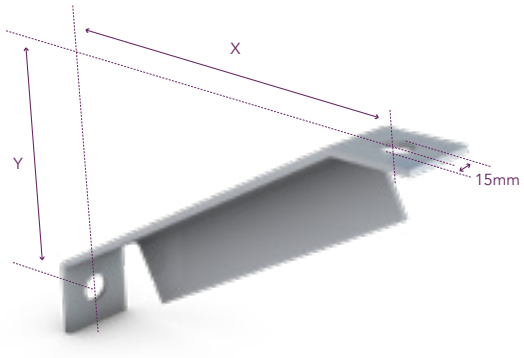
The Cantilever Arm Prop is available in three sizes:

Cantilever Arm Props

Part Number	Dimensions (mm)		
	L	X	Y
IC-PROP-300-450-⬡	300	125	216.5
	450	425	736
IC-PROP-600-750-⬡	600	425	736
	750	725	1259
IC-PROP-900-1200-⬡	900	725	1259
	1050	725	1259

⬡ = Select a Finish & Material

Finishes & Materials: GM SS



The Table below gives the recommended maximum safe working load for each size of cantilever arm prop when supporting Speedway Cable Ladder.

Safe Working Loads with Single Channel Cantilevers

Part Number	Cantilever Type	L (mm)	Max UDL kg
IC-PROP-300-450-⬡	IC-CARM-SC-P-300	300	748
IC-PROP-300-450-⬡	IC-CARM-SC-P-450	450	238
IC-PROP-600-750-⬡	IC-CARM-SC-P-600	600	1587
IC-PROP-600-750-⬡	IC-CARM-SC-P-750	750	286
IC-PROP-900-1200-⬡	IC-CARM-SC-P-900	900	369
IC-PROP-900-1200-⬡	IC-CARM-SC-P-1050	1050	179

⬡ = Select a Finish & Material

Finishes & Materials: GM SS

Safe Working Loads with Double Channel Cantilevers

Part Number	Cantilever Type	L (mm)	Max UDL kg
IC-PROP-300-450-⬡	IC-CARM-BB-P-300	300	2136
IC-PROP-300-450-⬡	IC-CARM-BB-P-450	450	680
IC-PROP-600-750-⬡	IC-CARM-BB-P-600	600	4531
IC-PROP-600-750-⬡	IC-CARM-BB-P-750	750	817
IC-PROP-900-1200-⬡	IC-CARM-BB-P-900	900	1053
IC-PROP-900-1200-⬡	IC-CARM-BB-P-1050	1050	512

⬡ = Select a Finish & Material

Finishes & Materials: GM SS

Where used with the IC-CARM-SC-P range of single channel cantilever arm brackets, it may be necessary to drill the single channel to accept a fixing for the cantilever arm prop.

Trapeze Support Channel

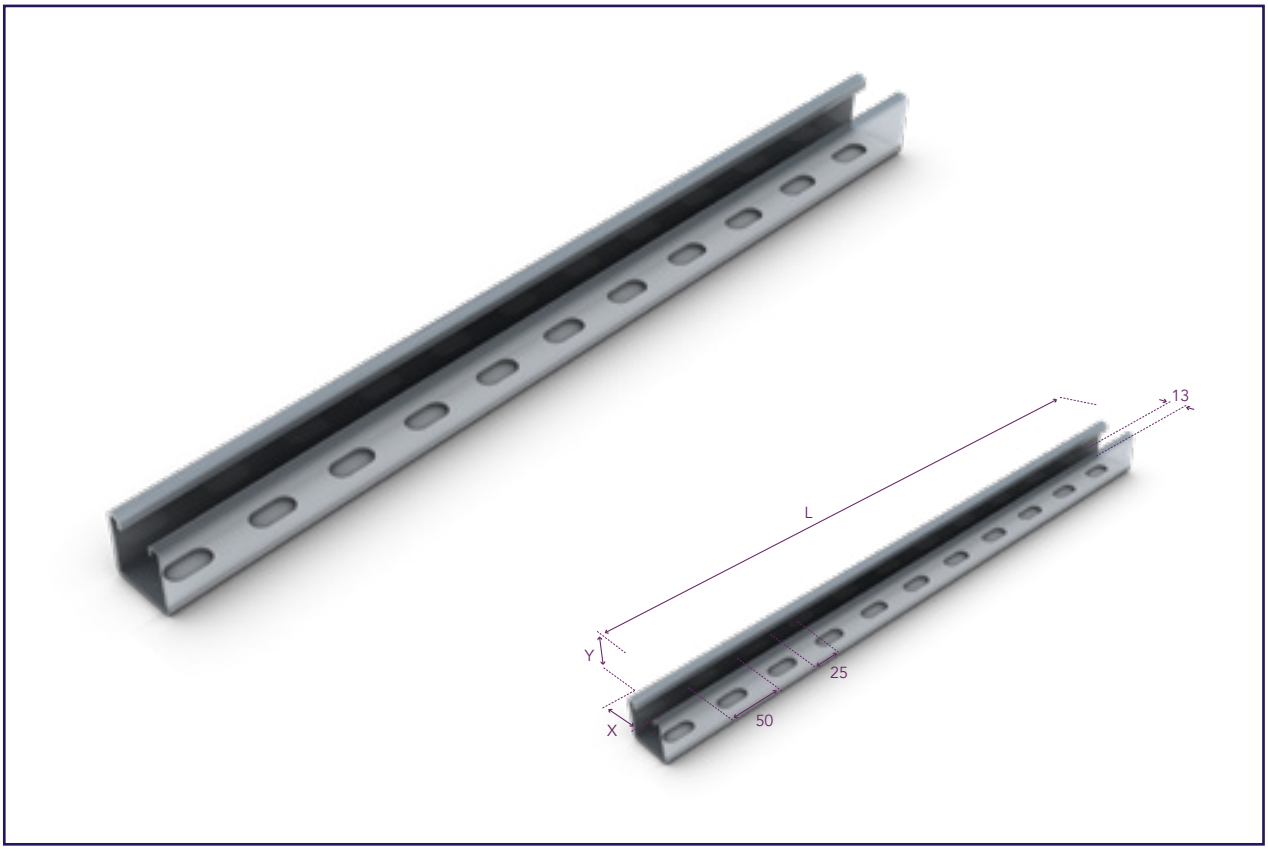
The Trapeze Support Channel (IC-CNL-D) provides a versatile means of installing Speedway Cable Ladder and Cable Tray using a trapeze support arrangement.

Based on slotted deep channel (strut type) to BS6946, the Trapeze Support Channel has 26 x 13 slots at 50mm pitch and is suited to either M10 or M12 threaded rod hangers. The slotted deep channel is supplied to an exact size to suit each width of Speedway Cable Ladder or Cable Tray and has the slots arranged uniformly along the length of the channel to simplify installation.

The continuous open slot on the trapeze support channel facilitates the use of Speedway External Flange Clamps (SW-EFC), Adaptable Fixing Brackets (SW-AFB) or Hold Down Brackets (SW△-HDB) for securing the Speedway Cable Ladder or for Cable Tray is suitable for use with the tray hold down bracket (HDB) or for direct fixing through the bed of the cable tray using conventional M6 channel nuts.

The tables below give installation details as well as the recommended maximum load for each size of trapeze support channel when used with Speedway Cable Ladder (which should be uniformly loaded to apply two equal point loads onto the ladder trapeze hanger) and Cable Tray (which should also be uniformly loaded).

Consult our Design Team for loading information on non-standard trapeze support channels and non-uniform loading configurations.



HOW TO ORDER

IC	-	CNL	-	D	-	S	-	SL3	-	SS	-	2.5
System Type		Product Group		Channel Type		Slotting Type		Length		Finish		Gauge

TRAPEZE SUPPORT CHANNEL

For Speedway Cable Ladder

VANTRUNK SPEEDWAY®

Part Number	Ladder Width (mm)	L	Ladder Load (kg)
IC-CNL-D-S-SL350-⬡	150	350	658
IC-CNL-D-S-SL500-⬡	300	500	
IC-CNL-D-S-SL650-⬡	450	650	
IC-CNL-D-S-SL800-⬡	600	800	
IC-CNL-D/S/SL950-⬡	750	950	
IC-CNL-D-S-SL1100-⬡	900	1100	
IC-CNL-D-S-SL1250-⬡	1050	1250	

⬡ = Select a Finish & Material

Finishes & Materials: GM SS

For Cable Tray

VANTRUNK CABLE-TRAY

Part Number	Tray Width (mm)	L	Tray Load (kg)
IC-CNL-D-S-SL250-⬡	50	250	320
	75	250	2038
IC-CNL-D-S-SL300-⬡	100	300	1560
IC-CNL-D-S-SL350-⬡	150	350	1103
IC-CNL-D-S-SL400-⬡	200	400	868
	225	400	800
IC-CNL-D-S-SL500-⬡	300	500	615
IC-CNL-D-S-SL650-⬡	450	650	442
IC-CNL-D-S-SL800-⬡	600	800	348
IC-CNL-D-S-SL950-⬡	750	950	285
IC-CNL-D-S-SL1100-⬡	900	1100	244

⬡ = Select a Finish & Material

Finishes & Materials: GM SS

Heavy Duty Trapeze Support Channel

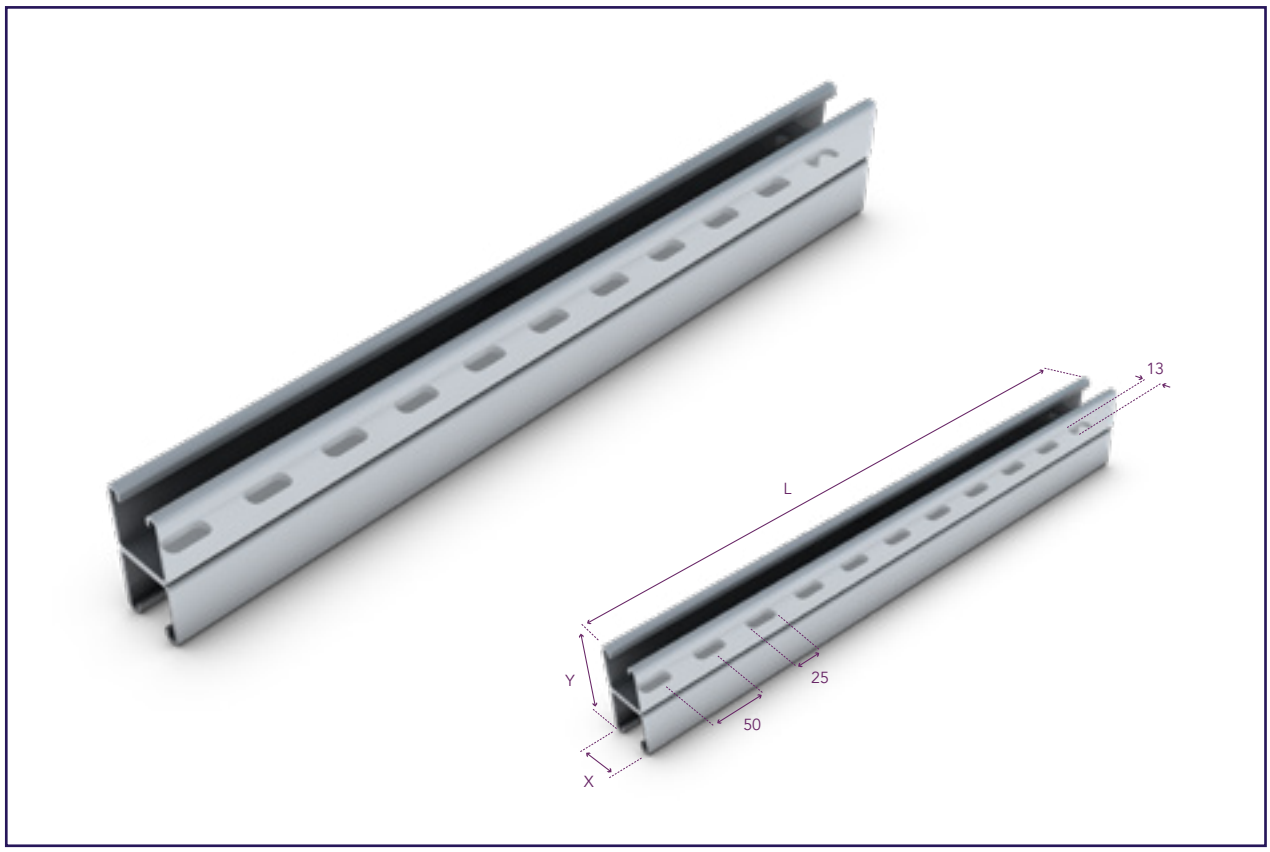
The Trapeze Support Channel (IC-CNL-D) provides a versatile means of installing Speedway Cable Ladder and Cable Tray using a trapeze support arrangement.

Based on slotted deep channel (strut type) to BS6946, the Trapeze Support Channel has 26 x 13 slots at 50mm pitch and is suited to either M10 or M12 threaded rod hangers. The slotted deep channel is supplied to an exact size to suit each width of Speedway Cable Ladder or Cable Tray and has the slots arranged uniformly along the length of the channel to simplify installation.

The continuous open slot on the trapeze support channel facilitates the use of Speedway External Flange Clamps (SW-EFC), Adaptable Fixing Brackets (SW-AFB) or Hold Down Brackets (SW△-HDB) for securing the Speedway Cable Ladder or for Cable Tray is suitable for use with the tray hold down bracket (HDB) or for direct fixing through the bed of the cable tray using conventional M6 channel nuts.

The tables below give installation details as well as the recommended maximum load for each size of trapeze support channel when used with Speedway Cable Ladder (which should be uniformly loaded to apply two equal point loads onto the ladder trapeze hanger) and Cable Tray (which should also be uniformly loaded).

Consult our Design Team for loading information on non-standard Heavy Duty Trapeze Support Channels and non-uniform loading configurations. Additional Heavy Duty Trapeze Hangers and alternative fixing slot configurations are available – consult our Design Team for further information.



HOW TO ORDER

IC	-	CNL	-	DBB	-	S	-	SL3	-	GM	-	2.5
System Type		Product Group		Channel Type		Slotting Type		Length		Finish		Gauge

TRAPEZE SUPPORT CHANNEL

For Speedway Cable Ladder

VANTRUNK SPEEDWAY®

Part Number	Ladder Width (mm)	L	Ladder Load (kg)
IC-CNL-BBD-S-SL350-⬡	150	350	
IC-CNL-BBD-S-SL500-⬡	300	500	
IC-CNL-BBD-S-SL650-⬡	450	650	
IC-CNL-BBD-S-SL800-⬡	600	800	1659
IC-CNL-BBD-S-SL950-⬡	750	950	
IC-CNL-BBD-S-SL1100-⬡	900	1100	
IC-CNL-BBD-S-SL1250-⬡	1050	1250	

⬡ = Select a Finish & Material

Finishes & Materials: GM SS

For Cable Tray

VANTRUNK CABLE-TRAY

Part Number	Tray Width (mm)	L	Tray Load (kg)
IC-CNL-BBD-S-SL350-⬡	150	350	
IC-CNL-BBD-S-SL500-⬡	300	500	
IC-CNL-BBD-S-SL650-⬡	450	650	
IC-CNL-BBD-S-SL800-⬡	600	800	1659
IC-CNL-BBD-S-SL950-⬡	750	950	
IC-CNL-BBD-S-SL1100-⬡	900	1100	
IC-CNL-BBD-S-SL1250-⬡	1050	1250	

⬡ = Select a Finish & Material

Finishes & Materials: GM SS

VANTRUNK INTELOK®

INTELOK CONCRETE INSERTS

Steel Framing Concrete Inserts are manufactured from Steel Framing Intelok Channel profiles. The back of each channel is pressed out to form specially designed strong anchor lugs.

The channel is then filled with a unique profile manufactured from expanded polystyrene foam which prevents the ingress of concrete during the pouring stage of construction. The infill is simply removed by inserting a knife blade down the two continuous slots formed in the profile enabling rapid removal of the infill.

ACCREDITED TO THE FOLLOWING STANDARDS

CE

HOW TO ORDER

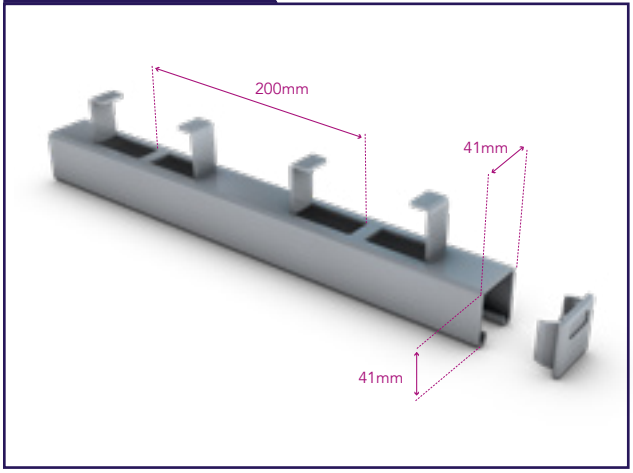
IC	– CON –	D	– SL3* –	GM
System Type	Product Group	Type	Channel Length	Finish

*Standard Lengths of Channel: SL3 (3000mm), SL6 (6000mm)

Deep Intelok Concrete Insert

Steel Framing Deep Concrete Inserts are manufactured from 2.5mm, 41 x 41 deep channel with securing lugs at 200mm centres.

Ref. IC-CON-D



Loading Data - Concrete Inserts

Loading Condition	Deep Channel
Safe Working Load per 200mm module	670kg
Safe Working Load per metre length	3350kg
Safe pull-out load on channel lips	1000kg
Safe shear load - M10 fixings	1392kg
Safe shear load - M12 fixings	2023kg

Part Number
IC-CON-D-☐-⬡

Finishes & Materials: GM SS

☐ = Select a Channel Length* ⬡ = Select a Finish

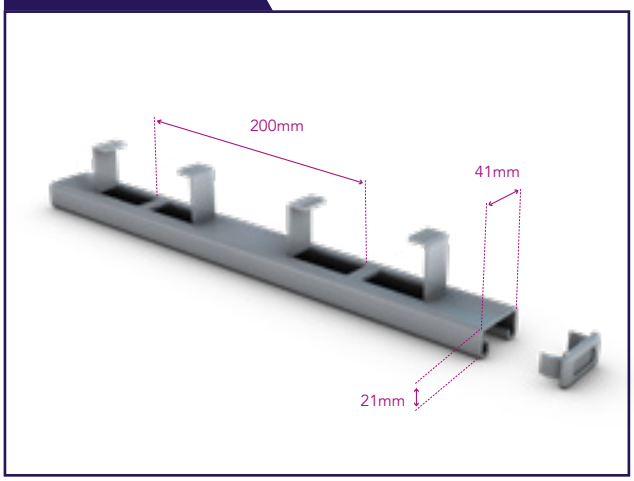
Loading data is based on concrete with a crushing strength of 33N/mm² and a factor safety of 2.

Steel Framing Deep Concrete Inserts are available in standard lengths of 3m. For lengths other than the standard 3 metres, quote the required length in mm up to 3m (must be divisible by 200).

Intelok Shallow Concrete Insert

Steel Framing Shallow Concrete Inserts are manufactured from 2.5mm, 41 x 21 shallow channel with securing lugs at 200mm centres.

Ref. IC-CON-S



Loading Data - Concrete Inserts

Loading Condition	Deep Channel
Safe Working Load per 200mm module	400kg
Safe Working Load per metre length	2000kg
Safe pull-out load on channel lips	1000kg
Safe shear load - M10 fixings	1392kg
Safe shear load - M12 fixings	2023kg

Part Number
IC-CON-S-☐-⬡

Finishes & Materials: GM SS

☐ = Select a Channel Length* ⬡ = Select a Finish

Loading data is based on concrete with a crushing strength of 33N/mm² and a factor safety of 2.

Steel Framing Shallow Concrete Inserts are available in standard lengths of 3m. For lengths other than the standard 3 metres, quote the required length in mm up to 3m (must be divisible by 200).

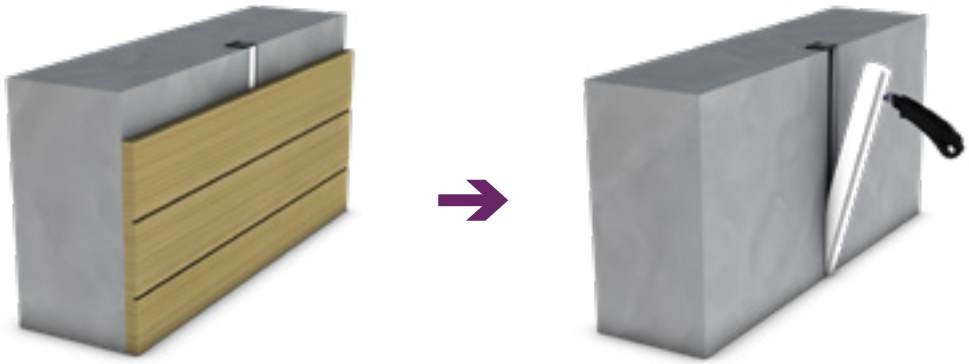
The Concrete Insert above is shown with Protective End Caps. Vantrunk highly recommends the use of Protective End Caps as the cap prevents the ingress of concrete slurry into the insert during installation. (Order Separately for End Caps Page 188).

Intelok Steel Framing Concrete Insert Installation Instructions:

STEP 1: FIXING TO SHUTTERING

Fix the Concrete Insert to the shuttering by nailing through the slots created by the anchor lugs. Fit end caps as necessary to the open ends of the concrete insert. The anchor lugs can be wired onto reinforcement mesh as required to increase the strength of the finished assembly.

STEP 2: REMOVING THE INFILL



After pouring of concrete & removal of the shuttering, remove the polystyrene infill using a knife to cut through the two continuous groves in the infill. Remove the nails.

STEP 3: INSERTING THE QUICKFIT ASSEMBLY

QF

Vantrunk Quickfit Brackets-Cantilevers are simply inserted into the channel. When the hexagon set screw is rotated through 90° degrees the channel nuts turn into the correct position, it is then easily tightened by a spanner. This saves approximately two thirds of the time taken when using the conventional method of spring channel nuts etc.

The Quickfit assembly can be adjusted along the channel to the desired position before tightening the fixing bolt.

The Vantrunk Intelok Concrete Inserts are also compatible with the conventional style of spring channel nuts.

STEP 4: FINISHED INSTALLATION

VANTRUNK INTELOK®

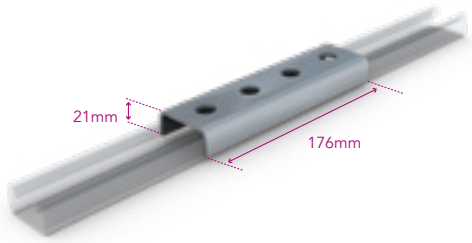
INTELOK ACCESSORIES

The Vantrunk Steel Framing System is complemented by a range of accessories.

From a selection of pipe clamps and connectors to end caps and cover strips, the following ancillary items represent cost-effective and practical solutions to most requirements.

HOW TO ORDER 325AK11 – SS
System, Bracket Type & Finish

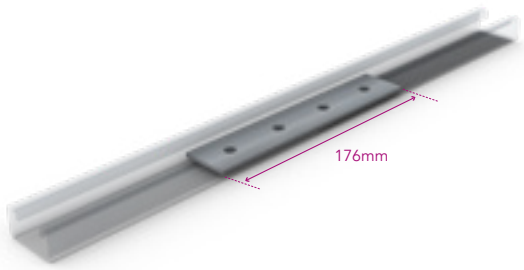
Shallow External Connector



Part No. GA 325AK11-GA

Part No. SS 325AK11-SS

Shallow Internal Connector

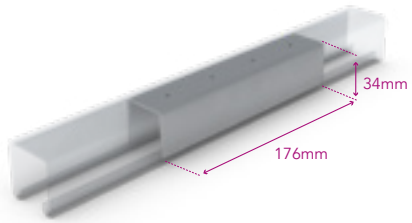


Part No. GA 325AK13-GA

Part No. SS 325AK13-SS

Comes complete with necessary fixings. Not structural.

Light Duty Internal Connector

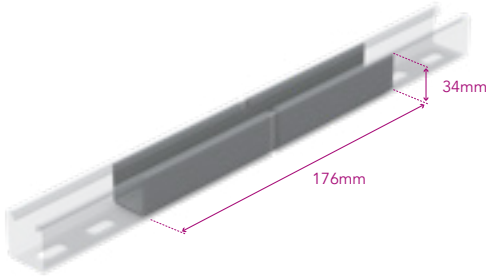


Part No. QQ 336AB08-QQ

Part No. SS 336AB08-SS

Comes complete with necessary fixings. Not structural. Not suitable for slotted channel.

Light Duty Internal Connector (for Slotted Channel)

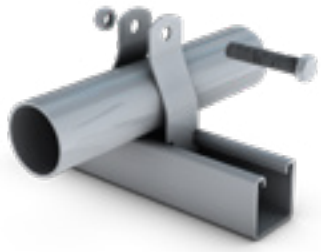


Part No. QQ 336AB12-QQ

Part No. SS 336AB12-SS

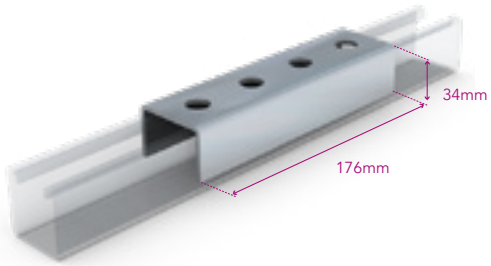
Comes complete with necessary fixings. Not structural. Suitable for slotted channel.

Pipe Clamps



A Range of Pipe Clamps are available in a zinc plated finish, please contact the Vantrunk Sales Team for more information. Please note that a minimum order quantity applies for this range of products.

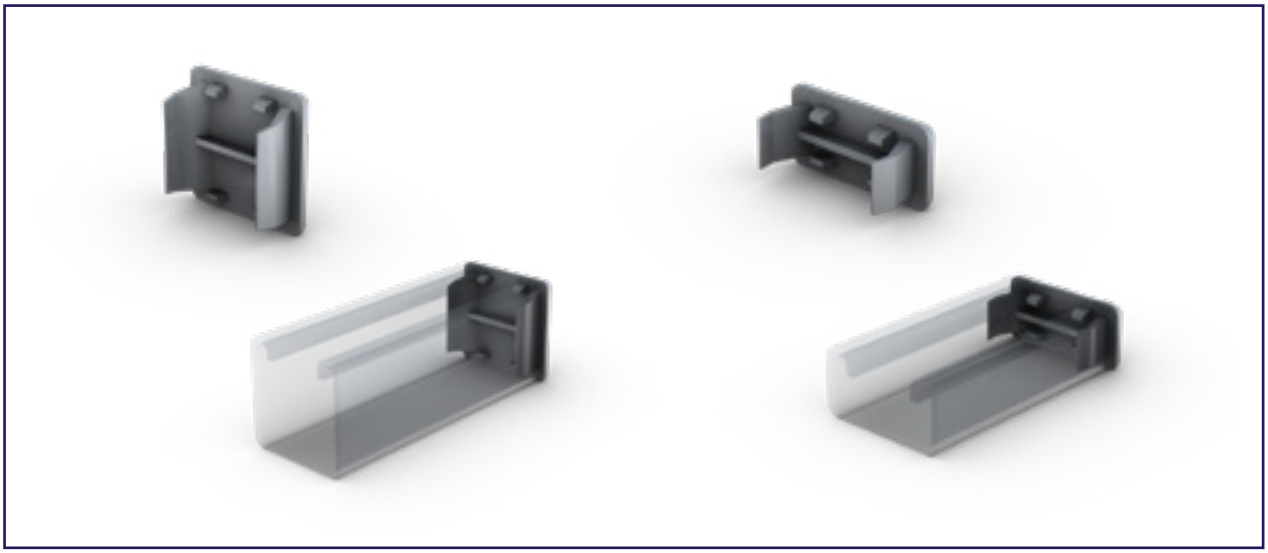
Deep External Connector



Part No. GA 325AK10-GA

Part No. SS 325AK10-SS

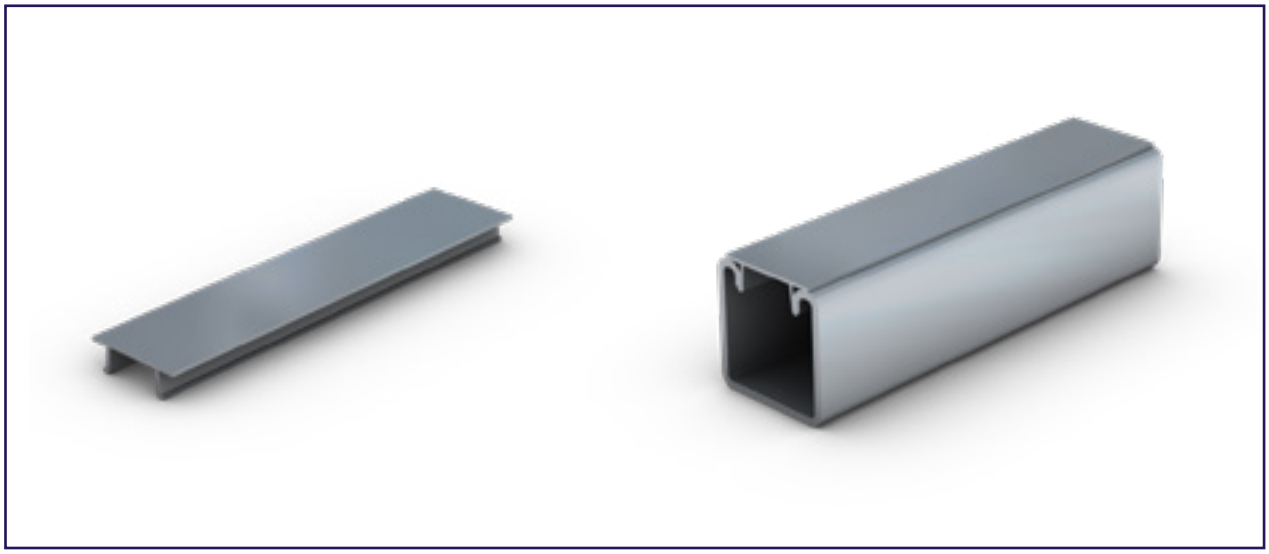
Protective End Cap



Protective End Caps are designed to close off the open ends of Intelok Deep and Shallow Channel Profiles. End caps are also used with Intelok Concrete Inserts to prevent the ingress of concrete slurry during the pouring process. Manufactured from injection moulded PVC, end caps are available in black or white colours.

