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INTRODUCTION

CABLE CAGE SYSTEMS is, in Australia, Hong Kong, Singapore and the Pacific region, the agent for the giant French Cable Tray Systems Company, who for over 40 years is one of the world's leading manufacturer's of high quality cable tray support and management systems.

The Cable Cage tray system offers a number of advantages over traditional type cable trays apart from an economical point including:

- Fast and simple on-site assembly
- Light weight yet strong and effective - can be handled by one person
- Supports can be spaced up to 2.5 metres apart
- Ease of installation, Easy-lock and claw fittings without bolts
- Easy to upgrade or re-configure
- Simple fixing systems
- Fast coupling with the unique patented 'Unifil'® Clips and Fishplates
- Cable safe - flush smooth surfaces and edges
- Adaptable - cables can exit cage tray at any point
- Easy to create tees, crosses, reduces, risers and bends on-site
- Strong with high load bearing performance
- A wide range of fixing accessories
- Will not break even when overloaded
- Fire tested to AS/AZS 3013:1995
- Open cable cage trays allow air circulation to keep wiring cool and makes for easy identification of cables

CAPABILITIES

CABLE CAGE SYSTEMS offers customers the most cost efficient solution to their cable tray requirements by providing high quality products that are:

- Unique in performance and versatility
- Exceptionally easy and fast to install using clip-on fasteners and brackets
- Cable Cage trays are manufactured in Australia in a number of finishes suiting all environments
- Gives maximum strength for minimal weight
- Multi solutions for the free routing of power and communications cabling
- Safety due to the specially shaped side wall construction

SERVICE

CABLE CAGE SYSTEMS offer the best service and product range to ensure that customers are provided with the most cost efficient solution to their requirements with quick delivery of the highest quality products.

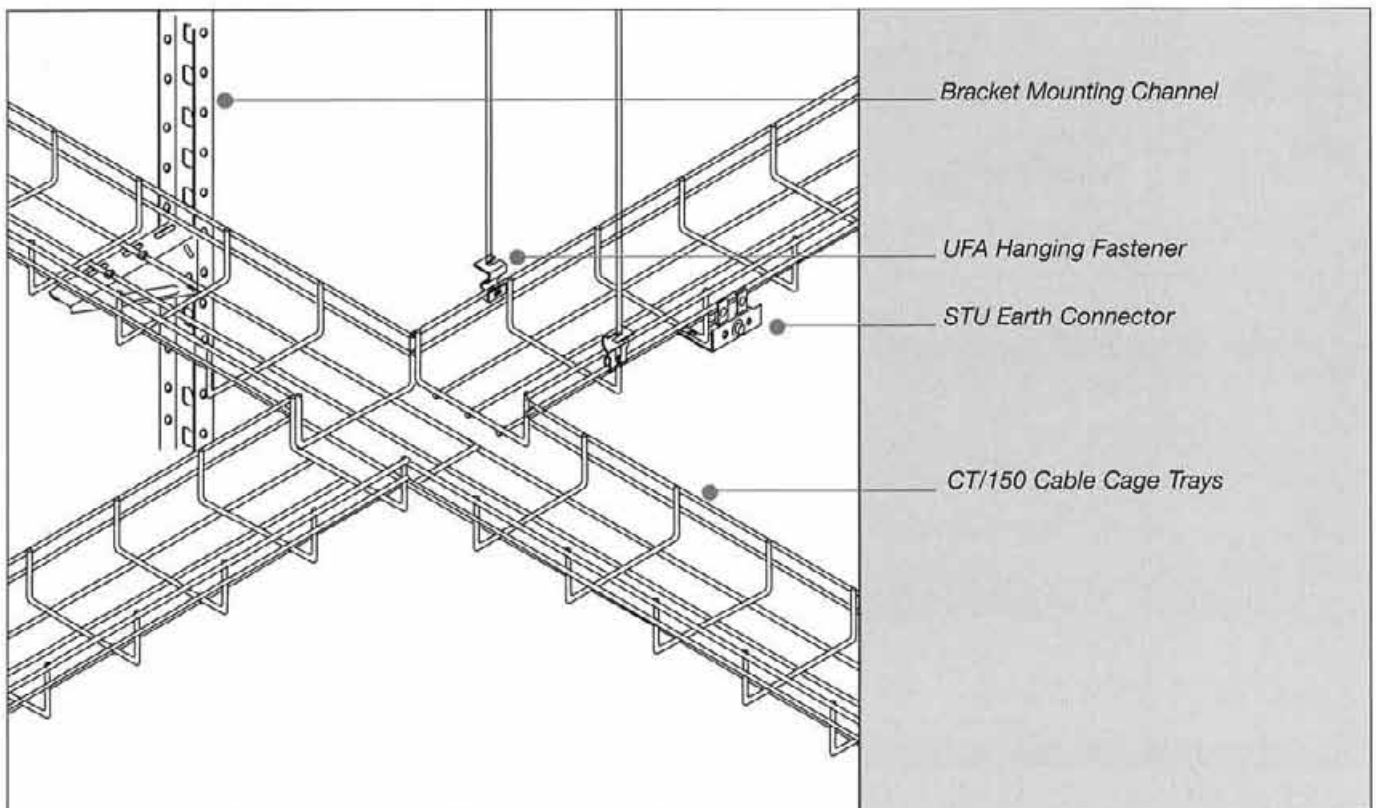
QUALITY

From design through to manufacture and delivery, **CABLE CAGE SYSTEMS** offer professional commitment to quality products and service.

To further assure confidence

CABLE CAGE SYSTEMS is committed to ISO 9001-2000 quality control.

Tolmega products have been awarded the AFAQ ISO 9002 certification since 1992.



TESTED

CABLE CAGE SYSTEMS products have been tested to European and Australian Standards for load and fire ratings and Cable Cage trays are manufactured to meet the requirements of Australian (draft standard) IEC 61537 - EDI Cable Tray and Ladder Systems for Electrical Installations.

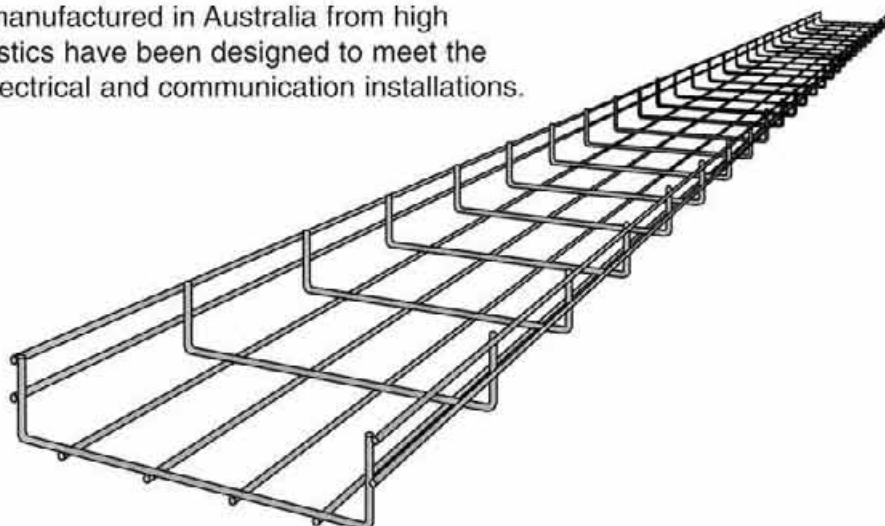
CABLE CAGE RANGE

CABLE CAGE SYSTEMS trays are manufactured in Australia from high quality grade steel. Their characteristics have been designed to meet the most demanding requirements of electrical and communication installations.

DIMENSIONS

Standard Length: 3000 mm
Standard Height: 54 mm
Longitudinal Wire Spacing: 50 mm
Cross Wire Spacing: 100 mm

Wires cut flush on width for safety
and with equal overhang on length



CABLE CAGE TRAY RANGE

RANGE		MATERIALS AND SURFACE TREATMENTS			
Width of Cable Cage Tray mm		Mass kg/m	Electro Zinc Code	Pre Galvanised Code	Hot Dipped Galvanised Code
100		1.15	CT100EZ	CT100PG	CT100HD
150		1.38	CT150EZ	CT150PG	CT150HD
200		1.60	CT200EZ	CT200PG	CT200HD
300		2.00	CT300EZ	CT300PG	CT300HD
400		2.90	CT400EZ	CT400PG	CT400HD
500		3.30	CT500EZ	CT500PG	CT500HD
600		3.70	CT600EZ	CT600PG	CT600HD

Cable trays of greater width or depth available on request.

MATERIALS AND SURFACE TREATMENTS

FROM STOCK		MANUFACTURED TO ORDER	
EZ	Electro Zinc Plated Steel	304	Stainless Steel - 304 L Grade
PG	Pre Galvanised Steel	316	Stainless Steel - 316 L Grade
HD	Hot Dipped Galvanised Steel		Epoxy or Polyester Coatings

Other surface treatments available upon request subject to size of order

LOAD CAPACITIES

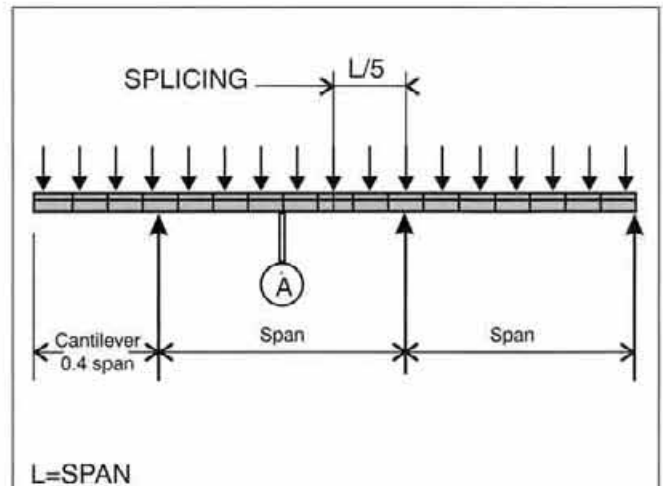
CABLE CAGE SYSTEMS trays are certified on a test station meeting the current and projected European standards.

The cable trays are tested to conform to the standards on 2.4 spans.

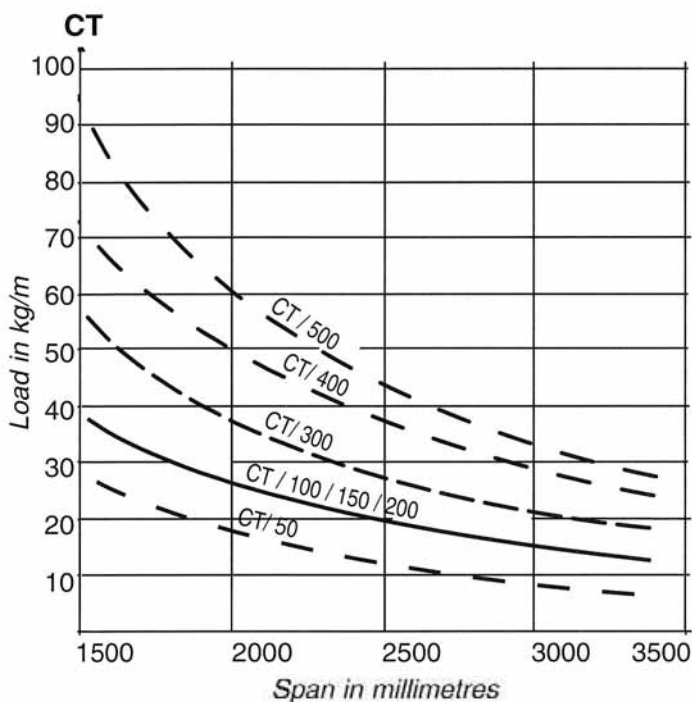
The load is evaluated following two criteria

- Utilisation criterion: durability under electric cable loads.
Limited to $L/300$ in the middle of the span without residual distortion.
- Installation criterion: resistance to stress during erection.

A safety coefficient of 2 is applied.



PERMISSIBLE CABLE LOAD



MAXIMUM LOAD CAPACITY

The maximum load capacity for a cable density of $0.28 \text{ kg/cm}^2/\text{m}$.

CT/50	= 18
CT/100	= 15
CT/150	= 22
CT/200	= 28
CT/300	= 44
CT/400	= 58
CT/500	= 73
CT/600	= 89

RANGE	Load in kg/m according to span				
	Span				
	1000	1750	2000	2250	2500
	kg/m	kg/m	kg/m	kg/m	kg/m
CT/50	25.6	18.7	14.2	11.2	9.0
CT/100 to CT/300	57.6	43.5	34.2	27.6	22.8
CT/400	90	65.5	49.8	39.1	31.5
CT/500	110	79.5	60	46.8	37.5
CT/600	115	81.0	68	52.4	44.3

CORROSION

CHOICE OF MATERIAL

Choice of material or implementation depending upon the environment

ENVIRONMENT	EZ	GAL	STAINLESS STEEL	
			304	316
Interior - Normal	■	▼	▼	▼
Exterior - Urban	●	■	▼	▼
Exterior - Industrial		●	●	■
Exterior - Marine		●	●	■
Mineral Acids		●	●	■
Organic Acids		●	●	■
Bases		●	■	●
Halogens			●	▼
Hydrocarbons		●	■	▼
Food	●		●	■

● Possible ■ Recommended ▼ Superfluous

ZINC COATING ON STEEL

EZ : GALVANISING BY ELECTROLYTIC DEPOSIT AND CHROMING

(Source NFA 91 102 - NFA 91 472)

Electrolytically, a zinc coating is deposited on the steel. The baths used consist of acid or alkali solutions of zinc salts. The anodes are zinc (generally to 99.99% of purity) and the parts to be coated, previously degreased and cleaned, are connected to the cathode. After galvanising, the parts are chromed to increase the protection.

