

# M★RAK

Oil & Gas,  
Infrastructure  
and Building  
Applications

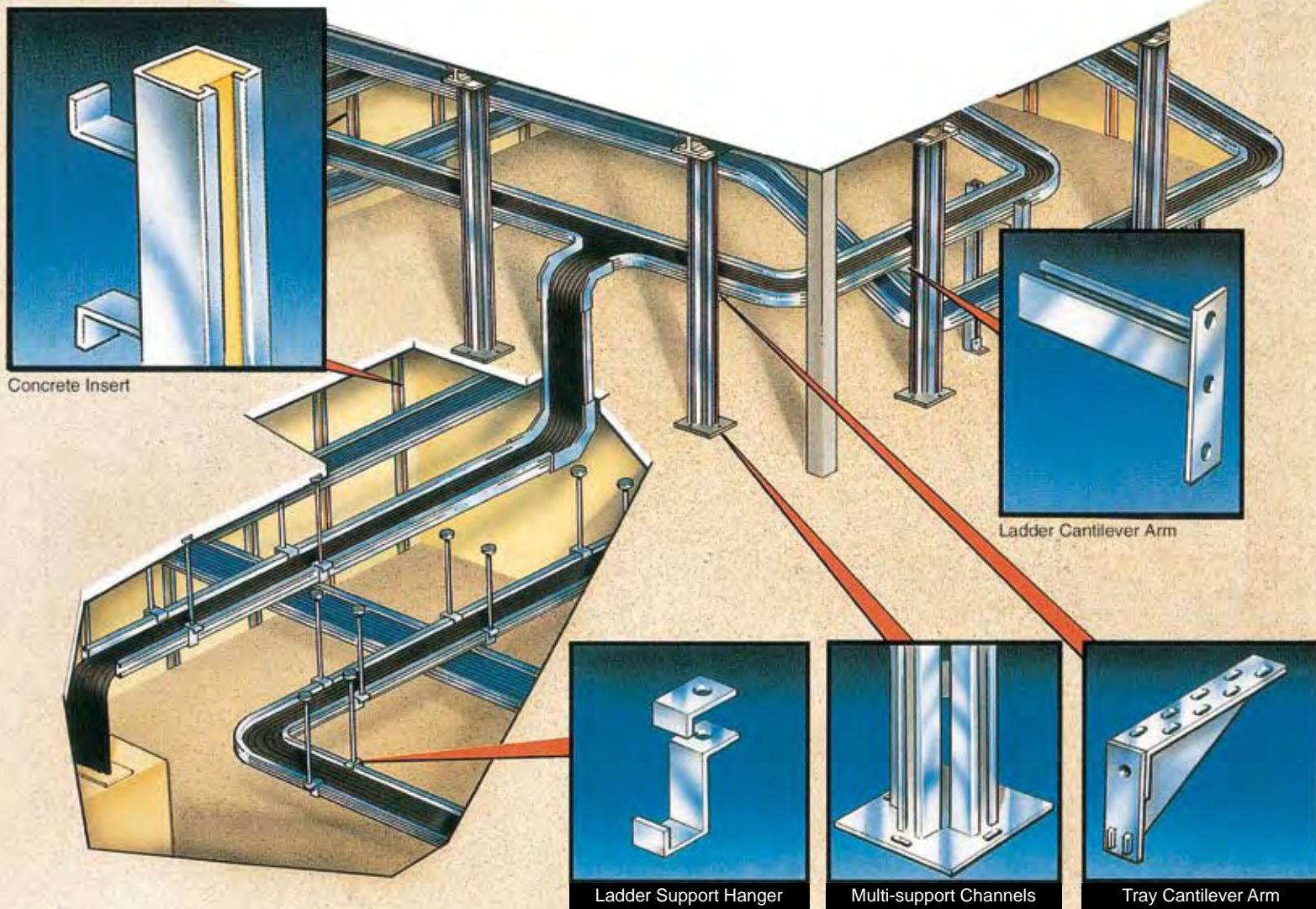


## Cable Support Systems



**TRI-STAR INDUSTRIES PTE LTD**

M\*RAK is a comprehensive range of high quality Cable Support System designed specifically to satisfy the demanding needs of the Oil, Gas and Power industries. M\*RAK is also being used in high quality industrial and building projects.



M\*RAK Cable Support System, established in the 1990s, is manufactured according to ISO 9001 quality system for supply to primarily the oil and gas and power generation industries.

The M\*RAK design is aimed at servicing quality conscious markets. Materials are available in Stainless 304, 316, 316L, Carbon Steel with Hot Dipped Galvanised or Powder Coating finish and non-ferrous materials like FRP and Aluminium. M\*RAK system of cable support includes strut channels, concrete insert, cantilever arms, trapeze and brackets.

We emphasize on quality products and services, using only reliable raw materials and metal fittings on all our products. We practise stringent quality control at every stage of production, guaranteed to meet your specification and requirement and work closely with engineers and consultants to determine the most suitable system for installation.

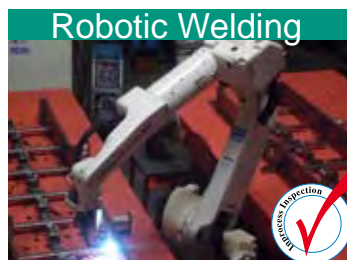
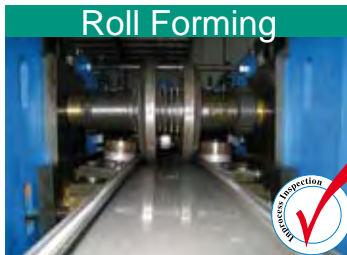
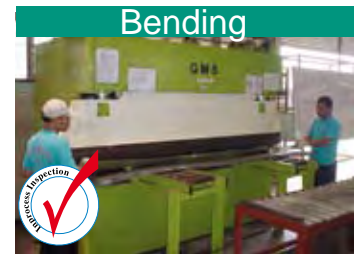
In addition to being the first cable support system manufacturer in Malaysia to be awarded the ISO 9001, we are also the first to be accredited with ISO 9001 : 2000 certification.

**PETRONAS**  
**LESEN MEMBEKAL PERALATAN-MEMBEKAI PERKHIDMATAN KEPADA SYARIKAT-SYARIKAT CARIGALI DAN PENGELOAAR SENYAWAN DE MALAYA**  
 Pada merupakan hakmilik yang diikat oleh Dekret 7, 2014 Kerajaan Persekutuan. 1974 dari meringkas Perak...  
**SBN INDUSTRIES SDN BHD (2706487)**  
 NO 6, JALAN PENAGA, KAWASAN PERINDUSTRIAN KOTA PUTRI, 81750 MASAI, JOHOR.  
 Bilik Bilik Lesen adalah seperti berikut:-  
 Bilik Lesen: 1-570648 P  
 Tempoh Masa Lesen: 10 September 2009 - 10 September 2010  
 Yuran Lesen: RM 500.00  
 Bidang Pembekalan/Perkhidmatan: Supply & Layanan "BAGI" BAHAN BAKAU

**IQNet**  
 THE INTERNATIONAL CERTIFICATION NETWORK  
**CERTIFICATE**  
 IQNet and SIRIM QAS International Sdn. Bhd. hereby certify that  
**SBN INDUSTRIES SDN. BHD.**  
 6, JALAN PENAGA  
 KAWASAN PERINDUSTRIAN KOTA PUTRI  
 81750 MASAI  
 JOHOR DARUL TAKZIM  
 MALAYSIA  
 has implemented and maintains a  
**QUALITY MANAGEMENT SYSTEM**  
 which fulfills the requirements of the following standard  
**ISO 9001 : 2008**  
 for the following field of activities  
 1) MANUFACTURE OF CABLE SUPPORT SYSTEMS.  
 2) MANUFACTURE OF CATHODIC PROTECTION.  
 Issued on : 07 July 2009  
 Validity date : 22 July 2010  
 Certification Number : MY-AR 0176  
 René Wimmer, President of IQNet  
 Dato' Mariani Mohamad, Managing Director, SIRIM QAS International Sdn. Bhd.

**SIRIM QAS**  
**CERTIFICATE**  
 SIRIM QAS International Sdn. Bhd. hereby certifies that  
**SBN INDUSTRIES SDN. BHD.**  
 6, JALAN PENAGA  
 KAWASAN PERINDUSTRIAN KOTA PUTRI  
 81750 MASAI  
 JOHOR DARUL TAKZIM  
 MALAYSIA  
 has implemented a Quality Management System complying with  
**ISO 9001 : 2008**  
 Quality Management Systems - Requirements  
 Scope of Certification  
 1) MANUFACTURE OF CABLE SUPPORT SYSTEMS.  
 2) MANUFACTURE OF CATHODIC PROTECTION.  
 Original Certification Date : 23 July 1993  
 Issue Date : 07 July 2009  
 Expiry Date : 22 July 2010  
 Certification No. : AR 0176  
 Dato' Mariani Mohamad, Managing Director, SIRIM QAS International Sdn. Bhd.  
 In Hq. Yahaya Ahmad, Chairman, SIRIM QAS International Sdn. Bhd.

**IQNet**  
 IQNet Primary\*  
 AENOR Spain AFNOR Certification France AIS-Vossloh International Belgium ANCE Mexico APCER Portugal CENQ Italy  
 CQC China CQM China CQS Czech Republic Csi Cert Centre IQS Holding GmbH Germany DS Denmark ELIOT Greece  
 Y Brazil PONDORAMA Fawcett HQ/AAA Hong Kong China ISONTEC Colombia IMC Mexico Intertek Certification Finland  
 IRAM Argentina IQA Japan KPC Korea NEMET Hungary Nemko AS Norway NSAI Ireland PCBC Poland  
 Quality Assure Austria RR Russia SII Israel SIO Slovenia SEEDM QAS International Malaysia IQS Switzerland SBAE Slovenia  
 TST 94, Penzance Russia TSE Turkey YLQS Serbia  
 IQNet is represented in the USA by: AFNOR Certification, CENQ, DQS Holding GmbH and NSAI Inc.  
 All IQNet partners in valid at the time of issue of this certificate. Updated information is available under www.iqnet-certification.com



We are equipped with state-of-the-art machinery and testing equipment. We roll form 6M long ladders in various profiles and our robotic welding produces high quality welding in high speed production to meet high demand of quality and delivery.

We take pride of our quality. We have spectrometer to check all incoming materials, stringent QC and total quality management.

**Stainless Steel**  
Passivation  
Finish

**Mild Steel**  
Hot-Dipped  
Galvanised  
Finish

**Mild Steel**  
Epoxy  
Finish

## Choosing Your Cable Support Systems

### Cable Tray Perforated Type

Solid and rigid, good choice for carrying smaller and dedicated cables. Weight is a concern when tray size becomes bigger.

### Cable Ladder

Versatile, lighter and easy to install. Wide range of load capacity profile.

### Cable Trunking

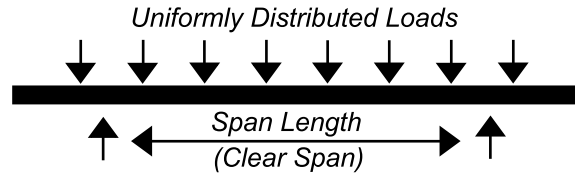
Totally enclosed, generally used indoors.

Choose a Cable Support System by your required cable load and designed support span.

NEMA Standard Classification in Table 1 shows the minimum working load with 1.5 safety factor.

Choice of Cable Support material shall be determined by the application environment; corrosion resistance and price are facts for consideration.

Cable Support Systems are meant for supporting cables, not used as walkways.



Working Load Lbs/ft (kg/m)	Support Span Feet (m)	Class Designation Per 3.1
50 (74.4)	8 (2.44)	8A
75 (111.6)	8 (2.44)	8B
100 (148.8)	8 (2.44)	8C
50 (74.4)	12 (3.66)	12A
75 (111.6)	12 (3.66)	12B
100 (148.8)	12 (3.86)	12C
50 (74.4)	16 (4.87)	16A
75 (111.5)	16 (4.87)	16B
100 (148.8)	16 (4.87)	16C
50 (74.4)	20 (6.09)	20A
75 (111.6)	20 (6.09)	20B
100 (148.8)	20 (6.09)	20C

Table 1

Span/Load Designation on M*RAK Cable Ladder and Tray													
Side Rail Height	NEMA	8A	8B	8C	12A	12B	12C	16A	16B	16C	20A	20B	20C
38mm		FB38	FB38	FB38									
50mm		FB50	FB50	FB50									
75mm		HRF50	HRF50	HRF50									
		CPL75	CPL75										
		C175	C175										
		HL75	HL75	HL75									
100mm		FB75	FB75	FB75									
		CPL100	CPL100	CPL100	CPL100								
		CI100	CI100	CI100	CI100								
		CT100	CT100	CT100	CT100								
125mm		HRF100	HRF100	HRF100									
		HL100	HL100	HL100	HL100	HL100	HL100						
		CPL125	CPL125	CPL125	CPL125	CPL125	CPL125						
		CI125	CI125	CI125	CI125	CI125	CI125						
150mm		CT125	CT125	CT125	CT125	CT125	CT125						
		HL125	HL125	HL125	HL125	HL125	HL125	HL125	HL125	HL125	HL125	HL125	
		CPL150	CPL150	CPL150	CPL150	CPL150	CPL150	CPL150	CPL150	CPL150	CPL150		
		CI150	CI150	CI150	CI150	CI150	CI150	CI150	CI150	CI150	CI150		
160mm		CT150	CT150	CT150	CT150	CT150	CT150	CT150	CT150	CT150	CT150		
		HL150	HL150	HL150	HL150	HL150	HL150	HL150	HL150	HL150	HL150	HL150	HL150
		AI150	AI150	AI150	AI150	AI150	AI150	AI150	AI150	AI150	AI150	AI150	AI150
		HL160	HL160	HL160	HL160	HL160	HL160	HL160	HL160	HL160	HL160	HL160	HL160

Table 2

### Electrical Continuity of Connections

Electrical Continuity of Connections are verified by Resistance Test. The net resistance of the joint shall not be more than 0.00033ohm (NEMA VE1 clause 4.3)

# Metallic Cable

# Ladder

Tested to conform to all International Standards



**MOODY INTERNATIONAL QA SERVICES PTE LTD**  
40 HILLVIEW TERRACE, SINGAPORE 669266, TELEPHONE : 7608033, FAX : 7600767  
E-MAIL : moodysing@inbox3.singnet.com.sg

## INSPECTION REPORT

DATE : 2ND, JUNE 1998	MIS JOB NO. : MIS-138-98	RE
CLIENT :	CLIENT P.O. NO.	VENDOR/SUPPLIER
SBN INDUSTRIES SDN BHD	NO. 6, JALAN PENAGA,	LOCATION
PERINDUSTRIAN KOTA PUTRI	81750 MASAI, JOHOR,	VENDOR P.O. NO.
WEST MALAYSIA		PLANT VISITED
ATTN : MR. HAROLD LIM / CHUA W.S.		VISIT DATE
		EXPEDITOR
COPIES TO : FILE	INSPECTION TIME	TRAVELLING TIME
	REPORTING TIME	TOTAL
	MILEAGE	

RESULTS OF INSPECTION	: [X] ACCEPTED	[ ] REJECTED	[ ] HELD
ORDER STATUS	: [X] COMPLETE	[ ] INCOMPLETE	

### MATERIAL DESCRIPTION

ITEM NO.	QUANTITY	MATERIAL DESCRIPTION
---	--	CABLE LADDERS

### SUMMARY OF INSPECTION

This report was issued for MIS-138-98 to witness load test

### PRESENT

1. Harold Lim
2. Doreen Chiang
3. Chua W. S.
4. Steven Chiem

WORLD WIDE



## INSPECTION REPORT

### CABLE LADDER DESTRUCTION TEST

PROJECT NO. 1107683  
REPORT NO. 02-16297-SG

for  
M/S. SBN INDUSTRIES SDN BHD.

PREPARED BY  
ABSG Consulting Inc.  
Singapore Office

20<sup>th</sup> JULY 2002

## CERTIFICATE OF CABLE LADDER LOAD TESTING

This is to REPORT that the undersigned surveyor in BUREAU VERITAS, SGL, acting within the scope of General Conditions of Bureau Veritas Industrial Events, at the request of SBN INDUSTRIES SDN BHD, witnessed on 28<sup>th</sup> Aug 2002, at the SBN INDUSTRIES SDN BHD, premises, Kota Puteri, Masai, Johor, Malaysia to witness the Cable Tray Collector Test in accordance to NEMA-VE-1-2002 Method A (Span Distance 9M, 148.8kg/m). The details are as follows:

PRODUCT	: MRAK Cable Ladder
MATERIAL	: MS Steel (HKG)
SIDE RAIL PROFILE	: FL (Flange Flange) Type Straight Cable Ladder (RFL = 100 x 25 x 10)
CROSS RUNG PROFILE	: MS Steel Slotted Type (25 x 25 x 10)
LOADS SPAN CLASS DESIGNATION	: SSC Method A (Span Distance: 9M, W=148.8kg/m) (20' - 00" total height)
LENGTH	: 8000 mm
HEIGHT	: 190 mm
WIDTH	: 800 mm
THICKNESS	: 2.8 mm
SPAN LENGTH	: 8.8 M

REFERENCE TEST STANDARDS USED: NEMA-VE-1-2002 Method A.

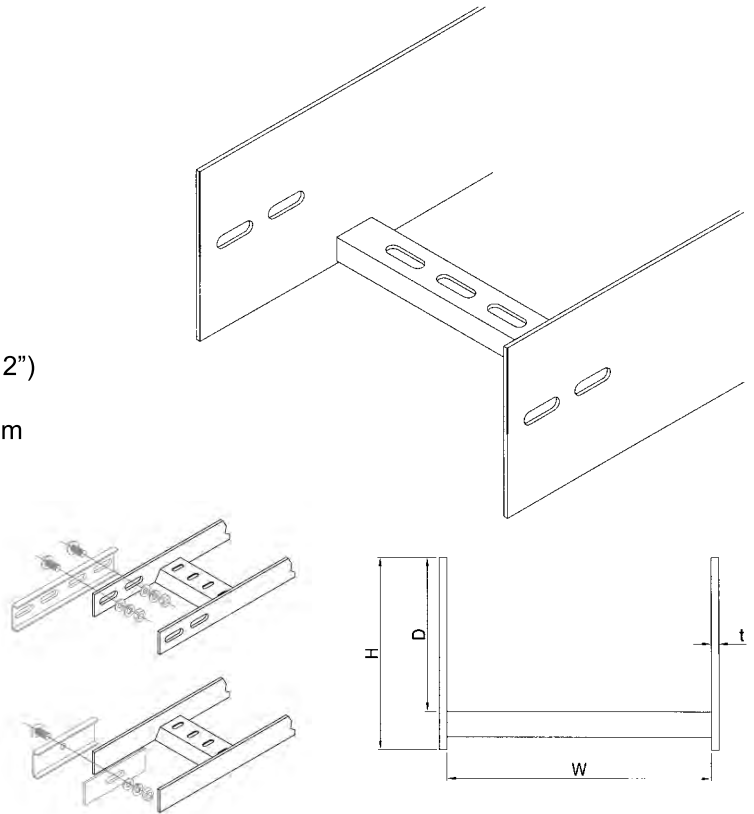
TEST PROCEDURE:  
Leading to Destruction  
Required minimum weight for NEMA-VE-1-2002 = 1341 kg  
Weight achieved that caused the destruction = 1394.4 kg

RESULT:  
The products were found to be in conformity with aforementioned standards. In witness whereof the present certification has been issued.  
Issued at Pasir Gudang, Johor, Malaysia on September 26, 2002

WORLD WIDE

## Flat Bar Type Ladder

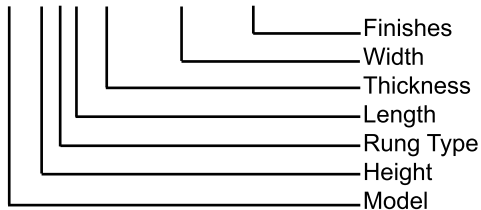
- Length : 3000mm
- Ladder rung type : A to E (1.5 or 2mm)
- Rung spacing : 230 or 300mm (9" or 12")
- Ladder rung slots : 11 x 35mm or 7 x 20mm
- Joint plate : 2mm thick C profile
- Fastener : M10 x 20mm Carriage Bolt/nut/FW/SW (4 sets per joint plate)



Model	H (mm)	T (mm)	W (mm)	Material	Coating
FB	38	3 - 6	SL150-900	Stainless Steel 304	
	50			Stainless Steel 316 or 316L	
	75			Mild Steel	Hot Dip Galvanised
	100				Epoxy coated

### Definition of Product Code (HOW TO ORDER)

e.g. FB38A3/3.0/SL450/SS304



### Rung Type

**A**

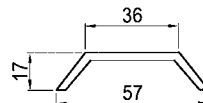
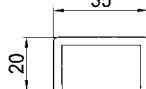
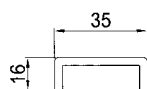
**B**

**C**

**D**

**E**

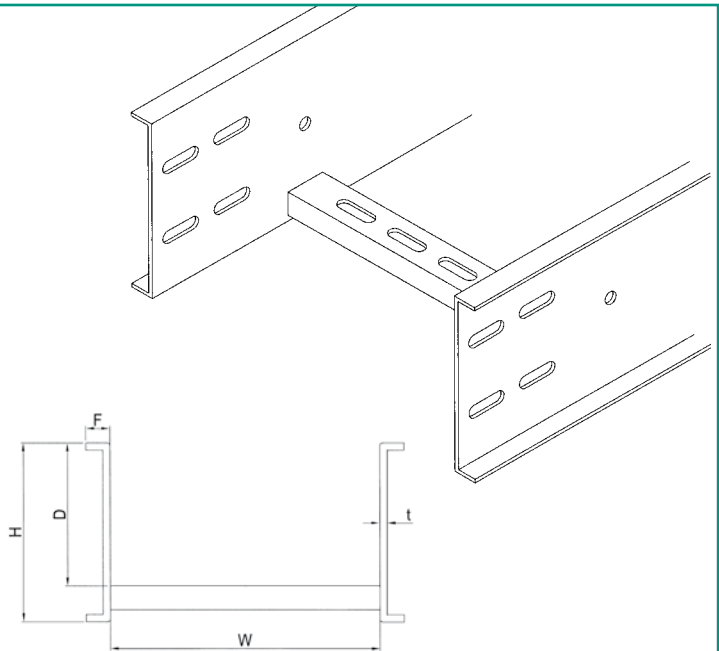
Thickness:  
1.5mm or 2mm



Ladder Height(H)	Depth (D)	Depth (D)	Depth (D)	Depth (D)	Depth (D)
38	19	15	21	18	15
50	31	27	33	30	27
75	56	52	58	55	52
100	81	77	83	80	77

## Open 'C' Type Ladder

- Length : 3000mm or 4000mm
- Ladder rung type : A to E (1.5 or 2mm)
- Rung spacing : 230 or 300mm (9" or 12")
- Ladder rung slots : 11 x 35mm or 7 x 20mm
- Joint plate : 1.5 or 2mm thick
- Fastener : M10 x 20mm Carriage Bolt/nut/FW/1SW (8 sets per joint plate)