Part Number	Channel Type
325AA10-NY	Deep Channel (Black)
325AA11-NY	Shallow Channel (Black)
325AA12-NY	Deep Channel (White)
325AA13-NY	Shallow Channel (White)

Cover Strip



Cover Strips are designed to close off the continuous open slots of Intelok Channel Profiles, particularly for decorative purposes or where the channel is used as trunking for the routing of secondary cables. Cover strips are supplied in 3m lengths and are available in extruded white PVC and roll-formed pre-galvanised mild steel or stainless steel material.

Part Number	Cover Strip Type
339AA10-NY	3 Mtr Long (PVC)
339AB10-QQ	3 Mtr Long (Pre-Galv')
339AA10-SS	3 Mtr Long (SS)

VANTRUNK

ENGINEERED FOR EXTREME ENVIRONMENTS

SHAH DENIZ & SOUTH CAUCASUS PIPELINE EXPANSION

Shah Deniz Stage 2 Full Field Development is a giant project that will add a further 16 billion cubic metres per year (bcma) of gas production to the approximately 9 bcma produced by Shah Deniz Stage 1.

LOCATION

CASPIAN SEA
Azerbaijan & Georgia.

CLIENT

bp

$28bn
INVESTMENT

FACT 1

$28 billion
Investment for gas
production & transportation

FACT 2

Expansion of the existing Sangachal terminal and the addition of two new bridge linked offshore platforms

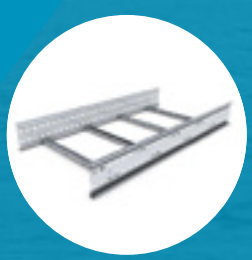
FACT 3

Construction of the South Caucasus Pipeline expansion scheme

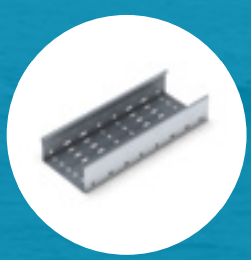
FACT 4

European energy security will be increased by Caspian gas in European markets for first time

PRODUCTS SUPPLIED



SPEEDWAY



HEAVY DUTY CABLE TRAY

VANTRUNK SPEEDWAY®
EXTREME CABLE LADDER

Vantrunk stainless Speedway cable ladder systems, cable tray systems and Intelok secondary support system.Vantrunk have supplied all five phases of the BP Azeri developments from 2002 to 2017.

VANTRUNK UNIFRAME

SECTION 04: UNIVERSAL MOUNTING FRAME SYSTEM FOR ELECTRICAL EQUIPMENT

Vantrunk's Uniframe mounting frames are available in standard widths of 1m and 1.5m, other widths are available on request.

The Uniframe system is highly customisable to accommodate specific project requirements, such as slotted side panels to suit the mounting of electrical equipment - consult our Sales Team for further details.

Uniframe mounting frames are available as a flat pack kit as standard or if required as a pivotable flat pack for rapid onsite assembly.

Available in two configurations, single and double sided with feet for either bolting or welding.

The Uniframe system also includes a variety of accessories which are detailed on the following pages.

HOW TO ORDER

UF	-	SM	-	1000	-	GA	-	2.0
System Type		Frame Type		Width		Finish		Thickness

Single Sided Configuration

Package includes:
2 x Side Panels
6 x Mounting Panels
3 x Channel Sections
1 x Roof Unit

System Type: UF UF-SM-1000-⬡-2.0

Part Number	Width
UF-SM-1000-⬡-2.0	1000
UF-SM-1500-⬡-2.0	1500

⬡ = Select a Finish & Material

Finishes & Materials:

GA SS GX

Single Sided Configurations are available with feet for welding directly to steelwork. To order add the suffix '-W' to the part code

Double Sided Configuration

Package includes:
2 x Side Panels
8 x Mounting Panels
4 x Channel Rail
2 x Roof Unit
4 x Feet (Bolted or Welded)

System Type: UF UF-DM-1000-⬡-2.0

Part Number	Width
UF-DM-1000-⬡-2.0	1000
UF-DM-1500-⬡-2.0	1500

⬡ = Select a Finish & Material

Finishes & Materials:

GA SS GX

Double Sided Configurations are available with feet for welding directly to steelwork. To order add the suffix '-W' to the part code

HOW TO ORDER UF - DM - 1000 - GA - 2.0
System Type | Frame Type | Width | Finish | Thickness

Extra Mounting Panels

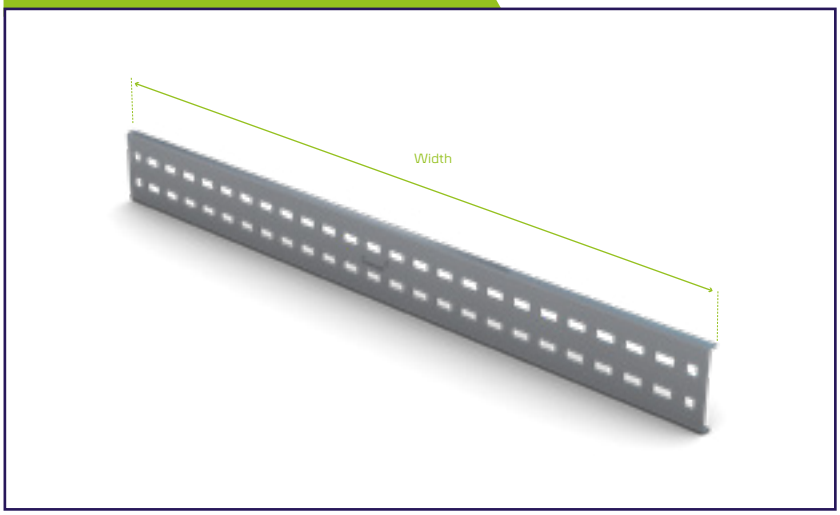
Part Number	Width
UF-MP-1000-O-2.0	1000
UF-MP-1500-O-2.0	1500

⬡ = Select a Finish & Material

Finishes & Materials:

GA SS GX

Part Number: UF-MP-1000-⬡-2.0



Extra Channel Rails

Part Number	Width
UF-CR-1000-O-2.0	1000
UF-CR-1500-O-2.0	1500

⬡ = Select a Finish & Material

Finishes & Materials:

GA SS GX

Part Number: UF-CR-1000-⬡-2.0

Internal Shelf

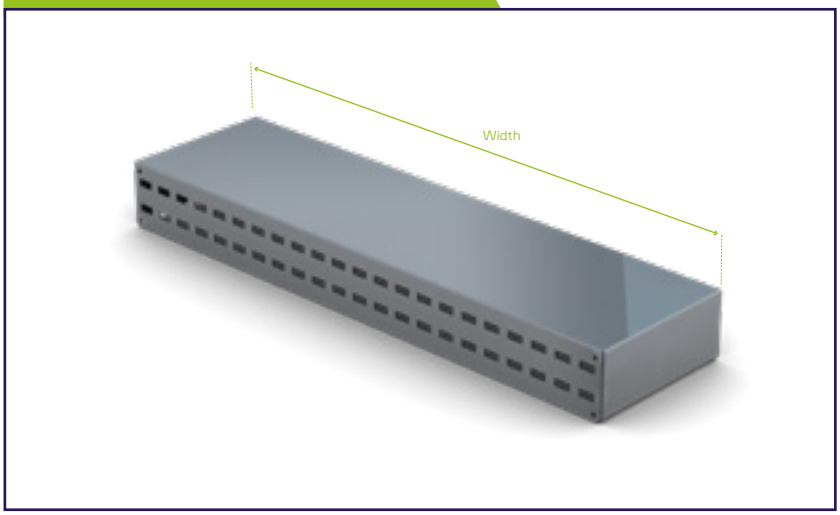
Part Number	Width
UF-IS-1000-O-2.0	1000
UF-IS-1500-O-2.0	1500

⬡ = Select a Finish & Material

Finishes & Materials:

GA SS GX

Part Number: UF-IS-1000-⬡-2.0

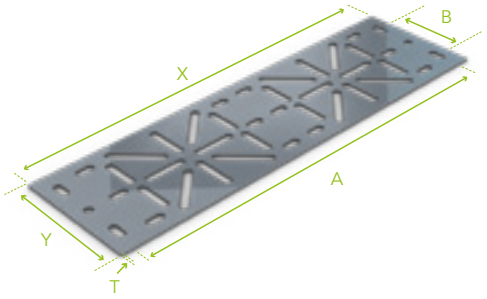


Speedway Mounting Plate

The Speedway Mounting Plate (SMP) provides a means of attaching junction boxes and other items to the speedway Cable Ladder System. Mounting plates are available to suit all Speedway Cable Ladder widths up to & including 900mm for attachment across the face of the cable ladder. The 300mm Speedway Mounting Plate (SW-SMP-300-⬡) can also be attached between rungs on all widths of Speedway Cable Ladder and can be mounted either within the cable space or below the cable ladder.

Alternative mounting plate designs can be made to order. Contact our Sales Team for more details.

Frame Type: SMP SW-SMP-150-⬡



SW-SMP-150
150mm Speedway Mounting Plate

SW-SMP-300
300mm Speedway Mounting Plate

Part Number	Dimensions (mm)					
	Ladder Width	X	Y	A	B	T
SW-SMP-150-⬡	150	200	100	175	60	2
SW-SMP-300-⬡	300	350		325		
SW-SMP-450-⬡	450	500		475		
SW-SMP-600-⬡	600	600		625		
SW-SMP-750-⬡	750	800		775		
SW-SMP-900-⬡	900	950		925		

Recommend Fixings:
Speedway Rungs: M6 Channel Nut and M6 x 12 Pan Head Screw (& M6 Flat Washer for Stainless Steel)

Across Cable Ladder: M6 x 12 Pan Head Screw and M6 Hex Nut (& M6 Flat Washer for Stainless Steel)

Alternative mounting plate designs can be manufactured to special order - Consult our Design Team for further details.

⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX

Supplied with: FIXING SETS x0

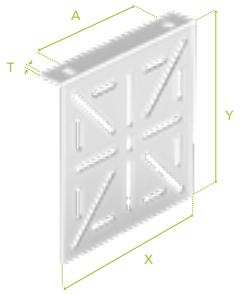
HOW TO ORDER SW - SMP - 150 - GA
System Type | Frame Type | Width | Finish

Junction Box Plates

Speedway Junction Box Plates (JBP) provide a versatile means of attaching junction boxes, switches and other equipment directly onto Speedway Cable Ladder and Fittings.

Junction Box Plates are available in five standard sizes to suit all secondary equipment mounting requirements. Junction Box Plates are not supplied with ladder fixings.

Accessory Type: JBP **SW-JBP01-⬡**



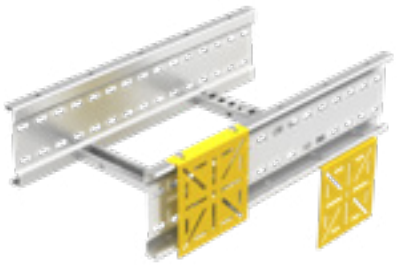
JBP01
Junction Box Plate

JBP02
Junction Box Plate

JBP03
Junction Box Plate

JBP04
Junction Box Plate

JBP05
Junction Box Plate



Junction Box Plate JBP01 shown mounted in two possible orientations on Speedway cable ladder

Junction Box Plate JBP05 shown mounted in three possible orientations on Speedway cable ladder

Part Number	Dimensions (mm)				No. of Fixings
	X	Y	A	T	
SW-JBP01-⬡	160	165	120	2	2
SW-JBP02-⬡	210	215	120	2	2
SW-JBP03-⬡	310	315	120	3	3
SW-JBP04-⬡	65	90	47	2	1
SW-JBP05-⬡	150	110	120	2	2

⬡ = Select a Finish & Material

Finishes & Materials: GA SS GX

Supplied with: FIXING SETS x0

Recommend Fixings:
For attachment to Speedway cable ladder - M6 x 12 Pan head screw and M6 nut (&M6 Flat Washer for stainless steel).

Consult our sales Team for further details.

VANTRUNK

SECTION 05: FIXINGS

Cable Management installations require a range of ancillary fixings. Vantrunk stock the full range of fixings required to ensure installers have a reliable 'single source' to meet their site requirements.

HOW TO ORDER M10x25 - HS - GA
Thread Size x Length | Fixing Type | Finish

Cup Square Bolts

Thread Size	Length (mm)	Part No. GA	Part No. SS
M10	16	318AR31-GA	318AR81-SS
	20	318AR32-GA	318AR82-SS
	25	318AR33-GA	318AR83-SS

Cone Point Hex Head Set Screw

Thread Size	Length (mm)	Part No. ZA	Part No. SS
M10	40	M10x40-CP-ZD	M10x40-CP-SS-A4
M12	40	M12x40-CP-ZD	M12x40-CP-SS-A4

Hex Head Set Screw

Thread Size	Length (mm)	Part No. GA	Part No. SS
M6	20	M6x20-HS-GA	M6x20-HS-SS-A4
	25	M6x25-HS-GA	M6x25-HS-SS-A4
	30	M6x30-HS-GA	M6x30-HS-SS-A4
	35	M6x35-HS-GA	M6x35-HS-SS-A4
	40	M6x40-HS-GA	M6x40-HS-SS-A4
M8	20	M8x20-HS-GA	M8x20-HS-SS-A4
	25	M8x25-HS-GA	M8x25-HS-SS-A4
	30	M8x30-HS-GA	M8x30-HS-SS-A4
	35	M8x35-HS-GA	M8x35-HS-SS-A4
	40	M8x40-HS-GA	M8x40-HS-SS-A4
	50	M8x50-HS-GA	M8x50-HS-SS-A4
M10	20	M10x20-HS-GA	M10x20-HS-SS-A4
	25	M10x25-HS-GA	M10x25-HS-SS-A4
	30	M10x30-HS-GA	M10x30-HS-SS-A4
	35	M10x35-HS-GA	M10x35-HS-SS-A4
	40	M10x40-HS-GA	M10x40-HS-SS-A4
	50	M10x50-HS-GA	M10x50-HS-SS-A4
	60	M10x60-HS-GA	M10x60-HS-SS-A4
	75	M10x75-HS-GA	M10x75-HS-SS-A4
M12	25	M12x25-HS-GA	M12x25-HS-SS-A4
	30	M12x30-HS-GA	M12x30-HS-SS-A4
	35	M12x35-HS-GA	M12x35-HS-SS-A4
	40	M12x40-HS-GA	M12x40-HS-SS-A4
	50	M12x50-HS-GA	M12x50-HS-SS-A4
	60	M12x60-HS-GA	M12x60-HS-SS-A4
	75	M12x75-HS-GA	M12x75-HS-SS-A4

Pan Head Screw

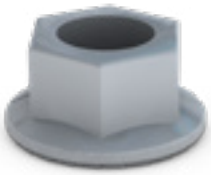
Thread Size	Length (mm)	Part No. SS
M6	12	M6x12-PHS-SS-A4
	16	M6x16-PHS-SS-A4
	20	M6x20-PHS-SS-A4
	25	M6x25-PHS-SS-A4
	30	M6x30-PHS-SS-A4
	35	M6x35-PHS-SS-A4
	40	M6x40-PHS-SS-A4

Mushroom Head Bolt & Square Nut

Thread Size	Length (mm)	Part No. GA
M6	12	M6X12-BN-GA
	16	M6X16-BN-GA
	20	M6X20-BN-GA
	25	M6X25-BN-GA
	30	M6X30-BN-GA

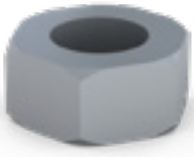
Serrated Flange Nut

Size	Part No. GA	Part No. SS
M10	M10-SFN-GA	M10-SFN-SS-A4



Hex Nut

Thread Size	Part No. GA	Part No. SS	Part No. NyloK
M6	M6-HN-GA	M6-HN-SS-A4	M6-NN-SS-A4
M8	M8-HN-GA	M8-HN-SS-A4	M8-NN-SS-A4
M10	M10-HN-GA	M10-HN-SS-A4	M10-NN-SS-A4
M12	M12-HN-GA	M12-HN-SS-A4	M12-NN-SS-A4

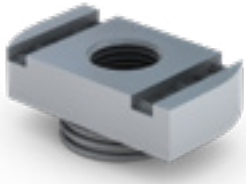


Channel Nut - Long Spring

Thread Size	Part No. GA	Part No. SS
M6	IC-NUT-M6-L-GA	IC-NUT-M6-L-SS
M8	IC-NUT-M8-L-GA	IC-NUT-M8-L-SS
M10	IC-NUT-M10-L-GA	IC-NUT-M10-L-SS
M12	IC-NUT-M12-L-GA	IC-NUT-M12-L-SS

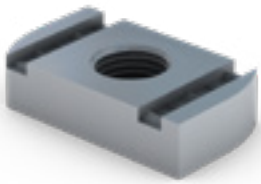
Channel Nut - Short Spring

Thread Size	Part No. GA	Part No. SS
M6	IC-NUT-M6-S-GA	IC-NUT-M6-S-SS
M8	IC-NUT-M8-S-GA	IC-NUT-M8-S-SS
M10	IC-NUT-M10-S-GA	IC-NUT-M10-S-SS
M12	IC-NUT-M12-S-GA	IC-NUT-M12-S-SS



Channel Nut - No Spring

Thread Size	Part No. GA	Part No. SS
M6	IC-NUT-M6-N-GA	IC-NUT-M6-N-SS
M8	IC-NUT-M8-N-GA	IC-NUT-M8-N-SS
M10	IC-NUT-M10-N-GA	IC-NUT-M10-N-SS
M12	IC-NUT-M12-N-GA	IC-NUT-M12-N-SS



Flat Washer

Size	Part No. GA	Part No. SS	Part No. Nylon
M6	M6-FW-GA	M6-FW-SS-A4	M6-FW-NY
M8	M8-FW-GA	M8-FW-SS-A4	M8-FW-NY
M10	M10-FW-GA	M10-FW-SS-A4	M10-FW-NY
M12	M12-FW-GA	M12-FW-SS-A4	M12-FW-NY

Internal Tooth Shake Proof Washer

Thread Size	Part No. GA	Part No. SS
M6	M6-SW-GA	M6-SW-SS-A4
M8	M8-SW-GA	M8-SW-SS-A4
M10	M10-SW-GA	M10-SW-SS-A4
M12	M12-SW-GA	M12-SW-SS-A4

Single Coil Spring Washer

Thread Size	Part No. GA	Part No. SS
M6	M6-SPW-GA	M6-SPW-SS-A4
M8	M8-SPW-GA	M8-SPW-SS-A4
M10	M10-SPW-GA	M10-SPW-SS-A4
M12	M12-SPW-GA	M12-SPW-SS-A4

Threaded Rod (Studding)

Size	Length (mm)	Part No. GA	Part No. SS
M6	1M	M6-R1-GA	M6-R1-SS-A4
	3M	M6-R3-GA	M6-R3-SS-A4
M8	1M	M8-R1-GA	M8-R1-SS-A4
	3M	M8-R3-GA	M8-R3-SS-A4
M10	1M	M10-R1-GA	M10-R1-SS-A4
	3M	M10-R3-GA	M10-R3-SS-A4
M12	1M	M12-R1-GA	M12-R1-SS-A4
	3M	M12-R3-GA	M12-R3-SS-A4

Nylon Bush

Part Number	Thread Size	Length	Description
BUSH-6x6-NY	M6	6	BUSH 6MM ID X 8MM OD X 6MM LONG
BUSH-6x8-NY		8	BUSH 6MM ID X 8MM OD X 8MM LONG
BUSH-6x10-NY		10	BUSH 6MM ID X 8MM OD X 10MM LONG
BUSH-16x6-NY	M10	6	BUSH 10MM ID X 16MM OD X 6MM LONG
BUSH-16x7-NY		7	BUSH 10MM ID X 16MM OD X 7MM LONG
BUSH-16x8-NY		8	BUSH 10MM ID X 16MM OD X 8MM LONG
BUSH-16x10-NY		10	BUSH 10MM ID X 16MM OD X 10MM LONG
BUSH-16x12-NY		12	BUSH 10MM ID X 16MM OD X 12MM LONG
BUSH-16x15-NY		15	BUSH 10MM ID X 16MM OD X 15MM LONG
BUSH-12x16-NY	M12	16	Q-FIT BUSH 12MM ID X 16MM LONG

Nylon Pad

Part Number	Length (mm)	Width (mm)	Thickness (mm)	Description
PAD-66.5x50x4-NY	66.5	50	4	PAD (ISOLATION)
PAD-50x40x4-NY	50	40	4	PAD (ISOLATION)
PAD-80x55x4-NY	80	55	4	PAD (ISOLATION)
PAD-75x50x4-NY	75	50	4	PAD (ISOLATION)

HOW TO ORDER M10 – R3 – SS
Thread Size Fixing Type Finish

Speedway Ladder Fixing Set

Finish and Material	Code	Contents		
		QTY	Fixing Code	Fixing Description
GA	389AA31-20-GA	1x	318AR32-GA	M10x20mm CUP SQ BOLT
		1x	M10-SFN-GA	M10 SERRATED FLANGE NUT
SS	389AA81-20-SS	1x	318AR82-SS	M10x20mm CUP SQ BOLT
		1x	M10-SFN-SS-A4	M10 SERRATED FLANGE NUT

Speedway Ladder Fixing Kit

Finish and Material	Code	Contents		
		QTY	Fixing Code	Fixing Description
GA	VSFK-GA	8x	389AA31-20-GA	Speedway Ladder Fixing Set
SS	VSFK-SS	8x	389AA81-20-SS	Speedway Ladder Fixing Set

Speedway Expansion Coupler Fixing

Finish and Material	Code	Contents		
		QTY	Fixing Code	Fixing Description
GA	VEFK-GA	8x	318AR33-GA	M10x25mm CUP SQ BOLT
		16x	M10-HN-GA	M10 HEX NUT
		8x	M12-FW-GA	M12 FLAT WASHER
SS	VEFK-SS	8x	318AR83-SS	M10x25mm CUP SQ BOLT
		16x	M10-HN-SS-A4	M10 HEX NUT
		8x	M12-FW-SS-A4	M12 FLAT WASHER

Speedway Ladder Cover Fixing

Speedway covers are supplied complete with the required number of cover fixing kits (VCF3). The cover fixing kits are common to closed, louvered and peaked covers. The covers are secured to the ladder using pre-punched slots which are incorporated into the flanges of all Speedway ladder and fittings.

VCF3-GA

For fixing covers to cable ladder

VCF3-SS

For fixing covers to cable ladder

VCF8-SS

For fixing overlapping cover to cover

Finish and Material	Code	Contents		
		QTY	Fixing Code	Fixing Description
GA	VCF3-GA	1x	M6x12-BN-GA	M6x12mm Roofing Bolt & Nut
		1x	M6-SW-GA	M6 Internal Shake Proof Washer
SS	VCF3-SS	1x	M6X12-PHS-SS-A4	M6x12mm Pan Head Screw
		1x	M6-FW-SS-A4	M6 Flat Washer
		1x	M6-SW-SS-A4	M6 Internal Shake Proof Washer
		1x	M6-HN-SS-A4	M6 Hex Nut
	VCF8-SS	1x	M6X12-PHS-SS-A4	M6x12mm Pan Head Screw
		1x	M6-FW-SS-A4	M6 Flat Washer
		1x	M6-SW-SS-A4	M6 Internal Shake Proof Washer

Earth Bonding Strap Fixing Set

Finish and Material	Code	Contents		
		QTY	Fixing Code	Fixing Description
GA	389AA55-GA	2x	318AR32-GA	M10x20mm CUP SQ BOLT
		2x	M10-SFN-GA	M10 SERRATED FLANGE NUT
SS	389AA65-SS	2x	318AR82-SS	M10x20mm CUP SQ BOLT
		2x	M10-SFN-SS-A4	M10 SERRATED FLANGE NUT

VANTRUNK

ENGINEERED FOR EXTREME ENVIRONMENTS

SHAH DENIZ & SOUTH CAUCASUS PIPELINE EXPANSION

Shah Deniz Stage 2 Full Field Development is a giant project that will add a further 16 billion cubic metres per year (bcma) of gas production to the approximately 9 bcma produced by Shah Deniz Stage 1.

LOCATION

CASPIAN SEA
Azerbaijan & Georgia.

CLIENT

bp

$28bn
INVESTMENT

FACT 1

$28 billion
Investment for gas
production & transportation

FACT 2

Expansion of the existing Sangachal terminal and the addition of two new bridge linked offshore platforms

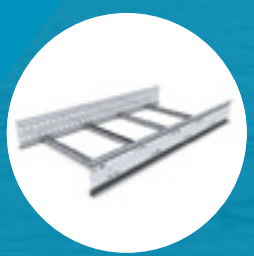
FACT 3

Construction of the South Caucasus Pipeline expansion scheme

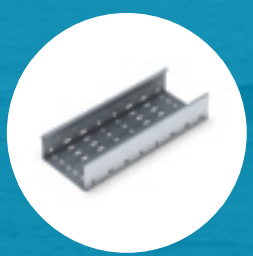
FACT 4

European energy security will be increased by Caspian gas in European markets for first time

PRODUCTS SUPPLIED



SPEEDWAY



HEAVY DUTY CABLE TRAY

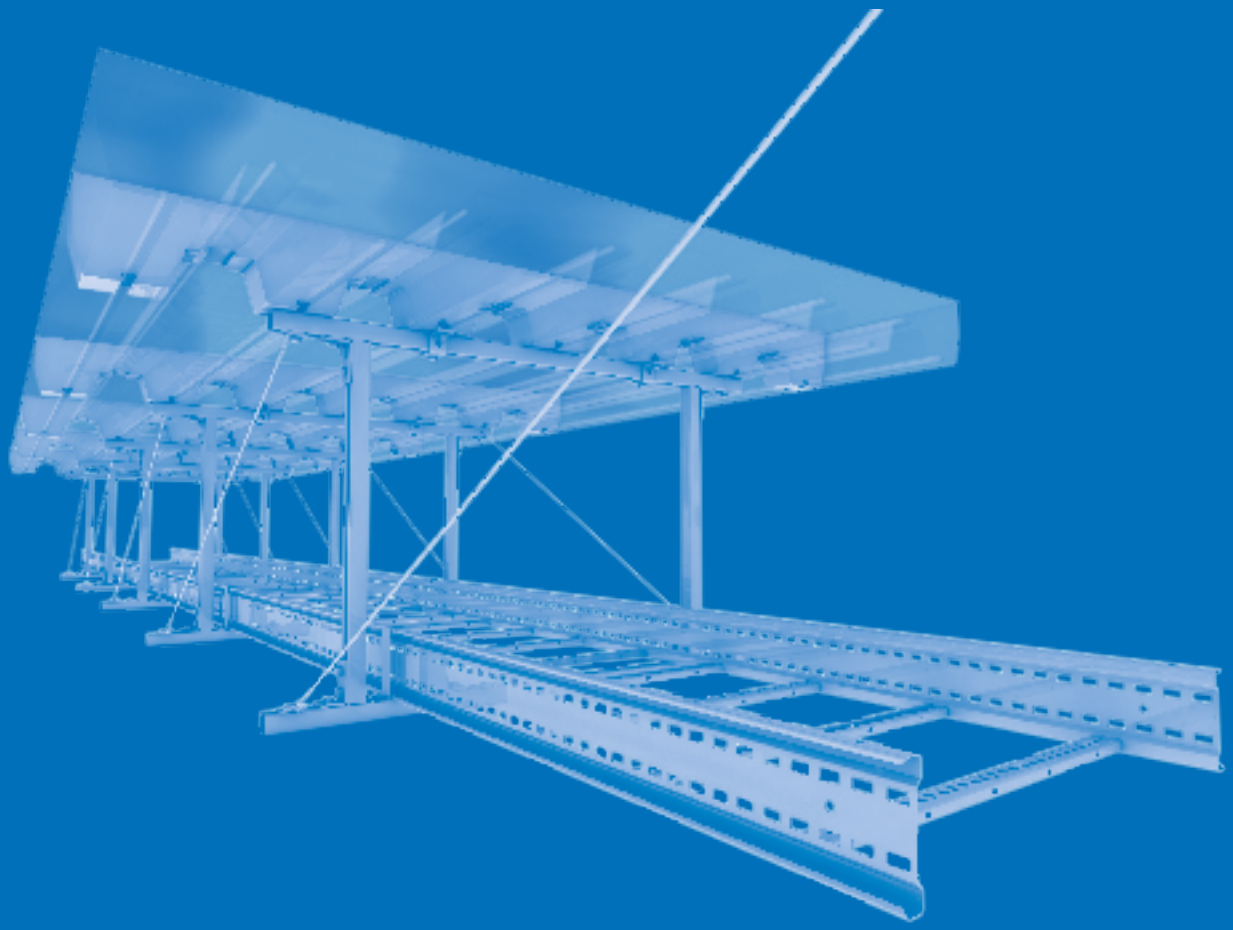
VANTRUNK SPEEDWAY®
EXTREME CABLE LADDER

Vantrunk stainless Speedway cable ladder systems, cable tray systems and Intelok secondary support system.Vantrunk have supplied all five phases of the BP Azeri developments from 2002 to 2017.