PG : PRE GALVANISED STEEL

(Source NF EN 10 142)

The galvanised steel is obtained by immersing previously treated steel in a bath of molten zinc at 450-460°C.

The current grade of Z 275 NA, is a thickness of 18 microns on the surface, normal zinc formation N, finishing grade A.

HD : HOT-DIP GALVANISED STEEL AFTER FABRICATION (Source NFA 91 121)

After surface treatment, the steel is immersed in a bath of molten zinc. This gives a zinc thickness ranging from 49 to 70 microns depending on the thickness of the metal.

COMMON QUESTIONS ABOUT WHITE RUST

Under what conditions does white rust appear?

It needs a fast oxidation, either under a heterogeneous film of water, or under permanent

condensation (for example by differential aeration).

This fast oxidation can be local or general.

What does this white blister consist of?

It is the precipitation of basic salts of zinc $Zn(OH)_2$.

Is the protection decreased?

These basic salts are powdery, not very adherent and provide no protection. However, they quickly combine with components of the surrounding air to form a protective layer (zinc hydroxide, $Zn(OH)_2$, + carbon dioxide in the air, CO_2 , - forms a protective layer of basic zinc carbonate).

The basic salts formed are not very soluble in water and they accumulate in the surface patina until reaching a state of balance between their elimination in the form of soluble salts and their generation by oxidation of the metal.

White rust has therefore no influence on the duration of the zinc protection.

ZINC LOSES THROUGH CORROSION

Industrial environment: 5 to 10 microns per year

Urban environment: 3 to 7 microns per year

Marine environment: 3 to 8 microns per year

Rural environment: 0.8 to 1 micron per year

OTHER MATERIALS

304 L : STAINLESS STEEL X2CrMi 18-9

(Source NF EN 10088-2)

Good resistance to corrosion in natural and food atmospheres.

316 L : STAINLESS STEEL X2CrMiMo 17-12-2

(Source NF EN 10088-2)

Especially intended for the chemical and food environments, and surface treatments.

OTHER COATINGS

EPOXY OR POLYESTER COATINGS

These coatings are generally applied on continuous pre galvanised steel (PG), for better protection it is best to choose steel hot-dipped galvanised after fabrication (HD).

For essentially aesthetic requirements and inside buildings, an epoxy coating can be applied on electro zinc plated steel (EZ).

They can also be applied to stainless steel.

Exterior use: Polyester

Interior use: Epoxy

These coatings

- Differentiate the electrical circuits by their colour, hence saving work time.
- Provide a complementary protection, recommended in many cases of chemically aggressive environments.
- Are environmentally friendly.

This type of two-way protection, powder coating on zinc galvanised steel, is the only process where the added corrosion proof properties provide more than double that of the protection given separately.

CHARACTERISTICS

The coating is applied by electrostatic gun-spray then stove hardened. The heat hardened powers offer good resistance to abrasion and blows, excellent durability and requires little maintenance.

COLOURS

Refer to **CABLE CAGE SYSTEMS** or the Dulux powder coating range.

ELECTROLYTIC CORROSION

Electrolytic corrosion is defined as a process of accelerated corrosion resulting from the movement of an electric current between two metals coupled in an electrolytic environment. Below the **bold** line, the metal is being attacked.

The joined metal undergoes no galvanic corrosion but, on the contrary, enjoys an effect of galvanic protection.

Electrolytic corrosion is very important when choosing the assembly bolts and certain accessories different from the cable cage and supports. *See diagram.*

Joined Metal →

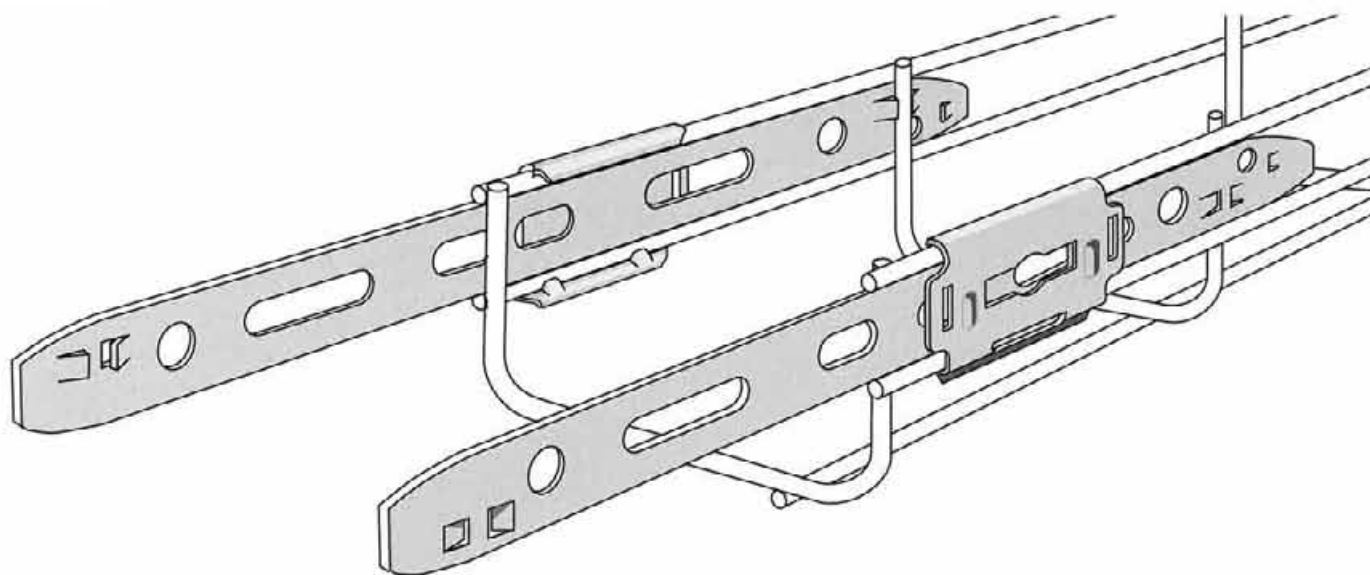
Metal under consideration ↓

	Platinum	Gold, Au	Stainless Steel 18-9 X10 Cr Ni 18-9	Silver, Ag	Mercury, Hg	Nickel, Ni	Cu-Zn23 Ni22 Alloy	Copper, Cu	Cupro-aluminium, Cu-Al10	Cu-Zn Alloy (Brass), Cu Zn39 Pb	Cu-Sn Alloy (Bronze), Cu Sn12	Tin, Sn	Lead, Pb	Fe-Ni Alloy at 25% Ni	Aluminium-Copper 2017A (Al Cu4 Mg)	Cast Iron	Carbon Steel, XC10	Light Cut Steel 2011 (A Cu5 Pb Bi)	Light Foundry Steel, Al Si10 Mg	Aluminium1050A (A5)	Carbon Steel for Thermal Treatment	Al-Mg Alloy 5754 (Al Mg3) 565A (Al Mg5)	Cadmium, Cd	Pure Iron, Fe	Al-Mg-Si Alloy	Chrome, Cr	Al-Zn-Mg Alloy 7045A (Al Zn8 Mg Cu)	White Metal 75% Sn 25% Zn	Zinc, Zn	Manganese, Mn	Magnesium, Mg	
Platinum	0																															
Gold	130	0																														
Stainless Steel 18-9	250	120	0																													
Silver	350	220	100	0																												
Mercury	350	320	100	0	0																											
Nickel	430	300	180	80	80	0																										
Cu-Zn-Ni Alloy	450	320	200	100	100	20	0																									
Copper	570	440	320	220	220	140	120	0																								
Cupro-aluminium	600	470	350	250	250	170	150	30	0																							
Cu-Zn Alloy (Brass)	650	520	400	300	300	220	200	80	50	0																						
Cu-Sn Alloy (Bronze)	770	640	520	420	420	340	320	200	170	120	0																					
Tin	800	670	550	450	450	370	350	230	200	150	30	0																				
Lead	840	710	590	490	490	410	390	270	240	190	70	40	0																			
Fe-Ni Alloy at 25% Ni	930	800	80	580	580	500	480	360	330	280	10	130	90	0																		
Aluminium-Copper	940	810	690	590	590	510	490	370	340	290	170	140	100	10	0																	
Cast Iron	950	820	700	600	600	520	500	380	350	300	180	150	110	20	10	0																
Carbon Steel	1000	870	750	650	650	570	550	430	400	350	230	200	180	70	50	50	0															
Light Cut Steel	1000	870	750	650	650	570	550	430	400	350	230	200	160	70	60	50	0	0														
Light Foundry Steel	1065	935	815	715	715	635	615	495	465	415	295	265	225	135	125	115	5	5	0													
Aluminium	1090	960	840	740	740	660	640	520	490	440	320	290	250	160	150	140	90	90	25	0												
Carbon Steel for Thermal Treatment	1095	965	845	745	745	665	645	525	495	445	325	295	255	165	155	145	95	95	30	5	0											
Al-Mg Alloy	1100	970	850	750	750	670	650	530	500	450	330	300	260	170	160	150	100	100	35	10	5	0										
Cadmium	1100	970	850	750	750	670	650	530	500	450	330	300	260	170	160	150	100	100	35	10	5	0										
Pure Iron	1105	975	855	755	755	675	655	535	505	455	335	305	265	175	165	155	105	105	40	15	10	5	5	0								
Al-Mg-Si Alloy	1105	975	855	755	755	675	655	535	505	455	335	305	265	175	165	155	105	105	40	15	10	5	5	0								
Chrome	1200	1070	950	850	850	770	750	630	600	550	430	400	360	270	260	250	200	200	135	110	105	100	100	95	95	0						
Al-Zn-Mg Alloy	1225	1095	975	875	875	795	775	655	625	575	455	425	385	295	285	275	225	225	160	135	130	125	125	120	120	25	0					
White Metal 75% Sn 25% Zn	1360	1230	1110	1010	1010	930	910	790	760	710	590	560	520	430	420	410	360	360	295	270	265	260	260	255	255	10	135	0				
Zinc	1400	1270	1150	1050	1050	970	950	830	800	750	630	600	560	470	460	450	400	400	335	310	305	300	300	295	295	200	175	40	0			
Manganese	1470	1340	1220	1120	1120	1040	1020	900	870	820	700	670	630	540	530	520	470	470	405	380	375	370	370	365	365	270	245	110	70	0		
Magnesium	1950	1820	1700	1600	1600	1520	1500	1380	1350	1300	1180	1150	1110	1020	1010	1000	950	950	885	80	855	850	850	845	845	750	725	590	550	480	0	

The joined metal undergoes no galvanic corrosion but, on the contrary, enjoys an effect of galvanic protection.

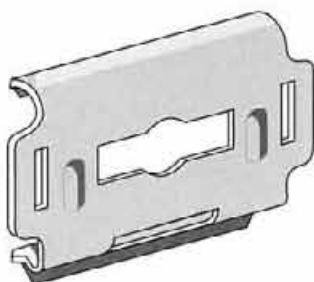
Electrolytic corrosion is very important when choosing the assembly bolts and certain accessories different from the cable cage and supports. *See diagram.*

CLIP-ON SYSTEM



CABLE CAGE SYSTEMS

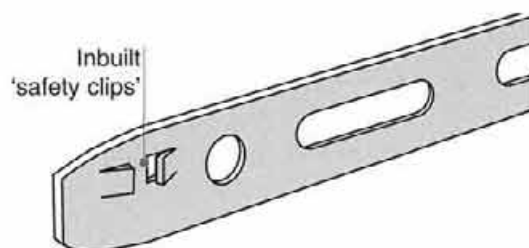
Multi-Function 'Unifil'® Clip



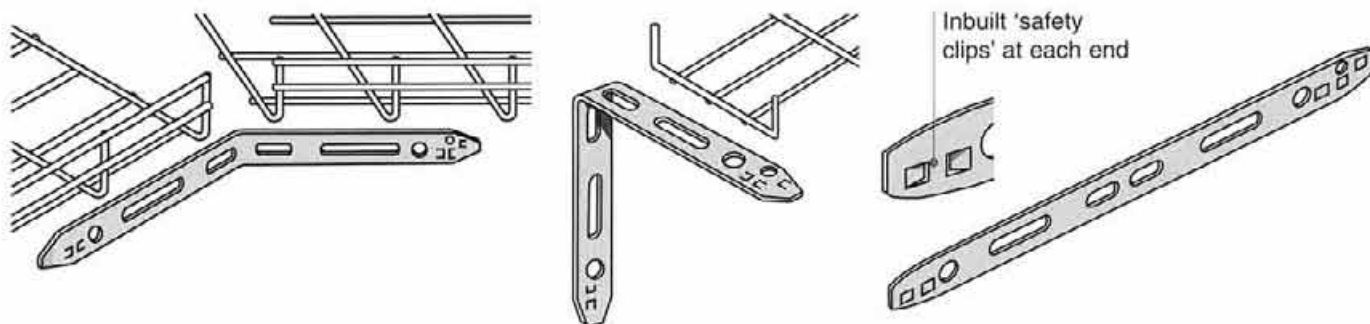
The **CABLE CAGE SYSTEMS** unique multi-function 'Unifil'® Clip and Fishplate patented system can be pre-fitted to each cable tray at one end. Two additional Clips would also be supplied for joining ends.