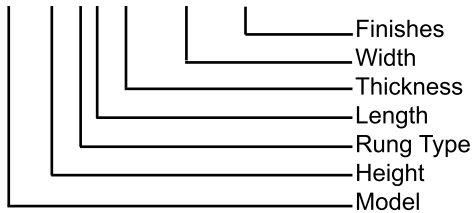


Model	H (mm)	NEMA Rating	T (mm)	W (mm)	Material	Coating
<b>CPL</b>	75 100 125 150	8AB 8ABC, 12A 8ABC, 12ABC 8ABC, 12ABC, 16ABC 20A	1.5 - 3	SL150-900	Stainless Steel 304 Stainless Steel 316 or 316L Aluminium 5052	
					Mild Steel Pre-Galvanised Electro Galvanised	HDG Epoxy Coated

Safety factor - 1.5

### Definition of Product Code (HOW TO ORDER)

e.g. CPL150A3/2.0/SL300/SS304



### Rung Type

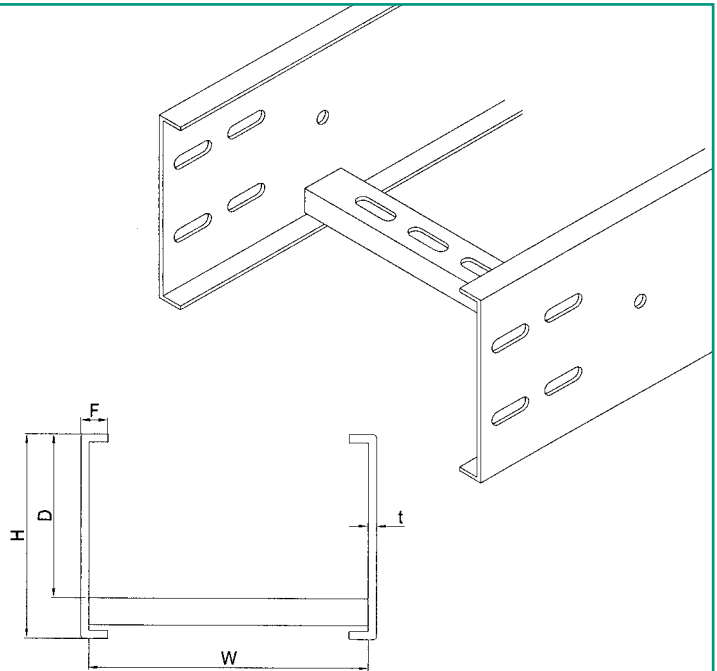
Thickness:  
1.5mm or 2mm

	A	B	C	D	E
Ladder Height(H)	Depth (D)	Depth (D)	Depth (D)	Depth (D)	Depth (D)
75	54	50	56	53	50
100	79	75	81	78	75
125	104	100	106	103	100
150	129	125	131	128	125



## Inward 'C' Type Ladder

- Length : 3000mm or 4000mm
- Ladder rung type : A to E (1.5 or 2mm)
- Rung spacing : 230 or 300mm (9" or 12")
- Ladder rung slot : 11 x 35mm or 7 x 20mm
- Joint plate : 1.5mm or 2mm thick
- Fastener : M10 x 20mm Carriage Bolt/nut/FW/1 SW (8 sets per joint plate)

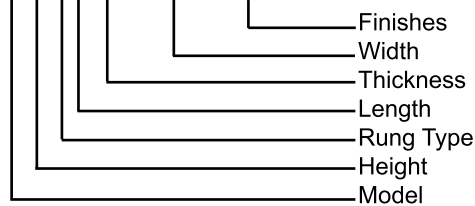


Model	H (mm)	NEMA Rating	T (mm)	W (mm)	Material	Coating
CI	75	8AB	1.5 - 3	SL150-900	Stainless Steel 304	HDG Epoxy Coated
	100	8ABC, 12A			Stainless Steel 316 or 316L	
	125	8ABC, 12ABC			Aluminium 5052	
	150	8ABC, 12ABC, 16ABC 20A			Mild Steel	
					Pre-Galvanised Electro Galvanised	

Safety factor - 1.5

### Definition of Product Code (HOW TO ORDER)

e.g. CI150A3/2.0/SL300/SS316

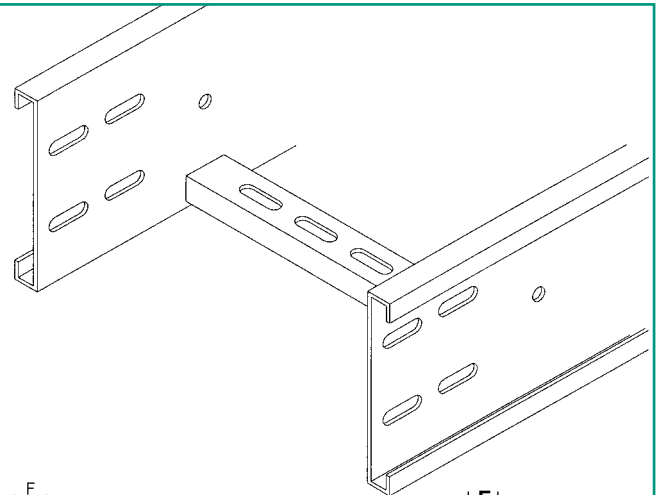


### Rung Type

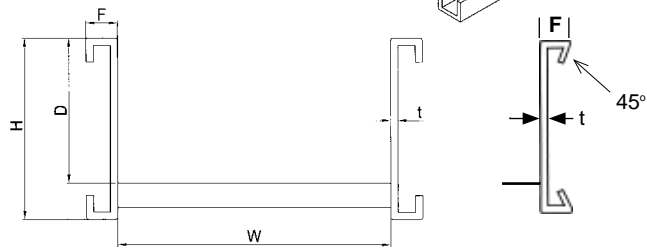
Thickness:  
1.5mm or 2mm

	A	B	C	D	E
Ladder Height (H)	Depth (D)	Depth (D)	Depth (D)	Depth (D)	Depth (D)
75	54	50	56	53	50
100	79	75	81	78	75
125	104	100	106	103	100
150	129	125	131	128	125

## Heavy Duty Return Flange Type Ladder



- Length : 3000mm or 6000mm
- Ladder rung type : A to E (1.5 or 2mm)
- Rung spacing : 230 or 300mm (9" or 12")
- Ladder rung slot : 11 x 35mm or 7 x 20mm
- Joint plate : 1.5mm or 2mm thick
- Fastener : M10 x 20mm Carriage Bolt/nut/FW/1 SW (8 sets per joint plate)

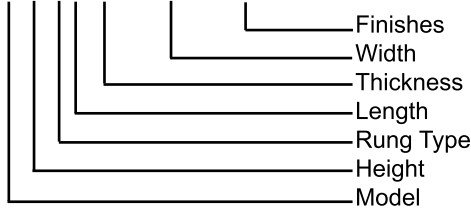


Model	H (mm)	NEMA Rating	T (mm)	W (mm)	Material	Coating
<b>HL</b>	75	8AB	1.5 - 4	SL150-900	Stainless Steel 304	HDG Epoxy Coated
	100	8ABC, 12ABC			Stainless Steel 316 or 316L	
	125	8ABC, 12ABC, 16AB, 20AB			Aluminium 5052	
	150	8ABC, 12ABC, 16ABC, 20ABC			Mild Steel	
	160	8ABC, 12ABC, 16ABC, 20ABC			Pre-Galvanised Electro Galvanised	

Safety factor - 1.5

### Definition of Product Code (HOW TO ORDER)

e.g. HL160A3/2.0/SL300/SS304



### Rung Type

**A**

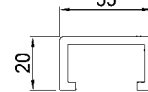
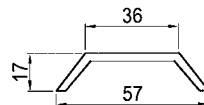
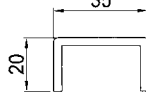
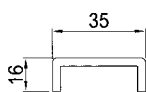
**B**

**C**

**D**

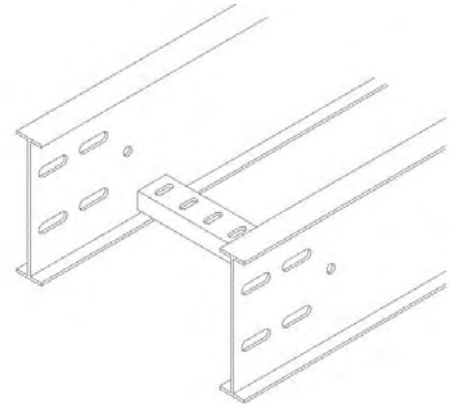
**E**

Thickness:  
1.5mm or 2mm

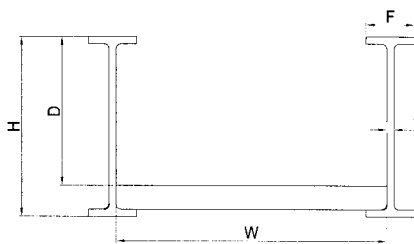


Ladder Height (H)	Depth (D)	Depth (D)	Depth (D)	Depth (D)	Depth (D)
75	54	50	56	53	50
100	79	75	81	78	75
125	104	100	106	103	100
150	129	125	131	128	125
160	139	135	141	138	135

## Heavy Duty Aluminium Ladder



- Length : 3000mm or 6000mm
- Ladder rung type : B (2 to 3mm)
- Rung spacing : 230 or 300mm (9" or 12")
- Ladder rung slots : 7 x 20L
- Joint plate : 2mm to 3mm thick
- Fastener : M10 x 20mm Carriage Bolt/nut/1FW/1SW (8 sets per joint plate)

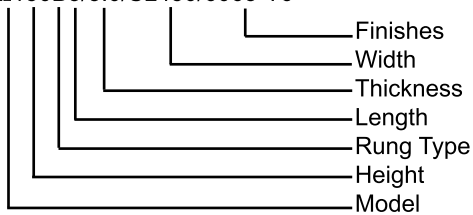


Model	H (mm)	NEMA Rating	T (mm)	W (mm)	Material
<b>AI</b>	150	8ABC, 12ABC, 16ABC, 20ABC	2 - 4	SL150-900	Marine grade 6063-T6 Aluminium

Safety factor - 1.5

### Definition of Product Code (HOW TO ORDER)

e.g. AI150B3/3.0/SL450/6063-T6

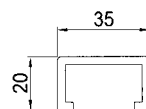


### Rung Type

Thickness:  
3.0mmT

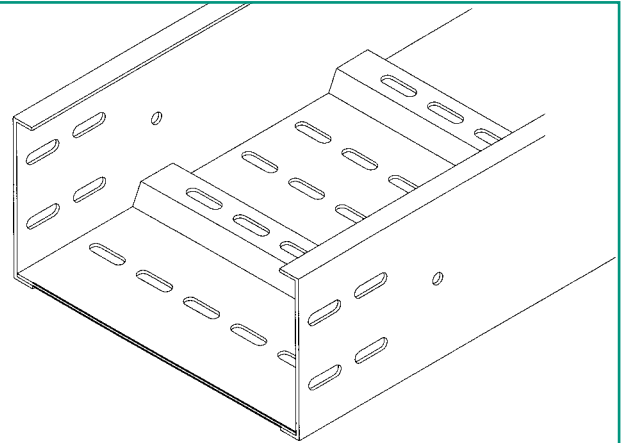
Ladder Height (H)  
150

### B

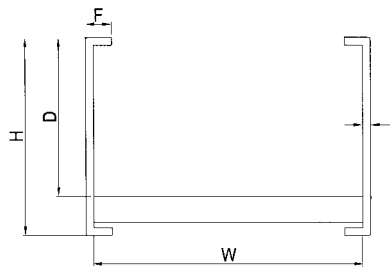


Depth (D)  
125

## Heavy Duty Corrugated Trough



- Length : 3000mm or 6000mm
- Trough rung type : B (1.5 or 2mm)
- Rung spacing : 300mm (12")
- Trough rung slot : 11 x 35mm or 7 x 20mm
- Joint plate : 1.5mm or 2mm thick
- Fastener : M10 x 20mm Carriage Bolt/nut/FW/1 SW (8 sets per joint plate)

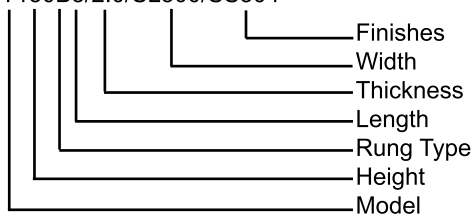


Model	H (mm)	NEMA Rating	T (mm)	W (mm)	Material	Coating
CT	100	8ABC, 12ABC	1.5 - 3	SL 150-900	Stainless Steel 304	HDG Epoxy Coated
	125	8ABC, 12ABC, 16AB			Stainless Steel 316 or 316L	
	150	8ABC, 12ABC, 16ABC 20ABC			Mild Steel	
					Pre-Galvanised Electro Galvanised	

Safety factor - 1.5 Note: Aluminium thickness should be 2.0T and above

### Definition of Product Code (HOW TO ORDER)

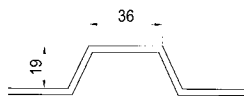
e.g. CT150B3/2.0/SL300/SS304



### Rung Type

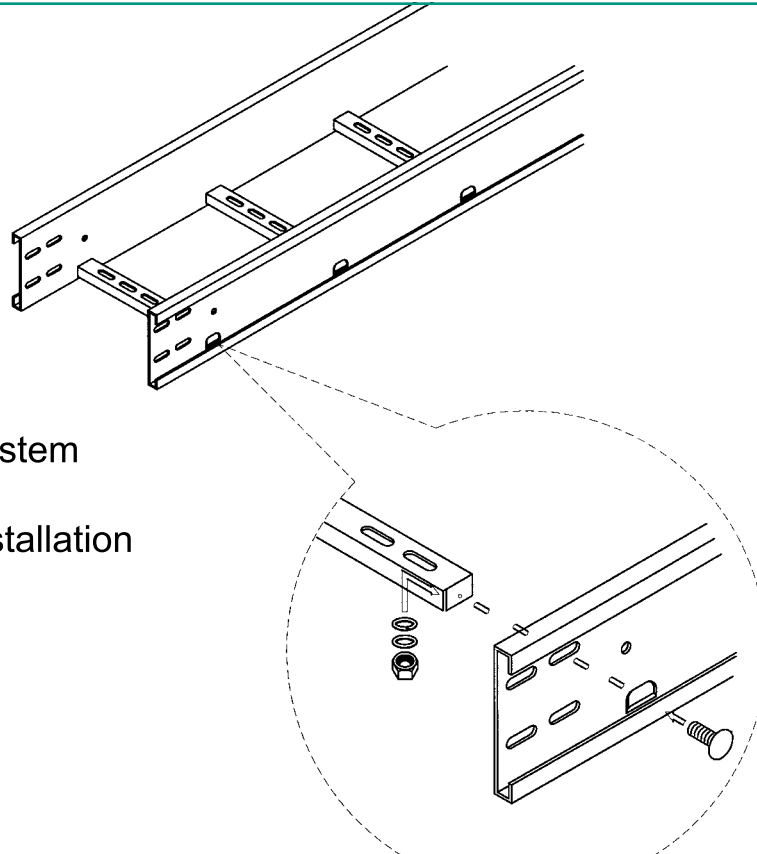
**B**

Thickness:  
1.5mm or 2mm



Ladder Height (H)	Depth (D)
100	78
125	103
150	128

## Knock-down Type Ladder



Totally knock-down design

Most versatile cable ladder system

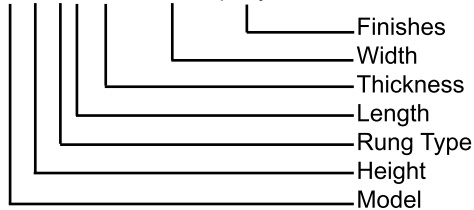
Flexibility for fast and easy installation

Lower shipping cost

Model	H (mm)	T (mm)	W (mm)	Material	Coating
KFL	75 - 150	1.5 - 3	SL 150-900	Stainless Steel 304 Stainless Steel 316 or 316L Aluminium 5052	
				Mild Steel Pre-Galvanised Electro Galvanised	HDG Epoxy Coated

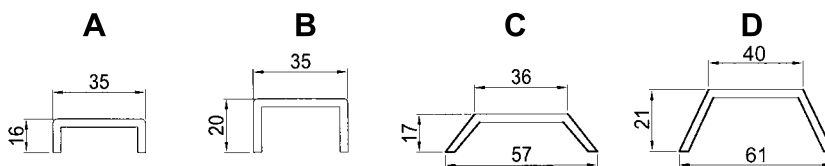
### Definition of Product Code (HOW TO ORDER)

e.g. KFL125A3/1.5/SL450/Epoxy



### Rung Type

Thickness:  
1.5mm or 2mm



Ladder Height (H)	Depth (D)	Depth (D)	Depth (D)	Depth (D)
75	54	50	56	53
100	79	75	81	78
125	104	100	106	103
150	129	125	131	128

Fitting Type	H	H	H	H	H	W
.../LFB150	75	100	125	150	160	150
.../LFB300	75	100	125	150	160	300
.../LFB450	75	100	125	150	160	450
.../LFB600	75	100	125	150	160	600
.../LFB750	75	100	125	150	160	750
.../LFB900	75	100	125	150	160	900

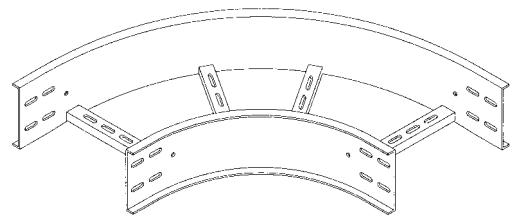
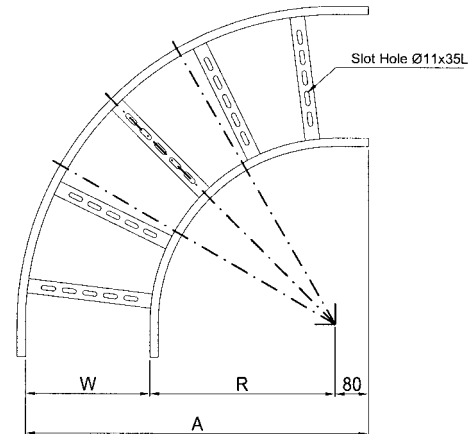
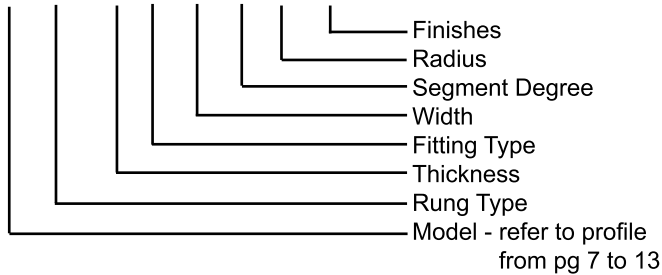
**Radius (R), mm:**

150, 200, 300, 450, 500, 600, 750, 900, 1000 & 1200

**Segment Degree:** 30°, 45°, 60°, 90°

**Definition of Product Code (HOW TO ORDER)**

e.g. CPL150A/1.5/LFB300/90/450/MS HDG



Fitting Type	H	H	H	H	H	W1	W2
.../LCO150	75	100	125	150	160	150	150
.../LCO300	75	100	125	150	160	300	300
.../LCO450	75	100	125	150	160	450	450
.../LCO600	75	100	125	150	160	600	600
.../LCO750	75	100	125	150	160	750	750
.../LCO900	75	100	125	150	160	900	900

**Radius (R), mm :**

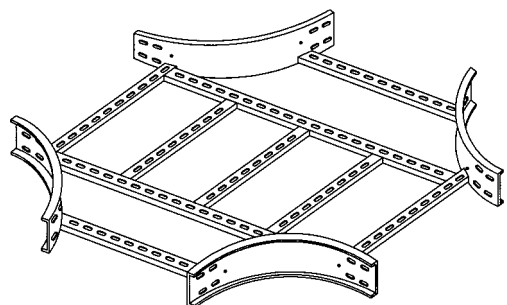
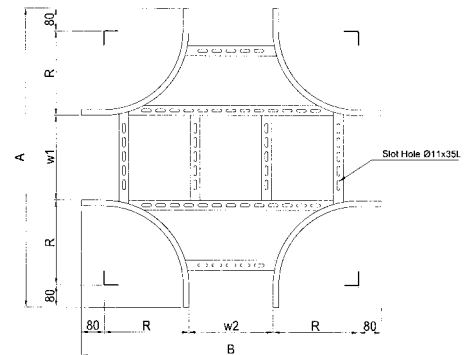
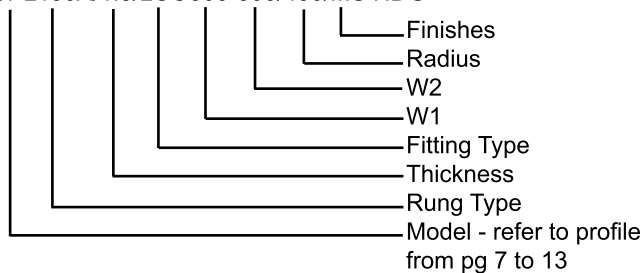
150, 200, 300, 450, 500, 600, 750, 900, 1000 & 1200

**Crossover :**

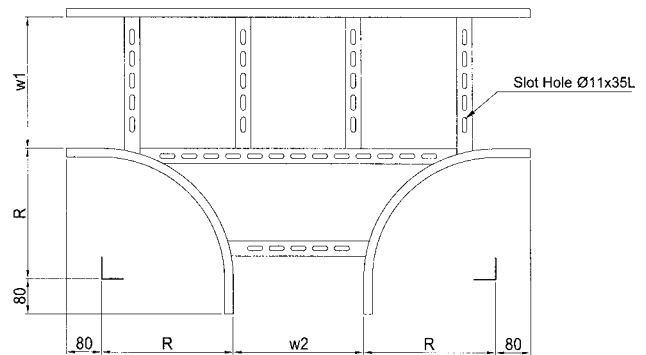
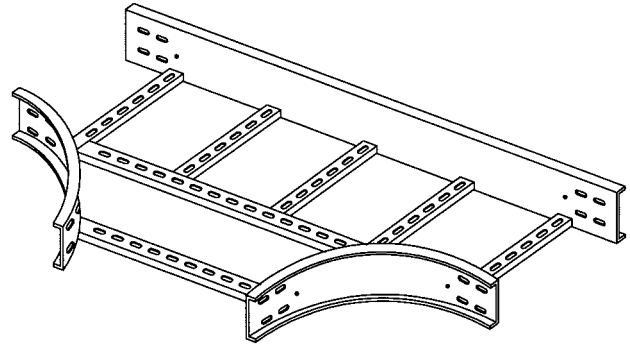
W1 = W2 Equal  
W1 ≠ W2 Unequal