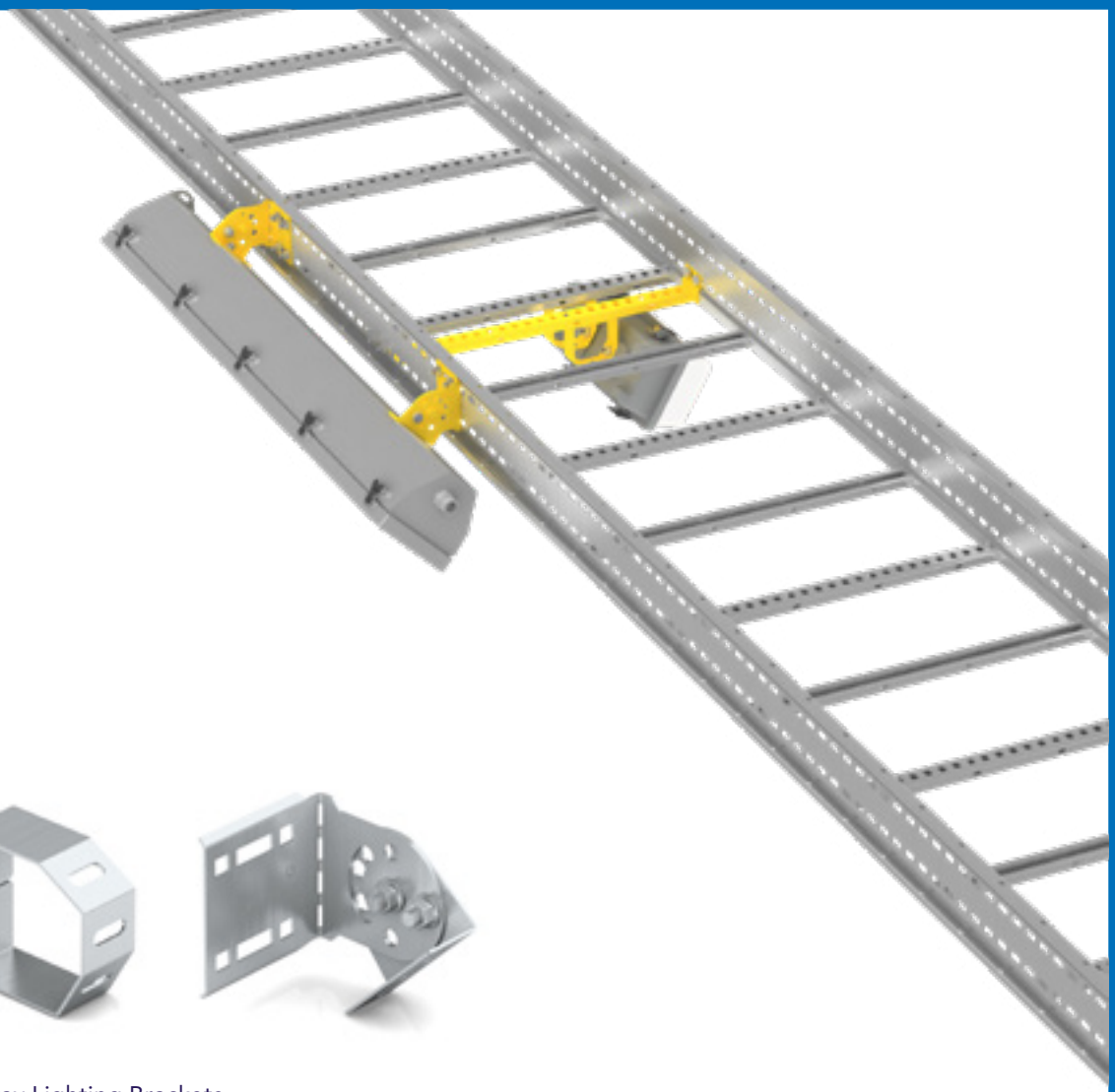
VANTRUNK

SECTION 06: INNOVATIVE DESIGN SOLUTIONS

Combining our extensive industry experience and our continual investment in research and development; Vantrunk have secured our position as the leader in bespoke made to order solutions within the cable management sector.



LIGHTING BRACKETS



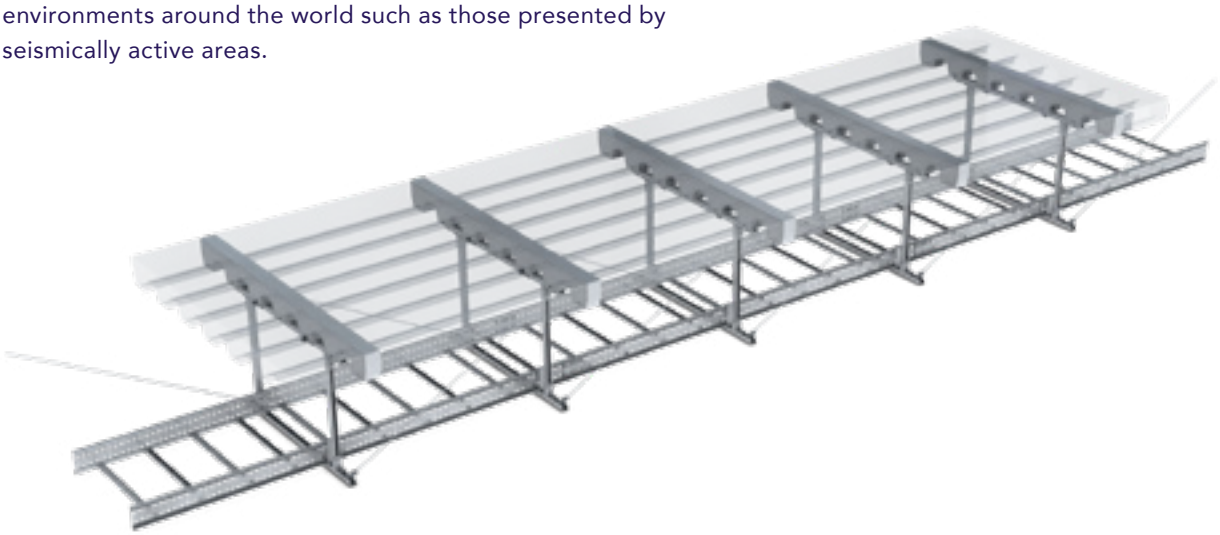
Speedway Lighting Brackets

Speedway Accessory Mounting Rungs

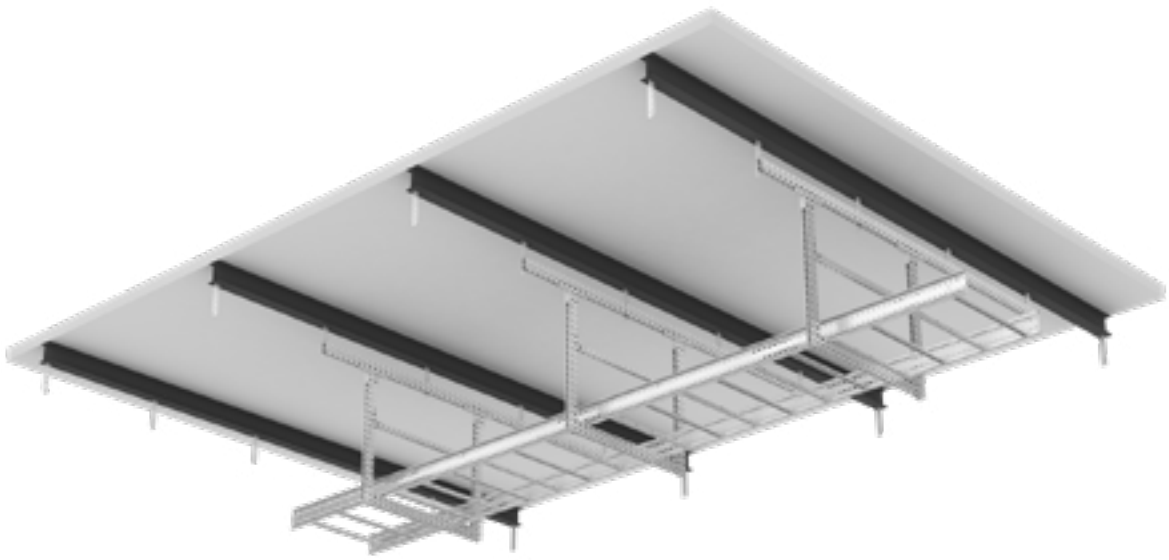
Cable Tray Lighting Brackets

ASSEMBLIES FOR SEISMIC ACTIVE AREAS

As Extreme Environment Experts Vantrunk can work closely with customers to overcome obstacles when working in harsh environments around the world such as those presented by seismically active areas.

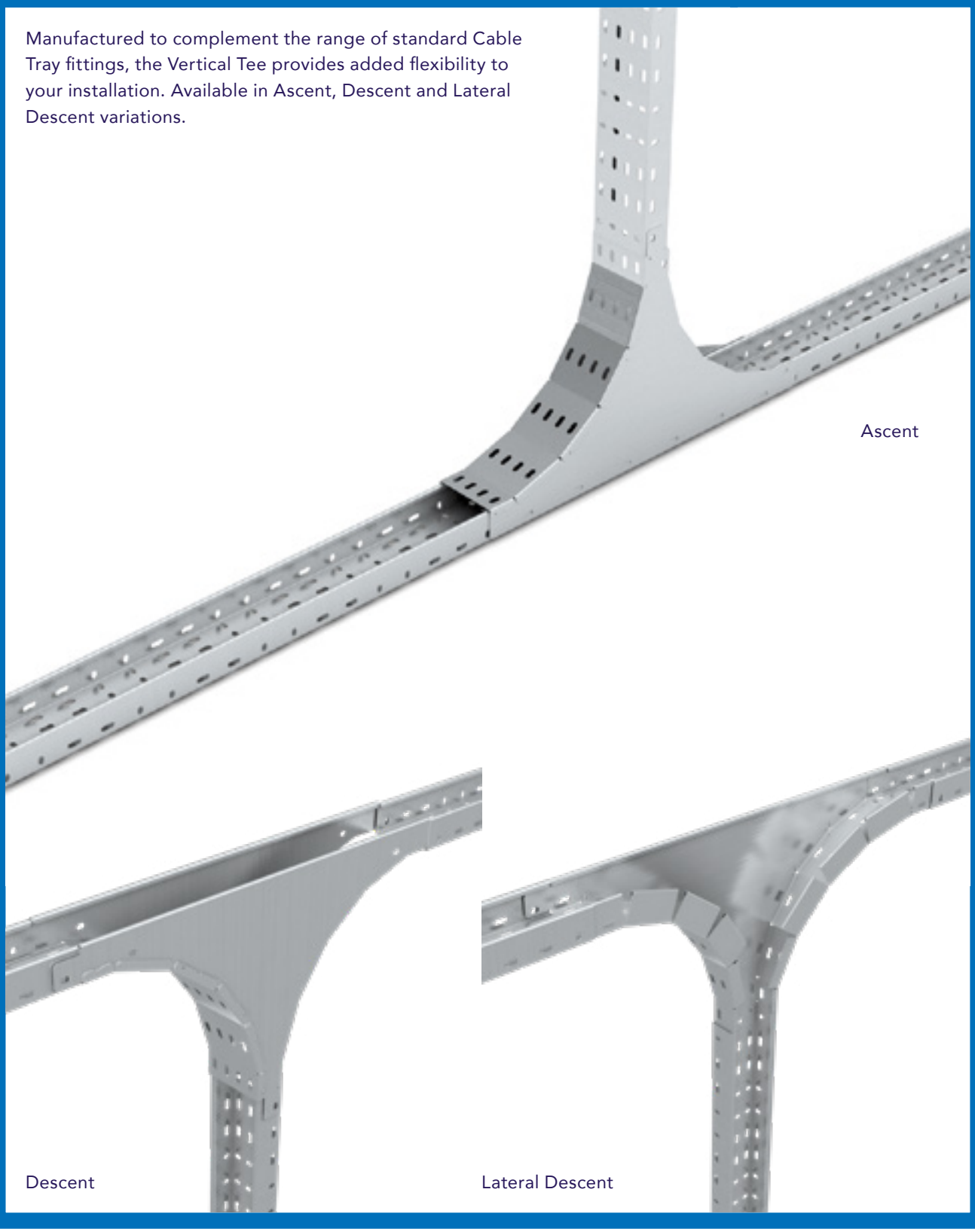


FLEXIBLE ASSEMBLY



VANTRUNK CABLE TRAY VERTICAL TEES

Manufactured to complement the range of standard Cable Tray fittings, the Vertical Tee provides added flexibility to your installation. Available in Ascent, Descent and Lateral Descent variations.



Ascent

Descent

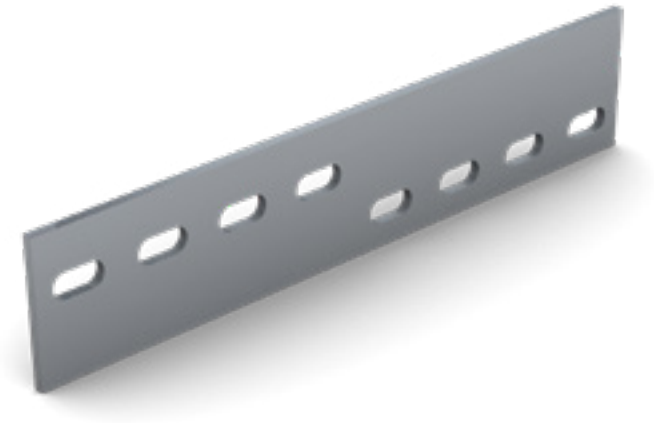
Lateral Descent

BRIDGE CABLE SUPPORT

TRANSITION COUPLERS

Bespoke designs that allow connection of Vantrunk Speedway Cable Ladder and Tray products to other Cable Management manufacturer's products. This is an ideal product when looking to install Vantrunk product on a site with existing cable management products.

Speedway Transition Coupler



Cable Tray Transition Coupler

SPEEDWAY Y-FITTINGS

Manufactured to complement the range of standard Speedway fittings, the Speedway Y-Fitting provides added flexibility to your installation. Available in right hand and left hand options.

SPEEDWAY VERTICAL TEES

Manufactured to complement the range of standard Speedway fittings, the Vertical Tee provides added flexibility to your installation. Available in Ascent and Descent configurations, both of which are suitable for mid-span or end - span changes of direction.

VANTRUNK

SECTION 07: ENGINEERING DATA

This collection of Engineering Data is intended to supply essential technical information relating to Vantrunk's Cable Management Systems. Its aim is to ensure that the specified Cable Management installation is adequately protected against corrosion and has suitable strength & rigidity to provide reliable support at minimum installed cost.

Our Technical Team is available to answer any questions relating to particular site requirements which may not be answered in the following sections.

Contact our team here: eddy.current@vantrunk.co.uk

CONTENTS

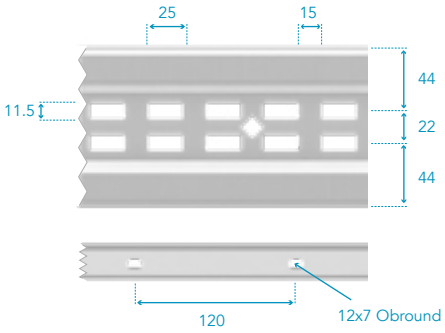
1. SPEEDWAY CABLE LADDER

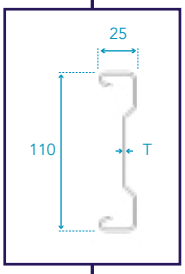
1.1 General Information

1.1.1 Slot Patterns

Details of the slot patterns for the Speedway cable ladder system are given in the following diagrams. These slot patterns are common for each Speedway cable ladder type, irrespective of material gauge.

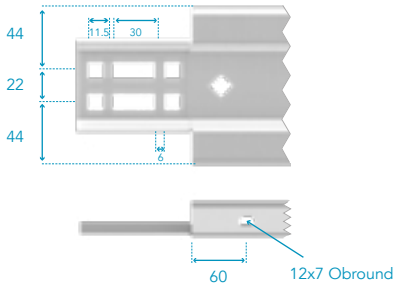
Speedway SW4 Straight Ladder





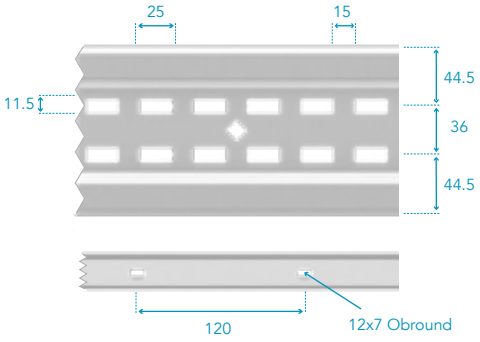
T = Side Wall Gauge (See section 1.1.2 for details).

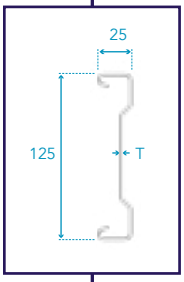
Speedway SW4 Fittings



The slot pattern for the Speedway SW4 fittings is repeated at each end of the fitting side wall and centrally on radial side walls (elbows, tees & crosses).

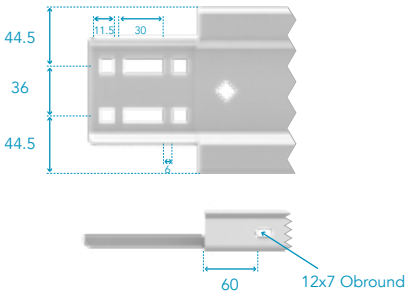
Speedway SW5 Straight Ladder





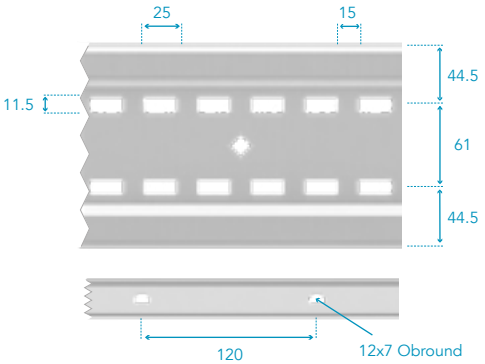
T = Side Wall Gauge (See section 1.1.2 for details).

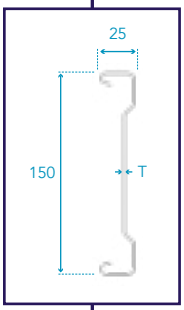
Speedway SW5 Fittings



The slot pattern for the Speedway SW5 fittings is repeated at each end of the fitting side wall and centrally on radial side walls (elbows, tees & crosses).

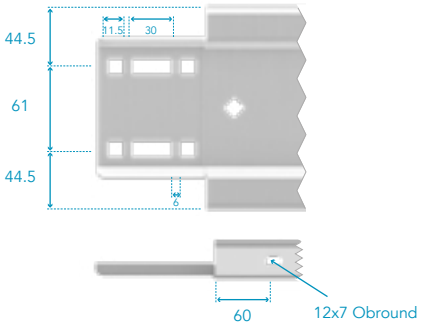
Speedway SW6 Straight Ladder





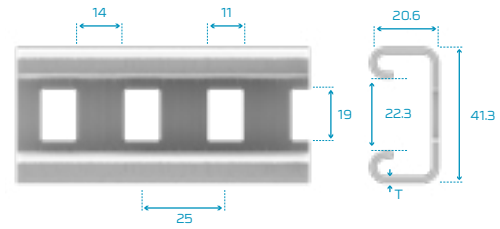
T = Side Wall Gauge (See section 1.1.2 for details).

Speedway SW6 Fittings



The slot pattern for the Speedway SW6 fittings is repeated at each end of the fitting side wall and centrally on radial side walls (elbows, tees & crosses).

Speedway Rung



T = Rung Gauge (1.5mm, 2.0mm 0r 2.5mm)

1.1.2 Standard Material Gauges

The gauges for the standard Speedway cable ladder & fittings have been determined by providing the most cost effective and efficient combination of material gauges for the side walls and rungs to suit the designed application of each type of Speedway cable ladder system.

The following table shows the standard material gauges for the Speedway cable ladder system in Hot Dipped Galvanised Structural Steel (GY). These gauges are supplied as standard unless otherwise specified.

Standard Galvanised Gauges

Finish & Material	Ladder Type	Side Wall Gauge	Rung Gauge						
			150 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1050 mm
GY	Speedway SW4	1.5mm	1.5mm						
	Speedway SW5	1.5mm							
	Speedway SW6	2mm	2mm						

The Speedway cable ladder system is available in a combination of side wall gauges (1.5mm & 2.0mm) and rung gauges (1.5mm, 2.0mm & 2.5mm) to suit specific installation requirements.

Consult our Technical Team for guidance on the correct selection of material gauge combinations.

Weights, where provided are for the Hot Dipped Galvanised Mild Steel item. The following correction factor should be used to determine the approximate weight for the corresponding item in an alternative Finish and Material. For exact weights please contact our Technical Team.

Material Correction Factor	
Hot Dipped Galvanised Silicon Rich Steel GX	Stainless Steel SS
1.06	0.95

1.1.3 Free Base Area

Speedway straight cable ladder has the following free base area (FBA):

Ladder Type	Free Base Area	Classification to BS EN ISO 61537
Speedway SW4	86.5%	Y
Speedway SW5		
Speedway SW6		

1.1.4 Cross Sectional Area

Speedway cable ladder has the following cross-sectional area (CSA):

Speedway SW4 Ladder	CSA mm²	Speedway SW5 Ladder	CSA mm²	Speedway SW6 Ladder	CSA mm²
SW4-SL-150-#	13780	SW5-SL-150-#	15975	SW6-SL-150-#	20075
SW4-SL-300-#	26740	SW5-SL-300-#	30975	SW6-SL-300-#	38825
SW4-SL-450-#	39700	SW5-SL-450-#	45975	SW6-SL-450-#	57575
SW4-SL-600-#	52660	SW5-SL-600-#	60975	SW6-SL-600-#	76325
SW4-SL-750-#	65620	SW5-SL-750-#	75975	SW6-SL-750-#	95075
SW4-SL-900-#	78580	SW5-SL-900-#	75975	SW6-SL-900-#	113825

Add Finish & Material.

1.1.5 Speedway Cable Ladder Specification

The following is a typical specification for a cable ladder system which embodies the key features of the Speedway Cable Ladder System:

1. The cable ladder system shall be based on two longitudinal outward facing side members (sidewalls) with return edge flanges to improve safety during handling, installation and cable pulling activities. The longitudinal side members shall form the main structural elements of the cable ladder system and shall be longitudinally ribbed for enhanced stiffness and rigidity
2. The profile of the side members shall remain constant for the straight cable ladder and the cable ladder fittings
3. The profile of the side members shall present a smooth surface to allow for easier cable pulling and to minimise the opportunities for damage to the cable insulation
4. The longitudinal side members shall have a height of:
   - Speedway SW4 = 110mm and a flange width of 25mm
   - Speedway SW5 = 125mm and a flange width of 25mm
   - Speedway SW6 = 150mm and a flange width of 25mm
5. The longitudinal side member shall have a wall thickness of:
   - 1.5mm*
   - 2.0mm*

   * Actual side member thickness is dependent on the projects exact requirements, please speak to our Sales Team for details
6. The side members of the straight cable ladder shall be fully slotted to minimise weight. The slot pattern in the side members shall allow for cutting of the straight cable ladder at any point along the length without the need to drill the side member when connecting to adjacent straight cable ladder and cable ladder fittings using the standard means of coupling
7. The two longitudinal side members shall be connected by individual transverse members (rungs) which shall be welded at the lowest point of the inside face of the side members to give a loading depth of:
   - Speedway SW4 = 85mm
   - Speedway SW5 = 100mm
   - Speedway SW6 = 125mm
8. The transverse members shall be evenly spaced at 300mm centres along the length of the straight cable ladder. The transverse members for horizontal bends (flat elbows) shall be located at either 0° or 7.5° and multiples there of around the fitting subject to a maximum spacing of 465mm between adjacent transverse members when measured as a linear distance along the outside face of the horizontal bend. The transverse members for horizontal intersection fittings (tees and crosses) shall be evenly spaced at intervals not exceeding 465mm. The transverse members for vertical bends (inside and outside risers) shall be evenly spaced at intervals not exceeding 300mm centres
9. The transverse members shall be of channel profile with a width of 41mm and a height of 21mm. The transverse members shall have a continuous open slot to suit the mounting of cable restraint devices (cleats, etc.) and other equipment using standard channel nuts and fixings. The base of the transverse members shall have slots of size 18mm x 11mm at 25mm centres to suit the use of cable ties and banding
10. The transverse members (rung) shall have a wall thickness of:
    - 1.5mm*
    - 2.0mm*
    - 2.5mm*

    * Actual rung thickness is dependent on the projects exact requirements, please speak to our Sales Team for details
11. The transverse members for straight cable ladder shall be orientated with the continuous slot facing alternately upwards and downwards. The transverse members for cable ladder fittings shall be orientated with the continuous slot facing upwards to allow for the securing of cable restraint devices (cleats, etc.) at every rung position

12. The width of the straight cable ladder and the cable ladder fittings shall be measured relative to the inside faces of the side members. The widths of the straight cable ladder and cable ladder fittings shall be 150mm, 300mm, 450mm, 600mm, 750mm, 900mm & 1050mm
13. The straight cable ladder shall have a length of 3000mm or 6000mm as specified
14. The cable ladder fittings shall have fixed angles of 90°, 60°, 45° and 30°
15. Radial cable ladder fittings shall have a radius of 300mm, 450mm, 600mm, 750mm, 900mm, 1050mm & 1200mm. The radius of the fitting shall be measured relative to the inside face on the radial side wall
16. The cable ladder system shall be manufactured using:

- **Hot Dipped Galvanised Structural Steel:** structural steel of a grade to BS EN 10025-2 and shall be hot dip galvanised up to a maximum average coating thickness of 85µm after manufacture to BS EN ISO 1461
- **Deep Galvanised Structural Steel:** structural steel of a grade to BS EN 10025-2 and shall be deep galvanised up to a maximum average coating thickness of 120µm after manufacture to BS EN ISO 1461
- **Deep Galvanised Silicon Rich Structural Steel:** silicon-rich steel (generally complying of a grade to BS EN 10025) and deep galvanised up to a maximum average coating thickness of 160µm after manufacture to BS EN ISO 1461.
- **Hot Dipped Galvanised Carbon Steel:** low carbon steel of a grade to BS EN 10111 or equivalent and shall be hot dip galvanised to 55µm after manufacture to BS EN ISO 1461
- **Marine Grade Stainless Steel:** stainless steel grade 1.4404 (316L marine grade) to BS EN 10088

17. The couplers shall be profiled to match the profile of the cable ladder. The couplers shall be secured using M10 square-shouldered bolts with rounded heads. The bolts shall be secured with M10 serrated flanged nuts as standard. The couplers shall have a slot pattern which greatly reduces slip between adjacent straight ladder lengths (including cut lengths of straight cable ladder) and between cable ladder fittings. The couplers shall have a slot pattern which allows for easy connection to cut lengths of straight cable ladder without the need for on - site drilling

1.2 Installation

1.2.1 Loads

A correctly designed and specified cable ladder installation should take into account the nature and extent of the loads which will be imposed on the cable ladder system. These loads comprise of dead loads including the self-weight of the cable ladder system, the weight of the cables and secondary equipment attached to the cable ladder, imposed loads which occur during installation of the cable ladder system and during cable pulling operations, and external loads such as wind, snow & ice.

Cable ladders are often employed in locations where the wind speeds may cause considerable lateral loading and careful consideration must be given to design to ensure a satisfactory installation. An awareness of the worst possible climate conditions is necessary when specifying the correct Speedway cable ladder system.

The load-deflection information given in section 1.3.3 is based on static loading of the Speedway cable ladder installation and does not take into account dynamic effects such as wind, etc.

In designing a cable ladder installation it is good practice to allow at least a 20% excess capacity in a new installation for future expansion. Such a provision is of great economic advantage when there is a later need for additional cables.

1.2.2 Support Spacing

The space between the supports of a cable ladder installation is referred to as the span. Supports for cable ladder should, as far as practicable, be spaced so as to create the most economical load-span ratio to suit the capacity of the cable ladder system.