CABLE CAGE SYSTEMS

Multi-Function 'Unifil'® Fishplate



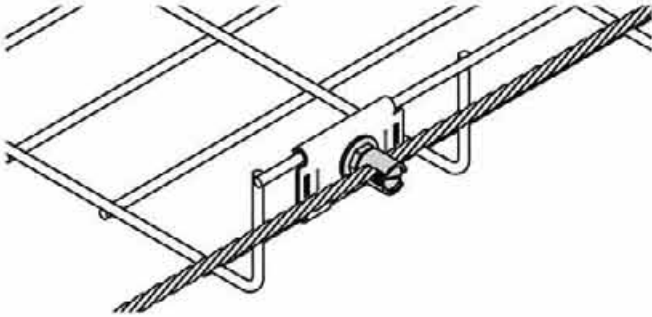
This provides even faster and simpler securing of the cable cage trays at each end. For added security the 'Unifil'® Clips and Fishplates may be held together using **TRCC 6 x 20** bolts.



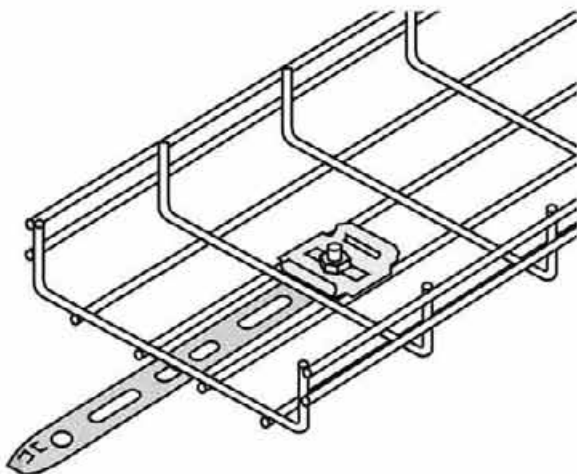
The **CABLE CAGE SYSTEMS** unique multi-function 'Unifil'® patented Fishplate in addition to connecting cable cage trays can be used as

- Curved assembly couplings

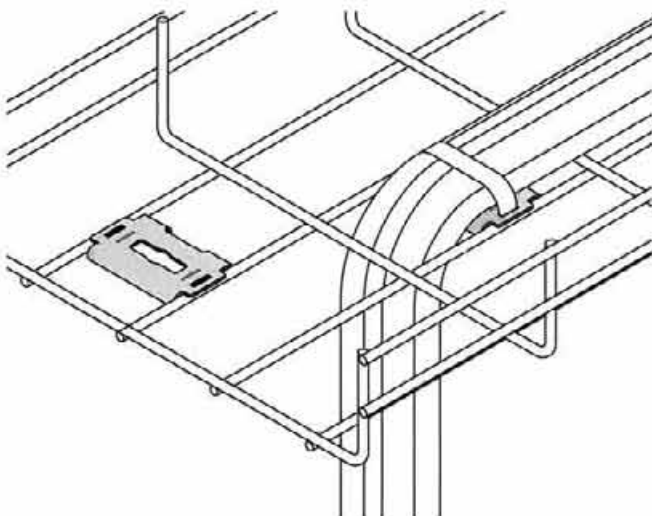
- As wall brackets when bent to required angle
- Incorporate 'safety clips' at each end to lock over cross wires and stop the assembly from accidentally coming apart



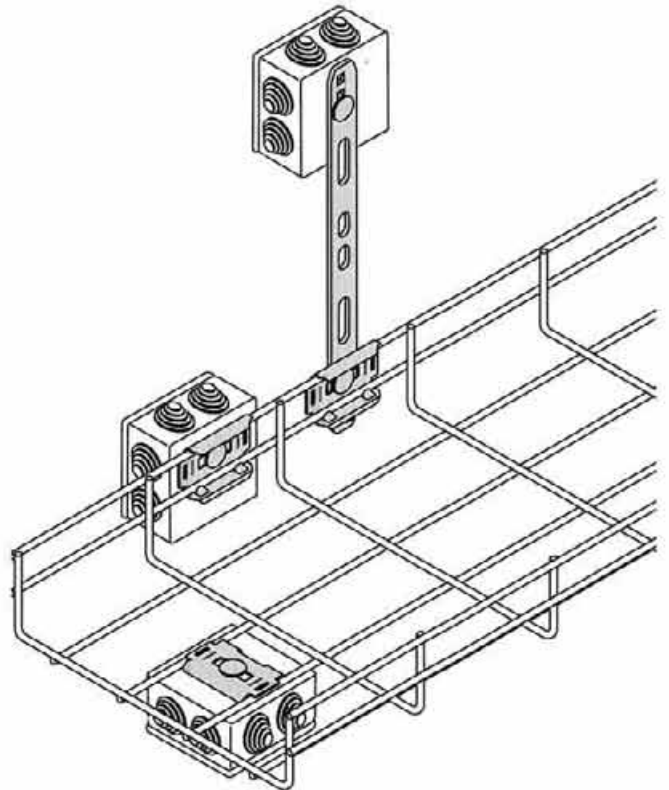
'Unifil'® Clips used as earth conductor terminal clamps.
Should an earth conductor be used in an installation these clips allow simple and easy mounting with wire clamp *STU* bolted to clip.



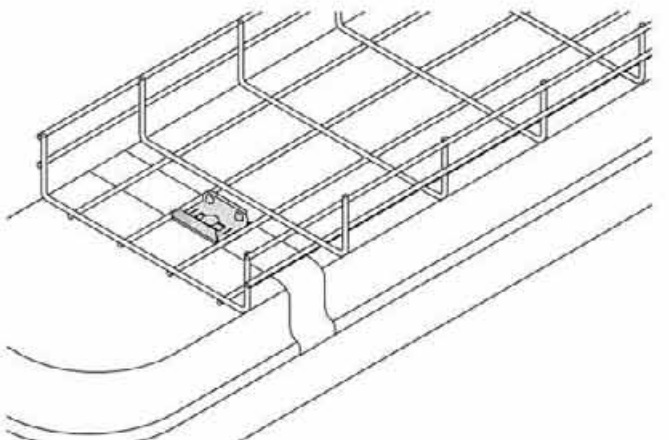
Bottom splicing of Cable Cage trays using 'Unifil'® Clips and Fishplates.



'Unifil'® Clips used as 'soft' drop points and for tie-fixing cables.



'Unifil'® Clips are ideal for the support of accessories and appliances.

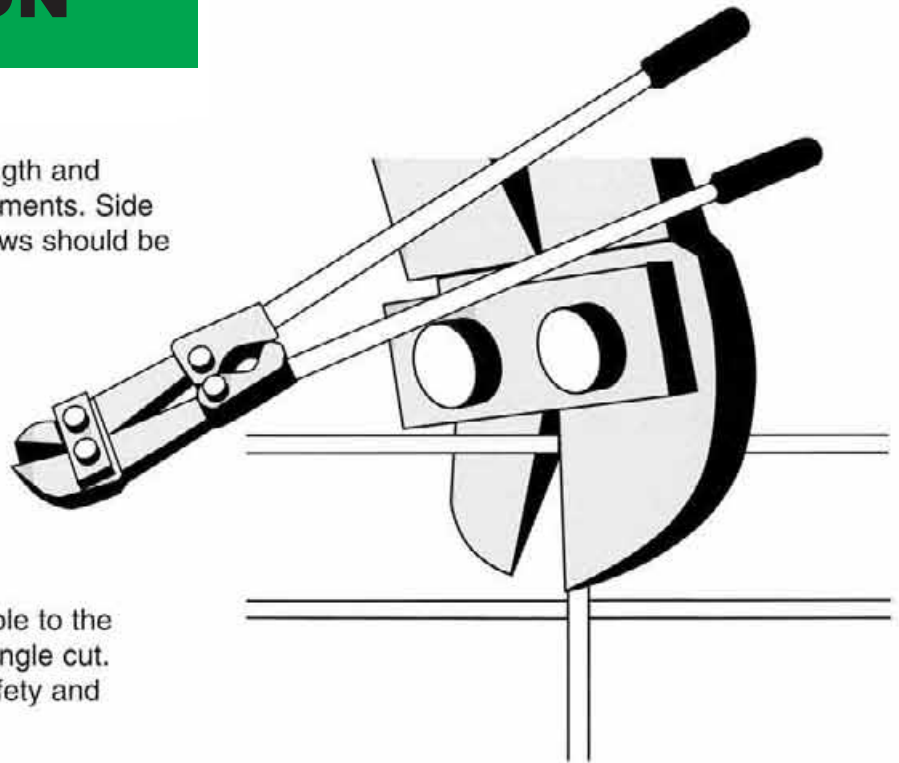


Light fittings can be simply fixed to Cable Cage trays using 'Unifil'® Clips.

INSTALLATION

HOW TO CUT WIRE

The Cable Cage trays are cut to length and shape, on site, to required measurements. Side action bolt cutters with 'offset cut' jaws should be used for cutting.



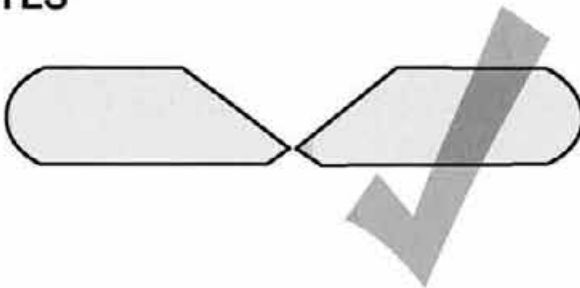
Position the jaws as close as possible to the intersection of the steel wires and angle cut. This ensures the best results for safety and joining trays.

CONTINUITY OF GALVANISED PROTECTION

The use of side action bolt cutters ensures the maintenance of the protective layers and helps to create a protective cover to the cut.

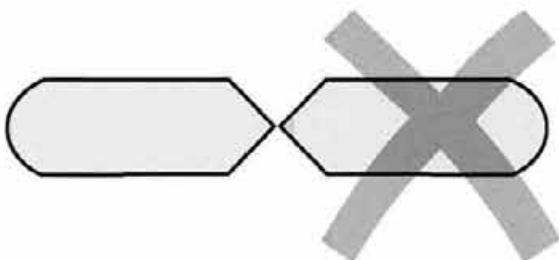
Important: When cutting always keep the remaining sharp edge away from the inside of the tray.

YES

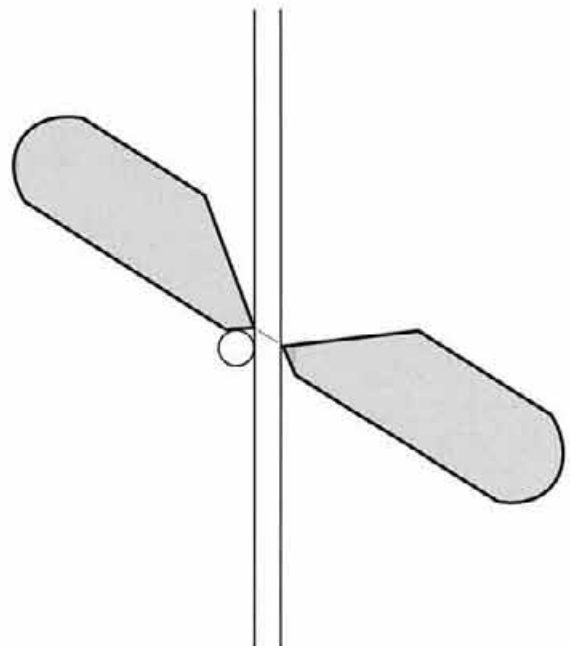


Side action 'offset cut'.

NO



Standard central cut jaws.

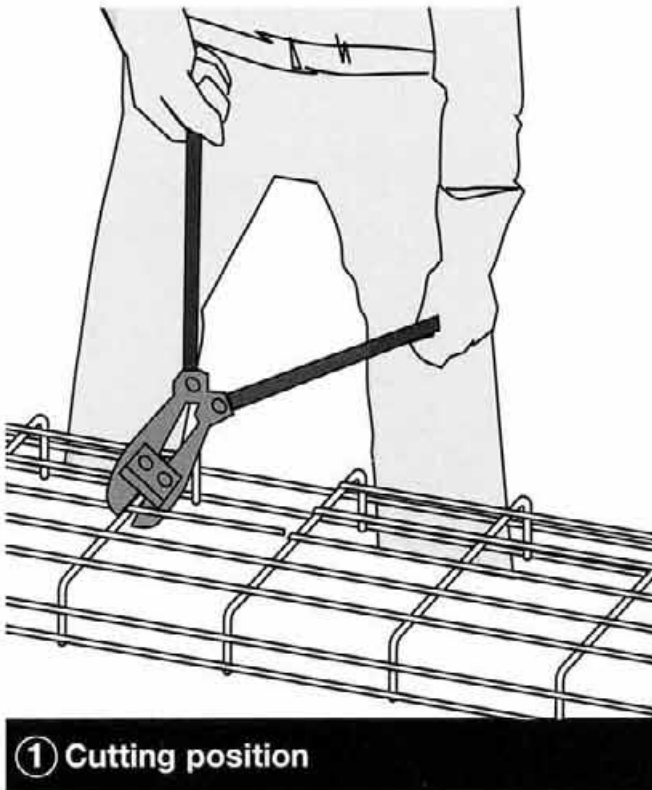


Correct positioning of bolt cutter jaws.