**Definition of Product Code (HOW TO ORDER)**

e.g. CPL150A/1.5/LCO300-300/450/MS HDG



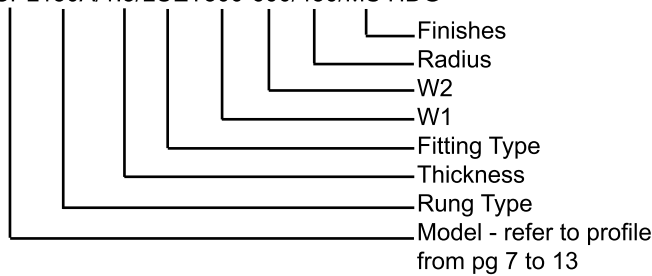
Fitting Type	H	H	H	H	H	W1	W2
.../LET150-150	75	100	125	150	160	150	150
.../LUET150-300	75	100	125	150	160	150	300
.../LUET150-450	75	100	125	150	160	150	450
.../LUET150-600	75	100	125	150	160	150	600
.../LUET150-750	75	100	125	150	160	150	750
.../LUET150-900	75	100	125	150	160	150	900
.../LUET300-150	75	100	125	150	160	300	150
.../LET300-300	75	100	125	150	160	300	300
.../LUET300-450	75	100	125	150	160	300	450
.../LUET300-600	75	100	125	150	160	300	600
.../LUET300-750	75	100	125	150	160	300	750
.../LUET300-900	75	100	125	150	160	300	900
.../LUET450-150	75	100	125	150	160	450	150
.../LUET450-300	75	100	125	150	160	450	300
.../LET450-450	75	100	125	150	160	450	450
.../LUET450-600	75	100	125	150	160	450	600
.../LUET450-750	75	100	125	150	160	450	750
.../LUET450-900	75	100	125	150	160	450	900
.../LUET600-150	75	100	125	150	160	600	150
.../LUET600-300	75	100	125	150	160	600	300
.../LUET600-450	75	100	125	150	160	600	450
.../LET600-600	75	100	125	150	160	600	600
.../LUET600-750	75	100	125	150	160	600	750
.../LUET600-900	75	100	125	150	160	600	900
.../LUET750-150	75	100	125	150	160	750	150
.../LUET750-300	75	100	125	150	160	750	300
.../LUET750-450	75	100	125	150	160	750	450
.../LUET750-600	75	100	125	150	160	750	600
.../LET750-750	75	100	125	150	160	750	750
.../LUET750-900	75	100	125	150	160	750	900
.../LUET900-150	75	100	125	150	160	900	150
.../LUET900-300	75	100	125	150	160	900	300
.../LUET900-450	75	100	125	150	160	900	450
.../LUET900-600	75	100	125	150	160	900	600
.../LUET900-750	75	100	125	150	160	900	750
.../LET900-900	75	100	125	150	160	900	900



**Radius (R) mm :**  
 150, 200, 300, 450, 500, 600, 750,  
 900, 1000 & 1200

### Definition of Product Code (HOW TO ORDER)

e.g. CPL150A/1.5/LUET300-600/450/MS HDG



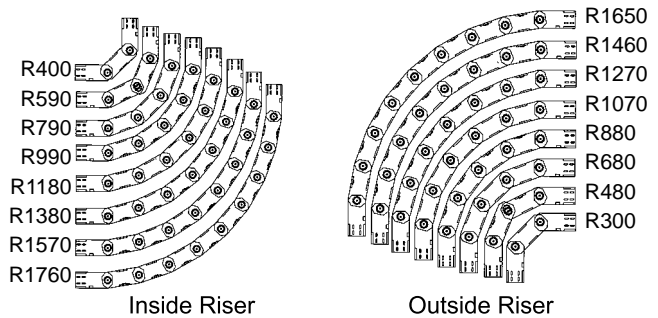
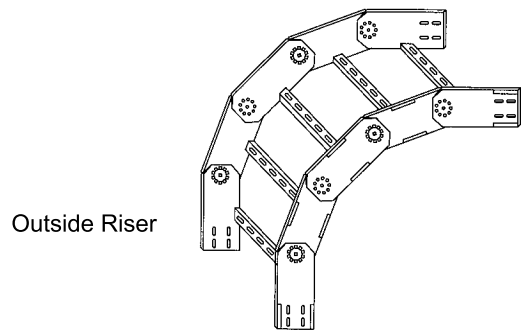
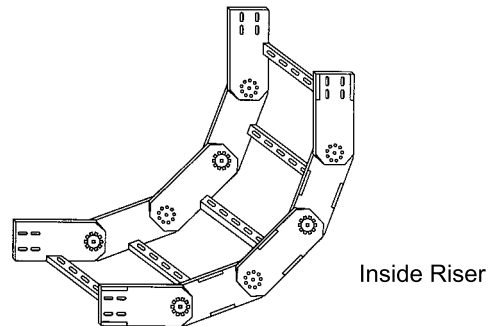
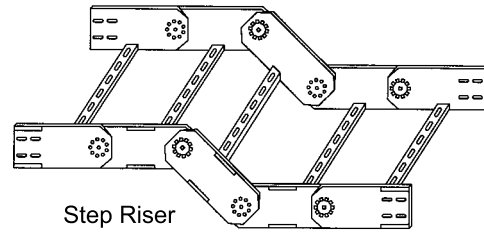
These are flexible means of coping on site with difficult installation situations. When used in conjunction with articulated bends and bendable fishplates these accessories can solve most mis-alignment problems. However, minor alignment difficulties may be overcome more simply using vertically hinged connectors.

Articulated risers can be used in a number of ways depending upon the circumstances. They should always be assembled together before being lifted in situ and there are two alternative approaches to installation:

- A. Using the centre bolts the component can be assembled and tightened to an approximation of the required shape then installed and adjusted in situ.
- B. If the required radius is known then the various sections can be locked into predetermined positions during assembly creating a component with a fixed, known radius which can then be installed.

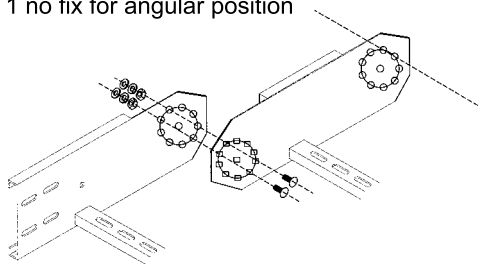
Sets can be split to create assemblies (more vertically hinged connectors will be required) or joined together to create extra long components.

Totally flexible with angle adjustment of every 4 degree



### Riser Assembly

- (A) Match the square hole with round holes in sequence
- (B) 2 sets of M8 hex bolt/nuts/2 flat washer/1 spring washer to fix at one side
  - 1 no installed to center of the round holes
  - 1 no fix for angular position

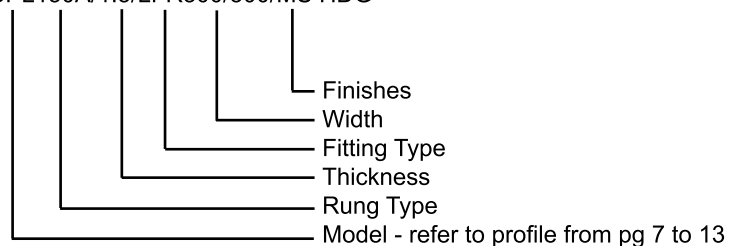


The combination of the 9 and 10 holes circles gives adjustment in steps of 4 degree

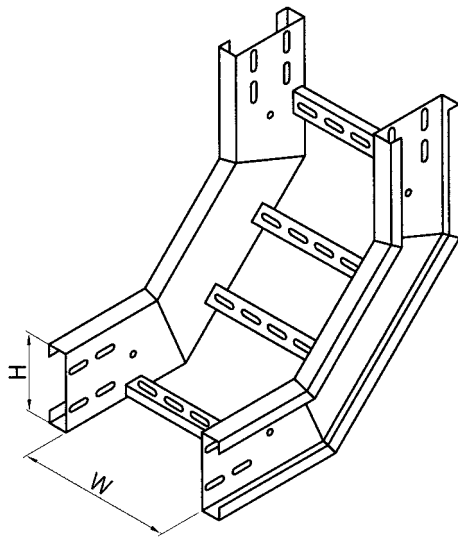
Fitting Type	W
.../FR150	150
.../FR300	300
.../FR450	450
.../FR600	600
.../FR750	750
.../FR900	900

### Definition of Product Code (HOW TO ORDER)

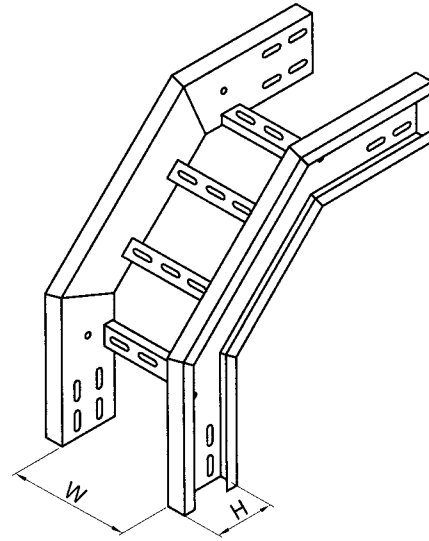
e.g. CPL150A/1.5/LFR300/300/MS HDG



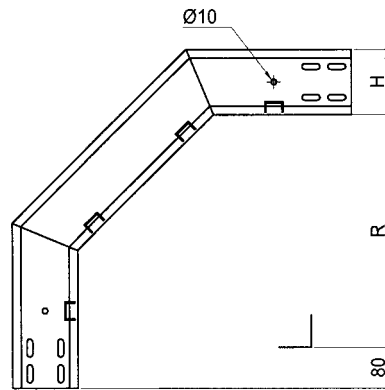
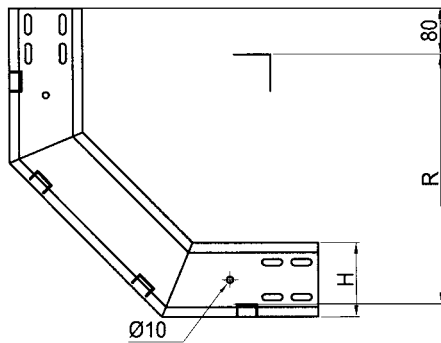




**Inside Riser**



**Outside Riser**

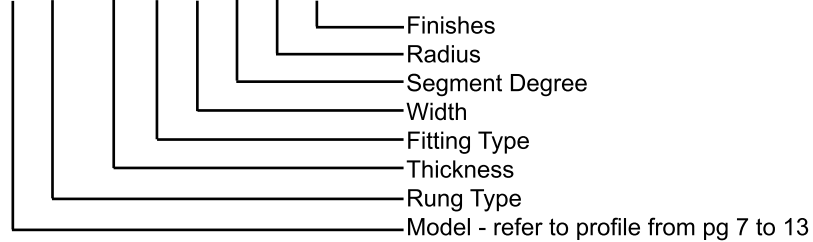


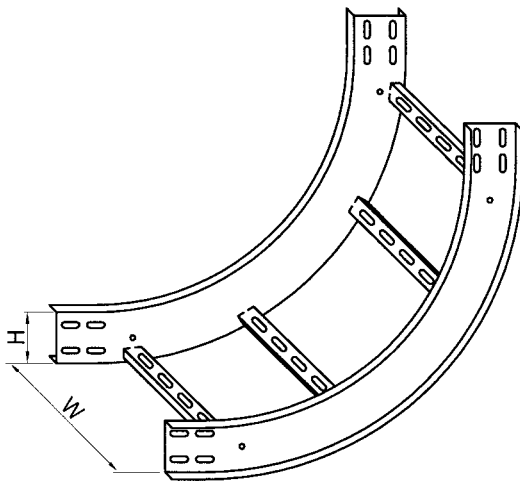
Fitting Type	H	H	H	H	H	W
.../LIR150	75	100	125	150	160	150
.../LIR300	75	100	125	150	160	300
.../LIR450	75	100	125	150	160	450
.../LIR600	75	100	125	150	160	600
.../LIR750	75	100	125	150	160	750
.../LIR900	75	100	125	150	160	900

Fitting Type	H	H	H	H	H	W
.../LOR150	75	100	125	150	160	150
.../LOR300	75	100	125	150	160	300
.../LOR450	75	100	125	150	160	450
.../LOR600	75	100	125	150	160	600
.../LOR750	75	100	125	150	160	750
.../LOR900	75	100	125	150	160	900

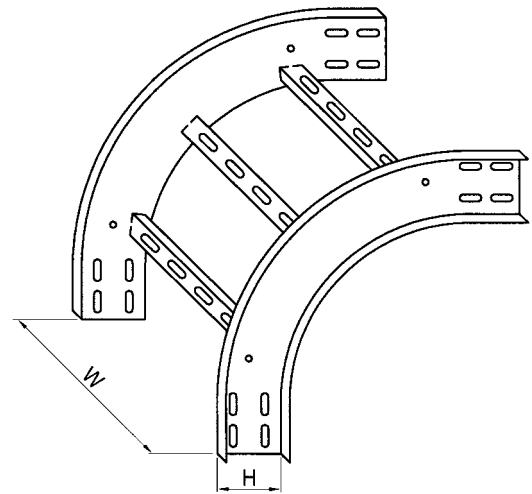
**Definition of Product Code (HOW TO ORDER)**

e.g. CPL150A/1.5/LIR300/90/450/HDG

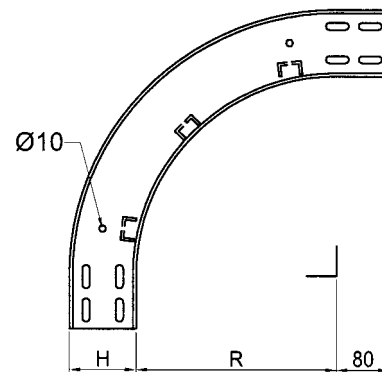
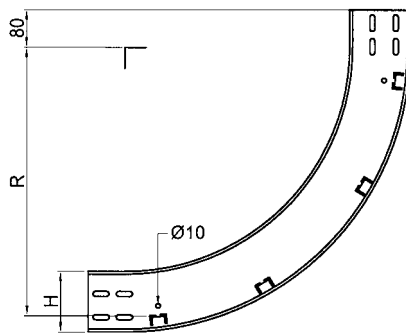




Inside Riser



Outside Riser

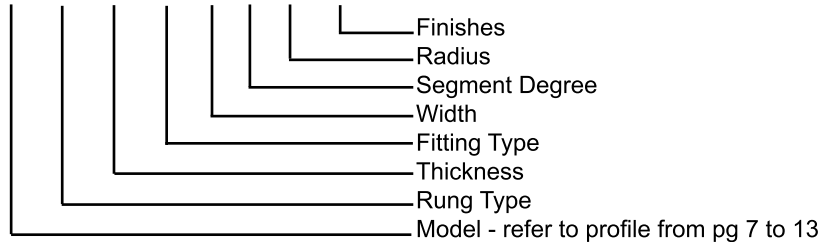


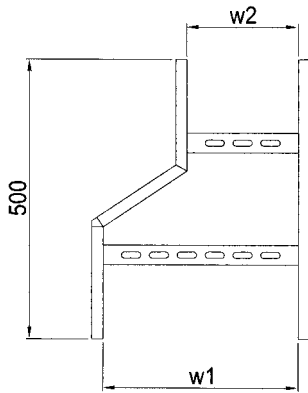
Fitting Type	H	H	H	H	H	W
.../LAIR150	75	100	125	150	160	150
.../LAIR300	75	100	125	150	160	300
.../LAIR450	75	100	125	150	160	450
.../LAIR600	75	100	125	150	160	600
.../LAIR750	75	100	125	150	160	750
.../LAIR900	75	100	125	150	160	900

Fitting Type	H	H	H	H	H	W
.../LAOR150	75	100	125	150	160	150
.../LAOR300	75	100	125	150	160	300
.../LAOR450	75	100	125	150	160	450
.../LAOR600	75	100	125	150	160	600
.../LAOR750	75	100	125	150	160	750
.../LAOR900	75	100	125	150	160	900

### Definition of Product Code (HOW TO ORDER)

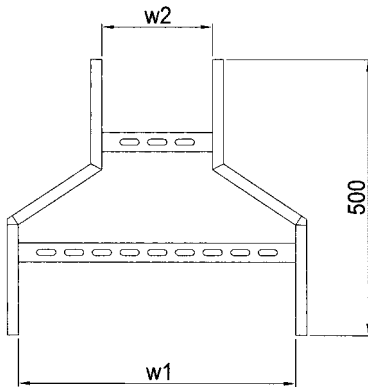
e.g. CPL150A/1.5/LAIR300/90/450/HDG





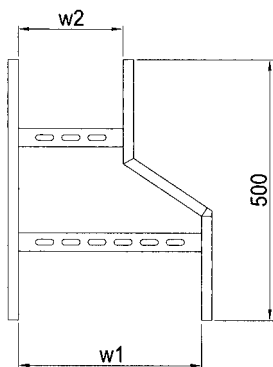
Left Hand Reducer

Fitting Type	H	H	H	H	H	W1	W2
.../LLR300-150	75	100	125	150	160	300	150
.../LLR450-300	75	100	125	150	160	450	300
.../LLR450-150	75	100	125	150	160	450	150
.../LLR600-450	75	100	125	150	160	600	450
.../LLR600-300	75	100	125	150	160	600	300
.../LLR600-150	75	100	125	150	160	600	150
.../LLR750-600	75	100	125	150	160	750	600



Concentric Reducer

Fitting Type	H	H	H	H	H	W1	W2
.../LCR300-150	75	100	125	150	160	300	150
.../LCR450-300	75	100	125	150	160	450	300
.../LCR450-150	75	100	125	150	160	450	150
.../LCR600-450	75	100	125	150	160	600	450
.../LCR600-300	75	100	125	150	160	600	300
.../LCR600-150	75	100	125	150	160	600	150
.../LCR750-600	75	100	125	150	160	750	600

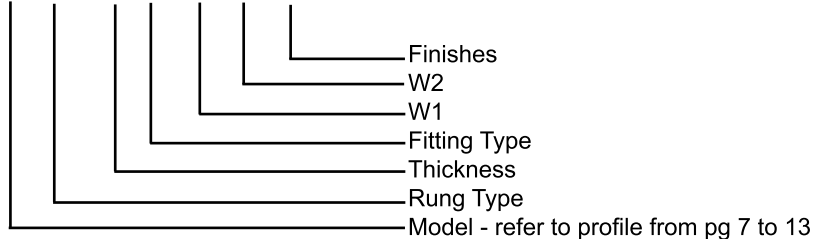


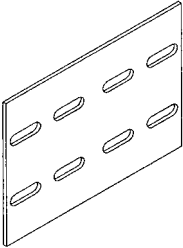
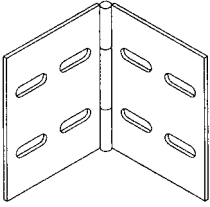
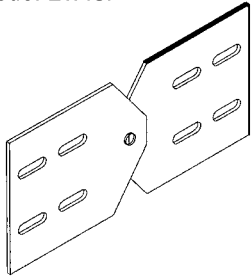
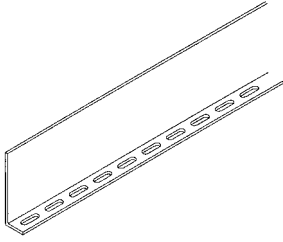
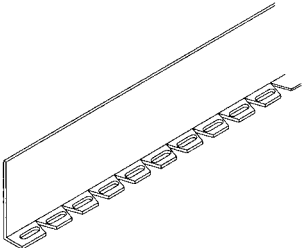
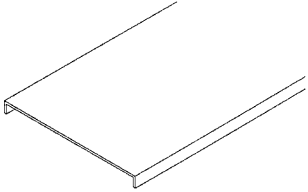
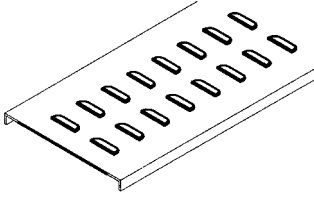
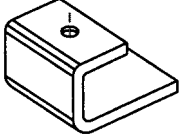
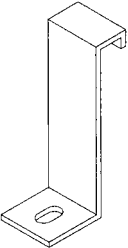
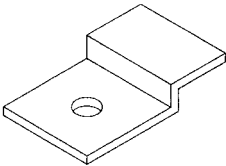
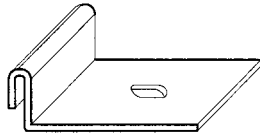
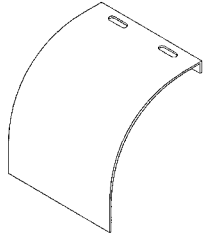
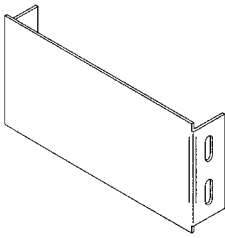
Right Hand Reducer



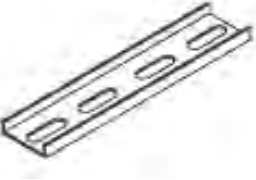
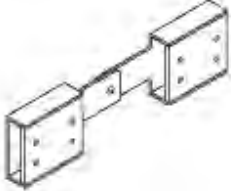
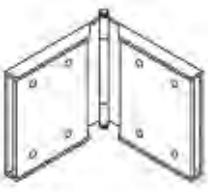
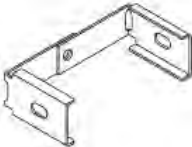
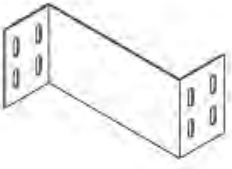

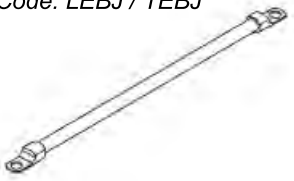
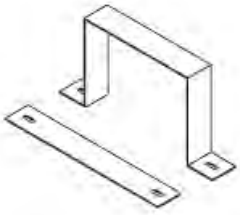

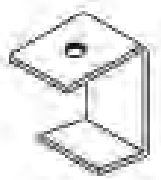

Fitting Type	H	H	H	H	H	W1	W2
.../LRR300-150	75	100	125	150	160	300	150
.../LRR450-300	75	100	125	150	160	450	300
.../LRR450-150	75	100	125	150	160	450	150
.../LRR600-450	75	100	125	150	160	600	450
.../LRR600-300	75	100	125	150	160	600	300
.../LRR600-150	75	100	125	150	160	600	150
.../LRR750-600	75	100	125	150	160	750	600

