



The benefits of Indigenous procurement go beyond fulfilling government requirements; they touch the very core of social responsibility and inclusive growth. As a majority Indigenous owned business, FAT Comms offers a unique avenue to meet and surpass Indigenous procurement targets. By purchasing Kounis products through FAT Comms, clients can demonstrate their commitment to Indigenous procurement to meet Indigenous procurement targets. It's not merely a transaction; it's a statement of support for an inclusive future.

FAT Comms represents a commitment to social responsibility and empowerment. As a majority Indigenous owned business, we are aligned with Indigenous Procurement Policies at both federal and state levels. Our registration with key organisations such as Supply Nation and Kinaway underscores our mission to foster growth within the Indigenous community while delivering unparalleled services to our clients.

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ABN 43 008 701 335

# Electrical Cable Support Systems







AUSTRALIA WIDE AUSTRALIAN MADE





ABN 43 008 701 335 ACN 008 701 335



# **Company Profile**

With over six decades of design, manufacturing and supply **Kounis Metal Industries** Pty Ltd has changed its name to **Kounis Group**. The change of name represents the broadening of our portfolio with greater diversification of products and services across all sectors of the business.

Our core belief and objective is to provide products and services of a quality which exceed customer expectations in respect to quality, performance, safety and price. This is reinforced by the positive growth of our core business whilst expanding into areas of new growth with the design and manufacture of transportable electrical switchrooms.

The Kounis Group Head Office is located in Western Australian and is also the location of its main manufacturing plant. In addition the group has several supporting workshops and warehouses located in Perth. The Kounis Group has a well-established large sales and warehousing facility in Melbourne to service the East Coast of Australia which carries comprehensive stocks of cable supports and standard products.

The Kounis Group is quality assured to ISO 9001 and prides itself on the quality of its products and services, along with its dedicated highly experienced equal opportunity workforce. With large stocks of standard products all of which conform to Australian Standards and an ability to manufacture and provide services in a minimum time frame the Kounis Group is able to offer unparalleled service levels across all areas of business.

# Manufacturing and Shipping Worldwide

- Precision and General Sheetmetal Work
- Electrical Switchboards
- Cable Support Systems
- Transportable Switchrooms
- Light to Medium Fabrication
- Rotor Resistance Starters
- Mining Enclosures
- Packaged sub-Stations
- CNC Turret Punching /Laser Cutting and Folding
- De-Watering Skids
- Architectural Screens and Perforating
- Switchboard Service Maintenance and Audits

**Managing Director** 

**Dave Kounis** 



# Health, Safety, Environment and Quality (HSEQ) Policy

The Kounis Group considers Health, Safety, Environment and Quality (HSEQ) an integral part of the company's business vision and values. Our objective is to provide, with the assistance of our people, a workplace that protects the safety and health of its employees, contractors, customers and visitors, whilst producing products and services of an outstanding quality.

The Kounis Group utilises its development and implementation of a documented and systematic HSEQ management system that includes the establishment of HSEQ business standards and supporting procedures, practices, guidance and information. A key aspect of this approach will involve the adoption of risk management for identifying, assessing, controlling and monitoring all areas of the business's operations. In maintaining this commitment, we have developed a Quality Assurance System (QAS) which incorporates all aspects of HSEQ, including objectives, targets and key performance indicators, all of which are utilised to enable continual improvement of operations.

# **Objective**

The Kounis Group will provide products and services of a quality which conform to customer requirements and consistently exceed our customer's needs and expectations. To achieve this, we have implemented a Quality Management System which conforms to ISO 9001. The Kounis Group aims to strive towards continuous improvement in products and services for our customers by providing the appropriate training, resources (both internal and external), equipment, training, support and reference materials to ensure its HSEQ objectives are met.

### **Management Responsibilities**

The Managing Director is ultimately responsible for HSEQ management and compliance throughout the company. All managers, supervisors and leading hands are responsible for work areas under their control. HSEQ procedures are in place and observed, and for communicating and implementing the necessary information and guidance to achieve the company's objectives. Managers, supervisors and leading hands are expected to continuously promote and maintain a high standard of quality and safety in their respective work areas and to lead by example and encourage involvement of employees.

### **Employee Responsibilities**

Employees are responsible for actively participating in the HSEQ management system requirements. This includes working in a safe and healthy manner, participating in training, complying with company procedures, instructions and directions. And not adversely affecting the safety of fellow employees, contractors, customers and visitors, reporting of hazards or incidents, and ensuring the quality of both product and service.

### Communication

The Kounis Group, through our consultative process, encourage two-way communication, cooperation and involvement of management, employees, contractors and customers in the ongoing development of our HSEQ management system (QAS).

Managing Director

Dave Kounis

November 2016



# **Cable Support Systems**

# **Design and Cable Support System Selection**

### **Design Standard**

The Kounis Group Cable Support Systems has been designed to provide a rigid and convenient system to support cable and pipe runs over spans up to 6 m. Kounis Group have designed and tested the range of supports to the NEMA Standards VE-1 to give a range of class rating to meet the requirements of the industry. The NEMA Standard is published by the National Electrical Manufacturers Association based in the U.S.A. This is generally referred to in Australia for design guide lines as there are no Australian Standards. The Standard gives a clear loading to span classification with a 1.5 factor of safety on the collapse load when tested on a simple span which would be the worst case.

## **NEMA Rating**

The rating system is based on the Span distance in feet together with the safe working uniform load Category A, B and C, where:

Span: Rating ladder span of 12 ft (3.6 m), 16 ft (4.8 m), and 20 ft (6 m)

Loading: Safe working uniform load rating of A (75 kg/m), B (112 kg/m) and C (149 kg/m) incorporating a 1.5 Factor of Safety.

Example: 20C class ladder has a safe working load of 149 kg/m over a 20 ft (6 m) span

**Electrical Continuity** According to the NEMA Standards VE-1 the maximum electrical resistance requirement for splice plate connections is 330 micro-ohms to ensure a safe ladder installation

The splice plate connections maximum electrical resistance required by NEMA Standards VE-1 is 330 micro-ohms to ensure

a safe ladder installation. Kounis Group have tested the splice plates on the cable support system range and they have complied with the NEMA Standard VE-1 standard.

### **Cable Support Selection**

To arrive at a suitable design for a Cable Support System there are a few design parameters to consider. Both for Cable Tray and Ladder these are similar, however, the Cable Ladder requirements are generally more demanding than cable tray where the ladders support the main cable route for primary power cables or pipeline supports. The following consideration should be made when selecting a Cable Support System.

### Cable Ladder

There are four primary considerations for Cable Ladder design:

- Cable weight or pipe loading that is to be supported over a required span. This determines the side rail height of the support profile which also has to have sufficient internal cable laying depth to take the total height of the cable or pipe. Generally the load will not protrude past the top of the ladder side rail.
- 2. The required support span or distance between brackets when related to the load determines what the mid span deflection will be. For a standard mid span beam deflection ratio this would be 1/180 of the span but for minimal apparent visual deflection 1/360 would be advisable. By reducing the deflection this can make for a heavier duty ladder requirement or span reduction requiring additional supports and so making for additional costs.



- 3. It is important to evaluate the environmental condition where the Cable Support System is to be installed. Standard Cable Ladder supply is from Mild Steel with a Hot Dip Galvanised finish. In most circumstances such as in mining or on processing plants this would be a good economical choice for a lifespan of over 10 years. For use in areas where there are corrosive chemicals or salt laden air the life span of the system would decrease and it could be cost effective to specify Stainless Steel or Aluminium to avoid replacement costs and loss of production.
- 4. The Kounis Group range of Standard Cable Ladder is from 150 mm wide and then with progressive incremental sizes of 150 mm up to and including 600 mm wide. This gives a wide range for choice and we can also produce widths over the maximum for specific installations where required. Kounis Group Standard fittings can usually cater for most cabling but other radii fittings to suit bend radius of large diameter cabling can be supplied where required. Where reinforced fittings are required allowing for large radius without any additional support brackets Kounis Group make a Structural Type Ladder System. This is a cost effective system for use to minimize deflection or flexing in the fittings and can be used in demanding conditions or cyclonic regions.

# **Cable Tray**

There are four primary considerations for Cable Ladder design:

 Calculate the total maximum cable weight that is to be supported over a required support span. This determines the tray side support profile which also has to have sufficient internal cable laying depth to take the total height of the cable.

- The Support Span which has to take the cable weight determines the type of tray profile that is to be used. The mid span deflection should be kept to a minimum with positioning of joints adjacent to a support point.
- Where a multiple quantity of smaller size cables are to be supported a deeper size tray would be required. This is due to the physical depth of cables to be laid on the tray and not necessarily weight.
- 4. Cable Trays are usually installed inside of buildings so Pre-Galvanised Steel (Galvabond) is the standard material for this type of environment. Where there are corrosive or exposed external conditions other materials such as Aluminium, 316 Stainless Steel or Hot Dip Galvanised can be supplied. Also a powder-coat finish over the Galvabond material is another option.

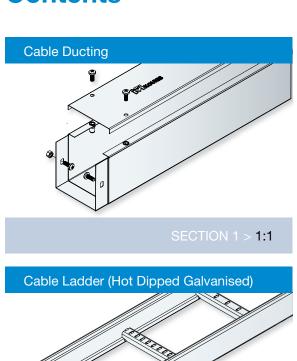
Generally Kounis Group Cable Tray Systems have a rolled safety edge on the top of the side rail to avoid any damage to cables that are routed out of the tray. The Ladder Tray has slots for cables to drop through the formed channel.

There are a wide range of Kounis Ladder or Tray Support Systems which are stocked and together with our K-Strut Support Channels, Brackets and Framing System enable the designer to solve any support installation.

The following sections of this catalogue give further details of the Kounis Group Cable Support Range together with our identification codes for ease of identification and procurement. Kounis Group have a proud history of supplying a top quality system of Cable Supports made to meet the demands of the mining, construction, commercial, offshore oil and gas operations.



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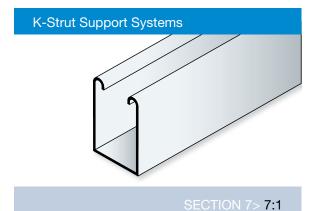






Structural Ladder System

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Cable Tray

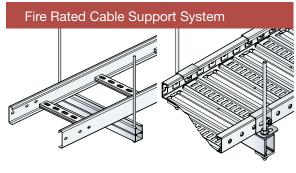
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FIRE RATED SECTION See separate catalogue for Fire Rated Cable Support



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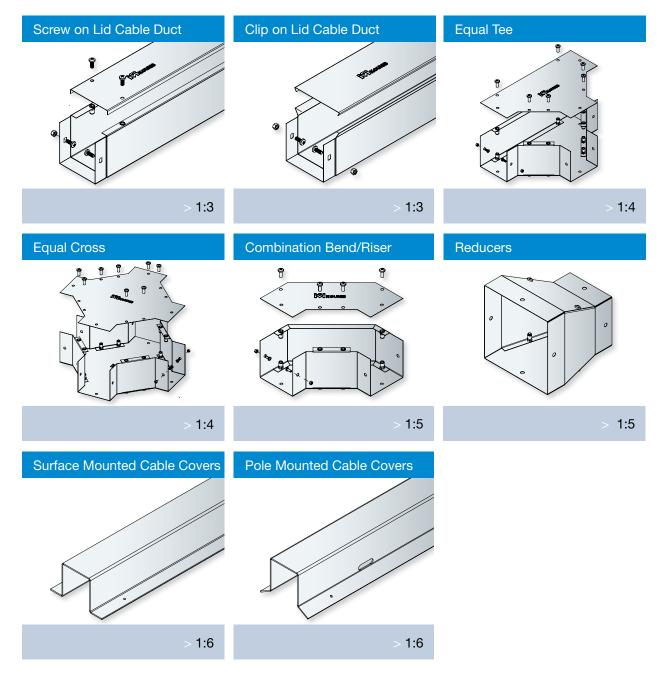
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# **SECTION 1: Cable Ducting**





# **Cable Duct Systems**

## **General Description**

The Kounis Group Cable Duct Systems were developed for use in commercial and industrial applications.

This product range offers complete versatility when undertaking cable installations where segregation and mechanical protection is required

The finished product is constructed from 0.75 mm base material of which there are three finish options *Galvabond*, Mild Steel with post production *Hot Dip Galvanised* surface treatment and 316 Grade *Stainless Steel*. System options are;

**Clip On Lid Ducting System –** Offers a simple and economical means for supporting cables. The lid simply clips on and off for a no tools required access to the cabling

**Screw On Lid Ducting System –** Offers a more robust and secure means for supporting cables, especially in vertical applications. For added security against tampering optional Prolok clutch head screws can be supplied in place of standard Phillips drive fasteners.

All of which include the following features:

- 2.4 m length
- Multiple width & height options
- Self-splicing ends making for cost efficient installation by eliminating the need for additional materials
- A full range of self splicing combination fittings to suit
- Option for shop fitted divider strip to form separate compartments
- Option for cable tie off points evenly spaced across straight lengths
- Option for conduit entry knockouts

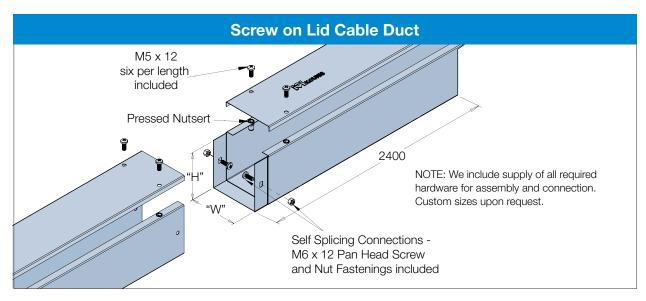
Custom sizes and painted finish is available on request

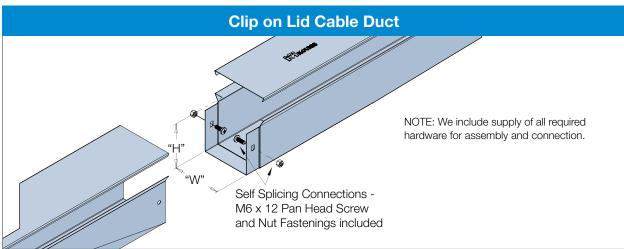
### Kounis Group Standard Colour Range

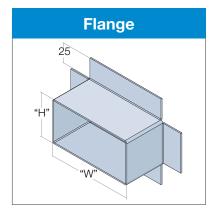
Optional Polyester Powder Coat finishes can be provided from our standard stock colours. Our range is White, Black, Orange and Grey Hammertone. Other colours or epoxy powder coat finish can be provided to firm orders.

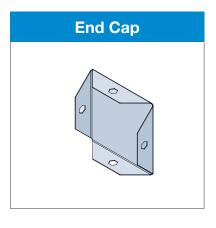


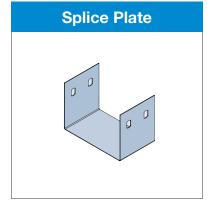
# **Cable Duct**









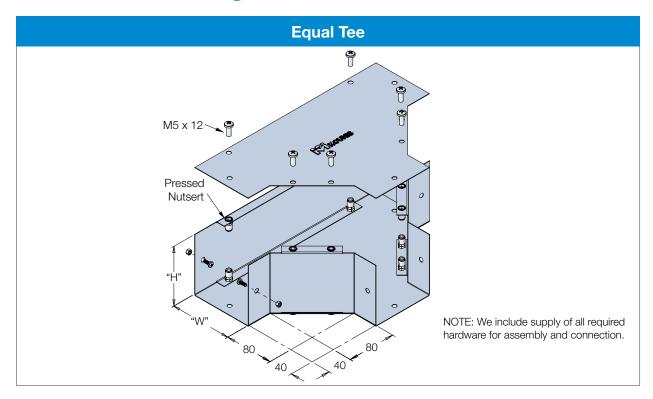


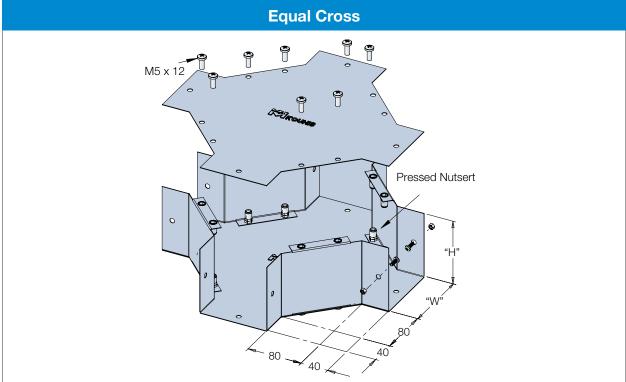
### **When Ordering**

Range	Туре	Size	Std.Finish	Fastenings	Finish
KD	S	55	G	K	PC-COL
KD = Duct & Lid	S = Screw On Lid C = Clip On lid P = Splice Plate E = End Cap F = Flange D = Divider only (see note) DWLD = Divider fitted	55 = 50 x 50 mm 77 = 75 x 75 mm 105 = 100 x 50 mm 1010 = 100 x 100 mm 1510 = 150 x 100 mm 1515 = 150 x 150 mm	G = Galvabond H = Hot Dip Galvanised S = 316 Stainless Steel	K = Includes all Bolts and Nuts	PC-COL = Paint Painted Finish to Kounis standard colour range
			NOTE: Dividers to show for 50 x 50 duct	v height size only i.e. 50	



# **Cable Duct Fittings**



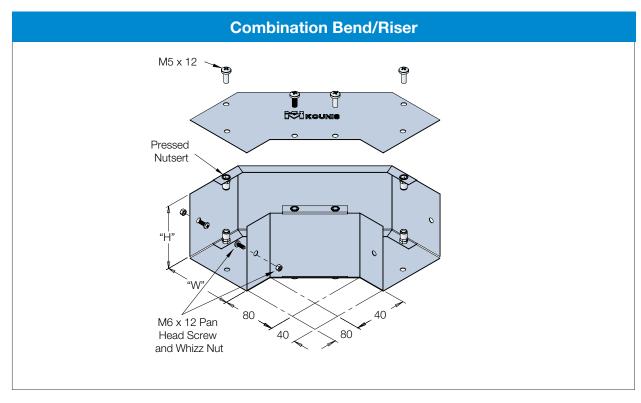


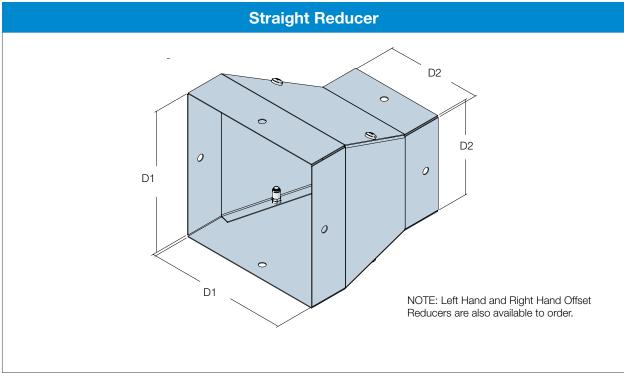
### **When Ordering**

Range	Туре	Size	Std.Finish	Fastenings	Finish
KD	TS	55	G	K	PC-COL
KD = Duct & Lid	TS = Tee Equal XS = Cross Equal Screw on lids	55 = 50 x 50 mm 77 = 75 x 75 mm 105 = 100 x 50 mm 1010 = 100 x 100 mm 1510 = 150 x 100 mm 1515 = 150 x 150 mm		K = Includes all Bolts and Nuts	PC-COL = Paint Painted Finish to Kounis standard colour range
ORDERING EXAMPLE SHOWN: Cable Duct Equal Tee with Screw on lid 50 x 50 mm Galvabond c/w Bolts and Nuts.				NOTE: Unequal Tees ar firm order.	nd crosses made to



# **Cable Duct Fittings**





### **When Ordering**

Range	Туре	Size	Std.Finish	Fastenings	Finish
KD	BS	55	G	K	PC-COL
KD = Ducts and Lid	BS = Bend 90° RS = Riser 90° SRS = Straight Reducer (D1 to D2) Screw on lids (see note)	55 = 50 x 50 mm 77 = 75 x 75 mm 105 = 100 x 50 mm 1010 = 100 x 100 mm 1510 = 150 x 100 mm 1515 = 150 x 150 mm	G = Galvabond H = Hot Dip Galvanised S = 316 Stainless Steel	K = Includes all Bolts and Nuts	PC-COL = Paint Painted Finish to Kounis standard colour range
ORDERING EXAMPLE SHOWN: Cable Duct Bend 90° with Screw on lid 50 x 50mm Galvabond c/w Bolts and Nuts. Painted				NOTE: 45° bend/riser o (eg: 5545 code) for alte	



# **Surface & Pole Mounted Cable Covers**

## **General Description**

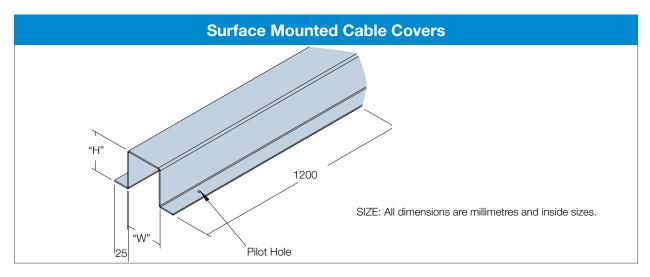
The Kounis Group Cable Covers are developed for use in commercial and industrial applications that require mechanical protection over conduit or cable runs.

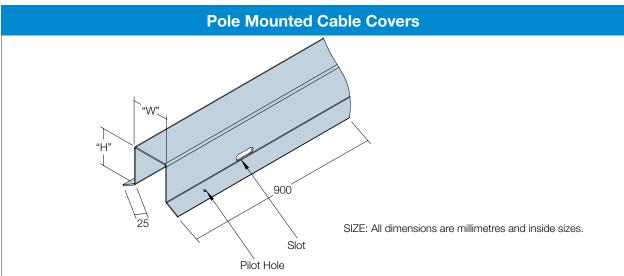
The finished product is constructed from 1.6 mm Mild Steel with post production *Hot Dip Galvanised* surface treatment or 1 mm 316 Grade *Stainless Steel*.

Stock standard sizes are designed to fit over common size Electrical and Communications conduit systems.

Pole and Surface Mounted Covers come complete with pilot holes for fixing; Pole covers come with the addition of slotted holes positioned at the return fold for strap fixing.

Custom sizes and painted finish is available on request.



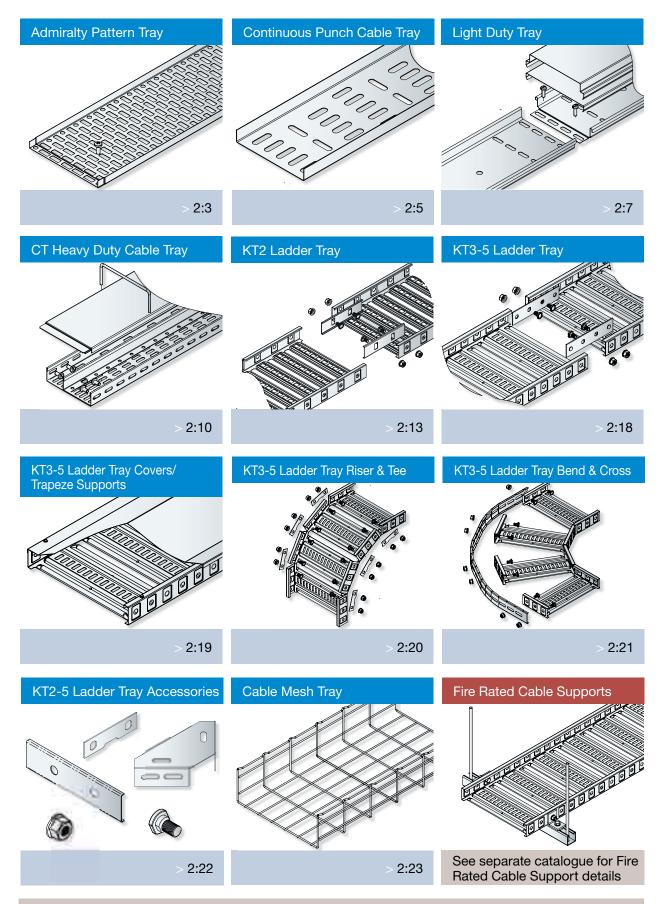


### When Ordering

Range	Size	Std.Finish	Finish			
KSM	25	Н	PC-COL			
KSM = Surface Mounted Cover KPM = Pole Mounted Cover	25 = 25 x 25 mm 32 = 32 x 32 mm 38 = 38 x 38 mm 50 = 50 x 50 mm 75 = 75 x 75 mm 100 = 100 x 100 mm	H = Hot Dip Galvanised S = 316 Stainless Steel G = Galvabond	PC-COL = Paint Painted finish to Kounis standard colour range			
ORDERING EXAMPLE SHOWN: Surface Mounted Cover 25 x 25 mm Hot Dip Galvanised. Painted Finish to specification colour.						



# **SECTION 2:** Cable Tray



FIRE RATED SECTION See separate catalogue for Fire Rated Cable Ladder and Tray Systems. Fire rated to AS/NZS 3013:2005



# **Admiralty Pattern Tray**

# **General Description**

The Kounis Group Admiralty Pattern Tray System was developed for use in general applications where installers are looking for an economical option for cable management.

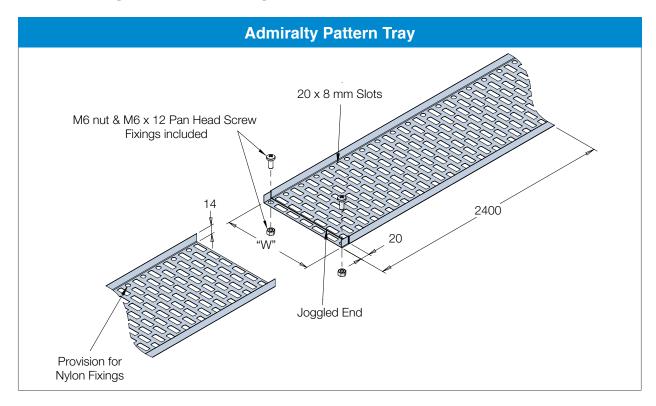
The finished product is constructed from 0.75 mm base material of which there are two options; *Galvabond* and post production *Hot Dip Galvanised* surface treatment. Both of which offer the following features:

- 2.4 m length
- 14 mm side
- Self-splicing ends making for cost efficient installation by eliminating the need for additional materials
- Perforated tie off points at 25 mm continuous centres offering superior ventilation and efficient use of tray width
- Reverse punched to ensure burr free cable laying surface
- A full range of fittings available (made to order)

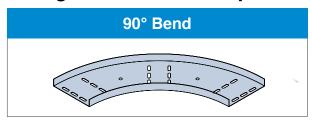
Painted finish is available on request.

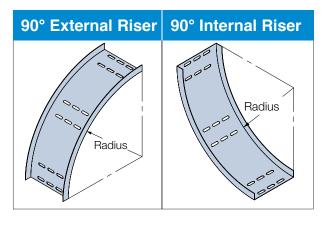


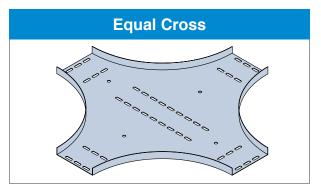
# **Admiralty Pattern Tray**

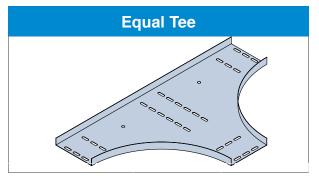


# Fittings Available on Request









### **When Ordering**

Range	Туре	Wide	Std.Finish	Fastenings	Finish
KAP	T	7	G	K	PC-COL
KAP = Admiralty Pattern Tray	T = Tray TB = Bend 90D TT = Tee Equal TC = Cross Equal TRX = External Riser 90° TRI = Internal Riser 90°	7 = 75 mm 10 = 100 mm 15 = 150 mm 23 = 230 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm	G = Galvabond H = Hot Dip Galvanised		PC = COL = Paint Painted Finish to Kounis standard colour range
ORDERING EXAMPLE SHOWN: Admiralty Pattern Tray 75 mm wide Galvabond c/w Bolts and Nuts.  Painted Finish to specification colour. NOTE: Unequal Tees and crosses made to firm order.			NOTE: 45° bend/riser (eg: 745 code) for altern		



# **Continuous Punch Cable Tray**

## **General Description**

The Kounis Group Continuous Punch Cable Tray System was developed for use in Instrumentation and shipbuilding applications where the surrounding environment calls for a low profile medium durability system that can withstand impact from wind and loose debris.

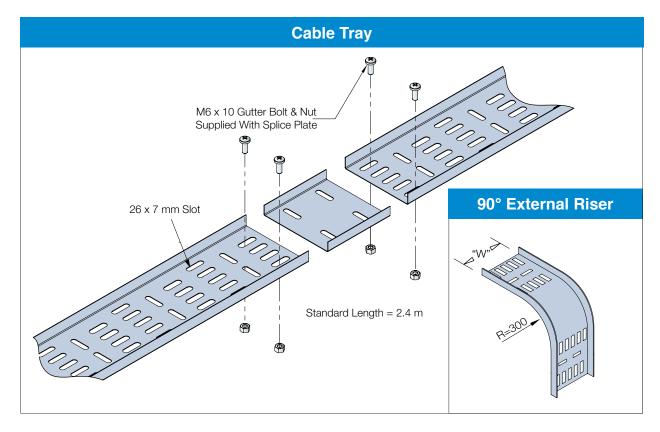
The finished product is constructed from a variety of material finishes and thicknesses ranging from; *Galvabond* 0.90 mm, *Hot Dip Gavanised* 0.90 mm, 316 Grade *Stainless Steel* 0.90 mm and *Aluminium* 2.0 mm. All of which offer the following standard features and options:

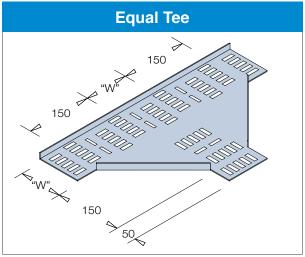
- 2.4 m length
- 14 mm side
- Perforated tie off points at running length and width wise consecutively offering multiple options for cable tie off and superior ventilation
- A full range of fabricated fittings to suit

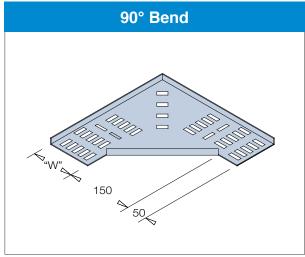
Custom sizes and painted finish available on request



# **Continuous Punch Cable Tray**







# **When Ordering**

Range	Туре	Wide	Std.Finish	Fastenings	Finish
CP CP = Continuous Punch Cable Tray	T T = Tray B = Bend 90° TT = Tee Equal C = Cross Equal RX = External Riser 90° RI = Internal Riser 90°	7 7 = 75 mm 10 = 100 mm 15 = 150 mm 23 = 230 mm 30 = 300 mm 45 = 450 mm	G = Galvabond H = Hot Dip Galvanised A = Aluminium S = Stainless Steel	K = Includes all Bolts and Nuts	PC-COL PC = COL = Paint Painted Finish to Kounis standard colour range
ORDERING EXAMPLE Painted Finish to speci		60 = 600 mm 75 mm wide Galvabond c/w Bolts	and Nuts.	NOTE: 45° bend/riser o (eg: 745 code) for alterr	



# **Light Duty Tray**

# **General Description**

The Kounis Group Light Duty Tray System was developed for use in any application where installers are looking for exceptional load bearing characteristics from a light series tray system.

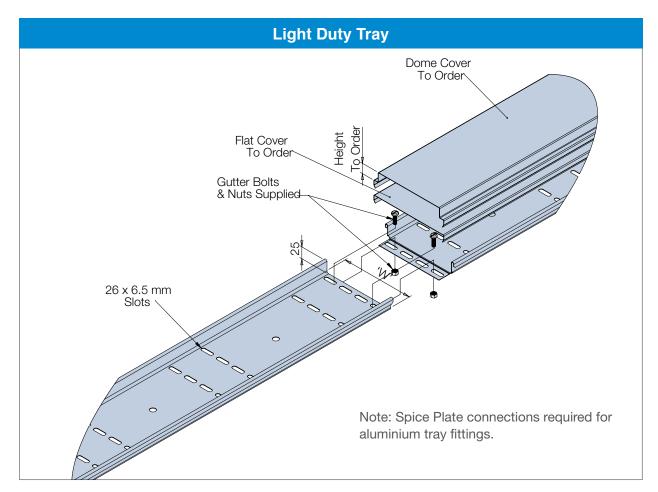
The finished product is constructed from a variety of material finishes and thicknesses; *Galvabond* 0.8 mm thick up to 300 mm wide and 1.0 mm for 450 and 600, *Hot Dip Galvanised* 0.8 mm thick up to 300 mm wide and 1.0 mm for 450 and 600, *Stainless Steel* 0.9 mm thick all sizes, *Aluminium* 2.0 mm thick all sizes. All of which offer the following standard features and options:

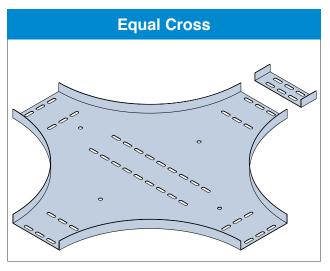
- 2.4 m length
- 25 mm side with rolled lip stiffening
- Self-splicing ends making for cost efficient installation by eliminating the need for additional materials
- Evenly spaced perforated tie off points
- Centre hang option
- A full range of fittings available (splice plates required)

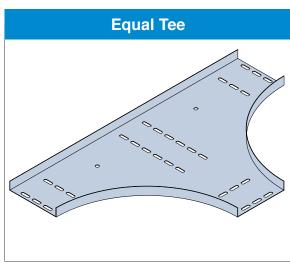
Painted finish and custom fittings available on request



# **Light Duty Tray**





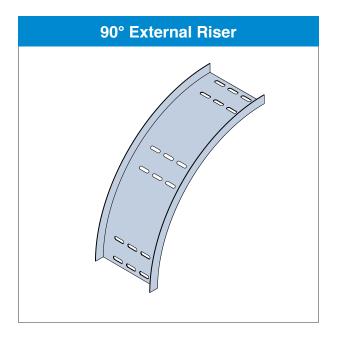


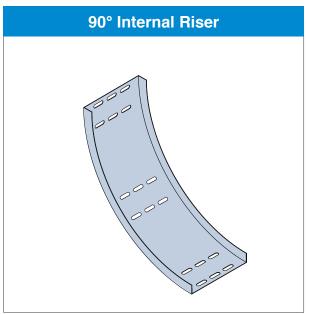
# **When Ordering**

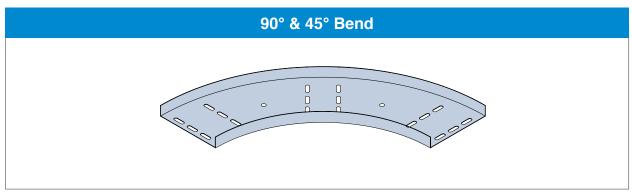
Range	Туре	Wide	Std.Finish	Fastenings	Finish
L	DT	7	G	K	PC-COL
L = Light Duty Cable Tray	DT = Tray T = Tee Equal C = Cross Equal FC = Flat Cover DC = Domed Cover (height made to order) P = Spice Plate	7 = 75 mm 10 = 100 mm 15 = 150 mm 23 = 230 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm	G = Galvabond H = Hot Dip Galvanised A = Aluminium S = Stainless Steel	K = Includes all Splice Plates Bolts and Nuts	PC-COL = Paint Painted Finish to Kounis standard colour range
, ,			NOTE: Unequal Tees a firm order.	and Crosses made to	

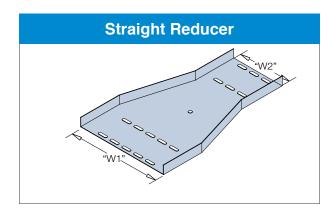


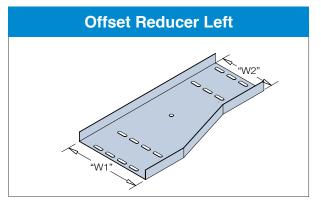
# **Light Duty Tray**











# When Ordering

Range	Туре	Wide	Std.Finish	Fastenings	Finish
L	В	7	G	K	PC-COL
L = Light Duty Cable Tray	B = Bend 90D RX = External Riser 90° RI = Internal Riser 90° SR = Straight Reducer LR = Left Reducer RR = Right Reducer (see notes)	7 = 75 mm 10 = 100 mm 15 = 150 mm 23 = 230 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm	G = Galvabond H = Hot Dip Galvanised A = Aluminium S = Stainless Steel	K = Includes all Splice Plates Bolts and Nuts	PC-COL = Paint Painted Finish to Kounis standard colour range
				NOTE: 45° bend/riser of (eg: 745 code) for alter	



# **CT Heavy Duty Cable Tray**

# **General Description**

The Kounis Group CT Heavy Duty Cable Tray System was developed for use in mining and offshore applications and has been designed for use in demanding locations where additional strength and durability are required due to extreme winds.