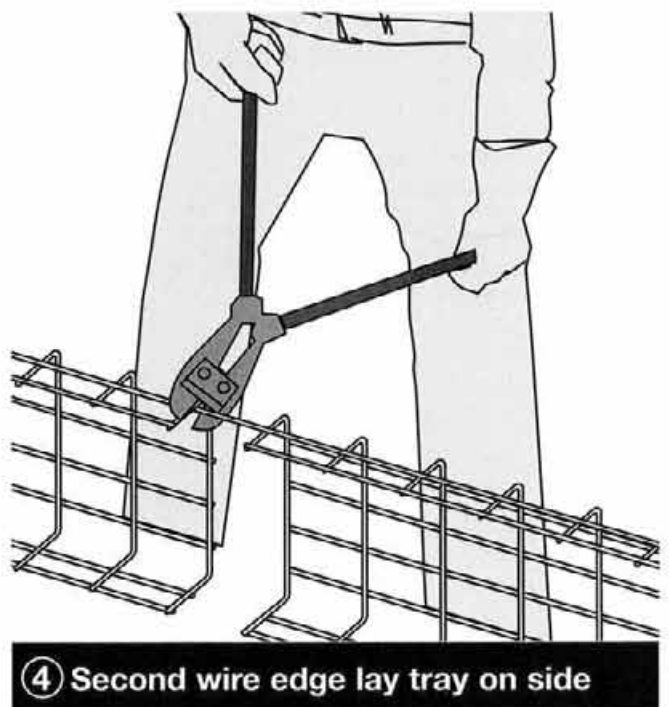
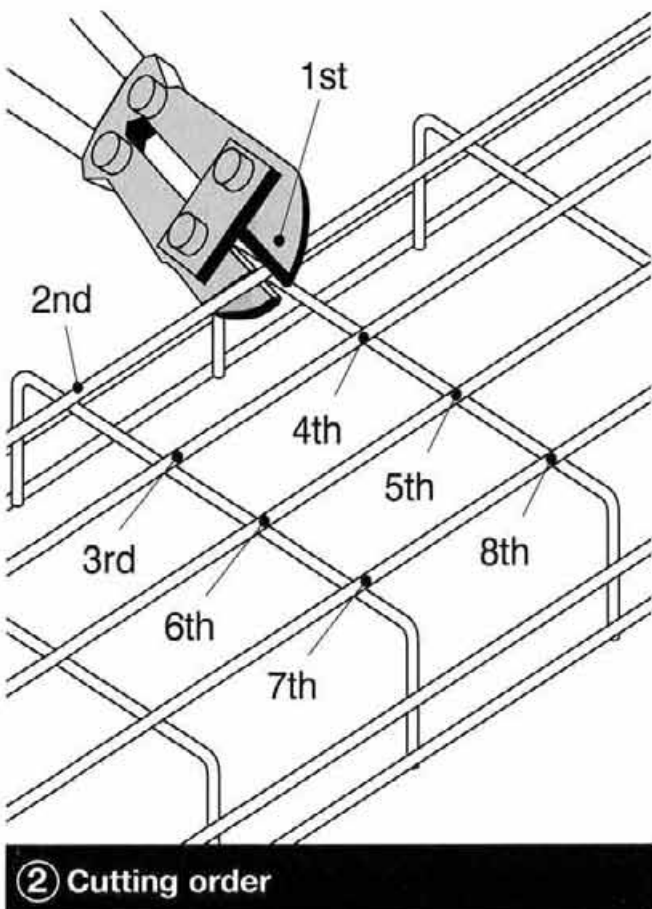
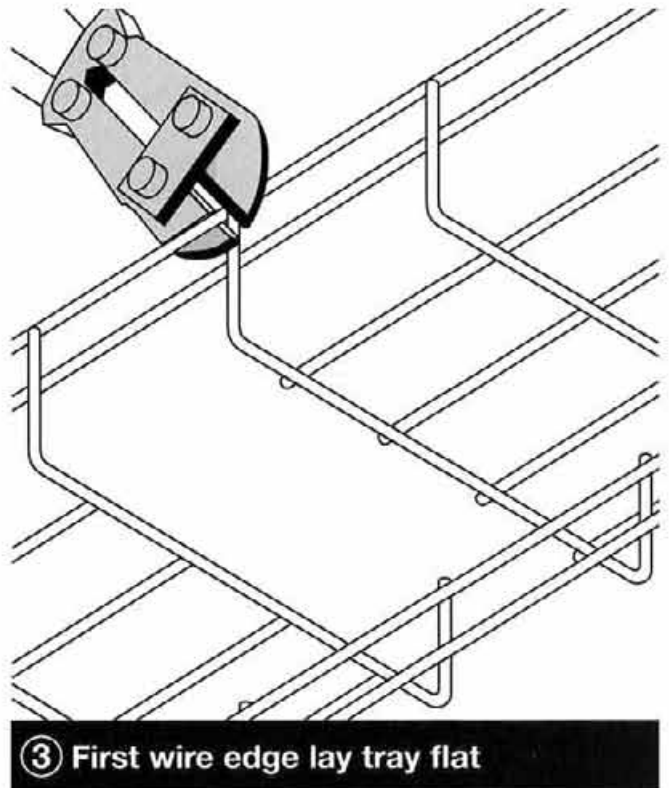
HOW TO CUT A CABLE CAGE TRAY



CUT THE BOTTOM WIRES FIRST AS SHOWN



CUTTING THE SIDE WIRES



INSTALLATION

STRAIGHT ASSEMBLIES

Standard tray lengths

The **CABLE CAGE SYSTEMS** wire trays come pre-assembled with 'Unifil'® Clips and Fishplates on one end. To connect simply snap-on the two additional clips provided to each side of the other end and push the Fishplates into the Clips using a flat-head screwdriver or similar.

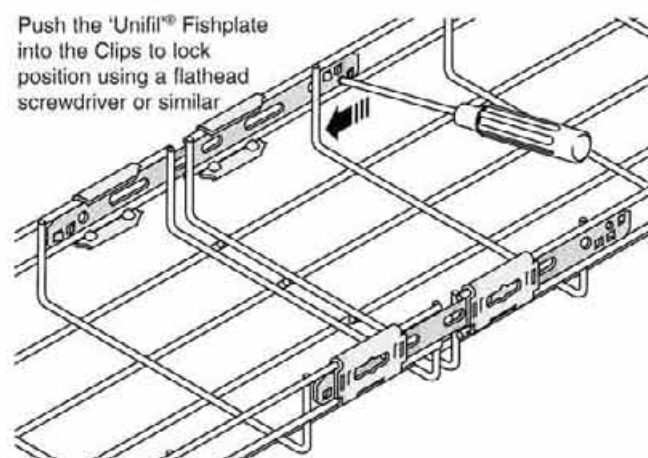
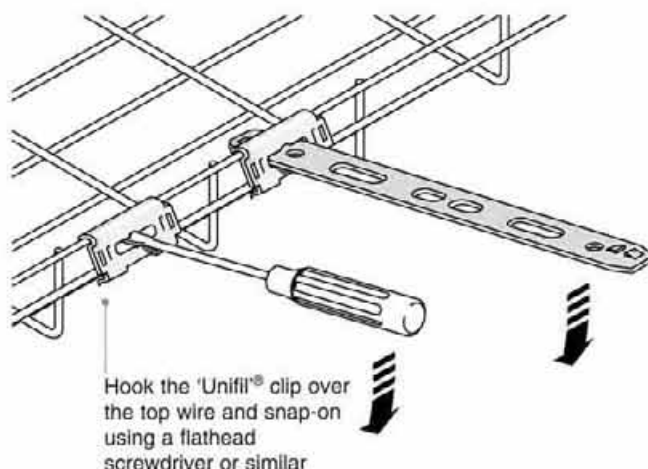
Safety clips are incorporated into each end of the Fishplates and lock over cross wires to ensure assembly is held firmly in position.

For extra security of assembly, the Fishplates can be bolted to the Clips with **TRCC 6 x 20** bolts.

Cut tray lengths

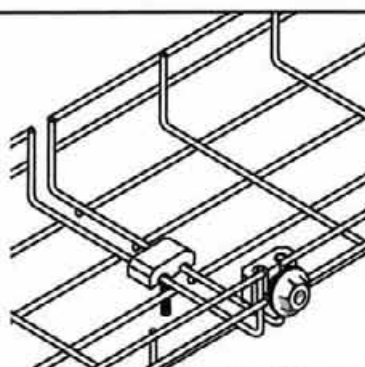
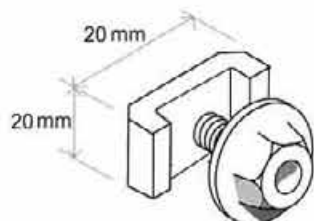
Where Cable Cage Wire Trays are cut to measurement, the multi-function 'Unifil'® clip assembly is fast and easy.

Attach one 'Unifil'® clip to each side of the cut end of the tray using a flathead screwdriver or similar. Then push the fish plates into position.



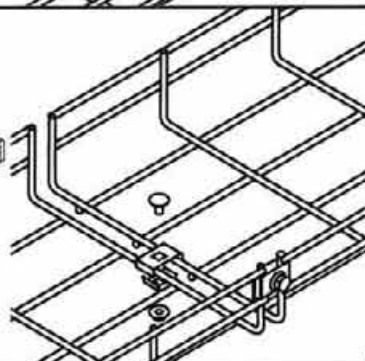
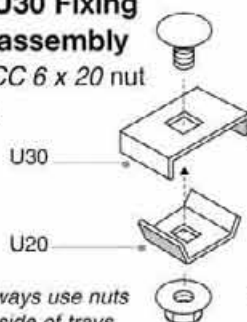
Alternate Cable Cage wire tray coupling assemblies

Rapid Fit Connector



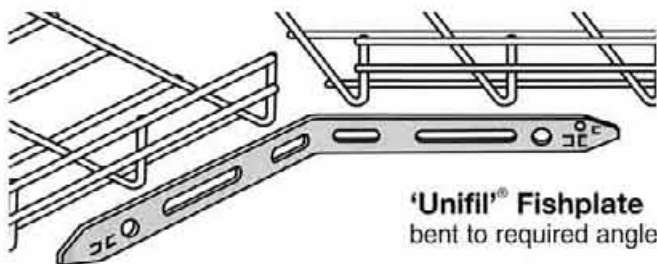
COUPLINGS - Rapid Fit and U20+U30

U20 + U30 Fixing clamp assembly with TRCC 6 x 20 nut and bolt.



Width of Cable Cage Tray	Side	Bottom
100 mm to 200 mm	2 Rapid Fit Connectors 2 U20+U30 Assemblies plus 2 TRCC 6 x 20 nuts & bolts	1 Rapid Fit Connectors 1 U20+U30 Assemblies plus 1 TRCC 6 x 20 nuts & bolts
300 mm to 500 mm	2 Rapid Fit Connectors 2 U20+U30 Assemblies plus 2 TRCC 6 x 20 nuts & bolts	2 Rapid Fit Connectors 2 U20+U30 Assemblies plus 2 TRCC 6 x 20 nuts & bolts

CURVED ASSEMBLIES

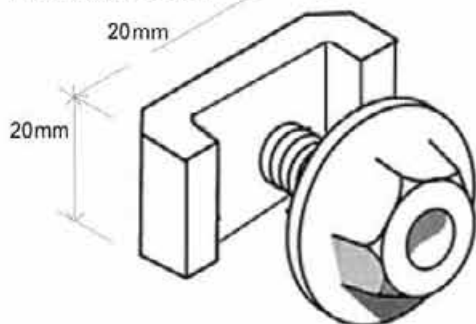


'Unifil'® Fishplate
bent to required angle

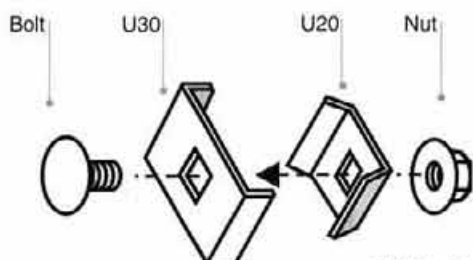


ELU Bendable Coupler
bent to required angle

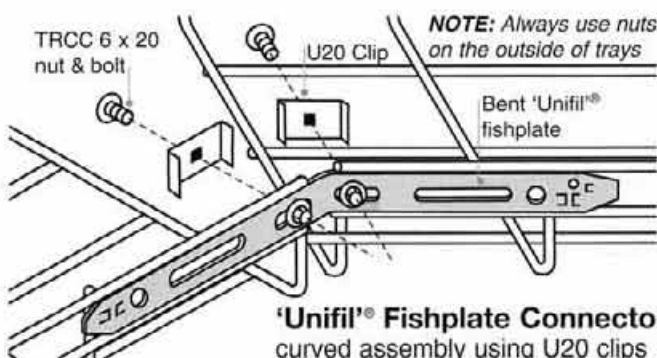
Rapid Fit Connector



U20 + U30 Fixing clamp assembly with TRCC 6 x 20 nut and bolt.