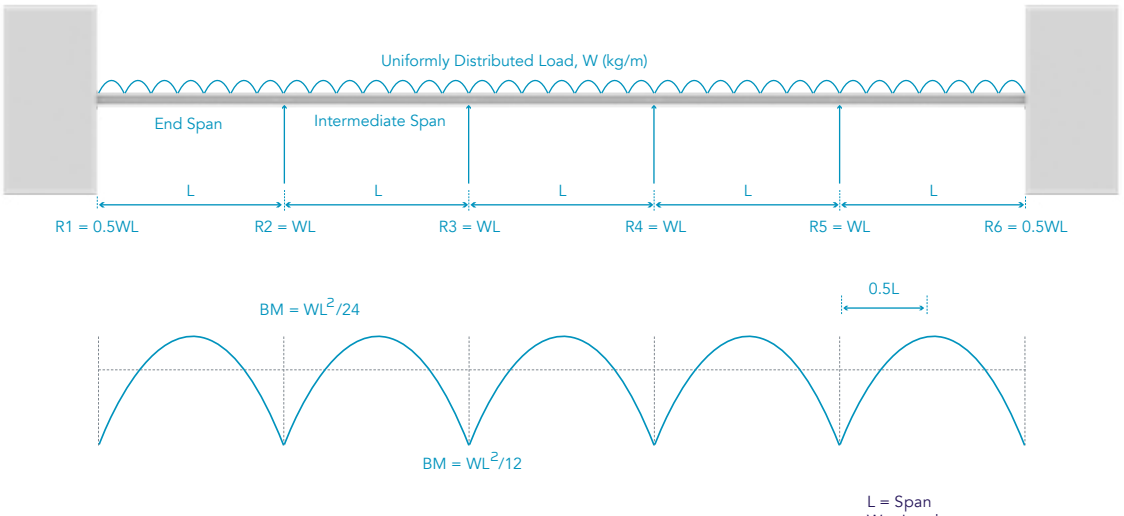
This will give the most advantageous solution when considering procurement and installation costs. As a general rule of thumb, the load-carrying capability of the Speedway Cable Ladder system increases as the span decreases, so a lighter duty cable ladder system can be specified for shorter spans. Conversely, a heavier duty Speedway Cable Ladder system will need to be specified for longer spans.

When considering support positions it should be remembered that it is necessary to support accessories when a change of direction takes place i.e. bends, tees, risers etc. This is to ensure that undue 'corner' cantilever reaction is minimised. Recommendations for the location of supports for Speedway Cable Ladder fittings are given in section 1.2.4.

1.2.3 Location of Couplers

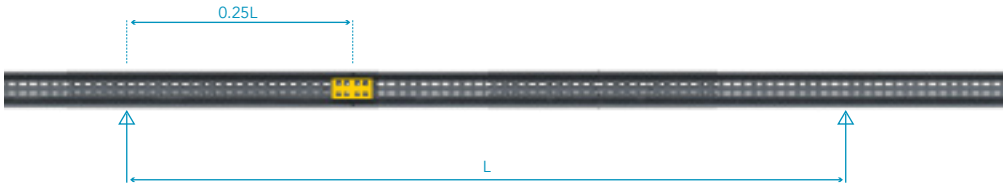
The maximum bending moments acting on a cable ladder run occur in the cable ladder side members at the supports and at the mid span position. For this reason it is good practice to avoid locating couplers in a cable ladder run either directly on supports or at the mid span position. It is also good practice to avoid locating couplers in the end span of a continuous beam installation as the bending moments in the end span are, for simple end support installations, much higher than those found in the intermediate spans.

These limitations cannot always be achieved in a cable ladder installation and are not a mandatory requirement for the Speedway coupling system. The ideal positions to locate the couplers in a cable ladder run are at approximately a quarter of a span from the supports where the bending moment, and hence the stress, is minimal. Positioning the couplers at the quarter span positions is of benefit during installation, assisting in alignment of the cable ladders and allowing unhindered securing of the cable ladder to the supports.



Bending Movement distribution for a continuous beam with fixed ends
(The Bending Movement for ends spans in a continous beam with simple end supports will be higher than that shown)

L = Span
W = Load
UDL = Uniformly Distributed Load
R = Reaction at Support
BM = Bending Movement



Location of couplers at point of least Bending Movement
(Approximately ¼ of the span away from the supports)

1.2.4 Support Locations for Speedway Fittings

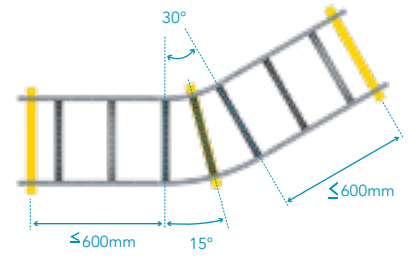
The following illustrations show the recommended support positions when installing Speedway cable ladder fittings. The supports should be fully fixed to provide maximum support for the Speedway cable ladder fitting.

For more specific recommendations relating to particular site installations please contact our Technical Team.

Speedway Flat Elbows

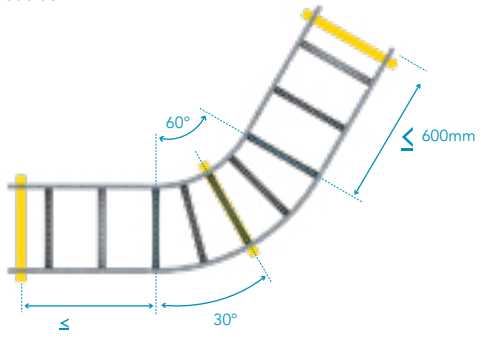
Speedway 30° Flat Elbows

For 30° flat elbows, supports should be placed within 600mm of the end of the flat elbow. For 30° flat elbows with radii of 450mm and above, an intermediate support should be located radially at 15° under the flat elbow.



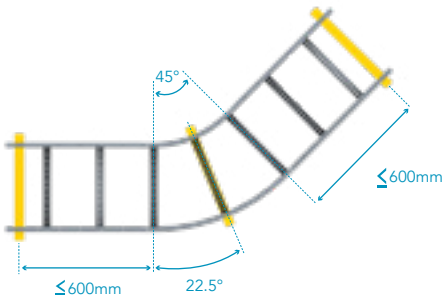
Speedway 60° Flat Elbows

For 60° flat elbows, supports should be placed within 600mm of the end of the flat elbow. An intermediate support should be located radially at 30° under the flat elbow.



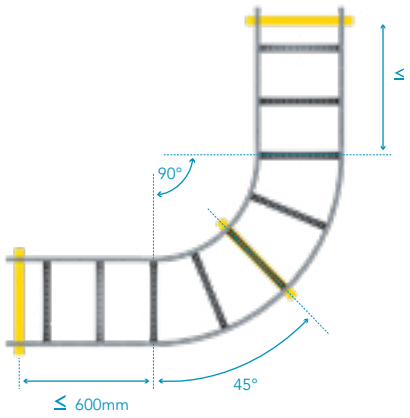
Speedway 45° Flat Elbows

For 45° flat elbows, supports should be placed within 600mm of the end of the flat elbow. For 45° flat elbows with radii of 450mm and above, an intermediate support should be located radially at 22.5° under the flat elbow.



Speedway 90° Flat Elbows

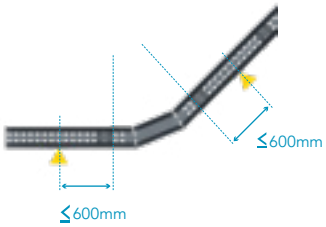
For 90° flat elbows, supports should be placed within 600mm of the end of the flat elbow. An intermediate support should be located radially at 45° under the flat elbow.



Speedway Inside & Outside Risers

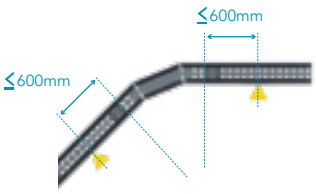
Speedway Inside Risers (all angles)

For inside risers (30°, 45°, 60° & 90°) supports should be placed within 600mm of the end of the inside riser.



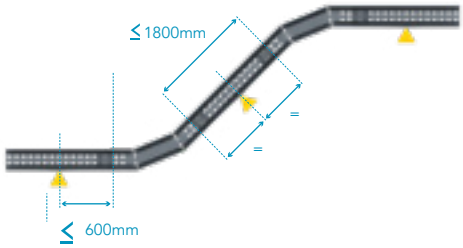
Speedway Outside Risers (all angles)

For inside risers (30°, 45°, 60° & 90°) supports should be placed within 600mm of the end of the inside riser.

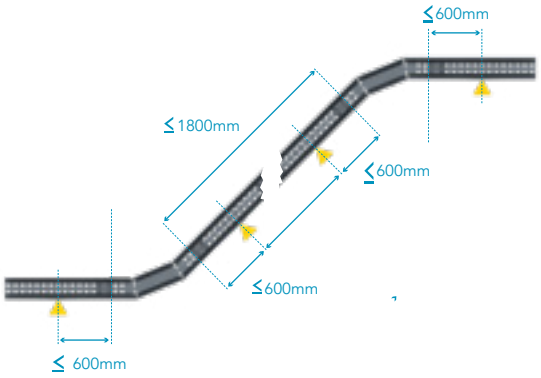


Speedway Inside & Outside Risers in Offset Arrangement

For inside & outside risers (30°, 45°, 60° & 90°) forming an offset of length up to 1800mm, supports should be placed within 600mm of the end of the offset and centrally on the inclined cable ladder.



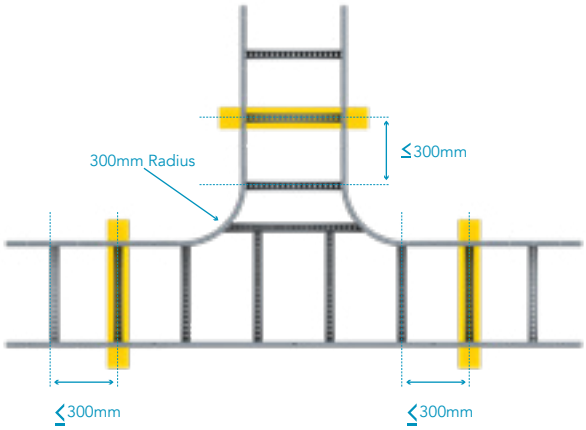
For inside & outside risers (30°, 45°, 60° & 90°) forming an offset of length over 1800mm, supports should be placed within 600mm of the ends of the inside & outside risers. The inclined cable ladder should be supported in accordance with the support recommendations for a straight cable ladder run.



Speedway Equal & Unequal Tees

Speedway Equal & Unequal Tees (300mm Radius)

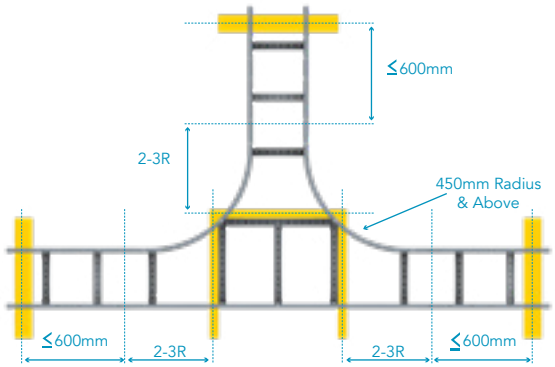
For equal and unequal tees with radii of 300mm, supports should be located within 300mm of the tee on each branch in the cable ladder run.



Speedway Equal & Unequal Tees (450mm Radius & Above)

For equal and unequal tees with radii of 450mm and above, supports should be located within 600mm of the tee on each branch in the cable ladder run.

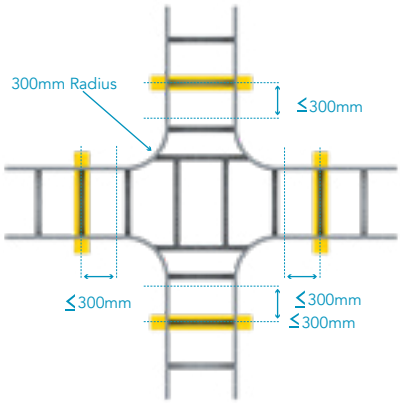
Intermediate supports should be placed at approximately 2-3 of the radius (R) on each branch of the tee as shown.



Speedway Crosses

Speedway Crosses (300mm Radius)

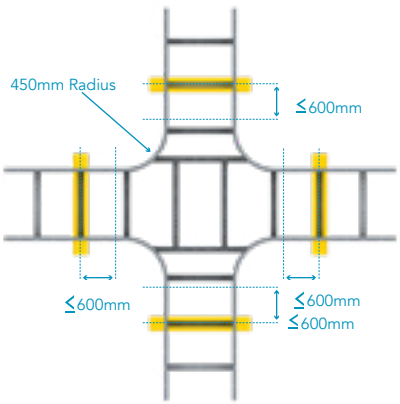
For crosses with radii of 300mm, supports should be located within 300mm of the cross on each branch in the cable ladder run.



Speedway Crosses (450mm Radius & Above)

For crosses with radii of 450mm and above, supports should be located within 600mm of the tee on each branch in the cable ladder run.

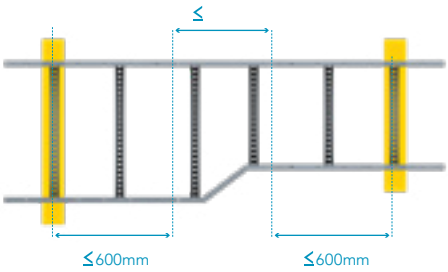
Intermediate supports should be placed at approximately 2-3 of the radius (R) on each branch of the cross as shown.



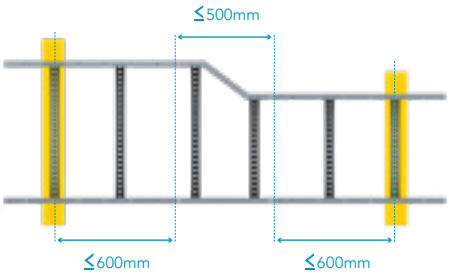
Speedway Reducers

For all widths of straight reducer, left-hand reducer, and right-hand reducer, supports should be located on the cable ladder run within 600mm of the reducer as shown.

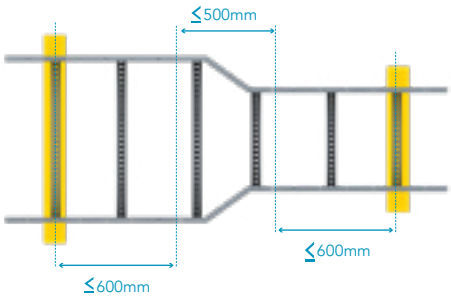
Speedway Right-Hand Reducer



Speedway Left-Hand Reducer



Speedway Straight Reducer



1.2.5 Loading of Supports

It is important that cable ladder and cable ladder supports are loaded in a symmetrical manner such that undue stresses are kept to a minimum.

The safe working load figures for the Speedway cable ladder and the Speedway cantilever type supports is based on a uniform loading within the Speedway cable ladder and on the assumption that the correct length of cantilever is used in each case.

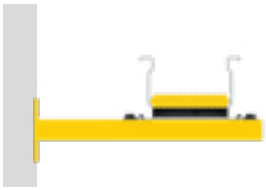
Where cantilevers of additional length are used to support Speedway cable ladder, care should be taken to position the cable ladder as close to the backplate of the cantilever as the installation routing will allow.

Where the Speedway cable ladder is not filled to capacity, or is carrying heavy cables, care should be taken to position the cables as close to the cantilever backplate as the installation routing will allow.

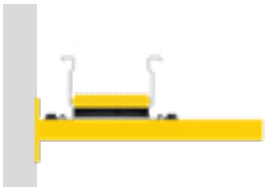
For those installations where the routing of the cable ladder or the position of heavy cable loads cannot be undertaken in accordance with the above, the IC-PROP-Size cantilever arm prop should be used to correctly support the cantilever arm.

More details on the Safe Working Load of Speedway supports can be found in the Supports Section.

For further information and guidance on the loading of supports please contact our Technical Team.



Avoid locating cable ladder on the end of cantilever support



Locate cable ladder close to the cantilever backplate

Avoid placing unsymmetrical cable loads on the extremes of cantilever supports

Locate unsymmetrical cable loads close to the cantilever backplate

Use the cantilever prop (IC-PROP-Size – See page 177) to support offset cable ladder or unsymmetrical cable loads.

1.2.6 Electrical Continuity Characteristics

In tests conducted to verify the electrical continuity characteristics of the Speedway cable ladder it has been established that the standard Speedway coupling system provides adequate electrical continuity, ensuring equipotential bonding and connection to earth.

The Speedway cable ladder system has been tested for electrical continuity to BS EN 61537 (Section 11.1). Details are given in the following table.

Ladder Type	Material & Finish	Impedance across joint	Impedance per metre length
Speedway SW4	Hot Dip Galvanised	<50mΩ	<5mΩ
	Stainless Steel		
Speedway SW5	Hot Dip Galvanised		
	Stainless Steel		
Speedway SW6	Hot Dip Galvanised		
	Stainless Steel		

BS EN 61537 requires a maximum impedance of 50mΩ across the coupled joint and 5mΩ per metre length without a joint

The electrical continuity of the Speedway cable ladder joints has been tested to NEMA VE (Section 5.1). Details are given in the following table.

Ladder Type	Material & Finish	Resistance across joint
Speedway SW4	Hot Dip Galvanised	<33mΩ
	Stainless Steel*	
Speedway SW5	Hot Dip Galvanised	
	Stainless Steel*	
Speedway SW6	Hot Dip Galvanised	
	Stainless Steel	

NEMA VE 1 requires a net resistance of no more than 33mΩ across the coupled joint. * Requires use of earth bonding strap EBS01

Earth continuity bonding straps (part number EBS-01) of cross sectional area 16 mm² are available for use with Speedway cable ladder where a non-conductive surface finish i.e. epoxy coated etc, has been specified or where the installation requires an additional means of bonding.

1.2.7 Electromagnetic Compatibility (EMC)

In normal use Speedway cable ladder can be considered to be passive in respect of electromagnetic influences, emission and immunity. When Speedway cable ladder is installed as part of a wiring installation, the installation may emit or may be influenced by electromagnetic signals. The degree of influence will depend on the nature of the installation within its operating environment and the electrical equipment connected by the wiring. As a minimum precaution to minimise the occurrence of electromagnetic influences, power and data-signal cables should be run on separate cable routings or at least separated by means of dividers.

Our Technical Team should be consulted for further information on electromagnetic compatibility issues.

1.2.8 Assembly Recommendations

Instructions for the correct assembly of Speedway straight couplers and expansion couplers are given below.

Speedway Straight Couplers

The Speedway straight couplers are supplied with the correct number of fixing sets (4 for Speedway SW4 and 8 for Speedway SW5 & SW6), each comprising of an M10 x 20 square shouldered bolt and an M10 serrated flanged nut.

1 Locate the Speedway straight coupler on the outside of the two abutting components of the Speedway cable ladder installation (ladder to ladder) with the profile of the straight coupler aligned to the central ribbed profile on the abutting components.

2 Position the Speedway straight coupler over the two components such that a series of square apertures are created by the alignment of the slot patterns in the coupler and the slot patterns in the two abutting components. For joints between uncut Speedway cable ladders, the straight coupler should sit centrally across the joint. For connecting cut sections of Speedway cable ladder it may be necessary to reposition the coupler to create the series of square apertures.

3 Insert an M10x20 square shouldered bolt into one of the square apertures from the inside of the Speedway cable ladder with the threaded portion of the bolt protruding

4 Fit an M10 Serrated Flange Nut onto the threaded portion of the bolt.

5 Tighten the fixing assembly by hand.

6 Repeat for the remaining fixing sets.

7 Fully secure the abutting components to the supporting structure.

8 Check the alignment of the Speedway straight coupler and the abutting components and adjust as necessary to give a fair and true alignment.

9 Tighten the hex nuts on the Speedway straight coupler to a torque of 46Nm.

Speedway Integral Coupler Assembly

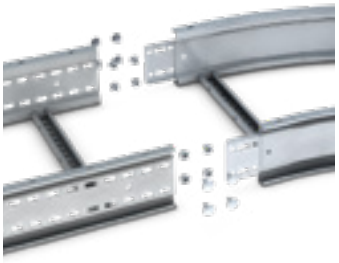
Speedlok Speedway Fittings are supplied with the correct number of fixing sets for that type of fitting, each comprising of an M10 x 20 square shouldered bolt, an M10 serrated flange nut.

1 Position the Straight Length of Speedway Cable Ladder on the inside of the Integral Couplers of the Speedway fitting with the Integral Coupler lying over the web of the Speedway profile.

2 Position the Speedway Integral Coupler so that a series of square apertures are created by the alignment of the slot patterns in the coupler and the straight ladder.

3 Insert an M10 x 20square shouldered bolt into one of the square apertures from the inside of the Speedway cable ladder with the threaded portion of the bolt protruding through the side wall of the ladder and the Speedway Integral Coupler.

4 Fit an M10 Serrated Flange Nut onto the threaded portion of the bolt.



5 Tighten the fixing assembly by hand.

6 Repeat for the remaining fixing sets.

7 Fully secure the abutting components to the supporting structure.

8 Check the alignment of the Speedway Integral Coupler and the abutting components and adjust as necessary to give a fair and true alignment.

9 Tighten the flange nuts on the Speedway straight coupler to a torque of 46Nm.

Speedway Expansion Couplers

The Speedway expansion couplers are supplied with 8 fixing sets, each comprising of an M10 x 25 square shouldered bolt, an M12 flat washer, an M10 shake-proof washer and 2 M10 hex nuts. Refer to page 246 for details on the spacing between expansion couplers and the required gap setting procedure at the time of installation.

1 Locate the Speedway expansion coupler on the outside of the two abutting Speedway cable ladders with the profile of the expansion coupler aligned to the central ribbed profile on the Speedway cable ladders. NOTE: the expansion coupler should not be used to connect cut sections of cable ladder.

2 Position the Speedway expansion coupler equally over the two abutting Speedway cable ladders such that a series of square apertures are created by the alignment of the slot pattern in the coupler and the slot pattern in the cable ladders.

3 Insert an M10 x 25 square shouldered bolt into one of the square apertures from the inside of the Speedway cable ladder with the threaded portion of the bolt protruding through the Speedway cable ladder and the Speedway expansion coupler.

4 Fit a M12 flat washer and a M10 hex nut onto the threaded portion of the M10x25 bolt.

5 Tighten the fixing assembly by hand such that it is free to move within the slots of the Speedway cable ladder and the Speedway expansion coupler (some light resistance to movement is preferable).

6 Repeat for the remaining fixing sets.

7 Check the alignment of the Speedway expansion coupler and the Speedway cable ladders and adjust as necessary to give a fair and true alignment.

8 Check the setting gap (See page 246)

9 Secure the Speedway cable ladders to the supporting structure using external flange clamps SW-EFC See Page 73) and nylon spacer pads (PAD See Page 200).

10 Fit a second M10 hex nut onto each of the hand tightened assemblies. Using a M10 spanner to hold the first M10 hex nut in place, tighten the second M10 hex nut to a torque of 46Nm. Check that the completed assembly is free to move (some light resistance to movement is preferable).

11 Repeat for the remaining fixing sets.

12 Check the installed Speedway expansion coupler for freedom of movement (some light resistance to movement is preferable).

Consult our Technical Team for installation instructions for the Speedway full moment expansion coupler.

1.3 Loading Information

To enable the selection of the most appropriate Speedway cable ladder for a particular installation it is necessary to consider the loads which must be supported and the distance between supports (the span). These loads are broadly classed as dead loads, imposed loads and point loads.

1.3.1 Dead Loads

Dead loads include the weight of any cables, pipes and secondary equipment carried on or installed on the cable ladder plus the self weight of the cable ladder and any component of the cable ladder (covers, connectors, accessories, etc.).

Weight data for cables is readily available from the cable manufacturer or supplier and is usually quoted in terms of kilograms per metre (kg/m). The weight per metre from the cables (or pipes, etc) is the sum of the individual cable (or pipe, etc) weights. Weight data for secondary equipment should also be readily available from the equipment manufacturer or supplier and is usually quoted in terms of kilograms (kg). The unit weight for the secondary equipment can be converted into a equivalent weight per metre by using the following formula:

$$\text{Equivalent weight per metre Wm (kg/m)} = \frac{\text{2 x unit of equipment (kg)}}{\text{Span (m)}}$$

For example, a secondary item of equipment with a weight of 12kg has an equivalent weight per metre Wm of 8kg/m for a span of 3m. This figure should be added to the sum of the individual cable weights (or pipe, etc). When determining the location of secondary items of equipment, care should be taken to either mount these items centrally across the cable ladder using the Speedway mounting plates, or place these items adjacent to, or directly onto, the cable ladder side members and as close to the cable ladder supports as the installation will allow.

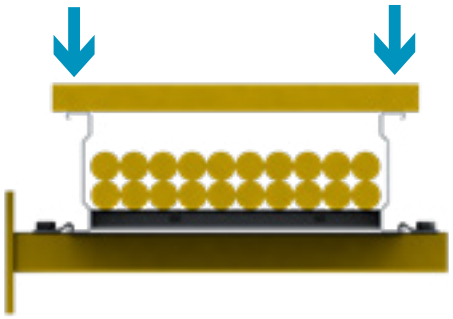
The allowable loading figures given in the tables overleaf include the self weight of the Speedway cable ladder. The weight data for additional installed components (covers, mounting accessories, etc) for the Speedway cable ladder system can be provided on request by our Technical Team.

1.3.2 Point Loads

Point loads are often applied to the cable ladder during installation, cable pulling and in-service inspection.

An allowance can be made for the influence of point loads at the design stage when determining the total load to be carried by the Speedway cable ladder system. Typical point loads are in the order of 75kg to 150kg. When specifying a point load requirement it should be noted that the value of the point load should be kept to a minimum as incorporating the point load will reduce the allowable cable load for the Speedway cable ladder. Loading graphs which include the influence of a mid span point load are available on request.

Speedway cable ladder is not intended to be used as a walkway and on no account should point loads be applied to the rungs. On those occasions where it is necessary to apply a point load care should be taken to apply the load evenly onto the two side members, preferably using a board or similar support to distribute the load over as long a section of the cable ladder as possible.



Correct application of point load onto Speedway cable ladder using a board to spread the load evenly onto the side members

1.3.3 Safe Working Load

When correctly mounted and secured, cable ladder can be considered to be a 'continuous beam'. This implies that the cable ladder run is regularly supported and that the cable ladders at the extremities of the run are firmly anchored. The following tables are used to calculate the safe working load and have been verified by testing in accordance to BS EN 61537 .The load bearing capacity of a cable ladder is limited by the lesser of the maximum allowable stress induced in the side members and rungs or the maximum deflection acceptable in the same members. The maximum allowable stress is usually limited by the materials lower yield stress; this gives a safety factor of 1.7 against the ultimate tensile strength.

Maximum deflection, (in the absence of a particular customer need) is not allowed to exceed 1/100th of the distance between supports (span) longitudinally or 1/20th of the rung length (cable ladder width) transversely. Although unusual, there may be occasions when it is difficult or indeed impossible to anchor the cable ladder securely in position. Under these circumstances the ladder is 'simply supported' and its load bearing ability is substantially reduced. As a rough guide maximum loads should be limited to two thirds of those shown in the loading tables and increased deflection values should be accepted for each span.

The data given in the tables is for Vantrunk cable ladder installed as a continuous beam and allows for the weight of the ladder itself. The safe working load values represent a uniformly distributed load and a factor of 1.7 as recommended in the cable ladder European standard. This information is given for guidance only and larger safety factors can be used depending on the installation. The Speedway Cable Ladder system, components and accessories have been tested to BS EN ISO 61537.

Further details are can be provided by our Technical Team.

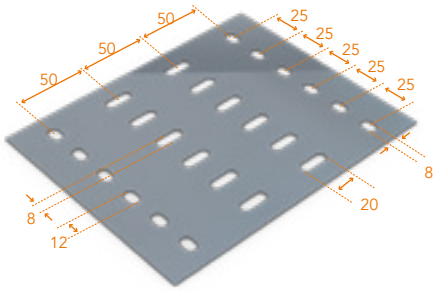
ENGINEERING DATA

Ladder Type	3m		4m		5m		6m	
	kg/m	N/m	kg/m	N/m	kg/m	N/m	kg/m	N/m
Speedway SW4	256	2511	175	1717	61	598	44	432
Speedway SW5	306	3002	206	2021	98	961	72	706
Speedway SW6	488	4787	295	2894	163	1599	129	1265

Loading data in Accordance with BS EN IEC 61537
Test Type II with a 0.75L end span.

2. VANTRUNK CABLE TRAY
2.1 General Information
2.1.1 Slot Patterns

Details of the slot patterns for the Vantrunk cable tray system are given in the following diagram. These slot patterns are common for each Vantrunk cable tray type, irrespective of material gauge and finish.



2.1.2 Profiles

Medium Duty Return Flange

Heavy Duty Return Flange

2.1.3 Side Wall Heights

The Vantrunk cable tray range is available with the following side wall heights.

Tray & Fitting Type	Side Wall Height mm
Medium Duty Return Flange	25
Heavy Duty Return Flange	50
	75
	100

2.1.4 Cable Tray Fitting Radius

Vantrunk cable tray fittings are available with the following standard radii.

Standard Radius For Cable Tray Fittings

Tray Width (mm)	Flat Elbows, Tees & Crosses	Inside & Outside Risers
50	75	300
75		
100		
150		
200	150	
225		
300		
450		
600		
750		
900		

All Vantrunk cable tray fittings are available to order with radii of 300mm, 450mm & 600mm. Those cable tray fittings which have a standard radius of 75mm are also available to order with a radius of 150mm. Consult our Sales Team for details.