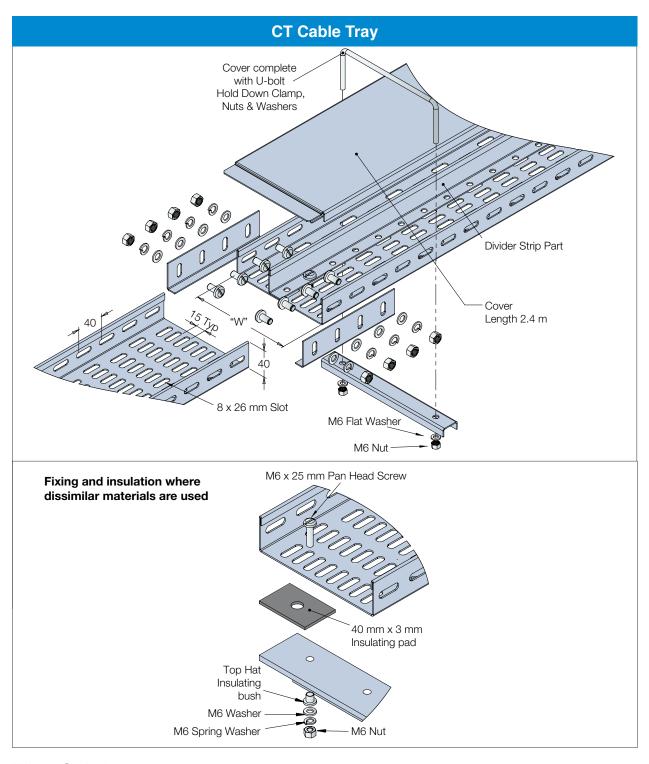
The finished product is constructed from 1.6 mm base material of which there are four options; *Mild Steel* with post production *Hot Dip Galvanised* surface treatment, *Galvabond*, 316 Grade *Stainless Steel* and *Aluminium*. All of which offer the following features:

- 2.4 m length
- 40 mm side
- Double folded top flange giving extra load bearing characteristics with no sharp edges
- Perforated tie off points at 40 mm continuous centres running length wise enabling wider cable bandings to be used as well as offering superior ventilation
- A full range of fabricated fittings to suit
- Heavy duty covers can be supplied complete with clamp rod fixing brackets

Custom sizes and painted finish available on request.



# **CT Heavy Duty Cable Tray**

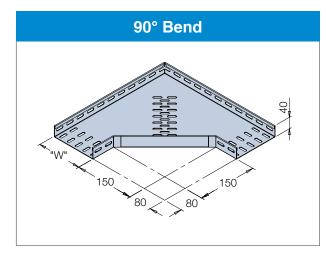


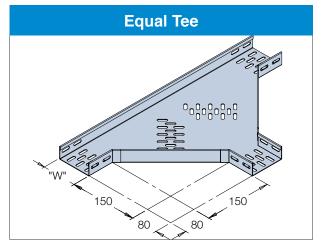
### **When Ordering**

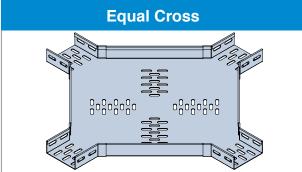
Range	Туре	Wide	Std.Finish	Fastenings	Finish
CT	T	7	G	K	PC-COL
CT = Heavy Duty Cable Tray	T = Tray FC = Flat Cover ST = Slotted Divider P = Splice Plate SPAD = Insulating Pad SBUSH = Insulating Bush S-BOLT = M6 P/Hd screw	7 = 75 mm 10 = 100 mm 15 = 150 mm 23 = 230 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm	G = Galvabond H = Hot Dip Galvanised A = Aluminium S = Stainless Steel	K = Includes all Splice Plates Bolts and Nuts	PC-COL = Paint Painted Finish to Kounis standard colour range
ORDERING EXAMPLE SHOWN: CT Heavy Duty Tray 75 mm wide Galvabond c/w splice plates, Bolts and Nuts. Painted finish to specification colour.					

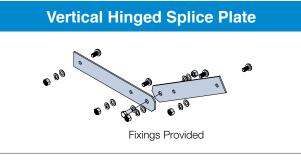


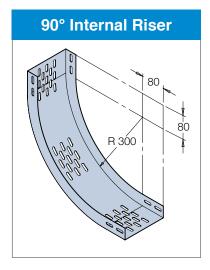
# **CT Heavy Duty Cable Tray Fittings**

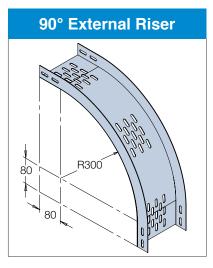


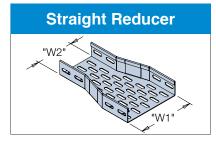


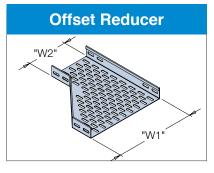












### **When Ordering**

Range	Туре	Wide	Std.Finish	Fastenings	Finish
CT	В	7	G	K	PC-COL
CT = Heavy Duty Cable Tray	B = Bend 90° TT = Tee Equal C = Cross Equal VP = Vertical Hinge Splice RI = Internal Riser 90° SR = Straight Reducer LR = Left Reducer RR = Right Reducer (see notes)	7 = 75 mm 10 = 100 mm 15 = 150 mm 23 = 230 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm	G = Galvabond H = Hot Dip Galvanised A = Aluminium S = Stainless Steel	K = Includes all Splice Plates Bolts and Nuts	PC-COL = Paint Painted Finish to Kounis standard colour range
ORDERING EXAMPLE SHOWN: CT Heavy Duty Tray 90° Bend 75mm wide Galvabond c/w Splice Plates Bolts and Nuts. Painted Finish to specification colour. NOTE: Reducers to show large width first i.e. 300 to 150 (3015).				NOTE: 45° bend/riser (eq: 745 code) for alter	



# **Ladder Tray**

## **General Description**

The Kounis Ladder Tray System was developed for use in commercial and industrial applications where the installer demands a cost efficient site adaptable cable management system. One that can offer enough strength and durability to carry light to heavier duty cabling whilst maintaining an economical support span to minimise support steelwork costs.

### **Material and Finish**

The finished product is constructed from 0.75 mm thick base material with finish options of:

- 1. Stock Galvabond for internal use.
- 2. Mild Steel with a post-production Hot Dip Galvanised finish for external use or to suit some demanding internal conditions.

### **Tray Loading Capacity Options**

There are three Kounis Ladder tray options to suit your particular project. Starting from our KT2 which has its own individual base pattern and lower side profile, so giving a versatile tray to suit tight installation areas. The KT3 and KT5 both have identical base patterns but increased tray depths give increased loading capacity. For details of all loading and deflections please refer to our catalogue graphs.

System options are:

KT2 Ladder Tray System - 45mm high sided tray 40 mm usable depth. Light Duty

KT3 Ladder Tray System - 50mm high sided tray 45 mm usable depth. Medium Duty

KT5 Ladder Tray System - 85mm high sided tray 80 mm usable depth. Heavy Duty

### **Tray Features and Options**

All of the trays feature the following features or options:

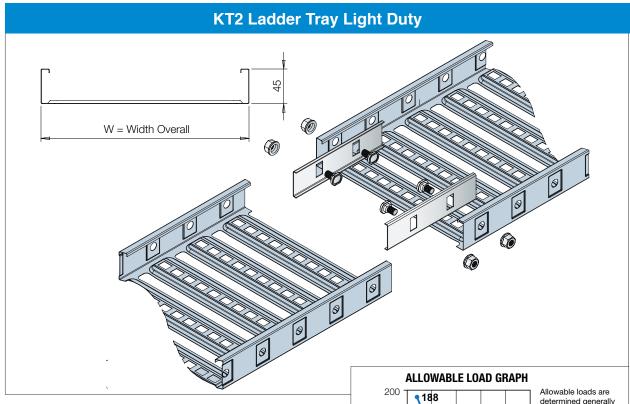
- 3m lengths.
- Kit parts and fixings to give site fabricated direction changes, junctions or size changes.
- Perforated tie off points at 20mm continuous centres enabling maximum use of the tray width as well as offering superior ventilation.
- Drain holes to aid the dissipation of moisture in external applications.
- Straight Flat or Peak Type covers to suit.
- Barrier Strip for multiple service segregation available.
- A full range of pre-fabricated light or heavy trapeze supports.
- Powder coat finish to suit clients specified colour or to Kounis standard colour range.

### Kounis Group Standard Colour Range

Optional Polyester Powder Coat finishes can be provided from our standard stock colours. Our range is White, Black, Orange and Grey Hammertone. Other colours or epoxy powder coat finish can be provided to firm orders.



# **KT2 Ladder Tray Light Duty**

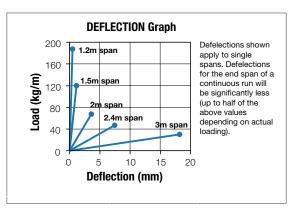


# **Specification**

Class Designation:	Cable ladder tray Light Duty Type KT2
Material:	Steel sheet.
Finish:	Standard Galvabond other finishes to firm orders.
Side Depth:	45 mm high sided tray.
Stock Length:	3000 mm standard, joining together by a pair of bolt on splice plates supplied separately.
Stock Widths:	150 mm, 300 mm, 450 mm & 600 mm standard widths.
Fittings:	A full range of ancillaries are available to site manufacture fittings e.g. bend, risers, tees, crosses & reducers.
Radius:	Formed on site to suit requirements with a minimum 300 mm radius.
Accessories:	Flat or peak covers available for trays lengths, Barrier strips and support brackets.

### 

Allowable loads are determined generally in accordance with NEMA requirements and verified by testing. Safety factor = 1.5 over collapse load for single span.

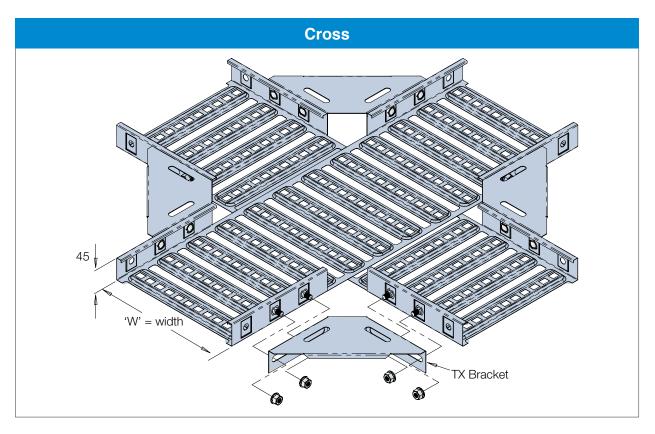


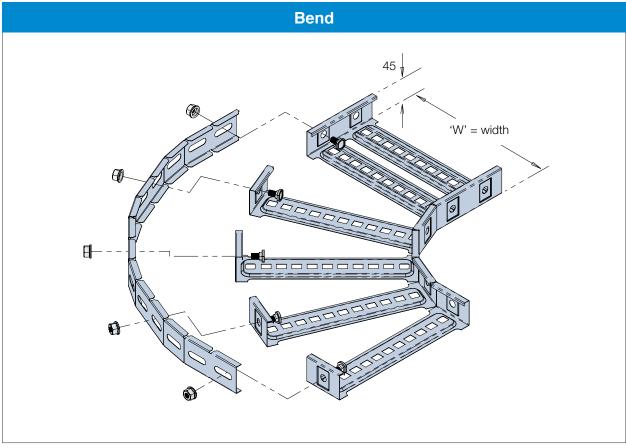
### When Ordering

Range	Туре	Wide	Std.Finish	Fastenings	Finish	
KT	2	15	G	K	PC-COL	
KT = Ladder Tray	2 = 45 mm High Side Light Duty	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm	G = Galvanised H = Hot Dip Galvanised	Splice Plates, Bolts and Nuts	PC-COL = paint Painted finish to Kounis standard colour range	
ORDERING EXAMPLE SHOWN: Ladder Tray KT2 Light Duty 45 mm high 150 mm wide Galvabond c/w Splice plates, Bolts and Nuts.						



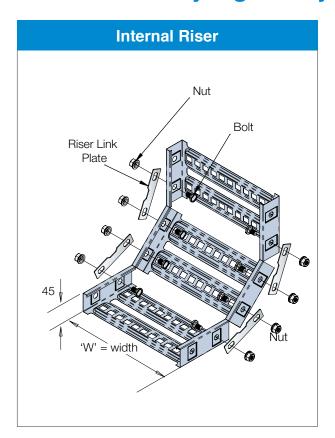
# **KT2 Ladder Tray Light Duty Assembly Instructions**

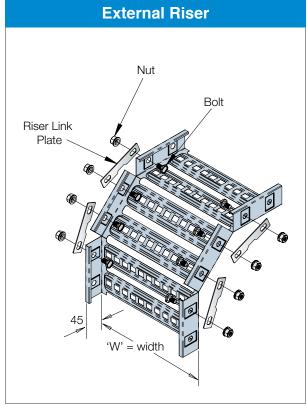


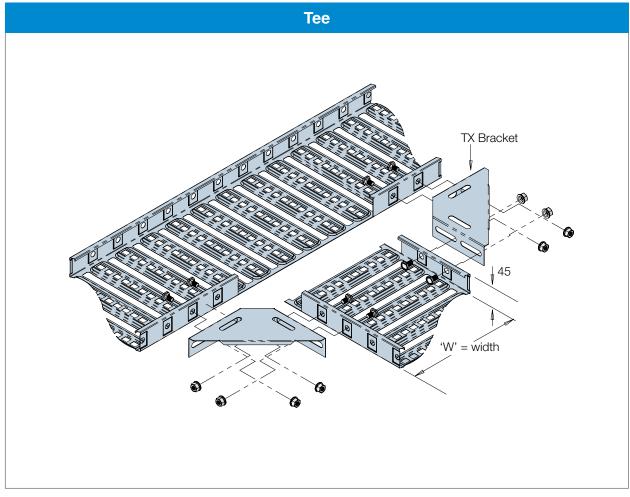




# **KT2 Ladder Tray Light Duty Assembly Instructions**

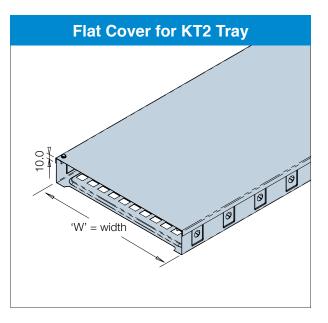








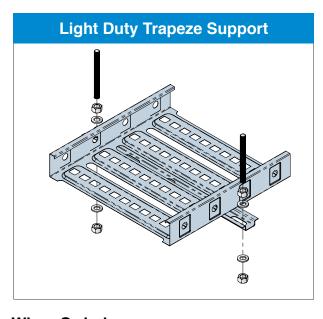
# **KT2 Ladder Tray Covers and Trapeze Supports**





### **When Ordering**

Range	Туре	Wide	Std.Finish	Fastening	Finish	
KT2	FC	15	G		PC-COL	
KT2 = KT2 Ladder Tray	FC = Flat Cover PC = Peak Cover	30 = 300 mm 45 = 450 mm	G = Galvabond Thk.0.75 mm H = Hot Dip Galvanised Thk. 1.0 mm 150-300W Thk. 1.2 mm 450-600W	Tek Screw fixings can be supplied separately	PC-COL = Paint Painted finish to Kounis standard colour range	
ORDERING EXAMPLE SHOWN: Ladder Tray KT2 Flat Cover 150 mm wide Galvabond Painted finish Painted Finish to specification colour.						



# Refer to accessories for KT2 Hold-Down Clamps

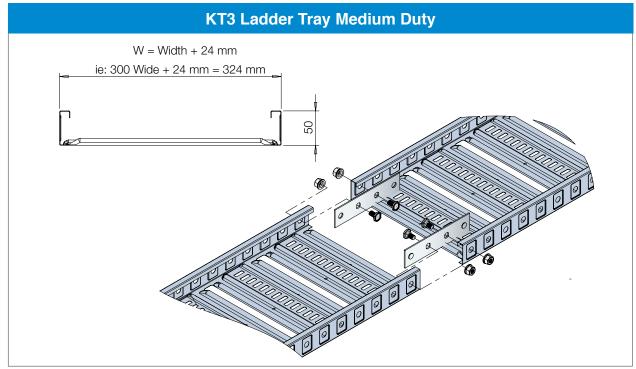
# **When Ordering**

Range	Туре	Wide	Finish		
K	LTS	15	G		
K = Ladder Tray Brackets NOTE: Recommended for KT2 Ladder Tray	LTS = Light Duty Supports HTS = Heavy Duty Supports	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm	G = Galvabond H = Hot Dip Galvanised Z = Zinc Plated		
ORDERING EXAMPLE SHOWN: Ladder Tray Light Duty Support 150 mm wide					

Note: Recommended M10 hanger drop rods and fastenings. Please refer to our K-Strut and fixings section for a full range to suit your particular installation.

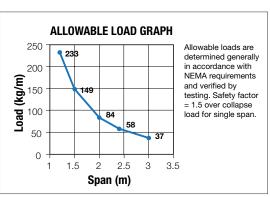


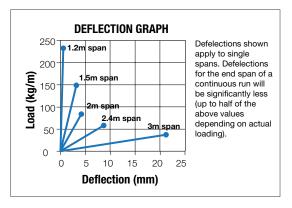
# **KT3 Ladder Tray Medium Duty**



### **Specification**

Class Designation:	Cable ladder tray Medium Duty Type KT3		
Material:	Steel sheet.		
Finish:	Standard Galvabond other finishes to firm orders.		
Side Depth:	50 mm high sided tray.		
Stock Length:	3000 mm standard, joining together by a pair of bolt on splice plates supplied separately.		
Stock Widths:	150 mm, 300 mm, 450 mm & 600 mm standard widths.		
Fittings:	A full range of ancillaries are available to site manufacture fittings e.g. bend, risers, tees, crosses & reducers.		
Radius:	Formed on site to suit requirements with a minimum 300 mm radius.		
Accessories:	Flat or peak covers available for trays lengths, Barrier strips and support brackets.		



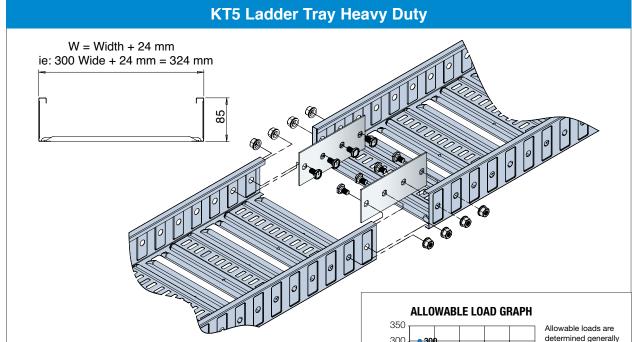


### When Ordering

	•					
Range	Туре	Wide	Std.Finish	Fastenings	Finish	
KT	3	15	G	K	PC-COL	
KT = Ladder Tray	3 = 50 mm High Side Medium Duty	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm	G = Galvanised H = Hot Dip Galvanised		PC-COL = paint Painted finish to Kounis standard colour range	
ORDERING EXAMPLE SHOWN: Ladder Tray KT3 Medium Duty 50 mm high 150 mm wide Galvabond c/w Splice plates, Bolts and Nuts Painted Finish to specification colour.						

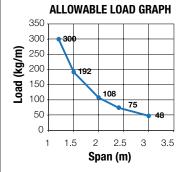


# **KT5 Ladder Tray Heavy Duty**

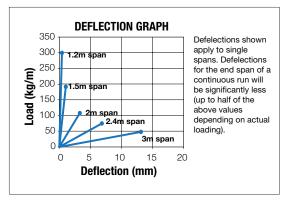


#### **Specification**

Olasa Basismatiana	Cable ladder tray Heavy Duty Type KT5
Class Designation:	Cable ladder tray fleavy buty Type KTO
Material:	Steel sheet.
Finish:	Standard Galvabond other finishes to firm orders.
Side Depth:	85 mm high sided tray.
Stock Length:	3000 mm standard, joining together by a pair of bolt on splice plates supplied separately.
Stock Widths:	150 mm, 300 mm, 450 mm & 600 mm standard widths.
Fittings:	A full range of ancillaries are available to site manufacture fittings e.g. bend, risers, tees, crosses & reducers.
Radius:	Formed on site to suit requirements with a minimum 300 mm radius.
Accessories:	Flat or peak covers available for trays lengths, Barrier strips and support brackets.



Allowable loads are determined generally in accordance with NEMA requirements and verified by testing. Safety factor = 1.5 over collapse load for single span.

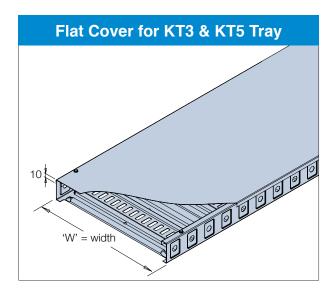


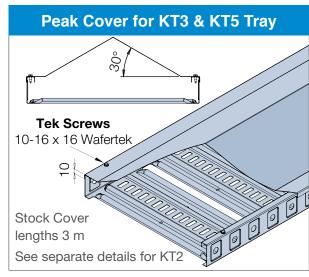
#### **When Ordering**

Range	Туре	Wide	Std. Finish	Fastenings	Finish
KT	5	15	G	K	PC-COL
KT = Ladder Tray	5 = 85 mm High Side Heavy Duty	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm	G = Galvabond H = Hot Dip Galvanised	K = Includes all Splice Plates, Bolts and nuts Standard Zinc Plate or Galvanised	PC-COL = Paint Painted finish to Kounis standard colour range
ORDERING EXAMPLE SHOWN: Ladder Tray KT5 Heavy Duty 85 mm high 150 mm wide Galvabond c/w Splice plates, Bolts and Nuts Painted Finish to specification colour.					



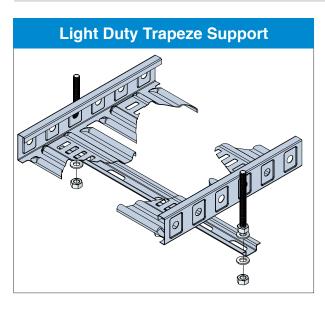
# **KT3 and KT5 Ladder Tray Covers and Trapeze Supports**

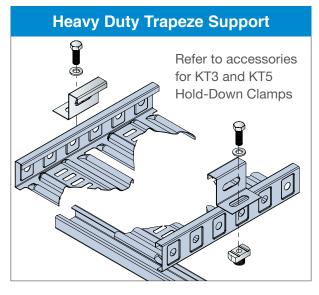




#### When Ordering

	•				
Range	Туре	Wide	Std.Finish	Fastening	Finish
KT	FC	15	G		PC-COL
KT = Ladder Tray	FC = Flat Cover PC = Peak Cover	30 = 300 mm	G = Galvabond Thk.0.75 mm H = Hot Dip Galvanised Thk. 1.0 mm 150-300W Thk. 1.2 mm 450-600W	Tek Screw fixings can be supplied separately	PC-COL = Paint Painted finish to Kounis standard colour range
ORDERING EXAMPLE SHOWN: Ladder Tray Flat Cover 150mm wide Galvabond finish. Painted Finish to specification colour					





#### **When Ordering**

Range	Туре	Wide	Finish
K	LTS	15	G
K = Ladder Tray Brackets NOTE: Recommended both KT3 and KT5	LTS = Light Duty Supports HTS = Heavy Duty Supports	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm	G = Galvabond H = Hot Dip Galvanised Z = Zinc Plated
ORDERING EXAMPLE Galvabond finish.	SHOWN: Ladder Tray	Light Duty Support	150 mm wide

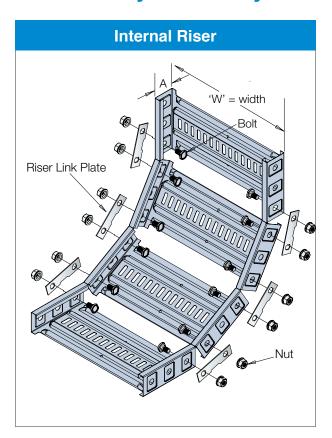
Note: Recommended M10 hanger drop rods and fastenings. Please refer to our K-Strut and fixings section for a full range to suit your particular installation.

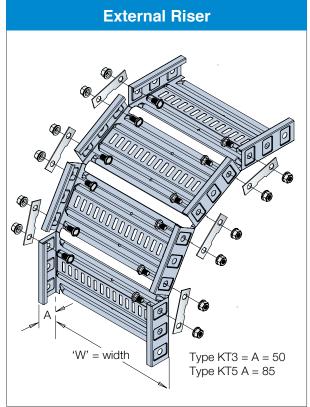
QTY. OF BENDS FROM 3 m LENGTH RADIUS PLATE		
WIDTH	BEND 90°	
150 mm	4 per Length	
300 mm	3 per Length	
450 mm	2 per Length	
600 mm	2 per Length	

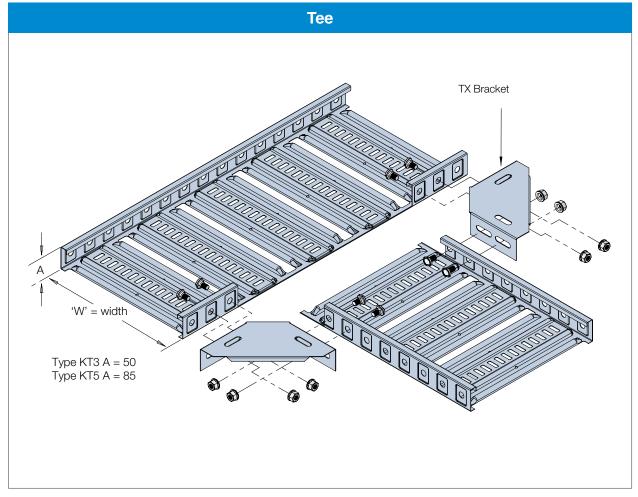
QTY. OF FITTINGS FROM 3 m TRAY LENGTH			
WIDTH	BEND 90°	RISER 90°	TEES
150 mm	5	5	4
300 mm	5	5	3
450 mm	5	5	2
600 mm	5	5	2



# **Ladder Tray Assembly Instructions**

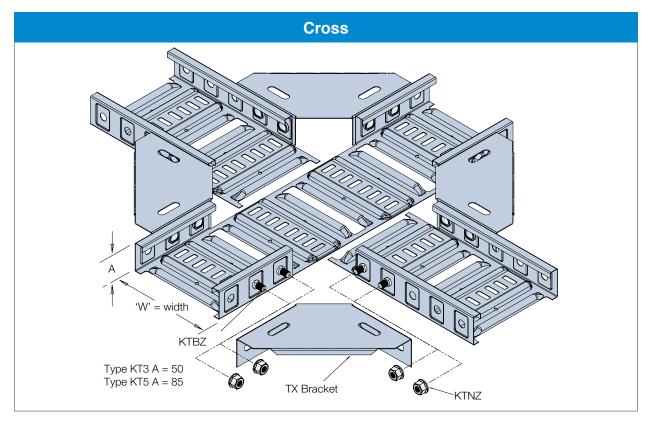


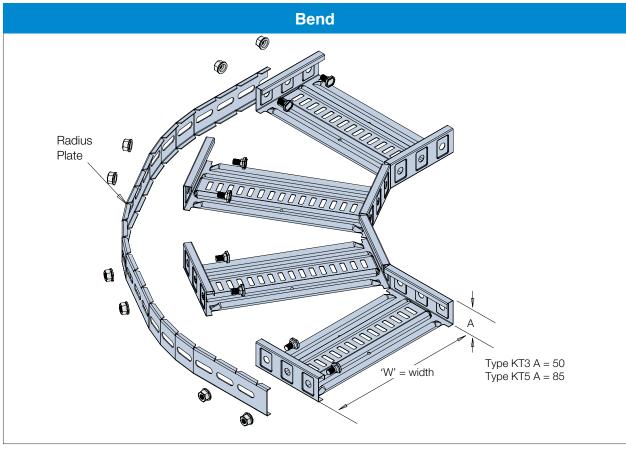






# **Ladder Tray Assembly Instructions**



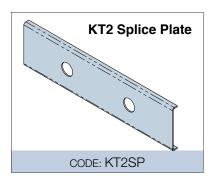


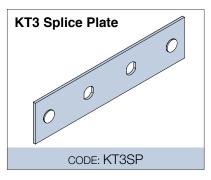
NOTE: KT3 and KT5 plates and brackets are not interchangeable.

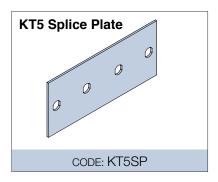


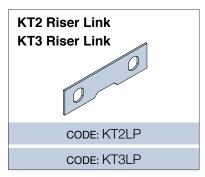
# **Ladder Tray Accessories**

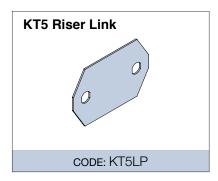
#### **Ladder Tray Accessories**

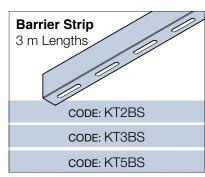


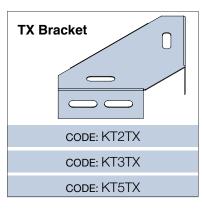


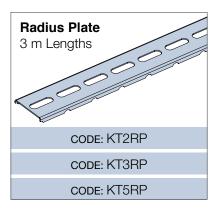


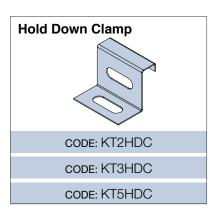
















#### **When Ordering**

Range	Туре	Accessories	Std.Finish	Fastenings	Finish
KT	2	SP	G		PC-COL
KT = Ladder Tray	2 = 45 mm High Side Light Duty 3 = 50 mm High Side Medium Duty 5 = 85 mm High Side Heavy Duty	SP = Splice Plate HDC = Hold Down Clamp LP = Link Plate BS = Barrier Strip TX = Tee/Cross Bracket RP = Radius Plate B = Tray Bolt N = Tray Nut	G = Galvabond H = Hot Dip Galvanised Z = Zinc Plated	NOTE: Tray Bolt and Tray Nuts are supplied separately Standard Zinc Plate or Galvanised	PC-COL = Paint Painted Finish to Kounis standard colour range
ORDERING EXAMPLE SHOWN: Ladder Tray KT2 Light Duty 45 mm high Splice Plates Galvabond Painted Finish to specification colour.					



#### Cable Mesh

#### **General Description**

The Kounis Group Cable Mesh System was developed for use in commercial and industrial applications where the installer demands a cost efficient site adaptable cable management system that can offer enough strength and durability to carry light to medium duty cables whilst maintaining an economical support span.

The finished product is constructed from 3.8 mm wire of which there are two finish options; *Zinc Plated* and *Hot Dip Galvanised*. System options are

KM54 Cable Mesh System - 54 mm high sided tray

KT105 Cable Mesh System – 104 mm high sided tray

All of which offer the following features or options:

- 3 m length
- Site fabricated fittings for all required direction, junction or size changes
- Mesh tie off spacing at 50 mm W x 100 mm L making cable tracing and identification easy whilst enabling cable entry exit at any point
- Indented top lip wire making an all smooth edge system to ensure no damage is made to the cable when they are being installed
- Mesh spacing allows exceptional ventilation and minimises the likelihood of vermin infestation
- Tab loc joining system makes the install easy whilst eliminating the need for multiple tools
- Tab loc trapeze system eliminates the need for additional accessories making for a cost efficient install

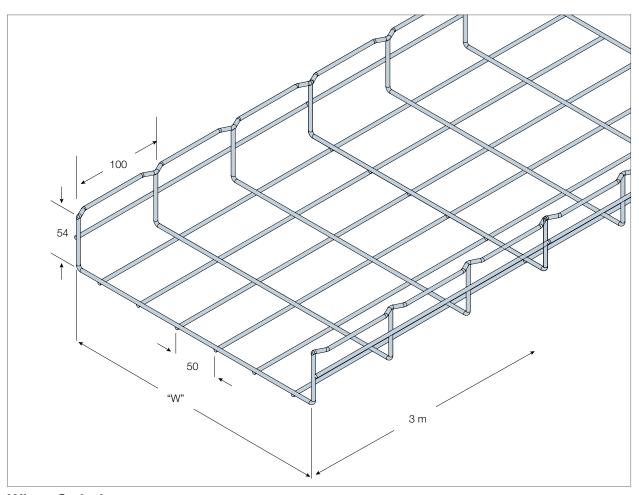
Painted finish available on request.

#### Kounis Group Standard Colour Range

Optional Polyester Powder Coat finishes can be provided from our standard stock colours. Our range is White, Black, Orange and Grey Hammertone. Other colours or epoxy powder coat finish can be provided to firm orders.



## Cable Mesh - 54 mm

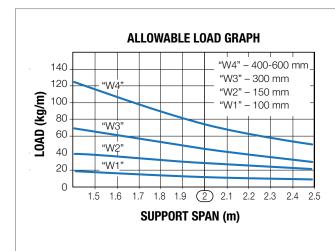


#### When Ordering

Range	Туре	Wide	Finish
KM	54	10	Z
KM = Cable Mesh	54 = (54 mm High Side)	10 = 100 mm 15 = 150 mm 30 = 300 mm 40 = 400 mm 50 = 500 mm 60 = 600 mm	Z = Zinc Plated H = Hot Dip Galv P = Painted
ORDERING EXAMPLE SHOWN: Cable Mesh 54 mm High Side 100 mm Wide Zinc Plated			

DEPTH: 50 mm inside

LENGTH: 3 m

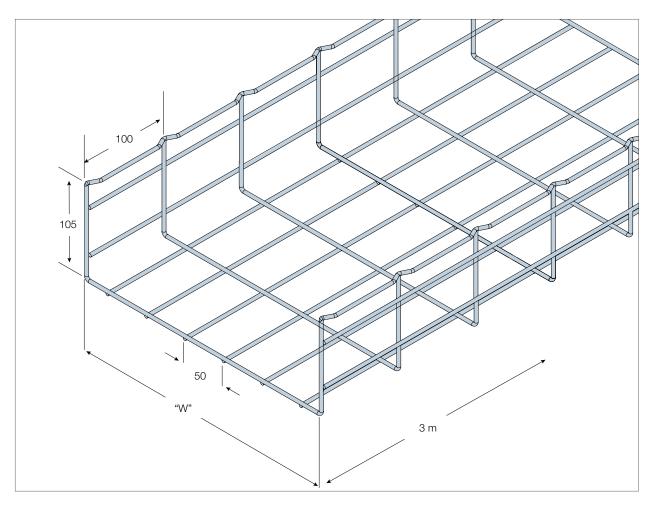


#### KM 54 Tray

The graph shows kg/m loading over a given Support Span to the range Kounis Cable Mesh. The resultant Mid-span deflections given are at a ratio of 1/200 of the span. The deflections are for tray selection only and can vary with positioning of connectors or site.