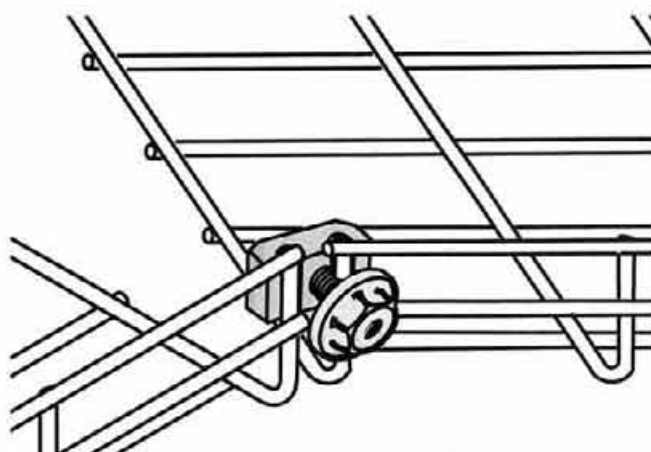
NOTE: Always use nuts on the outside of trays



'Unifil'® Fishplate Connector
curved assembly using U20 clips

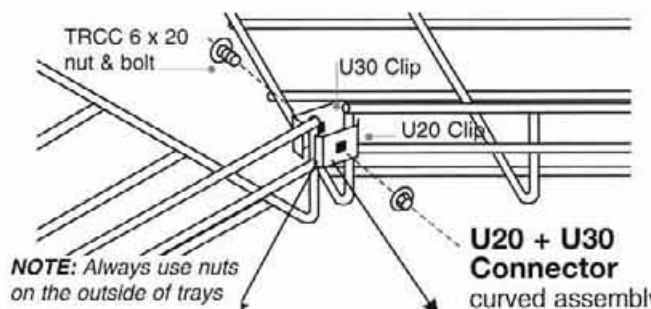
The **CABLE CAGE SYSTEMS** wire trays can easily be formed on-site by cutting the bottom and side wires.

Tees, bends - both short and long radius, risers, crosses, etc are simply made by cutting the wires as required and assembling using the appropriate hardware.



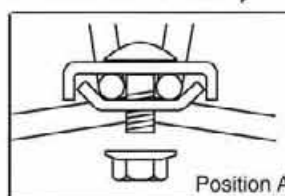
NOTE: Always use nuts on the outside of trays

Rapid Fit Connector
curved assembly

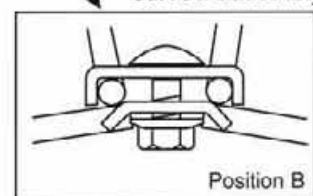


NOTE: Always use nuts on the outside of trays

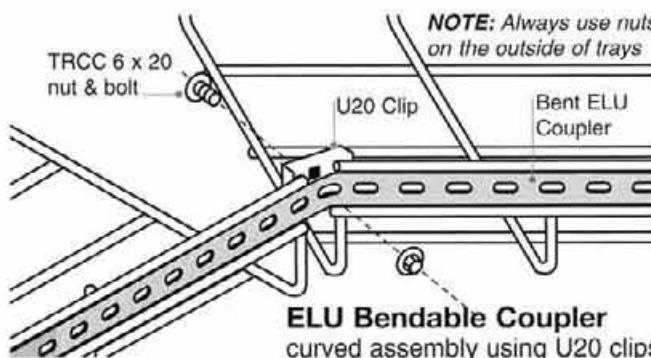
U20 + U30 Connector
curved assembly



Position A



Position B



NOTE: Always use nuts on the outside of trays

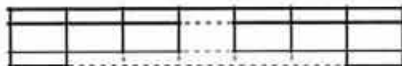
ELU Bendable Coupler
curved assembly using U20 clips

INSTALLATION

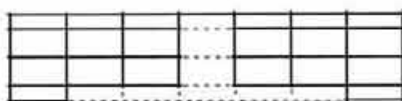
BENDS, TEES AND RISERS

CABLE CAGE SYSTEMS wire trays can easily form angles by simply cutting, on-site, the bottom and side wires. Cut the tray wires as shown on pages 10 and 11 in the patterns below.

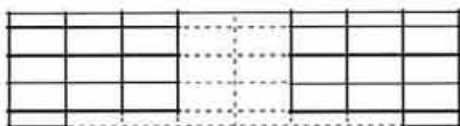
90° Bends - Short Radius



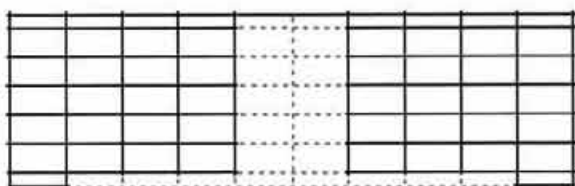
CT100



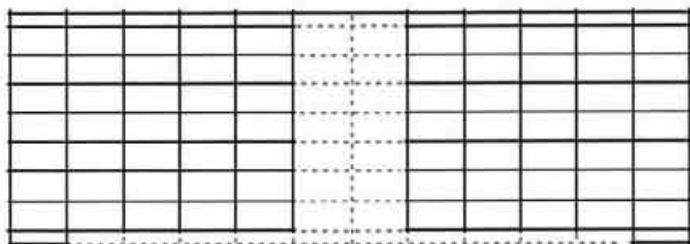
CT150



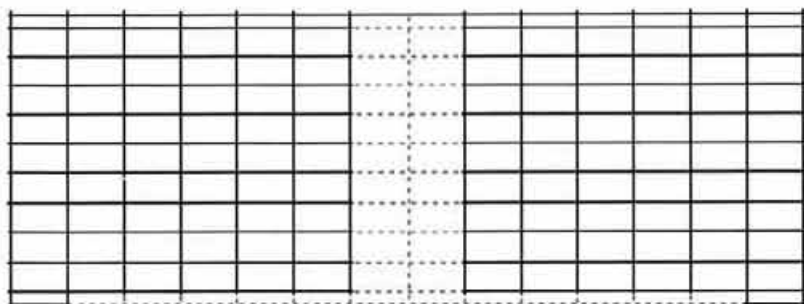
CT200



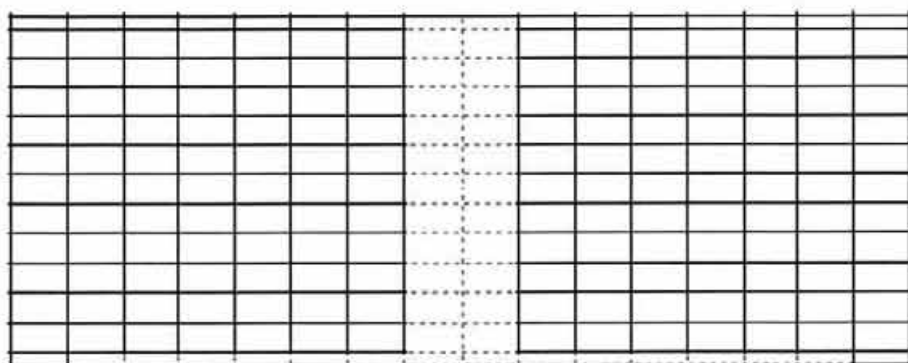
CT300



CT400



CT500



CT600

Angles such as 90° Short or Large Radius Bends, Tees, Crosses, Reduces and Rises are easily formed on-site using standard wire trays, accessories and fixings.

Width of Tray mm	Internal Radius mm	Size L x L mm	Number of Fixings per Bend
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100	35	370 x 370	1
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Width of Tray mm	Internal Radius mm	Size L x L mm	Number of Fixings per Bend
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150	110	370 x 370	1
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Width of Tray mm	Internal Radius mm	Size L x L mm	Number of Fixings per Bend
------------------	--------------------	---------------	----------------------------

200	120	430 x 430	1
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Width of Tray mm	Internal Radius mm	Size L x L mm	Number of Fixings per Bend
------------------	--------------------	---------------	----------------------------

300	120	530 x 530	1
-----	-----	-----------	---

Width of Tray mm	Internal Radius mm	Size L x L mm	Number of Fixings per Bend
------------------	--------------------	---------------	----------------------------

400	120	630 x 630	2
-----	-----	-----------	---

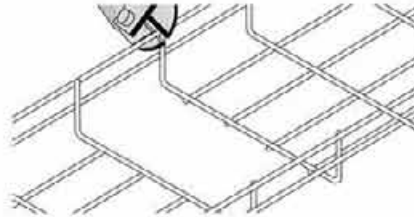
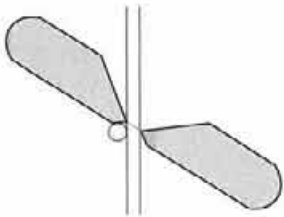
Width of Tray mm	Internal Radius mm	Size L x L mm	Number of Fixings per Bend
------------------	--------------------	---------------	----------------------------

500	120	730 x 730	2
-----	-----	-----------	---

Width of Tray mm	Internal Radius mm	Size L x L mm	Number of Fixings per Bend
------------------	--------------------	---------------	----------------------------

600	120	830 x 830	2
-----	-----	-----------	---

90° BENDS - SHORT RADIUS



IMPORTANT: When cutting always keep the remaining sharp edge away from the inside of the tray.

NOTE: Always use nuts on the outside of trays

Make sure the correct fixings and accessories are used.

Standard use is:

Sizes 100mm to 300mm

1 Rapid Fit connector or

1 set U20 + U30 +

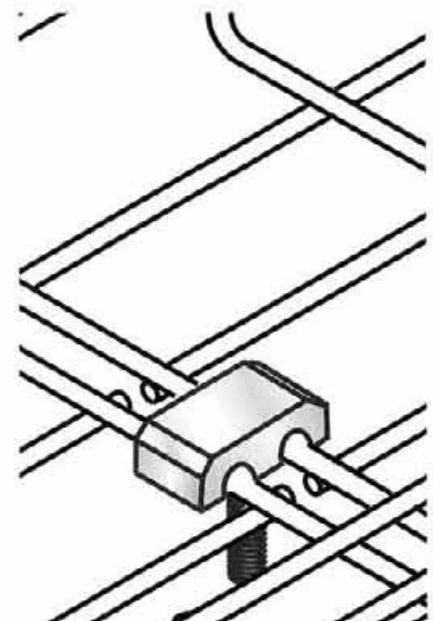
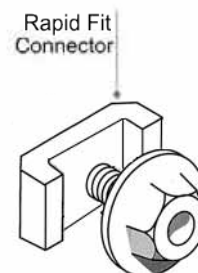
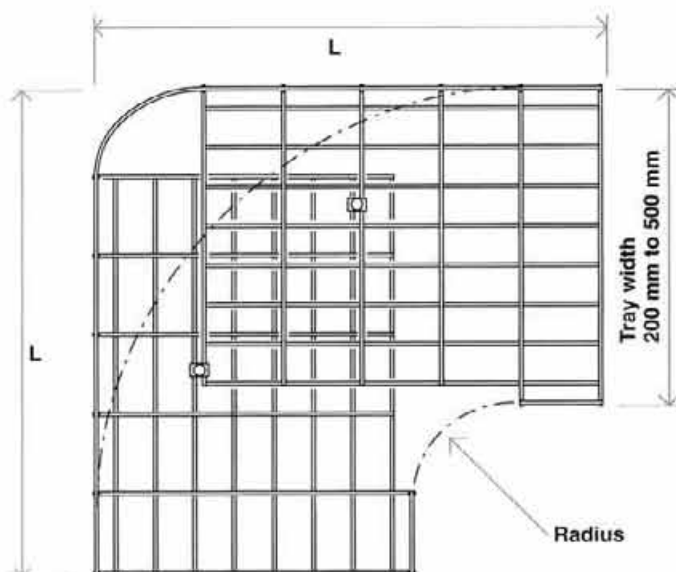
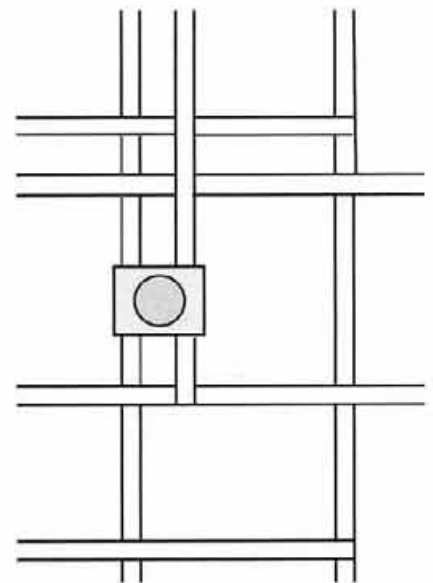
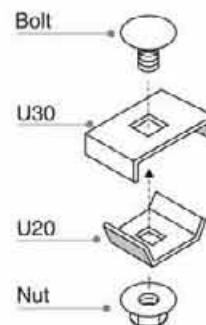
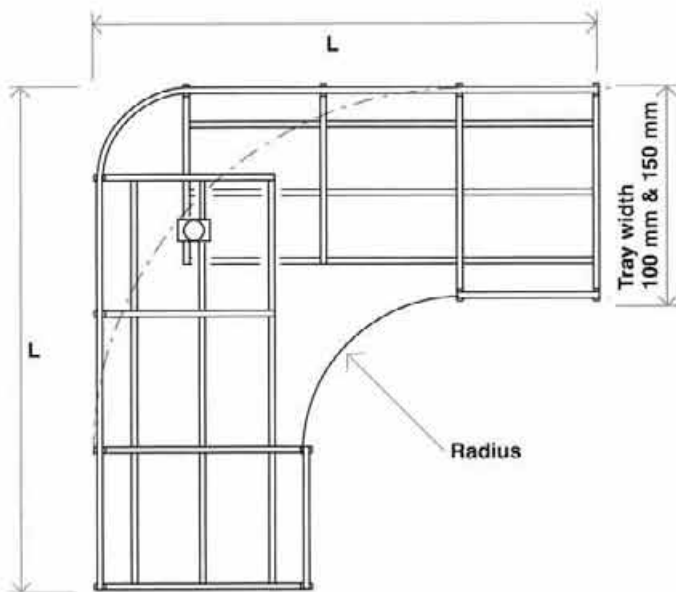
TRCC 6 x 20