2.1.5 Material Gauges

The standard range of material gauges for the Vantrunk cable tray & fittings have been determined by providing the most cost effective and efficient gauge for each material type to suit the designed application of each of Vantrunk cable tray system types.

Straight Lengths

	Medium Duty				Heavy Duty			
	GA	SS	GX	GW	GA	SS	GX	GW
50	0.9mm	1.0mm	1.5mm		0.9mm	1.0mm	1.5mm	
75								
100								
150								
200					1.2mm			
225								
300	1.2mm							
400	1.5mm	1.5mm			1.5mm	1.5mm		
450								
600								
750	2.0mm		2.0mm		2.0mm		2.0mm	
900								

Fittings

	Medium Duty				Heavy Duty			
	GA	SS	GX	GW	GA	SS	GX	GW
50	0.9mm	1.0mm	1.5mm		0.9mm	1.0mm	1.5mm	
75								
100								
150								
200					1.2mm			
225								
300	1.2mm							
400		1.5mm				1.5mm		
450								
600					1.5mm			
750	1.5mm		2.0mm		2.0mm		2.0mm	
900								

Covers

	GA	SS	GX	GW
50	0.9mm	1.0mm	1.5mm	
75				
100				
150				
200				
225				
300	1.2mm			
400		1.5mm		
450				
600				
750	1.5mm		2.0mm	
900				

The following table shows the standard material gauges for each width and type of Vantrunk cable tray system in a number of finishes. Consult our Technical Team for gauge details for other materials & finishes.

The standard material gauges are supplied for each tray and fitting type & width unless otherwise specified.

Consult our Technical Team for guidance on the appropriate selection of non-standard material gauges. Weights, where quoted in the catalogue, are for the standard hot dip galvanised carbon steel item. The following correction factors should be used to determine an estimated weight for the corresponding item in an alternative gauge and finish. For exact weight data please consult our Sales Team.

As an example:
A heavy duty return flange cable 90° flat bend, 300mm wide, hot dip galvanised finish in standard 1.2mm gauge weighs 2.32kg. The equivalent weight of the stainless steel item in 1.5mm gauge = 2.32kg x 1.2 = 2.78kg.

Material & Gauge Correction Factor

Standard Gauge	Required Gauge	Hot Dip Galvanised Mild Steel (GA)	Stainless Steel (SS)	Hot Dip Galvanised Silicon Rich, Steel (GX)
0.9	0.9	0.92	0.94	1.08
	1.0	1.02	1.04	1.20
	1.2	1.24	1.26	1.42
	1.5	1.58	1.60	1.76
	2.0	2.10	2.13	2.35
1.0	0.9	0.83	0.84	1.08
	1.0	0.92	0.94	1.20
	1.2	1.12	1.14	1.42
	1.5	1.42	1.44	1.76
	2.0	1.89	1.92	2.35
1.2	0.9	0.69	0.70	0.81
	1.0	0.77	0.78	0.90
	1.2	0.93	0.95	1.07
	1.5	1.18	1.20	1.32
	2.0	1.57	1.60	1.76
1.5	0.9	0.55	0.56	0.65
	1.0	0.61	0.62	0.72
	1.2	0.75	0.76	0.85
	1.5	0.95	0.96	1.05
	2.0	1.26	1.28	1.41
2.0	0.9	0.41	0.42	0.49
	1.0	0.46	0.47	0.54
	1.2	0.56	0.57	0.64
	1.5	0.71	0.72	0.79
	2.0	0.94	0.96	1.06

Consult our Technical Team for other material & gauge combinations.

2.1.6 Recommended number of fixings

Vantrunk cable tray fittings have integral jointing strips for connecting to straight lengths and for connecting cable tray fittings to cable tray fittings. The cable tray fixing set comprises of an M6 x 12 screw and an M6 nut (plus an M6 flat washer for stainless steel fixings).

Cable Tray Fixing Sets

Part Number	Description	
Hot Dip Galvanised Cable Tray		
M6x12-BN-GA	M6 x 12 Mushroom Head Bolt M6 Square Nut	
Stainless Steel		
M6x12PHS-SS-A4 M6-FW-SS-A4 M6-HN-SS-A4	M6 x 12 Pan Head Screw M6 Flat Washer M6 Hex Nut	

The following table gives the recommended number of fixings for each type of cable tray straight length, fish plate coupler & cable tray fitting.

Recommended Number of Fixings for Cable Tray

Item	Width mm	Number of Fixing Supplied	
Straight Lengths	50 to 150 200 225 300 450 600 750 900	0 (Fixings supplied with Couplers)	
Fish Plate Couplers	50 & 75	NA	
	100 & 150	5	
	200 225 300	6	
	450	8	
	600	10	
	750	12	
	900	16	
Flat Bends Risers	50 to 150 200 225	4	
	300	6	
	450 600 750 900	8	
Equal Tees Unequal Tees	50 to 150 200 225	6	
	300	9	
	450 600 750 900	12	
Four Ways	50 to 150 200 225	8	
	300	12	
	450 600 750 900	16	
Reducers	Primary Width	Secondary Width < 200mm	Secondary Width > 200mm
	75 100 150 200 225	4	
	300	5	
	450	6	7
	600 750 900	6	8

2.1.7 Perforation Base Area

Vantrunk straight cable tray has the following perforation base area:

Perforation Base Area for Vantrunk Cable Tray

Tray Type	Perforation Base Area	Classification to BS EN 61537
Medium Duty Return Flange	9.14%	B
Heavy Duty Return Flange	9.14%	B

Consult our Technical Team for perforation base area classifications for Vantrunk cable tray fittings.

2.1.8 Cross-sectional Area

The Vantrunk cable tray has the following cross-sectional areas (CSA):

Cross-sectional Area for Vantrunk Cable Tray

Tray Type	Width	CSA mm²
Medium Duty Return Flange	50	1040
	75	1628
	100	2215
	150	3390
	200	4565
	225	5153
	300	6915
	450	10440
	600	13965
	750	17490
	900	21015
Heavy Duty Return Flange	50	2290
	75	3503
	100	4715
	150	7140
	200	9565
	225	10778
	300	14415
	450	21690
	600	28965
	750	36240
	900	43515

CSA information is based on standard gauges in a hot dip galvanised finish. Consult our Technical Team for other gauges and materials.

The cross sectional areas given in the table above exclude return flanges where appropriate – see the following illustration for the cross section which is included as part of the area calculation.

Consult our Technical Team for cross-sectional area information for Vantrunk cable tray fittings.

2.1.9 Vantrunk Cable Tray Specification

The following is a typical specification for a cable tray system which incorporates the key features of the Vantrunk cable tray system.

1 The cable tray system shall comprise a perforated base with longitudinal upward facing side walls. Medium duty and heavy duty cable tray shall have returned flanges on the side walls for improved strength.

2 The profile of the cable tray straight lengths shall remain constant for the straight cable tray and shall be compatible with that of the matching cable tray fittings.

3 The inside of the cable tray shall present a smooth surface to allow for easier cable pulling and to minimise the opportunities for damage to the cable insulation.

4 The cable tray side walls shall have an overall height of:

For medium duty return flange cable tray: 25mm for all tray widths.

For heavy duty return flange cable tray: 50mm (or required side wall height) for all tray widths.

5 The cable tray shall have a width of 50mm, 75mm 100mm, 150mm, 200mm, 225mm, 300mm, 450mm, 600mm, 750mm and 900mm as required. The width shall be measured internally between the side walls.

6 The cable tray shall have a minimum thickness as follows for hot dip galvanised finish, other finishes consult our sales team:

For medium duty return flange cable tray: 0.9mm for tray of widths 50mm to 225mm, 1.2mm for tray of width 300mm (1.0mm for stainless steel), 1.5mm for tray of widths 450mm and 600mm and 2.0mm for widths of 750mm and 900mm (1.5mm for stainless steel).

For heavy duty return flange cable tray: 0.9mm for tray of widths 50mm to 150mm, 1.2mm for tray of width 200mm to 300mm (1.0mm for stainless steel), 1.5mm for tray of widths 450mm and 600mm and 2.0mm for widths of 750mm and 900mm (1.5mm for stainless steel).

For silicon rich, deep galvanised tray – all types: 1.5mm for tray of width 50mm to 600mm, 2.0mm for tray of widths 750mm to 900mm.

7 Straight cable tray shall be fully slotted with longitudinal slots of size 20mm x 8mm and transverse slots of size 12mm x 8mm. The slots shall be pitched at 25mm centres across the width of the cable tray and at 50mm centres along the length of the cable tray.

8 Straight cable tray shall have a length of 3000mm

9 Cable tray fittings shall be suitable slotted to match the slot pattern in the straight cable tray and shall have integral joints to facilitate connection to straight tray lengths and to other cable tray fittings.

10 Cable tray flat bends shall have fixed angles of 90°, 60°, 45° and 30°.

11 Cable tray fittings (except risers) shall have a radius of 75mm for widths up to & including 150mm, & a radius of 150mm for widths of 200mm and above. Cable tray risers shall have a radius of 300mm when formed to the set angle.

12 Cable tray risers shall be of an angle, 90°, 60°, 45° and 30°.

13 The cable tray system shall be manufactured using:

For carbon steel, hot dip galvanised finish: carbon steel to BS EN 10111 and shall be hot dip galvanised after manufacture to BS EN ISO 1461.

For stainless steel: stainless steel grade, 1.4404 (316 marine grade) to BS EN 10088.

For silicon rich, deep galvanised finish: silicon-rich steel and shall be deep galvanised after manufacture to twice the coating thickness specified by BS EN ISO 1461.

14 Couplers for the cable tray system shall be either of flat bar type or profiled to match the profile of the cable tray. Couplers shall be secured using M6 x 12 fixings with smooth heads to minimise possible damage to cables.

2.2 Installation Recommendations

2.2.1 Loads

A correctly designed and specified cable tray installation should take into account the nature and extent of the loads which will be imposed on the cable tray system. These loads comprise of dead loads including the self-weight of the cable tray system, the weight of the cables and secondary equipment attached to the cable tray, imposed loads which occur during installation of the cable tray system and during cable pulling operations, and external loads such as wind, snow & ice.

Cable trays are often employed in locations where the wind speeds may cause considerable lateral loading and careful consideration must be given to design to ensure a satisfactory installation. An awareness of the worst possible climate conditions is necessary when specifying the correct Vantrunk cable tray system.

The load-deflection information given in 2.3.3 is based on static loading of the Vantrunk cable tray installation. This information does not take into account dynamic effects such as vibration, earthquake loading, etc.

In designing a cable tray installation it is good practice to allow at least a 20% excess capacity in a new installation for future expansion. Such a provision is of great economic advantage when there is a later need for additional cables.

2.2.2 Support Spacing

The space between the supports of a cable tray installation is referred to as the span. Supports for cable tray should, as far is practicable, be spaced so as to create the most economical load/span ratio to suit the capacity of the cable tray system.

This will give the most advantageous solution when considering procurement and installation costs. As a general rule of thumb, the load-carrying capability of the Vantrunk cable tray system increases as the span decreases, so a lighter duty cable tray system can be specified for shorter spans. Conversely, a heavier duty Vantrunk cable tray system will need to be specified as the span increases.

Vantrunk cable tray can provide cost-effective support for cable loads at spans of 0.5m to 3m depending on the type of cable tray system selected. For longer spans, or for carrying significantly increased cable loads, the Speedway cable ladder system should be used.

When considering support positions it should be remembered that it is necessary to support accessories when a change of direction takes place i.e. bends, tees, risers etc. This is to ensure that undue 'corner' cantilever reaction is minimised. Recommendations for the location of supports for Vantrunk cable tray fittings are given in section 2.2.4

2.2.3 Location of Couplers

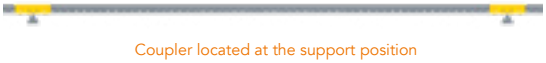
The maximum bending moments acting on a cable tray run occur in the cable tray at the supports and at the mid span position. For this reason it is good practice to avoid locating couplers in a cable tray run either directly on supports or at the mid span position. It is also good practice to avoid locating couplers in the end span of a continuous beam installation as the bending moments in the end span are, for simple end support installations, much higher than those found in the intermediate spans. These limitations cannot always be achieved in a cable tray installation and are not a mandatory requirement for the Vantrunk cable tray coupling system where the loading information given in 3.3 is valid irrespective of the location of the couplers.

The ideal positions to locate the connections in a cable tray run are at approximately one fifth to one quarter of a span from the supports where the bending moments, and hence the stresses, are minimal. Positioning the couplers at the one fifth to one quarter span positions is of benefit during installation, assisting in alignment of the cable trays and allowing unhindered securing of the cable tray to the supports.

Ideal Coupler Location

Allowable Coupler Location

Inappropriate Coupler Location



2.2.4 Support Locations for Cable Tray Fittings

It is also important to consider support locations for cable tray fittings which are used as part of a cable tray installation to change direction, change width or create intersections.

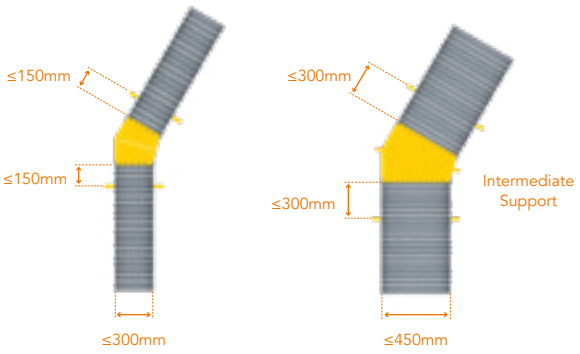
Vantrunk cable tray fittings are designed to carry loads comparable to that for the straight cable tray but will require local support to avoid undue stresses being applied to the fittings.

The following illustrations show the recommended support positions when installing Vantrunk cable tray fittings. The supports should be fully fixed to provide maximum support for the Vantrunk cable tray fitting.

Flat Elbows

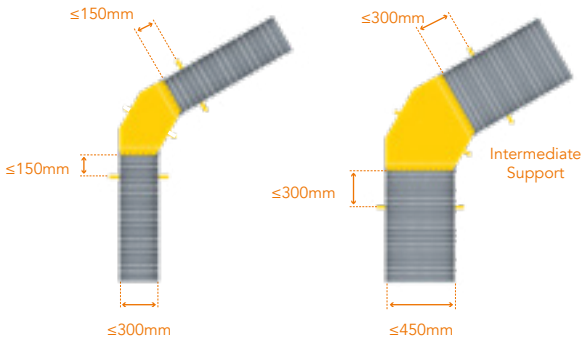
30° Flat Elbow

For 30° flat elbows, supports should be placed within 150mm of the fitting for widths up to 300mm. For fittings of width 450mm and above, supports should be placed within 300mm of the fitting and an intermediate support should be located radially at 15° across the centre of the fitting.



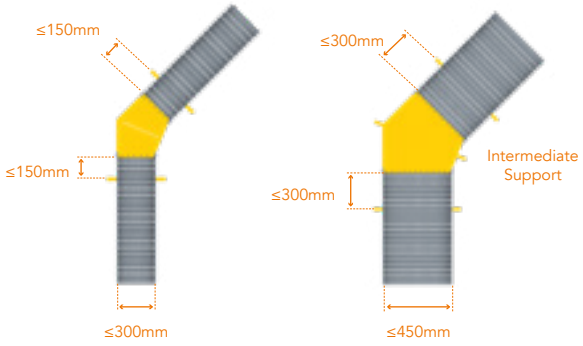
60° Flat Elbow

For 60° flat elbows, supports should be placed within 150mm of the fitting for widths up to 300mm. For fittings of width 450mm and above, supports should be placed within 300mm of the fitting and an intermediate support should be located radially at 30° across the centre of the fitting.



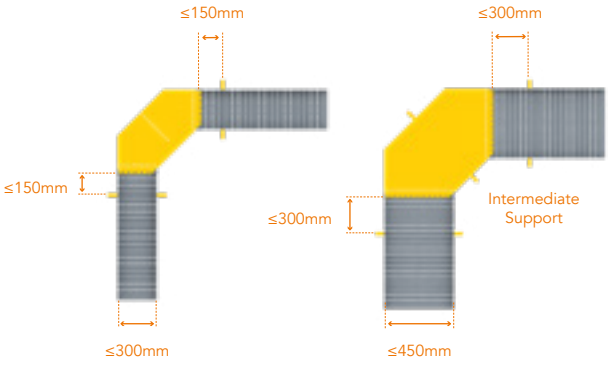
45° Flat Elbow

For 45° flat elbows, supports should be placed within 150mm of the fitting for widths up to 300mm. For fittings of width 450mm and above, supports should be placed within 300mm of the fitting and an intermediate support should be located radially at 22.5° across the centre of the fitting.



90° Flat Elbow

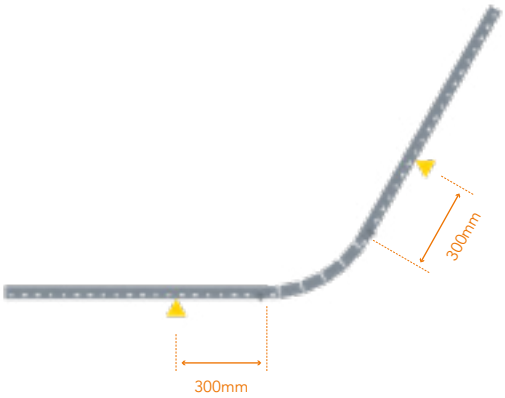
For 90° flat elbows, supports should be placed within 150mm of the fitting for widths up to 300mm. For fittings of width 450mm and above, supports should be placed within 300mm of the fitting and an intermediate support should be located radially at 45° across the centre of the fitting.



Internal & External Risers

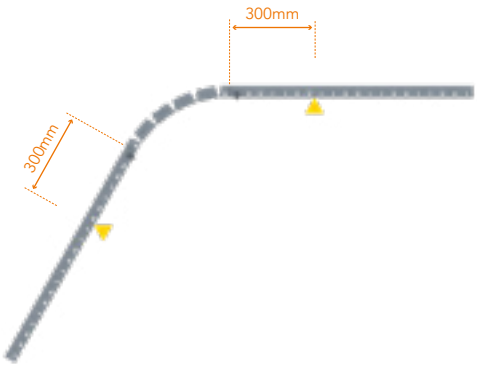
Internal Risers

For all widths of internal risers, supports should be placed within 300mm of the fitting.



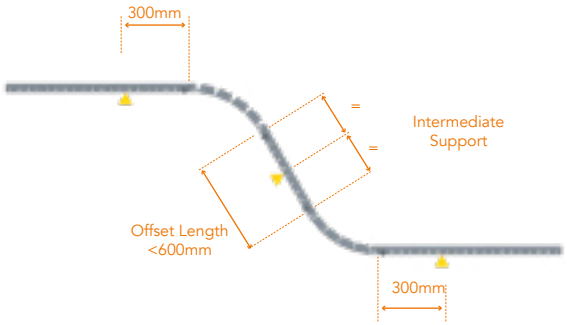
External Risers

For all widths of external risers, supports should be placed within 300mm of the fitting.



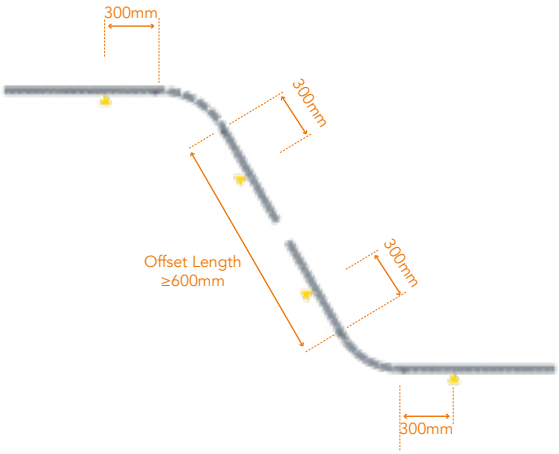
Internal & External Risers Used in Offset Arrangement

For internal & external risers used in an offset arrangement of length up to 600mm, supports should be located within 300mm of each end of the offset and centrally on the inclined cable tray.



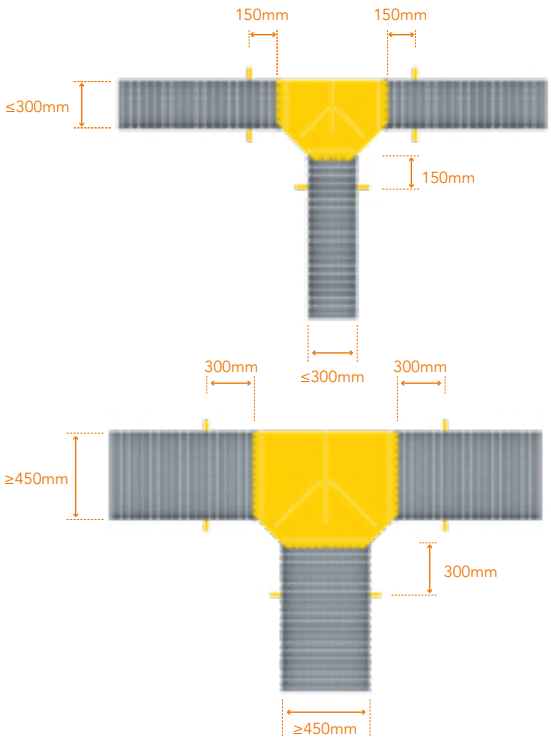
...continued

For internal & external risers used in an offset arrangement of length over 600mm, supports should be located within 300mm of each end of the internal & external risers. The inclined cable tray should be supported in accordance with the support recommendations for the straight cable tray run.



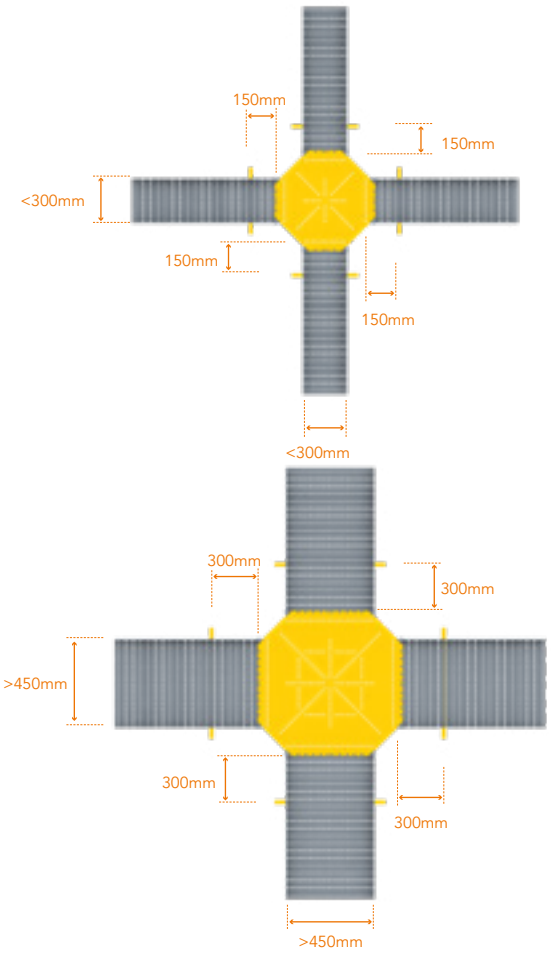
Equal & Unequal Tees

For equal and unequal tees, supports should be placed within 150mm of the fitting for main or branch widths up to 300mm. For fittings of main or branch width 450mm and above, supports should be placed within 300mm of the fitting.



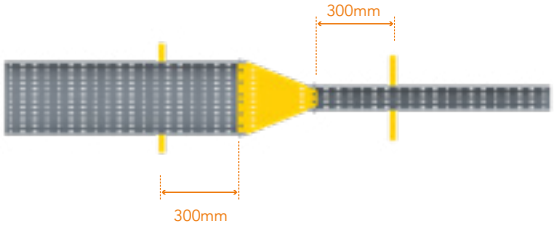
Crosses

For crosses, supports should be placed within 150mm of the fitting for main or branch widths up to 300mm. For fittings of main or branch width 450mm and above, supports should be placed within 300mm of the fitting.



Reducers

For all widths of reducers (straight, left & right), supports should be placed within 300mm of the fitting.

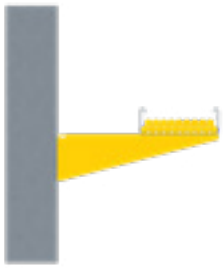


2.2.5 Loading of Vantrunk Cable Tray & Supports

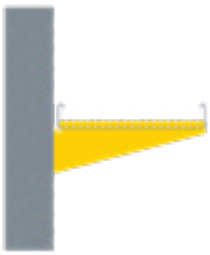
It is important that cable tray and cable tray supports are loaded in a symmetrical manner such that undue stresses in both the cable tray and the supports are kept to a minimum.

The safe working load figures for the Vantrunk cable tray and support accessories are based on a uniform loading within the Vantrunk cable tray and on the assumption that the correct length of support is used in each case.

Wherever possible, cable tray should be loaded in a uniform manner across the full width of the cable tray, particularly when the cable tray is loaded to the recommended load carrying capacity.

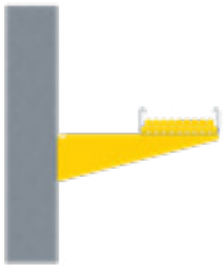


Avoid non-uniform loading

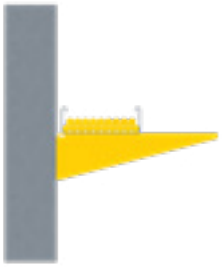


Load uniformly across the width of the cable tray

Where cantilever supports of additional length are used to support cable tray, care should be taken to position the cable tray as close to the backplate of the cantilever as the installation routing will allow.



Avoid unsymmetrical loading on cantilevers



Load cantilevers close to the backplate

Safe working load information for cable tray supports is given in the 'Supports' section of this catalogue.

For further information and guidance on the design and loading of supports please contact our Technical Team.

2.2.6 Electrical Continuity Characteristics

In tests conducted to verify the electrical continuity characteristics of the Vantrunk cable tray it has been established that the standard coupling system provides adequate electrical continuity, ensuring equipotential bonding and connection to earth.

The Vantrunk cable tray system has been tested for electrical continuity to BS EN 61537 (Section 11.1).

Details are given in the following table:

Material & Finish	Impedance across joint	Impedance per metre length
Hot Dip Galvanised (0.9mm)	2mΩ	2mΩ
Hot Dip Galvanised (1.5mm)	2mΩ	2mΩ
Stainless Steel (1.2mm)	2mΩ	2mΩ

BS EN 61357 requires a maximum impedance of 50mΩ across the coupled joint and a 5mΩ per metre length without a joint.

Earth continuity bonding straps (part number EBS-05) of cross sectional area 4 mm² are available for use with Vantrunk cable tray where a non-conductive surface finish i.e. epoxy coated etc, has been specified or where the installation requires an additional means of bonding. Consult our Technical Team for more details.

2.2.7 Electromagnetic Compatibility (EMC)

In normal use Vantrunk cable tray can be considered to be passive in respect of electromagnetic influences, emissionand immunity. When Vantrunk cable tray is installed as part of a wiring installation, the installation may emit or may be influenced by electromagnetic signals. The degree of influence will depend on the nature of the installation within its operating environment and the electrical equipment connected by the wiring. As a minimum precaution to minimise the occurrence of electromagnetic influences, power and data/signal cables should be run on separate cable routings or at least separated by means of dividers.

Our Technical Team should be consulted for further information on electromagnetic compatibility issues.

2.2.8 Assembly Recommendations

Instructions for the correct assembly of Vantrunk cable tray straight lengths and fittings are given below.

Cable tray couplers are supplied with the correct number of fixing sets, each comprising of an M6 x 12 screw and an M6 nut (plus an M6 flat washer for stainless steel fixings). Refer to section 2.1.6 for details on the recommended number of fixings for cable tray fittings.

When utilising the standard flat bar coupler as an expansion coupler it will be necessary to order M6x16 bolts and additional M6 nuts (4 per coupler).

Straight Cable Tray to Straight Cable Tray

1 Position the two straight cable trays onto the supporting structure.

2 For flat bar couplers, locate the cable tray flat bar coupler on the inside of the two abutting straight cable trays. For wrap over couplers, position the coupler on the outside of the two abutting straight cable trays.

3 Position the coupler across the joint between the two straight lengths. For flat bar couplers, align the slots in the coupler with those in the side wall of the cable tray. For wrap over couplers, align the slots in the coupler with those in the base of the cable tray.

4 From the inside of the cable tray insert the threaded portion of an M6 x 12 screw through one of the aligned slots.

5 Fit an M6 flat washer (where provided) and an M6 hex nut onto the protruding thread of the M6 x 12 screw.

6 Tighten the fixing assembly by hand.

7 Repeat for the remaining fixing sets.

8 Repeat the assembly procedure for the second coupler.

9 Fully secure the straight cable tray lengths to the supporting structure.

10 Check the alignment of the coupler and the abutting straight cable trays. Adjust as necessary to give a fair and true alignment.

11 Tighten the M6 hex nuts to a torque of 12Nm.

12 Where required, fit a fish plate coupler to the underside of the joint between the two straight cable trays.

Cable Tray Fitting to Straight Cable Tray

1 Position the straight cable tray and cable tray fitting onto the supporting structure and interlock the cable tray fitting into the straight cable tray.