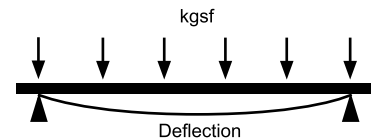
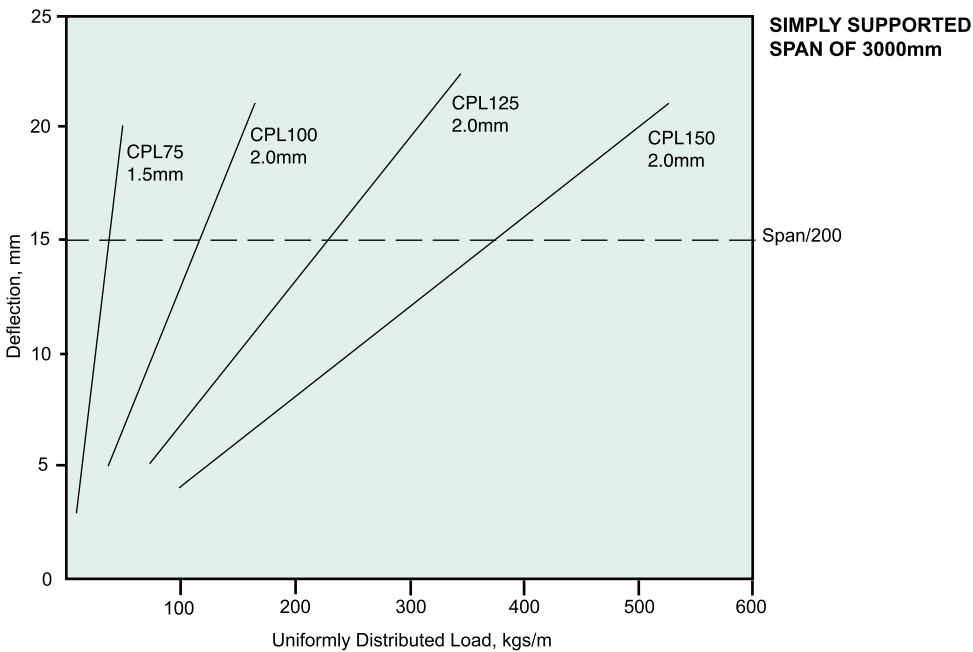
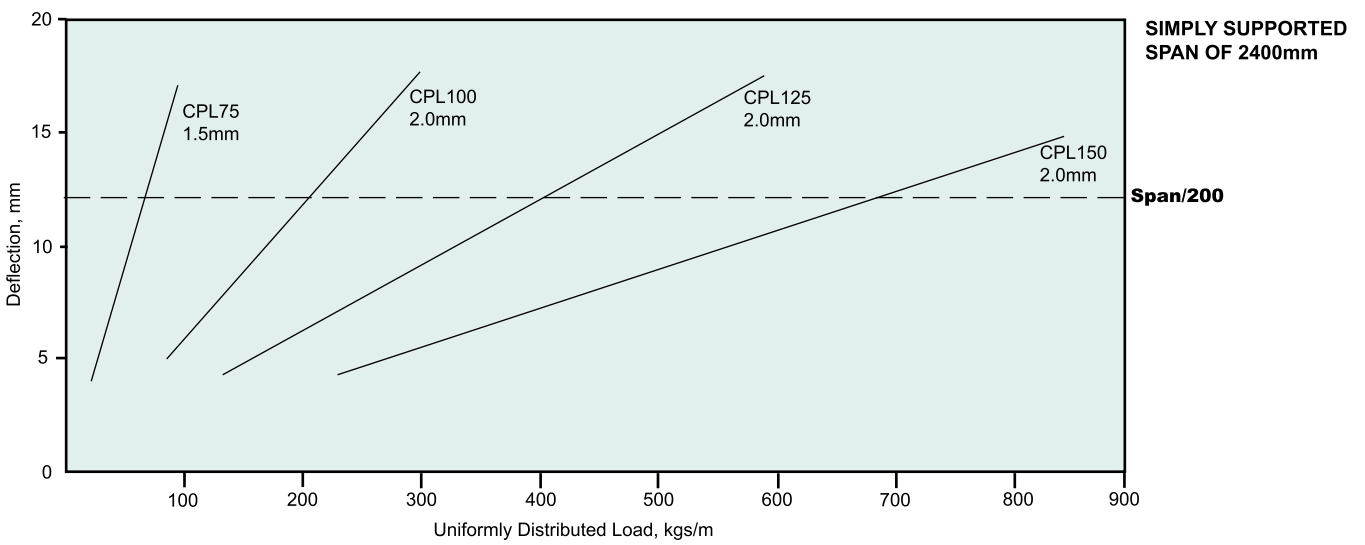
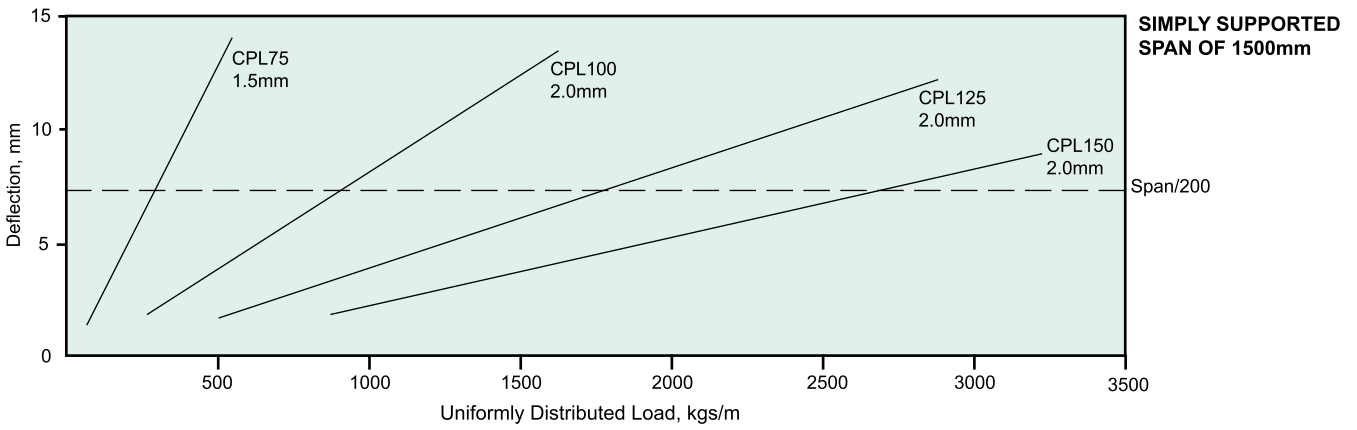
### Definition of Product Code (HOW TO ORDER)

e.g. CPL150A/1.5/LCR300-150/HDG



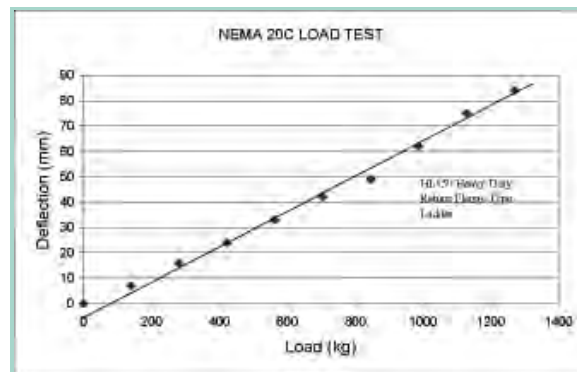
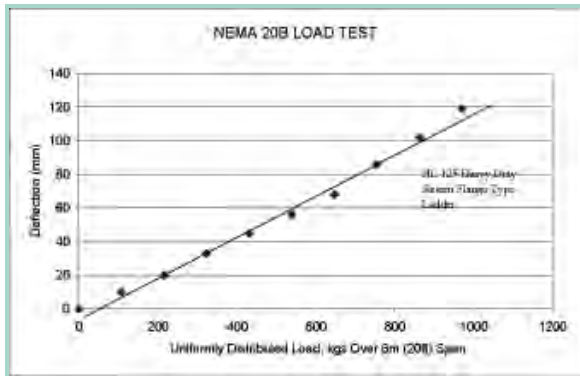
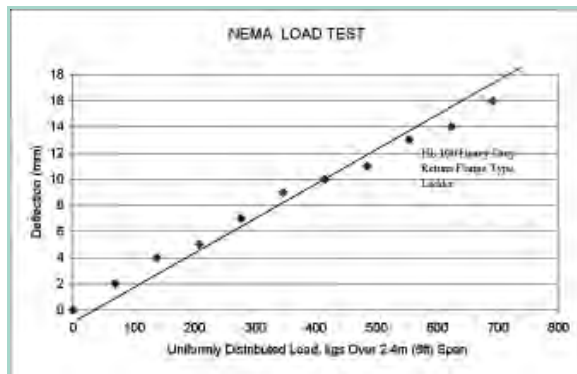
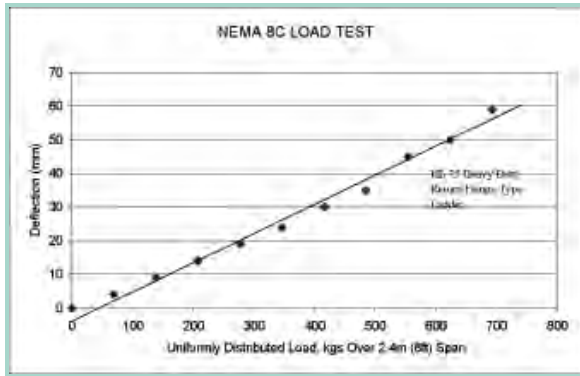
<p><b>Ladder Straight Splice Plate</b> Code: LSSP</p>  <p><b>Fastener:</b> 8 sets of M10x20 Carriage Bolt, 1Hex Nut, 1 Flat Washer &amp; 1 Spring Washer</p>	<p><b>Ladder Horizontal Adjustable Splice Plate</b> Code: LHASP</p>  <p><b>Fastener:</b> 8 sets of M10x20 Carriage Bolt, 1Hex Nut, 1 Flat Washer &amp; 1 Spring Washer</p>	<p><b>Ladder Vertical Adjustable Splice Plate</b> Code: LVASP</p>  <p><b>Fastener:</b> 8 sets of M10x20 Carriage Bolt, 1Hex Nut, 1 Flat Washer &amp; 1 Spring Washer</p>	<p><b>Ladder Straight Divider</b> Code: LSD</p>  <p><b>Fastener:</b> 2 sets of M6x16 or 2 sets of M10x20 Carriage Bolt, 1Hex Nut, 1 Flat Washer &amp; 1 Spring Washer</p>
<p><b>Ladder Flexible Divider</b> Code: LFD</p>  <p><b>Fastener:</b> 2 sets of M6x16 or 2 sets of M10x20 Carriage Bolt, 1Hex Nut, 1 Flat Washer &amp; 1 Spring Washer</p>	<p><b>Ladder Solid Flange Cover</b> Code: LSFC</p>  <p><b>Fastener:</b> 4 sets of Cover Clips c/w M6x20 Hex Bolt</p>	<p><b>Ladder Ventilated Flange Cover</b> Code: LVFC</p>  <p><b>Fastener:</b> 4 sets of Cover Clips c/w M6x20 Hex Bolt</p>	<p><b>Ladder Cover Clip</b> Code: LCC for CPL</p>  <p><b>Fastener:</b> 1 pce of M6x20 Hex Bolt</p>
<p><b>Ladder Hold Down Clamp</b> Code: LHDC</p>  <p><b>Fastener:</b> 1 set of M10x30 Hex Bolt, 1Hex Nut, 1 Flat Washer &amp; 1 Spring Washer</p>	<p><b>Ladder Hold Down Clip (for CPL)</b> Code: LHDC2</p>  <p><b>Fastener:</b> 1 set of M10x30 Hex Bolt, 1Hex Nut, 1 Flat Washer &amp; 1 Spring Washer</p>	<p><b>Ladder Hold Down U Clip (for HL 90Deg)</b> Code: LHUDC</p>  <p><b>Fastener:</b> 1 set of M10x30 Hex Bolt, 1Hex Nut, 1 Flat Washer &amp; 1 Spring Washer</p>	<p><b>Ladder Dropout</b> Code: LDO</p>  <p><b>Fastener:</b> 2 sets of M10x20 Carriage Bolt, 1Hex Nut, 1 Flat Washer &amp; 1 Spring Washer</p>
<p><b>Ladder End Plate</b> Code: LEP</p>  <p><b>Fastener:</b> 4 sets of M10x20 Carriage Bolt, 1Hex Nut, 1 Flat Washer &amp; 1 Spring Washer</p>	<p><b>Definition of Product Code (HOW TO ORDER)</b></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>For item 12</b> e.g. CPL150/2.0/LDO/450/300/SS304</p> <ul style="list-style-type: none"> <li>Model</li> <li>Thickness</li> <li>Code</li> <li>Width</li> <li>Radius</li> <li>Finishes</li> </ul> </div> <div style="width: 45%;"> <p><b>For items 1,2,3,4,5,8,9,10 &amp; 11</b> e.g. CPL150/2.0/LFD/SS316L</p> <ul style="list-style-type: none"> <li>Model</li> <li>Thickness</li> <li>Code</li> <li>Finishes</li> </ul> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p><b>For items 6,7 and 13</b> e.g. CPL150/2.0/LDO/450/SS304</p> <ul style="list-style-type: none"> <li>Model</li> <li>Thickness</li> <li>Code</li> <li>Width</li> <li>Finishes</li> </ul> </div> </div>		

<p><b>Ladder Hold Down V-Clip - for Returned Flanged Type Cable Ladder (45° flanged)</b> Code: LHDVC</p>  <p>Fastener: 1 set of M10x30 Hex Bolt, 1Hex Nut, 1 Flat Washer &amp; 1 Spring Washer</p>	<p><b>Straight Splice Plate (C Type) for Flat Bar Type Cable Ladder Non Slotted</b> Code: LSSP-C1</p>  <p>Fastener: 1 set of M10x20 Hex Bolt, 1Hex Nut, 1 Flat Washer &amp; 1 Spring Washer</p>	<p><b>Straight Splice Plate (C Type) for Flat Bar Type Cable Ladder Slotted</b> Code: LSSP-C2</p>  <p>Fastener: 4 sets of M10x20 Carriage Bolt/Hex Nut/Flat Washer/Spring Washer</p>	<p><b>Ladder Vertical Adjustable Splice Plate for Flat Bar Type Cable Ladder Non Slotted</b> Code: LVASP1</p>  <p>Fastener: 1 set of M6x16 Pan Head Bolt, 1Hex Nut, 1 Flat Washer &amp; 1 Spring Washer &amp; 8 sets of M6 x 20 Hex Bolt</p>
<p><b>Horizontal Adjustable Splice Plate (with Hinges) for Flat Bar Type Cable Ladder Non Slotted</b> Code: LHASP1</p>  <p>Fastener: 8 sets of M6x20 Hex Bolt</p>	<p><b>Horizontal Adjustable Splice Plate (without Hinges) for Flat Bar Type cable Ladder Slotted</b> Code: LHASP2</p>  <p>Fastener: 1 set of M6x16 Pan Head Bolt, 1Hex Nut, 1 Flat Washer &amp; 1 Spring Washer &amp; 2 sets of M10x20 Carriage Bolt/Hex Nut/Flat Washer/Spring Washer</p>	<p><b>Cable Ladder Reducer Plate</b> Code: LRP</p>  <p>Fastener: 8 sets of M10x20 Carriage Bolt/Hex Nut/Flat Washer/Spring Washer</p>	<p><b>Earth Bonding Jumper Material - Wire Braided</b> Code: LEBJ / TEBJ</p>  <p>Fastener: LEBJ - 2 sets of M8x20 Pan Head Bolt/Hex Nut/Flat Washer/Spring Washer TEBJ - 2 sets of M6x16 Pan Head Bolt/Hex Nut/Flat Washer/Spring Washer</p>
<p><b>Earth Bonding Jumper Material - Green PVC</b> Code: LEBJ / TEBJ</p>  <p>Fastener: LEBJ - 2 sets of M8x20 Pan Head Bolt/Hex Nut/Flat Washer/Spring Washer TEBJ - 2 sets of M6x16 Pan Head Bolt/Hex Nut/Flat Washer/Spring Washer</p>	<p><b>Cable Ladder Clamp</b> Code: LCCU</p>  <p>Fastener: 2 sets of M6x20 Hex Bolt/Hex Nut/Flat Washer/ Spring Washer</p>	<p><b>Edge Protector (Rubber)</b> Code: EPR</p> 	<p><b>Ladder Cover Clip</b> Code: LCC1</p>  <p>Fastener: 1 set of M6x20 Hex Bolt</p>
<p><b>Cable Tray Reducer Plate</b> Code: TRP</p>  <p>Fastener: 4 sets of M6x16 Pan Head Bolt/Hex Nut/Flat Washer/Spring Washer</p>	<p><b>Definition of Product Code (HOW TO ORDER)</b></p> <p><b>For item 14,15,16,17,18,19,20,23,25 and 26</b> e.g. CPL150/2.0/LHDVC/SS316</p> <ul style="list-style-type: none"> <li>Model</li> <li>Thickness</li> <li>Code</li> <li>Finishes</li> </ul> <p><b>For item 21,22 and 24</b> e.g. CPL150/LEBJ/WIRE BRAIDED</p> <ul style="list-style-type: none"> <li>Code</li> <li>Model</li> </ul>		



UNIFORMLY DISTRIBUTED LOAD  
SIMPLY SUPPORTED

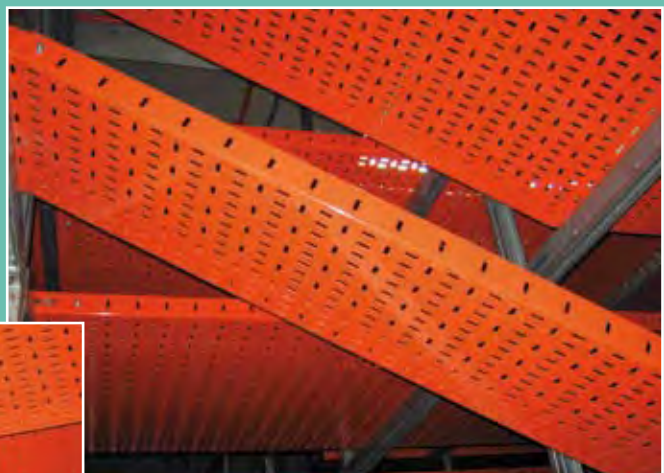
General indication of likely performance with 1.5 safety factor should have deflection no greater than span/200mm







# Metallic Cable Tray



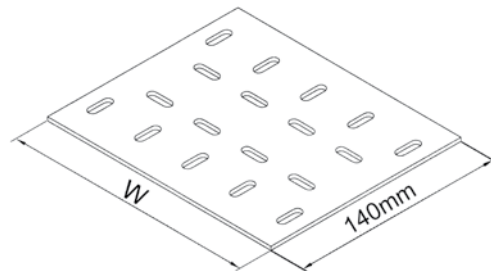
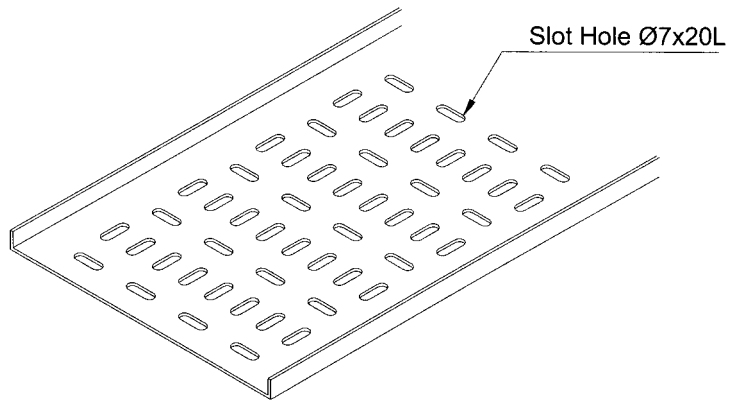
## Light Duty Tray

Length : 2438mm or 3000mm

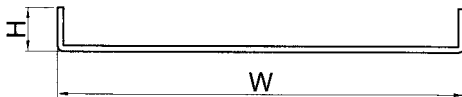
Dimension of slot : 7mm x 20mm or  
11mm x 35mm

Coupler : 1.0mm or 2mm thick

Fastener : M6 x 16mm Pan  
Head bolt/nut/FW/1SW  
(4 sets per coupler)



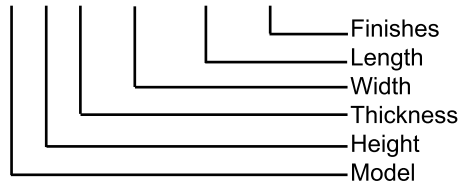
LD13 Tray Straight Coupling Plate  
...../TSCP/HDG or \*



Model	H(mm)	H(mm)	H(mm)	T(mm)	W(mm)	L(mm)	Material
NRF	13	15	20	1 - 2	ST50	2438 or 3000	Stainless Steel 304
	13	15	20	1 - 2	ST75	2438 or 3000	Stainless Steel 316 or 316L
	13	15	20	1 - 2	ST100	2438 or 3000	Aluminium 5052
	13	15	20	1 - 2	ST150	2438 or 3000	Mild Steel (HDG or epoxy coated finish)
	13	15	20	1 - 2	ST200	2438 or 3000	Pre-Galvanised
	13	15	20	1 - 2	ST225	2438 or 3000	Electro Galvanised
	13	15	20	1 - 2	ST300	2438 or 3000	
	13	15	20	1 - 2	ST450	2438 or 3000	
	13	15	20	1 - 2	ST600	2438 or 3000	
	13	15	20	1 - 2	ST750	2438 or 3000	
	13	15	20	1 - 2	ST900	2438 or 3000	

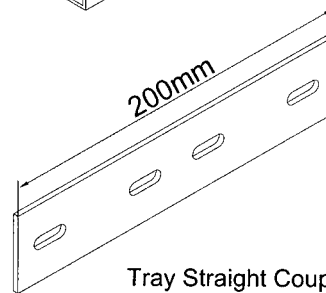
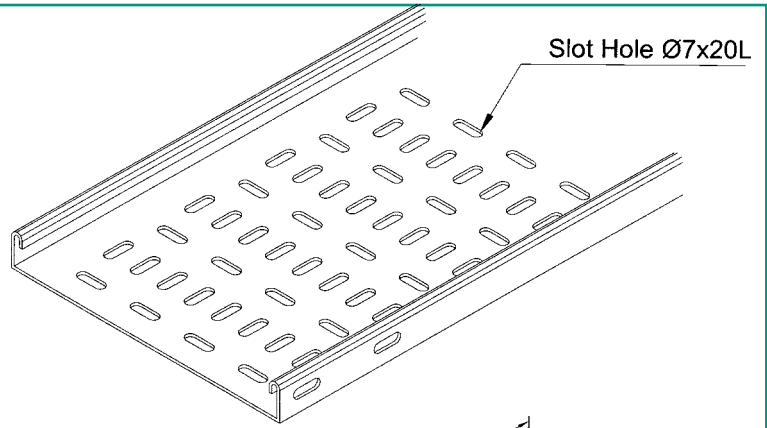
### Definition of Product Code (HOW TO ORDER)

e.g. NRF13/2.0/ST150/2438/SS304

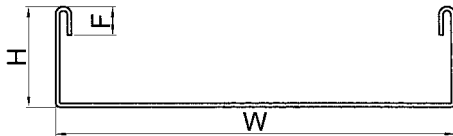


**Medium Duty Tray**

- Length : 2438mm or 3000mm
- Dimension of slot : 7mm x 20mm or 11mm x 35mm
- Coupler : 1.5mm or 2mm thick
- Fastener : M6 x 16mm Pan Head bolt/nut/FW/1SW (4 sets per coupler)



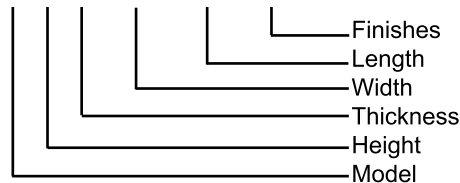
Tray Straight Coupling Plate  
...../TSCP/HDG or \*



Model	H (mm)	T (mm)	W (mm)	L (mm)	Material
<b>MRF</b>	25	1 - 2	ST50	2438 or 3000	Stainless Steel 304
	25	1 - 2	ST75	2438 or 3000	Stainless Steel 316 or 316L
	25	1 - 2	ST100	2438 or 3000	Aluminium 5052
	25	1 - 2	ST150	2438 or 3000	Mild Steel (HDG or epoxy coated finish)
	25	1 - 2	ST200	2438 or 3000	Pre-Galvanised
	25	1 - 2	ST225	2438 or 3000	Electro Galvanised
	25	1 - 2	ST300	2438 or 3000	
	25	1 - 2	ST450	2438 or 3000	
	25	1 - 2	ST600	2438 or 3000	
	25	1 - 2	ST750	2438 or 3000	
	25	1 - 2	ST900	2438 or 3000	