Sizes 400mm to 500mm

2 Rapid Fit connectors or

2 sets U20 + U30 +

TRCC 6 x 20

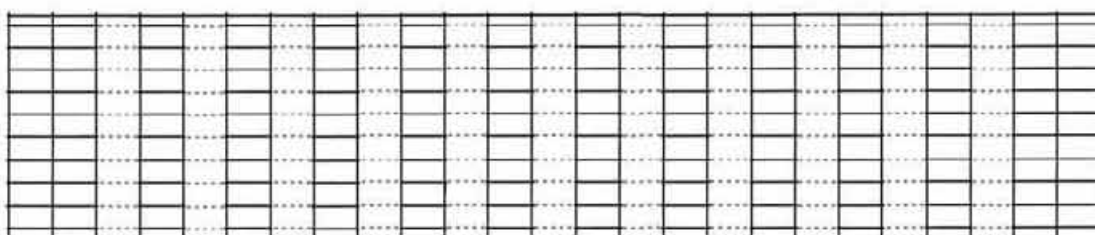
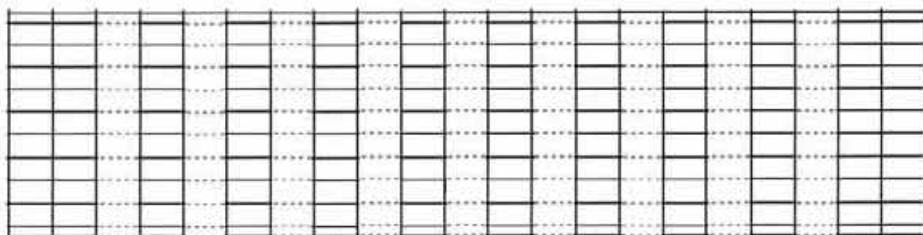
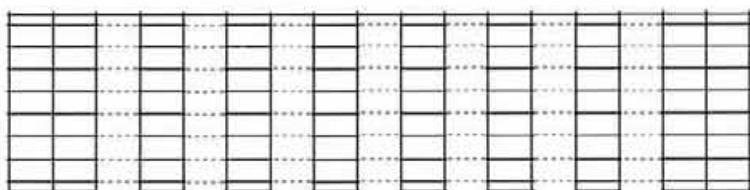
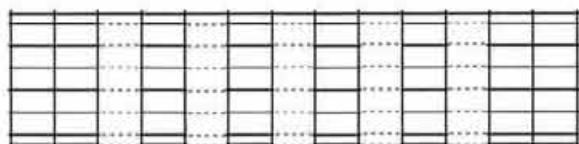
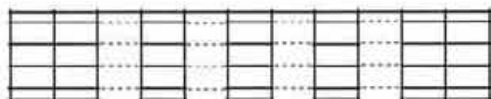
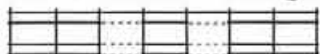


INSTALLATION

BENDS, TEES AND RISERS

Cut the tray wires as shown on pages 10 and 11 in the patterns below.

90° Bends - Large Radius



Angles such as 90° Large Radius Bends are easily formed on-site using standard wire trays, accessories and fixings.

Width of Tray mm	Internal Radius mm	Size L x L mm x mm
100	230	530 x 530

Width of Tray mm	Internal Radius mm	Size L x L mm x mm
150	300	650 x 650

Width of Tray mm	Internal Radius mm	Size L x L mm x mm
200	260	660 x 660

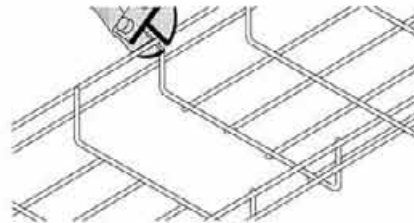
Width of Tray mm	Internal Radius mm	Size L x L mm x mm
300	440	940 x 940

Width of Tray mm	Internal Radius mm	Size L x L mm x mm
400	460	1060 x 1060

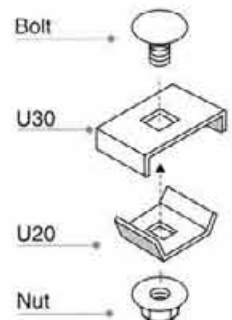
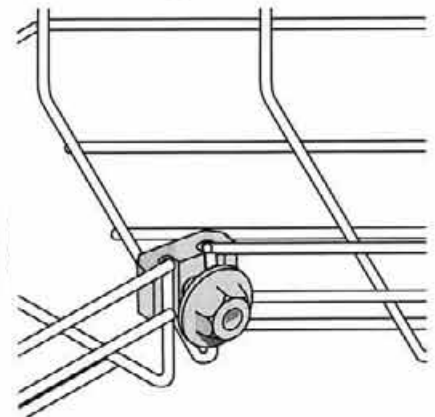
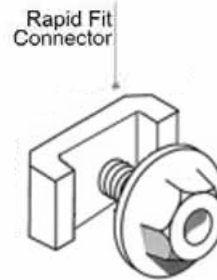
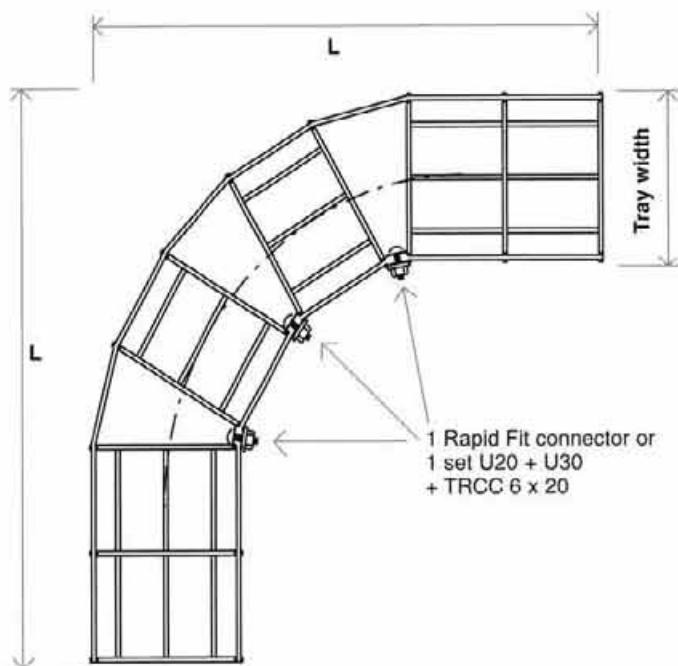
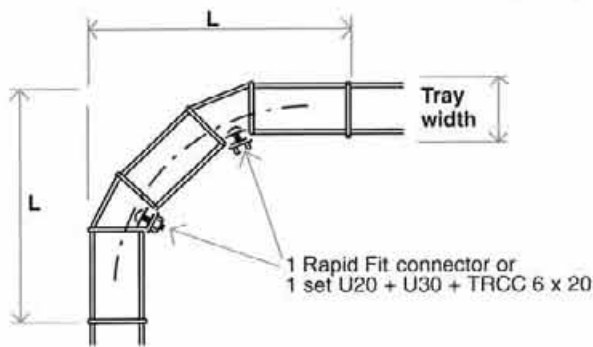
Width of Tray mm	Internal Radius mm	Size L x L mm x mm
500	610	1310 x 1310

Width of Tray mm	Internal Radius mm	Size L x L mm x mm
600	610	1310 x 1310

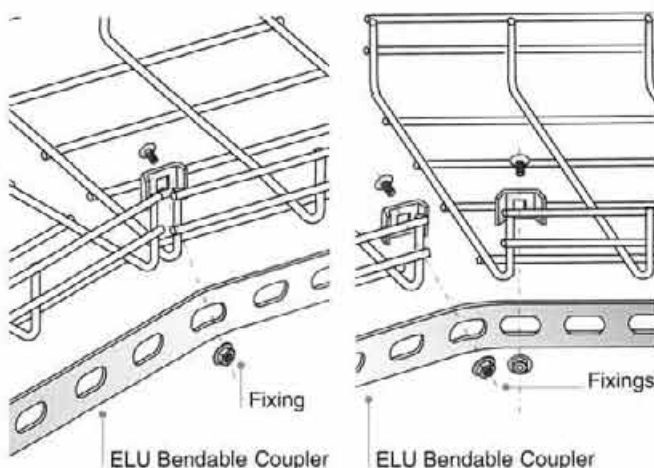
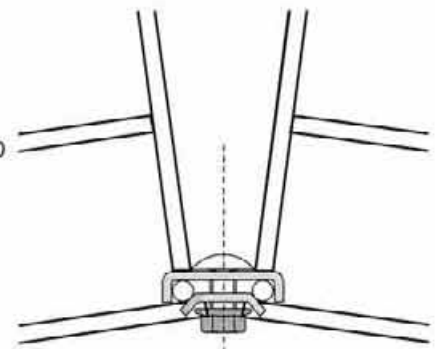
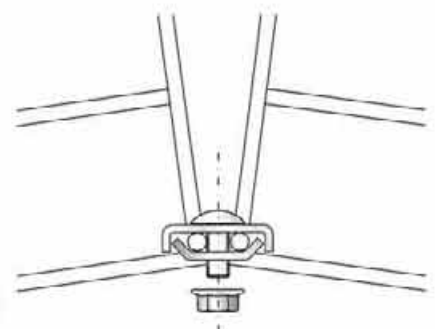
90° BENDS - LARGE RADIUS



IMPORTANT: When cutting always keep the remaining sharp edge away from the inside of the tray.

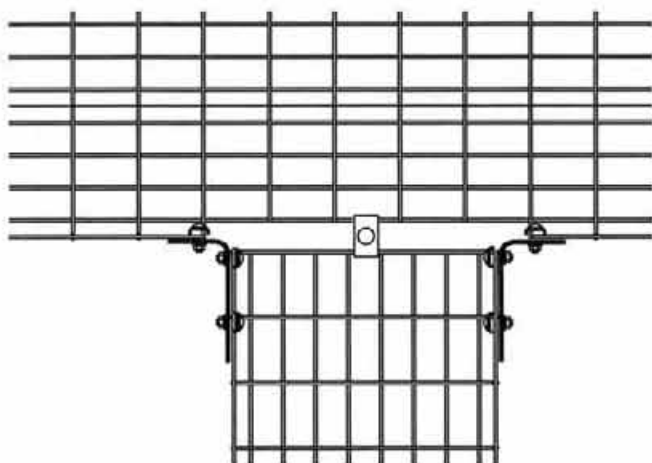


1 set of U20 + U30
+ TRCC 6 x 20
Bolt and Nut



INSTALLATION

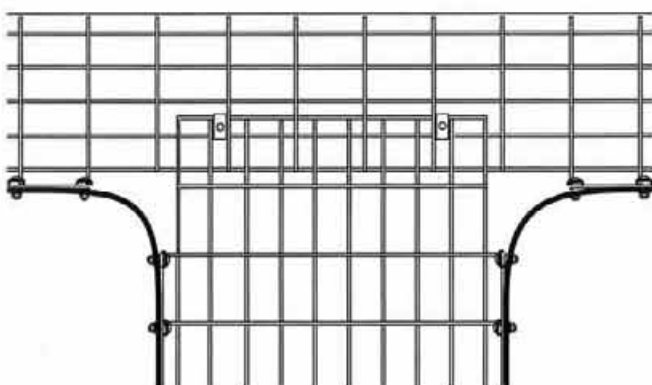
TEES, REDUCES AND BENDS



Angles such as Tees, Crosses, Reduces and Rises are easily formed on-site using standard wire trays, accessories and fixings.