## Cable Mesh - 105 mm

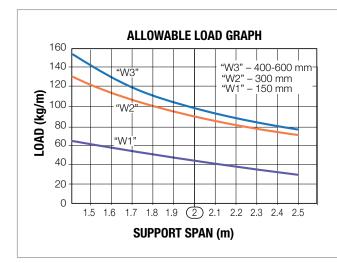


#### **When Ordering**

Range	Туре	Wide	Finish
KM	105	10	Z
KM = Cable Mesh	105 = (105 mm High Side)	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm	Z = Zinc Plated H = Hot Dip Galv P = Painted
ORDERING EXAMPLE SHOWN: Cable Mesh 104 mm High Side 100 mm Wide Zinc Plated			

DEPTH: 100 mm inside

LENGTH: 3 m

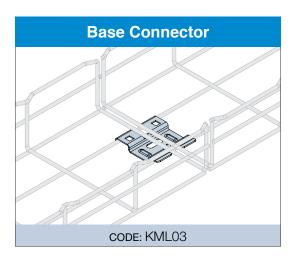


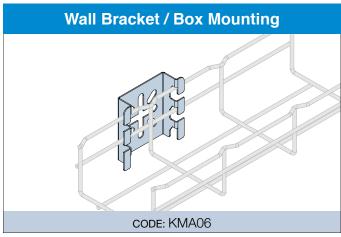
#### **KM 105 Tray**

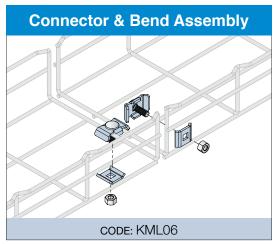
The graph shows kg/m loading over a given Support Span to the range Kounis Cable Mesh. The resultant Mid-span deflections given are at a ratio of 1/200 of the span. The deflections are for tray selection only and can vary with positioning of connectors.

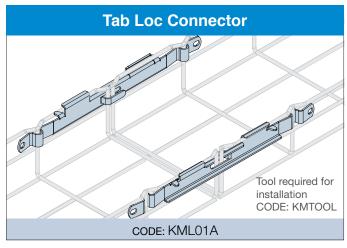


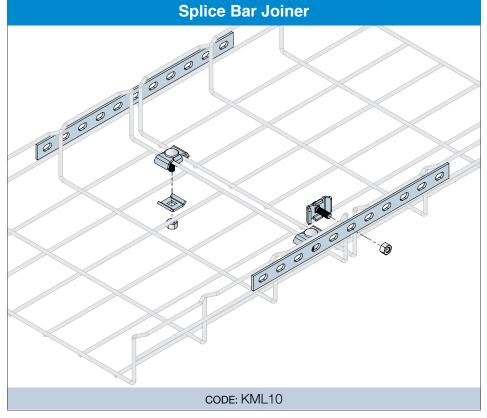
# **Cable Mesh Tray Accessories & Connectors**









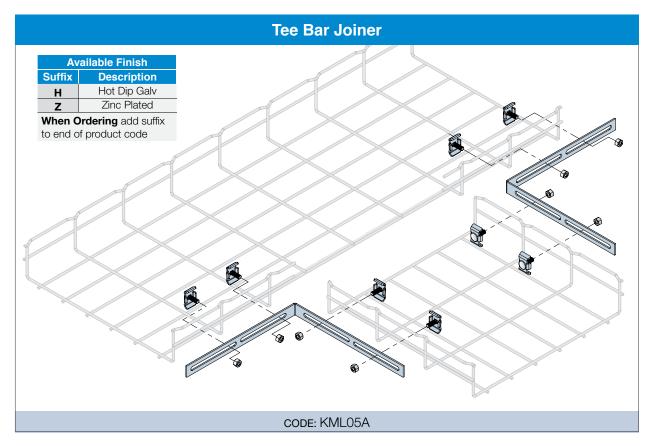


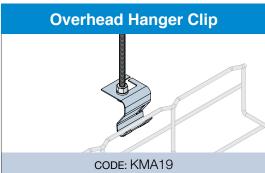
Available Finish		
Suffix Description		
H Hot Dip Galv		
<b>Z</b> Zinc Plated		
When Ordering add suffix		
to end of product code		

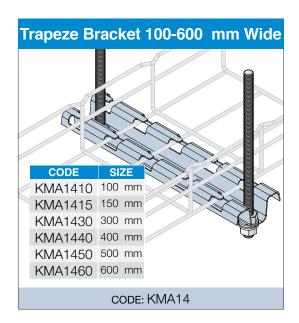
E.&O.E.

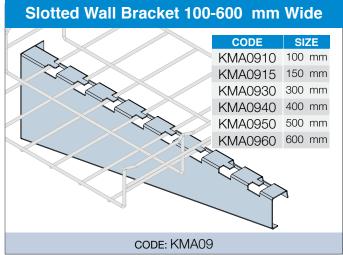


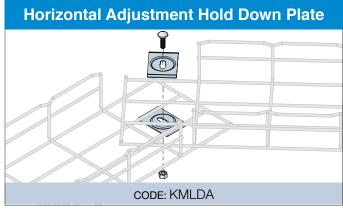
# **Cable Mesh Tray Accessories & Connectors**





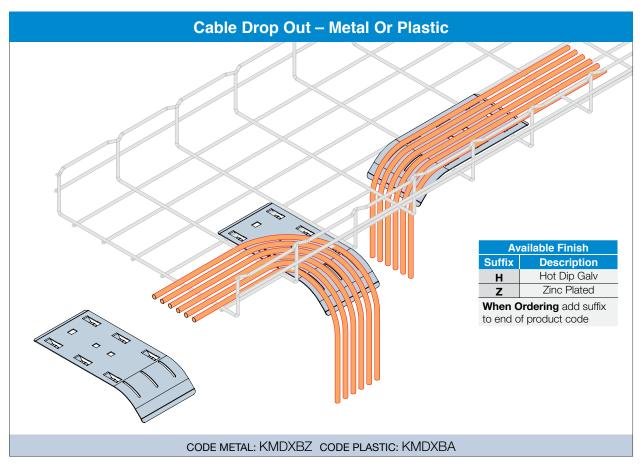


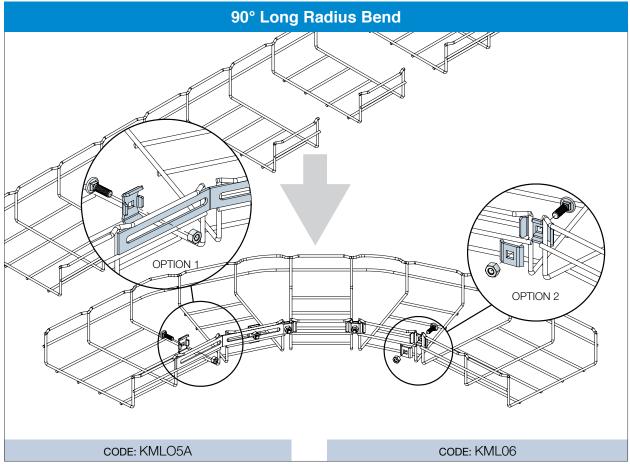




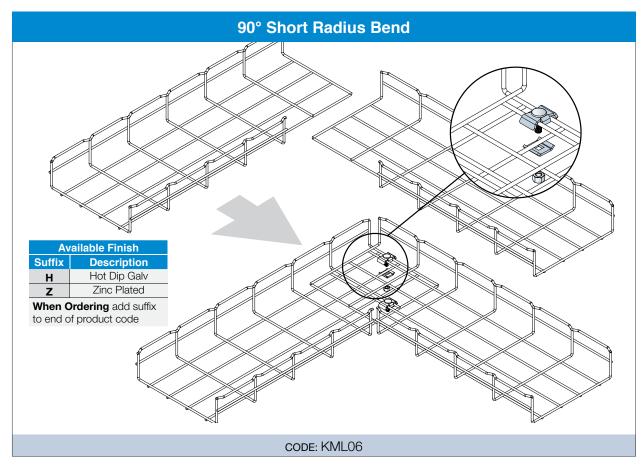


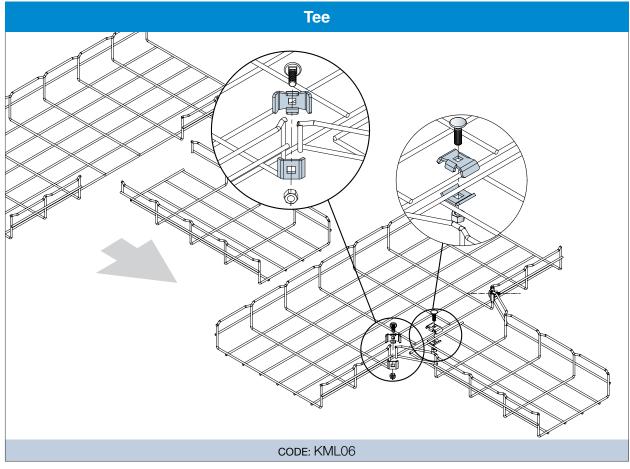
# **Cable Mesh Tray Accessories & Connectors**



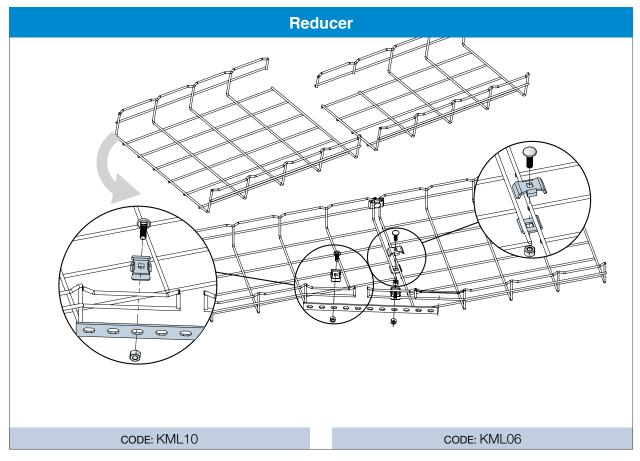


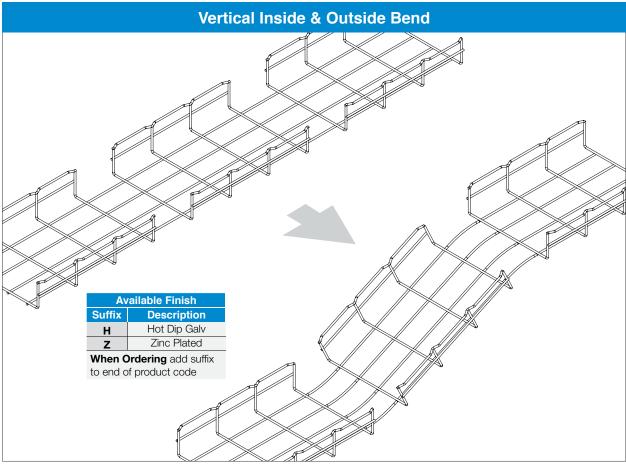




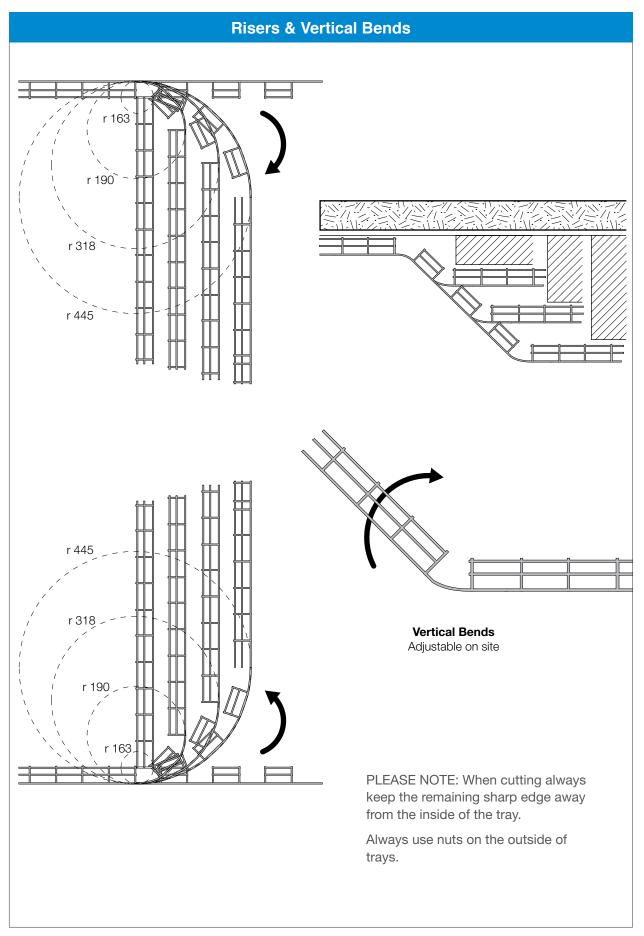












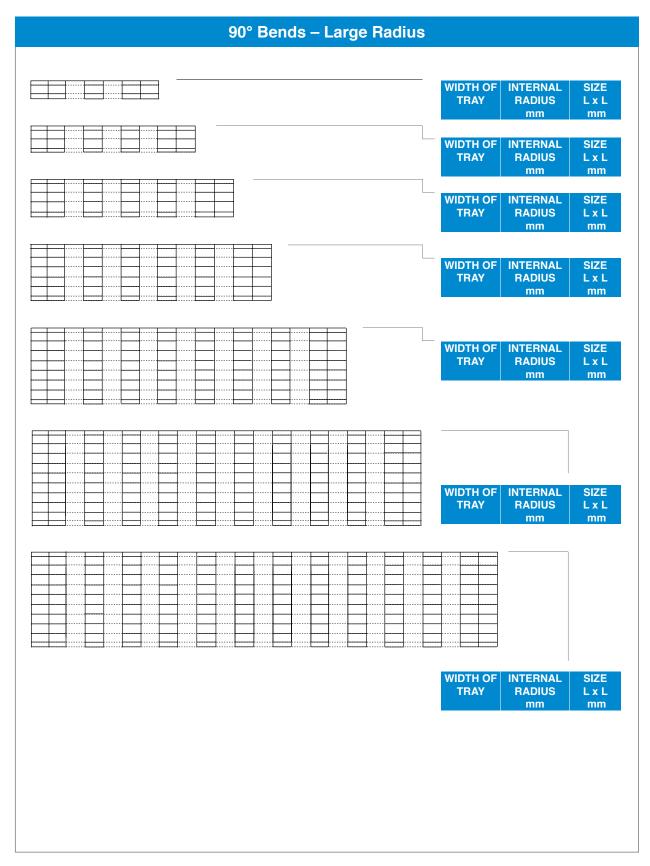


Wire trays can easily be formed into angles by simply cutting on-site the bottom and side wires. Cut the tray wires as shown on page 2:27 in the pattern belows. Angles such as 90° Short or Large Radius Bends, Tees, crosses, Reducers and Risers are easily formed on-site using standard wire trays, accessories and fixings.

90° Bends – Short Ra	dius
	WIDTH INTERNAL SIZE FIXINGS OF RADIUS L x L PER TRAY mm mm BEND
	WIDTH INTERNAL SIZE FIXINGS OF RADIUS L x L PER TRAY mm mm BEND
	WIDTH INTERNAL SIZE FIXINGS OF RADIUS L x L PER TRAY mm mm BEND
	WIDTH INTERNAL SIZE FIXINGS OF RADIUS L x L PER TRAY mm mm BEND
	WIDTH INTERNAL SIZE FIXINGS OF RADIUS L x L PER TRAY mm mm BEND
	WIDTH INTERNAL SIZE FIXINGS
	OF RADIUS LxL PER TRAY mm mm BEND
	WIDTH INTERNAL SIZE FIXINGS OF RADIUS L x L PER TRAY mm mm BEND



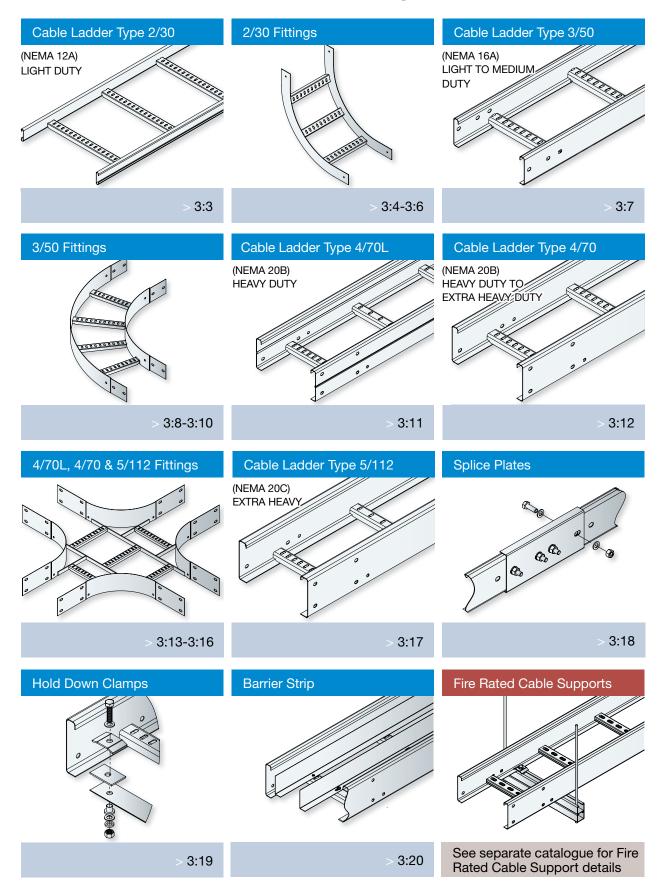
Wire trays can easily be formed into angles by simply cutting on-site the bottom and side wires. Cut the tray wires as shown on page 2:27 in the pattern belows. Large Radius Bends, are easily formed on-site using standard wire trays, accessories and fixings.







# **SECTION 3:** Cable Ladder Hot Dip Galvanised





## **Cable Ladder Hot Dip Galvanised**

#### **General Description**

The Kounis Group Hot Dip Galvanised Cable Ladder Systems are developed for use in commercial, industrial & mining applications.

Its superior support strength and open ventilation allows for effortless installation of electrical cables and or pipe work.

The finished product is constructed from mild Steel side rail sections and rungs welded at 300 mm continuous spacings, surface treatment is post production Hot Dip Galvanising.

This product range comprises of five system types to cover a wide range of requirements; *Type 2/30* Light Duty 65 mm Side (NEMA 12A), *Type 3/50* Medium to Heavy Duty 100 mm Side (NEMA 16A), *Type 4/70L* Heavy Duty 1.6 mm 130 mm Side (NEMA 20B), *Type 4/70* Heavy to Extra Heavy Duty 2.0 mm 130 mm Side (NEMA 20B) and *Type 5/112* Extra Heavy Duty 146 mm Side (NEMA 20C). All of which offer the following standard features:

- 6 m length
- Self-splicing Bend, Riser, Tee & Cross Fittings
- Rail in or rail out option (Type 2/30 is only available in Rail Out)
- Earthing holes at point of connection on straight lengths as well as fittings
- Channel type rung offering superior strength
- 25 mm rung tie off centres to allow maximum tie off options
- Engineer certification to withstand certain cyclonic conditions (only available for type 4/70 & 5/112, minimum installation requirements apply)

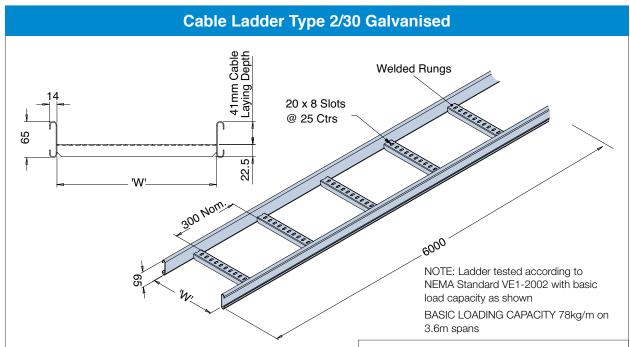
All fitting radius measurements are to the internal side rail, stock standard radius varies depending on cable ladder system type and branch standard. All other listed radius options are made to firm order.

Load capacities and deflection graphs are published by type and can be found on the straight length page for the associated cable ladder system.

Tested to NEMA VE1-2002 Standards, Full engineering details are available on request.

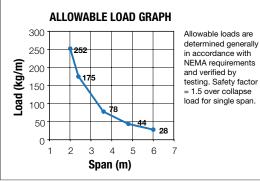


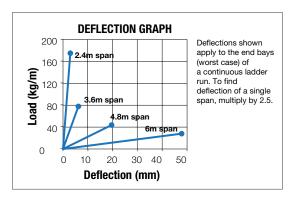
# Cable Ladder Light Duty Type 2/30 12A 1.6 mm Steel Galvanised



#### Specification

Specification	
Class Designation:	Cable ladder- light duty type 2/30.
Material:	Steel sheet.
Finish:	Hot dip galvanised after fabrication to: AS/NZS 4680 i.e.390gm/m² zinc, approximately 55µm.
Rung Spacing:	300mm spacing with slotted rungs standard
Side Depth:	65 mm high sided tray.
Inside Depth:	41 mm cable laying depth
Stock Length:	6000 mm standard joining together by a pair of quick fix bolt on splice plates supplied separately. No side rail drilling required.
Stock Widths:	150 mm, 300 mm, 450 mm & 600 mm standard widths.
Fittings:	A full range fitting are available e.g. bend, risers, tees, crosses & reducers.
Radius:	300mm radius for standard fittings. Other radius fittings are available and made to firm orders.
Accessories:	Flat or peak covers available for ladders & fittings. Barrier strips. Hold down clamps.



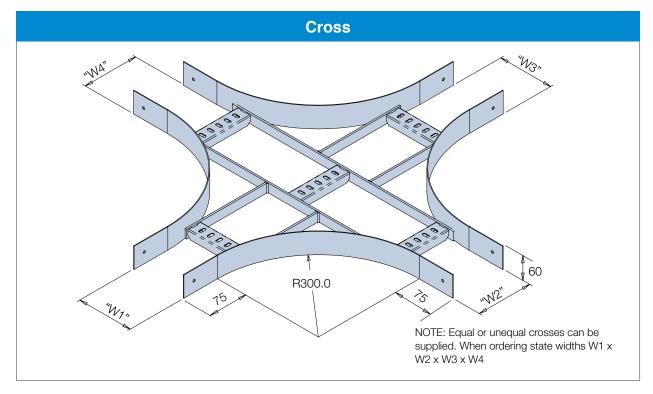


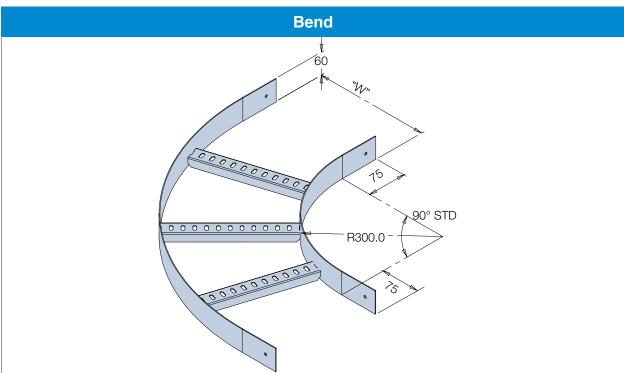
#### When Ordering

Range	Туре	Wide	Std.Finish	Fastenings	<b>Rail Direction</b>	Finish
2C	L	15	Н	K		PC-COL
2C = 2/30 65 mm High Side 1.6 mm Gauge	L = Straight 6 metre Length	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm	H = Hot Dip Galv	K = includes all required Splice plates with Bolts and nuts	Only supplied with Rail Out standard rail (see Rail note)	PC-COL = paint Painted finish to Kounis standard colour range
	ler (RO) is a Kounis standard supply code. Rail In ladder is	90 = 900 mm  Ordering example s Painted Finish to sp	shown: 2/30 Cable Lado pecification colour.	der 150mm wide x 6 n	netre HDG c/w Splice	Plates Bolts and Nuts.



# Cable Ladder 2/30 Fittings



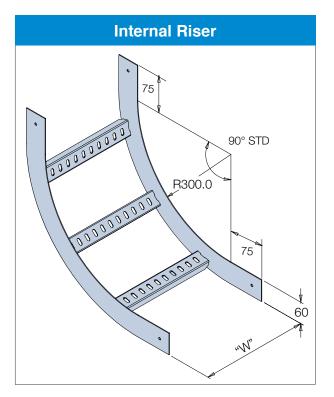


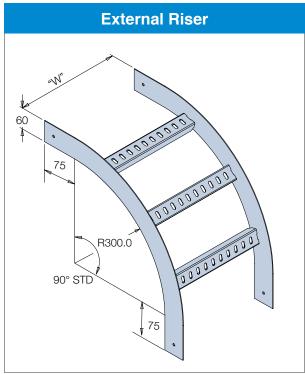
#### **When Ordering**

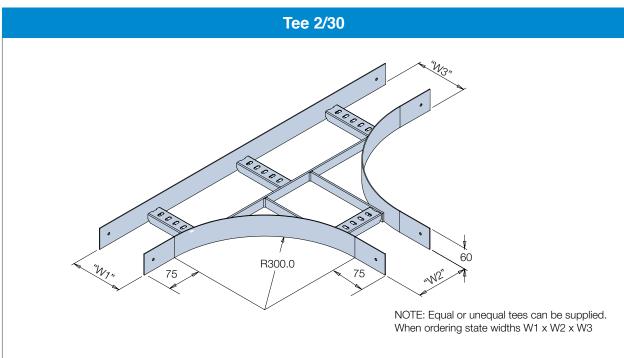
Range	Туре	Wide	Material	Fastenings	<b>Rail Direction</b>	Radius	Finish
2C	В	15	Н	K		3	PC-COL
2C = 2/30 65 mm High Side1.6 mm thk.	B = Bend 90° (see Ordering note) C = Cross Equal	30 = 300 mm	H = Mild Steel Hot Dip Galv S= 316 Stainless Steel A = Aluminium	K = includes all required Bolts and nuts	Only supplied with Rail Out standard rail	3 = 300 mm	PC-COL = paint Painted finish to Kounis standard colour range
RAIL NOTE: This Ladd standard and will not s Rail In ladder is not av	how in a supply code.		MPLE SHOWN: 2/30 Cable I specification colour	_adder 90° Bend 15	0mm wide HDG 300r	mm Radius c/w	Bolts and Nuts.



# Cable Ladder 2/30 Fittings





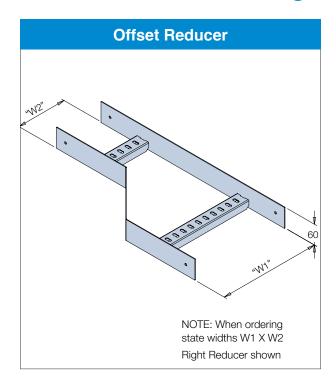


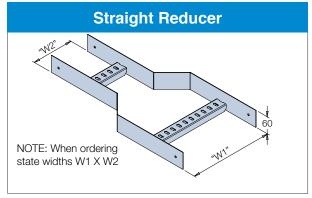
#### When Ordering

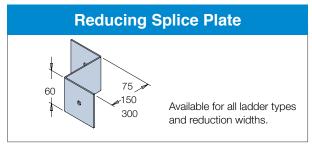
Range	Туре	Wide	Material	Fastenings	<b>Rail Direction</b>	Radius	Finish
2C	RI	15	Н	K		3	PC-COL
2C = 2/30 65mm High Side 1.6mm thk.	RI = Internal Riser 90° RX=External Riser 90° (see Ordering note) T = Tee Equal	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm	H = Mild Steel Hot Dip Galv	K = includes all required Bolts and nuts	Only supplied with Rail Out standard rail (see Rail note)	3 =300 mm	PC-COL = paint Painted finish to Kounis standard colour range
RAIL NOTE: This Lad standard and will not In ladder is not availa	show in a supply code. Rail	Nuts. Painted Fin	//PLE SHOWN: 2/30 Cat ish to specification colou I 60° option shown after	ır.			Radius c/w Bolts and



# **Cable Ladder 2/30 Fittings**





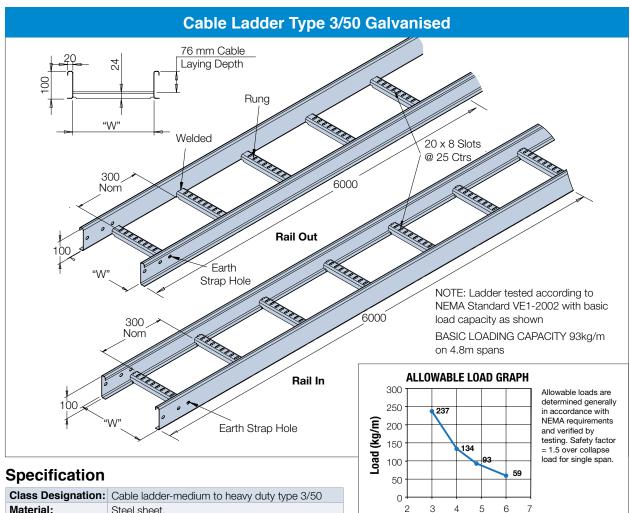


#### **When Ordering**

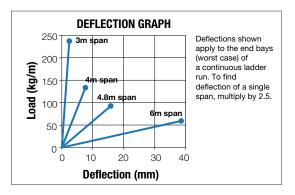
Range	Туре	Wide	Material	Fastenings	<b>Rail Direction</b>	Finish
2C	SR	3015	Н	K		PC-COL
High Side1.6 mm thk.	SR = Straight Reducer RR = Right Reducer LR = Left Reducer PR = Reducing Splice Plate (75-150-300 mm)	4530 = 450 to 300 mm 6045 = 600 to 450 mm	A = Aluminium	all required	with Rail Out (See Rail note)	PC-COL= paint Painted finish to Kounis standard colour range
	lder (RO) is a Kounis standard a supply code. Rail In ladder is	ORDERING EXAMPLE SHO Painted Finish to specificati	DWN: 2/30 Cable Ladder Straight on colour.	Reducer 300 to 1	50 mm wide HDG c/w	Bolts and Nuts.



# Cable Ladder Medium To Heavy Duty Type 3/50 16A 1.6 mm Steel Galvanised



•	
<b>Class Designation:</b>	Cable ladder-medium to heavy duty type 3/50
Material:	Steel sheet.
Finish:	Hot dipped galvanised after fabrication to AS/NZS 4680 i.e. 390 gm/m² zinc, approx, 55µm.
Rung Spacing:	300 mm spacings with slotted rungs standard.
Inside Depth:	76 mm cable laying depth.
Stock Length:	6000 mm standard, joining together by full strength splice plates.
Stock Widths:	150 mm, 300 mm, 450 mm & 600 mm standard other widths available by request.
Fittings:	A full range of fittings are available e.g. bends, risers, tees, crosses & reducers.
Radius:	300 mm radius standard for rail in. 450 mm radius standard for rail out. Other radii available by request.
Accessories:	Flat or peak covers available for ladders & fittings. Barrier strips. Hold down clamps.



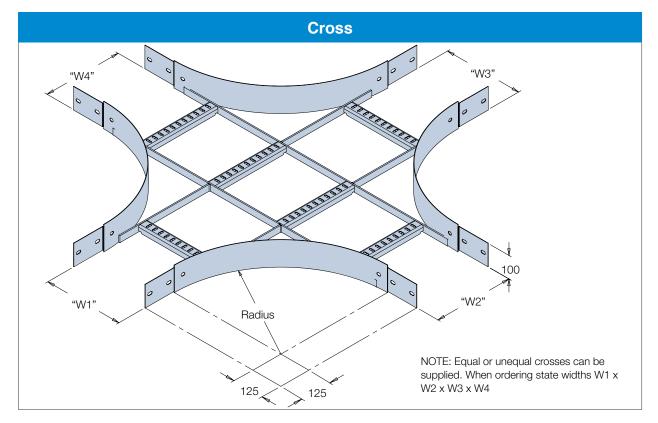
Span (m)

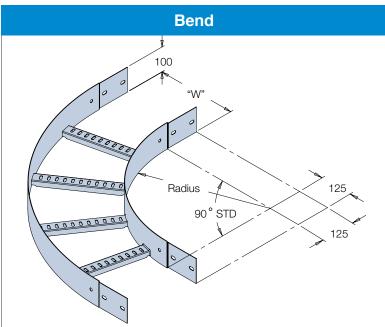
#### When Ordering

Range	Туре	Wide	Std.Finish	Fastenings	Rail Direction	Finish		
3C	L	15	Н	K	RI or RO	PC-COL		
3C = 3/50 100 mm High Side 1.6 mm Gauge		15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm	H = Hot Dip Galv	K = includes all required Splice plates with Bolts and nuts	RO = Rail Out	PC-COL = paint Painted finish to Kounis standard colour range		
NOTE: Rail In Ladder (RI) is a Kounis standard and will not show in a supply code. All Rail Out ladder will		90 = 900 mm   ORDERING EXAMPLE SHOWN: 3/50 Cable Ladder 150 mm wide x 6 metre HDG c/w Splice Plates Bolts and Nuts.						
have a RO suffix show	n in all supply codes.	Painted Finish to specification colour.						



# **Cable Ladder 3/50 Fittings**





#### **Standard Fitting Radius**

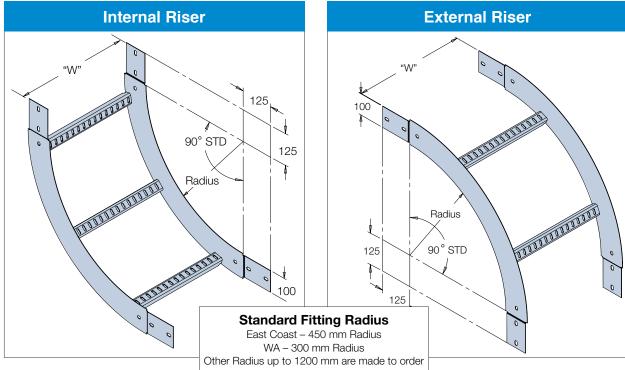
East Coast – 450 mm Radius WA – 300 mm Radius Other Radius up to 1200 mm are made to order

#### **When Ordering**

Range	Туре	Wide	Material	Fastenings	<b>Rail Direction</b>	Radius	Finish
3C	В	15	Н	K	RI or RO	3	PC-COL
3C = 3/50 100 mm High Side 1.6 mm thk.	B = Bend 90° C = Cross Equal (see Ordering note)	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm	H = Mild Steel Hot Dip Galv S = 316 Stainless Steel A = Aluminium	K = includes all required Bolts and Nuts	RI = Rail In RO = Rail Out (See Rail In note)	3 = 300 mm 4 = 450mm 6 = 600 mm	PC-COL = paint Painted finish to Kounis standard colour range
and will not show in a	r (RI) is a Kounis standard a supply code. All Rail a RO suffix shown in all	Painted Finish to Notes: 45, 30 & 6	//PLE SHOWN: 3/50 Cable La specification colour. 0° option shown after width ( ade to order (eg: W1-15 x W2	e.g.: 1545) code for 1	50 mm 45° Bend.		olts and Nuts.