**Definition of Product Code (HOW TO ORDER)**

e.g. MRF25/2.0/ST150/2438/SS304



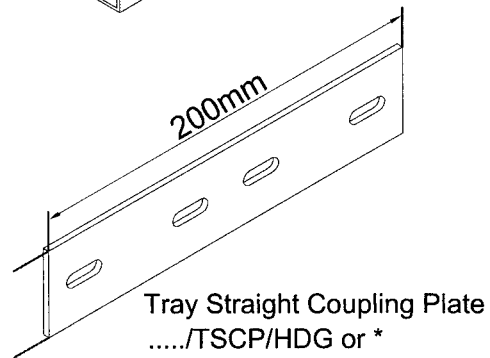
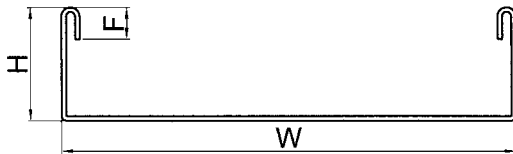
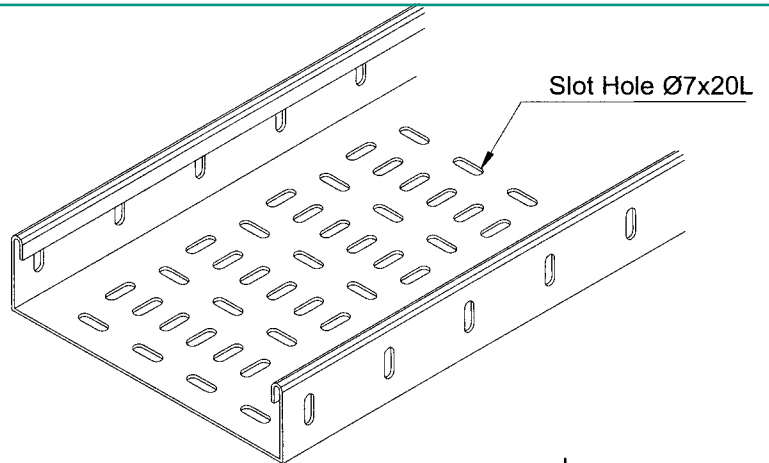
## Heavy Duty Tray

Length : 2438mm or 3000mm

Dimension of slot : 7mm x 20mm or  
11mm x 35mm

Coupler : 1.5mm or 3mm thick

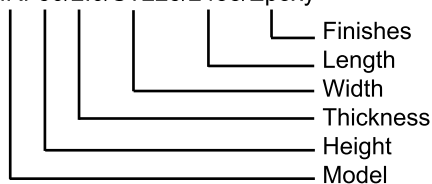
Fastener : M6 x 16mm Pan  
Head bolt/nut/FW/1SW  
(4 sets per coupler)



Model	H (mm)	H (mm)	H (mm)	T (mm)	W (mm)	L (mm)	Material
<b>HRF</b>	50	75	100	1 - 2	ST50	2438 or 3000	Stainless Steel 304
	50	75	100	1 - 2	ST75	2438 or 3000	Stainless Steel 316 or 316L
	50	75	100	1 - 2	ST100	2438 or 3000	Aluminium 5052
	50	75	100	1 - 2	ST150	2438 or 3000	Mild Steel (HDG or epoxy coated finish)
	50	75	100	1 - 2	ST200	2438 or 3000	Pre-Galvanised
	50	75	100	1 - 2	ST225	2438 or 3000	Electro Galvanised
	50	75	100	1 - 2	ST300	2438 or 3000	
	50	75	100	1 - 2	ST450	2438 or 3000	
	50	75	100	1 - 2	ST600	2438 or 3000	
	50	75	100	1 - 2	ST750	2438 or 3000	
	50	75	100	1 - 2	ST900	2438 or 3000	

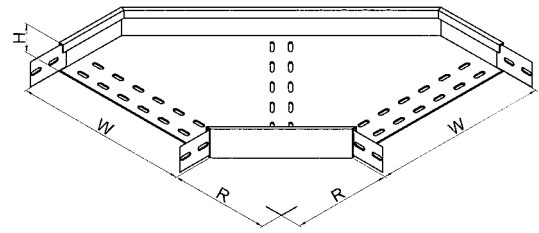
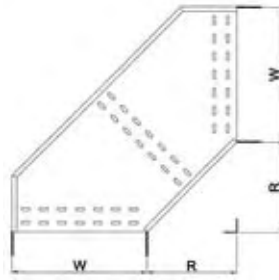
### Definition of Product Code (HOW TO ORDER)

e.g. HRF50/2.0/ST225/2438/Epoxy



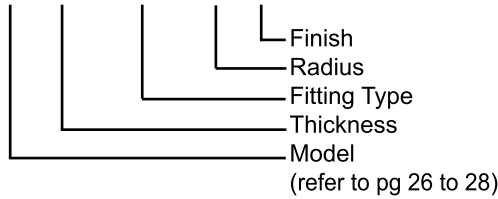
## Flat Bend

Fitting Type	W
.../TFB50	50
.../TFB75	75
.../TFB100	100
.../TFB150	150
.../TFB200	200
.../TFB225	225
.../TFB300	300
.../TFB450	450
.../TFB600	600
.../TFB750	750
.../TFB900	900



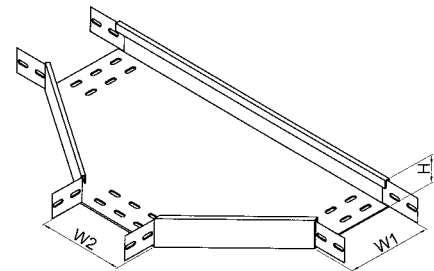
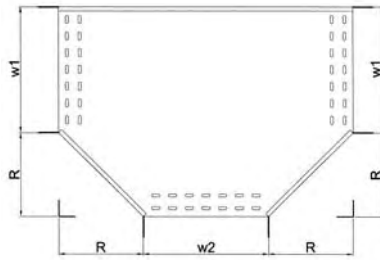
### Definition of Product Code (HOW TO ORDER)

e.g. HRF50/1.5/TFB100/200R/HDG



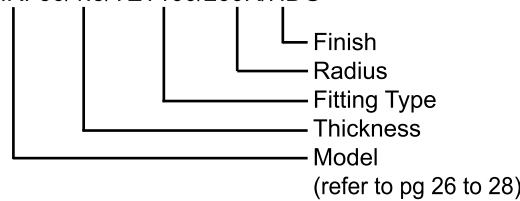
## Equal Tee

Fitting Type	W
.../TET50	50
.../TET75	75
.../TET100	100
.../TET150	150
.../TET200	200
.../TET225	225
.../TET300	300
.../TET450	450
.../TET600	600
.../TET750	750
.../TET900	900



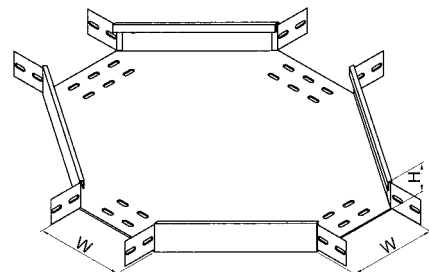
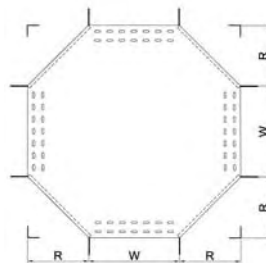
### Definition of Product Code (HOW TO ORDER)

e.g. HRF50/1.5/TET100/200R/HDG



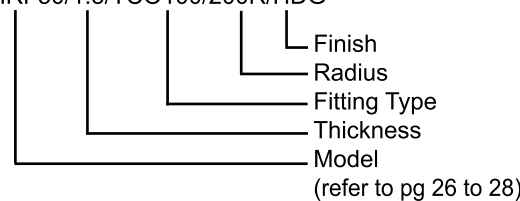
## Cross Over

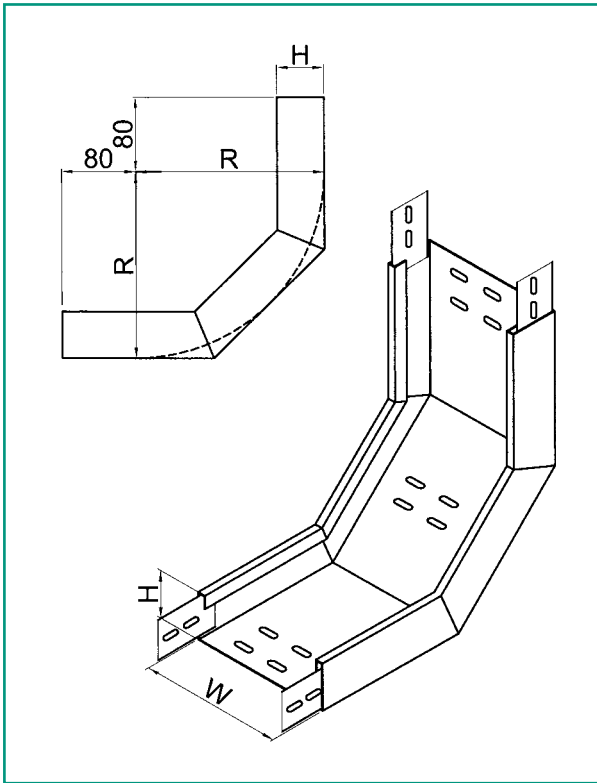
Fitting Type	W
.../TCO50	50
.../TCO75	75
.../TCO100	100
.../TCO150	150
.../TCO200	200
.../TCO225	225
.../TCO300	300
.../TCO450	450
.../TCO600	600
.../TCO750	750
.../TCO900	900



### Definition of Product Code (HOW TO ORDER)

e.g. HRF50/1.5/TCO100/200R/HDG



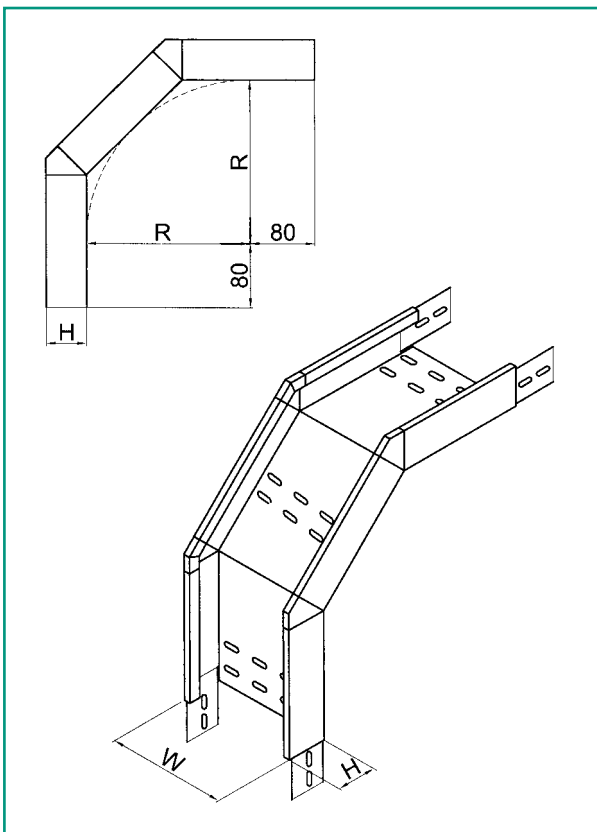
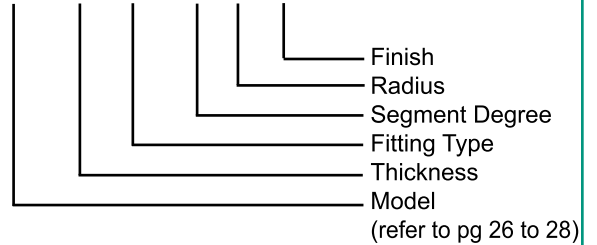


## 90° Inside Riser

Fitting Type	W
.../TVI 50	50
.../TVI 75	75
.../TVI 100	100
.../TVI 150	150
.../TVI 200	200
.../TVI 225	225
.../TVI 300	300
.../TVI 450	450
.../TVI 600	600
.../TVI 750	750
.../TVI 900	900

### Definition of Product Code (HOW TO ORDER)

e.g. HRF50/1.5/TVI450/90/300/HDG

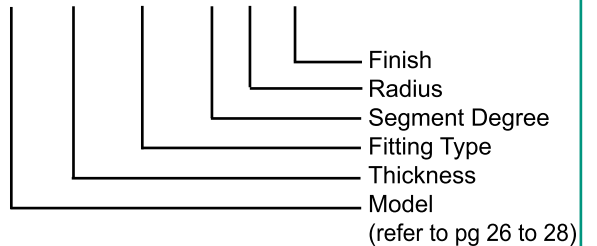


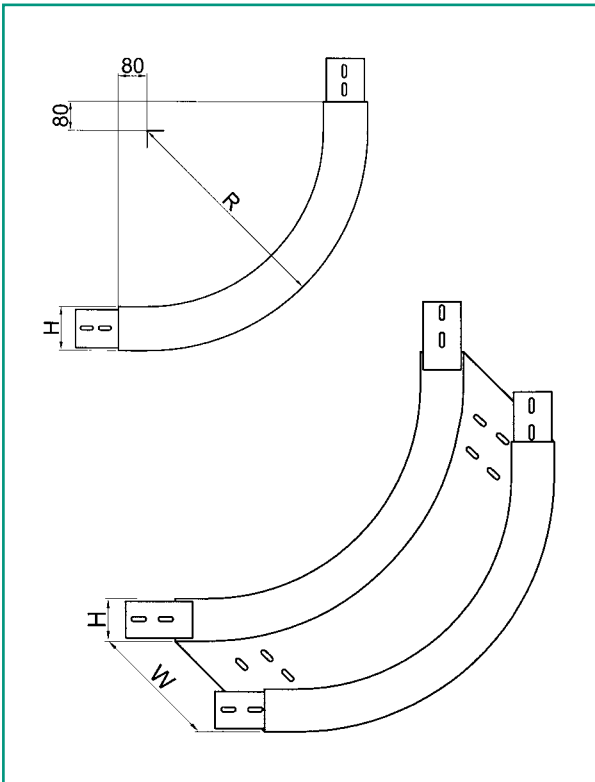
## 90° Outside Riser

Fitting Type	W
.../TVO 50	50
.../TVO 75	75
.../TVO 100	100
.../TVO 150	150
.../TVO 200	200
.../TVO 225	225
.../TVO 300	300
.../TVO 450	450
.../TVO 600	600
.../TVO 750	750
.../TVO 900	900

### Definition of Product Code (HOW TO ORDER)

e.g. HRF50/1.5/TVO450/90/300/HDG



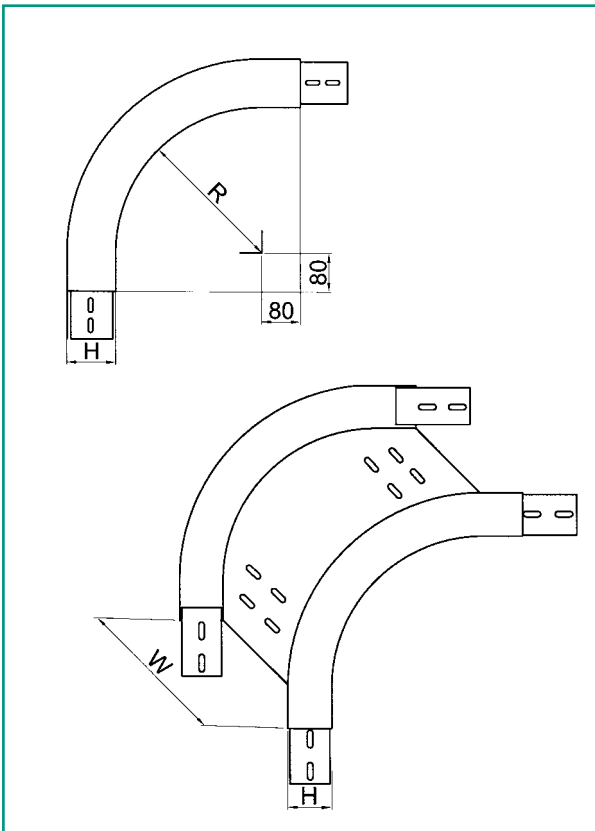
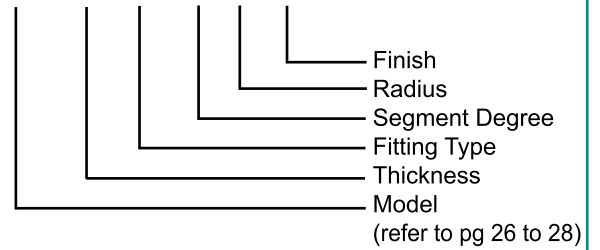


## 90° Inside Riser

Fitting Type	W
.../TSI 50	50
.../TSI 75	75
.../TSI 100	100
.../TSI 150	150
.../TSI 200	200
.../TSI 225	225
.../TSI 300	300
.../TSI 450	450
.../TSI 600	600
.../TSI 750	750
.../TSI 900	900

### Definition of Product Code (HOW TO ORDER)

e.g. HRF50/1.5/TSI450/90/300/HDG

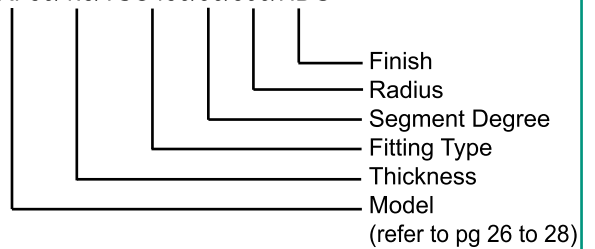


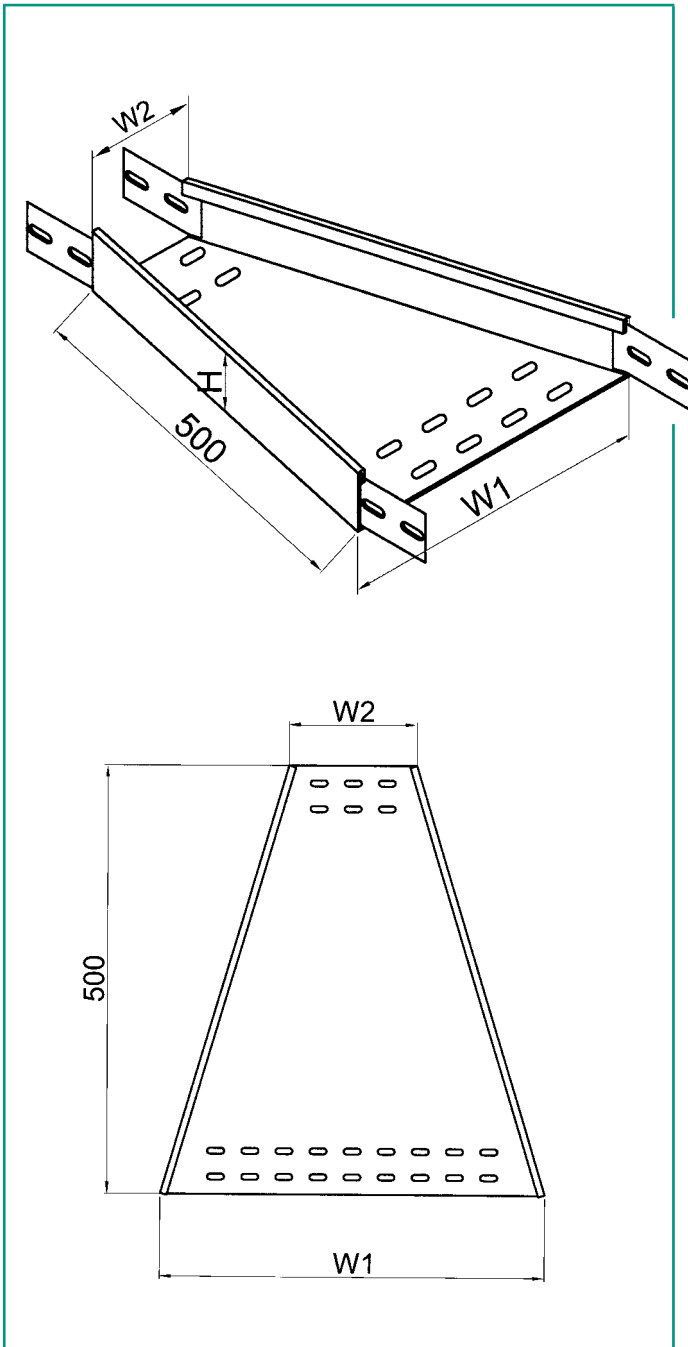
## 90° Outside Riser

Fitting Type	W
.../TSO 50	50
.../TSO 75	75
.../TSO 100	100
.../TSO 150	150
.../TSO 200	200
.../TSO 225	225
.../TSO 300	300
.../TSO 450	450
.../TSO 600	600
.../TSO 750	750
.../TSO 900	900

### Definition of Product Code (HOW TO ORDER)

e.g. HRF50/1.5/TSO450/90/300/HDG

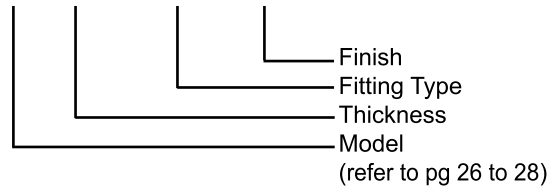




Fitting Type	w1	w2
..../TCR100-50	100	50
..../TCR150-50	150	50
..../TCR150-100	150	100
..../TCR200-50	200	50
..../TCR200-150	200	150
..../TCR200-100	200	100
..../TCR200-150	200	150
..../TCR225-50	225	50
..../TCR225-100	225	100
..../TCR225-150	225	150
..../TCR225-200	225	200
..../TCR300-50	300	50
..../TCR300-100	300	100
..../TCR300-150	300	150
..../TCR300-200	300	200
..../TCR300-225	300	225
..../TCR450-50	450	50
..../TCR450-100	450	100
..../TCR450-150	450	150
..../TCR450-200	450	200
..../TCR450-225	450	225
..../TCR600-50	600	50
..../TCR600-100	600	100
..../TCR600-150	600	150
..../TCR600-200	600	200
..../TCR600-225	600	225
..../TCR600-300	600	300
..../TCR600-450	600	450
..../TCR750-50	750	50
..../TCR750-100	750	100
..../TCR750-150	750	150
..../TCR750-200	750	200
..../TCR750-225	750	225
..../TCR750-300	750	300
..../TCR750-450	750	450
..../TCR750-600	750	600
..../TCR900-50	900	50
..../TCR900-100	900	100
..../TCR900-150	900	150
..../TCR900-200	900	200
..../TCR900-225	900	225
..../TCR900-300	900	300
..../TCR900-450	900	450
..../TCR900-600	900	600
..../TCR900-750	900	750