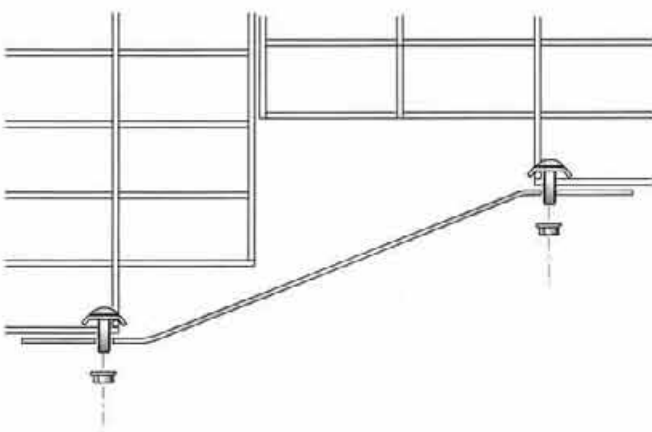
Small Radius Tee and Cross

Width ELU 600 mm	U 20 + TRCC 6x20	U 40 + TRCC 6x20
100	6	-
150	6	-
200	1 ELU 600	-
300	cut on site to	6
400	2 x 200 mm	6
500		6
600		6



Large Radius Tee and Cross

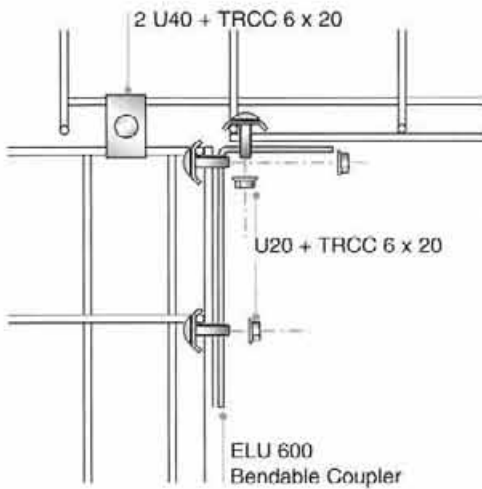
Width ELU 600 mm	U20 + TRCC 6x20	U20 + U30 TRCC 6x20
100	6	-
150	6	-
200	2 ELU 600	-
300	cut on site	6
400		6
500		6
600		6



Reducer

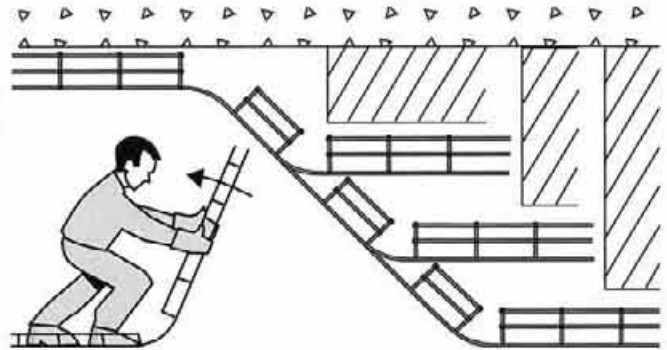
Reduction mm	ELU 600	U 20 + TRCC 6x20
100	1 ELU 600	2
200	cut on site	2

TEES, RISERS & VERTICAL BENDS

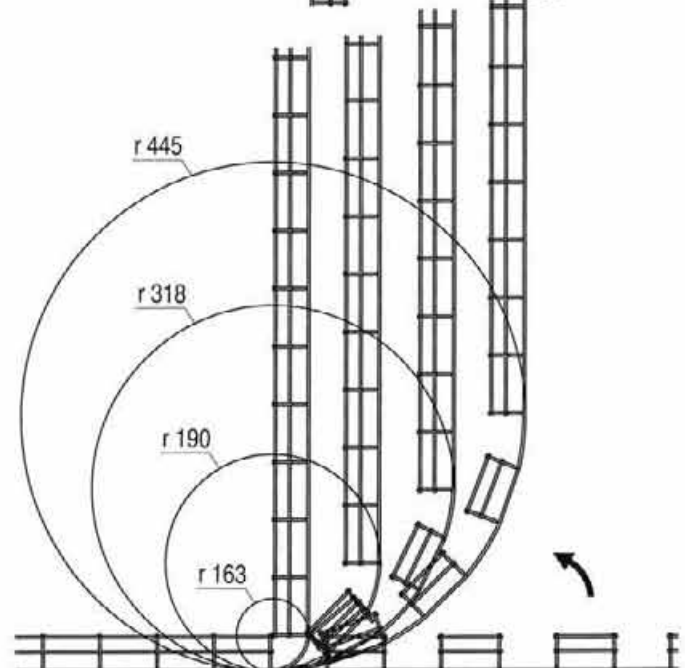
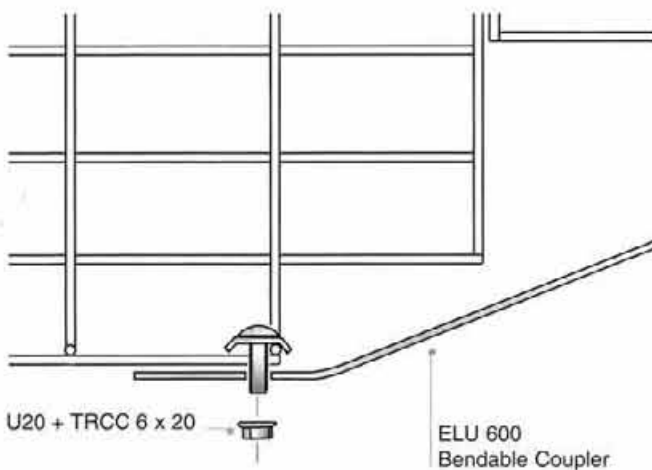
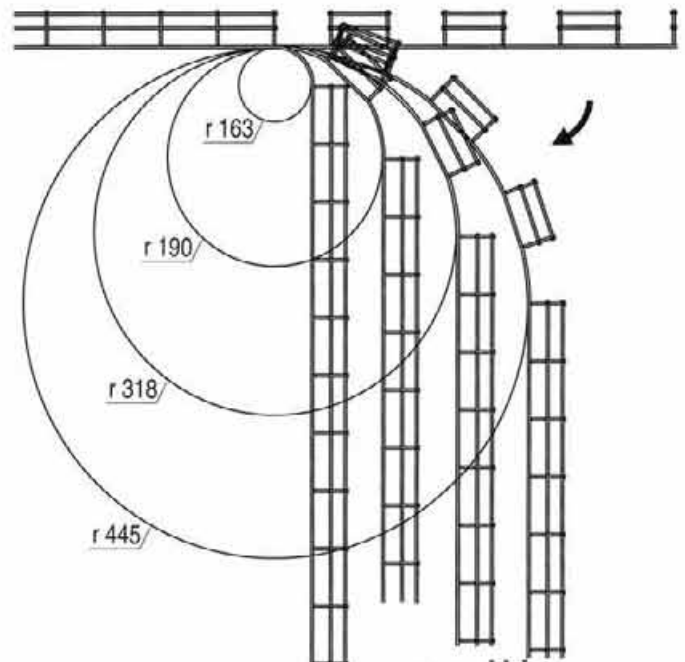
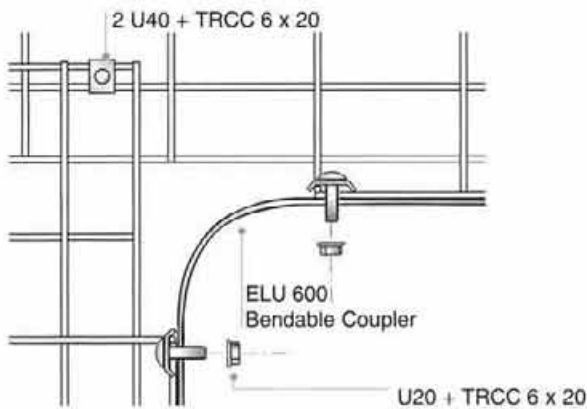


IMPORTANT:
When cutting
always keep the
remaining sharp
edge away from
the inside of the
tray.

NOTE: Always
use nuts on the
outside of trays



Vertical Bends
Adjustable on site



PRODUCT LIST

CABLE CAGE TRAY RANGE

DIMENSIONS

Standard Length: 3000 mm
Standard Height: 54 mm

Longitudinal Wire Spacing: 50 mm
Cross Wire Spacing: 100 mm

CT : Straight Lengths

Can be pre-fitted with 'Unifil'® Clips and Fishplates for easy end joining

RANGE

Width of
Cable Cage Tray
mm

100



150



200



300



400



500



600



MATERIALS AND SURFACE TREATMENTS

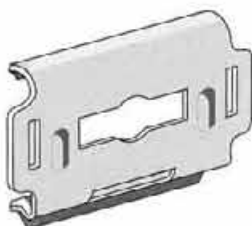
Electro Zinc Code	Pre Galvanised Code	Hot Dipped Galvanised Code	Mass kg/m
CT100EZ	CT100PG	CT100HD	1.15
CT150EZ	CT150PG	CT150HD	1.38
CT200EZ	CT200PG	CT200HD	1.38
CT300EZ	CT300PG	CT300HD	2.00
CT400EZ	CT400PG	CT400HD	2.90
CT500EZ	CT500PG	CT500HD	3.30
CT600EZ	CT600PG	CT600HD	3.70

Cable trays of greater width and depth available on request

'UNIFIL'® CLIP

DIMENSIONS

Length: 54 mm
Height: 37 mm



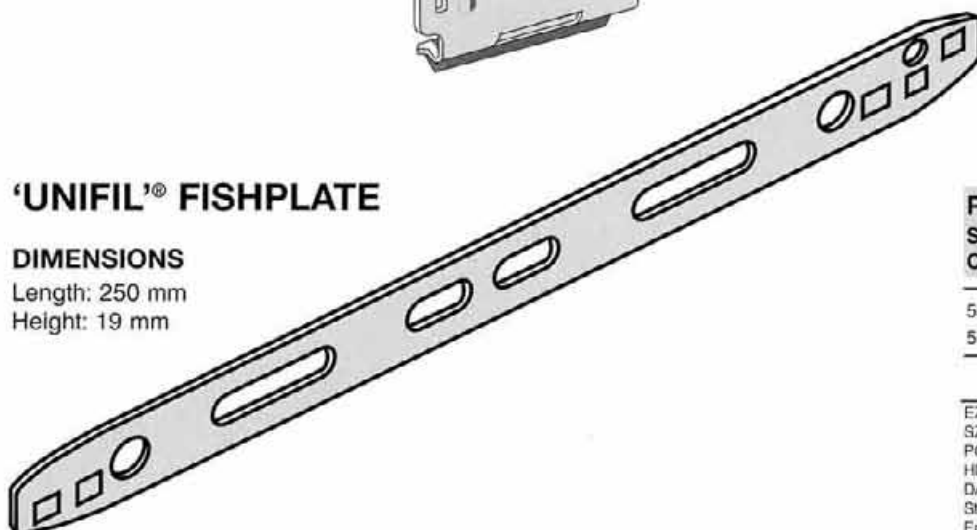
T 25/50 : 'Unifil'® Clip

SZ Code	DACRO Code	Description	kg / Unit
552129	556129	T 25/50 D5<300	0.025
552131	556131	T 25/50 D6≥300	0.025

'UNIFIL'® FISHPLATE

DIMENSIONS

Length: 250 mm
Height: 19 mm

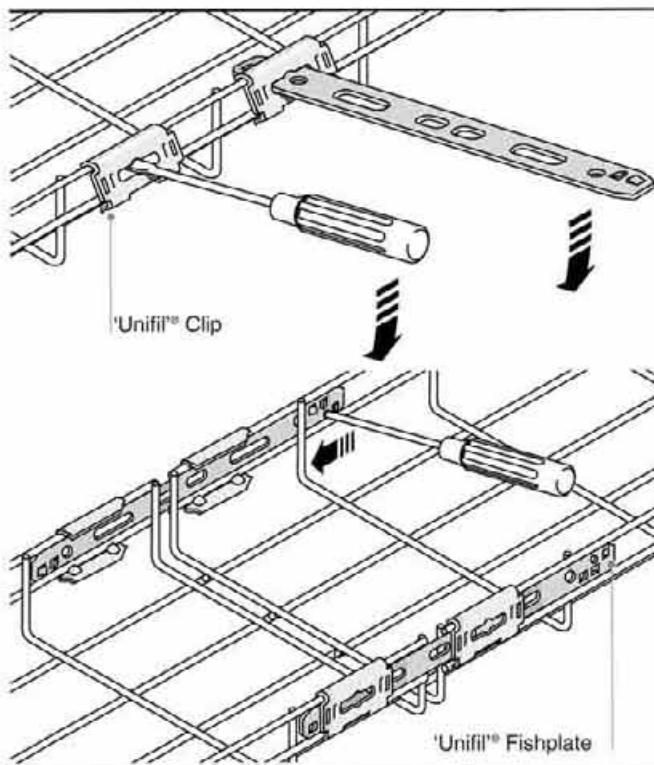
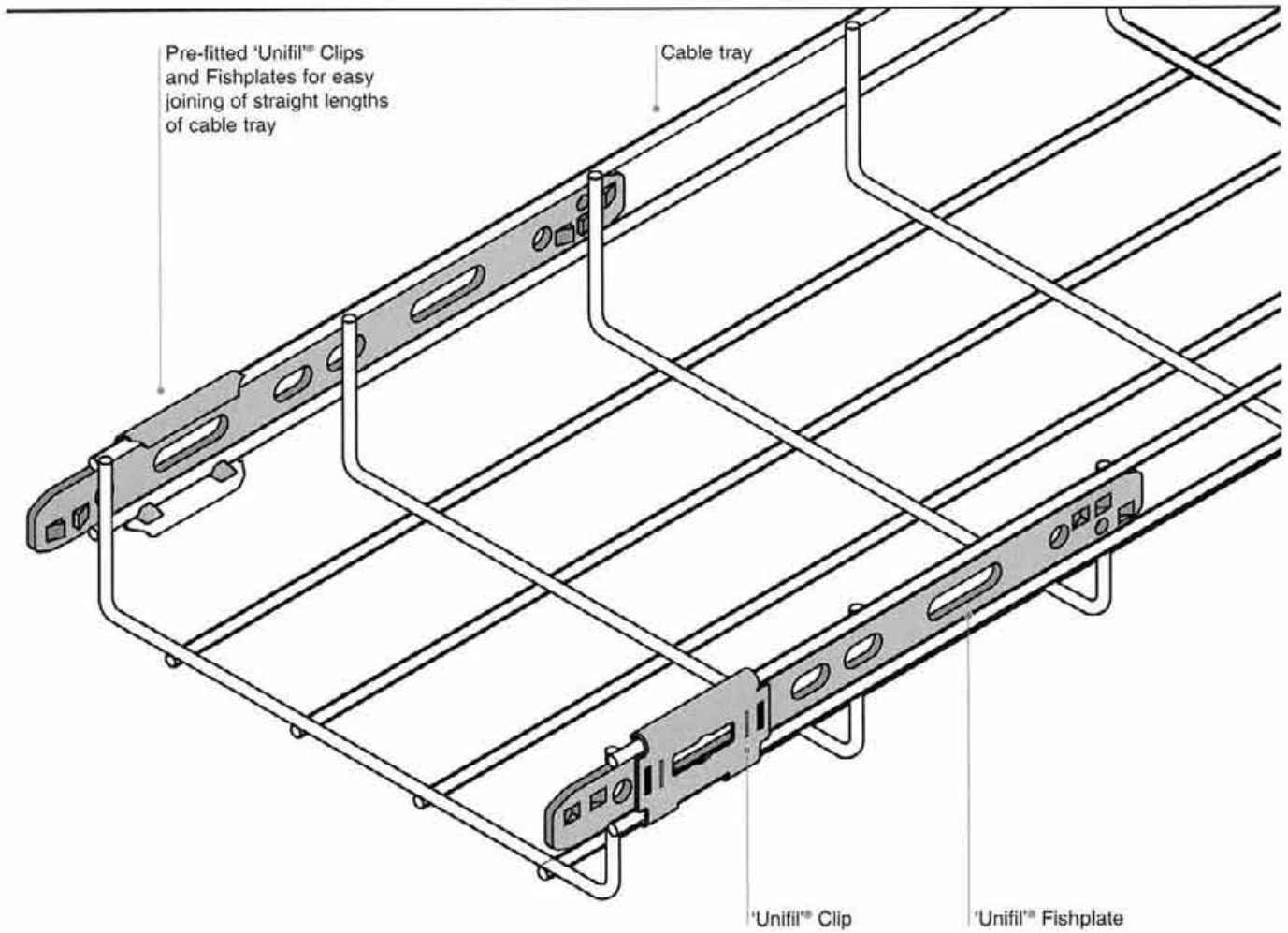