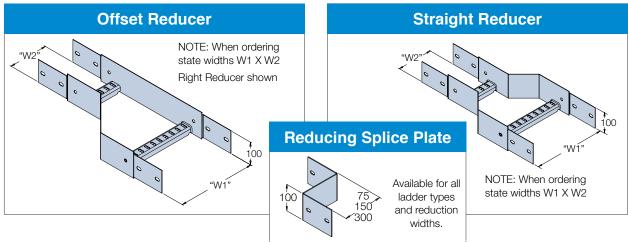


# **Cable Ladder 3/50 Fittings**



#### When Ordering

	•						
Range	Туре	Wide	Material	Fastenings	<b>Rail Direction</b>	Radius	Finish
3C	RI	15	Н	K	RI or RO	3	PC-COL
3C = 3/50 100mm High Side 1.6mm thk	RI = Internal Riser 90° RX=External Riser 90° (see Ordering note)	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm 90 = 900 mm	H = Mild Steel Hot Dip Galv S = 316 Stainless Steel A = Aluminium	K = includes all required Bolts and Nuts	RI = Rail In RO = Rail Out (See Rail In note)	4 = 450 mm	PC-COL = paint Painted finish to Kounis standard colour range
NOTE: Rail In Ladder (RI) is a Kounis standard and will not show in a supply code. All Rail Out ladder will have a RO suffix shown in all supply codes.  NOTE: Rail In Ladder (RI) is a Kounis standard and will not show in a supply code. All Rail Out ladder will have a RO suffix shown in all supply codes.  NOTE: 45, 30 & 60° option shown after size (e.g.: 1545) code for alternative 150 mm 45° Riser.					adius c/w Bolts and		

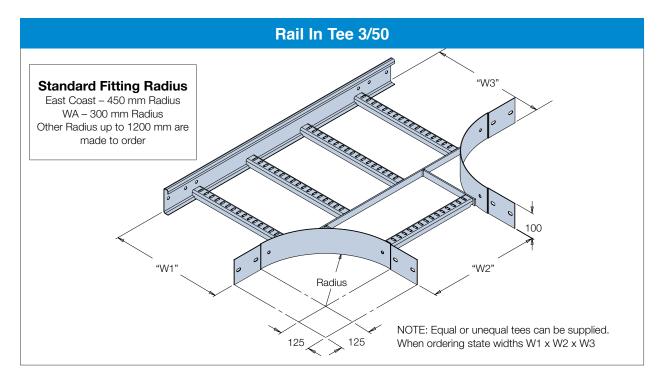


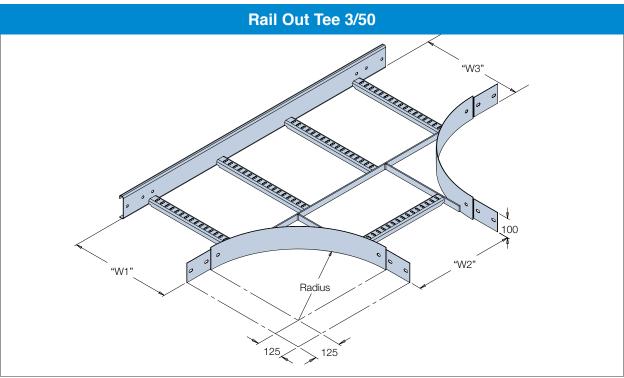
#### When Ordering

Range	Туре	Wide	Material	Fastenings	<b>Rail Direction</b>	Finish
<b>3C</b> 3C = 3/50 100 mm High Side 1.6 mm thk.	SR SR = Straight Reducer RR = Right Reducer LR = Left Reducer PR = Reducing Splice Plate (75-150-300 mm) (See Ordering note)	3015 3015 = 300 to 150 mm 4530 = 450 to 300 mm 6045 = 600 to 450 mm 7560 = 750 to 600 mm 9075 = 900 to 750 mm	H = Mild Steel Hot Dip Galv S= 316 Stainless Steel A = Aluminium	K K = includes all required Bolts and nuts	RI or RO RI = Rail In RO = Rail Out (See Rail In note)	PC-COL PC-COL= paint Painted finish to Kounis standard colour range
NOTE: Rail In Ladder (RI) is a Kounis standard and will not show in a supply code. All Rail Out ladder will have a RO suffix shown in all supply codes.			ORDERING EXAMPLE SHOWN: 3/50 Cable Ladder Straight Reducer 300 to 150 mm wide HDG c/w Bolts and Nuts. Painted Finish to specification colour.			



# **Cable Ladder 3/50 Fittings**



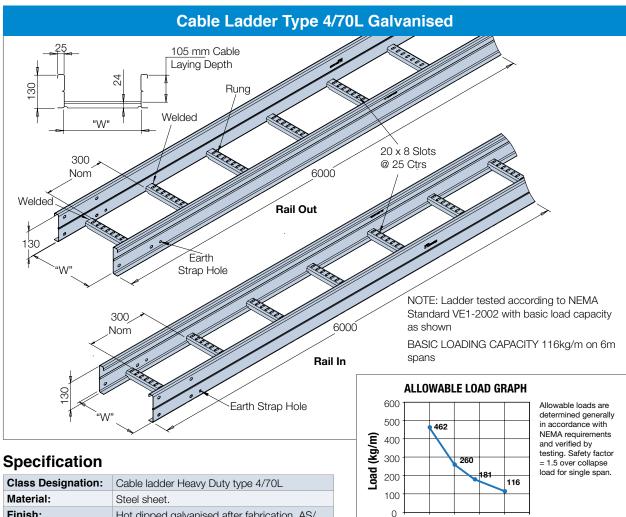


#### **When Ordering**

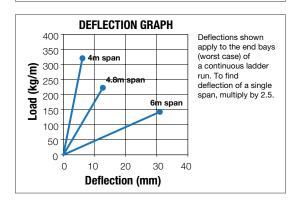
	•						
Range	Туре	Wide	Material	Fastenings	<b>Rail Direction</b>	Radius	Finish
3C	Т	15	Н	K	RI or RO	3	PC-COL
3C = 3/50 100 mm High Side 1.6 mm thk	T = Tee Equal (see Ordering note)	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm 90 = 900 mm	H = Mild Steel Hot Dip Galv S = 316 Stainless Steel A = Aluminium	K = Includes all required Bolts and Nuts	RO = Rail Out	4 = 450 mm	PC-COL= paint Painted finish to Kounis standard colour range
NOTE: Rail In Ladder (RI) is a Kounis standard and will not show in a supply code. All Rail Out ladder will have a RO suffix shown in all supply codes.						solts and Nuts.	



# Cable Ladder Heavy Duty Type 4/70L 20B 1.6 mm Steel Galvanised



•	
Class Designation:	Cable ladder Heavy Duty type 4/70L
Material:	Steel sheet.
Finish:	Hot dipped galvanised after fabrication. AS/ NZS 4680 i.e. 390 gm/m² zinc, approx, 55 µm.
Rung Spacing:	300 mm spacings with slotted rungs standard.
Inside Depth:	105 mm cable laying depth.
Stock Length:	6000 mm standard, joining together by full strength splice plates.
Stock Widths:	150 mm, 300 mm, 450 mm & 600 mm standard.
Fittings:	A full range of fittings are available e.g bends,risers,tees,crosses & reducers.
Radius:	300 mm radius standard for rail in. 450 mm radius standard for rail out. Other radii available by request.
Accessories:	Flat or peak covers available for ladders & fittings. Barrier strips. Hold down clamps.



Span (m)

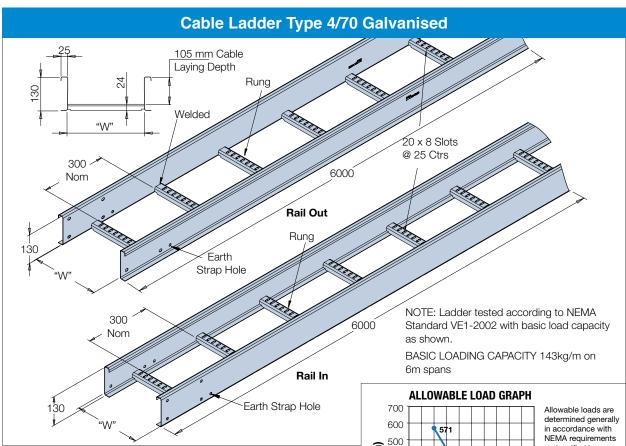
2

#### When Ordering

Range	Туре	Wide	Std.Finish	Fastenings	Rail Direction	Finish
4CL	L	15	Н	K	RI or RO	PC-COL
4CL = 4/70L 130 mm High Side 1.6 mm Gauge		15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm	H = Hot Dip Galv	K = includes all required Splice plates with Bolts and Nuts	RO = Rail Out	PC-COL = paint Painted finish to Kounis standard colour range
	RI) is a Kounis standard and oly code. All Rail Out ladder will n in all supply codes.	90 = 900 mm  ORDERING EXAMP  Painted Finish to sp		le Ladder 150 mm wide :	x 6 metre HDG c/w Splic	e Plates Bolts and Nuts.



# Cable Ladder Heavy to Extra Heavy Duty Type 4/70 20B 2.0 mm Steel Galvanised

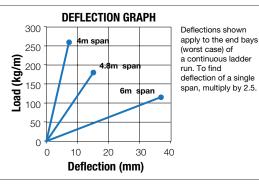


#### **Specification**

Class Designation:	Cable ladder heavy to extra heavy duty type 4/70
Material:	Steel sheet.
Finish:	Hot dipped galvanised after fabrication. AS/NZS 4680 i.e. 390 gm/m² zinc, approx, 55 µm.
Rung Spacing:	300 mm spacings with slotted rungs standard.
Inside Depth:	105 mm cable laying depth.
Stock Length:	6000 mm standard , joining together by full strength splice plates.
Stock Widths:	150 mm, 300 mm, 450 mm & 600 mm standard.
Fittings:	A full range of fittings are available e.g bends, risers, tees, crosses & reducers.
Radius:	300 mm radius standard for rail in. 450 mm radius standard for rail out. Other radii available by request.
Accessories:	Flat or peak covers available for ladders & fittings. Barrier strips. Hold down clamps.

# ALLOWABLE LOAD GRAPH 700 600 5571 600 400 321 8 143 100 2 3 4 5 6 7 Span (m)

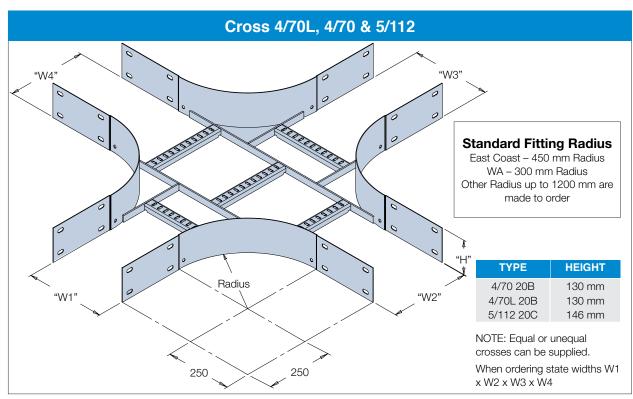
determined generally in accordance with NEMA requirements and verified by testing. Safety factor = 1.5 over collapse load for single span.

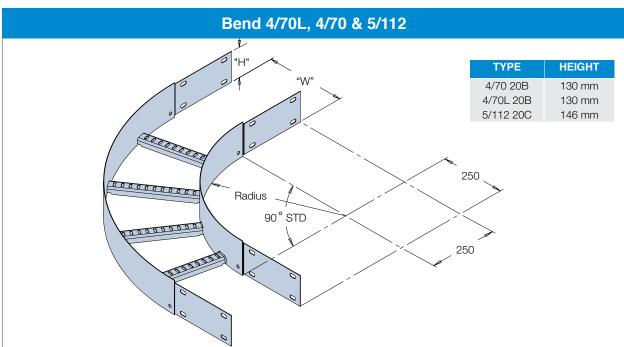


#### When Ordering

Range	Туре	Wide	Std.Finish	Fastenings	Rail Direction	Finish
4C	L	15	Н	K	RI or RO	PC-COL
4C = 4/70 130 mm High Side 2.0 mm Gauge	L = Straight 6 metre Length	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm	H = Hot Dip Galv	K = includes all required Splice plates with Bolts and Nuts	RI = Rail In RO = Rail Out (see Rail In note)	PC-COL = paint Painted finish to Kounis standard colour range
NOTE: Rail In Ladder (RI) i	s a Kounis standard and	90 = 900 mm				
	ode. All Rail Out ladder will	ORDERING EXAMP		Ladder 150 mm wide x	6 metre HDG c/w Splice	Plates Bolts and Nuts.



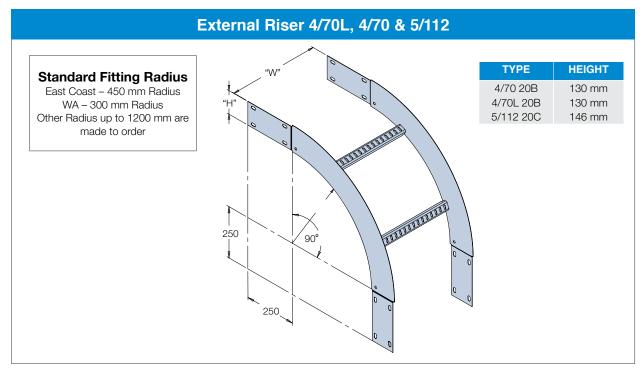


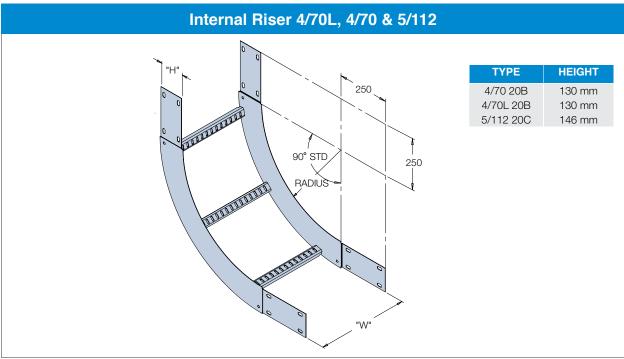


#### When Ordering

Range	Туре	Wide	Material	Fastenings	<b>Rail Direction</b>	Radius	Finish
4C	В	15	Н	K	RI or RO	3	PC-COL
4C = 4/70 130 mm High 2.0 mm thk. 5C = 5/112 146 mm High 2.0 mm thk. 4C = 4/70L 130 mm High 1.6 mm thk	BL= Bend 90°	30 = 300 mm 45 = 450 mm	H = Mild Steel Hot Dip Galv S = 316 Stainless Steel A = Aluminium	K = Includes all required Bolts and Nuts		3 = 300 mm 4 = 450 mm 6 = 600 mm	Painted finish
	l) is a Kounis standard and code. All Rail Out ladder own in all supply codes.	Painted Finish to	MPLE SHOWN: 4/70 Cable L specification colour. of option shown after size (e.				w Bolts and Nuts.



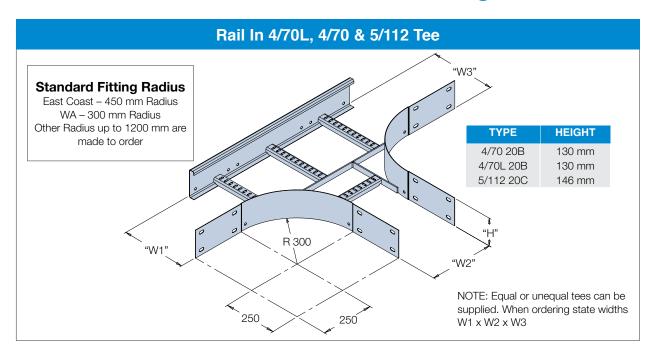


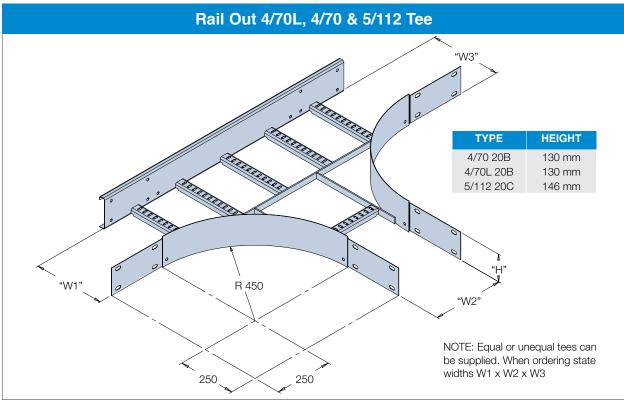


#### When Ordering

	•						
Range	Туре	Wide	Material	Fastenings	<b>Rail Direction</b>	Radius	Finish
4C	RI	15	Н	K	RI & RO	3	PC-COL
4C = 4/70 130 mm High 2.0 mm thk. 5C = 5/112 146 mm High 2.0 mm thk. 4C = 4/70L 130 mm High 1.6 mm thk	RIL = Internal Riser 90°		H = Mild Steel Hot Dip Galv S = 316 Stainless Steel A = Aluminium	K = Includes all required Bolts and Nuts		3 = 300 mm 4 = 450 mm 6 = 600 mm	PC-COL= paint Painted finish to Kounis standard colour range
	i) is a Kounis standard and code. All Rail Out ladder will in all supply codes.	and Nuts. Painte	MPLE SHOWN: 4/70 Cal d Finish to specification of option shown after siz	colour.			Radius c/w Bolts



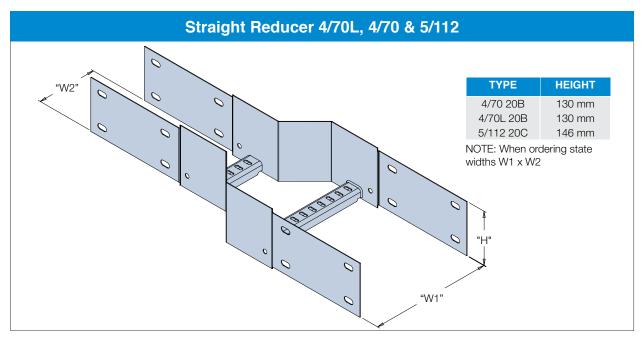


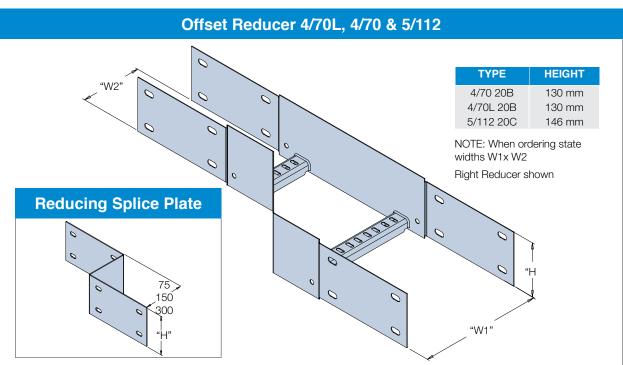


#### When Ordering

	•						
Range	Туре	Wide	Material	Fastenings	<b>Rail Direction</b>	Radius	Finish
4C	Т	15	Н	K	RI or RO	3	PC-COL
4C = 4/70 130 mm High 2.0 mm thk. 5C = 5/112 146 mm High 2.0 mm thk. 4C = 4/70L 130 mm High 1.6 mm thk	4/70L and stainless	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm 90 = 900 mm	H = Mild Steel Hot Dip Galv S = 316 Stainless Steel A = Aluminium	K = Includes all required Bolts and Nuts	-	3 = 300 mm 4 = 450 mm 6 = 600 mm	Painted finish
	l) is a Kounis standard and code. All Rail Out ladder will in all supply codes.	Nuts. Painted Fin	MPLE SHOWN: 4/70 Cal nish to specification color fees made to order (e.g.:	ur.			





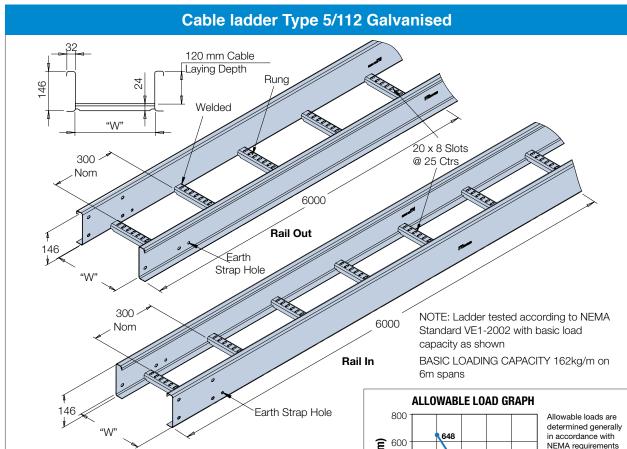


#### When Ordering

Range	Туре	Wide	Material	Fastenings	<b>Rail Direction</b>	Finish
4C	SR	3015	Н	K	RI or RO	PC-COL
4C = 4/70 130 mm High 2.0 mm thk. 5C = 5/112 146 mm High 2.0 mm thk. 4C = 4/70L 130 mm High 1.6 mm thk	PR = Reducing Splice Plate	3015 = 300 to150 mm 4530 = 450 to 300 mm 6045 = 600 to 450 mm 7560 = 750 to 600 mm 9075 = 900 to 750 mm	Dip Galv Painted finish to S= 316 Stainless	K = includes all required Bolts and nuts	RI = Rail In RO = Rail Out (See Rail In note)	PC-COL = paint Painted finish to Kounis standard colour range
	l) is a Kounis standard and will de. All Rail Out ladder will have a upply codes.	ORDERING EXAMPLE SHO Nuts. Painted Finish to spe		traight Reducer 30	0 to 150 mm wide HD	G c/w Bolts and

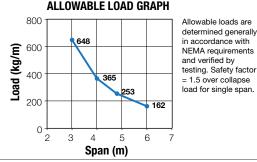


# Cable Ladder Extra Heavy Duty Type 5/112 20C 2 mm Steel Galvanised

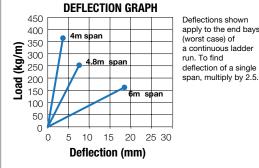


#### **Specification**

opcomodiion	
<b>Class Designation:</b>	Cable ladder extra heavy duty type 5/112.
Material:	Steel sheet.
Finish:	Hot dipped galvanised after fabrication to AS/NZS 4680 ie 390 gm/m² zinc, approx, 55 μm.
Rung Spacing:	300 mm spacings with slotted rungs standard.
Inside Depth:	120 mm cable laying depth.
Stock Length:	6000 mm standard, joining together by full strength splice plates.
Stock Widths:	150 mm, 300 mm, 450 mm & 600 mm standard.
Fittings:	A full range of fittings are available e.g bends, risers, tees, crosses & reducers.
Radius:	300 mm radius standard for rail in. 450 mm radius standard for rail out. Other radii available by request.
Accessories:	Flat or peak covers available for ladders & fittings.  Barrier strips. Hold down clamps.



Deflections shown apply to the end bays (worst case) of a continuous ladder run. To find

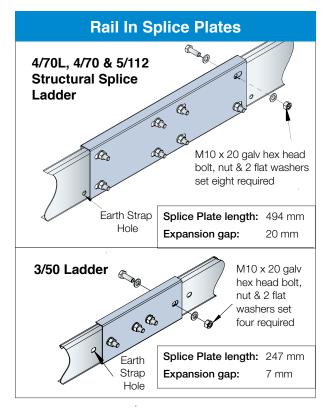


#### When Ordering

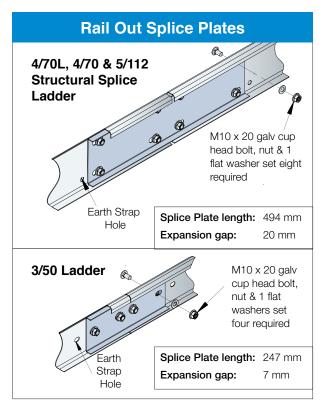
Range	Туре	Wide	Material	Fastenings	Rail Direction	Finish
5C	L	15	Н	K	RI or RO	PC-COL
5C = 5/112 146 mm High Side 2.0 mm Gauge	L = Straight 6 metre Length	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm	H = Hot Dip Galv	K = Includes all required Splice plates with Bolts and nuts	RO = Rail Out	PC-COL = paint Painted finish to Kounis standard colour range
	oly code. All Rail Out ladder will	90 = 900 mm  ORDERING EXAMPLE Painted Finish to speci		Ladder 150 mm wide	x 6 metre HDG c/w S <sub>l</sub>	olice Plates Bolts and Nuts.



# **Cable Ladder Splice Plates**



Bolting of straight section cable ladder to be as NEMA-VE2-2006 Cl.4.3 and with the tourque settings shown.

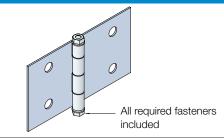


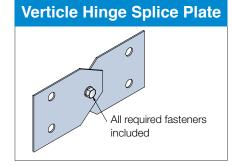
Metric Bolts	Class 5.8
Size	N-m
M8 x 1.25	14-16
M10 x 1.5	26-33
M12 x 1.78	45-58

#### When Ordering

Range	Туре	Material	Fastenings	Rail Direction	Finish
3C	LP	Н	K	RI or RO	PC-COL
2C = 2/30 65 mm High Side 3C = 3/50 100 mm High Side 4C = 4/70 130 mm High Side 4CL = 4/70L 130 mm High x 1.6mm 5C = 5/112 146 mm High Side	LP = Straight Splice Plate	H = Mild Steel Hot Dip Galv S = 316 Stainless Steel A = Aluminium	K = includes all required Bolts and nuts	RO = Rail Out	PC-COL = paint Painted finish to Kounis standard colour range
NOTE: Rail In Ladder (RI) is a Kounis stand supply code. All Rail Out ladder will have codes except 2/30 ladder.		ORDERING EXAMPLE SHO Painted Finish to specification		/50 HDG c/w Bolts and	d Nuts.

## **Horizontal Hinge Splice Plate**







#### When Ordering

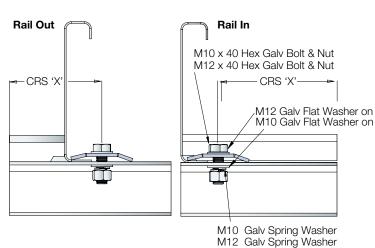
Range	Туре	Material	Fastenings	Finish
2C	HP	Н	K	PC-COL
	HP = Horizontal Hinge Splice Plate VP = Vertical Hinge Splice Plate			PC-COL = paint Painted finish to Kounis standard colour



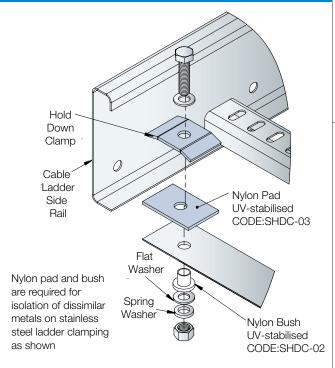
# **Cable Ladder Hold Down Clamps**

## **Cable Ladder Hold Down Clamp Assembly**

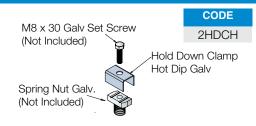
	STANDARD	CYCLONIC	RAIL OUT
	CRS 'X'	CRS 'X'	WIDTH
<b>—</b>	210 mm	224 mm	150 mm
0 0	360 mm	374 mm	300 mm
₹%	510 mm	524 mm	450 mm
œ	660 mm	674 mm	600 mm
<u></u>	214 mm	224 mm	150 mm
ರ ೪	364 mm	374 mm	300 mm
RAIL 4	514 mm	524 mm	450 mm
页	664 mm	674 mm	600 mm
<u>_</u>	230 mm	230 mm	150 mm
당 2	380 mm	380 mm	300 mm
7 5	530 mm	530 mm	450 mm
2	680 mm	680 mm	600 mm
	STANDARD	CYCLONIC	RAIL IN
	CRS 'X'	CRS 'X'	WIDTH
		OIIO A	
7	90mm	76mm	150mm
Z 0	90mm 240mm		150mm 300mm
3/50		76mm	
RAIL IN 3/50	240mm	76mm 226mm	300mm
N RAIL IN 3/50	240mm 390mm	76mm 226mm 376mm	300mm 450mm
LIN RAILIN 70 3/50	240mm 390mm 540mm	76mm 226mm 376mm 526mm	300mm 450mm 600mm
AAIL IN RAIL IN 4/70 3/50	240mm 390mm 540mm	76mm 226mm 376mm 526mm	300mm 450mm 600mm
RAIL IN RAIL IN 4/70 3/50	240mm 390mm 540mm 86mm 236mm	76mm 226mm 376mm 526mm 76mm 226mm	300mm 450mm 600mm 150mm 300mm
N RAIL IN RAIL IN 4/70 3/50	240mm 390mm 540mm 86mm 236mm 386mm	76mm 226mm 376mm 526mm 76mm 226mm 376mm	300mm 450mm 600mm 150mm 300mm 450mm
L IN RAIL IN RAIL IN 12 4/70 3/50	240mm 390mm 540mm 86mm 236mm 386mm 536mm	76mm 226mm 376mm 526mm 76mm 226mm 376mm 526mm	300mm 450mm 600mm 150mm 300mm 450mm
3AIL IN RAIL IN RAIL IN 5/112 4/70 3/50	240mm 390mm 540mm 86mm 236mm 386mm 536mm	76mm 226mm 376mm 526mm 76mm 226mm 376mm 526mm 770mm	300mm 450mm 600mm 150mm 300mm 450mm 600mm



# Stainless Steel Cable Ladder Hold Down Assembly



## 2/30 Hold Down Clamp Assembly



#### When Ordering

····o·· ······························		
Range	Туре	Finish
HDC	s	н
HDC = Square Hold	S = Standard 3 mm Thick 11 mm Ø	H = Hot Dip Galv
Down Clamp	C10 = Cyclonic 5 mm Thick 11 mm Ø C12 = Cyclonic 5 mm Thick 14 mm Ø BN10 = 40 mm Bolt, Nut & Washer M10 BN12 = 40 mm Bolt, Nut & Washer M12	S = 316 Stainless Steel
ORDERING EXAMPLE SHOWN: Hold Down Clamp Standard 3 mm thick, 11 mm Ø Hot Dip Galvanised		

NOTE: Fastening lengths are based on fixing to a 8mm maximum thickness. For other supports we would require details when ordering to ensure correct fastener length.



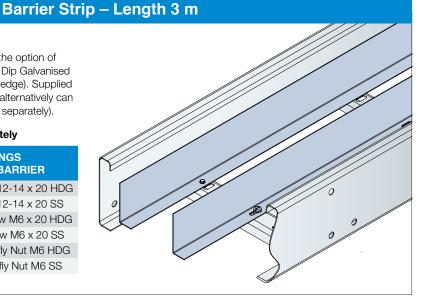
# Cable Ladder Barrier Strip & Earth Strap

#### **Barrier Strip**

Barrier Strip is supplied in 3 m lenghts with the option of 1.0 mm thick Galvabond, 1.6 mm thick Hot Dip Galvanised Steel and 0.6 mm Stainless Steel (with safe edge). Supplied with plain type flange for tek screw fixing or alternatively can be slotted for bolts and nuts (hardware sold separately).

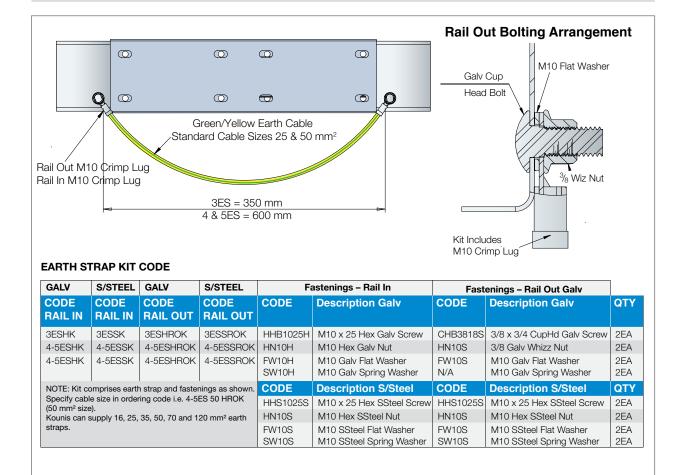
#### **Barrier Fixings Sold Separately**

CODE	BARRIER FIXINGS 3 REQUIRED PER BARRIER
CSKH	Tek Galv – Tek Screw Hex 12-14 x 20 HDG
CSKS	Tek SS - Tek Screw Hex12-14 x 20 SS
PHS0620H	Bolt Galv - Pan Head Screw M6 x 20 HDG
PHS0620S	Bolt SS - Pan Head Screw M6 x 20 SS
K3016H	Nut Galv - Channel Butterfly Nut M6 HDG
K3016S	Nut SS - Channel Butterfly Nut M6 SS



#### When Ordering

Range	Туре	Material	Finish	Fastenings
4-5C	ST	L	G	K
2C = 2/30 65 mm High Side 3C = 3/50 100 mm High Side 4-5C = 4/70 130 mm High Side & 5/112 = 146 mm High Side	Ü	L = 0.6 mm Thick steel (N/A in Hot Dip Galv) M = 1.0 mm Thick Steel H = 1.6 mm Thick Steel	G = Galvabond H = Hot Dip Galvanised S = Stainless Steel A = Aluminium	K = Includes all required fixing screws and nuts
ORDERING EXAMPLE SHOWN: 4/70	Barrier Slotted Flange Light Duty Gal	vabond complete with fastenings.		

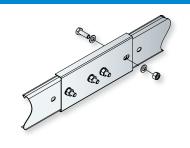




# **SECTION 4: Cable Ladder Stainless Steel & Aluminium**



#### **Ladder Splice Plates**



> 3:18



# **Cable Ladder Stainless Steel**

# **General Description**

The Kounis Metal Industries Stainless Steel Cable Ladder Systems were developed for use in commercial, industrial & mining applications where the surrounding environment calls for a higher level of protection against corrosion.

Its superior support strength and open ventilation allows for effortless installation of electrical cables and or pipe work.

The finished product is constructed from 316 Grade Stainless Steel side rail sections and rungs welded at 300 mm continuous spacings. Surface treatment is post production pickling and passivation with the focus of ensuring all weld joints are clean to achieve a maximum life span from the installation.

This product range comprises of three system types to cover a wide range of requirements; *Type 3/50* Medium to Heavy Duty 100mm Side (NEMA 16A), *Type 4/70L* Heavy Duty 130 mm Side and *Type 5/112* Extra Heavy Duty 146 mm Side (NEMA 20C). All of which offer the following standard features:

- 6 m lengths
- Self-splicing Bend, Riser, Tee & Cross Fittings.
- Rail in or rail out option
- Earthing holes at point of connection on straight lengths as well as fittings
- Channel type rung offering superior strength
- 25 mm rung tie off centres to allow maximum tie off options
- Hold Down Clamps assemblies with nylon isolation pads and bushes are available for dissimilar materials.
- A full range of flat and peak covers are available for straight lengths and fittings

Engineer certification to withstand certain cyclonic conditions (only available for Type 4/70 & 5/112, minimum installation requirements apply).

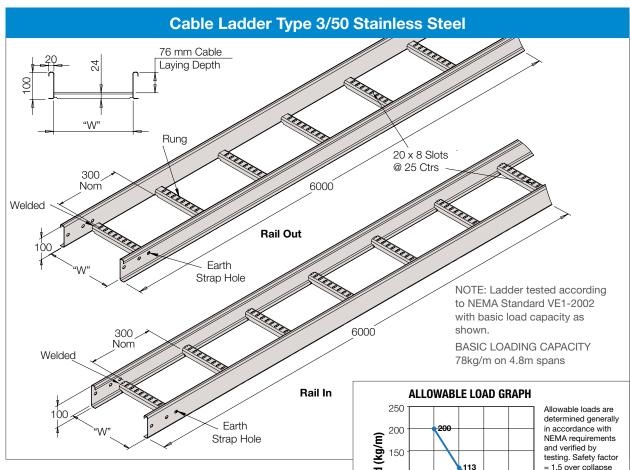
All fitting radius measurements are to the internal side rail, stock standard radius varies depending on cable ladder system type and branch standard. All other listed radius options are made to firm order.

Load capacities and deflection graphs are published by type and can be found on the straight length page for the associated cable ladder system.

Tested to NEMA VE1-2002 Standards. Full engineering details are available on request.

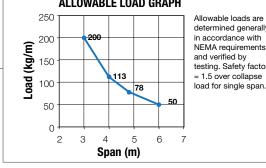


# Cable Ladder Medium To Heavy Duty Type 3/50 16A 1.6 mm Stainless Steel 316 Grade



#### Specification

•	
Class Designation:	Cable ladder-medium to heavy duty type 3/50.
Material:	316 stainless steel sheet.
Finish:	Natural.
Rung Spacing:	300 mm spacings with slotted rung standard.
Inside Depth:	76 mm cable laying depth.
Stock Length:	6000 mm standard, joining together by full strength splice plates
Stock Widths:	150 mm, 300 mm, 450 mm & 600 mm standard. Other widths available by request.
Fittings:	A full range of fittings are available e.g bends, risers, tees, crosses and reducers.
Radius:	300 mm radius standard for rail in. 450 mm radius standard for rail out. Other radii available by request.
Accessories:	Flat or peak covers available for ladders and fittings. Barrier strips. Hold down clamps.