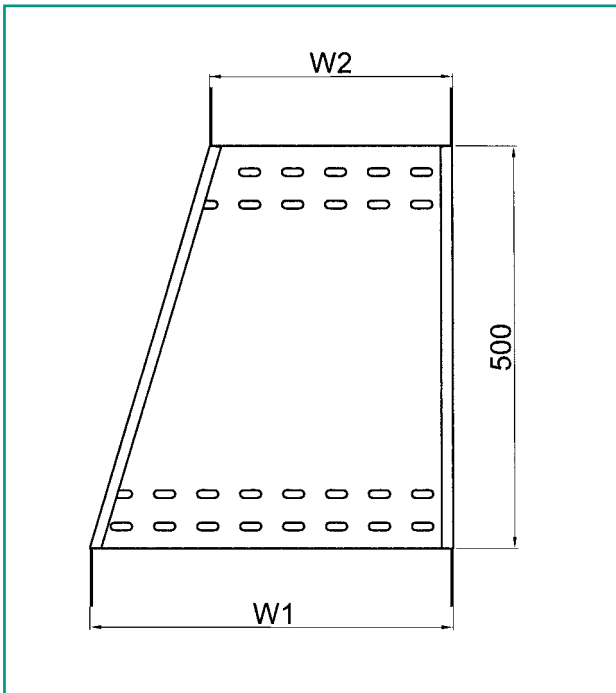
**Definition of Product Code (HOW TO ORDER)**

e.g. HRF50/1.5/TCR150-100/HDG

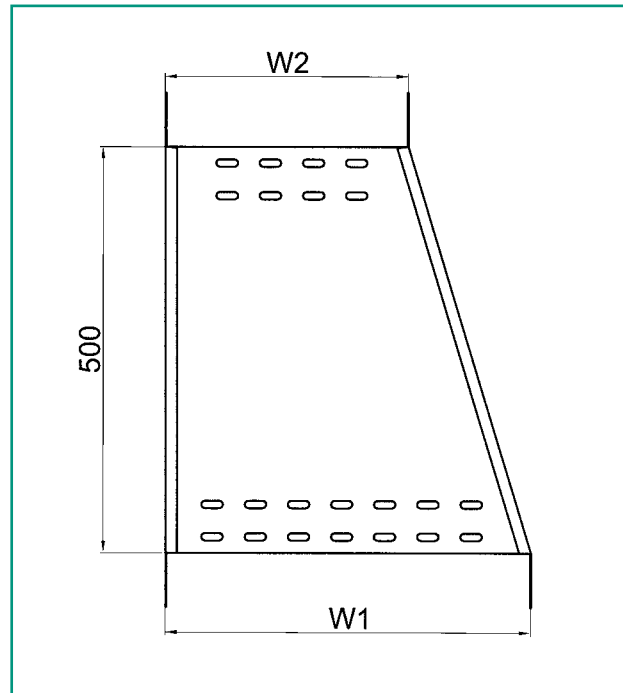




### Left Hand Reducer

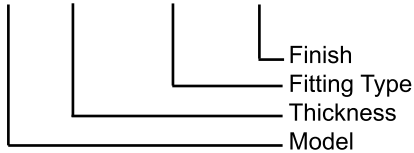


### Right Hand Reducer



#### Definition of Product Code (HOW TO ORDER)

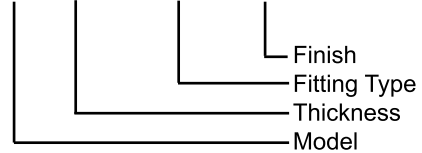
e.g. HRF50/1.5/TLR150-100/HDG



(refer to pg 26 to 28)

#### Definition of Product Code (HOW TO ORDER)

e.g. HRF50/1.5/TRR150-100/HDG

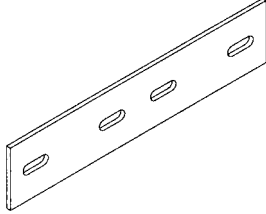


(refer to pg 26 to 28)

Fitting Type	w1	w2	Fitting Type	w1	w2
.../TLR100-50	100	50	.../TLR600-150	600	150
.../TLR150-50	150	50	.../TLR600-200	600	200
.../TLR150-100	150	100	.../TLR600-225	600	225
.../TLR200-50	200	50	.../TLR600-300	600	300
.../TLR200-150	200	150	.../TLR600-450	600	450
.../TLR200-100	200	100	.../TLR750-50	750	50
.../TLR200-150	200	150	.../TLR750-100	750	100
.../TLR225-50	225	50	.../TLR750-150	750	150
.../TLR225-100	225	100	.../TLR750-200	750	200
.../TLR225-150	225	150	.../TLR750-225	750	225
.../TLR225-200	225	200	.../TLR750-300	750	300
.../TLR300-50	300	50	.../TLR750-450	750	450
.../TLR300-100	300	100	.../TLR750-600	750	600
.../TLR300-150	300	150	.../TLR900-50	900	50
.../TLR300-200	300	200	.../TLR900-100	900	100
.../TLR300-225	300	225	.../TLR900-150	900	150
.../TLR450-50	450	50	.../TLR900-200	900	200
.../TLR450-100	450	100	.../TLR900-225	900	225
.../TLR450-150	450	150	.../TLR900-300	900	300
.../TLR450-200	450	200	.../TLR900-450	900	450
.../TLR450-225	450	225	.../TLR900-600	900	600
.../TLR600-50	600	50	.../TLR900-750	900	750
.../TLR600-100	600	100			

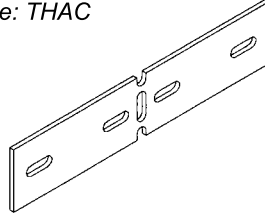
Fitting Type	w1	w2	Fitting Type	w1	w2
.../TRR100-50	100	50	.../TRR600-150	600	150
.../TRR150-50	150	50	.../TRR600-200	600	200
.../TRR150-100	150	100	.../TRR600-225	600	225
.../TRR200-50	200	50	.../TRR600-300	600	300
.../TRR200-150	200	150	.../TRR600-450	600	450
.../TRR200-100	200	100	.../TRR750-50	750	50
.../TRR200-150	200	150	.../TRR750-100	750	100
.../TRR225-50	225	50	.../TRR750-150	750	150
.../TRR225-100	225	100	.../TRR750-200	750	200
.../TRR225-150	225	150	.../TRR750-225	750	225
.../TRR225-200	225	200	.../TRR750-300	750	300
.../TRR300-50	300	50	.../TRR750-450	750	450
.../TRR300-100	300	100	.../TRR750-600	750	600
.../TRR300-150	300	150	.../TRR900-50	900	50
.../TRR300-200	300	200	.../TRR900-100	900	100
.../TRR300-225	300	225	.../TRR900-150	900	150
.../TRR450-50	450	50	.../TRR900-200	900	200
.../TRR450-100	450	100	.../TRR900-225	900	225
.../TRR450-150	450	150	.../TRR900-300	900	300
.../TRR450-200	450	200	.../TRR900-450	900	450
.../TRR450-225	450	225	.../TRR900-600	900	600
.../TRR600-50	600	50	.../TRR900-750	900	750
.../TRR600-100	600	100			

**Tray Straight Coupling Plate** 1  
Code: TSCP



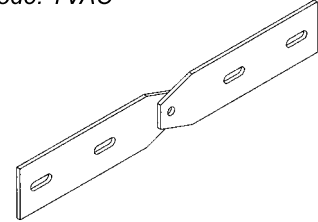
Fastener: 4 sets of M6x16 Pan Head Bolt, 1Hex Nut, 1 Flat Washer & 1 Spring Washer

**Tray Horizontal Adjustable Coupler** 2  
Code: THAC



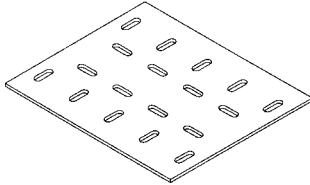
Fastener: 4 sets of M6x16 Pan Head Bolt, 1Hex Nut, 1 Flat Washer & 1 Spring Washer

**Tray Vertical Adjustable Coupler** 3  
Code: TVAC



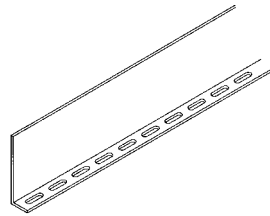
Fastener: 4 sets of M6x16 Pan Head Bolt, 1Hex Nut, 1 Flat Washer & 1 Spring Washer

**LD13 Tray Straight Coupling Plate** 4  
Code: TFCP



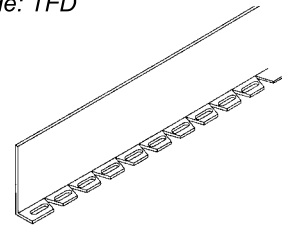
Fastener: 4 sets of M6x16 Pan Head Bolt, 1Hex Nut, 1 Flat Washer & 1 Spring Washer

**Tray Straight Divider** 5  
Code: TSD



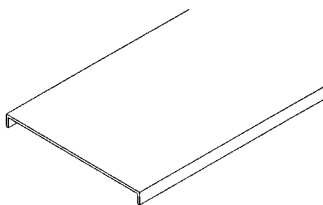
Fastener: 2 sets of M6x16 Pan Head Bolt, 1Hex Nut, 1 Flat Washer & 1 Spring Washer

**Tray Flexible Divider** 6  
Code: TFD



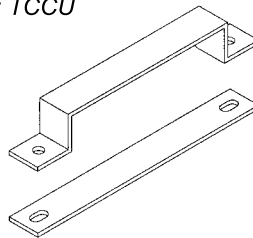
Fastener: 2 sets of M6x16 Pan Head Bolt, 1Hex Nut, 1 Flat Washer & 1 Spring Washer

**Tray Solid Flange Cover** 7  
Code: TSFC



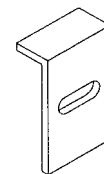
Fastener: 4 sets of cover clip c/w M6x20 Pan Head Bolt, 2 Hex Nut, 1 Spring Washer & 1 Flat Washer

**Tray Cover Clamp** 8  
Code: TCCU



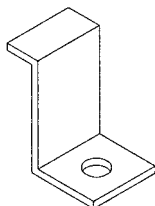
Fastener: 2 sets of M6x20 Hex Bolt, 1 Hex Nut/1FW/1SW

**Tray Cover Clip** 9  
Code: TCC



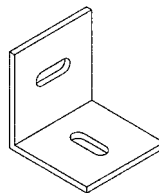
Fastener: 1 set of M6x16 Round Head Bolt, 1Hex Nut, 1 Flat Washer & 1 Spring Washer

**Tray Cover Clip-combination Hold Down Clamp and Cover Clip** 10  
Code: TCC2



Fastener: 1 set of M10x30 Hex Bolt, 1 Flex Nut, 1 Flex Washer & 1 Spring Washer

**Tray Hold Down Clip** 11  
Code: THDC

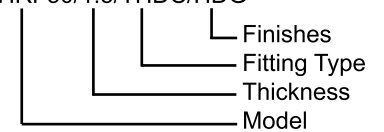


Fastener: 2 sets of M6x16 Pan Head Bolt, 1 Hex Nut, 1 Spring Washer & 1 Flat Washer

**Definition of Product Code (HOW TO ORDER)**

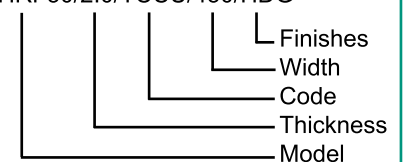
For items 1,2,3,5,6,9,10 & 11

e.g. HRF50/1.5/THDC/HDG



For items 4,7 and 8

e.g. HRF50/2.0/TCCU/450/HDG



**Cable**

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**Trunking**

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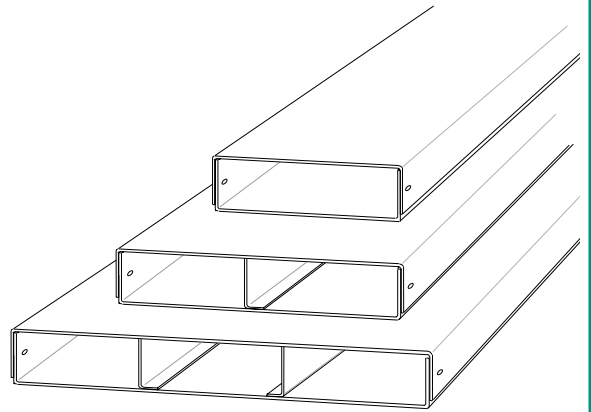
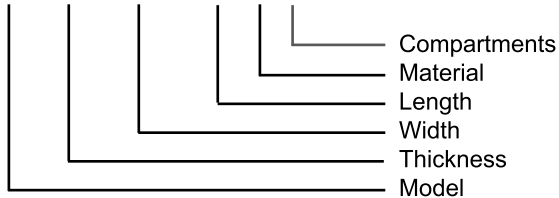
**Systems**

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## Underfloor Ducting System

### Definition of Product Code (HOW TO ORDER)

e.g. UD25/1.0/DST100/2438/GI/2

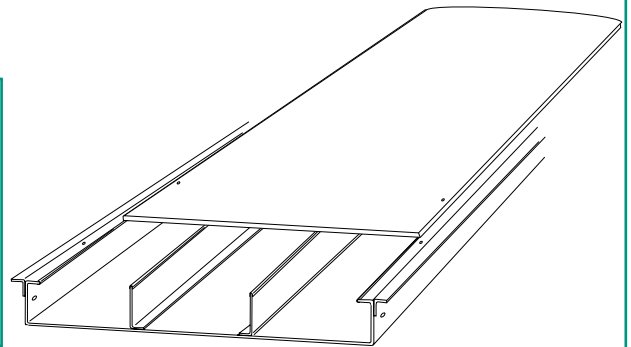
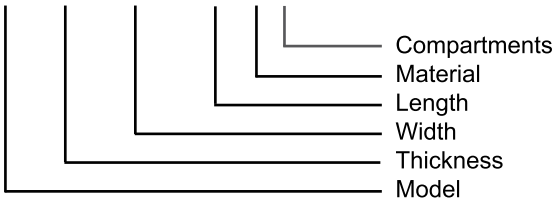


Model	H (mm)	H (mm)	H (mm)	T (mm)	W (mm)	L (mm)	Material
<b>UD</b>	25	32	38	0.8 - 2.0	DST50	1500, 2438 or 3000	Stainless Steel 304 Stainless Steel 316 or 316L Aluminium 5052 Mild Steel (HDG or epoxy coated finish) Pre-Galvanised Electro Galvanised
	25	32	38	0.8 - 2.0	DST75	1500, 2438 or 3000	
	25	32	38	0.8 - 2.0	DST100	1500, 2438 or 3000	
	25	32	38	0.8 - 2.0	DST150	1500, 2438 or 3000	
	25	32	38	0.8 - 2.0	DST200	1500, 2438 or 3000	
	25	32	38	0.8 - 2.0	DST225	1500, 2438 or 3000	
	25	32	38	0.8 - 2.0	DST250	1500, 2438 or 3000	
	25	32	38	0.8 - 2.0	DST275	1500, 2438 or 3000	
	25	32	38	0.8 - 2.0	DST300	1500, 2438 or 3000	
25	32	38	0.8 - 2.0	DST375	1500, 2438 or 3000		

## Flushfloor Trunking System

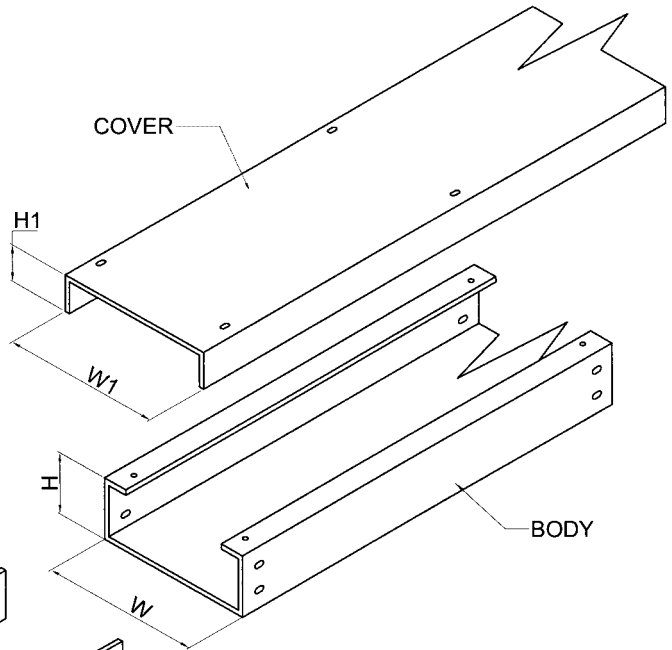
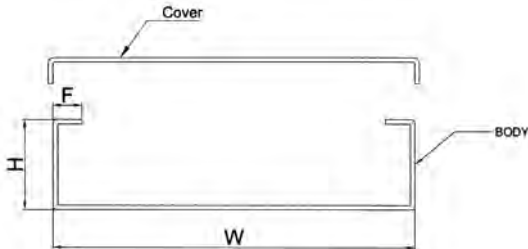
### Definition of Product Code (HOW TO ORDER)

e.g. FT60/2.0/DST280/3000/GI/3

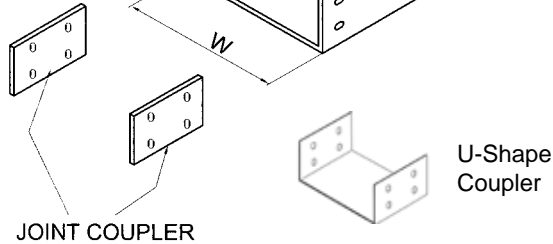


Model	H (mm)	T (mm)	W (mm)	L (mm)	Material	
<b>FT</b>	60	0.8 - 2.0	DST155	1500, 2438 or 3000	Stainless Steel 304 Stainless Steel 316 or 316L Aluminium 5052 Mild Steel (HDG or epoxy coated finish) Pre-Galvanised Electro Galvanised	
	60	0.8 - 2.0	DST280	1500, 2438 or 3000		
	60	0.8 - 2.0	DST405	1500, 2438 or 3000		
Model	H (mm)	T (mm)	W (mm)	L (mm)		
<b>FT</b>	28	0.8 - 2.0	DST100	1500, 2438 or 3000		
	28	0.8 - 2.0	DST150	1500, 2438 or 3000		
	28	0.8 - 2.0	DST200	1500, 2438 or 3000		
	28	0.8 - 2.0	DST225	1500, 2438 or 3000		
	28	0.8 - 2.0	DST300	1500, 2438 or 3000		

**Light Duty Trunking**



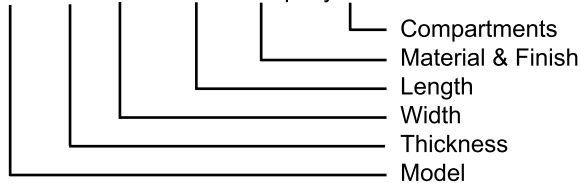
- Compartments : 1, 2 or 3
- Length : 2438mm or 3000mm
- Coupler : 1.0mm or 2mm according to body thickness
- Fastener : M6 x 16mm Mushroom Head bolt/nut/2FW/1SW (4 sets per coupler)



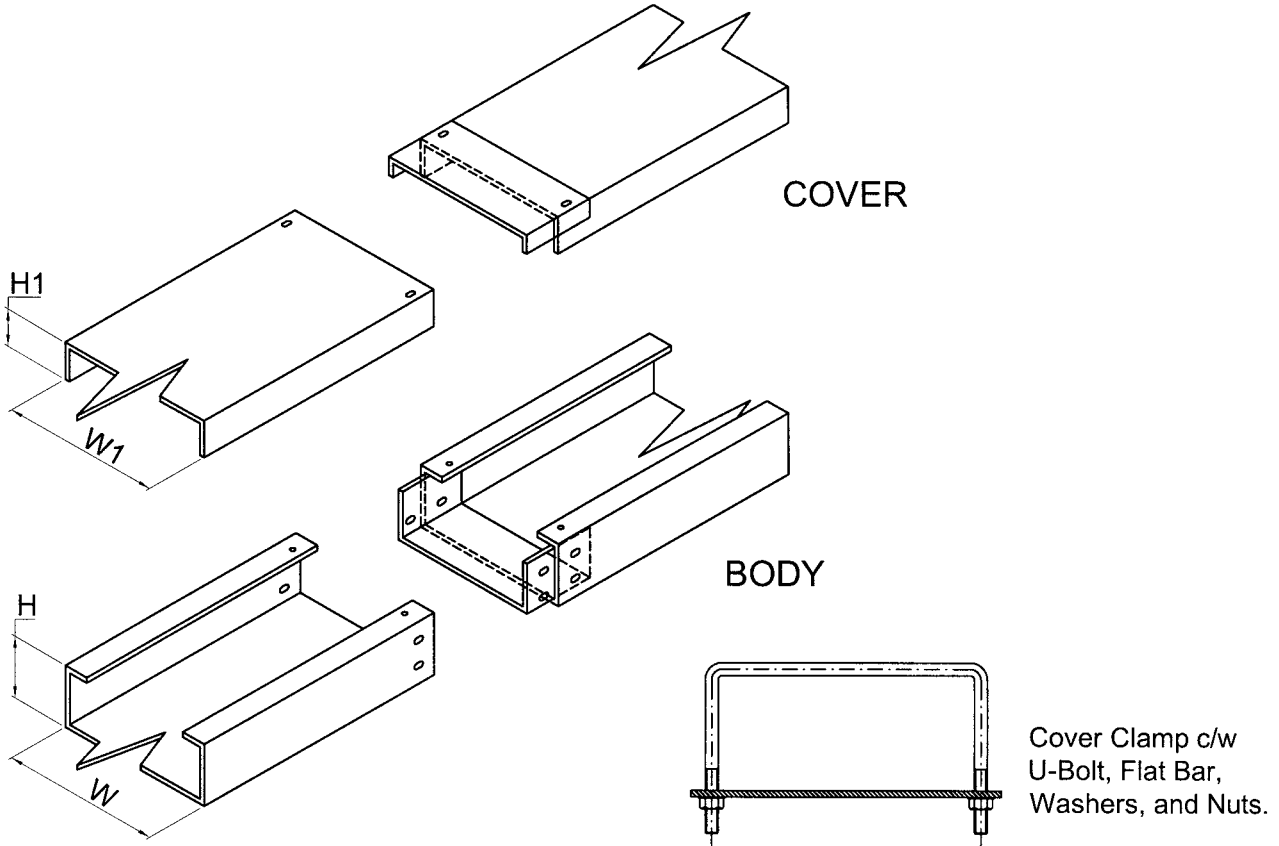
Model	H (mm)	H (mm)	H (mm)	T (mm)	W (mm)	L (mm)	Material
NP	25	50	100	1 - 2	TST50	2438 or 3000	Hot dip galvanised Stainless steel 304 Stainless steel 316 or 316L Epoxy coated
	25	50	100	1 - 2	TST75	2438 or 3000	
	25	50	100	1 - 2	TST100	2438 or 3000	
	25	50	100	1 - 2	TST150	2438 or 3000	
	25	50	100	1 - 2	TST200	2438 or 3000	
	25	50	100	1 - 2	TST225	2438 or 3000	
	25	50	100	1 - 2	TST300	2438 or 3000	
	25	50	100	1 - 2	TST450	2438 or 3000	
	25	50	100	1 - 2	TST600	2438 or 3000	
	25	50	100	1 - 2	TST750	2438 or 3000	
	25	50	100	1 - 2	TST900	2438 or 3000	

**Definition of Product Code (HOW TO ORDER)**

e.g. NP50/1.2/TST200/2438/GI Epoxy/2



**Heavy Duty Cable Ducting System**

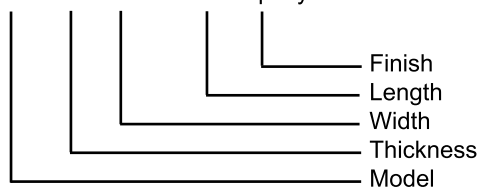


Fittings & Accessories - please refer to manufacturer

Model	H (mm)	H (mm)	H (mm)	H (mm)	H (mm)	T (mm)	W (mm)	L (mm)	Material
<b>HD</b>	150	200	250	300	400	1.5 - 3.2	TST50	2438 or 3000	Stainless Steel 304
	150	200	250	300	400	1.5 - 3.2	TST75	2438 or 3000	Stainless Steel 316 or 316L
	150	200	250	300	400	1.5 - 3.2	TST100	2438 or 3000	Aluminium 5052
	150	200	250	300	400	1.5 - 3.2	TST150	2438 or 3000	Mild Steel (HDG or epoxy coated finish)
	150	200	250	300	400	1.5 - 3.2	TST200	2438 or 3000	Pre-Galvanised
	150	200	250	300	400	1.5 - 3.2	TST225	2438 or 3000	Electro Galvanised
	150	200	250	300	400	1.5 - 3.2	TST300	2438 or 3000	
	150	200	250	300	400	1.5 - 3.2	TST450	2438 or 3000	
	150	200	250	300	400	1.5 - 3.2	TST600	2438 or 3000	
	150	200	250	300	400	1.5 - 3.2	TST750	2438 or 3000	
	150	200	250	300	400	1.5 - 3.2	TST900	2438 or 3000	

**Definition of Product Code (HOW TO ORDER)**

e.g. HD200/1.5/TST200/2438/Epoxy



# Metal

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# Framing

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# Systems

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**Channels**

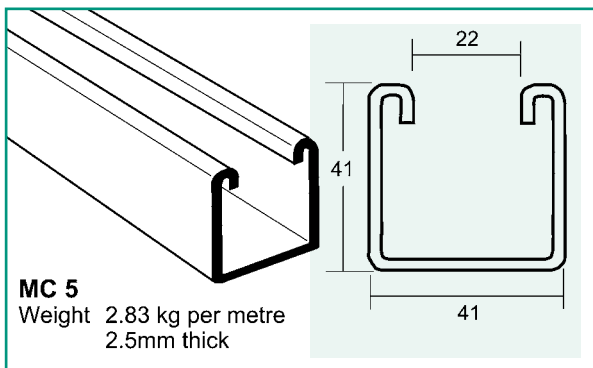
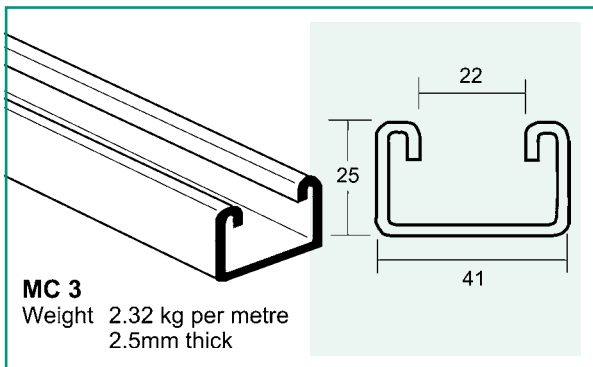
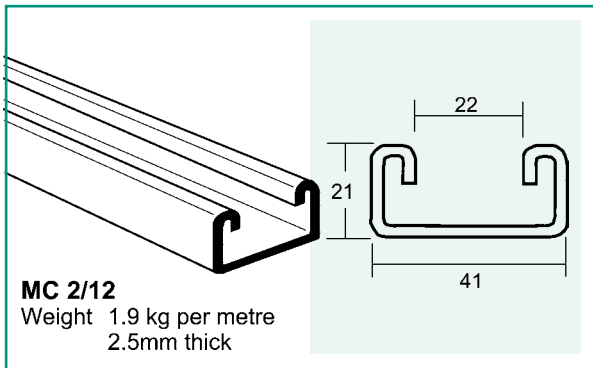
**Cantilever Supports**

**Concrete Inserts**

**Fittings and Brackets**

**Clamps and Hangers**

**Accessories**



M\*RAK Metal Framing Systems are designed as a support system which has almost infinite permutations, it provides a rigid structure without welding or drilling.