2 Align the slots on the interlocked straight cable tray and cable tray fitting.

3 From the inside of the cable tray, insert the threaded portion of an M6 x 12 screw through one of the aligned slots.

4 Fit an M6 flat washer (where provided) and an M6 hex nut onto the protruding thread of the M6 x 12 screw.

5 Tighten the fixing assembly by hand.

6 Repeat for the remaining fixing sets.

7 Fully secure the straight cable tray and cable tray fitting to the supporting structure.

8 Check the alignment of the interlocked straight cable tray and cable tray fitting. Adjust as necessary to give a fair and true alignment.

9 Tighten the M6 hex nuts to a torque of 12Nm.

Cable Tray Expansion Joint

Refer to Page 248 for details on the spacing between expansion couplers and the required gap setting procedure at the time of installation.

1 Position the two straight trays onto the supporting structure.

2 Locate the cable tray flat bar coupler on the inside of the two abutting straight cable trays.

3 Position the coupler across the joint between the two straight lengths. Align the slots in the coupler with those in the side wall of the cable tray.

4 From the inside of the cable tray insert the threaded portion of an M6 x 16 screw through one of the aligned slots.

5 Fit an M6 flat washer (where provided) and an M6 hex nut onto the protruding thread of the M6 x 16 screw.

6 Tighten the fixing assembly by hand such that the fixing assembly is free to move within the slots (some light resistance to movement is preferable).

7 Repeat for the remaining fixing sets.

8 Repeat the assembly procedure for the second coupler.

9 Check the alignment of the coupler and the abutting straight cable trays. Adjust as necessary to give a fair and true alignment.

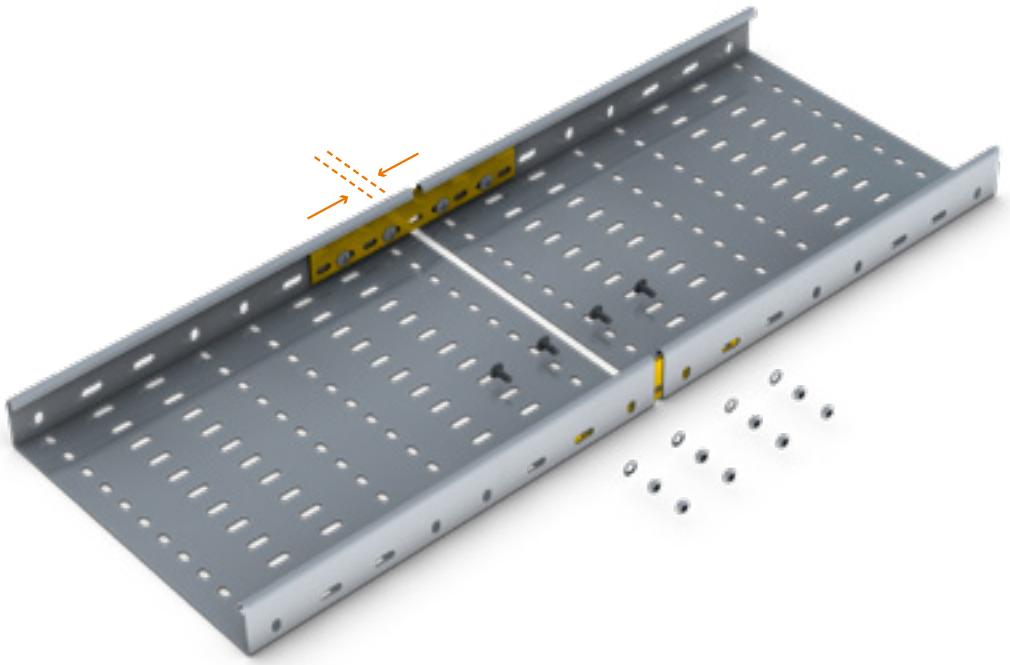
10 Check the setting gap between the straight cable trays and adjust as necessary.

11 Secure the straight cable trays to the supporting structure using nylon spacer pads and hold down brackets to permit movement relative to the structure.

12 Fit the second M6 nut onto the fixing assemblies. Lock the second M6 nut onto the first M6 nut. Check that the completed fixing assembly remains free to move within the aligned slots.

13 Tighten the 2nd M6 hex nut onto the 1sr M6 hex nut to a torque of 12Nm.

14 Ensure that the fixing assembly remains free to move within the slots, otherwise re-assembly as necessary.



2.3 Loading Information

To enable the selection of the most appropriate Vantrunk cable tray for a particular installation it is necessary to consider the loads which must be supported and the distance between supports (the span). These loads are broadly classed as dead loads, imposed loads and point loads.

2.3.1 Dead Loads

Dead loads include the weight of any cables, pipes and secondary equipment carried on or installed on the cable tray plus the self weight of the cable tray and any component of the cable tray (covers, connectors, accessories, etc.).

Weight data for cables is readily available from the cable manufacturer or supplier and is usually quoted in terms of kilograms per metre (kg/m). The weight per metre from the cables (or pipes, etc) is the sum of the individual cable (or pipe, etc) weights.

Weight data for secondary equipment should also be readily available from the equipment manufacturer or supplier and is usually quoted in terms of kilograms (kg). The unit weight for the secondary equipment can be converted into an equivalent weight per metre by using the following formula:

$$\text{Equivalent weight per metre } Wm = \frac{2 \times \text{unit weight of equipment (kg) kg/m}}{\text{Span (m)}}$$

For example, a secondary item of equipment with a weight of 12kg has an equivalent weight per metre Wm of 16kg/m for a span of 1.5m. This figure should be added to the sum of the individual cable weights (or pipe, etc). When determining the location of secondary items of equipment, care should be taken to either mount these items centrally across the cable tray or place these items adjacent to, or directly onto, the cable tray side walls and as close to the cable tray supports as the installation will allow.

The allowable loading figures given in the tables below include the self weight of the Vantrunk cable tray. The weight data for additional installed components (covers, mounting accessories, etc) for the Vantrunk cable tray system can be provided on request by our Technical Team.

2.3.2 Point Loads

Point loads are often applied inadvertently to the cable tray during installation and during in-service inspection. Care should be exercised to avoid these undue point loads, particularly on light duty & medium duty cable trays which are not designed for this type of loading.

In situations where point loads are applied to heavy duty cable trays, an allowance can be made for the influence of point loads at the design stage when determining the total load to be carried by the Vantrunk cable tray system. When specifying a point load requirement at the design stage it should be noted that the value of the point load should be kept to a minimum as incorporating the point load will reduce the allowable cable load for the Vantrunk cable tray. Loading graphs which include the influence of a mid span point load are available on request.

Vantrunk cable tray is not intended to be used as a walkway and on no account should localised point loads be applied onto the bed of the cable tray. On those occasions where it is necessary to apply a point load care should be taken to apply the load evenly onto both side walls of the cable tray, preferably using a board or similar support to distribute the load over as long a section of the cable tray as possible.

Where doubt exists, further guidance should be sought from our Technical Team.

2.3.3 Loading Graphs

When correctly mounted and secured, cable tray can be considered to be a 'continuous beam'. This implies that the cable tray run is regularly supported and that the cable trays at the extremities of the run are firmly anchored. The following tables are used to calculate the safe working load and have been verified by testing in accordance to BS EN 61537.

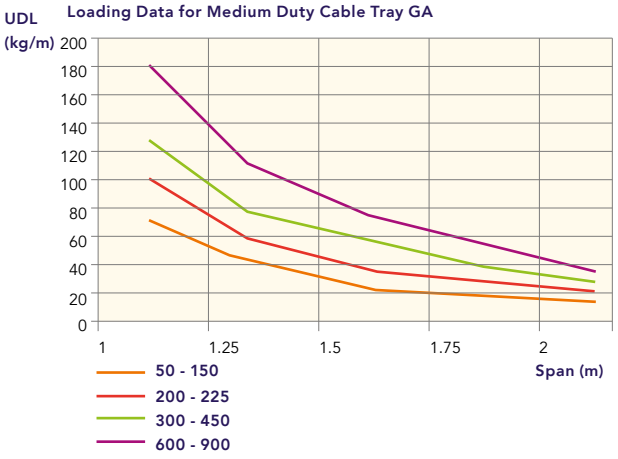
The load bearing capacity of a cable tray is limited by the lesser of the maximum allowable stress induced in the tray section or the maximum deflection acceptable between the supports. The maximum allowable stress is usually limited by the materials lower yield stress; this gives a safety factor of 1.7 against the ultimate tensile strength. Maximum deflection, (in the absence of a particular customer need) is not allowed to exceed 1/360th of the distance between supports (span).

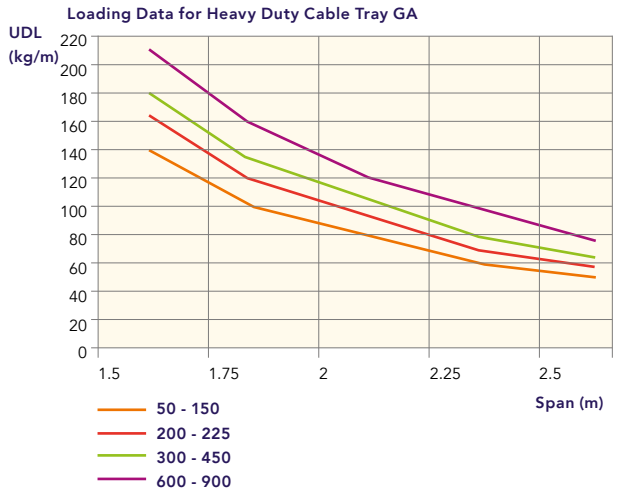
Although unusual, there may be occasions when it is difficult or indeed impossible to anchor the cable tray securely in position. Under these circumstances the tray is 'simply supported' and its load bearing ability is substantially reduced. As a rough guide maximum loads should be limited to two thirds of those shown in the loading tables and increased deflection values should be accepted for each span. The data given in the graphs is for tray installed as a continuous beam and allows for the weight of the tray itself.

Loading information is available for other gauges and for heavy duty cable trays with increased side wall heights – contact our Technical Team for details

The Vantrunk cable tray system, components and accessories have been tested to BS EN IEC 61537.

Further details can be provided by our Technical Team.

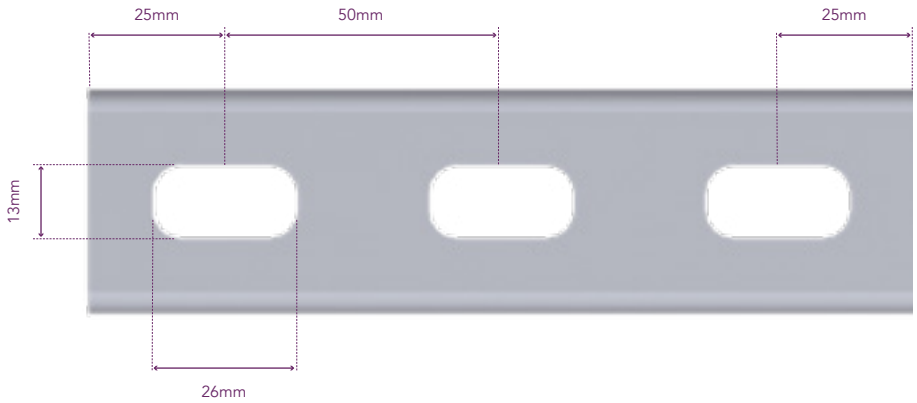




3. INTELOK STEEL FRAMING

3.1 General Information

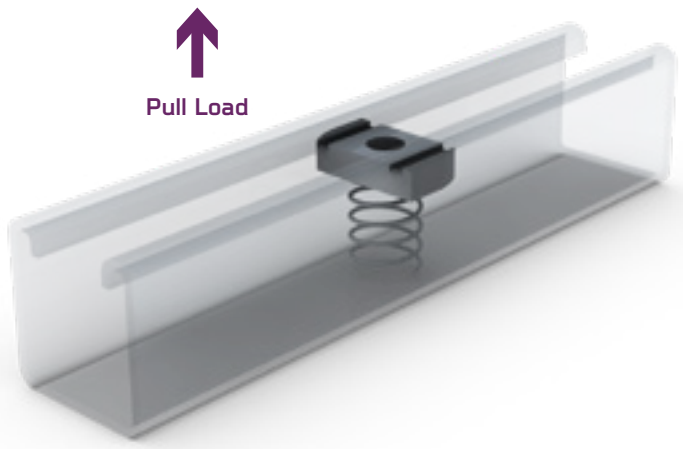
3.1.1 Slot Information



3.2 Loading Information

3.2.1 Pull Test

In order to measure the safe working pull out load (SWL) for channel, a series of tests were conducted according to BS 6946:1988. The following are the set of results that were derived from the tests.

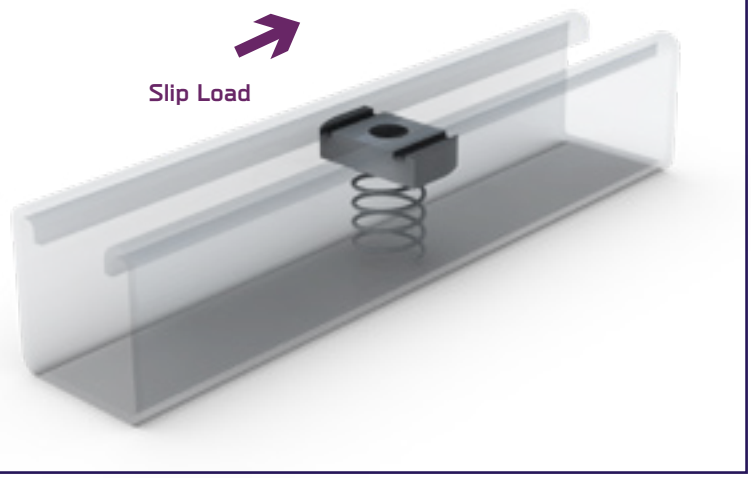


* The Results in the table have had a safety factor of 3 applied to the ultimate failure load
* The Results are in Kilogram (Kg)

Material	M10	M12
Hot Dip Galvanised	839	768
Pre-Galvanised	728	733
Stainless Steel	1052	1375

3.2.2 Slip Test

In order to measure the safe working slip load (SWL) for channel, a series of tests were conducted according to BS 6946:1988. The following are the set of results that were derived from the tests.



* The Results in the table have had a safety factor of 3 applied to the ultimate failure load
* The Results are in Kilogram (Kg)

Material	Nut Size	Torque	1mm Slip	Failure	Average SWL
Hot Dip Galvanised	M10	46Nm	662.6kg	733.9kg	286.5kg
Pre-Galvanised	M10	46Nm	632kg	978.6kg	425.9kg
Stainless Steel	M10	31Nm	336.4kg	540.3kg	188kg

3.3 Bracket Weights & Quickfit Fixing Quantities

Page Number	Part Number	Weight (g)	Quickfit				Former QF Reference
			Part Number	No of QF Fixings	M10 Weight (g)	Bracket Description	
162	325AJ02-GA	52	N-A		-	Internal washer	N-A
162	325AJ03-GA	75	N-A		-	Square washer M6	N-A
162	325AJ05-GA	73	N-A		-	Square washer M8	N-A
162	325AJ07-GA	72	N-A		-	Square washer M10	N-A
162	325AJ10-GA	69	325AJ10-GA-QF	1	132	Square washer M12	325QJ60
162	325AD11-GA	153	325AD11-GA-QF	2	279	Two hole plate	325QD61
162	325AC11-GA	229	325AC11-GA-QF	3	418	Three hole plate	325QC61
162	325AC13-GA	306	325AC13-GA-QF	4	558	Four hole plate	325QC63
162	325AY10-GA	382	325AY10-GA-QF	5	697	Five hole flat plate	325QY60
162	325AY11-GA	459	325AY11-GA-QF	6	837	Six hole flat plate	325QY61
162	325AY12-GA	535	325AY12-GA-QF	7	976	Seven hole flat plate	325QY62
163	325AG10-GA	207	325AG10-GA-QF	3	396	L bracket	325QG60
163	325AF13-GA	276	325AF13-GA-QF	3	465	T bracket	325QF63
163	325AF15-GA	418	325AF15-GA-QF	4	670	Fishplate-joiner four hole	325QF65
163	325AF26-GA	261	325AF26-GA-QF	3	450	Three hole angle plate	325QF76
163	325AF27-GA	207	325AF27-GA-QF	4	459	Four hole cross plate	325QF77
163	325AQ10-GA	610	325AQ10-GA-QF	4	862	Right angle bracket	325QQ60
163	325AQ11-GA	594	325AQ11-GA-QF	5	909	Right angle bracket	325QQ61
164	325AQ14-GA	401	325AQ14-GA-QF	4	653	Right angle bracket	325AQ14
163	325AQ12-GA	418	325AQ12-GA-QF	4	670	Right angle bracket	325QQ62
164	325AS10-GA	162	325AS10-GA-QF	2	288	Right angle bracket 1+1	325QS60
164	325AC09-GA	229	325AC09-GA-QF	3	418	Right angle bracket 2+1	325QC59
164	325AC10-GA	229	325AC10-GA-QF	3	418	Right angle bracket 2+1	325QC60
164	325AD10-GA	153	325AD10-GA-QF	2	279	Right angle bracket 1+1	325QD60
164	325AE10-GA	306	325AE10-GA-QF	4	558	Right angle brackets 3+1	325QE60
164	325AE11-GA	306	325AE11-GA-QF	4	558	Right angle bracket 2+2	325QE61
164	325AE12-GA	394	325AE12-GA-QF	4	646	Right angle shelf bracket 2+2	325QE62
165	325AH11-GA	219	325AH11-GA-QF	2	345	Acute angle bracket 45°	325QH61
165	325AD17-GA	188	325AD17-GA-QF	2	314	Obtuse angle bracket 45°	325QD67
165	325AF14-GA	276	325AF14-GA-QF	3	465	45° angle bracket	325QF64
165	325AF10-GA	276	325AF10-GA-QF	4	528	Channel support bracket	325QF60
165	325AF11-GA	276	325AF11-GA-QF	4	528	Channel support bracket (LH)	325QF61
165	325AF12-GA	276	325AF12-GA-QF	4	528	Channel support bracket (RH)	325QF62
165	325AG12-GA	207	325AG12-GA-QF	3	396	Channel support bracket (LH)	325QG62
166	325AG13-GA	207	325AG13-GA-QF	3	396	Channel support bracket (RH)	325QG63
166	325AG15-GA	231	325AG15-GA-QF	2	357	Channel support bracket (LH)	325QG65
166	325AG16-GA	231	325AG16-GA-QF	2	357	Channel support bracket (RH)	325QG66
166	325AV02-GA	324	325AV02-GA-QF	3	513	Corner bracket – 3 way	325QV52
166	325AV09-GA	688	325AV09-GA-QF	5	1003	Wing fitting – 3 leg	325QV59
166	325AV10-GA	595	325AV10-GA-QF	4	847	Wing fitting – 2 leg	325QV60
166	325AB10-GA	458	325AB10-GA-QF	3	647	Cross support bracket	325QB60
167	325AD28-GA	188	325AD28-GA-QF	2	314	Z shaped shallow bracket	325QD78
167	325AC12-GA	229	325AC12-GA-QF	2	355	Z shaped deep bracket	325QC62
167	325AU10-GA	306	325AU10-GA-QF	2	432	Z shaped B to B bracket	325QU60
167	325AT11-GA	306	325AT11-GA-QF	2	432	Back to back bracket	325QT61
167	325AJ13-GA	293	325AJ13-GA-QF	3	482	U shaped shallow bracket	325QJ63
166	325AJ12-GA	382	325AJ12-GA-QF	3	571	U shaped deep bracket	325QJ62
167	325AJ14-GA	535	325AJ14-GA-QF	3	724	Back to back channel bracket	325QJ64
167	325AJ11-GA	459	325AJ11-GA-QF	4	711	Double channel bracket	325QJ61
167	325AU15-GA	306	325AU15-GA-QF	3	495	W shaped deep bracket	325QU15
167	325AJ15-GA	306	325AJ15-GA-QF	2	432	U shaped deep bracket	325QJ65
168	325AR10-GA	454	325AR10-GA-QF	1	517	Base plate	325QR60
168	325AN10-GA	454	325AN10-GA-QF	1	517	Base plate	325QN60
168	325AT10-GA	984	325AT10-GA-QF	2	1110	Double base plate	325QT60
168	325AW01-GA	878	325AW01-GA-QF	2	1004	Wing fitting	325QW51
168	325AW02-GA	971	325AW02-GA-QF	4	1223	B to B Wing fitting	325QW52
168	325AW03-GA	428	325AW03-GA-QF	1	491	B to B Short wing fitting	325QW53
168	325AW04-GA	466	325AW04-GA-QF	2	592	Short wing fitting	325QW54
169	325AP10-GA	199	325AP10-GA-QF	1	262	Beam bracket	325QP60
169	325AP11-GA	169	N-A		-	Beam clamp	N-A
169	325AX11-GA	185	N-A		-	Beam clamp	N-A
169	325AX10-GA	528	325AX10-GA-QF	1	591	Beam clamp	325QX60
169	325AM10-GA	338	N-A		-	Beam clamp deep-shallow	N-A
170	325AM12-GA	386	N-A		-	Beam clamp (B TO B chnl)	N-A
170	325AM13-GA	691	N-A		-	Beam clamp H.Duty (B to B)	N-A
170	325AM14-GA	898	N-A		-	Beam clamp H.Duty (B to B)	N-A
170	325AL11-GA	390	N-A		-	Beam clamp shallow (window)	N-A
170	325AL10-GA	418	N-A		-	Beam clamp deep (window)	N-A
170	325AL09-GA	418	N-A		-	Beam clamp B to B (window)	N-A
187	325AK10-GA	435	325AK10-GA-QF	4	687	Deep external connector	325QK60
187	325AK11-GA	327	325AK11-GA-QF	4	579	Shallow external connector	325QK61
187	325AK13-GA	285	N-A		-	Shallow internal connector	N-A

Part Number	Weight (g)	Quickfit				Former QF Reference
		Part Number	No of QF Fixings	M10 Weight (g)	Bracket Description	
325AJ02-SS	44	N-A		-	Internal washer	N-A
325AJ03-SS	64	N-A		-	Square washer M6	N-A
325AJ05-SS	62	N-A		-	Square washer M8	N-A
325AJ07-SS	62	N-A		-	Square washer M10	N-A
325AJ10-SS	59	325AJ10-SS-QF	1	124	Square washer M12	325XQJ60
325AD11-SS	131	325AD11-SS-QF	2	261	Two hole plate	325XQD61
325AC11-SS	196	325AC11-SS-QF	3	391	Three hole plate	325XQC61
325AC13-SS	262	325AC13-SS-QF	4	522	Four hole plate	325XQC63
325AY10-SS	326	325AY10-SS-QF	5	651	Five hole flat plate	325XQY60
325AY11-SS	392	325AY11-SS-QF	6	782	Six hole flat plate	325XQY61
325AY12-SS	457	325AY12-SS-QF	7	912	Seven hole flat plate	325XQY62
325AG10-SS	177	325AG10-SS-QF	3	372	L bracket	325XQG60
325AF13-SS	236	325AF13-SS-QF	3	431	T bracket	325XQF63
325AF15-SS	357	325AF15-SS-QF	4	617	Fishplate-joiner four hole	325XQF65
325AF26-SS	223	325AF26-SS-QF	3	418	Three hole angle plate	325XQF76
325AF27-SS	177	325AF27-SS-QF	4	437	Four hole cross plate	325XQF77
325AQ10-SS	521	325AQ10-SS-QF	4	781	Right angle bracket	325XQQ60
325AQ11-SS	508	325AQ11-SS-QF	5	833	Right angle bracket	325XQQ61
325AQ14-SS	343	325AQ14-SS-QF	4	603	Right angle bracket	325XAQ14
325AQ12-SS	357	325AQ12-SS-QF	4	617	Right angle bracket	325XQQ62
325AS10-SS	138	325AS10-SS-QF	2	268	Right angle bracket 1+1	325XQS60
325AC09-SS	196	325AC09-SS-QF	3	391	Right angle bracket 2+1	325XQC59
325AC10-SS	196	325AC10-SS-QF	3	391	Right angle bracket 2+1	325XQC60
325AD10-SS	131	325AD10-SS-QF	2	261	Right angle bracket 1+1	325XQD60
325AE10-SS	262	325AE10-SS-QF	4	522	Right angle brackets 3+1	325XQE60
325AE11-SS	262	325AE11-SS-QF	4	522	Right angle bracket 2+2	325XQE61
325AE12-SS	337	325AE12-SS-QF	4	597	Right angle shelf bracket 2+2	325XQE62
325AH11-SS	187	325AH11-SS-QF	2	317	Acute angle bracket 45°	325XQH61
325AD17-SS	161	325AD17-SS-QF	2	291	Obtuse angle bracket 45°	325XQD67
325AF14-SS	236	325AF14-SS-QF	3	431	45° angle bracket	325XQF64
325AF10-SS	236	325AF10-SS-QF	4	496	Channel support bracket	325XQF60
325AF11-SS	236	325AF11-SS-QF	4	496	Channel support bracket (LH)	325XQF61
325AF12-SS	236	325AF12-SS-QF	4	496	Channel support bracket (RH)	325XQF62
325AG12-SS	177	325AG12-SS-QF	3	372	Channel support bracket (LH)	325XQG62
325AG13-SS	177	325AG13-SS-QF	3	372	Channel support bracket (RH)	325XQG63
325AG15-SS	197	325AG15-SS-QF	2	327	Channel support bracket (LH)	325XQG65
325AG16-SS	197	325AG16-SS-QF	2	327	Channel support bracket (RH)	325XQG66
325AV02-SS	277	325AV02-SS-QF	3	472	Corner bracket – 3 way	325XQV52
325AV09-SS	588	325AV09-SS-QF	5	913	Wing fitting – 3 leg	325XQV59
325AV10-SS	509	325AV10-SS-QF	4	769	Wing fitting – 2 leg	325XQV60
325AB10-SS	391	325AB10-SS-QF	3	586	Cross support bracket	325XQB60
325AD28-SS	161	325AD28-SS-QF	2	291	Z shaped shallow bracket	325XQD78
325AC12-SS	196	325AC12-SS-QF	2	326	Z shaped deep bracket	325XQC62
325AU10-SS	262	325AU10-SS-QF	2	392	Z shaped B to B bracket	325XQU60
325AT11-SS	262	325AT11-SS-QF	2	392	Back to back bracket	325XQT61
325AJ13-SS	250	325AJ13-SS-QF	3	445	U shaped shallow bracket	325XQJ63
325AJ12-SS	326	325AJ12-SS-QF	3	521	U shaped deep bracket	325XQJ62
325AJ14-SS	457	325AJ14-SS-QF	3	652	Back to back channel bracket	325XQJ64
325AJ11-SS	392	325AJ11-SS-QF	4	652	Double channel bracket	325XQJ61
325AU15-SS	262	325AU15-SS-QF	3	457	W shaped deep bracket	325XQU15
325AJ15-SS	262	325AJ15-SS-QF	2	392	U shaped deep bracket	325XQJ65
325AR10-SS	388	325AR10-SS-QF	1	453	Base plate	325XQR60
325AN10-SS	388	325AN10-SS-QF	1	453	Base plate	325XQN60
325AT10-SS	841	325AT10-SS-QF	2	971	Double base plate	325XQT60
325AW01-SS	750	325AW01-SS-QF	2	880	Wing fitting	325XQW51
325AW02-SS	830	325AW02-SS-QF	4	1090	B to B Wing fitting	325XQW52
325AW03-SS	366	325AW03-SS-QF	1	431	B to B Short wing fitting	325XQW53
325AW04-SS	398	325AW04-SS-QF	2	528	Short wing fitting	325XQW54
325AP10-SS	170	325AP10-SS-QF	1	235	Beam bracket	325XQP60
325AP11-SS	144	N-A		-	Beam clamp	N-A
325AX11-SS	158	N-A		-	Beam clamp	N-A
325AX10-SS	451	325AX10-SS-QF	1	516	Beam clamp	325XQX60
325AM10-SS	289	N-A		-	Beam clamp deep-shallow	N-A
325AM12-SS	330	N-A		-	Beam clamp (B TO B chnl)	N-A
325AM13-SS	591	N-A		-	Beam clamp H.Duty (B to B)	N-A
325AM14-SS	768	N-A		-	Beam clamp H.Duty (B to B)	N-A
325AL11-SS	333	N-A		-	Beam clamp shallow (window)	N-A
325AL10-SS	357	N-A		-	Beam clamp deep (window)	N-A
325AL09-SS	357	N-A		-	Beam clamp B to B (window)	N-A
325AK10-SS	372	325AK10-SS-QF	4	632	Deep external connector	325XQK60
325AK11-SS	279	325AK11-SS-QF	4	539	Shallow external connector	325XQK61
325AK13-SS	244	N-A		-	Shallow internal connector	N-A

3.4 Classification to BS 6946:1988

The Metal Channels, Brackets and other components in this catalogue, are covered by this standard and are used to make load bearing frameworks.

For more details on the classification of the Vantrunk Steel Framing System, components and accessories to BS 6946:1988 please refer to the Vantrunk Technical Team.

3.5 Reference Standards

The following list of standards relating to Vantrunk's Cable Management products and associated support systems covered in this catalogue.