140

120

100

80

60 40 20

0

Load (kg/m)

**DEFLECTION GRAPH** 

**Deflection (mm)** 

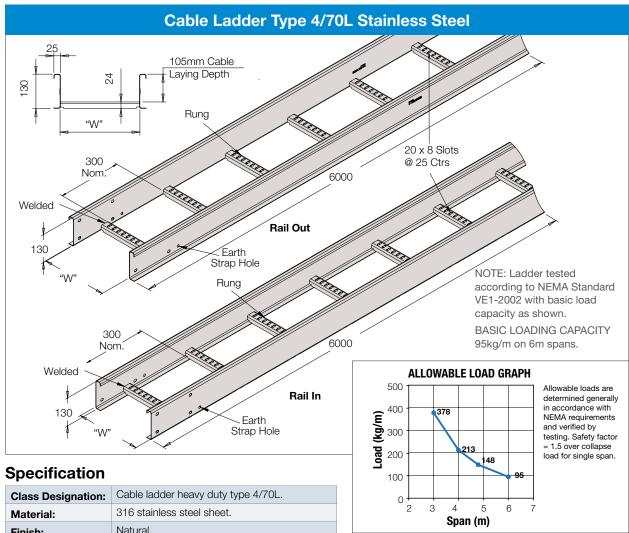
Deflections shown apply to the end bays (worst case) of run. To find deflection of a single span, multiply by 2.5. 10 15 20 25 30 35

## When Ordering

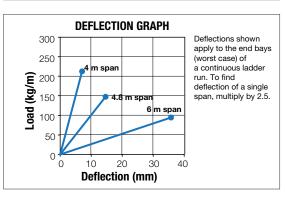
	•					
Range	Туре	Wide	Material	Fastenings	Rail Direction	Finish
3C	L	15	S	K	RI or RO	
3C = 3/50 100 mm High Side 1.6 mm Gauge		15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm	316 Grade Stainless Steel	K = Includes all required Splice plates with Bolts and nuts	RI = Rail In RO = Rail Out (See Rail In note)	Standard Supply is Mill Finish
NOTE: Rail In Ladder (	RI) is a Kounis standard and	90 = 900 mm				
will not show in a supply code. All Rail Out ladder will have a RO suffix shown in all supply codes.		ORDERING EXAMPLE Bolts and Nuts	SHOWN: 3/50 Cable L	adder 150 mm wide x	6 metre 316 Stainless	s Steel c/w Splice Plates



# Cable Ladder Heavy Duty Type 4/70L 20B 1.6 mm Stainless Steel 316 Grade



Class Designation:	Cable ladder heavy duty type 4/70L.
Material:	316 stainless steel sheet.
Finish:	Natural.
Rung Spacing:	300 mm spacings with slotted rung standard.
Inside Depth:	105 mm cable laying depth.
Stock Length:	6000 mm standard, joining together by full strength splice plates.
Stock Widths:	150 mm, 300 mm, 450 mm and 600 mm standard. Other widths available by request.
Fittings:	A full range of fittings are available e.g bends, risers, tees, crosses & reducers.
Radius:	300 mm radius standard for rail in. 450 mm radius standard for rail out. Other radii available by request.
Accessories:	Flat or peak covers available for ladders and fittings. Barrier strips. Hold down clamps.

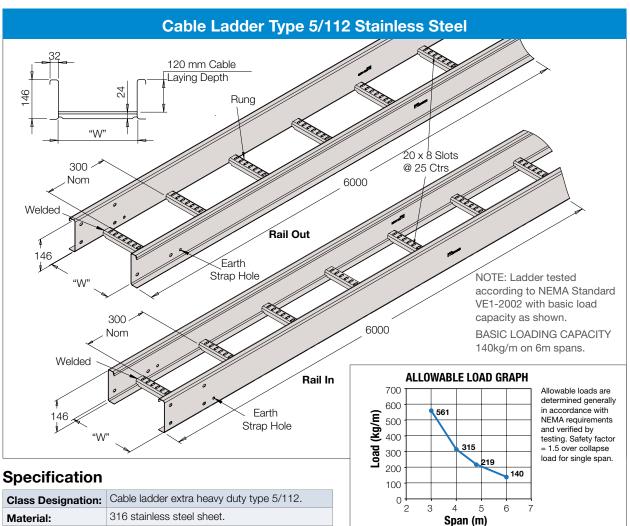


#### When Ordering

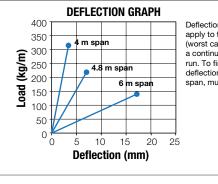
Range	Туре	Wide	Material	Fastenings	<b>Rail Direction</b>	Finish
4CL	L	15	S	K	RI or RO	
4CL = 4/70L 130 mm High Side 1.6mm Gauge	L = Straight 6 metre Length	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm		K = Includes all required Splice plates with Bolts and nuts	RI = Rail In RO = Rail Out (See Rail In note)	Standard Supply is Mill Finish
NOTE: Rail In Ladder (	RI) is a Kounis standard and	90 = 900 mm				
will not show in a supply code. All Rail Out ladder will have a RO suffix shown in all supply codes.		ORDERING EXAMPLE Bolts and Nuts	SHOWN: 4/70L Cable	Ladder 150 mm wide	x 6 metre 316 Stainles	ss Steel c/w Splice Plates



# Cable Ladder Extra Heavy Duty Type 5/112 20C 2.0 mm Stainless Steel 316 Grade



opecification	
Class Designation:	Cable ladder extra heavy duty type 5/112.
Material:	316 stainless steel sheet.
Finish:	Natural.
Rung Spacing:	300 mm spacings with slotted rung standard.
Inside Depth:	120 mm cable laying depth.
Stock Length:	6000 mm standard, joining together by full strength splice plates.
Stock Widths:	150 mm, 300 mm, 450 mm and 600 mm standard. Other widths available by request.
Fittings:	A full range of fittings are available e.g bends, risers, tees, crosses and reducers.
Radius:	300 mm radius standard for rail in.450 mm radius standard for rail out. Other radii available by request.
Accessories:	Flat or peak covers available for ladders and fittings. Barrier strips. Hold down clamps.



Deflections shown apply to the end bays (worst case) of a continuous ladder run. To find deflection of a single span, multiply by 2.5.

#### **When Ordering**

Range	Туре	Wide	Material	Fastenings	Rail Direction	Finish
5C	L	15	S	K	RO	
5C = 5/112 146 mm High Side 2.0 mm Gauge	L = Straight 6 metre Length	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm	Stainless Steel	K = Includes all required Splice plates with Bolts and nuts	RI = Rail In RO = Rail Out (See Rail In note)	Standard Supply is Mill Finish
NOTE: Rail In Ladder (	RI) is a Kounis standard and	90 = 900 mm				
will not show in a supply code. All Rail Out ladder will have a RO suffix shown in all supply codes.		ORDERING EXAMPLE Bolts and Nuts.	SHOWN: 5/112 Cable	Ladder 150 mm wide	x 6 metre 316 Stainle	ss Steel c/w Splice Plates



## Cable Ladder Aluminium

# **General Description**

The Kounis Group Aluminium Cable Ladder Systems are developed for use in commercial, industrial & mining applications.

Its superior support strength and open ventilation allows for effortless installation of electrical cables and or pipe work.

The finished product is constructed from Grade 6106 – T6 Extruded Aluminium Alloy side rail sections has rungs welded at 300 mm continuous spacings. Ladders have a post production treatment with the focus on ensuring all weld joints are clean to achieve a maximum life span from the installation.

This product range comprises three system types to cover a wide range of requirements; *Type 3/50* Medium Duty 90 mm Side (NEMA 12A), *Type 4/70* Heavy Duty 130 mm Side (NEMA 16B and NEMA 20A) and *Type 5/112* Extra Heavy Duty 155 mm Side (NEMA 20C). All of which offer the following standard features:

- 6 m length
- Self-splicing Bend, Riser, Tee & Cross Fittings
- Earthing holes at point of connection on straight lengths as well as fittings
- Channel type rungs offering superior strength
- 25 mm rung tie off centres to allow maximum tie off options
- Use of stainless steel fixings required
- A full range of flat and peak covers are available for straight lengths and fittings

All fitting radius measurements are to the internal side rail, stock standard radius varies depending on cable ladder system type and branch standard.

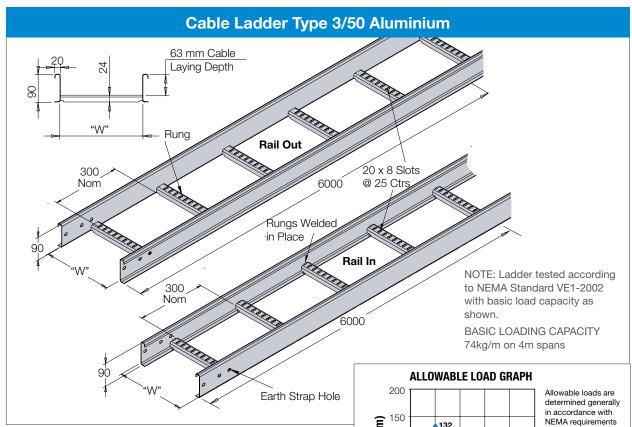
All other listed radius options are made to firm order.

Load capacities and deflection graphs are published by type and can be found on the straight length page for the associated cable ladder system.

Tested to NEMA VE1-2002 Standards, Full engineering details are available on request.

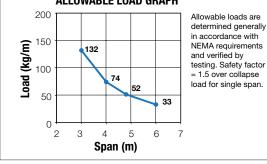


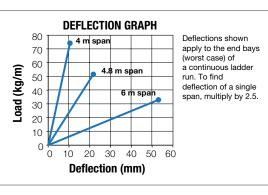
# Cable Ladder Medium Duty Type 3/50 12A Grade 6106 – T6 Aluminium



## **Specification**

Class designation:	Cable ladder medium duty type 3/50.
Material:	6106-T6 Marine Grade Aluminum Alloy Grade 316 Stainless Steel fastenings
Finish:	Standard Mill Finish
Rung spacing:	300 mm spacings with slotted rungs standard.
Inside depth:	63 mm cable laying depth.
Stock length:	6000 mm standard, joining together by full strength splice plates
Stock widths:	150 mm, 300 mm, 450 mm and 600 mm standard.
Fittings:	A full range of fittings are available e.g bends, risers, tees, crosses and reducers.
Radius:	300 mm radius standard for rail in.450 mm radius standard for rail out. Other radii available by request.
Accessories:	Flat or peak covers available for ladders and fittings. Barrier strips. Hold down clamps.



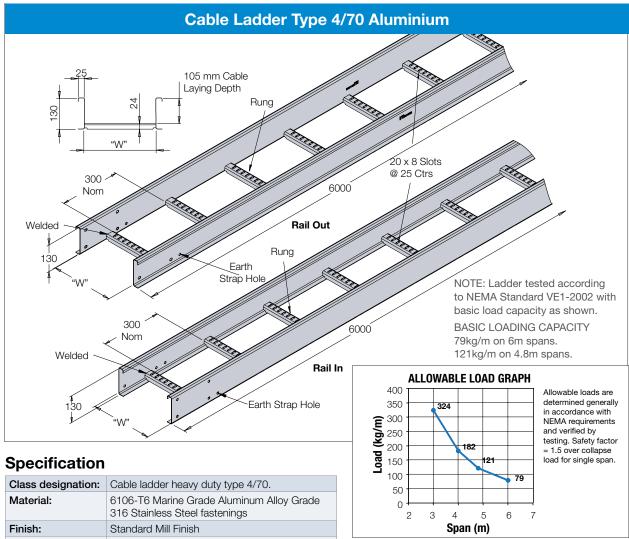


#### When Ordering

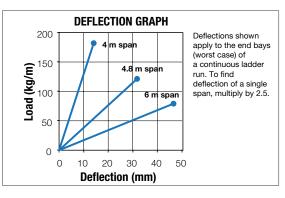
Range	Туре	Wide	Material	Fastenings	Rail Direction	Finish
3C	L	15	Α	K	RI or RO	
3C = 3/50 90mm High Side Extrusion	L = Straight 6 metre Length	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm 90 = 900 mm	A = 6106-T6 Aluminium	K = includes all required Splice plates with Bolts and nuts	RI = Rail In RO = Rail Out (See Rail In note)	Standard supply is Mill Finish Aluminium
NOTE: Rail In Ladder (RI) is a Kounis standard and will not show in a supply code. All Rail Out ladder will have a RO suffix shown in all supply codes.			MPLE SHOWN: 3/50 Cable Lac	dder 150 mm wide x 6 r	netre Aluminium c/w Sp	olice Plates Bolts and



# Cable Ladder Heavy Duty Type 4/70 20A/16B Grade 6106 – T6 Aluminium



-	
Class designation:	Cable ladder heavy duty type 4/70.
Material:	6106-T6 Marine Grade Aluminum Alloy Grade 316 Stainless Steel fastenings
Finish:	Standard Mill Finish
Rung spacing:	300 mm spacings with slotted rungs standard.
Inside depth:	105 mm cable laying depth.
Stock length:	6000 mm standard, joining together by full strength splice plates
Stock widths:	150 mm, 300 mm, 450 mm and 600 mm standard.
Fittings:	A full range of fittings are available e.g bends, risers, tees, crosses and reducers.
Radius:	300 mm radius standard for rail in.450 mm radius standard for rail out. Other radii available by request.
Accessories:	Flat or peak covers available for ladders and fittings. Barrier strips. Hold down clamps.

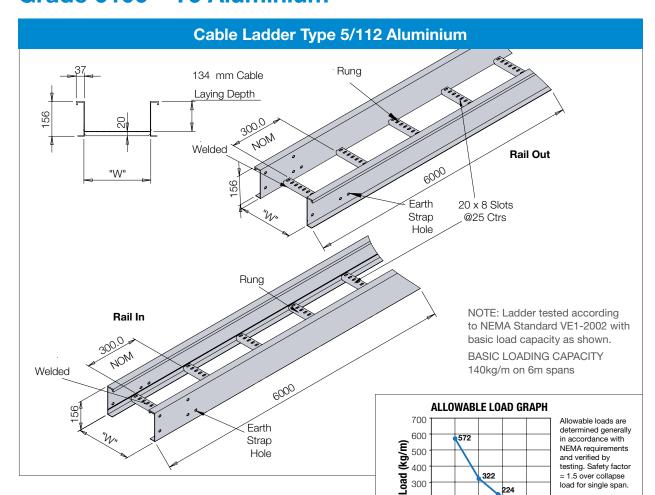


#### When Ordering

Range	Туре	Wide	Material	Fastenings	Rail Direction	Finish
4C = 4/70 130 mm High Side Extrusion	L = Straight 6 metre Length	15	A = 6106-T6 Aluminium	K = includes all required Splice plates with Bolts and nuts	RI or RO RI = Rail In RO = rail Out (See Rail In note)	Standard supply is Mill Finish Aluminium
will not show in a sup	(RI) is a Kounis standard and ply code. All Rail Out ladder will vn in all supply codes.	ORDERING EXAM Nuts	ИPLE SHOWN: 3/50 Cable Lac	lder 150 mm wide x 6 n	netre Aluminium c/w Sp	lice Plates Bolts and

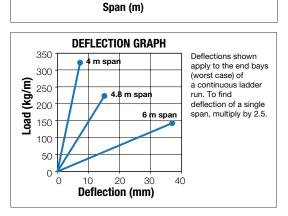


# Cable Ladder Extra Heavy Duty Type 5/112 20C Grade 6106 – T6 Aluminium



## **Specification**

Class designation:	Cable ladder extra heavy duty type 5/112.
Material:	6106-T6 Marine Grade Aluminum Alloy Grade 316 Stainless Steel fastenings
Finish:	Standard Mill Finish
Rung spacing:	300 mm spacings with slotted rungs standard.
Inside depth:	130 mm cable laying depth.
Stock length:	6000 mm standard, joining together by full strength splice plates
Stock widths:	150 mm, 300 mm, 450 mm and 600 mm standard.
Fittings:	A full range of fittings are available e.g bends, risers, tees, crosses and reducers.
Radius:	300 mm radius standard for rail in.450 mm radius standard for rail out. Other radii available by request.
Accessories:	Flat or peak covers available for ladders and fittings. Barrier strips. Hold down clamps.



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200

100 2 3

#### When Ordering

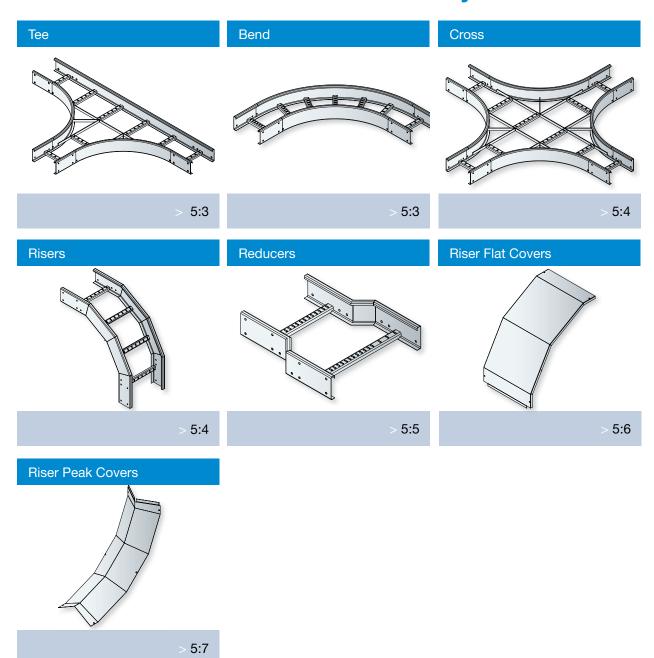
Range	Туре	Wide	Material	Fastenings	Rail Direction	Finish
5C	L	15	A	K	RI or RO	
5C = 5/112 156mm High Side Extrusion	L = Straight 6 metre Length	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm 90 = 900 mm	A = 6106-T6 Aluminium	K = includes all required Splice plates with Bolts and nuts	RI = Rail In RO= Rail Out (See Rail In note)	Standard supply is Mill Finish Aluminium
	RI) is a Kounis standard and will ode. All Rail Out ladder will have supply codes.	Ordering example Nuts	e shown 5/112 Cable Ladder 1	50mm wide x 6 metre	Aluminium Rail In c/w s	Splice Plates Bolts &



# **Notes**



# **SECTION 5: Structural Cable Ladder Systems**





# **Structural Cable Ladder Systems**

# **General Description**

The Kounis Metal Industries Structural Cable Ladder Fittings and Covers were developed for use in heavy commercial, industrial and mining applications. Structural fittings are ideal were standard flat strip fittings are deemed to be too light for heavy applications and not meeting the load or deflection requirements of the installation.

The Structural Fitting range has been designed utilizing the structural capabilities of the straight side rail section and following the same profile to allow the fitting to be more rigid and self-supporting for large radius installation.

The Structural Fitting range is available to suit *Type 4/70L* 1.6 mm 130 mm Side (NEMA 20B), *Type 4/70* 2.0 mm 130 mm Side (NEMA 20B) and *Type 5/112* 146 mm Side (NEMA 20C) all of which offer the following standard features:

- Hot Dipped Galvanised, 316 Grade Stainless Steel and Aluminium Construction
- 8 bolt splice plate connection
- Rail in or rail out option
- Earthing holes at all points of connection
- Channel type rung offering superior strength
- 25 mm rung tie off centres to allow maximum tie off options
- A full range of flat and peak covers for straight lengths and fittings are available. (Structural fitting covers in this section are specific to Internal and external risers)
- Engineer certification to withstand certain cyclonic conditions (only available for Type 4/70 & 5/112, minimum installation requirements apply)

All fitting radius measurements are to the internal side rail, stock standard radius varies depending on cable ladder system type and branch standard. All other listed radius options are made to firm order.

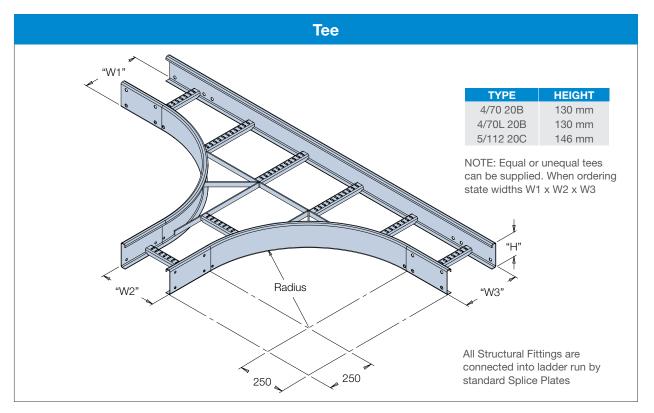
Painted finish available on request.

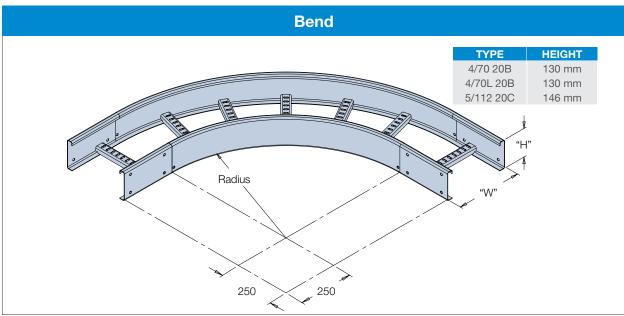
#### Kounis Group Standard Colour Range

Optional Polyester Powder Coat finishes can be provided from our standard stock colours. Our range is White, Black, Orange and Grey Hammertone. Other colours or epoxy powder coat finish can be provided to firm orders.



# **Structural Cable Ladder Fittings**



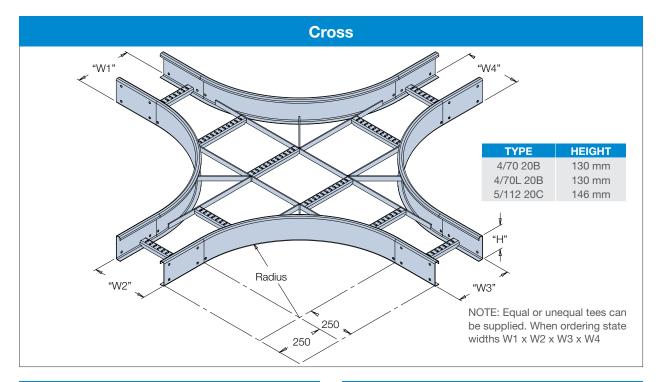


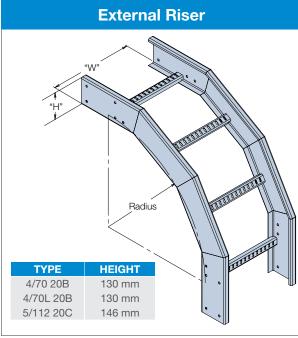
#### **When Ordering**

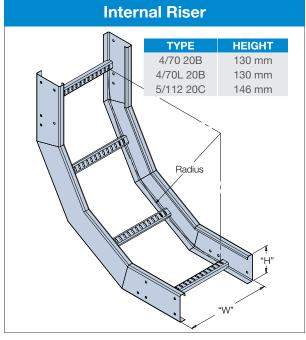
Range	Туре	Wide	Material	Fastenings	<b>Rail Direction</b>	Radius	Finish
4D	В	15	Н	K	RO or RI	6	PC-COL
4D = 4/70 130 mm High 2.0 mm thk. 5D = 5/112 146 mm High 2.0 mm thk. 4D = 4/70L 130 mm High 1.6 mm thk	TL = Tee Equal	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm 90 = 900 mm	H = Mild Steel Hot Dip Galv S = 316 Stainless Steel A = Aluminium	K = includes all required Splice Plates, Bolts and nuts	-	3 = 300 mm 6 = 600 mm 9 = 900 mm 600 mm Std. radius	PC-COL = paint Painted finish to Kounis standard colour range
	) is a Kounis standard and code. All Rail Out ladder own in all supply codes.	Plates Bolts and I	MPLE SHOWN: 4/70 Structur Nuts. Painted Finish to speci 0° option shown after size (e	fication colour.			Radius c/w Splice



# **Structural Cable Ladder Fittings**







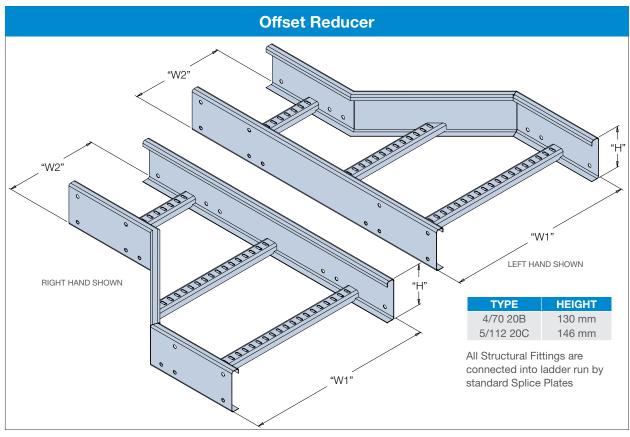
All Structural Fittings are connected into ladder run by standard Splice Plates

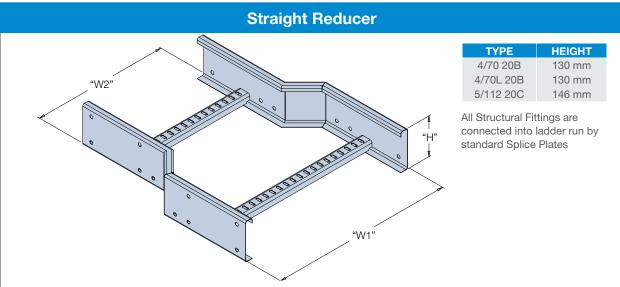
#### **When Ordering**

Range	Туре	Wide	Material	Fastenings	<b>Rail Direction</b>	Radius	Finish
4D	RI	15	Н	K	RI or RO	6	PC-COL
4D = 4/70 130 mm High 2.0 mm thk. 5D = 5/112 146 mm High 2.0 mm thk. 4D = 4/70L 130 mm High 1.6 mm thk	4/70 & 5/112	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm 90 = 900 mm	H = Mild Steel Hot Dip Galv S = 316 Stainless Steel A = Aluminium		RO = Rail Out	3 = 300 mm 6 = 600 mm 9 = 900 mm 600 mm Std. radius	
,	) is a Kounis standard and will de. All Rail Out ladder will have a apply codes.	ORDERING EXAMPLE SHOWN: 4/70 Structural Cable Ladder 90° Internal Riser 150 mm wide HDG Rail Out 600 mm Radius c/w Splice Plates Bolts and Nuts. Painted Finish to specification colour. Note: 45,30 & 60° option shown after size (eg: 1545) code alternative 150 mm 45° Riser.					



# **Structural Cable Ladder Fittings**



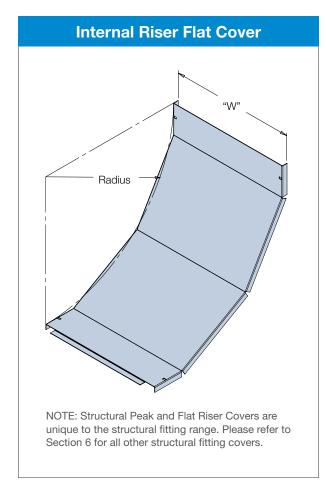


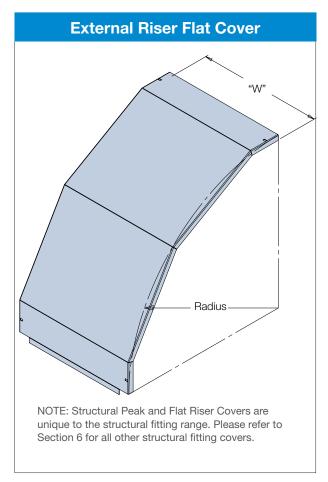
#### When Ordering

Range	Туре	Wide	Material	Fastenings	<b>Rail Direction</b>	Radius	Finish
4D	SR	3015	Н	K	RI or RO	6	PC-COL
4D = 4/70 130 mm High 2.0 mm thk. 5D = 5/112 146 mm High 2.0 mm thk. 4D = 4/70L 130 mm High 1.6 mm thk	4/70 & 5/112	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm 90 = 900 mm	H = Mild Steel Hot Dip Galv S = 316 Stainless Steel A = Aluminium	K = includes all required Splice Plates, Bolts and nuts		6 = 600 mm 9 = 900 mm	PC-COL = paint Painted finish to Kounis standard colour range
,	) is a Kounis standard and will not All Rail Out ladder will have a RO y codes.		MPLE SHOWN: 4/70 ts and Nuts. Painted		dder Straight Reduction colour.	er 300 to 150 mr	m wide HDG c/w



# **Structural Cable Ladder Flat Fitting Covers**





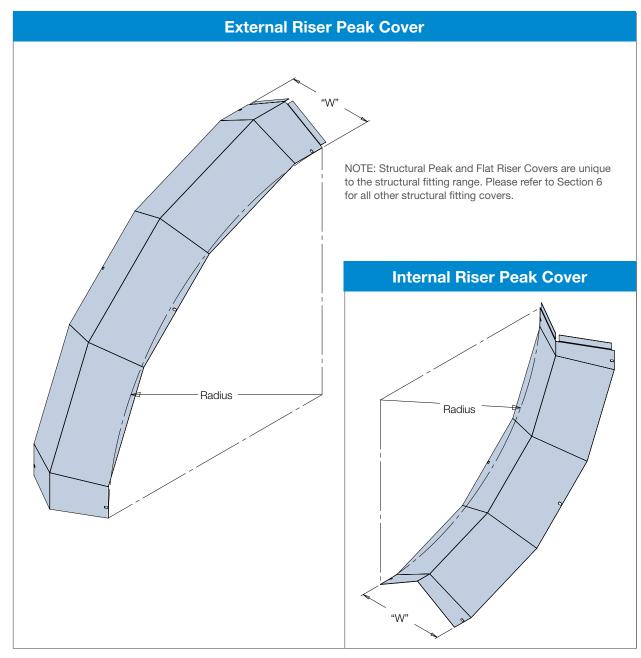
Covers can also be supplied in Stainless Steel or Aluminium to order.

#### When Ordering

Range	Туре	Fitting	Wide	Thickness	Std. Finish	Fastenings	Side Rail	Radius	Finish
4D	FC	RX	15	Н	Н	K	RI or RO	6	PC-COL
4D = 4/70 130 mm High 2.0 mm thk Structural 5D = 5/112 146 mm High 2.0 mm thk Structural	FC = Flat Cover	RI = Internal RX = External Riser 90° (see ordering note)	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm 90 = 900 mm	L = 0.6  mm thk. $M = 1.2  mm$ thk. $H = 1.6  mm$ thk. $H = 1.6  mm$ thk.	G = Galvabond H = Hot Dip Galv S= 316 Stainless Steel A = Aluminium P = Painted	K = includes all required attachment hooks	RI = Rail In RO = Rail Out	6 = 600 mm 9 = 900 mm	Painted finish to Kounis standard colour range
in a supply code	NOTE: Rail In Ladder (RI) is a Kounis standard and will not show n a supply code. All Rail Out ladder will have a RO suffix shown n all supply codes.				AMPLE SHOWN: 4/7 HDG 600 radius c/w a 60° option shown afte	attachment hooks.	Painted Finish to	specification col	our.



# **Structural Cable Ladder Peak Fitting Covers**



Covers can also be supplied in Stainless Steel or Aluminium to order.

#### **When Ordering**

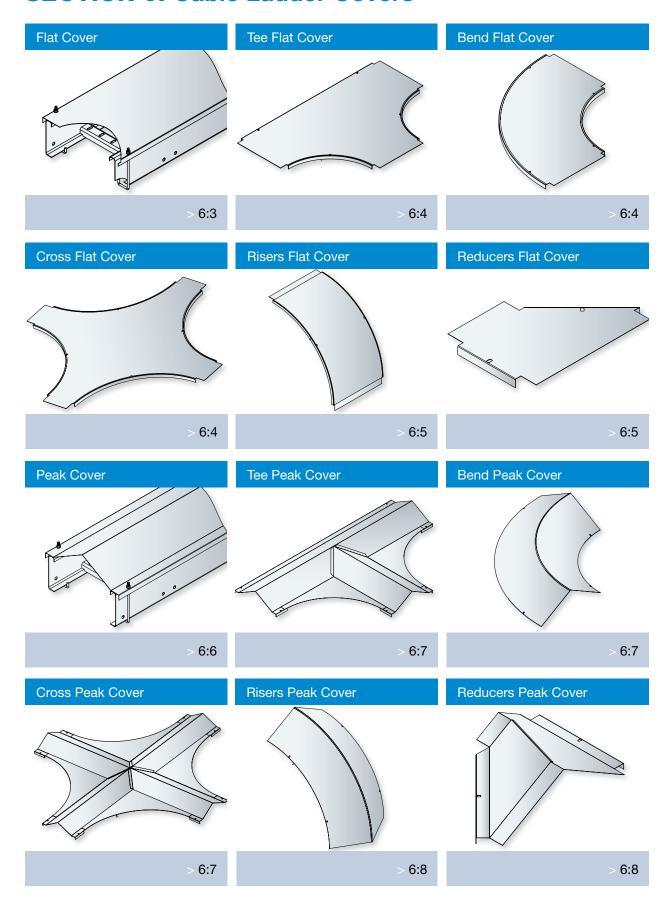
Range	Туре	Fitting	Wide	Thickness	Std. Finish	Fastenings	Side Rail	Radius	Finish
4D	PC	RX	15	Н	Н	K	RI or RO	6	PC-COL
4D = 4/70 130 mm High 2.0 mm thk Structural 5D = 5/112 146 mm High 2.0 mm thk Structural	Cover	RI = Internal RX = External Riser 90° (see ordering note)		L = 0.6  mm thk. $M = 1.2  mm$ thk. $H = 1.6  mm$ thk. $H = 1.6  mm$ thk.	G = Galvabond H = Hot Dip Galv S= 316 Stainless Steel A = Aluminium P = Painted	K = includes all required Attachment Hooks	RI = Rail In RO = Rail Out	6 = 600 mm 9 = 900 mm	Painted finish to Kounis standard colour range
	. All Rail Out	Kounis standard a ladder will have a f		150 mm wide H	AMPLE SHOWN: 4/7 HDG 600 radius c/w 60° option shown aft	attachment hooks.	Painted Finish to	specification col	



# **Notes**



# **SECTION 6: Cable Ladder Covers**





## **Cable Ladder Flat & Peak Covers**

# **General Description**

The Kounis Group Cable Ladder Cover range was developed to suit all installations that require physical and ultraviolet protection from the surrounding environment.

The finished product is constructed from a variety of material thicknesses ranging from; *Light Duty* 0.6 mm, *Medium Duty* 1.2 mm and *Heavy Duty* 1.6 mm and finishes to suit any application or environment; *Galvabond*, Mild Steel *Hot Dip Galvanised*, 316 Grade *Stainless Steel* and *Aluminium*. All of which offer the following standard features and options:

- 3 m length
- Option of hook bolt or snug fit metal tek screw attachment
- Option of Flat or 30° peak
- Also available in 15° and 45° peak made to order
- Option of ventilation louvers
- A full range of fitting covers flat or peaked
- Engineer certification to withstand cyclonic area importance level 2 wind terrain category 1 conditions (Covers are recommended to be1.6 mm thick Hot Dip Galvanised.

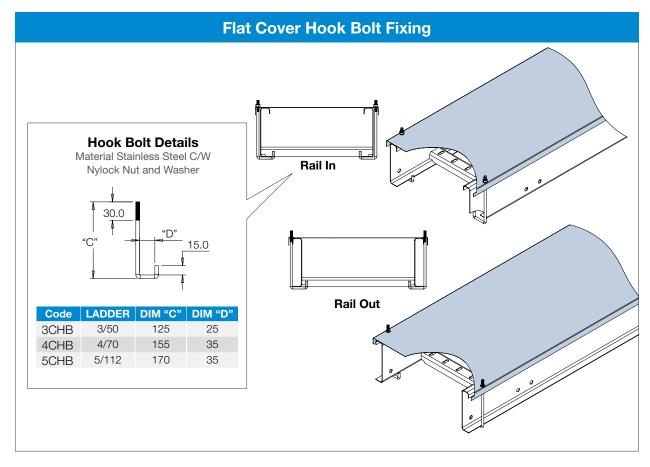
Painted finish available on request.

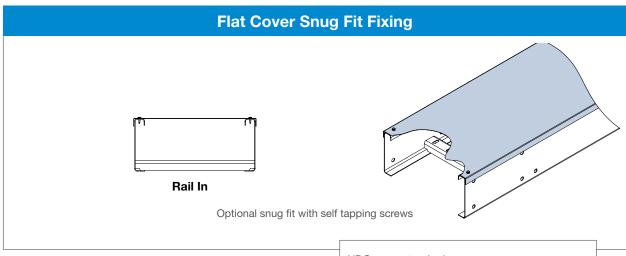
#### Kounis Group Standard Colour Range

Optional Polyester Powder Coat finishes can be provided from our standard stock colours. Our range is White, Black, Orange and Grey Hammertone. Other colours or epoxy powder coat finish can be provided to firm orders.



# **Cable Ladder Flat Covers**





Flat cover lengths can be supplied with ventilation louvres to order.