Construction and allied industries find M\*RAK ideal as a framing system for structural supports, service supports, suspended ceilings, raised flooring and as concrete inserts for fixing.

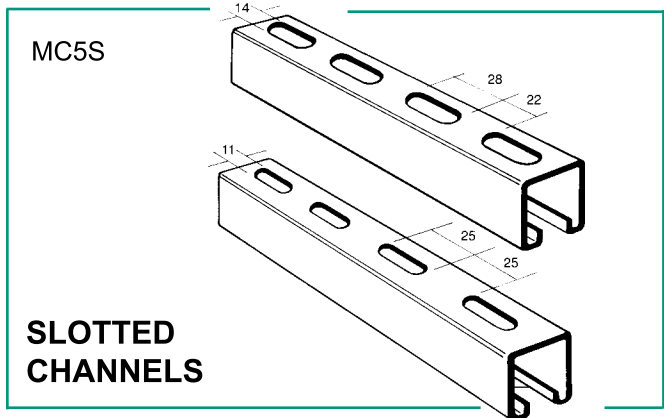
M\*RAK is economical in that after installation it is easily adjustable, demountable and reusable.

## CHANNELS

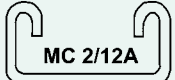
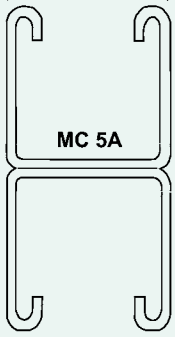







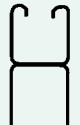



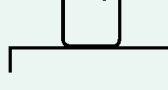


Standard finishes for M\*RAK channels consist of hot dipped galvanized to BS EN ISO 1461/BS 729, pre-galvanized to BS 2989 1982 and mill finish. Special coatings are available, e.g. Epoxy, Polyester, Nylon, etc, in a range of colours upon request.

### Stainless Steel

Channels are available in MC5 and MC2/12 etc. Sections are cold rolled from marine grade stainless steel reference T316L. A full range of fittings and accessories are also available as standard items. Please specify stainless steel when ordering.









## COMBINATION CHANNELS

<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 20px;">  <p><b>MC 2/12A</b></p> </div> <div>  <p><b>MC 5A</b></p> </div> </div>	<p>Standard Finishes:</p> <p>Pre-galvanized to BS 2989 Stainless Steel HDG to BS EN ISO 1461/BS 729</p> <p>Other combination channels available to order.</p>	 MC 5B	 MC 5C	 MC 5D	 MC 5E	 MC 5/2X
	 MC 5G	 MC 5H	 MC 5J	 MC 5K	 MC 5/2Z	
		 MC 5/2Y	 MC 5L	 MC 5N	 MC 5P	



## CHANNEL DATA

Section	Span	Uniformly Distributed Load at 172N/mm <sup>2</sup> Stress	Uniformly Distributed Load at deflection of span/360	Uniformly Distributed Load at deflection of span/180
	mm			
 <b>MC 2/12</b>	250	600	600	-
	500	295	265	-
	750	197	118	-
	1000	150	65	-
	1500	99	24	66
	2000	74	-	34
	2500	60	-	20
 <b>MC 2/12A</b>	500	815	815	-
	1000	406	320	-
	1500	268	140	-
	2000	200	65	164
	2500	160	46	100
	3000	135	30	66
	3500	108	23	46
 <b>MC 3</b>	500	483	483	-
	1000	242	110	-
	1500	161	58	140
	2000	121	30	70
	2500	97	28	42
 <b>MC 5</b>	3000	80	-	28
	500	1057	1057	-
	1000	529	515	-
	1500	352	190	-
	2000	264	100	210
 <b>MC 5A</b>	2500	208	90	126
	3000	167	42	84
	3500	148	-	60
	4000	130	-	44
	500	2892	-	-
 <b>MC 5A</b>	1000	1446	-	-
	2000	723	-	-
	3000	482	-	-
	4000	300	-	-

## Bolt Torque Data

Isometric Coarse Threads Plated Only	Newton/Metres (N/M)	Foot/Pounds (ft/lbs)
M6	5.0	3.7
M10	24.2	17.7
M12	41.8	30.8

### Notes:

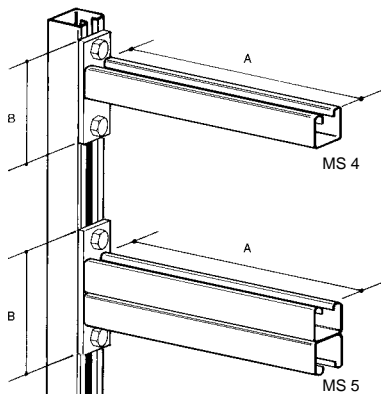
Safe uniformly distributed loads are tabulated for simply supported spans based on a stress of 172N/mm<sup>2</sup> where deflection is not a critical factor. Where deflection is to be limited to a minimum, use alternative safe loads.

For loads concentrated in the centre of the span multiply load by 0.5

multiply deflection by 0.8

Technical information for these sections and other channels and combinations is available on request.

## CANTILEVER ARMS



Part No.	Length A mm	Length B mm	UDL Kg kg	Weight kg
BMS 4 150	150	110	398	0.92
BMS 4 300	300	110	252	1.38
BMS 4 450	450	110	160	1.74
BMS 4 600	600	110	102	2.17
BMS 4 750	750	110	51	2.64
BMS 5 150	150	150	1250	1.74
BMS 5 300	300	150	907	3.26
BMS 5 450	450	150	544	4.12
BMS 5 600	600	150	454	4.98
BMS 5 750	750	150	363	5.83

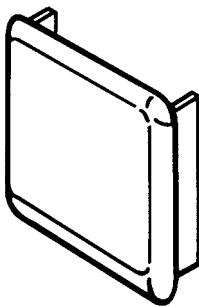
All cantilever arms are in hot dipped galvanised finish to BS EN ISO1461/BS 729.

**CONCRETE INSERTS**

Standard lengths come in 6 metres complete with plastic and caps.  
Specify length required.  
i.e. MC 5CI 200mm long

**MC 5CI**

Recommended Max. Load in 30N/mm<sup>2</sup> concrete.  
Pieces over 300mm long 900kg.  
Maximum Load per metre 3000kg.



**MPVC41**

1. It is not recommended that load should be fixed less than 40mm from either end.
2. Safe distance between 2 max (P) point loads is 250mm.

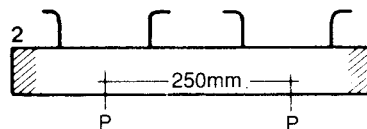
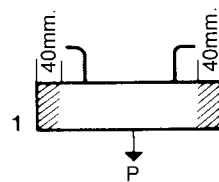
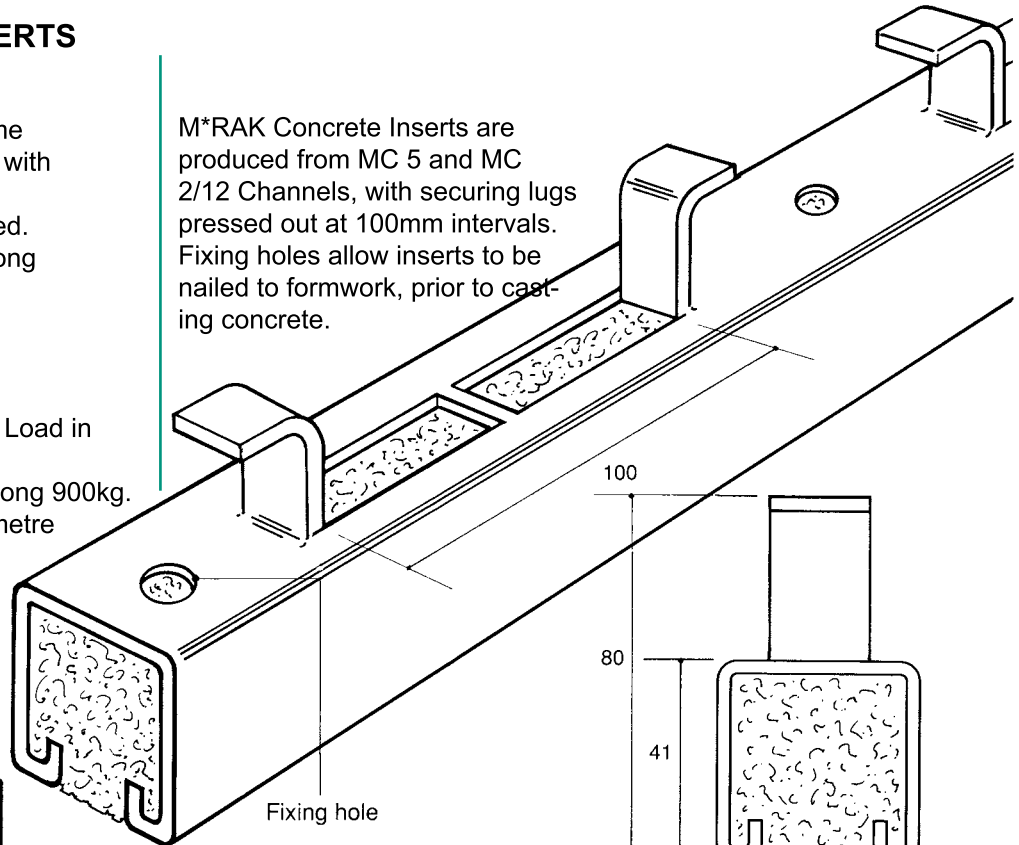
**MPVC END CAPS**

- MPVC41
- MPVC31
- MPVC21

Available in Blue, Black and White

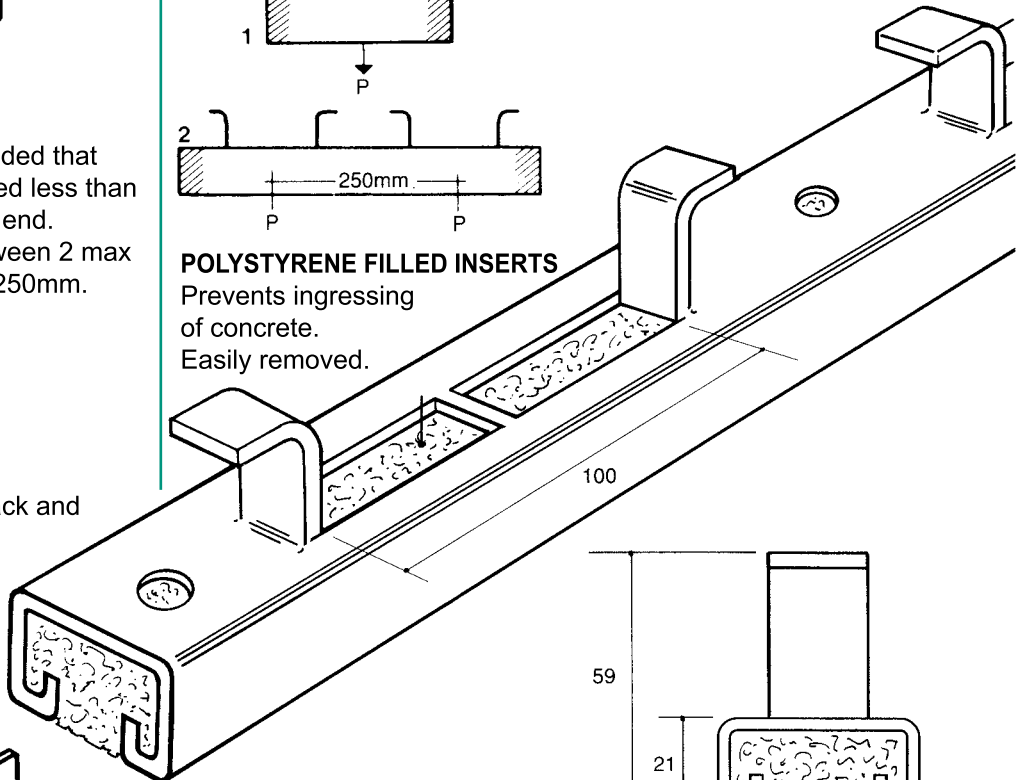
**MPVC21**

M\*RAK Concrete Inserts are produced from MC 5 and MC 2/12 Channels, with securing lugs pressed out at 100mm intervals. Fixing holes allow inserts to be nailed to formwork, prior to casting concrete.



**POLYSTYRENE FILLED INSERTS**

Prevents ingress of concrete.  
Easily removed.

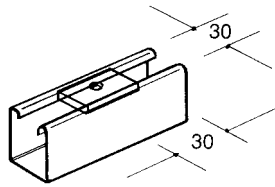


**MC 2CI**

Recommended Max Load in 30N/mm<sup>2</sup> concrete.  
Pieces over 300mm long 650kg.  
Maximum Load per metre 2000kg.

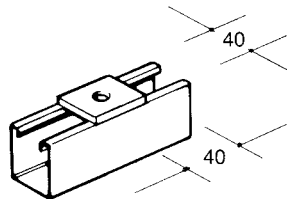
**FLAT PLATE FITTINGS**

**INTERNAL PLATE**  
3mm thick

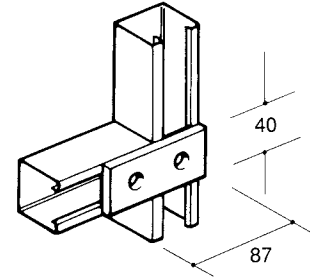


Available in 6, 8, 10 and 12mm hole clearance  
**MF 999/6/8/10/12** Weight 0.05kg

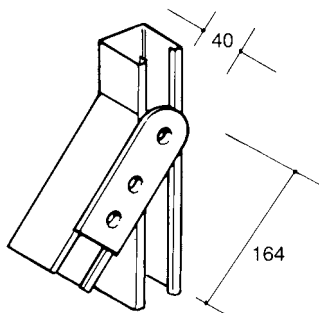
**EXTERNAL PLATE**



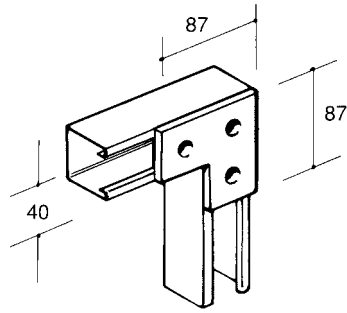
Available in 6, 8, 10 and 12mm hole clearance  
**MF 1000/6/8/10/12** Weight 0.07kg



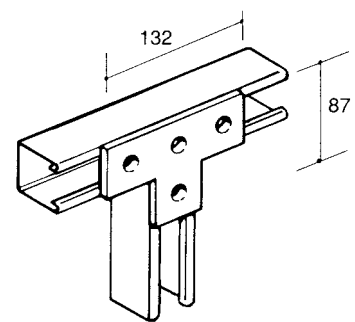
**MF 1001** Weight 0.16kg



**MF 1005** Weight 0.31kg

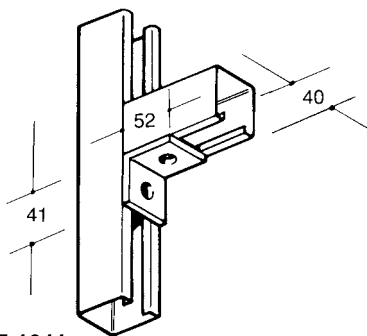


**MF 1006** Weight 0.25kg

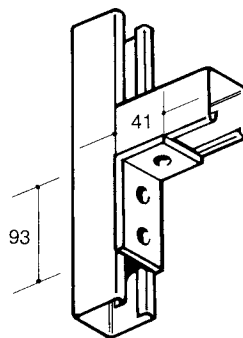


**MF 1007** Weight 0.34kg

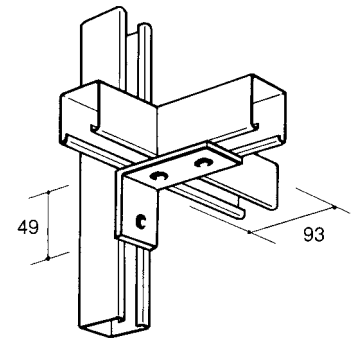
**RIGHT ANGLE FITTINGS**



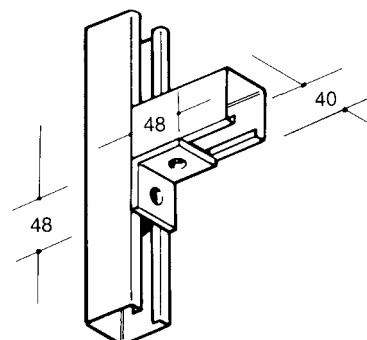
**MF 1011** Weight 0.16kg



**MF 1012** Weight 0.22kg

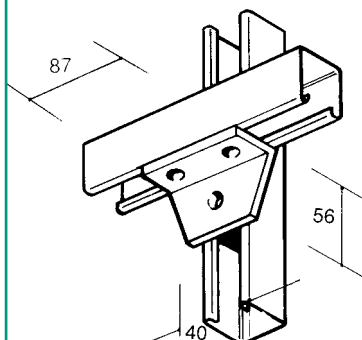


**MF 1013** Weight 0.24kg

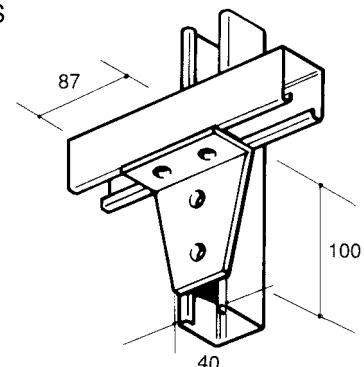


**MF 1011a** Weight 0.16kg

**NINETY DEGREE ANGLE FITTINGS**



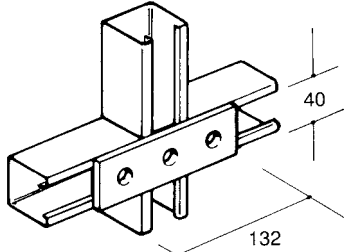
**MF 1017** Weight 0.30kg



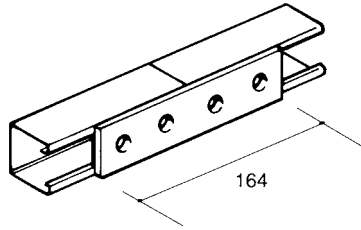
**MF 1018** Weight 0.45kg

**FLAT PLATE FITTINGS**

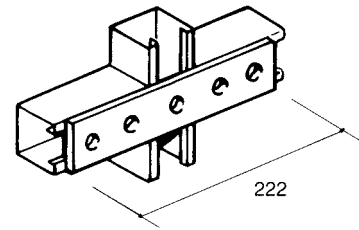
Unless otherwise stated all fittings are manufactured from 6mm thick steel strip and are hot dip galvanized to BS EN ISO 1461/BS 729. Standard hole diameter will be 14mm to give clearance on M12 diameter set screws. For best results use M12 Channel Nuts and Bolts.