BS 729	Replaced by BS EN ISO 1461
BS 1449	Part 1 Replaced by BS EN 10111, 10130 & 10025
BS 1449	Part 2 Replaced by BS EN 10088-2
BS EN ISO 1461:2009	Hot Dip Galvanised coatings on fabricated on and steel articles. Specifications and test methods (formerly BS 729)
BS 2989	Replaced by BS EN 10147
BS 6946:1988	Specification for metal channel support systems for electrical installations
BS EN 10025:1993	Replaced by BS EN 10025-2:2004
BS EN 10025-2:2004	Hot Rolled Products of structural steels. Technical delivery conditions for non alloy structural steels (formerly BS 10025:1993)

BS 10088-2:2005	Stainless Steel. Technical Delivery conditions for sheet-plate and strip for general purposes (formerly BS 1449 Part 2)
BS EN 10111:2008	Continuously hot rolled low carbon steel sheet & strip for cold forming. Technical delivery conditions
BS EN 10130:2006	Cold Rolled low carbon flat products for cold forming. Technical Conditions
BS EN 10147:2004	Replaced by BS EN 10136:2004
BS EN 14713:2009	Protection against corrosion of iron and steel in structures – Zinc and aluminium coatings – Guidelines
BS EN 10327:2009	Continuously hot-dip coated strip & sheet of low carbon steels for cold forming. Technical Delivery Conditions

4. GENERAL ENGINEERING DATA

4.1. Extreme Environments

4.1.1 Low Temperature Applications

Consideration should be given to the likely affects of low temperatures when specifying cable management products for installation at a location subject to sub zero temperatures.

Manufactured using generic low carbon steels and austenitic stainless steels – general guidance on the low temperature performance of these materials is as follows:

Low Carbon Steels

Low carbon steels used in the manufacture of commercially available cable management systems exhibit a ductile to brittle transition at low temperatures. At these low temperatures an impact can cause cracking which will propagate faster than the elastic deformation, resulting in failure of the product by brittle fracture. Brittle fracture can be avoided by specifying structural grade steels that have certified minimum impact values. These structural steel grades are typically certified at temperatures of 0°C, -20°C, and -40°C, showing a decreasing impact value as the temperature decreases. Vantrunk has manufactured the Speedway cable ladder system for low temperature applications using structural steels that have been independently tested at temperatures of -46°C giving average charpy values of 20 joules for 2.0mm thickness.

Austenitic Stainless Steels

Austenitic stainless steels, including grade 1:4404 to BS EN 10088-2 (marine grade 316) which is used in the manufacture of Vantrunk Cable Management systems and accessories, are not affected by sub zero temperatures. These stainless steels do not suffer a loss in either ductility or toughness and are not susceptible to failure by brittle fracture at low temperatures below -50°C. Please contract our Technical Team for further information relating to low temperature applications.

4.1.2 Expansion & Contraction

When designing and installing a cable management installation it is important to take into consideration thermal expansion and contraction; even in relatively moderate climates there will be sufficient seasonal thermal movement which could easily place undue stresses on the cable ladder installation and the supporting structure.

To incorporate thermal movement in the design of a Cable Management System installation it is important to establish the maximum temperature differential which is likely to be encountered at the site of the installation. The temperature differential is based on the maximum and minimum seasonal temperatures. This temperature differential will determine the maximum spacing between expansion couplers within the Cable Management installation.

To facilitate correct installation of the expansion couplers it will be necessary to measure the temperature of the cable ladder at the time of installation and to use this temperature to determine the required 'setting gap' between the adjoining lengths of cable ladder and tray. This will ensure that the movement provided by the expansion coupler is not compromised by incorrect assembly at the time of installation.

Speedway Cable Ladder

The Speedway Expansion Coupler (SW-EXP) is designed to allow movement up to a maximum of 28mm and requires supporting 600mm either side of the joint.

For applications where it is not practical to support within 600mm on each side of the expansion joint, or for those installations where there is a requirement to provide an expansion coupler capable of accommodating more than 28mm of movement, the Support Reduction Expansion Coupler (SREC) should be used. The Speedway Support Reduction Expansion Coupler is capable of carrying the full load of the Speedway cable ladder at the expansion joint without the need to provide local support and can allow movement of 75mm.

In installations where an additional means of earthing or bonding is required Earth Bonding Straps (EBS-01 Page 85) should be used at expansion joints. The Speedway expansion couplers should be correctly assembled – refer to 1.2.8 for further details.

Maximum Distance between Expansion Joints

The maximum allowable spacing between expansion couplers is given in the below table for both hot dip galvanised and stainless steel Speedway Cable Ladder. Intermediate values can be obtained using the formula given under the table.

Temperature Differential at Location of Installation		Maximum Spacing Between Expansion Couplers							
		Expansion Couplers				Support Reduction Expansion Coupler			
		Hot Dip Galvanised		Stainless Steel		Hot Dip Galvanised		Stainless Steel	
°C	°F	m	ft	m	ft	m	ft	m	ft
10	50	216	693	175	561	577	1851	469	1505
20	68	108	346	88	282	289	927	235	754
30	86	72	231	59	189	193	619	157	504
40	104	54	173	44	141	145	465	118	379
50	122	44	141	35	112	116	372	94	302
60	140	36	115	30	96	97	311	79	253
70	158	31	99	25	80	83	266	67	215
80	176	27	87	22	71	73	234	59	189
90	194	24	77	20	64	65	209	53	170
100	212	22	71	18	58	58	186	47	151

The maximum allowable distance between expansion joints can also be calculated from the following formula:

D = M / [K Tdiff]

Where:

D = maximum allowable distance between expansion joints (m)

M = allowable movement for each expansion joint (m)

- SW-EXP = 0.028
- SW-SREC = 0.075

K = coefficient of linear expansion of the material (°C-1)

- GY = 13 x10^{-6}
- GW = 13 x10^{-6}
- GX = 13 x10^{-6}
- SS = 16 x10^{-6}

Tdiff = temperature differential at installation site [Maximum temperature – Minimum temperature] (°C)

As an example:

For a GY ladder installation using traditional expansion couplers-

M, SW-EXP = 0.028m
K, GY = 13 x10^{-6} °C-1
Maximum temperature, **Tmax** = +35°C
Minimum temperature, **Tmin** = -15°C
Therefore, **Tdiff** = (+35) – (-15) = 50°C

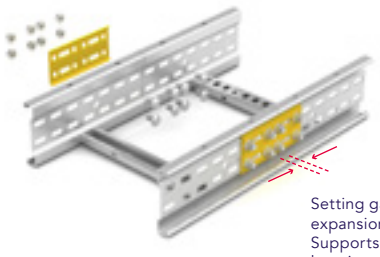
D = 0.028 / [13 x10^{-6} x 50] = 44m

Therefore the maximum allowable distance between expansion joints is 44m, however, for ease of installation, expansion couplers should be fitted at every 14th 3m cable ladder, giving 42m between expansion couplers.

If the same installation was to use the Support Reduction Expansion Coupler instead then maximum allowable distance between expansion joints would be 116m; meaning an expansion joint would be required every 38th ladder giving 114m between SREC couplers.

If the cable ladder run was 500m in length then this would mean a saving of 44 couplers and 72 supports by using the Support Reduction Expansion Coupler instead of the traditional Expansion Coupler.

Setting Gap



Setting gap for Speedway full moment expansion coupler (CS/EXP). Supports are not required at the location of the expansion joint.

To determine the setting gap at the time of installation the following formula should be used:

G = [Tins - Tmax] / [Tdiff / M]

Where:

G = setting gap (mm)
Tins = temperature at the time of installation (°C)
Tmax = maximum temperature (°C)
Tdiff = temperature differential (°C)
M = allowable movement for each expansion joint (m)

- SW-EXP = 0.028
- SW-SREC = 0.075

Example:

Continuing the previous example -
Installation Temperature, **Tins** = +20°C
Maximum temperature, **Tmax** = +35°C
Temperature differential, **Tdiff** = 50°C
Allowable movement, **M** = 0.028

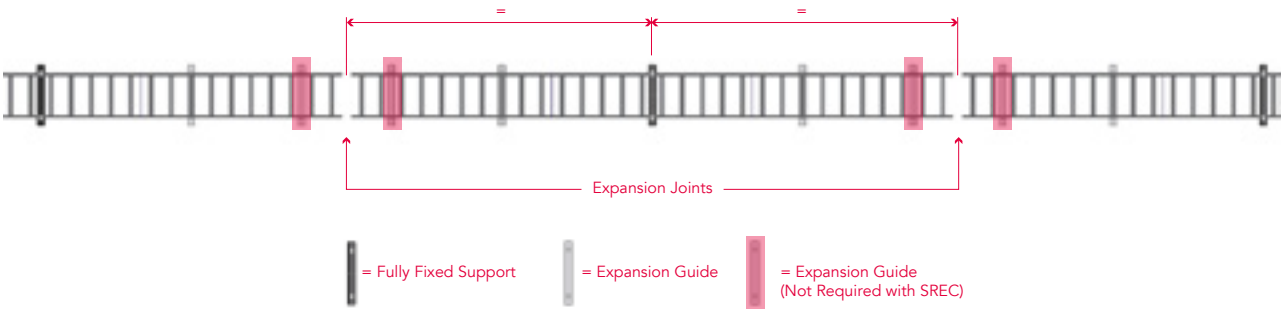
G = [+20 - +35] / [+50 / 0.028] = 8.4mm

Or for the Support Reduction Expansion Coupler = 22.5mm

Supports and Expansion Guides

If using traditional Expansion Couplers to ensure safe and correct installation, the Speedway Cable Ladder should be supported within 600mm on both sides of the expansion joint.

If using the Support Reduction Expansion Coupler (SREC), then the Speedway Cable Ladder does not need to be supported at the expansion joint.



The Speedway Cable Ladder should be fully fixed to the support nearest to the midpoint between expansion joints. At all other support positions Expansion Guides should be used, to ensure longitudinal movement.

Expansion guides (SW-EFC-EXP) comprise of a Speedway External Flange Clamp (EFC) and a nylon spacer pad), which will allow the Speedway Cable Ladder to expand and contract in a restrained manner.

Vantrunk Cable Tray

The standard flat bar coupler can allow movement up to a maximum of 14mm. This movement allowance is the basis for determining both the maximum allowable spacing between expansion joints and the required setting gap at the time of installation.

To ensure safe and correct installation, the Vantrunk Cable Tray should be supported within 300mm on each side of connections fitted with expansion couplers.

The flat bar couplers at each expansion joint should be correctly assembled – refer to 1.2 for further details. Where installed with expansion couplers, the Vantrunk Cable Tray should be secured to the supporting structure in a manner which will allow free movement.

Maximum Distance between Expansion Joints

The maximum allowable spacing between expansion joints is given in the following table for both galvanised (pre-, hot dip & deep) and stainless steel Vantrunk Cable Tray. Intermediate values can be obtained using the formula given under the table.

Temperature Differential		Maximum Spacing Between Expansion Couplers			
		Hot Dip Galvanised		Stainless Steel	
°C	°F	m	ft	m	ft
10	50	108	346	88	282
20	68	54	173	44	141
30	86	36	115	30	96
40	104	27	87	22	71
50	122	22	71	18	58
60	140	18	58	15	48
70	158	16	51	13	42
80	176	14	45	11	35
90	194	12	38	10	32
100	212	11	35	9	29

The maximum allowable spacing between expansion joints can also be calculated from the following formula:

D = M / [K Tdiff]

Where:

D = maximum allowable distance between expansion joints (m)

M = allowable movement for each expansion joint (m)

- M = 0.014

K = coefficient of linear expansion of the material (°C-1)

- GY = 13 x10^{-6}
- GW = 13 x10^{-6}
- GX = 13 x10^{-6}
- SS = 16 x10^{-6}

Tdiff = temperature differential at installation site [Maximum temperature – Minimum temperature] (°C)

As an example:

For a SS tray installation-

M = 0.014m

K = 16 x10^{-6} °C-1

Maximum temperature, **Tmax** = +25°C

Minimum temperature, **Tmin** = -5°C

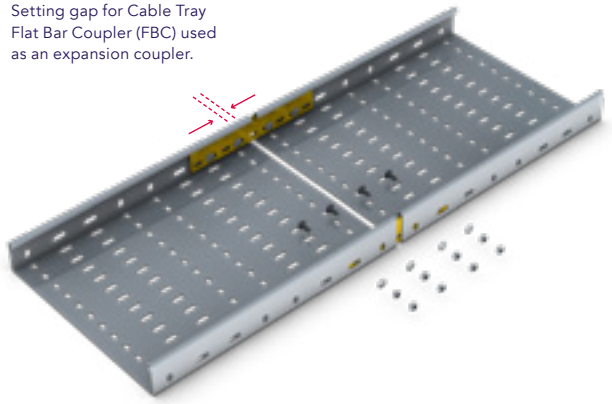
Therefore, **Tdiff** = (+25) – (-5) = 30°C

D = 0.014 / [16 x10^{-6} x 30] = 30m

Therefore the maximum allowable distance between expansion joints is 30m, however, for ease of installation, expansion couplers should be fitted at every 10th 3m cable tray..

Setting Gap

Setting gap for Cable Tray Flat Bar Coupler (FBC) used as an expansion coupler.



To determine the setting gap at the time of installation the following formula should be used:

G = [Tins - Tmax] / [Tdiff / M]

Where:

G = setting gap (mm)

Tins = temperature at the time of installation (°C)

Tmax = maximum temperature (°C)

Tdiff = temperature differential (°C)

M = allowable movement for each expansion joint (m)

- SW-EXP = 0.028
- SW-SREC = 0.075

Example:

Continuing the previous example -

Installation Temperature, **Tins** = +15°C

Maximum temperature, **Tmax** = +25°C

Temperature differential, **Tdiff** = 30°C

Allowable movement, **M** = 0.014

G = [+15 - +25] / [+30 / 0.014] = 4.7mm

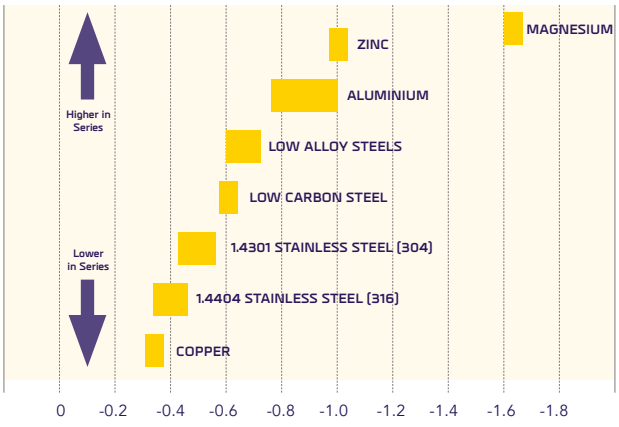
4.1.3 Bimetallic Corrosion

Bimetallic corrosion (also referred to as galvanic or electrolytic corrosion) occurs when two dissimilar metals are in close contact with an electrolyte. An electrolyte is a medium which allows the flow of an electrical current. The presence of water as moisture can act as an electrolyte. For further details see Pages 78-79 for Speedway Insulation Assemblies and Page 127 for Cable Tray Insulation Assemblies.

The rate of corrosion depends upon the differences in electrical potential of the metals as defined by the Galvanic Series (see chart below), the strength of the electrolyte, the period for which the electrolyte is present, and the geometry of the connection between the dissimilar metals. When corrosion occurs it is the anodic metal (which is higher in the galvanic series) that will corrode in preference to the cathodic metal (which is lower in the galvanic series).

If corrosion takes place between two dissimilar metals, the metal which is higher in the galvanic series will corrode in preference to the metal which is lower in the galvanic series.

Galvanic Series Chart



Potential Difference (Calomel electrode in salt water at 25 °C)

It is common to find dissimilar metals such as stainless steel and low carbon steel or zinc (as found on a hot dip galvanised item) in contact in a damp atmosphere (i.e. sea water, rain, etc.).

This arrangement is typically found in coastal and offshore applications where painted structures or heavyweight galvanised steel brackets are used to support stainless steel cable ladders on the exterior of an installation.

Whilst it is possible to use a layer of paint or grease to separate the stainless steel cable ladder from a zinc coating or any exposed low carbon steel arising from drilling of the support structure, these should not be considered as a long term means of providing electrical separation between the dissimilar metals.

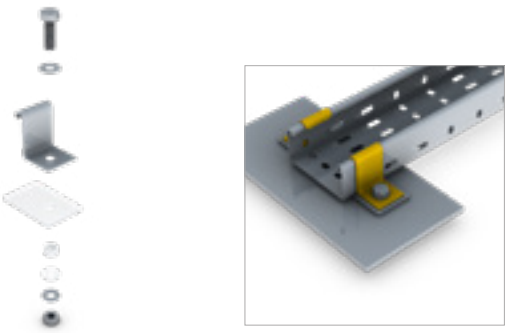
The best solution is to electrically isolate the two dissimilar metals. Vantrunk cable management systems include a range of nylon pads, bushes, and washers which entirely separates the cable ladder or tray and the fixings from the support structure to prevent bimetallic corrosion.

In a typical insulating assembly the ladder or tray securing device (external flange clamp, hold down bracket, or adaptable fixing bracket), securing bolt, nut, & washer are entirely of stainless steel and are therefore compatible with the stainless steel cable ladder.

Insulating assembly for External Flange Clamp (EFC)

Insulating assembly for Hold Down Bracket (HDB)

Insulating assembly for Adaptable Fixing Bracket (AFB)



Insulating assembly for Hold Down Bracket (HDB)

4.1.4 Imposed Loads

Imposed loads include wind, ice and snow. The effects of imposed loads will vary from one installation to another and further advice relating to the specific influences of each should be sought at the design stage. The following information on imposed loads is given as a general guide only.

Ice Loads

When determining the total load to be supported by the Speedway Cable Ladder or Vantrunk Cable Tray an allowance should be made for those locations where ice formation is likely.

The tables below shows the additional load imposed by a layer of ice 10mm thick and having a density of 916kg/m3.

Ice Load (10mm thick) on Speedway Cable Ladder

Width W mm	Ice Load kg/m		
	Speedway SW4	Speedway SW5	Speedway SW6
150	1.72	1.83	1.83
300	3.10	3.21	3.21
450	4.47	4.58	4.58
600	5.84	5.95	5.95
750	7.22	7.33	7.33
900	8.59	8.70	8.70
1050	9.97	10.08	10.08

Ice Load (10mm thick) on Vantrunk Cable Tray

Tray Width	Ice Load kg/m	
	Medium Duty	Heavy Duty
50	0.46	0.46
75	0.69	0.69
100	0.92	0.92
150	1.37	1.37
200	1.83	1.83
225	2.06	2.06
300	2.75	2.75
450	4.12	4.12
600	5.50	5.50
750	6.87	6.87
900	8.24	8.24

Snow Loads

The magnitude of the additional load imposed by snow will be influenced by a number of factors including the density of the snow, the degree of drifting which will alter the profile of the snow accumulating on the Speedway Cable Ladder or Vantrunk Cable Tray, and the nature of the cable ladder installation (i.e. covers fitted or percentage of cable loading area occupied by cables). The density of snow can vary from 160kg/m3 to 481kg/m3 depending on the level of wetness and compactness. The tables below assume that the snow has a density of 160kg/m3 and is applied to a uniform height of 100mm.

Snow Load (100mm thick) on Speedway Cable Ladder

Width W mm	Snow Load kg/m		
	Speedway SW4	Speedway SW5	Speedway SW6
150	3.01	3.20	3.20
300	5.41	5.60	5.60
450	7.81	8.00	8.00
600	10.21	10.40	10.40
750	12.61	12.80	12.80
900	15.01	15.20	15.20
1050	17.41	17.60	17.60

Snow Load (100mm thick) on Vantrunk Cable Tray

Tray Width	Snow Load kg/m	
	Medium Duty	Heavy Duty
50	0.80	0.80
75	1.20	1.20
100	1.60	1.60
150	2.40	2.40
200	3.20	3.20
225	3.60	3.60
300	4.80	4.80
450	7.20	7.20
600	9.60	9.60
750	12.00	12.00
900	14.40	14.40

Wind Loads

Wind loads exert a sideways force on the cable ladder or cable tray. The sideways force is based on the wind speed and is derived from the equation Vp (N/m²) = 0.6V2 where V is the wind speed in m/s. The wind speed will vary relative to the height above the ground and the degree of exposure. The following tables give an indication for the sideways force which will be exerted on Speedway Cable Ladder or Vantrunk Cable Tray in an exposed location at an ambient temperature of 20°C and average relative humidity for the United Kingdom.

The tabulated wind loads are based on Speedway Cable Ladder and Vantrunk Cable Tray that is installed in the horizontal plane. In this orientation the structural properties of the Vantrunk Cable Management Systems are sufficient to resist most normal wind loads. The wind loadings will be significantly higher for edge-mounted Speedway Cable Ladder and Vantrunk Cable Tray and for this reason edge-mounted ladder or tray should not be installed in areas of high wind exposure.

If covers are to be fitted to Speedway Cable Ladder or Vantrunk Cable Tray in locations subject to high wind loads further advice should be sought from our Technical Team regarding additional securing means.

Wind Loads on Speedway Cable Ladder

Beaufort Scale	Description	Wind Speed m/s		Pressure N/m²		Wind Loads - kg/m					
						Speedway SW4		Speedway SW5		Speedway SW6	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
0	Calm	0.00	0.20	0.00	0.02	0.00	0.00	0.00	0.0	0.00	0.00
1	Light air	0.30	1.50	0.05	1.35	0.00	0.01	0.00	0.02	0.00	0.02
2	Light breeze	1.60	3.30	1.54	6.53	0.01	0.06	0.02	0.07	0.02	0.09
3	Gentle breeze	3.40	5.40	6.94	17.50	0.06	0.16	0.08	0.20	0.10	0.24
4	Moderate breeze	5.50	7.90	18.15	37.45	0.16	0.34	0.20	0.42	0.25	0.52
5	Fresh breeze	8.00	10.70	38.40	68.69	0.35	0.62	0.43	0.77	0.53	0.95
6	Strong breeze	10.80	13.80	69.98	114.26	0.64	1.04	0.79	1.29	0.97	1.58
7	Near gale	13.90	17.10	115.93	175.45	1.05	1.59	1.31	1.98	1.60	2.43
8	Gale	17.20	20.70	177.50	257.09	1.61	2.34	2.00	2.90	2.45	3.56

Wind Loads on Vantrunk Cable Tray

Beaufort Scale	Description	Wind Speed m/s		Pressure N/m²		Medium Duty 25mm Height		Heavy Duty 50mm Height	
		Min	Max	Min	Max	Min	Max	Min	Max
0	Calm	0.00	0.20	0.00	0.02	0	0	0	0
1	Light air	0.30	1.50	0.05	1.35	0	0.1	0	0.5
2	Light breeze	1.60	3.30	1.54	6.53	0.2	0.7	0.5	2.3
3	Gentle breeze	3.40	5.40	6.94	17.50	0.7	1.8	2.4	6.1
4	Moderate breeze	5.50	7.90	18.15	37.45	1.9	3.9	6.3	13.1
5	Fresh breeze	8.00	10.70	38.40	68.69	4	7.2	13.4	24
6	Strong breeze	10.80	13.80	69.98	114.26	7.3	11.9	24.5	39.9
7	Near gale	13.90	17.10	115.93	175.45	12.1	18.3	40.5	61.3
8	Gale	17.20	20.70	177.50	257.09	18.5	26.8	62	89.8

4.2 Materials & Finishes

Details relating to the standard materials and finishes for Vantrunk Cable Management Systems, components, and accessories are given in the following sections. The choice of material and finish has been based on many years experience in providing cable management products and support systems for use in industrial and onshore/offshore installations.

Resistance Against Corrosion

The following table shows Vantrunk's range of standard materials and finishes and their classification for resistance against corrosion according to BS EN IEC 61537.

Class	Reference - Material and Finish	Vantrunk Finish & Material
0	None	
1	Electroplated to a minimum thickness of 5 mm according to ISO 2081	
2	Electroplated to a minimum thickness of 12 mm according to ISO 2081	
3	Pre-galvanised to grade 275 according to ISO 3575, ISO 4998 or EN 10346	QQ
4	Pre-galvanised to grade 350 according to ISO 3575, ISO 4998 or EN 10346	
5	Post-galvanised to a zinc mean coating thickness (minimum) of 45 mm according to ISO 1461 for zinc thickness only	GA
6	Post-galvanised to a zinc mean coating thickness (minimum) of 55 mm according to ISO 1461 for zinc thickness only	GA GM
7	Post-galvanised to a zinc mean coating thickness (minimum) of 70 mm according to ISO 1461 for zinc thickness only	
8	Post-galvanised to a zinc mean coating thickness (minimum) of 85 mm a ccording to ISO 1461 for zinc thickness only (usually high silicon steel)	GY GX GW
9A	Stainless steel manufactured to ASTM A240 / A240M - 95a designation S30400 or EN 10088 grade 1.4301 without a post treatment	
9B	Stainless steel manufactured to ASTM A240 / A240M - 95a designation S31603 or EN 10088 grade 1.4404 without a post treatment	
9C	Stainless steel manufactured to ASTM A240 / A240M - 95a designation S30400 or EN 10088 grade 1.4301 with a post treatment	
9D	Stainless steel manufactured to ASTM A240 / A240M - 95a designation S31603 or EN 10088 grade 1.4404 with a post treatment	SS

4.2.1 Materials

The following materials are used in the manufacture of the Vantrunk Cable Management Systems, components and accessories:

Structural Steels with Enhanced Suitability for Galvanising

Where it is beneficial Vantrunk products are manufactured using grades of structural steel that have a guaranteed minimum level of silicon, thereby increasing the zinc coating thickness and extending the time to first maintenance.

Structural Steel to BS EN 10025-2
Vantrunk's GY structural steel is a weldable, high strength structural steel with good galvanising properties. Products manufactured from this grade of steel have a minimum average zinc coating of 85 microns.

Structural Steel to BS EN 10025-2
Vantrunk's GW structural steel is a weldable, extreme strength structural steel with excellent galvanising properties. Products manufactured from this grade of steel have a minimum average zinc coating of 120 microns.

Silicon Rich Structural Steel to BS EN 10025-5
Vantrunk's GX silicon rich structural steel is a weldable, extreme strength structural steel suitable for deep galvanising. Ideal for environments where excellent corrosion resistance is required. A particular property of this material is the high silicon content which gives an affinity to attract even thicker coatings of zinc when galvanised (see Finishes – Deep Galvanising). Products manufactured from this grade of steel can achieve a minimum average zinc coating of up to 160 microns.

Mechanical Properties of Structural Steels with Enhanced Suitability for Galvanising

Material	Property		
	Yield Strength (N/mm^2)	Tensile Strength (N/mm^2)	Elongated A %
GY	275 minimum	430 - 580	15
GW	355 minimum	510 - 680	15
GX	355 minimum	510 - 680	15

Low Carbon Steel

Vantrunk Cable Management Systems are manufactured using two different types of low carbon steel, each of which is matched for performance and strength to the product and the intended application. These low carbon steel materials are hot-rolled steel and cold-rolled steel.

Hot-rolled Low carbon Steel to BS EN 10111
Hot-rolled low carbon steel is a cold forming material used for bending and drawing applications. This material is suitable for welding and hot dip galvanizing.

Cold-rolled Low Carbon Steel to BS EN 10130
Cold-rolled steel grade is a cold-forming material for forming and deep drawing applications. This material is suitable for welding and hot dip galvanizing.

The minimum average zinc coating thickness on the GA type materials is gauge dependant and in accordance with BS EN 1460.

Mechanical Properties of Low Carbon Steel

Material Grade	Type	Property		
		Yield Strength ReH (N/mm^2)	Tensile Strength Rm (N/mm^2)	Elongated A %
GA	Hot Rolled	170 – 360	440	23
	Cold Rolled	280 maximum	270 – 410	28

Stainless Steel

The Speedway Cable Ladder System, components and accessories are manufactured using 1.4404 marine grade stainless steel (316) which is matched for performance and strength to the product and the intended application.

The corrosion resistance of stainless steel arises from a passive, chromium-rich, oxide film that forms naturally on the surface of the steel. Although extremely thin at 1.5 nanometres (i.e. 1.5 x 10-9 metres) thick, this protective film is strongly adherent, and chemically stable (i.e. passive) under conditions which provide sufficient oxygen to the surface. The key to the durability of the corrosion resistance of stainless steels is that if the film is damaged it will normally self-repair in the presence of oxygen. In contrast to mild steel type materials which suffer from general corrosion where large areas of the surface are affected, stainless steels which have a passive oxide film are normally resistant to general corrosion. Stainless steels should not be considered to be indestructible, the oxide film can be broken down under certain conditions and corrosion can result, this typically taking the form of pitting or crevice corrosion.

The stainless steel used in the manufacture of Vantrunk Cable Management Systems, components and accessories has excellent corrosion and oxidation resistance due to the high chromium content. Grades 1.4404 stainless steel is an austenitic stainless steel which incorporate nickel to strengthen the oxide film and improve performance in more aggressive environments. The addition of molybdenum to 1.4404 marine grade improves resistance to pitting corrosion. The austenitic stainless steels have excellent resistance to attack by acids, alkalis and other chemicals.

Stainless steels offer excellent performance at both high and low temperatures and, unlike some mild steels, are not susceptible to brittle fracture arising from impact at low temperature. Independent tests have shown that stainless steel cable ladders and trays can withstand a temperature of 1000°C for a period of 5 minutes without collapse (contact our Technical Team for further details).