HDG cover standards

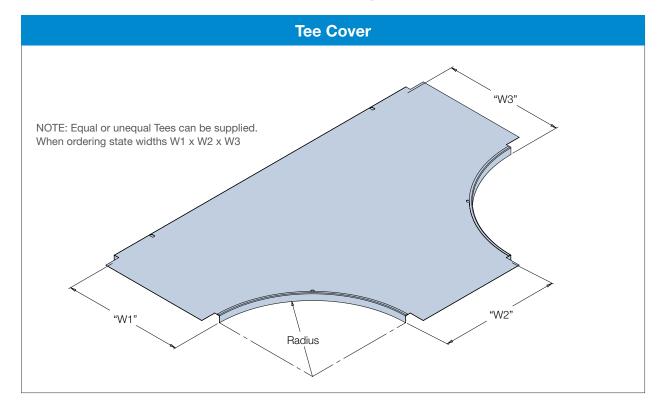
- 1. WA supplied in 1.6 mm HDG (code HH)
- 2. Eastern States up to 1.2 mm HDG (code H)

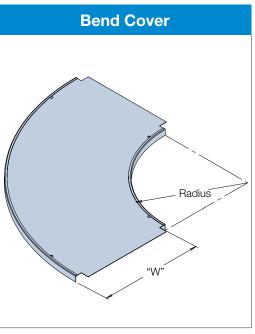
#### **When Ordering**

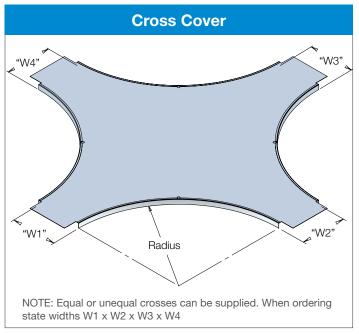
Range	Туре	Size	Thickness	Std. Finish	Fastenings	Rail Direction	Fit	Finish
3	FC	15	L	G	K	RI or RO	SF	PC-COL
		30 = 300 mm	H = 1.6 mm thk.	H = Hot Dip Galv S = 316	K = includes all required attachment hooks		Note: no hook required	Paint
	adder (RI) is a Kounis s ut ladder will have RO		not show in a supply	ORDERING EXAMPLE: 3/50 Cable Ladder Flat Cover 150 mm wide Light Duty Galvabond c/attachment hooks. Painted finish to specification colour.				



# **Cable Ladder Flat Cover Fittings**





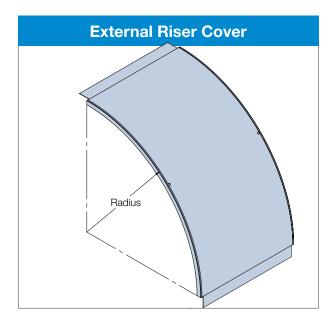


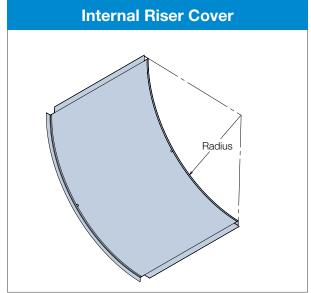
#### **When Ordering**

		9								
Range	Туре	Fitting	Size	Thickness	Std.Finish	Fastenings	Rail Direction	Radius	Fit	Finish
3	FC	Т	15	L	G	K	RI or RO	3	SF	PC-COL
2 = 2/30 3 = 3/50 4 = 4/70 5 = 5/112	FC = Flat Cover	T = Tee B = Bend C = Cross	30 = 300 mm		Galvabond	K = Includes all required attachment hooks		3 = 300 mm 4 = 450 mm 6 = 600 mm 9 = 900 mm	Fit (to order)	PC-COL = Paint Painted finish to Kounis standard colour range
	NOTE: Rail In Ladder (RI) is a Kounis standard and will not show in a supply code. All Rail Out ladder will have a RO suffix shown in all supply codes					MPLE SHOWN: 3, nm rad c/w attach				



# **Cable Ladder Flat Cover Fittings**





#### **When Ordering**

		•								
Range	Туре	Fitting	Size	Thickness	Std.Finish	Fastenings	Rail Direction	Radius	Fit	Finish
3	FC	RX	15	L	G	K		3	SF	PC-COL
2 = 2/30 3 = 3/50 4 = 4/70 5 = 5/112	Flat	Riser	30 = 300  mm		H = Hot Dip	K = Includes all required attachment hooks	RO = Rail	3 = 300 mm 4 = 450 mm 6 = 600 mm 9 = 900 mm	Fit (to order)	PC-COL = Paint Painted finish to Kounis standard colour range
	pe 4 and		and Rail Out Lade ser Cover are ide	der systems. ntical except hooks	ORDERING EXAM Light Duty Galvab	MPLE SHOWN: 3/ oond 300 mm rad				

# Straight Reducer Cover "W2" "W1" NOTE: When ordering state widths W1 x W2

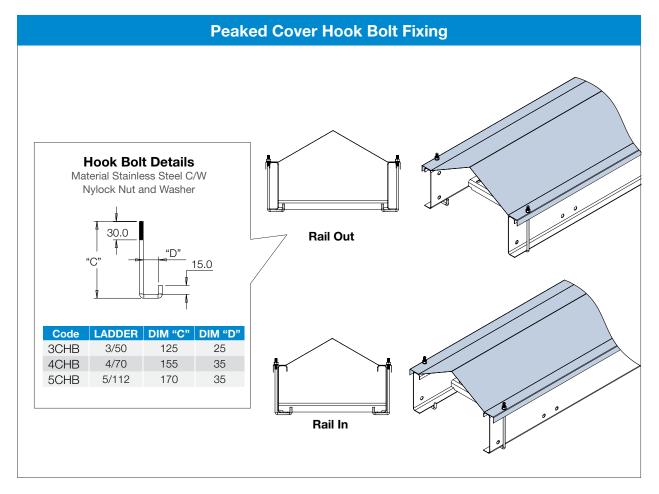
# Offset Reducer Cover "W2" "W1" LEFT HAND "W1" RIGHT HAND

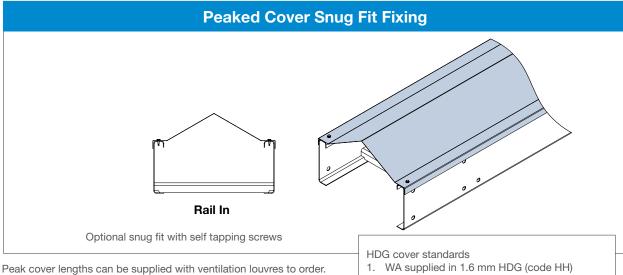
#### **When Ordering**

		_							
Range	Туре	Fitting	Size	Thickness	Std.Finish	Fastenings	Rail Direction	Fit	Finish
3	FC	SR	3015	L	G	K		SF	PC-COL
2 = 2/30 3 = 3/50 4 = 4/70 5 = 5/112	FC = Flat Cover	SR = Straight Reducer LR = Left Reducer RR = Right Reducer	15 = 150 mm 30 = 300 mm 45 = 450 mm 60 = 600 mm 75 = 750 mm 90 = 900 mm	M = 1.2 mm H = 1.6 mm	G = Galvabond H = Hot Dip Galv S = 316 Stainless Steel A = Aluminium	K =Includes all required attachment hooks	RI = Rail In RO = Rail Out (see note)	SF = Snug Fit (to order) NOTE: No hooks required	PC-COL = Paint Painted finish to Kounis standard colour range
NOTE: Redu systems.	icers Covers	fit both Rail In and	Rail Out Ladder				Straight Reducer Flat (		mm Wide Light



# **Cable Ladder Peaked Covers**





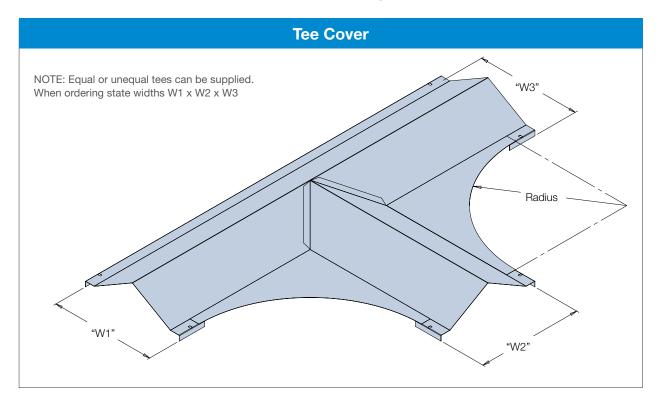
#### **When Ordering**

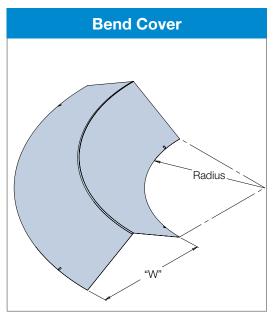
Range	Туре	Size	Thickness	Std. Finish	Fastenings	<b>Rail Direction</b>	Fit	Finish	
3	PC	15	L	G	K	RI or RO	SF	PC-COL	
2 = 2/30	PC = Peak Cover	15 = 150 mm	L = 0.6  mm thk.	G = Galvabond	K = includes	RI = Rail in	SF = Snug Fit	PC-COL =	
3 = 3/50	PCV = Peak	30 = 300 mm	M = 1.2  mm thk.	H = Hot Dip Galv	all required	RO = Rail Out	(to order)	Paint	
4 = 4/70	Cover with louvre	45 = 450 mm	H = 1.6  mm thk.	S = 316	attachment	(see note)	Note: No	Painted finish	
5 = 5/112	vents	60 = 600 mm		Stainless Steel	hooks		hooks	to Kounis	
		75 = 750 mm		A = Aluminium			required	standard colour	
		90 = 900 mm						range	
NOTE: Rail In L	adder (RI) is a Kounis	standard and will	not show in a supply	ORDERING EXAMPLE SHOWN: 3/50 Cable Ladder Peak Cover 150 mm Wide Light Duty					
code. All Rail O	ut ladder will have RO	suffix show in all	supply codes.	Galvabond c/w atta	chment hooks. Pa	inted finish to specific	cation colour.		

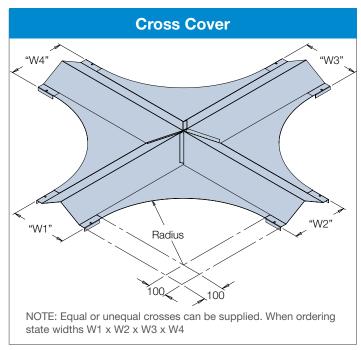
2. Eastern States up to 1.2 mm HDG (code H)



# **Cable Ladder Peak Cover Fittings**







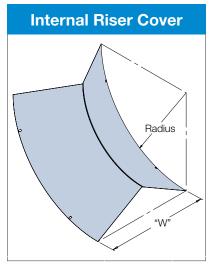
## **When Ordering**

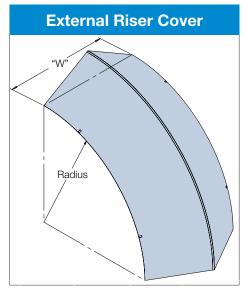
Range	Туре	Fitting	Size	Thickness	Std.Finish	Fastenings	Rail Direction	Radius	Fit	Finish	
3	PC	Т	15	L	G	K	RO	3	SF	PC-COL	
2 = 2/30 3 = 3/50 4 = 4/70 5 = 5/112	Peak	T = Tee B = Bend C = Cross	30 = 300 mm		G = Galvabond H = Hot Dip Galv S = 316 Stainless Steel	K = Includes all required attachment hooks	RI = Rail In RO = Rail Out NB: Bends Suit both rail types so leave clear	3 = 300 mm 4 = 450 mm 6 = 600 mm 9 = 900 mm	Fit (to	PC-COL = Paint Painted finish to Kounis standard colour range	
			standard and will ave a RO suffix s	not show in a hown in all supply	ORDERING EXAMPLE SHOWN: 3/50 Cable Ladder Tee Peak Cover 150 mm Wide Light Duty Galvabond 300mm rad c/w attachment hooks. Painted Finish to specification colour.						



# **Cable Ladder Peak Cover Fittings**





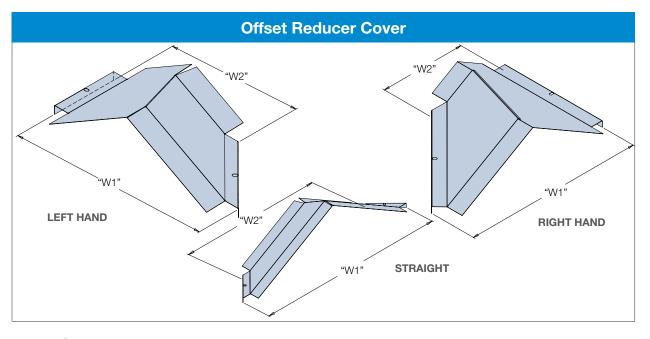


#### **When Ordering**

Range	Туре	Fitting	Size	Thickness	Std.Finish	Fastenings	Rail Direction	Radius	Fit	Finish	
3	PC	RX	15	L	G	K		3	SF	PC-COL	
2= 2/30 3= 3/50 4= 4/70 5= 5/112	PC= Peak Cover	Riser	30= 300 mm	L= 0.6 mm thk. M= 1.2 mm thk. H= 1.5 mm thk.	H= Hot Dip Galv	K= Includes all required attachment hooks	RO= Rail	3= 300 mm 4= 450 mm 6= 600 mm 9= 900 mm	SF= Snug Fit (to order) NOTE: No hooks required	PC-COL= paint Painted finish to Kounis standard colour range	
NOTE 1: Ris	ser Cove	rs Fit both Rail In	and Rail Out Lad	lder systems	ORDERING EXAMPLE SHOWN: 3/50 Cable Ladder External Riser Peak Cover 150 mm wide						

NOTE 1: Riser Covers Fit both Rail In and Rail Out Ladder systems NOTE 2: Type 4 & 5 RX External Riser Covers are identical except hooks i.e. 4-5 Range.

ORDERING EXAMPLE SHOWN: 3/50 Cable Ladder External Riser Peak Cover 150 mm wide Light Duty Galvabond 300 mm rad c/w attachment hooks. Painted finish to specification colour.

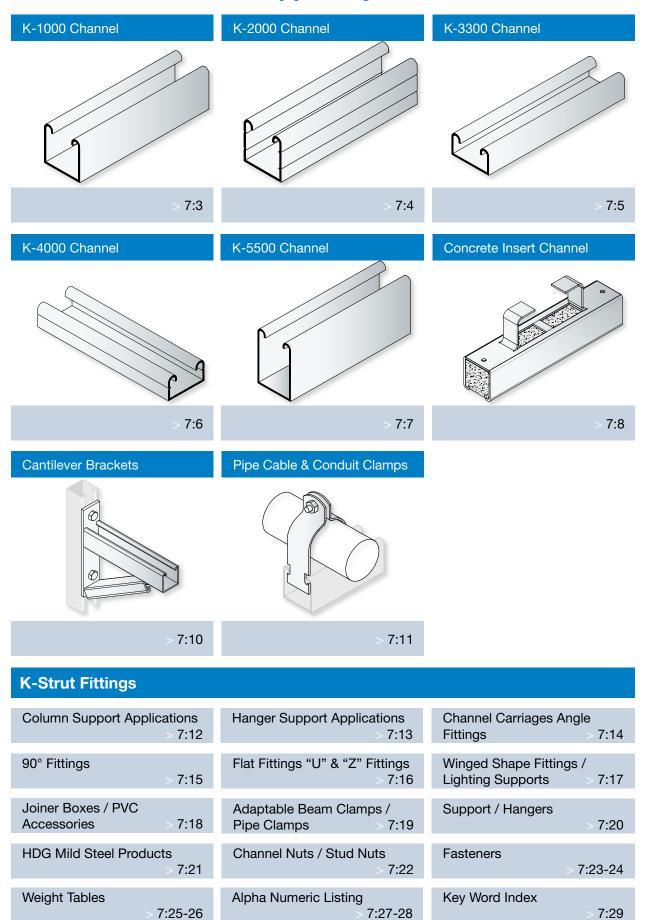


#### **When Ordering**

Range	Туре	Fitting	Size	Thickness	Std.Finish	Fastenings	Rail Direction	Fit	Finish	
3	PC	SR	3015	L	G	K		SF	PC-COL	
2 = 2/30 3 = 3/50 4 = 4/70 5 = 5/112	PC = Peak Cover	S = Straight Reducer LR = Left Reducer RR = Right Reducer	30 = 300 mm			K = Includes all required attachment hooks	RI = Rail In RO = Rail Out (see note)	SF = Snug Fit (to order) NOTE: No hooks required	PC-COL = Paint Painted Finish to Kounis standard colour range	
NOTE: Reducer Covers fit both Rail-In and Rail-Out ladder systems.										



# **SECTION 7: K-Strut Support Systems**





# **K-Strut Support Systems**

## **General Description**

The Kounis Group K-Strut Support Systems were designed as a site adaptable mechanical support method; this product range complements almost any installation of Cable, Pipe, HVAC or general support structure.

The key to making any installation easy and ensuring performance of the final product is to ensure selection of the correct parts and finishes; below is some key information you may require to assist selection:

#### **Product Finishes**

Mild Steel post production *Hot Dip Galvanised* surface treatment to AS/NZS1365, AS1594 and AS/NZS4680

316 Grade Stainless Steel

Mild Steel post production *Zinc Plated* surface treatment to AS1789 Mild Steel *Mill Finish* NO surface treatment

Painted finish available on request.

#### **Load Ratings**

Allowable loading for the K-Strut product range is listed in tables located on the relating product page. All published slip out, pull out and load ratings have been derived by calculation based on ultimate load capacity prior to product failure taking into account a safety factor of 1.5.

K-Strut channel is typically used in either a support beam or support column arrangement.

**Support Beam** technical data lists maximum allowable uniform load and mid span deflection at a range of spans. Together with this data we have designated a loading to span which will give a deflection ratio of 1/200 of the span. This will give a recognized practical beam deflection to minimize sagging of the beam under load.

**Support Column** technical data lists maximum lateral loading at a range on unbraced heights.

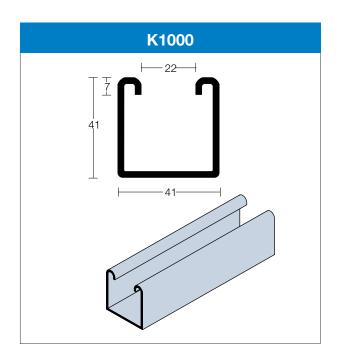
#### **Product Weights**

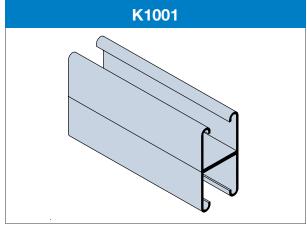
All itemised product weights are located under the alpha numeric listing at the back section of this catalogue.



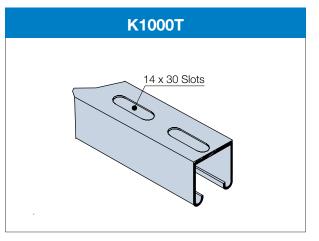
# **K1000 Series Channel**

- 6 m length
- K1000 series channel is manufactured from 2.5 mm Steel or 2.0 mm 316 Grade Stainless Steel
- Slotted option available
- Special cut to length sizes available on request
- Welded combination channel available on request
- Painted finish available on request







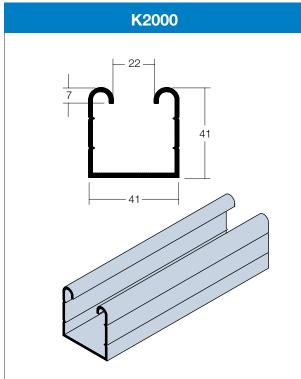


TECHNICA	L DETAILS K1000						N	MASS 2	.6 kg/n	n				
DATA	SPAN (mm)		600	750	1000	1500	2000	2500	3000	3500	4000	4500	5000	6000
	Max Allowed Uniform	K1000	7.5	6.0	4.5	3.0	2.2	1.8	1.5	1.3	1.1	1.0	0.9	0.7
	Load kN	K1001	13.3	13.3	12.7	8.5	6.4	5.1	4.2	3.6	3.2	2.8	2.5	2.1
BEAM	AM Deflection at Uniform		1.0	2.0	4.0	9.0	15.0	24.0	34.0	47.0	60.0	78.0	96.0	
LOADING	Load mm	K1001	0	1.0	2.0	5.0	9.0	13.0	19.0	26.0	35.0	43.0	53.0	77.0
	Uniform Load at	K1000	7.5	6.0	4.5	2.6	1.5	0.9	0.7	0.5	0.4	0.3	0.2	0.2
	Span/200 Deflection kN	K1001	13.3	13.3	12.7	8.5	6.4	4.7	3.3	2.4	1.8	1.5	1.2	8.0
The allowab	The allowable loads shown are derived from di				ate calc	ulated l	oad valu	ies by a	a 1.5 Fa	ctor of	Safety			
DATA	UNBRACED HEIGHT (mm)		600	75	50	1000	1250	15	00	1750	2000	25	00	2750
COLUMN	Max Allowed Lateral	K1000	15.5	14	.6	13.1	11.5	10	).2	9.2	8.4	7.	.0	6.5
LOADING	Load kN	K1001	28.9	28	3.5	27.8	27.0	25	5.9	24.7	23.4	20	0.0	18.2

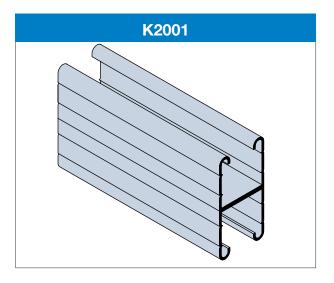


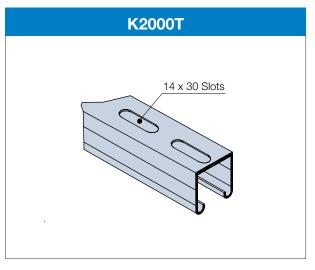
# **K2000 Series Channel**

- 6 m length
- K2000 series channel is manufactured from 1.6 mm Steel
- Slotted option available
- Special cut to length sizes available on request
- Welded combination channel available on request
- Painted finish available on request



	AVAILABLE FINISH
SUFFIX	DESCRIPTION
Н	Hot Dip Galvanised
G	Galvabond
S	316 Stainless Steel
Z	Zinc Passivated
М	Mild Steel Mill Finish
Р	Painted





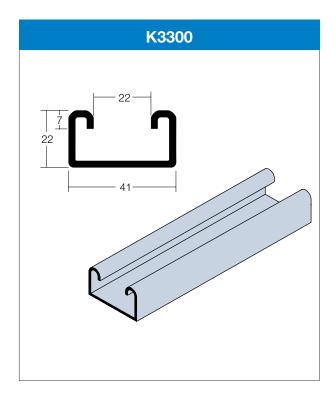
The allowable loads shown are derived from dividing the ultimate calculated load values by a 1.5 Factor of Safety

<b>TECHNICA</b>	L DETAILS K2000		MASS 1.8 kg/m											
DATA	SPAN (mm)	SPAN (mm)		750	1000	1500	2000	2500	3000	3500	4000	4500	5000	6000
	Max Allowed Uniform Load kN  Deflection at Uniform	K2000	4.5	3.6	2.7	1.8	1.3	1.1	0.9	0.8	0.7	0.6	05	0.4
		K2001	8.0	8.0	7.6	5.1	3.8	3.1	2.5	2.2	1.9	1.7	1.5	1.3
BEAM		K2000	1.0	2.0	4.0	9.0	15.0	24.0	34.0	47.0	60.0	78.0	96.0	129.0
LOADING	Load mm	K2001	0	1.0	2.0	5.0	9.0	13.0	19.0	26.0	35.0	43.0	53.0	77.0
	Uniform Load at	K2000	4.5	3.6	2.7	1.6	0.9	0.5	0.4	0.3	0.2	0.2	.1	.1
	Span/200 deflection kN	K2001	8.0	8.0	7.6	5.1	3.8	2.8	2.0	1.4	1.1	0.9	0.7	0.5



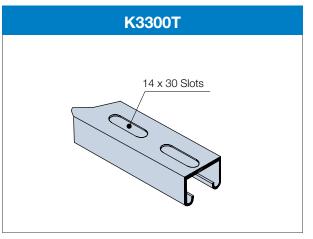
# **K3300 Series Channel**

- 6 m length
- K3300 series channel is manufactured from 2.5 mm Steel or 2.0 mm 316 Grade Stainless Steel
- Slotted option available
- Special cut to length sizes available on request
- Welded combination channel available on request
- Painted finish available on request



	K3301

AVAILABLE FINISH									
SUFFIX	DESCRIPTION								
н	Hot Dip Galvanised								
G	Galvabond								
S	316 Stainless Steel								
Z	Zinc Passivated								
М	Mild Steel Mill Finish								
Р	Painted								

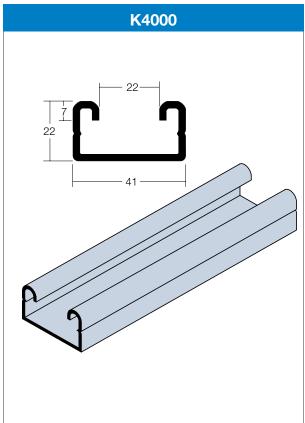


<b>TECHNICA</b>	L DETAILS K3300							MASS	<mark>3 1.9 k</mark> ç	g/m				
DATA	SPAN (mm)		600	750	1000	1500	2000	2500	3000	3500	4000	4500	5000	6000
	Max Allowed Uniform	K3300	2.7	2.2	1.6	1.1	0.8	0.6	0.5	0.5	0.4	0.4	0.3	0.3
	Load kN	K3301	7.5	6.0	4.5	3.0	2.3	1.8	1.5	1.3	1.1	1.0	0.9	0.8
BEAM	Deflection at Uniform	K3300	2.0	4.0	7.0	16.0	27.0	39.0	57.0	90.0	107.0	153.0	157.0	272.0
LOADING	Load mm	K3301	1.0	2.0	4.0	9.0	16.0	25.0	36.0	49.0	62.0	81.0	100.0	153.0
	Uniform Load at	K3300	2.7	2.1	1.2	0.5	0.3	0.2	0.1	0.1	0.1	0.1	-	-
	Span/200 deflection kN	K3301	7.5	6.0	4.5	2.0	1.4	0.9	0.6	0.5	0.4	0.3	0.2	-
The allowab	ole loads shown are derive	d from di	viding th	ne ultin	nate ca	lculated	load v	alues k	y a 1.5	Factor	of Safe	ty		
DATA	UNBRACED HEIGHT (mm)		600	7	50	1000	125	50	1500	1750	200	00	2500	2750
COLUMN	Max Allowed Lateral	K3300	9.6	8	3.9	7.7	6.2	2	5.0	4.1	-		-	-
LOADING	Load kN	K3301	18.7	1	8.1	16.9	15.	.6	14.1	12.5	10	.9	8.5	7.5

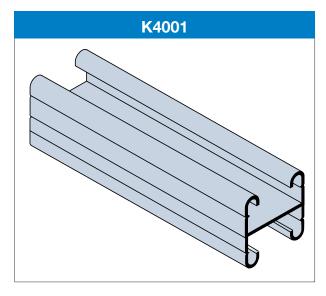


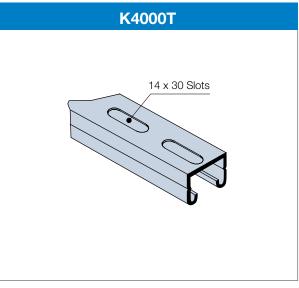
# **K4000 Series Channel**

- 6 m length
- K4000 series channel is manufactured from 1.6 mm Steel
- Slotted option available
- Special cut to length sizes available on request
- Welded combination channel available on request
- Painted finish available on request



	AVAILABLE FINISH
SUFFIX	DESCRIPTION
н	Hot Dip Galvanised
G	Galvabond
S	316 Stainless Steel
Z	Zinc Passivated
М	Mild Steel Mill Finish
Р	Painted





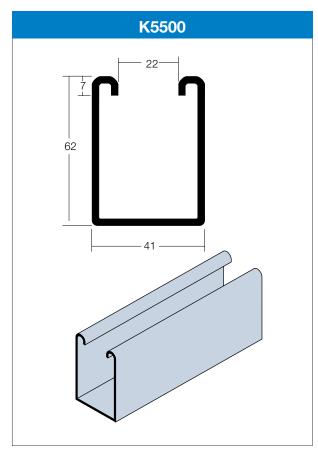
The allowable loads shown are derived from dividing the ultimate calculated load values by a 1.5 Factor of Safety.

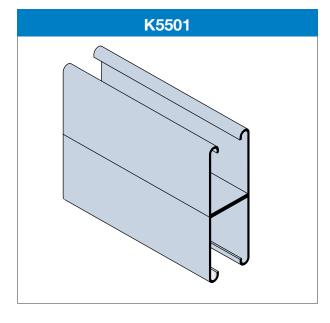
TECHNICA	L DETAILS K4000		MASS 1.3 kg/m												
DATA	SPAN (mm)	SPAN (mm)		750	1000	1500	2000	2500	3000	3500	4000	4500	5000	6000	
	Max Allowed Uniform	K4000	1.6	1.3	1.0	0.7	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	
	Load kN	K4001	4.5	3.6	2.7	1.8	1.4	1.1	0.9	0.8	0.7	0.6	0.5	0.5	
BEAM	Deflection at Uniform	K4000	2.0	4.0	7.0	16.0	27.0	39.0	57.0	90.0	107.0	153.0	157.0	272.0	
LOADING	Load mm	K4001	1.0	2.0	4.0	9.0	16.0	25.0	36.0	49.0	62.0	81.0	100.0	153.0	
	Uniform Load at	K4000	1.6	1.3	0.7	0.3	0.2	0.1	0.1	-	-	-	-	-	
	Span/200 deflection kN	K4001	4.5	3.6	2.7	1.2	0.8	0.5	0.4	0.3	0.2	0.2	0.1	-	



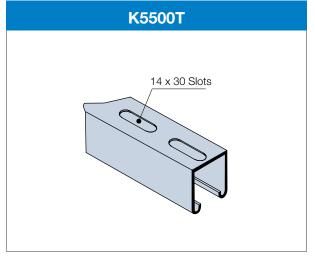
# **K5500 Series Channel**

- 6 m length
- K5500 series channel is manufactured from 2.5 mm Steel or 2.0 mm 316 Grade Stainless Steel
- Slotted option available
- Special cut to length sizes available on request
- Welded combination channel available on request
- Painted finish available on request





AVAILABLE FINISH										
SUFFIX DESCRIPTION										
Н	H Hot Dip Galvanised									
G	<b>G</b> Galvabond									
Z	Zinc Passivated									
М	M Mild Steel Mill Finish									
P Painted										
When Ordering add suffix to end of product code										



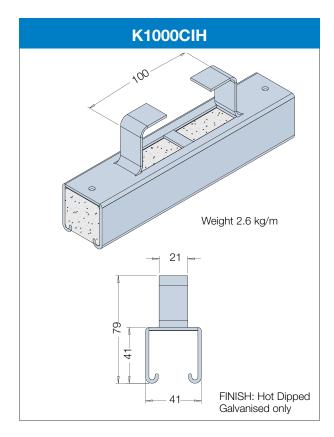
The allowable loads shown are derived from dividing the ultimate calculated load values by a 1.5 Factor of Safety.

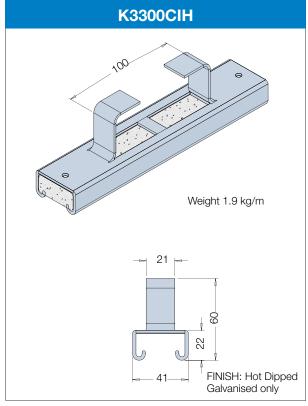
TECHNICAL DETAILS K5500				MASS 3.4 kg/m										
DATA	SPAN (mm)		600	750	1000	1500	2000	2500	3000	3500	4000	4500	5000	6000
BEAM LOADING	Max Allowed Uniform Load kN	K5500	14.3	11.4	8.6	5.7	4.3	3.4	2.9	2.4	2.1	1.9	1.7	1.4
		K5501	19.5	19.5	17.3	11.5	8.6	6.9	5.8	4.9	4.3	3.8	3.5	2.9
	Deflection at Uniform Load mm	K5500	1.0	1.0	3.0	6.0	11.0	16.0	24.0	32.0	41.0	53.0	65.0	93.0
		K5501	0	0	1.0	2.0	4.0	6.0	9.0	12.0	16.0	20.0	25.0	36.0
	Uniform Load at Span/200 deflection kN	K5500	14.3	11.4	8.6	5.7	4.1	2.6	1.8	1.3	1.0	0.8	0.7	0.5
		K5501	19.5	19.5	17.3	11.5	8.6	6.9	5.8	4.9	4.3	3.8	3.5	2.4

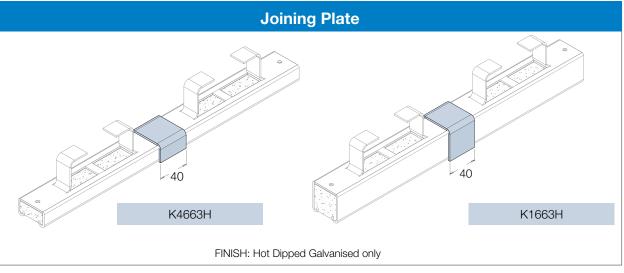


# **Concrete Insert Channel**

- 6 m length
- CI series channel is manufactured from 2.5 mm Mild Steel with post production Hot Dip Galvanised Surface Treatment
- Pressed lugs at 200 mm continuous centres
- Removable foam insert
- Testing is based on a minimum 300 mm section cast in 25 Mpa (average) concrete.
   Maximum load before pull out failure is 9.3 kN based on a safety factor of 3
- Special cut to length sizes available on request









# **Channel Loading Factors**

Technical details by K-Strut series are based on a uniform load taking into account a safety factory of 1.5. Below conversion factors for beams are designed to help ascertain the correct series for the desired application.

As an example;

K-Strut Series K1000 Channel in a uniform load over a 600 mm span has a max allowable load of 7.5 kN resulting in a 1 mm deflection at full load.

#### Scenario K1000G over 600 mm span with central concentrated load

Uniform load 7.5 kN x 0.50 central concentrated load factor = 3.75 kN

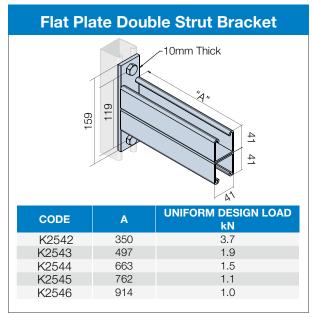
Uniform deflection at full load 1 mm x 0.80 central concentrated deflection factor = 0.8 mm

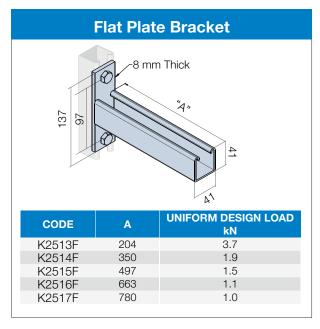
#### **Conversion Factors for Beams with Various Static Loading Conditions**

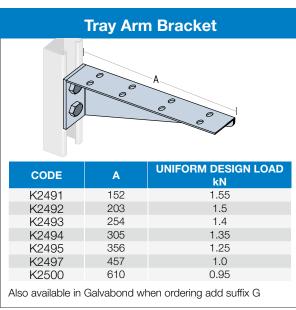
	LOAD AND SUPPORT CONDITION		LOAD FACTOR	DEFLECTION FACTOR
1.	Simple Beam, Uniform Load	<u> </u>	1.00	1.00
2.	Simple Beam, Concentrated Load at Centre	<b>†</b>	0.50	0.80
3.	Simple Beam, Two Equal Concentrated Loads at 1/4 pts	<b>*</b> * *	1.00	1.10
4.	Beam Fixed at Both Ends, Uniform Load		1.50	0.30
5.	Beam Fixed at Both Ends, Concentrated Load at Centre	<b>†</b>	1.00	0.40
6.	Cantilever Beam, Uniform Load		0.25	2.40
7.	Cantilever Beam, Concentrated Load at End		0.12	3.20
8.	Continuous Beam, Two Equal Spans, Uniform Load on Both Ends	7///////	1.00	0.42

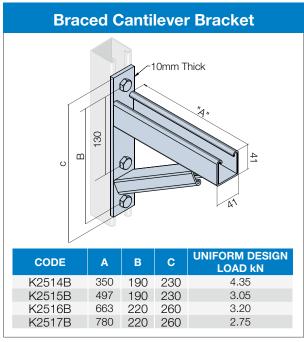


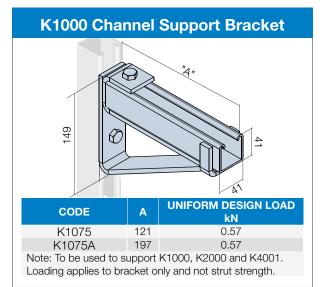
#### **Cantilever Brackets**











AVAILABLE FINISH		
SUFFIX	DESCRIPTION	
Н	Hot Dip Galvanised	
S	316 Stainless Steel	
When Ordering add suffix to end of product code		

Mounting plates have 14 mm diameter holes.