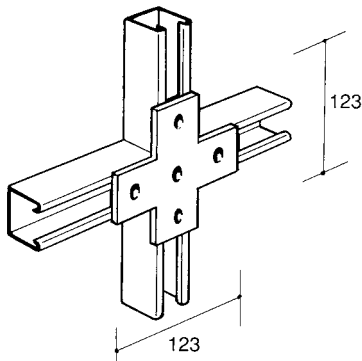
**MF 1002** Weight 0.24kg



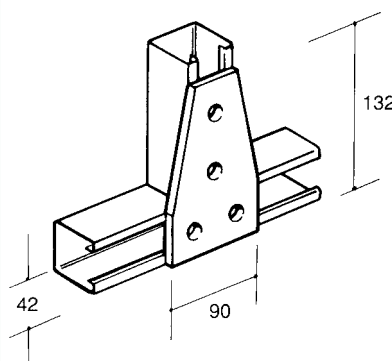
**MF 1003** Weight 0.30kg



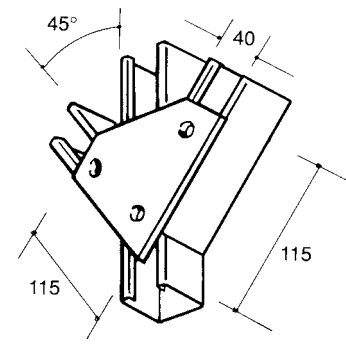
**MF 1004** Weight 0.41kg



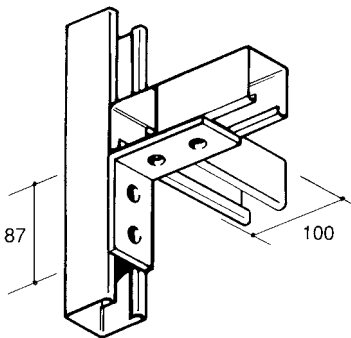
**MF 1008** Weight 0.41kg



**MF 1009** Weight 0.49kg



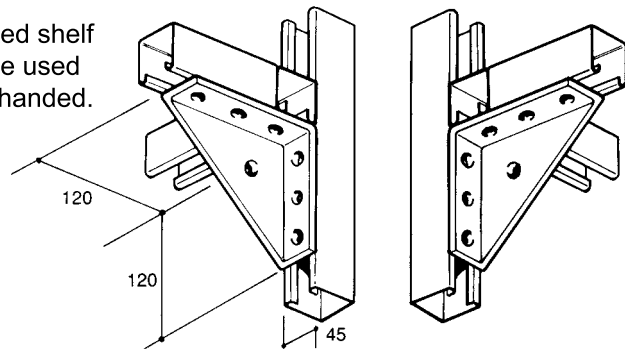
**MF 1010** Weight 0.49kg



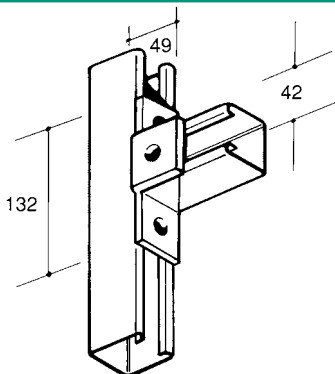
**MF 1014** Weight 0.31kg

**UNIVERSAL BRACKETS**

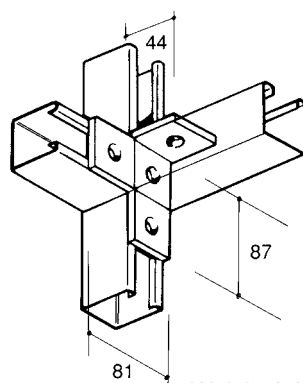
This gusseted shelf fitting can be used left or right handed.



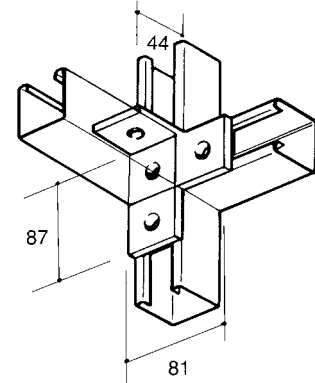
**MF 1015** Weight 0.54kg



**MF 1019** Weight 0.34kg

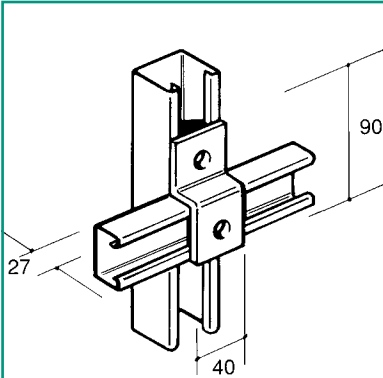


**MF 1020** Weight 0.34kg

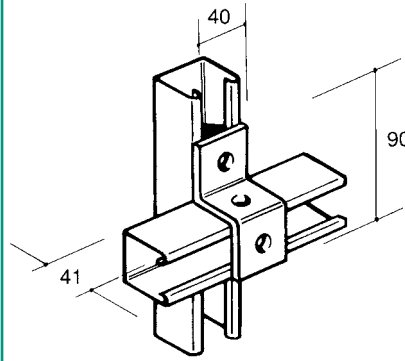


**MF 1021** Weight 0.34kg

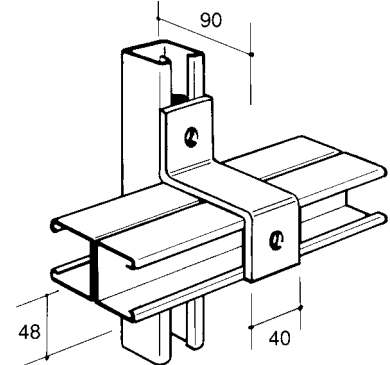
**'Z' FITTINGS**



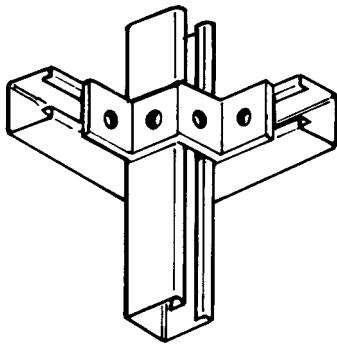
**MF 1022** Weight 0.19kg



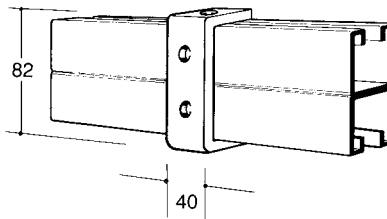
**MF 1023** Weight 0.23kg



**MF 1024** Weight 0.31kg



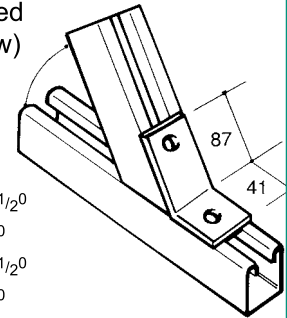
**MF 1123** Weight 0.30kg



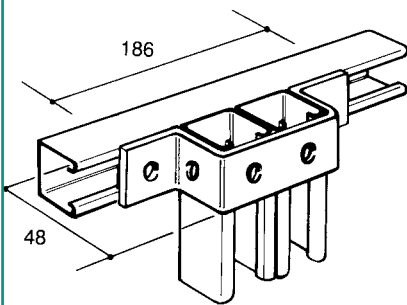
**MF 1049** Weight 0.31kg

Specify an **ANGLE FITTINGS** angle required (see below)

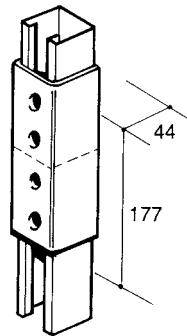
- Angles available
- 15° 52<sup>1</sup>/<sub>2</sub>°
  - 22<sup>1</sup>/<sub>2</sub>° 60°
  - 30° 67<sup>1</sup>/<sub>2</sub>°
  - 37<sup>1</sup>/<sub>2</sub>° 75°
  - 45° 82<sup>1</sup>/<sub>2</sub>°



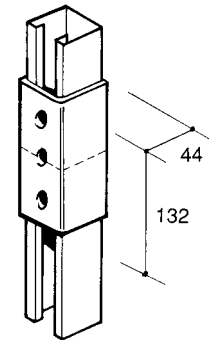
**MF 1029** Weight 0.25kg



**MF 1028** Weight 0.46kg



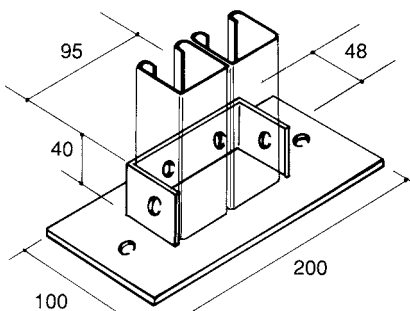
**MF 1033** Weight 0.84kg



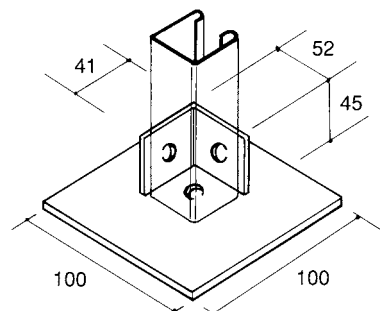
**MF 1034** Weight 0.65kg

**BASE PLATES 5mm thick**

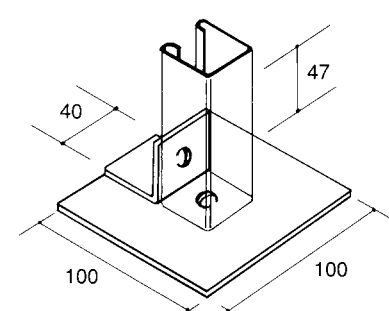
14mm dia Base Holes



**MF 1037** Weight 1.15kg

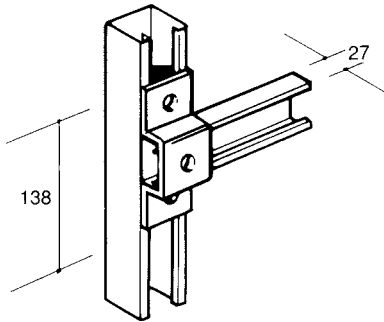


**MF 1038** Weight 0.50kg

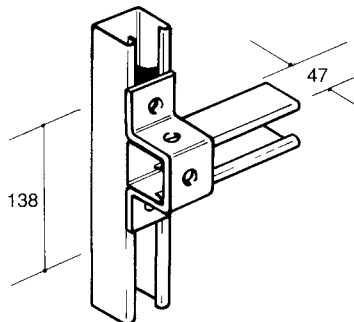


**MF 1039** Weight 0.56kg

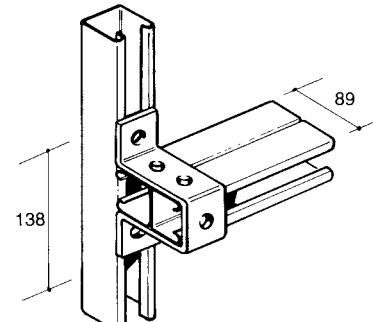
## 'U' FITTINGS



**MF 1025** Weight 0.30kg



**MF 1026** Weight 0.36kg

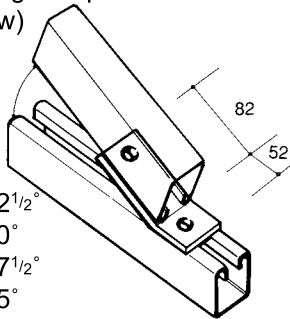


**MF 1027** Weight 0.55kg

Specify angle required  
(see below)

Angles  
available

- 15° 52<sup>1</sup>/<sub>2</sub>°
- 22<sup>1</sup>/<sub>2</sub>° 60°
- 30° 67<sup>1</sup>/<sub>2</sub>°
- 37<sup>1</sup>/<sub>2</sub>° 75°
- 45° 82<sup>1</sup>/<sub>2</sub>°

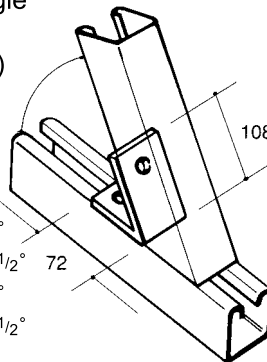


**MF 1030** Weight 0.25kg

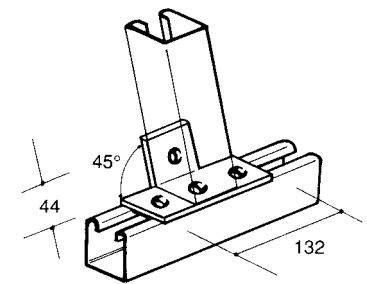
Specify angle  
required  
(see below)

Angles  
available

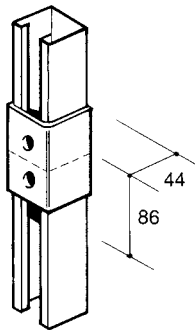
- 30° 60°
- 37<sup>1</sup>/<sub>2</sub>° 67<sup>1</sup>/<sub>2</sub>°
- 45° 75°
- 52<sup>1</sup>/<sub>2</sub>° 82<sup>1</sup>/<sub>2</sub>°



**MF 1031** Weight 0.30kg



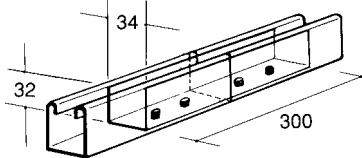
**MF 1032** Weight 0.34kg



**MF 1035** Weight 0.41kg

## INTERNAL SPLICE PLATE 2mm thick

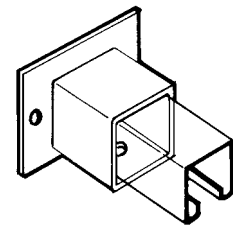
c/w self tapping fixing screws



**MF 1036/41**  
Weight 0.48 kg  
(To suit BMC 4 & BMC  
5 Monostrut Channels)

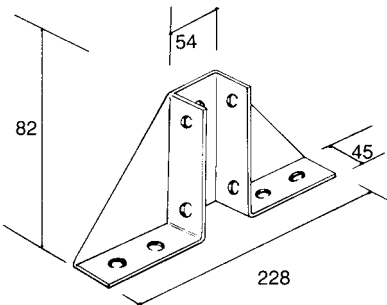
**MF 1036/21**  
Weight 0.24 kg  
(To suit BMC 1 & BMC 2/12  
Monostrut Channels)

## FLANGE CONNECTOR

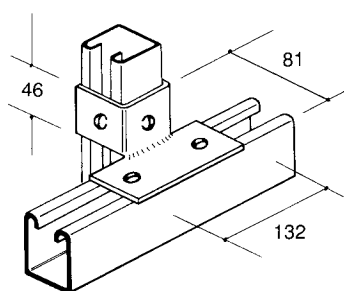


**MF 1085**

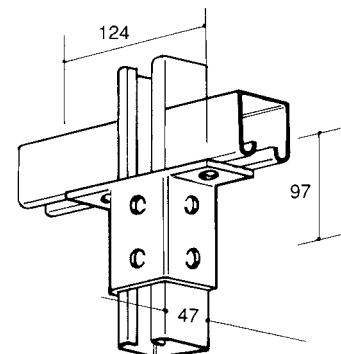
## SPECIAL FITTINGS



**MF 1040/41** Single Channel  
**MF 1040/82** Double Channel



**MF 1041** Weight 0.49kg

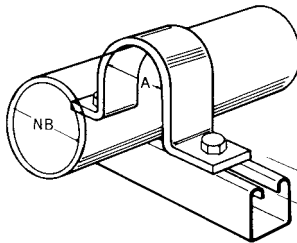


**MF 1042** Weight 0.61kg

<b>PIPE CLAMPS TYPE 'A'</b>		Minimum Pipe Diameter (mm)	Minimum Pipe Diameter (mm)	Part Number	Minimum Pipe Diameter (mm)	Minimum Pipe Diameter (mm)
Hot dipped galvanized finish.						
Bolts & nuts included.						
	MS AC 201	8.7	10.3	MS AC 218	48.4	52.4
	MS AC 202	10.3	12.7	MS AC 219	52.4	58.7
	MS AC 203	11.9	13.5	MS AC 220	58.7	63.5
	MS AC 204	13.5	14.3	MS AC 221	63.5	68.3
	MS AC 205	14.3	16.7	MS AC 222	68.3	73.0
	MS AC 206	15.9	18.3	MS AC 223	73.0	79.4
	MS AC 207	18.3	20.6	MS AC 224	76.2	82.6
	MS AC 208	19.0	21.4	MS AC 225	82.6	88.1
	MS AC 209	21.4	25.4	MS AC 226	88.1	95.2
	MS AC 210	25.4	27.8	MS AC 227	95.2	100.0
	MS AC 211	27.0	30.2	MS AC 228	100.0	106.4
	MS AC 212	30.2	33.3	MS AC 229	106.4	111.1
	MS AC 213	31.8	35.9	MS AC 230	111.1	120.7
	MS AC 214	34.9	39.7	MS AC 231	120.7	129.4
	MS AC 215	39.7	42.9	MS AC 232	129.4	138.1
	MS AC 216	42.9	46.8	MS AC 233	138.1	149.2
	MS AC 217	46.8	50.8	MS AC 234	149.2	161.9

## SADDLE CLAMPS

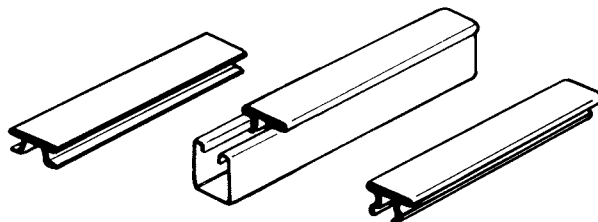
Hot dipped galvanized finish.



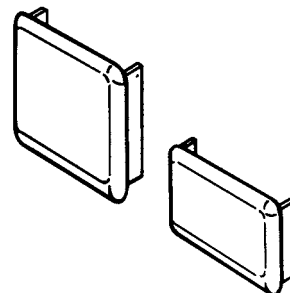
Part Number	Minimum Bore (mm)	Dimension 'A' (mm)	Dimension 'B' (mm)
MS BC 01	15	21	30
MS BC 02	20	27	30
MS BC 03	25	34	30
MS BC 04	32	43	30
MS BC 05	40	48	30
MS BC 06	50	60	30
MS BC 07	65	76	40
MS BC 08	80	89	40
MS BC 09	100	114	40
MS BC 10	125	140	40
MS BC 11	150	168	40

## LIGHTING FITTINGS

SNAP-IN CLOSURE STRIP - PVC  
Supplied in 3m lengths



END CAPS - PVC



# Wire Basket System

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# Boltings & Fasteners

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# GRP/FRP System



“Safety edge” New concept

Speed-Lock-coupler (boltless)

Easy to handle

On-site fabrication of fittings

Clip together system

Flexibility around obstacles

Wide range of sizes and profiles

High side walls for extra cabling capacity

Wide range of fixings for walls, ceilings and floors

Easy to adapt and extend

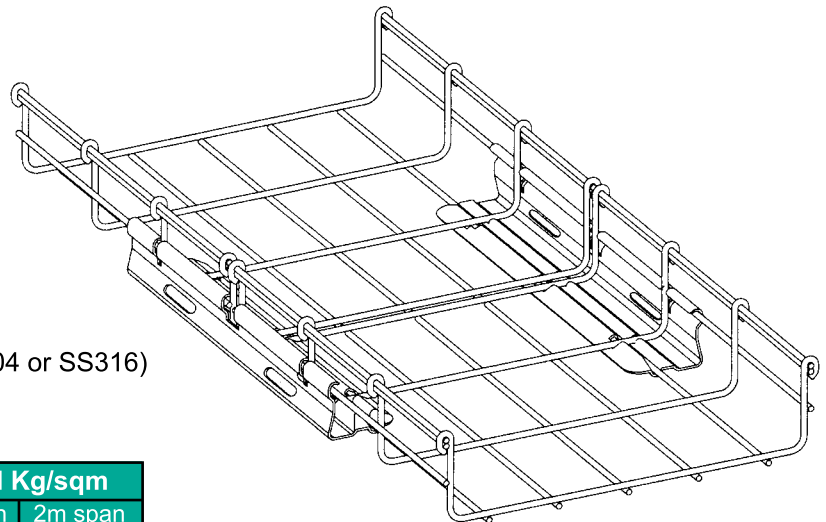
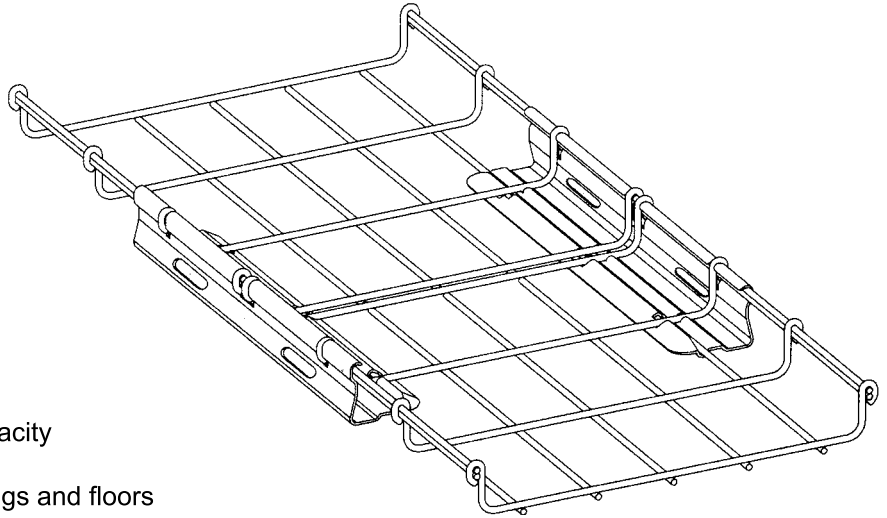
High strength to weight ratio

Easy routing of cables in and out

Improved air circulation

Dust-free : does not retain the dust

Finishes: HDG (pre-galvanised to SS304 or SS316)  
Epoxy coated



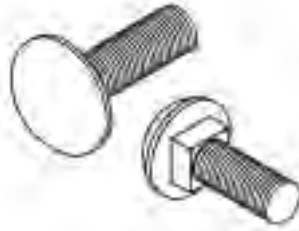
Model	H	W	L	Load Kg/sqm	
				1.5m span	2m span
<b>WMB 30</b>	30	50	3000	7	3
	30	100	3000	10	4
	30	150	3000	15	5
	30	200	3000	20	7
	30	300	3000	25	12.5

Model	H	W	L	Load Kg/sqm	
				1.5m span	2m span
<b>WMB 60</b>	60	50	3000	20	8
	60	100	3000	29	12
	60	150	3000	43	18
	60	200	3000	43	18
	60	300	3000	54	22
	60	400	3000	105	50
	60	500	3000	140	64

Safety factor - 2.5 Definition 1/200



M10x30L HEX BOLT



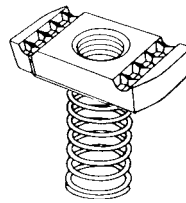
M10x20L CARRIAGE BOLT



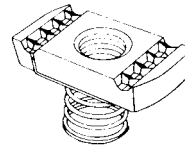
M6x16L ROUND HEAD BOLT



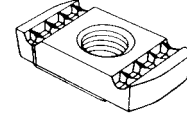
M8x20L PAN HEAD BOLT



LONG SPRING NUT



SHORT SPRING NUT



CHANNEL NUT WITHOUT SPRING

Material: Zinc-plated, Galvanised and Stainless Steel available on request



FLAT WASHER



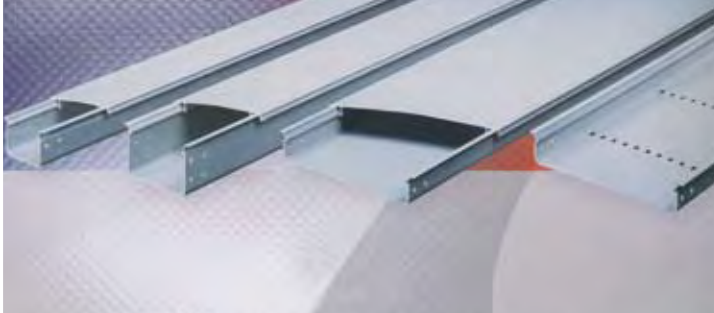
SPRING WASHER



HEXAGON NUT

## Corrosion Resistant Composite Technology

• No Earth-Bonding required • Easy Installation • Maintenance Free • Corrosion Resistant



GRP Heavy Duty Cable Tray & Duct

- The Pultrusion Process
- High load carrying to NEMA FG-1
- Available in Polyester, Acrylic and Phenolic Resins
- Modar Resin is available on special order



GRP Cable Ladder

CLASS 1 (MODAR) & CLASS 2 (POLYESTER) Resins have been subjected to the following tests:

- Flame Spread Test to BS746 Part 7
- Flame Propagation Test to BS 746 Part 6
- Smoke Emission Test to BS6853
- Fire Resistance Test to IEC331
- High Temperature Flame Test to IEC332 Part 3 (withstand 1000°C temperature for 3 hours)

**Best for use in Corrosive and Harsh Environment**



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