As the corrosion resistance of stainless steel is derived from the self-repairing oxide film it is important that the surface of the stainless steel remains uncontaminated, allowing the inherent corrosion resistance of the stainless steel to be maintained. Possible sources of contamination includes mild steel from cutting and drilling operations on site, and impingement of small particles created by welding and grinding of mild steel in close proximity to the stainless steel product. Care must be taken both during and after installation to avoid such contamination.

Stainless Steel Grade 1.4404 (316L) to BS EN 10088-2
Marine grade 1.4404 stainless steel is a corrosion resistant steel ideally suited for aggressive environments where severe conditions are prevalent, i.e. coastal and offshore applications. 1.4404 is a molybdenum-bearing austenitic stainless steel with high corrosion resistant properties, particularly to pitting and crevice corrosion. 1.4404 has excellent forming and welding characteristics. Post-weld annealing is not required with welding the material gauges that are used in the manufacture of the Speedway Cable Ladder System.

Mechanical Properties of Stainless Steel

Material Grade	Property		
	Proof Strength 0.2% Rp0.2 (N/mm²)	Tensile Strength Rm (N/mm²)	Elongated A_{80} %
SS	240 Min	530 to 680	40

4.2.2 Finishes

The following are available for Vantrunk Cable Management Systems, components, and accessories:

Galvanising
Hot dip galvanised to BS EN ISO 1461
(post-galvanised) GY, GA, & GW
Deep Galvanised to BS EN ISO 1461
(post-galvanised) GX & GW

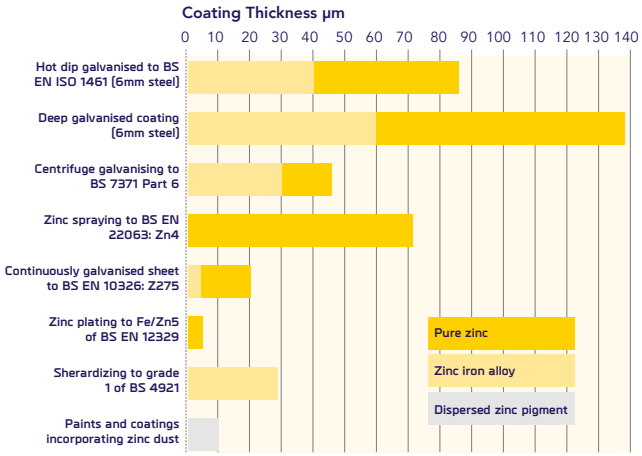
Coatings
Epoxy coated over low carbon steel EY & EA
Epoxy coated over hot dip galvanising FY & FA

Galvanising

The coating of steel using zinc, either before manufacture (pre-galvanised) or after manufacture (post-galvanised) is a cost effective and practical means of protecting the steel from corrosion. The zinc coating protects the steel in three ways. Firstly, the zinc coating weathers at a very slow rate giving a long and predictable life. Secondly, the zinc coating corrodes preferentially to provide sacrificial protection of any small areas of steel exposed through cutting, drilling, or accidental damage; scratches and small areas of damage are sealed by weathering products from the zinc. Thirdly, if the damaged area is larger, the sacrificial protection provided by the surrounding zinc prevents 'creepage' typically associated with other protective finishes such as paint coatings.

The thickness of the zinc coating is dependant on the method of application. The following table shows the typical zinc coating thicknesses for a number of galvanising and related processes, and includes zinc based paints for comparison purposes.

Zinc coatings compared in terms of coating thickness



Hot Dip Galvanised Finishes to BS EN ISO 1461

The hot dip galvanising process provides a continuous layer of zinc-iron alloys and zinc on the surface of the products manufactured in steel. The hot dip zinc coating provides a continuous barrier to moisture and other contaminants, thereby protecting the steel substrate.

During the galvanising process, a layer of zinc-iron alloy develops on the surface of the steel product. When the steel product is withdrawn from the zinc bath, a layer of pure zinc is left on the zinc-iron alloy. The layer of pure zinc gives a newly galvanised item a bright finish. This bright finish will gradually fade as the surface layer of the zinc oxidises, leaving a uniform dull grey appearance.

The average amount of zinc which can be deposited on a product is expressed in terms of thickness and is measured in µm. The actual zinc coating thicknesses will vary depending on the thickness of the steel, the chemical composition of the steel, and the period of immersion within the zinc bath. BS EN ISO 1461 specifies a number of thickness ranges for products to be galvanised, each of which has a specified minimum average local reading and minimum mean average reading. Details are given in the following table.

Zinc Coating Details to BS EN ISO 1461

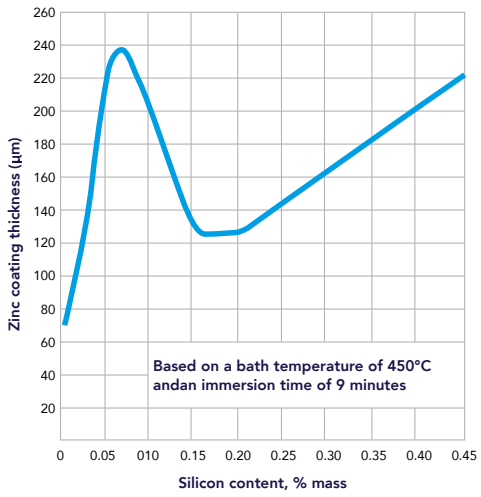
Coating Weight & Thickness – Dipped Articles				
Article & Thickness	Local Coating (minimum)		Mean Coating (minimum)	
	Mass (g/m²)	Thickness µm	Mass (g/m²)	Thickness µm
Steel t ≥ 6mm	505	70	610	85
Steel 3mm ≥ t < = 6mm	395	55	505	70
Steel 1.5mm =≥ t < = 3mm	325	45	395	55
Steel t < 1.5mm	250	35	325	45
Castings t ≥= 6mm	505	70	575	80
Castings t < 6mm	430	60	505	70

Coating Weight & Thickness – Centrifuged Articles				
Article & it's Thickness	Local Coating (minimum)		Mean Coating (minimum)	
	Mass (g/m²)	Thickness µm	Mass (g/m²)	Thickness µm
Articles with threads:				
Diameter ≥ 6mm	395	55	505	70
Diameter <= 6mm	325	45	395	55
Other articles (including castings):				
t ≥= 3mm	325	45	395	55
t < 3mm	250	35	325	45

Deep Galvanising to BS EN ISO 1461

The use of silicon-rich steels allows much heavier galvanised coatings to be obtained. Average coating thicknesses of two to three times that for low carbon steel can be achieved. It is for this reason that silicon-rich steels are termed 'reactive' steels and the galvanising process 'deep galvanising'.

The influence of the silicon does not increase consistently but rather follows a curve as shown in the following diagram. This curve gives average values and variations can be expected between different silicon-rich steels with the same silicon content but from different steel casts.



These variations are attributed to the fact that whilst the total silicon contents can be equal, the amount of silicon that is bound to oxygen within the steel can vary. More or less silicon is then dissolved in the steel, and it is only this amount that influences the reaction. The silicon can be unevenly distributed on the surface of the steel and this will lead to uneven variations in the coating thickness after galvanising.

Another property of the galvanised coatings on silicon-rich steels is the colour. During the galvanising process, a zinc layer builds up on the zinc-iron alloy layers which are adhering to the surface of the steel. The reaction rate can be such that this pure zinc layer is transformed completely to zinc-iron alloy before the article has had time to cool.

This results in a coating which can be much darker in appearance, varying in colour and thickness across the surface of the galvanised item. This appearance does not alter the corrosion resistance of the zinc coating. Due to the variations in coating thickness associated with deep galvanising of silicon-rich materials it is normal to specify the finish as 'deep galvanised to twice the coating thickness specified by BS EN ISO 1461'.

Wet storage stain

Galvanised steel is protected from corrosion by a layer of zinc-iron alloys and a layer of pure zinc. After galvanising, a protective zinc carbonate film forms over the surface of the zinc. The formation of this protective layer is only possible when the galvanised surface is exposed to free flowing air. Stacking freshly galvanised articles in contact with one another prevents the free circulation of air, and in wet or humid conditions, may result in the development of wet storage stain. Wet storage stain, often referred to as white rust, appears as a white, powdery covering. The white rust, comprising of zinc oxide and zinc hydroxide corrosion products, is voluminous and can appear to be more detrimental to the galvanised coating that it actually is.

Wet storage stain can be prevented by correct transport and storage provisions. For transportation over long distances, galvanised items should be protected by waterproof cover to prevent moisture ingress. For storage, galvanised items should be kept off the ground in a dry environment. If stacked in a potentially wet environment, the galvanised items should be separated from one another to provide free circulation of air. If possible, the stacking should be at an angle to facilitate drainage of water.

In normal use, light wet storage stain is not serious and does not reduce the life expectancy of the galvanised coating. The affected area should be dried and exposed to the atmosphere to allow the zinc to form a protective carbonate layer. The appearance of the wet storage stain will gradually fade to that of a normally weathered galvanised steel. Where more stubborn wet storage stain deposits are evident, these should be removed using a stiff bristle (non wire) brush and, if necessary, a cleaning solution should be used. Typical solutions would be ammonia A citric acid based clear such as Metsoak C4900 with a 10% dilution v/v, the cleaning solutions should be thoroughly rinsed off after treatment and the article allowed to dry.

Life expectancy of zinc coatings

The life expectancy of a zinc coating is largely determined by its thickness. Thicker coatings give longer life (the period to first maintenance). When exposed to atmosphere the zinc coating will weather and corrode, leading to a gradual diminution in the coating thickness. Under conditions of normal atmospheric exposure the level of corrosion is low and is typically at a rate which is between 1/10th and 1/40th of that of the steel base.

When subject to conditions of high humidity or condensation, the rate of corrosion of the zinc coating can be increased significantly.

The level of contamination in the atmosphere can also adversely affect the corrosion rate of the zinc coating. The most significant contaminant accelerating the corrosion rate of zinc is sulphur dioxide (SO_2). The resistance of zinc to atmospheric corrosion is dependent on the protective zinc carbonate film which forms on the surface of the zinc.

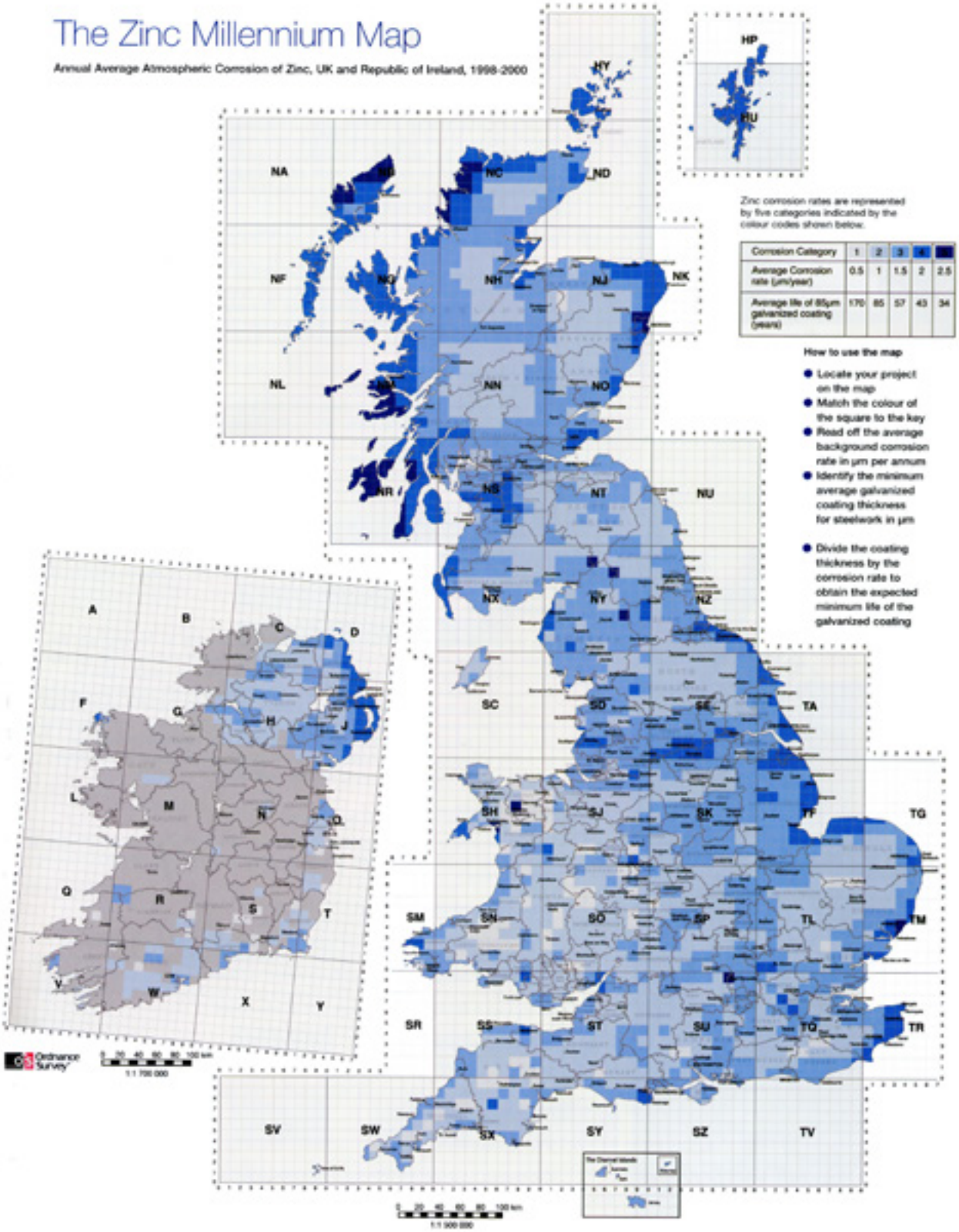
The sulphur dioxide reacts with moisture to destroy the protective film and this leads to the corrosion of the zinc coating.

Research undertaken by the Galvanizers Association has resulted in the publishing of a series of charts depicting the average atmospheric corrosion rate for zinc for the United Kingdom and Ireland. These charts indicate that the average local atmospheric corrosion rates for zinc have decreased, reflecting the general decrease in the levels of sulphur dioxide in the atmosphere.

Current atmospheric corrosion rates for zinc within the United Kingdom and the Republic of Ireland are given in the Zinc Millennium Map and are in the range of 0.5µm to 2.5µm per year (corrosion categories C2 – C3 to ISO 14713). Please see the following page for the Zinc Millennium Map.

The Zinc Millennium Map

Annual Average Atmospheric Corrosion of Zinc, UK and Republic of Ireland, 1998-2000



Zinc corrosion rates are represented by five categories indicated by the colour codes shown below:

Corrosion Category	1	2	3	4	5
Average Corrosion rate (µm/year)	0.5	1	1.5	2	2.5
Average life of 85µm galvanized coating (years)	170	85	57	43	34

How to use the map

- Locate your project on the map
- Match the colour of the square to the key
- Read off the average background corrosion rate in µm per annum
- Identify the minimum average galvanized coating thickness for steelwork in µm
- Divide the coating thickness by the corrosion rate to obtain the expected minimum life of the galvanized coating

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- All those who provided sample sites for the project

ADAS Consulting and GA are grateful to Orange Plc for provision of survey sites in the UK and the Irish Electricity Supply Board for survey sites that allowed corrosion rates at key Irish locations to be included in the Zinc Millennium Map. Further studies are planned to extend survey coverage in the Republic of Ireland. For areas not yet covered, the rates indicated for comparable areas may be used as an indication of likely corrosion rates.

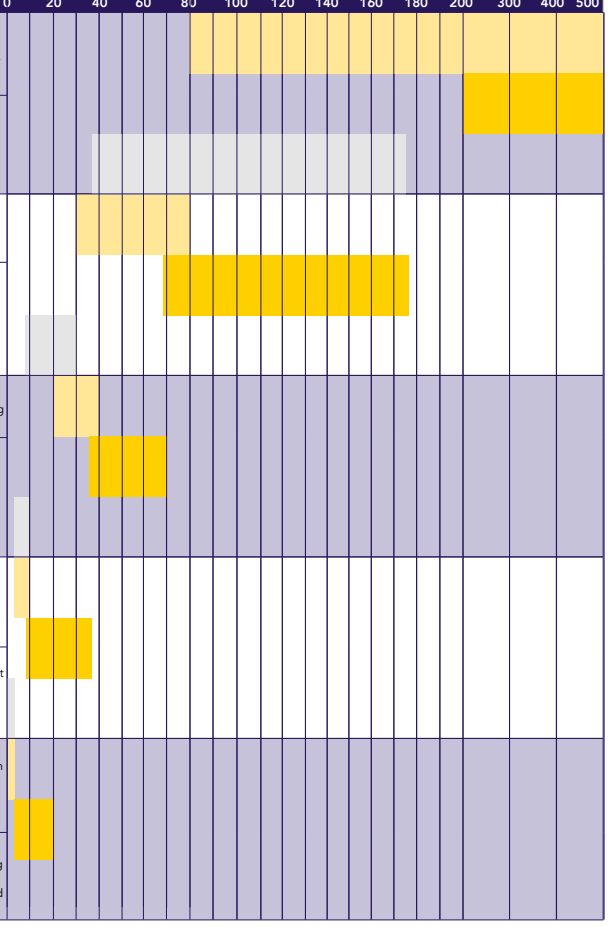
ENGINEERING DATA

The corrosion rate for zinc is generally linear for a given local environment. This allows predictions of the life expectancy of a galvanised product, to first maintenance, based on the zinc coating thickness and the zinc corrosion rates given in the Zinc Millennium Map. For example, a hot dip galvanised product with a coating thickness of 55µm will last approximately 110 years in a location where the atmospheric corrosion rate of zinc is 0.5µm per year, and approximately 22 years in a location where the atmospheric corrosion rate is 2.5µm per year.

Further information regarding hot dip galvanising and the Zinc Millennium Map can be obtained from the Galvanizers Association. The Zinc Millennium Map provides specific information for the United Kingdom and Ireland. For other locations, reference can be made to BS EN ISO 14713 (Protection against corrosion of iron and steel in structures – Zinc and aluminium coatings – Guidelines).

BS EN ISO 14713 provides general guidelines on corrosion rates for zinc in differing environmental conditions, details of which are given in the table below.

Category	Corrosion Rate µm/year	Environment	
C2	0.1 < rate ≤ 0.7 Low	Indoor	• Unheated spaces with varying temperature and relative humidity. Low frequency of condensation and low pollution, e.g. storage, sport halls
		Outdoor	• Temperate zone, atmospheric environment with low pollution, e.g.: rural areas, small towns • Dry or cold zone, atmospheric environment with short time of wetness, e.g. deserts, sub-arctic areas
C3	0.7 < rate ≤ 2.1 Medium	Indoor	• Spaces with moderate frequency of condensation and moderate pollution from production process, e.g. food processing plants, laundries, breweries, dairies
		Outdoor	• Temperate zone, atmospheric environment with medium pollution or some effect of chlorides, e.g. urban areas, coastal areas with low deposition of chlorides • Subtropical and tropical zones with atmosphere with low pollution
C4	2.1 < rate ≤ 4.2 High	Indoor	• Spaces with high frequency of condensation and high pollution from production process, e.g. industrial processing plants, swimming pools
		Outdoor	• Temperate zone, atmospheric environment with high or substantial effect of chlorides, e.g. polluted urban areas, industrial areas, coastal areas without spray of salt water, exposure to strong effect of de-icing salts • Subtropical and tropical zones with atmosphere with medium pollution
C5	4.2 < rate ≤ 8.4 Very High	Indoor	• Spaces with very high frequency of condensation and/or with high pollution from production process, e.g. mines, caverns for industrial purposes, unventilated sheds in subtropical and tropical zones
		Outdoor	• Temperate and Subtropical zones, atmospheric environment with very high pollution and/or important effect of chlorides, e.g. industrial areas, coastal areas, sheltered positions on coastline
CX	8.4 < rate ≤ 25 Extreme	Indoor	• Spaces with almost permanent condensation or extensive periods of exposure to extreme humidity effects and/or with high pollution from production process, e.g. unventilated sheds in humid tropical zones with penetration of outdoor pollution including airborne chlorides and corrosion-stimulating particulate matter
		Outdoor	• Subtropical and Tropical zones (very high time of wetness), atmospheric environment with very high pollution, including accompanying and production pollution and/or strong effect of chlorides, e.g. extreme industrial areas, coastal and offshore areas with occasional contact with salt spray



Low carbon Steel to BS EN ISO 1461 55µ Coating Thickness

Silicon Rich Steel to BS EN ISO1461 140µ Coating Thickness

Pre-Galvanised Steel to BS EN ISO 10326 19-25µ Coating Thickness

The corrosion rates should be considered as an indication only and provide a broad means of estimating the life expectancy of a zinc coating. This information should be treated as a general guide and further information should be sought relating to the specific zinc corrosion rates at the installation site. Using these broad corrosion rates, the above table shows the life expectancy of galvanised cable management products for corrosion categories C2 to CX.

Pickling and Passivation

Stainless steel is corrosion resistant because of the presence of a thin, dense, self-healing passive chromium-rich layer on the surface of the metal. This protective layer acts as a barrier between the metal and the environment and reduces the rate of dissolution of the metal. If this chromium oxide film is damaged the steel will, in most circumstances, oxidise and reform the protective layer (self-healing). When the surface of stainless steel is subject to mechanical treatments such as grinding or machining stresses, an increased roughness will occur in the outer surface layers damaging the oxide film, occasionally leaving impurities on the surface and preventing the passive film from reforming. This can also happen in general handling.

In addition, many grades of stainless steel are adversely affected by processes such as welding or heat treatment which can result in the formation of surface oxide films which can prevent the natural passive chromium oxide layer from forming. The heat discolouration marks found around the welds of stainless steel products is a form of oxide which does not necessarily adversely influence corrosion resistance unless the material is exposed to the most extremely aggressive environments e.g. when used for acid containment, etc. It should not be necessary to remove this discolouration in situations where the stainless steel offers satisfactory corrosion resistance for a particular installation.

If the passive oxide layer is damaged and the self-healing process does not occur the stainless steel will corrode, this will take the form of pitting, intercrystalline corrosion, or stress corrosion cracking. The rate of corrosion is accelerated in the presence of chloride compounds. Consequently, it is important to specify the correct grade of stainless steel, to use the correct welding techniques, and to avoid contamination with carbon steel during manufacturing processes. The use of 1.4404 marine grade stainless steel (316 grade) reduces the potential corrosion problems associated with the welding of stainless steel.

As standard, stainless steel Speedway Cable Ladder is treated by means of pickling and passivating. The pickling process removes the surface of the stainless steel by etching in a heated nitric/hydrofluoric acid solution. Pickling will remove surface debris, leaving the stainless steel clean and allowing the passive chromium oxide film to form; the surface of the stainless steel can then be described as being in the passive condition. A further treatment is then applied in which a solution of nitric acid is used to thicken the existing passive layer of chromium oxide whilst reducing the time taken to form the film. The entire process leaves the stainless steel with a uniform dull grey colour.

Coatings

A number of coatings have been used for the coating of cable management products. By far the most cost effective, versitile, and advantageous is epoxy. Epoxy coatings are based on thermosetting epoxy resins which are applied electrostatically as a powder spray which is cured and hardened in an oven. The powder spray application ensures complete and even coverage of the surface. Epoxy coatings give a thin, hard and durable finish which provides good chemical resistance, excellent adhesion, and coating flexibility. Epoxy coatings are available in a variety of colours. Black is supplied as standard unless otherwise requested.

Epoxy over Low Carbon Steel

Epoxy coatings can be applied directly to low carbon steel to give a corrosion resistant finish. The steel products are subject to a degreasing treatment to remove all surface contaminants and then epoxy powder coated to a dry film thickness of 75 microns.

Epoxy over Hot Dip Galvanised Low Carbon Steel

Whilst hot dip galvanising provides a long lasting and cost effective means of protecting steel from corrosion, the performance of the zinc coating can be enhanced by the addition of an epoxy coating. This type of finish is referred to as a duplex coating. The duplex coating can be used to add colour for aesthetic or safety purposes and provide additional protection for the steel in aggressive environments. The epoxy provides resistance to chemical degradation, and the underlying layer of zinc prevents creepage under the epoxy coating. The hot dip galvanised steel products are treated by an acid etch, a chromate pre-treatment and then epoxy powder coated to a dry film thickness of 75 microns.

4.3 Declarations in accordance to BS EN IEC 61537

As part of BS EN IEC 61537, Cable tray systems and cable ladder systems for cable management, Vantrunk supply the following information that is necessary for the proper and safe installation and use of Cable Management Systems:

a) **Installation / Assembly Instruction:**
- i. For **Speedway** see Page 215
- ii. For **Cable Tray** see Page 231

b) **Thermal Expansion:** See Page 245

c) **Classification:**

Clause	SS	GY	GA	GX	GW
6.1 According to material	6.1.1 Metallic system component				
6.2 According to resistance to flame propagation	6.2.2 Non-flame propagating system component				
6.3 According to electrical continuity characteristics	6.3.2 Cable ladder system with electrical continuity characteristics				
6.4 According to electrical conductivity	6.4.1 Electrically conductive system component				
6.5 According to resistance against corrosion	6.5.2 Class 9D	6.5.2 Class 8	6.5.2 Class 6	6.5.2 Class 8	6.5.2 Class 8
6.6 According to Temperature					
6.6.1 Minimum temperature for the system component	-50°C	-20°C	-20°C	-50°C	-40°C
6.6.2 Maximum temperature for the system component	+150°C	+150°C	+150°C	+150°C	+150°C
6.7 According to the perforation in the base area of the cable tray	Classification B: Over 2% and up to 15%				
6.8 According to the free base area of cable ladder length	Classification Y: Over 80% and up to 90%				
6.9 According to impact resistance	6.9.5 System component offering impact resistance up to 50 J				

d) **Relative Humidity:** Humidity does not affect classification

e) **Equipotential Bonding:**
- i. For **Speedway** see Page 221
- ii. For **Cable Tray** see Page 235

f) **Transport and Storage Precautions:** Materials can be used to temperature limits shown within theProduct Guide without taking any precautions (7.2)

g) **Product Dimensions:**
- i. For **Speedway** see Page 32
- ii. For **Cable Tray** see Page 101

h) **Torque Settings:**
- i. For **Speedway** see Page 222
- ii. For **Cable Tray** see Page 236

i) **End Span Limitations:** See Page 216

j) **Position and type of coupling along the span:** See Page 216

k) **Fittings Support Recommendations:**
- i. For **Speedway** see Page 217
- ii. For **Cable Tray** see Page 232

l) **Test Fixing Method:** Not fixed to supports

m) **Straight Length Safe Working Load:**
- i. For **Speedway** load data see Page 225
- ii. For **Cable Tray** load data see Page 239

n) **Cantilever Safe Working Load :**
- i. For **Speedway** cantilevers see Page 89
- ii. For **Cable Tray** cantilevers see Page 140
- iii. For **Intelok** cantilevers see Page 173 & 175

o) **Pendant Safe Working Load:** Not applicable.

p) **Material Specification:** See Page 252

For details relating to the CE marking of the Speedway Cable Ladder System and Vantrunk Cable Tray System, the associated Declaration and Technical File, please refer to our Technical Team.

4.4 Reference Standards

The following is a list of the standards relating to the cable management products covered by this catalogue:

BS 729	Replaced by BS EN ISO 1461.
BS 1449 Part 1	Replaced by BS EN 10111, 10130 & 10025.
BS 1449 Part 2	Replaced by BS EN 10088-2.
BS EN ISO 1461	Hot dip galvanised coatings on fabricated iron and steel articles. Specifications and test methods (formerly BS 729).
BS 2989	Replaced by BS EN 10147.
BS 6946	Specification for metal channel cable support systems for electrical installations.
ISO 9223	Corrosion of metals & alloys – Corrosivity of atmospheres.
BS EN 10025	Replaced by BS EN 10025-2
BS EN 10025-2	Hot rolled products of structural steels. Technical delivery conditions for nonalloy structural steels (formerly BS EN 10025:1993).
BS EN 10088-2	Stainless steels. Technical delivery conditions for sheet/ plate and strip for general purposes (formerly BS 1449 Part 2).
BS EN 10111	Continuously hot rolled low carbon steel sheet & strip for cold forming. Technical delivery conditions.
BS EN 10130	Cold rolled low carbon flat products for cold forming. Technical delivery conditions.
BS EN 10147	Replaced by BS EN 10136:2004.
BS EN 10326	Continuously hot-dip coated strip and sheet of structural steels. Technical delivery conditions.
BS EN ISO 14713	Protection against corrosion of iron and steel in structures – Zinc and aluminium coatings – Guidelines.
BS EN 10327	Continuously hot dip coated strip & sheet of low carbon steels for cold forming. Technical delivery conditions.
BS EN 50085-1	Cable trunking and cable ducting systems for electrical installations. General requirements (formerly BS 4678 Part 1).
BS EN IEC 61537	Cable tray systems & cable ladder systems for cable management.
NEMA VE 1	Metal Cable Tray Systems (also CSA International C22.2 No 126.1-98).
NEMA VE 2	Cable Tray Installation Guidelines.
BS EN 10346	Continously hot-dip coated strip & sheet of low carbon steels for cold forming. Technical delivery conditions.

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VANTRUNK

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NOTES

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