Note: Kounis Braced brackets are longer than other suppliers, and also 900 size (1.5 kN) brackets are available to firm order.



### Pipe, Cable & Conduit Clamps

### Pipe, Cable & Conduit Clamps

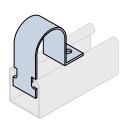


NOTE: Diameters are to outside of pipe, cable or insulation. Clamps are supplied with Pan Head screws and nuts.

## **Insulation Barrier** Insulating barrier K2600Black-PVC Insulating barrier in 20 m rolls K2600White-'Supacushion' barrier in 5 m Rolls

CODE	FIT DIA.	CODE	FIT DIA.	CODE	FIT DIA.
K5-8	8 mm	K5-51	51	K5-117	117 mm
K5-10	10 mm	K5-54	54	K5-121	121 mm
K5-12	12 mm	K5-57	57	K5-127	127 mm
K5-16	16 mm	K5-60	60	K5-133	133 mm
K5-18	18 mm	K5-64	64	K5-139	139 mm
K5-20	20 mm	K5-67	67	K5-146	146 mm
K5-21	21 mm	K5-70	70	K5-152	152 mm
K5-22	22 mm	K5-76	76	K5-159	159 mm
K5-25	25 mm	K5-79	79	K5-165	165 mm
K5-27	27 mm	K5-83	83	K5-178	178 mm
K5-29	29 mm	K5-86	86	K5-191	191 mm
K5-32	32 mm	K5-89	89	K5-203	203 mm
K5-34	34 mm	K5-92	92	K5-219	219 mm
K5-35	35 mm	K5-95	95	K5-230	230 mm
K5-38	38 mm	K5-98	98	K5-241	241 mm
K5-42	42 mm	K5-102	102	K5-254	254 mm
K5-43	43 mm	K5-105	105	K5-305	305 mm
K5-44	44 mm	K5-108	108	K5-315	315 mm
K5-48	48 mm	K5-111	111	K5-324	324 mm
K5-49	49 mm	K5-114	114		

#### **Single Bolt Strut Clamp**



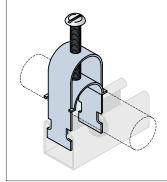
Setscrew and Strut nut ordered separately

CODE	FIT DIA.
K1600-34	34 mm
K1600-43	43 mm
K1600-48	48 mm
K1600-60	60 mm
K1600-76	76 mm
K1600-89	89 mm
K1600-102	102 mm
K1600-114	114 mm
K1600-152	152 mm
K1600-165	165 mm

AVAILABLE FINISH		
SUFFIX	DESCRIPTION	
Н	Hot Dip Galvanised	
Z	Zinc Passivated	
S	316 Stainless Steel	

When Ordering add suffix to end of product code

#### **Adjustable Saddle Clamp**



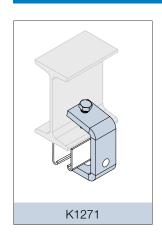
CODE	FIT DIA.
K5026-1	13 mm
K5028-1	19 mm
K5030-1	25 mm
K5032-1	32 mm
K5034-1	38 mm
K5036-1	44 mm
K5038-1	51 mm
K5040-1	57 mm
K5042-1	64 mm
K5044-1	70 mm
K5046-1	76 mm

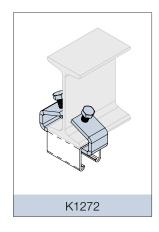
AVAILABLE FINISH		
SUFFIX	DESCRIPTION	
н	Hot Dip Galvanised	
Z	Zinc Passivated	
When Ordering add suffix to and of product code		

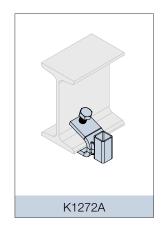
When Ordering add suffix to end of product code

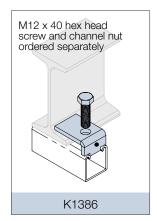


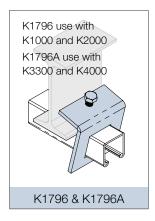
#### **Column Support Applications**

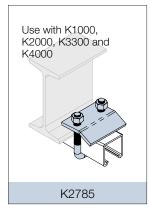


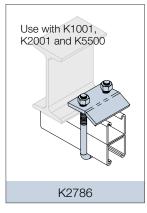


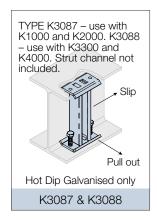


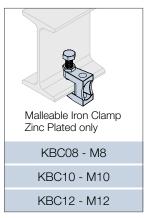


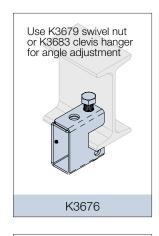


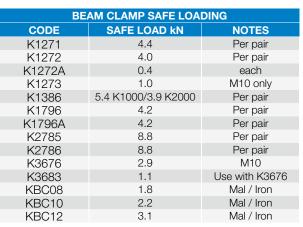




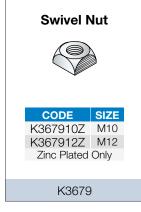












CODE	<b>USED WITH</b>	PULL OUT	SLIP
K3087	With K1000	450 kg	360 kg
K3087	With K2000	215 kg	135 kg
K3088	With K3300	450 kg	360 kg
End plates include Cone point screws only. Strut Channel is not			
included.			

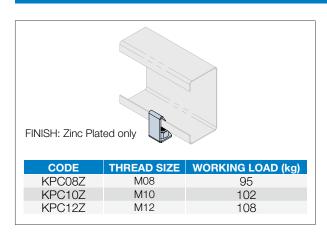
AVAILABLE FINISH		
SUFFIX	DESCRIPTION	
Н	Hot Dip Galvanised	
S	316 Stainless Steel	

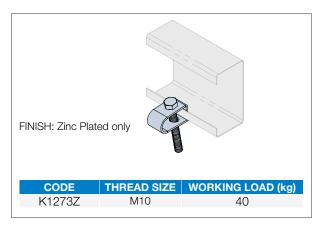
When Ordering add suffix to end of product code

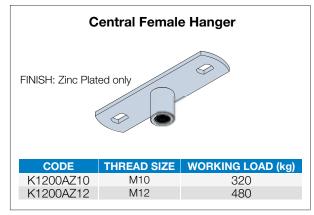
NOTES: Material thickness 6mm hole diameter 14 mm Channel nuts and bolts order seperately

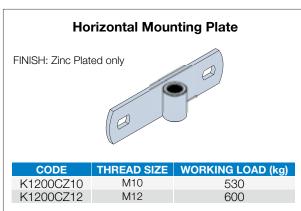


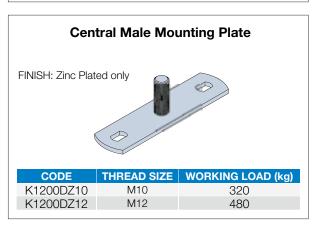
#### **Hanger Support Applications**

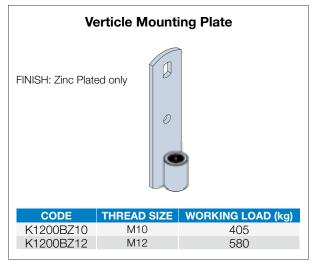


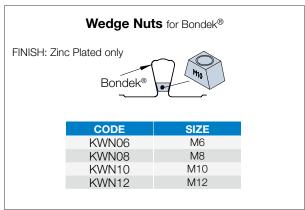








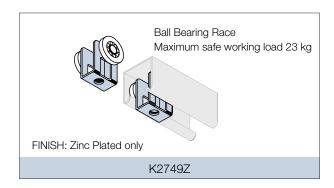


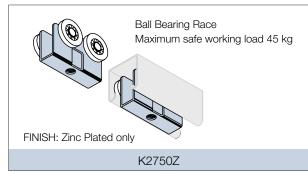


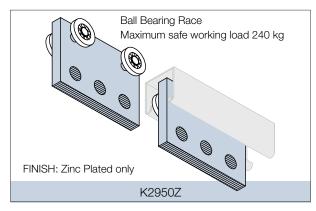
Mounting Plate Material:  $100 \times 25 \times 2.5 \text{ mm}$  thick Finish : Zinc plate finish

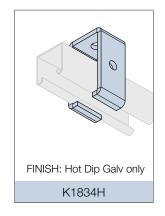


#### **Channel Carriages**



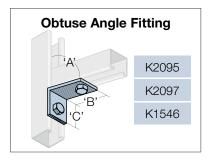


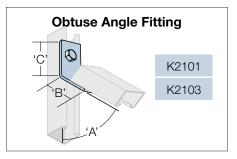






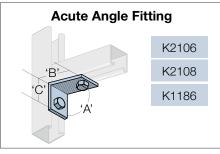
#### **Angle Fittings**





Angular Fitting	Ac
'A' (B'	É, C
45°	

K2452



When Ordering add suffix to end of product code				
OBTU:	SE ANG	LE FITTI	NG	
CODE	Α°	В	С	
K2095	75	91	43	
K2097	60	86	48	
K1546	45	76	60	
K2101	30	83	52	
K2103	15	84	52	
ACUT	<b>E ANGL</b>	E FITTIN	<b>IG</b>	
CODE	Α°	В	С	
K2106	75	80	63	
K2108	60	80	63	
K1186	45	80	63	
Α	ANGLE FITTING			
CODE	Α	В	С	

NOTE: Material

14 mm. Channel nuts and bolts order

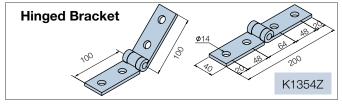
separately.

thickness 6 mm. Hole diameter

**AVAILABLE FINISH** 

**DESCRIPTION** Hot Dip Galvanised 316 Stainless Steel

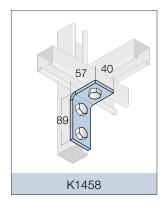
SUFFIX

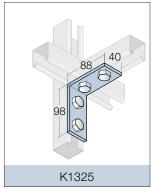


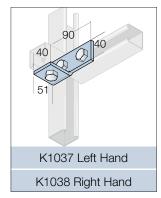
E.&O.E.

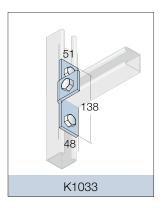


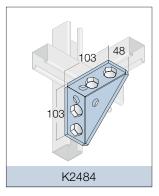
### 90° Fittings

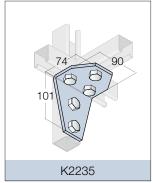


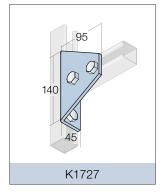


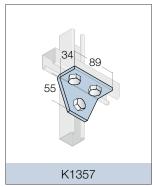


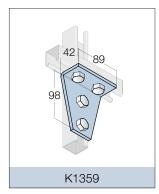


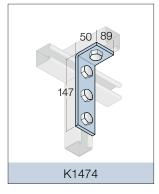


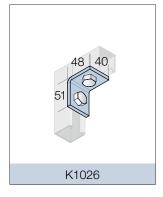


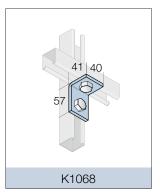


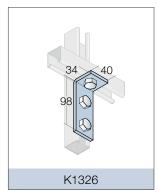


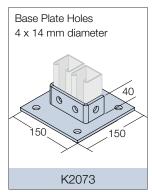


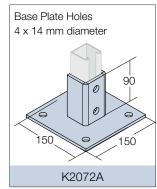


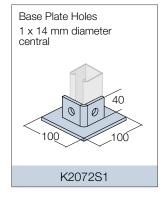












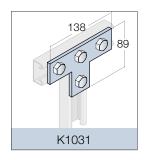
SUFFIX DESCRIPTION	
	SUFFIX
Hot Dip Galvanised	Н
S 316 Stainless Steel	S

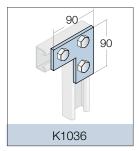
When Ordering add suffix to end of product code

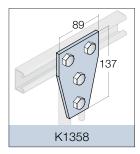
NOTES: Material thickness 6 mm hole diameter 14 mm Channel nuts and bolts ordered seperately

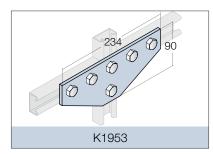


#### **Flat Fittings**







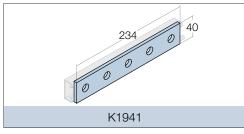


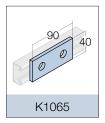


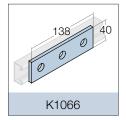


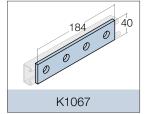






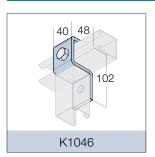


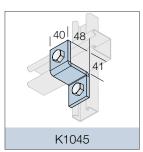


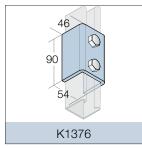


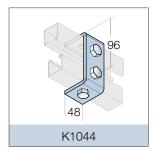
AVAILABLE FINISH		
SUFFIX	DESCRIPTION	
Н	Hot Dip Galvanised	
S	316 Stainless Steel	
When Ordering add suffix to end of product code		

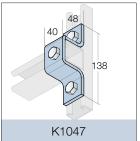
#### "U" & "Z" Fittings

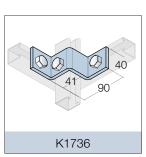


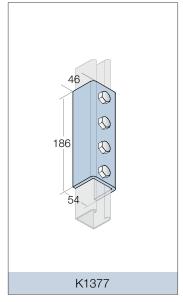


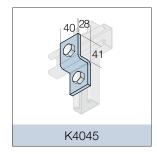


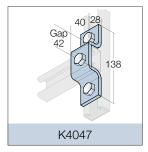


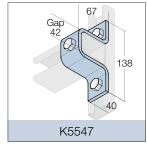












• •	
S	316 Stainless Steel
When Or	dering add suffix to end
of product	t code
•	

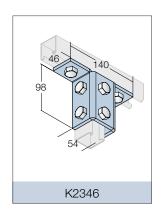
**AVAILABLE FINISH** 

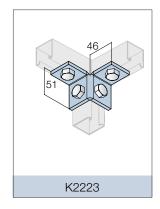
**DESCRIPTION**Hot Dip Galvanised

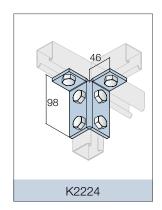
SUFFIX

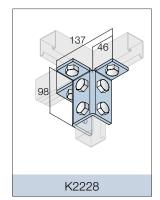


### **Winged Shape Fittings**

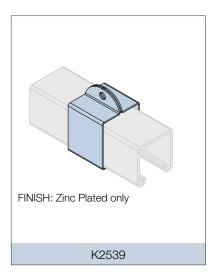


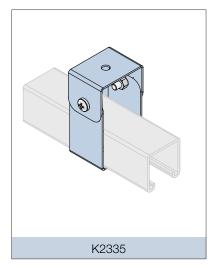


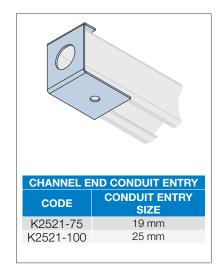


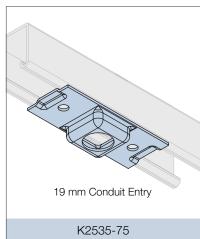


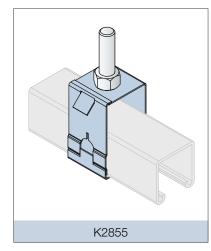
### **Lighting Supports**

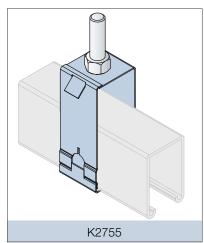










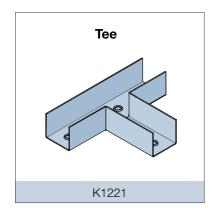


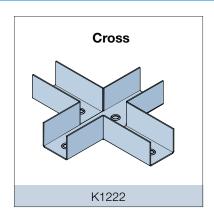
	AVAILABLE FINISH
SUFFIX	DESCRIPTION
Н	Hot Dip Galvanised
Z	Zinc Plated

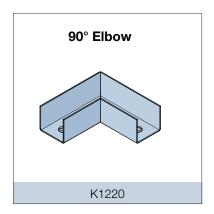
When Ordering add suffix to end of product code

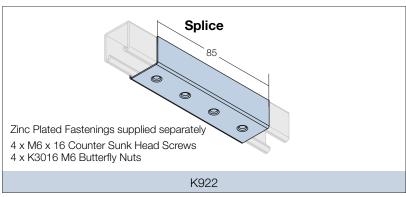


#### **Joiner Boxes/PVC Accessories**

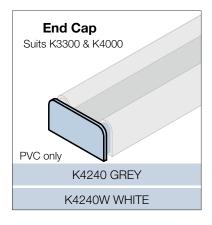


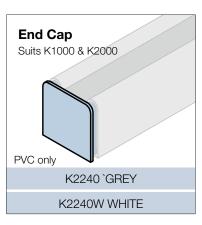


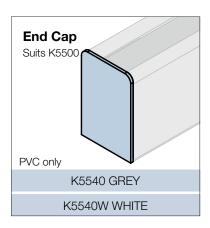




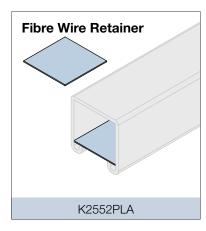
AV	AILABLE FINISH
SUFFIX	DESCRIPTION
н	Hot Dip Galvanised
Z	Zinc Plated
When Orde	ering add suffix to end of
product cod	de





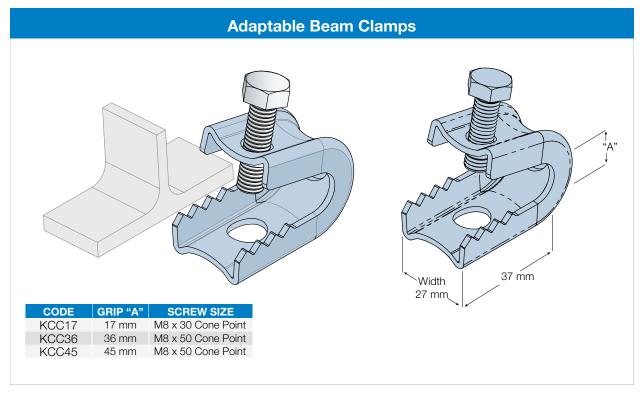


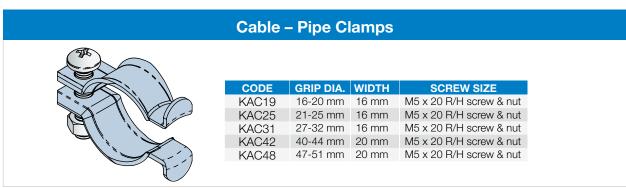
Closure Strip 3 m Length	
K1184AL AL	UM
K1184PL GF	REY
K1184PL WH	IITE

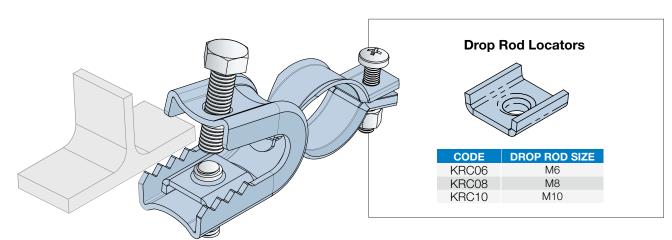


AVA	AILABLE FINISH
SUFFIX	DESCRIPTION
PL	PVC Grey
W	PVC White
AL	Aluminium









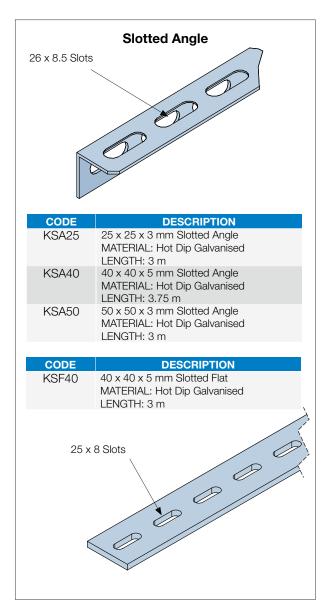
General Arrangement of Assembly with Cable Clamp and Drop Rod

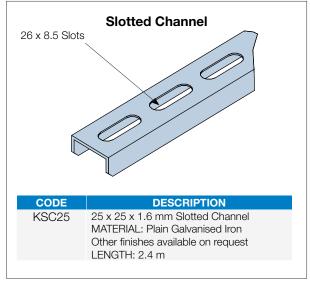
	AVAILABLE FINISH
SUFFIX	DESCRIPTION
н	Hot Dip Galvanised
Z	Zinc Passivated
S	316 Stainless Steel

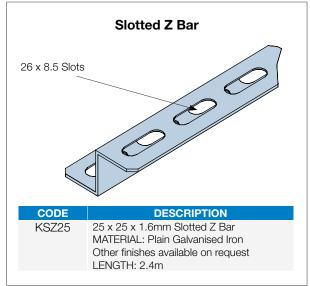
When Ordering add suffix to end of product code

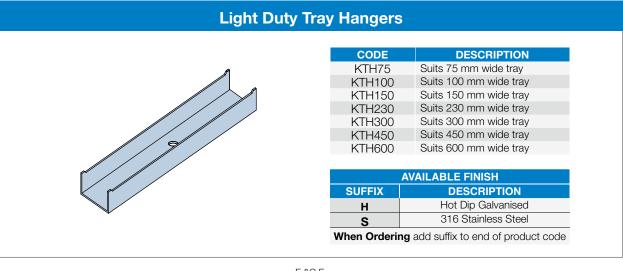


#### Supports/Hangers



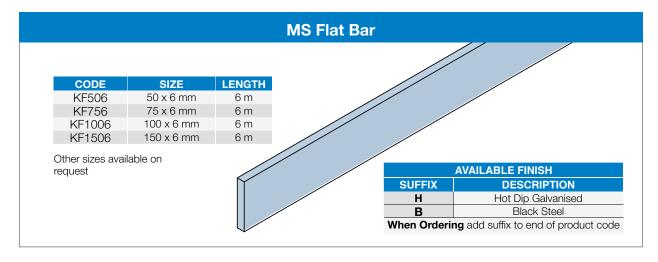


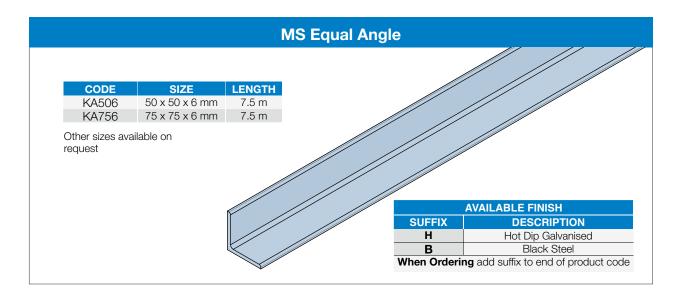


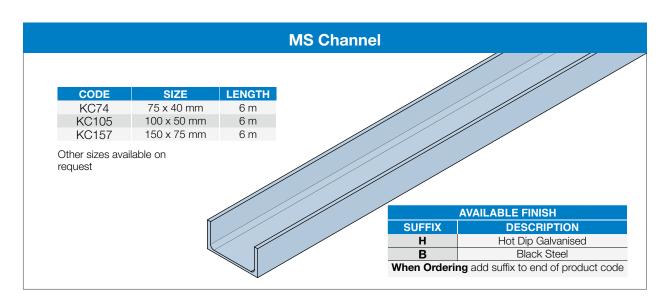




### **Structural Steel Hot Dip Galvanised**



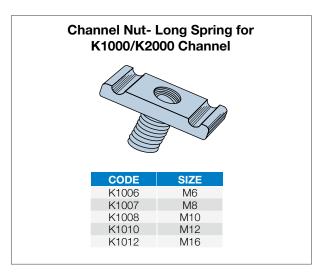


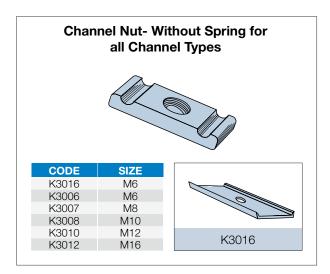


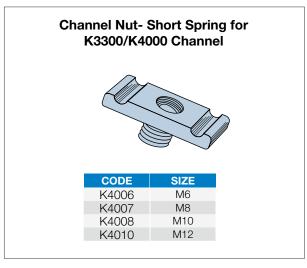
STRUCTURAL STEEL: AS/NZS 3679 HOT DIP GALVANISED: AS/NZS 4680

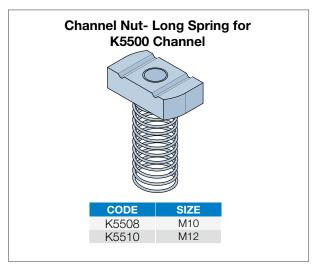


#### **Channel Nuts**

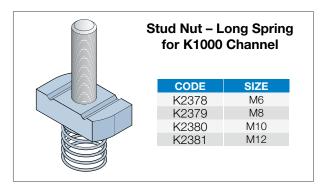


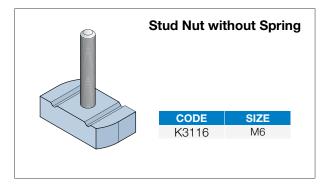






#### **Stud Nuts**





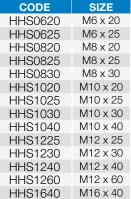
	AVAILABLE FINISH
SUFFIX	DESCRIPTION
н	Hot Dip Galvanised
Z	Zinc Passivated
S	316 Stainless Steel
M. O. I	11 66 1 1

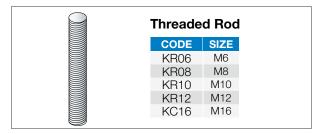
When Ordering add suffix to end of product code

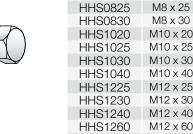


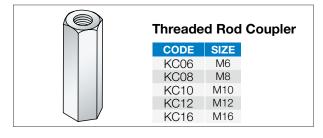
#### **Fasteners**

#### **Hex Head Set Screws**





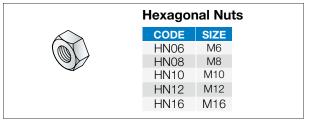




#### **Pan Head Screws**



CODE	SIZE
PHS0620	M6 x 20
PHS0625	M6 x 25
PHS0825	M8 x 25

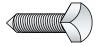


#### **Countersunk Head Screws**



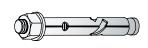
CODE	SIZE
CKS0616	M6 x 16
CKS0620	M6 x 20
CKS0820	M8 x 20

#### **Cone Point Set Screws**



CODE	SIZE
CPS1040	M10 x 40
CPS1240	M12 x 40
CPS1250	$M12 \times 50$

### **Concrete Anchor Hex Head**



CODE	SIZE
DB0840	M8 x 40
DB1040	M10 x 40
DB1050	M10 x 50
DB1075	M10 x 75
DB1260	M12 x 60
DB12100	M12 x 100

	Flat Was	hers
	CODE	SIZE
	FW06	M6
	FW08	M8
_	FW10	M10
	FW12	M12
	FW16	M16
	Spring V	Vashe
	CODE	SIZE
	SW06	M6
	SW08	M8
	SW10	M10
	SW12	M12

	Anchor/D	rop in Typ
	CODE	SIZE
	DIM06	M6 x 25
<b>()</b> )	DIM08	M8x30
	DIM10	M10 x 40
	DIM12	M12 x 50
	DIM16	M16 x 65

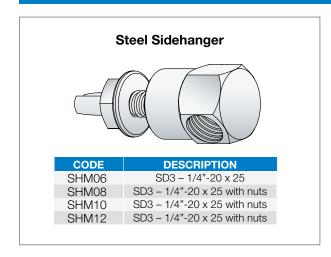
Nylon Anchor									
<del>-</del>	ZINC	SIZE							
	KNMH6538	6.5 x 38							

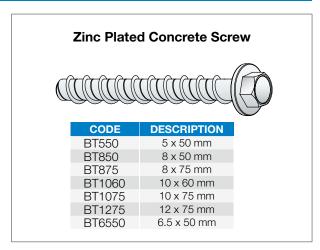
AVAILABLE FINISH									
SUFFIX	DESCRIPTION								
Н	Hot Dip Galvanised								
Z	Zinc Passivated								
S	316 Stainless Steel								

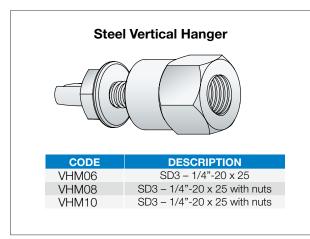
When Ordering add suffix to end of product code

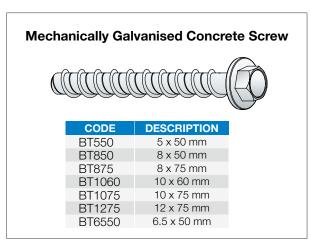


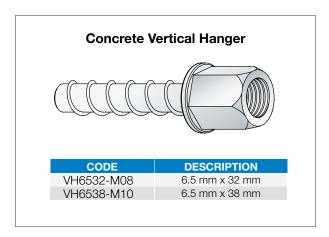
#### **Fasteners**

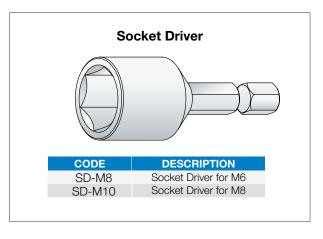




















			CABLE L	ADDER \	WEIGHT	TABLES				
LADDER		2/30	3/50	4/70L	4/70	5/112	3/50	4/70L	4/70	5/11
Ladder 6M	150	20.28	25.71	31.81	39.16	44.92	25.71	31.81	39.16	44.9
	300	23.16	28.59	34.69	42.04	47.80	28.59	34.69	42.04	47.8
	450	25.77	31.21	37.30	44.66	52.82	31.21	37.30	44.66	52.8
	600	28.46	33.90	39.99	47.35	56.38	33.90	39.99	47.35	56.3
	750	30.94	36.38	42.47	49.83	59.94	36.38	42.47	49.83	59.9
	900	33.73	39.16	45.26	52.62	61.27	39.16	45.26	52.62	61.2
Splice Plate	Universal	0.18	0.47	1.32	1.63	1.86	0.47	1.32	1.63	1.86
BENDS		300R	300R	300R	300R	300R	450R	450R	450R	450F
Bends 90°	150	1.68	2.63	4.17	5.11	5.69	3.26	4.98	6.12	6.84
Derius 90	300	2.37	3.42	5.06	6.10	6.74	4.35	6.16	7.41	8.18
	450	3.44	4.61	6.33	7.48	8.75	5.24	7.16	8.51	9.99
	600	4.24	5.52	7.34	8.59	10.11	6.73	8.74	10.19	12.1
	750	5.00	6.39	8.31	9.66	11.46	7.75	9.84	11.40	13.7
	900	5.82	7.33	9.32	10.78	12.32	8.83	11.03	12.69	14.5
RISERS 9	00°	300R	300R	300R	300R	300R	450R	450R	450R	4501
Risers 90°	150	1.44	2.40	3.98	4.91	5.54	3.15	4.92	6.06	6.82
	300	1.76	2.72	4.30	5.23	5.86	3.63	5.40	6.54	7.30
	450	2.05	3.01	4.59	5.52	6.41	4.07	5.84	6.97	8.22
	600	2.35	3.30	4.89	5.82	6.81	4.52	6.29	7.42	8.82
	750	2.62	3.58	5.16	6.09	7.20	4.93	6.70	7.83	9.4
	900	2.93	3.89	5.47	6.40	7.36	5.40	7.17	8.30	9.5
TEES	·	300R	300R	300R	300R	300R	450R	450R	450R	450
Equal Tees	150	3.88	5.39	7.14	8.42	9.29	7.29	9.30	11.09	12.2
	300	4.88	6.51	8.34	9.72	10.65	8.69	10.78	12.66	13.8
	450	6.29	8.01	9.91	11.37	13.05	9.89	12.17	14.17	16.2
	600	7.44	9.23	11.22	12.77	14.75	11.69	13.95	16.01	18.6
		8.51				_				
	750		10.40	12.45	14.10	16.47	12.98	15.32	17.47	20.5
00000	900	10.55	12.54	14.67	16.40	18.59	15.26	17.68	19.92	22.5
CROSS		300R	300R	300R	300R	300R	450R	450R	450R	450
Equal Cross	150	5.82	7.51	10.39	12.07	13.10	10.40	13.41	15.75	17.0
	300	7.00	8.69	11.56	13.24	14.28	11.73	14.74	17.08	18.3
	450	8.54	10.23	13.10	14.78	16.62	12.98	15.99	18.33	20.5
	600	9.81	11.50	14.37	16.06	18.18	14.84	17.85	20.19	22.9
	750	11.01	12.70	15.58	17.26	19.74	16.18	19.19	21.53	24.7
	900	13.19	14.88	17.76	19.44	21.60	18.52	21.53	23.87	26.4
BENDS 4	5°	300R	300R	300R	300R	300R	450R	450R	450R	450
Bends 45°	150	1.04	1.72	3.06	3.76	4.13	2.02	3.42	4.21	4.6
	300	1.46	2.20	3.54	4.28	4.73	2.50	3.95	4.80	5.3
	450	1.85	2.63	4.03	4.82	5.57	2.95	4.44	5.34	6.2
	600	2.25	3.09	4.54	5.38	6.26	4.00	5.53	6.47	7.6
	750	2.63	3.53	5.02	5.91	6.94	4.57	6.14	7.13	8.5
	900	3.04	4.00	5.53	6.47	7.37	5.18	6.82	7.86	8.9
RISERS 4		300R	300R	300R	300R	300R	450R	450R	450R	450
Risers 45°	150	0.98	1.66	2.99	3.68	4.11	1.98	3.39	4.18	4.6
1 110010 40	300	1.30	1.98	3.31	4.00	4.11	2.30	3.71	4.10	5.0
	450	1.59	2.27	3.60	4.29	4.99	2.59	4.00	4.79	5.6
	600	1.89	2.57	3.90	4.59	5.39	2.89	4.30	5.09	6.0
	750	2.17	2.85	4.18	4.86	5.79	3.17	4.58	5.36	6.4
	900	2.48	3.16	4.49	5.17	5.93	3.48	4.89	5.67	6.5
		300R	300R	300R	300R	300R	450R	450R	450R	450
REDUCER	RS		1	3.42	4.17	4.62	2.14	3.42	4.17	4.6
REDUCER	300	1.32	2.14	3.42						
		1.32 1.62	2.14 2.45	3.73	4.47	4.92	2.45	3.73	4.47	4.9
	300		+			4.92 5.85	2.45 2.89	3.73 3.88	4.47 4.62	
	300 450	1.62	2.45	3.73	4.47					4.9 5.8 5.9



			CABL	E LADI	DER WE	IGHT TABLES		
LADDER		3/50	4/70L	4/70	5/112	3/50 Fire Rated	4/70L Fire Rated	5/112 Fire Rated
Ladder 6 m	150	25.71	31.81	39.16	44.92	26.20	32.24	46.67
	300	28.59	34.69	42.04	47.80	29.29	35.33	51.21
	450	31.21	37.30	44.66	52.82	32.38	38.42	55.74
	600	33.90	39.99	47.35	56.38	35.47	41.51	60.28
	750	36.38	42.47	49.83	59.94	N/A	N/A	N/A
	900	39.16	45.26	52.62	61.27	41.65	47.69	69.35
Splice Plate	Universal	0.47	1.32	1.63	1.86	0.47	1.32	1.86
BENDS	0111101001	600R	600R	600R	600R	600R	600R	600R
Bends 90°	150	4.02	5.94	7.29	8.12	5.84	8.35	12.22
201100 00	300	4.98	6.97	8.43	9.32	7.13	9.77	14.31
	450	6.30	8.41	9.96	11.61	8.44	11.20	16.39
	600	7.37	9.57	11.22	13.17	9.69	12.63	18.49
	750	8.36	10.67	12.43	14.74	N/A	N/A	N/A
	900	10.34	12.73	14.60	16.71	12.34	15.49	22.69
RISERS 90		600R	600R	600R	600R	600R	600R	600R
Risers 90°	150	3.78	5.75	7.09	7.95	5.61	7.36	11.02
1 113013 30	300	4.26	6.23	7.57	8.43	6.46	8.05	12.28
	450	4.69	6.67	8.00	9.26	7.32	8.73	13.54
	600	5.14	7.11	8.45	9.86	8.18	9.42	14.80
	750	5.14	7.11	8.87	10.45	N/A	9.42 N/A	N/A
	900		7.99		10.43	9.90	10.79	17.32
TEEC	900	6.02		9.33				
TEES	450	600R	600R	600R	600R	600R	600R	600R
Equal Tees	150	9.81	12.50	14.57	15.90	11.97	16.30	21.77
	300	11.55	14.32	16.48	17.87	13.98	18.73	24.75
	450	13.04	15.89	18.15	20.54	15.81	21.00	27.48
	600	15.16	18.09	20.43	23.43	18.52	24.13	31.22
	750	16.74	19.75	22.19	25.73	N/A	N/A	N/A
	900	19.34	22.43	24.96	28.07	25.44	29.85	41.72
CROSS		600R	600R	600R	600R	600R	600R	600R
Equal Cross	150	14.29	17.92	20.42	21.95	17.68	22.71	30.08
	300	16.24	19.87	22.37	23.90	20.46	25.49	33.98
	450	17.92	21.56	24.05	26.78	23.06	28.09	37.63
	600	20.23	23.86	26.36	29.72	26.35	31.38	42.29
	750	22.11	25.74	28.24	32.20	N/A	N/A	N/A
	900	24.78	28.42	30.91	34.22	32.93	37.96	51.60
BENDS 45	5°	600R	600R	600R	600R	600R	600R	600R
Bends 45°	150	2.34	3.83	4.73	5.26			
	300	2.82	4.35	5.29	5.88			
	450	3.27	4.86	5.85	6.71	ON	ON	ON
	600	4.30	5.94	6.99	8.18	APLICATION	APLICATION	APLICATION
	750	4.88	6.56	7.65	9.05			
	900	5.50	7.23	8.38	9.56			
RISERS 45	5°	600R	600R	600R	600R	600R		
Risers 45°	150	2.29	3.81	4.69	5.26			
	300	2.61	4.13	5.01	5.58			
	450	2.90	4.42	5.30	6.13	ON	ON	ON
	600	3.20	4.72	5.60	6.53	APLICATION	APLICATION	APLICATION
	750	3.47	4.99	5.88	6.92			
	900	3.78	5.30	6.19	7.07			
REDUCER	S	Std	Std	Std	Std	Std	Std	Std
	300	2.14	3.42	4.17	4.62			
Straight Reducers		2.45	3.73	4.47	4.92			
Straight Reducers	450	2.40						
Straight Reducers	450 600					ON	ON	ON
Straight Reducers	600 750	2.89	3.88	4.62 5.06	5.85 5.93	ON APLICATION	ON APLICATION	ON APLICATION



	CABLE LADDER & FITTINGS											
Kounis Type		2/30	3/50	4/70L	4/70	5/112						
_	150 mm	19.70	26.20	32.30	39.28	44.98						
Ladder	300 mm	22.30	29.08	35.17	42.13	47.83						
	450 mm	24.90	31.95	38.05	47.11	52.82						
ight m L	600 mm	27.50	34.83	40.93	50.67	56.38						
Straight 6 m Le	750mm	30.10	37.70	43.80	54.24	59.94						
Ó	900 mm	32.70	44.89	50.99	57.80	63.50						
		0.30	0.47	1.32	1.63	1.86						

Kounis	з Туре	2/30	3/50	4/70L & 4/70	5/112	3/50	4/70L & 4/70	5/112	3/50	4/70L & 4/70	5/112
Rad	lius	300R	300R	300R	300R	450R	450R	450R	600R	600R	600R
0°	150 mm	1.62	2.72	4.25	5.72	3.34	5.06	6.92	4.13	6.04	8.15
Bend Fitting 90°	300 mm	2.36	3.50	5.14	6.75	4.46	6.27	8.28	5.09	7.08	9.34
Ē	450 mm	3.32	4.78	6.50	8.75	5.41	7.32	9.99	6.51	8.61	11.61
臣	600 mm	4.18	5.72	7.55	10.11	6.99	9.00	12.15	7.63	9.83	13.17
, pu	750 mm	6.00	6.68	8.60	11.46	8.12	10.21	13.71	8.73	11.04	14.74
Be	900 mm	7.80	8.60	10.60	12.83	10.42	12.62	15.29	12.25	14.64	17.49
<del>a</del>	150 mm	1.50	2.45	4.03	5.54	3.24	5.01	6.90	3.86	5.83	7.96
Riser Internal / External Fitting 90°	300 mm	1.82	2.77	4.35	5.86	3.71	5.49	7.38	4.34	6.31	8.43
iser Intern / External Fitting 90°	450 mm	2.14	3.09	4.67	6.41	4.19	5.96	8.22	4.82	6.79	9.26
ᇎᅕᇎ	600 mm	2.46	3.41	4.99	6.81	4.67	6.44	8.82	5.30	7.27	9.86
ise AE	750 mm	2.78	3.73	5.31	7.20	5.15	6.92	9.42	5.78	7.75	10.45
Œ	900 mm	3.10	4.53	6.11	7.60	6.35	8.12	10.02	6.98	8.95	11.04
	150 mm	3.92	5.50	7.25	9.31	7.40	9.41	12.33	9.98	12.67	15.91
Equal Tee Fitting	300 mm	5.20	6.61	8.45	10.65	8.83	10.91	14.01	11.74	14.50	17.89
T I	450 mm	6.68	8.21	10.12	13.05	10.10	12.38	16.29	13.33	16.18	20.54
qual Te Fitting	600 mm	7.24	9.49	11.48	14.75	12.00	14.26	18.62	15.57	18.50	23.43
9	750 mm	8.47	10.77	12.82	16.47	13.43	15.76	20.54	17.33	20.34	25.73
	900 mm	9.70	14.45	16.58	19.35	17.49	19.91	23.66	22.20	25.29	29.21
(0	150 mm	4.77	7.65	10.52	13.11	10.56	13.57	17.19	14.51	18.14	21.96
)  -  -	300 mm	5.94	8.82	11.70	14.27	11.89	14.91	18.53	16.48	20.12	23.92
Pi	450 mm	7.61	10.48	13.35	16.62	13.23	16.24	20.58	18.29	21.93	26.78
Equal Cross Fitting	600 mm	8.93	11.81	14.69	18.18	15.20	18.21	22.95	20.75	24.38	29.72
nb:	750 mm	10.26	13.14	16.02	19.74	16.69	19.71	24.73	22.84	26.48	32.20
ш	900 mm	14.23	17.11	19.99	22.49	21.06	24.08	27.70	28.29	31.92	35.61
	150 mm	0.85	1.77	3.12	4.14	2.08	3.47	4.75	2.40	3.89	5.26
Bend Fitting 45°	300 mm	1.18	2.25	3.59	4.74	2.56	4.01	5.37	2.88	4.41	5.88
45°	450 mm	1.66	2.72	4.11	5.57	3.04	4.53	6.21	3.36	4.94	6.71
- 등 4	600 mm	2.09	3.20	4.65	6.26	4.15	5.68	7.69	4.46	6.10	8.18
L Se	750 mm	3.00	3.67	5.17	6.94	4.79	6.36	8.57	5.10	6.78	9.05
В	900 mm	3.90	4.63	6.16	7.62	6.14	7.78	9.45	6.46	8.19	9.94
<u> </u>	150 mm	0.90	1.72	3.05	4.12	2.04	3.45	4.75	2.34	3.86	5.26
Riser Internal / External Fitting 45°	300 mm	1.10	2.04	3.37	4.44	2.36	3.77	5.07	2.66	4.18	5.58
nte ern g 4	450 mm	1.30	2.36	3.69	5.00	2.68	4.09	5.62	2.98	4.50	6.13
iser Interna / External Fitting 45°	600 mm	1.47	2.68	4.01	5.39	3.00	4.41	6.02	3.30	4.82	6.53
se / E Fit	750 mm	1.70	3.00	4.33	5.79	3.32	4.73	6.42	3.62	5.14	6.92
Œ	900 mm	1.86	3.79	5.13	6.18	4.11	5.53	6.82	4.42	5.94	7.32
ight	300 mm- 150mm	0.93	2.20	3.47	4.63	2.20	3.47	4.63	2.20	3.47	4.63
Reducers Straight & Offset	450 mm- 300mm	1.25	2.52	3.79	4.95	2.52	3.79	4.95	2.52	3.79	4.95
ducer: & O	600 mm- 450mm	1.70	2.97	3.95	5.85	2.97	3.95	5.85	2.97	3.95	5.85
Rec	750 mm- 600 mm	1.89	3.16	4.43	5.94	3.16	4.43	5.94	3.16	4.43	5.94

Note: Weight table includes Hot Dip Galvanised and 316 Stainless Steel



	CABLE TRAY SYSTEMS												
Kounis Type		Light Duty T	ray		Punched Tray								
Range/Finish	LD Galvabond	LD Aluminium	LD HDG	LD 316 SS	<b>CP Galvabond</b>	<b>KAPT Galvabond</b>	CT HDG						
75 mm	2.18	1.91	2.29	2.61	1.56	1.22	5.3						
100 mm	2.54	2.22	2.66	3.04	1.93	1.51	6.21						
150 mm	3.29	2.89	3.46	3.94	2.67	2.1	7.79						
230 mm	4.45	3.9	4.67	5.33	3.86	2.96	10.33						
300 mm	5.52	4.84	5.79	6.61	4.89	3.83	12.55						
450 mm	11.68	6.79	12.26	9.27	10.74	5.58	17.3						
600 mm	15.03	8.74	15.78	11.93	14.09	7.32	22.05						
Splice Plates	0.2	0.18	0.21	0.24	0.2	N/A	0.11						
Koun	is Type			La	adder Tray	,							
Range	e/Finish	KT3 Galvabo	nd	KT3 HDG	KT5 Galv	abond KT5	KT5 HDG						

150 mm	150 mm 5.8		5	7.2	7.64				
300 mm	0 mm 8.6		7	9.9	10.5				
450 mm	450 mm 11.4			12.6	13.36				
600 mm	600 mm 14.2		6	15.3	16.22				
Splice Plate	Splice Plate 0.17			0.32	0.34				
STANDARD CABLE DUCT									
	Screw Lid			Clip Lid					
CODE	<b>Duct Size</b>	Weight kg	CODI	E Duct Siz	e Weight kg				
KDS75	75 x 50 mm	3.94	KDC7	75 75 x 50	3.77				

	STANDARD CABLE DUCT												
		Screw Lid			Clip Lid								
	CODE	Duct Size	Weight kg	CODE	<b>Duct Size</b>	Weight kg							
	KDS75	75 x 50 mm	3.94	KDC75	75 x 50	3.77							
	KDS155	150 x 50 mm	3.94	KDC155	150 x 50	3.77							
£	KDS55	50 x 50 mm	3.49	KDC55	50 x 50	3.45							
Length	KDS77	75 x 75 mm	5.05	KDC77	75 x 75	4.99							
	KDS107	100 x 75 mm	4.68	KDC107	100 x 75	4.45							
E	KDS1517	150 x 75 mm	6.26	KDC1517	150 x 75	5.93							
2.4	KDS105	100 x 50 mm	4.97	KDC105	100 x 50	4.8							
×	KDS1010	100 x 100 mm	6.45	KDC1010	100 x 100	6.22							
Duct	KDS1510	150 x 100 mm	8.04	KDC1510	150 x 100	7.9							
_	KDS2010	200 x 100 mm	9.23	KDC2010	200 x 100	8.9							
	KDS3015	300 x 150 mm	1.03	KDC3015	300 x 150	1.22							
	KDS1515	150 x 150 mm	9.43	KDC1515	150 x 150	9.39							

Ма	terial	0.6 mm	1.2 mm	1.55 mm	1.2 mm	1.6 mm	0.6 mm	1.0 mm	2.0 mm
rer L	150 mm	3.15	6.37	8.79	7.05	9.35	3.28	1.85	11.18
ov #	300 mm	5.55	11.21	15.46	11.5	16.45	5.77	3.25	19.82
Straight Cove 3 m Length	450 mm	7.94	16.05	22.13	15.93	23.55	8.27	4.65	28.46
igh n L	600 mm	10.33	20.89	28.8	20.39	30.64	10.76	6.05	37.1
tra 3 r	750 mm	12.74	25.75	35.5	24.83	37.78	13.26	7.46	45.73
S	900 mm	15.13	30.59	42.17	29.28	44.88	15.75	8.86	54.37

Ma	terial	0.6 mm	1.2 mm	1.55 mm	1.2 mm	1.6 mm	0.6 mm	1.0 mm	2.0 mm
×	150 mm	2.93	5.93	8.17	8	8.7	3.05	1.72	9.99
over	300 mm	5.01	10.12	13.96	13.32	14.85	5.21	2.93	18.07
o ⊱	450 mm	7.08	14.32	19.74	18.65	21	7.37	4.15	25.56
Straight 3 m Le	600 mm	9.16	18.51	25.52	23.96	27.16	9.53	5.36	33.05
raiç 3 n	750 mm	11.23	22.7	31.3	29.3	33.31	11.69	6.58	40.54
St	900 mm	13.3	26.9	37.09	34.61	39.46	13.85	7.79	48.03



### **Alpha Numeric Listing**

BTISSO 7:24 CSKH-10 7:24 HDCSN10 3:19 K1272 7:12 BTISSO 7:24 CTB7 2:11 HDCSN10 3:19 K1272 7:12 BTISSO 7:24 CTB7 2:11 HDCSN10 3:19 K1272 7:12 BTISSO 7:24 CTB15 2:11 HDCSN10 3:19 K1272 7:13 BTISSO 7:24 CTB15 2:11 HDCSN 3:19 K1272 7:13 BTISSO 7:24 CTB23 2:11 HDCSN 3:19 K1223 7:13 BTISSO 7:24 CTB23 2:11 HDCSN 3:19 K1325 7:15 BTISSO 7:24 CTB30 2:11 HSD620 7:23 K1326 7:15 CKS0020 7:23 CTB30 2:11 HSD620 7:23 K1326 7:15 CKS0020 7:23 CTB30 2:11 HSD620 7:23 K1326 7:15 CKS0020 7:23 CTG7 2:11 HSD620 7:23 K1357 7:15 CKS0020 7:23 CTG7 2:11 HSD620 7:23 K1359 7:16 CKS0020 7:23 CTG7 2:11 HSD620 7:23 K1357 7:16 CKS0020 7:23 CTG7 2:11 HSD620 7:23 K1357 7:16 CKS0020 7:23 K1350 7:16 CKS0020 7:23 K1350 7:16 CKS0020 7:23 K1350 7:16 CKS0020 7:23 K1357 7:16 CKS0020 7:23 K1350 7:16 CKS0020 7:23 K1356 7:16 CKS0020 7:25 CTFC7 2:10 CKS0020 7:23 K1560 8:7 CKS0020 7:23 K	CODE	SECT: PAGE						
BIBSO								
BIBI76								
BT1060								
BT1075 7:24 CTB15 2:11 H-S0800 7:23 K1325 7:15 BT6550 7:24 CTB23 2:11 H-S0820 7:23 K1325 7:15 CK50820 7:23 CTB60 2:11 H-S0825 7:23 K1357 7:14 CK50820 7:23 CTB60 2:11 H-S0825 7:23 K1357 7:16 CK50820 7:23 CTC7 2:11 H-S0820 7:23 K1357 7:16 CK50820 7:23 CTC7 2:11 H-S0820 7:23 K1358 7:16 CK50820 7:23 CTC7 2:11 H-S0820 7:23 K1358 7:16 CK50820 7:23 CTC10 2:11 H-S0820 7:23 K1359 7:16 CK50820 7:23 CTC10 2:11 H-S0820 7:23 K1359 7:16 CK50820 7:23 CTC10 2:11 H-S1020 7:23 K1359 7:16 CK50820 7:23 CTC10 2:11 H-S1020 7:23 K1357 7:16 CK50820 7:23 CTC10 2:11 H-S1020 7:23 K1357 7:16 CK50820 7:23 CTC10 2:11 H-S1020 7:23 K1357 7:16 CK50820 7:23 CTC10 2:11 H-S1020 7:23 K1359 7:15 CK50820 7:23 K1359 7:16 CK50820 7:23 K1359 7:15 CK50820 7:23 K1359 7:16 CK50820 7:23 K1359 7:16 CK50820 7:23 K1359 7:16 CK50820 7:23 K1359 7:16 CK50820 7:23 K1359 7:15 CK50820 7:15 CK50820 7:23 K1359 7:15 CK50820 7:11 CK50820 7:23 K1359 7:15 CK50820 7:11 CK50820 7:23 K1359 7:11 CK50820 7:11 CK50820 7:23 K1359 7:11 CK50820 7:11 CK50820 7:11 CK50820 7:11 CK50820 7:23 K1359 7:11 CK50820 7:11 CK508								
BT1875 7:24 CTB23 2:11 HHS0820 7:23 K1326 7:15 CK50820 7:24 CTB30 2:11 HHS0820 7:23 K1326 7:15 CK50820 7:23 CTB60 2:11 HHS0820 7:23 K1337 7:15 CK50820 7:23 CTC7 2:11 HHS0820 7:23 K1357 7:15 CK50820 7:23 CTC7 2:11 HHS0820 7:23 K1357 7:16 CK50820 7:23 CTC7 2:11 HHS0820 7:23 K1357 7:16 CK50820 7:23 CTC7 2:11 HHS0820 7:23 K1357 7:16 CK50820 7:23 CTC50 2:11 HHS1020 7:23 K1376 7:16 CK50820 2:05 CTC30 2:11 HHS1020 7:23 K1366 7:12 CK5082 2:05 CTC30 2:11 HHS1030 7:23 K1366 7:12 CK5082 2:05 CTC30 2:11 HHS1030 7:23 K1366 7:12 CK5082 2:05 CTC30 2:11 HHS1030 7:23 K1366 7:12 CK5082 2:05 CTC30 2:11 HHS1250 7:23 K1360 7:12 CK5082 2:05 CTC50 2:10 HHS1240 7:23 K1600-34 7:11 CK5082 2:05 CTC60 2:10 HHS1240 7:23 K1600-34 7:11 CK5082 2:05 CTC61 2:10 HHS1240 7:23 K1600-34 7:11 CK5082 2:05 CTC61 2:10 HHS1240 7:23 K1600-34 7:11 CK5082 2:05 CTC61 2:10 HHS1640 7:23 K1600-49 7:11 CK5082 2:05 CTC61 2:10 HHS1640 7:23 K1600-60 7:11 CK5082 2:05 CTC61 2:10 HHS1640 7:23 K1600-60 7:11 CK5082 2:05 CTC61 2:10 HNS1640 7:23 K1600-60 7:11 CK5082 2:05 CTC60 2:10 HNS1640 7:23 K1600-60 7:11 CK5082 2:05 CTC60 2:10 HNS1640 7:23 K1600-60 7:11 CK5082 2:05 CTC600 2:10 HNS1640 7:23 K1600-102 7:11 CK5082 2:05 CTC600 2:10 K10000 7:03 K1600-102 7:11 CK5082 2:05 CTC600 2:10 K10000 7:03 K1727 7:15 CK5082 2:05 CTC600 2:10 K10000 7:03 K1727 7:15 CK5082 2:05 CTC600 2:10 K10000 7:03 K1727 7:15 CK5082 2:10 K10000 7:03 K								
OHB         3:20         CTB45         2:11         HHS0820         7:23         K1357         7:15           OKS0820         7:23         CTG7         2:11         HHS0830         7:23         K1358         7:16           CPB10         2:05         CTC10         2:11         HHS0830         7:23         K1359         7:16           CPB15         2:05         CTC15         2:11         HHS1020         7:23         K1377         7:16           CPB23         2:05         CTC23         2:11         HHS1030         7:23         K1386         7:17           CPB30         2:05         CTC30         2:11         HHS1040         7:23         K1458         7:15           CPB30         2:05         CTC60         2:11         HHS1240         7:23         K1646         7:14           CPB46         2:05         CTC60         2:11         HHS1240         7:23         K1600-43         7:11           CPC7         2:05         CTFC10         2:10         HHS1240         7:23         K1600-43         7:11           CPC7         2:05         CTFC10         2:10         HHS1240         7:23         K1600-43         7:11           CPC7<								
OHB         3:20         CTB45         2:11         HHS0820         7:23         K1357         7:15           OKS0820         7:23         CTG7         2:11         HHS0830         7:23         K1358         7:16           CPB10         2:05         CTC10         2:11         HHS0830         7:23         K1359         7:16           CPB15         2:05         CTC15         2:11         HHS1020         7:23         K1377         7:16           CPB23         2:05         CTC23         2:11         HHS1030         7:23         K1386         7:17           CPB30         2:05         CTC30         2:11         HHS1040         7:23         K1458         7:15           CPB30         2:05         CTC60         2:11         HHS1240         7:23         K1646         7:14           CPB46         2:05         CTC60         2:11         HHS1240         7:23         K1600-43         7:11           CPC7         2:05         CTFC10         2:10         HHS1240         7:23         K1600-43         7:11           CPC7         2:05         CTFC10         2:10         HHS1240         7:23         K1600-43         7:11           CPC7<								
OKS0820         7:23         CTIB60         2:11         HHS0825         7:23         K1356         7:16           OKS0820         7:23         CTC07         2:11         HHS0830         7:23         K1359         7:16           CPB10         2:05         CTC15         2:11         HHS1020         7:23         K1376         7:16           CPB15         2:05         CTC32         2:11         HHS1030         7:23         K1386         7:12           CPB30         2:05         CTC32         2:11         HHS1030         7:23         K1486         7:15           CPB30         2:05         CTC45         2:11         HHS1255         7:23         K1458         7:15           CPB45         2:05         CTC60         2:11         HHS1250         7:23         K1690-34         7:14           CPB80         2:05         CTC60         2:10         HHS1260         7:23         K1690-34         7:11           CPC7         2:06         CTFC7         2:10         HHS1260         7:23         K1690-34         7:11           CPC10         2:05         CTFC15         2:10         HHS1240         7:23         K1690-34         7:11								
CKS0820         7:23         CTC7         2:11         HHS0830         7:23         K1378         7:16           CPB10         2:05         CTC10         2:11         HHS1020         7:23         K1376         7:16           CPB15         2:05         CTC30         2:11         HHS1020         7:23         K1376         7:16           CPB23         2:05         CTC30         2:11         HHS1030         7:23         K1458         7:15           CPB30         2:05         CTC30         2:11         HHS1040         7:23         K1458         7:15           CPB45         2:05         CTC60         2:11         HHS1240         7:23         K1474         7:14           CPB80         2:05         CTC60         2:10         HHS1240         7:23         K1600-34         7:11           CPC7         2:05         CTFC70         2:10         HHS1240         7:23         K1600-34         7:11           CPC11         2:05         CTFC71         2:10         HHS1240         7:23         K1600-34         7:11           CPC11         2:05         CTFC71         2:10         HHN06         7:23         K1600-49         7:11								
CPB7         2.05         CTC10         2:11         HHS1020         7:23         K1377         7:16           CPB15         2:05         CTC15         2:11         HHS1025         7:23         K1377         7:16           CPB15         2:05         CTC30         2:11         HHS1040         7:23         K1486         7:12           CPB30         2:05         CTC30         2:11         HHS1040         7:23         K1486         7:14           CPB45         2:05         CTC60         2:11         HHS1220         7:23         K1464         7:15           CPB60         2:05         CTC70         2:10         HHS1240         7:23         K1600-34         7:11           CPC7         2:05         CTFC7         2:10         HHS1260         7:23         K1600-34         7:11           CPC7         2:05         CTFC7         2:10         HHS1260         7:23         K1600-34         7:11           CPC7         2:05         CTFC15         2:10         HHS1260         7:23         K1600-48         7:11           CPC10         2:05         CTFC23         2:10         HN08         7:23         K1600-60         7:11           CPC								
CPB10         2:05         CTC16         2:11         HHS1025         7:23         K1377         7:16           CPB23         2:05         CTC30         2:11         HHS1030         7:23         K1458         7:12           CPB23         2:05         CTC30         2:11         HHS1040         7:23         K1458         7:15           CPB45         2:05         CTC60         2:11         HHS1230         7:23         K1474         7:14           CPB60         2:05         CTC0         2:10         HHS1240         7:23         K1600-34         7:11           CPC07         2:05         CTFC7         2:10         HHS1260         7:23         K1600-34         7:11           CPC10         2:05         CTFC10         2:10         HHS1260         7:23         K1600-48         7:11           CPC11         2:05         CTFC10         2:10         HHS1260         7:23         K1600-48         7:11           CPC15         2:05         CTFC10         2:10         HHS1260         7:23         K1600-48         7:11           CPC16         2:05         CTFC23         2:10         HN06         7:23         K1600-60         7:11								
CPB15         2.05         CTC23         2:11         HHS1030         7:23         K1388         7:15           CPB30         2:05         CTC30         2:11         HHS1040         7:23         K1458         7:15           CPB45         2:05         CTC645         2:11         HHS1220         7:23         K1546         7:14           CPB60         2:05         CTC0         2:10         HHS1240         7:23         K1560         7:11           CPG7         2:05         CTFC10         2:10         HHS1260         7:23         K1600-43         7:11           CPC10         2:05         CTFC10         2:10         HHS1260         7:23         K1600-48         7:11           CPC11         2:05         CTFC15         2:10         HHS1260         7:23         K1600-48         7:11           CPC15         2:05         CTFC23         2:10         HN06         7:23         K1600-48         7:11           CPC23         2:05         CTFC30         2:10         HN08         7:23         K1600-60         7:11           CPC3         2:05         CTFC30         2:10         HN08         7:23         K1600-102         7:11 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
CPB23         2:05         CTG30         2:11         HHS1040         7:23         K1458         7:15           CPB30         2:05         CTC660         2:11         HHS1225         7:23         K1474         7:15           CPB80         2:05         CTC60         2:11         HHS1230         7:23         K1636         7:14           CPC7         2:05         CTFC7         2:10         HHS1240         7:23         K1600-34         7:11           CPC10         2:05         CTFC7         2:10         HHS1265         7:23         K1600-34         7:11           CPC10         2:05         CTFC10         2:10         HHS1265         7:23         K1600-48         7:11           CPC23         2:06         CTFC23         2:10         HN08         7:23         K1600-48         7:11           CPC30         2:05         CTFC30         2:10         HN08         7:23         K1600-76         7:11           CPC43         2:06         CTFC45         2:10         HN08         7:23         K1600-102         7:11           CPC60         2:05         CTFC45         2:10         HN16         7:23         K1600-114         7:11           <								
CPB30         2:05         CTC45         2:11         HHS1225         7:23         K1474         7:15           CPB45         2:05         CTC60         2:11         HHS1230         7:23         K1546         7:14           CP606         2:05         CTD         2:10         HHS1240         7:23         K1600-43         7:11           CPC10         2:05         CTFC10         2:10         HHS1265         7:23         K1600-43         7:11           CPC15         2:05         CTFC15         2:10         HHS1265         7:23         K1600-43         7:11           CPC30         2:05         CTFC30         2:10         HN06         7:23         K1600-48         7:11           CPC30         2:05         CTFC45         2:10         HN06         7:23         K1600-60         7:11           CPC45         2:05         CTFC45         2:10         HN00         7:23         K1600-162         7:11           CPC45         2:05         CTFC45         2:10         HN10         7:23         K1600-162         7:11           CPC60         2:05         CTSBUSH         1:10         HN16         7:23         K1600-152         7:11								
CPB45         2:05         CTC60         2:11         HHS1230         7:23         K1546         7:14           CPB60         2:05         CTD         2:10         HHS1240         7:23         K1600-34         7:11           CPC7         2:05         CTFC10         2:10         HHS1265         7:23         K1600-48         7:11           CPC15         2:05         CTFC15         2:10         HHS1640         7:23         K1600-40         7:11           CPC23         2:05         CTFC32         2:10         HN06         7:23         K1600-76         7:11           CPC30         2:05         CTFC45         2:10         HN08         7:23         K1600-76         7:11           CPC45         2:05         CTFC45         2:10         HN12         7:23         K1600-102         7:11           CPC60         2:05         CTFC80         2:10         HN12         7:23         K1600-102         7:11           CPP10         2:05         CTSBUSH         2:10         K1000         7:03         K1600-152         7:11           CPP10         2:05         CTSPAD         2:10         K10000         7:03         K1600-165         7:11								
CPB60         2:05         CTD         2:10         HHS1240         7:23         K1600-34         7:11           CPC7         2:05         CTFC7         2:10         HHS1260         7:23         K1600-48         7:11           CPC15         2:05         CTFC16         2:10         HHS1265         7:23         K1600-48         7:11           CPC32         2:05         CTFC15         2:10         HN06         7:23         K1600-60         7:11           CPC30         2:05         CTFC30         2:10         HN06         7:23         K1600-76         7:11           CPC30         2:05         CTFC45         2:10         HN06         7:23         K1600-76         7:11           CPC45         2:05         CTFC60         2:10         HN10         7:23         K1600-102         7:11           CPPC41         2:05         CTSBUSH         2:10         HN16         7:23         K1600-102         7:11           CPP10         2:05         CTSPAD         2:10         K10000         7:03         K1500-152         7:11           CPP16         2:05         CTST         2:10         K10000         7:03         K1727         7:15								
CPC7         2:05         CTFC7         2:10         HHS1260         7:23         K1600-43         7:11           CPC15         2:05         CTFC16         2:10         HHS1265         7:23         K1600-48         7:11           CPC15         2:05         CTFC33         2:10         HN06         7:23         K1600-60         7:11           CPC30         2:05         CTFC30         2:10         HN08         7:23         K1600-76         7:11           CPC30         2:05         CTFC30         2:10         HN08         7:23         K1600-89         7:11           CPC45         2:05         CTFC60         2:10         HN12         7:23         K1600-102         7:11           CPC60         2:05         CTSBWH         2:10         HN16         7:23         K1600-114         7:11           CPP10         2:05         CTSBWH         2:10         HN16         7:23         K1600-112         7:11           CPP10         2:05         CTSBWH         2:10         K1000         7:03         K1727         7:11           CPP10         2:05         CTLRW1 x W2         2:11         K1006         7:22         K1796         7:12								
CPC10         2:05         CTFC15         2:10         HHS1265         7:23         K1600-48         7:11           CPC28         2:05         CTFC25         2:10         HHS1640         7:23         K1600-60         7:11           CPC28         2:05         CTFC23         2:10         HN08         7:23         K1600-76         7:11           CPC45         2:05         CTFC45         2:10         HN10         7:23         K1600-89         7:11           CPC60         2:05         CTFC45         2:10         HN12         7:23         K1600-102         7:11           CPC60         2:05         CTFC60         2:10         HN12         7:23         K1600-102         7:11           CPP0         2:05         CTFC80         2:10         HN16         7:23         K1600-152         7:11           CPP10         2:05         CTSBUSH         2:10         K1000         7:03         K1720-15         7:11           CPP10         2:05         CTST         2:10         K10000         7:03         K1727         7:15           CPP23         2:05         CTP         2:10         K1000T         7:03         K1727         7:15								
CPC15         2:05         CTFC15         2:10         HHS1640         7:23         K1600-60         7:11           CPC23         2:05         CTFC23         2:10         HN06         7:23         K1600-76         7:11           CPC30         2:05         CTFC30         2:10         HN10         7:23         K1600-89         7:11           CPC45         2:05         CTFC45         2:10         HN10         7:23         K1600-102         7:11           CPC80         2:05         CTFC80         2:10         HN16         7:23         K1600-102         7:11           CPP7         2:05         CTSBUSH         2:10         K1000         7:03         K1600-165         7:11           CPP10         2:05         CTSPAD         2:10         K10000         7:03         K1600-165         7:11           CPP15         2:05         CTSPAD         2:10         K10000         7:03         K1727         7:15           CPP16         2:05         CTERW1 x W2         2:11         K10001         7:03         K1727         7:15           CPP23         2:05         CTERW1 x W2         2:11         K1001         7:03         K1736         7:16								
CPC23         2:05         CTFC23         2:10         HN06         7:23         K1600-76         7:11           CPC30         2:05         CTFC30         2:10         HN08         7:23         K1600-89         7:11           CPC45         2:05         CTFC45         2:10         HN10         7:23         K1600-102         7:11           CPC60         2:05         CTFC60         2:10         HN16         7:23         K1600-114         7:11           CPP10         2:05         CTSBUSH         2:10         HN16         7:23         K1600-155         7:11           CPP10         2:05         CTSPAD         2:10         K1000Cl         7:08         K1663         7:08           CPP23         2:05         CTS         2:10         K1000T         7:03         K1736         7:16           CPP23         2:05         CTRRW1 x W2         2:11         K1000T         7:03         K1736         7:16           CPP23         2:05         CTRRW1 x W2         2:11         K1000         7:22         K1796         7:12           CPP80         2:05         CTRW1 x W2         2:11         K1000         7:22         K1796         7:12								
CPC30         2:05         CTFC30         2:10         HN08         7:23         K1600-102         7:11           CPC45         2:05         CTFC45         2:10         HN10         7:23         K1600-102         7:11           CPC60         2:05         CTFC60         2:10         HN11         7:23         K1600-114         7:11           CPP7         2:05         CTSBUSH         2:10         K1000         7:03         K1600-152         7:11           CPP10         2:05         CTSPAD         2:10         K1000         7:03         K1600-165         7:11           CPP10         2:05         CTST         2:10         K1000T         7:03         K1727         7:15           CPP23         2:05         CTLRW1 x W2         2:11         K1000         7:03         K1727         7:15           CPP80         2:05         CTLRW1 x W2         2:11         K1000         7:22         K1796A         7:12           CPP810         2:05         CTTRW1 x W2         2:11         K1007         7:22         K1834         7:14           CPR110         2:05         CTTT         2:10         K1008         7:22         K1834         7:14								
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CPT23         2:05         DB12100         7:23         K1075         7:10         K2235         7:15           CPT30         2:05         DIM06         7:23         K1075A         7:10         K2240         7:18           CPT45         2:05         DIM08         7:23         K1184         7:18         K2335         7:17           CPT60         2:05         DIM10         7:23         K1186         7:14         K2346         7:17								
CPT30         2:05         DIM06         7:23         K1075A         7:10         K2240         7:18           CPT45         2:05         DIM08         7:23         K1184         7:18         K2335         7:17           CPT60         2:05         DIM10         7:23         K1186         7:14         K2346         7:17								
CPT45         2:05         DIM08         7:23         K1184         7:18         K2335         7:17           CPT60         2:05         DIM10         7:23         K1186         7:14         K2346         7:17								
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K2539	7:17	K5-51	7:11	KAC31	7:19	KDBS1010	1:05
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K2543	7:10	K5-57	7:11	KAC48	7:19	KDBS1515	1:05
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ABN 43 008 701 335

#### **Western Australia**

84 Norma Rd Booragoon WA 6154

Ph: 08 9330 5333 Fax: 08 9330 7772

Email: wasales@kounis.com.au

Freecall: 1300 KOUNIS

#### **Victoria**

82-88 Hume Hwy Somerton VIC 3062

Ph: 03 8339 3800 Fax: 03 8339 0785

Email: vicsales@kounis.com.au

www.kounis.com.au













# Contact FAT Comms today: sales@fatcomms.io







Kyle Lancaster

Nathan Smith



+61 480 399 917



+61 433 814 100



kyle@fatcomms.io



nathan@fatcomms.io



office@fatcomms.io



Melbourne, Victoria, Australia Geelong, Victoria, Australia

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