PLAT : 'Unifil'® Fishplate

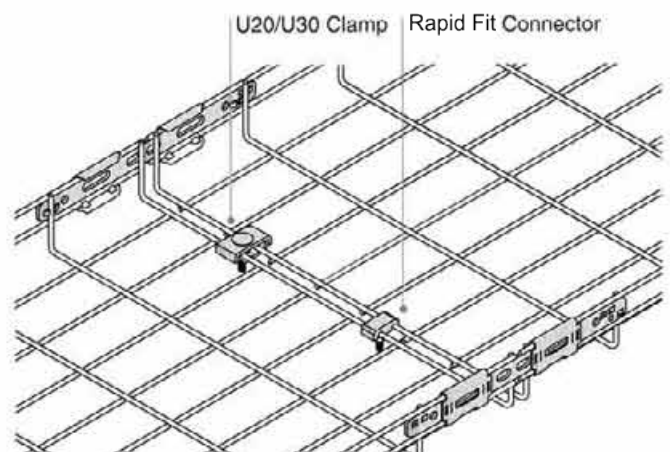
SZ Code	DACRO Code	Description	kg / Unit
552128	556128	Fishplate D5<300	0.09
552130	556130	Fishplate D6≥300	0.09

EZ: Electro zinc plated steel to NFA 90 102 - 91 472
SZ: Continuous galvanised sheet metal to NF EN 10 142
PG: Pre galvanised steel wire
HD: Hot dip galvanised steel after fabrication to ISO 1461
DACRO: A highly protective, zinc base, non-electrolytic coating
Stainless Steel Grade 304 L/316 L to EN 10088-2 - on request
Epoxy or polyester coatings - on request

TYPICAL APPLICATIONS



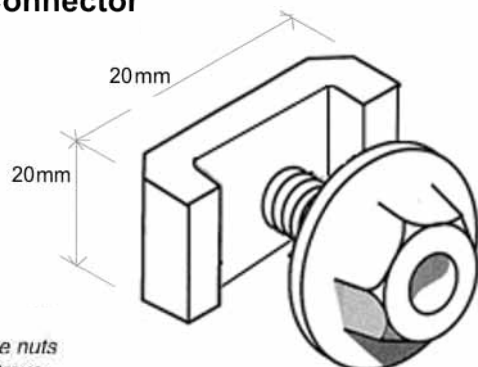
U20/U30 Clamps or Rapid Fit Connectors are to be used on Cable Trays over 300 mm wide in conjunction with the 'Unifil'® Clips and Fishplates.



PRODUCT LIST

ASSEMBLY HARDWARE

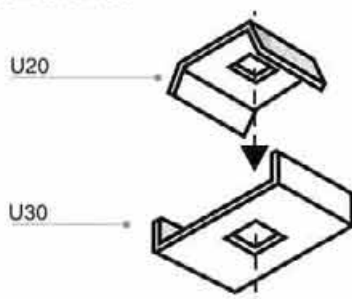
Rapid Fit Connector



NOTE: Always use nuts on the outside of trays

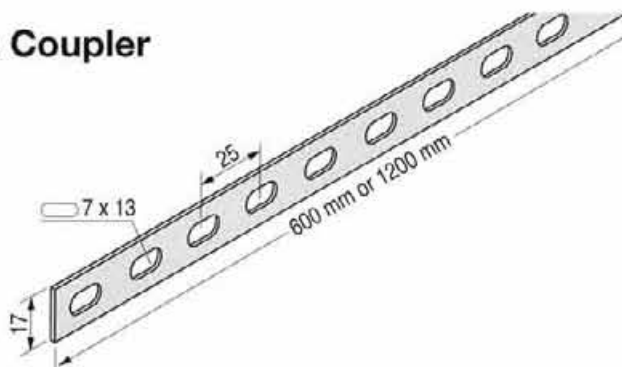
U20 + U30 Fixing clamp assembly

used with TRCC 6 x 20 bolt and nut



NOTE: Always use nuts on the outside of trays

ELU Bendable Coupler



TRCC 6 x 20 Nut and Bolt



NOTE: Always use nuts on the outside of trays

Rapid Fit Connector

EZ Code	Description	kg / Unit
552134	Rapit Fit Connector	0.018

U20/U30 : Fixing Clamp Assembly

EZ Code	HD Code	Description	kg / Unit
552042	553042	U20 Fixing Clamp	0.0086
552043	553043	U30 Fixing Clamp	0.016

ELU : Bendable Coupler

HD Code	SZ Code	Description	kg / Unit
552044	553044	ELU 600 Coupler	0.165
552045	553045	ELU 1200 Coupler	0.380

TRCC 6 x 20 : Bolt & Nut

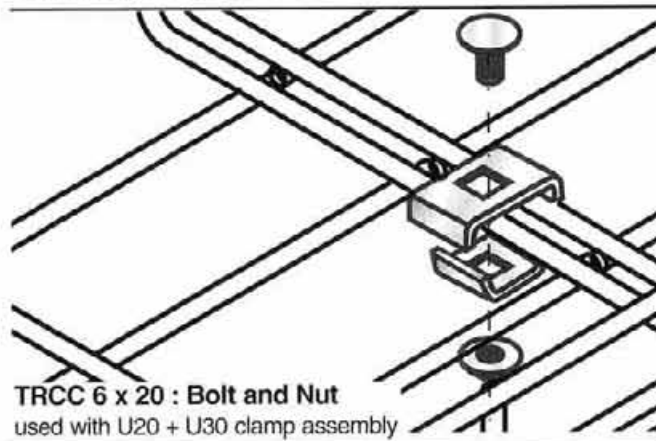
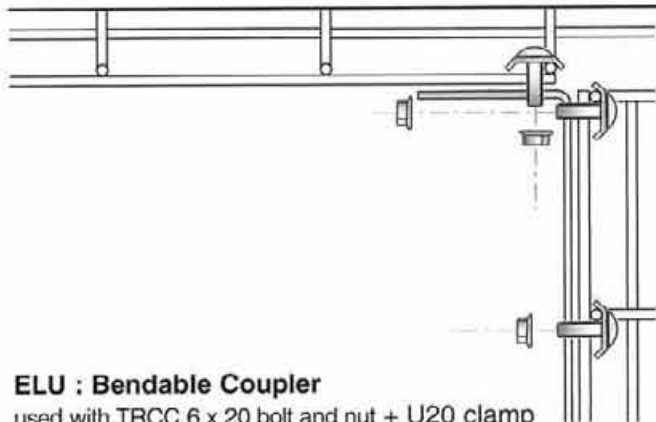
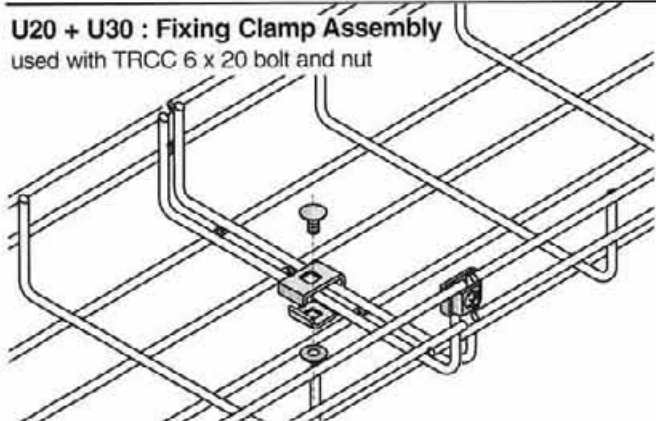
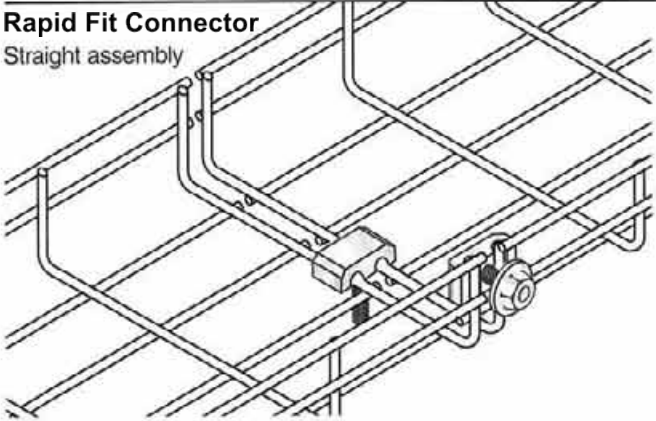
EZ Code	Description	kg / Unit
648003	6mm x 20mm Bolt & Nut	0.009

EZ: Electro zinc plated steel to NFA 90 102 - 91 472
 SZ: Continuous galvanised sheet metal to NF EN 10 142
 PG: Pre galvanised steel wire
 HD: Hot dip galvanised steel after fabrication to ISO 1461
 DACHO: A highly protective, zinc base, non-electrolytic coating
 Stainless Steel Grade 304 L/316 L to EN 10088-2 - on request
 Epoxy or polyester coatings - on request

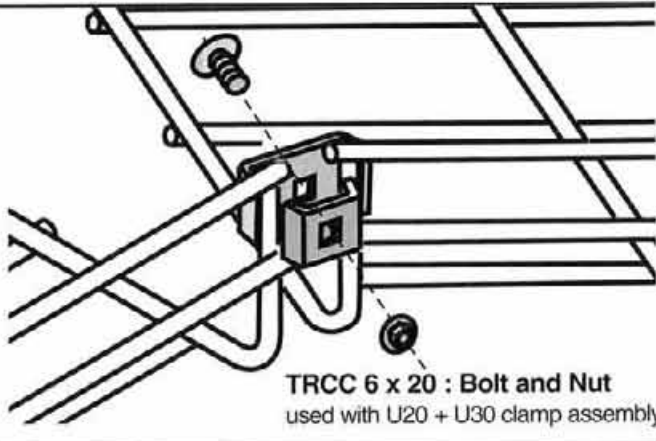
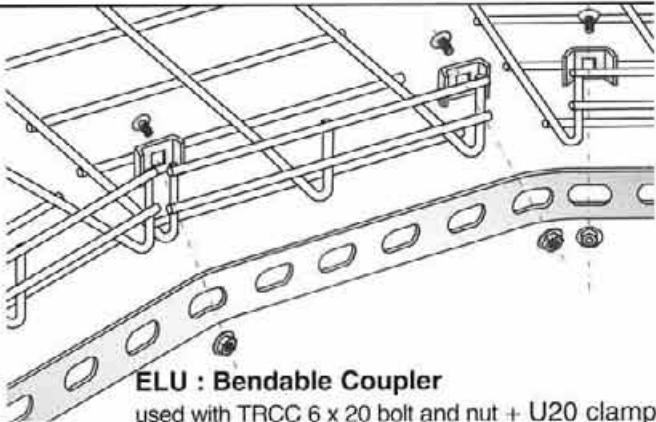
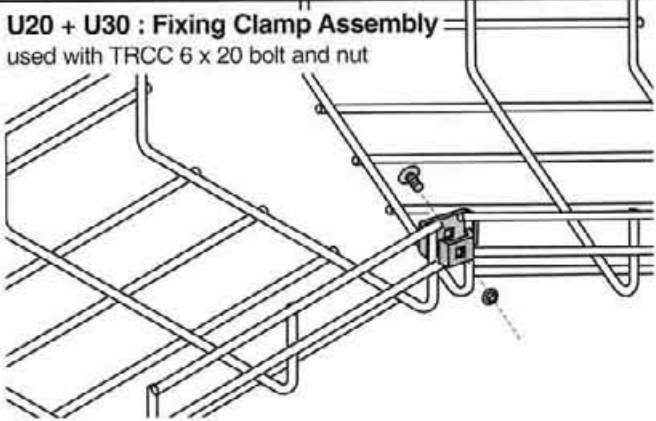
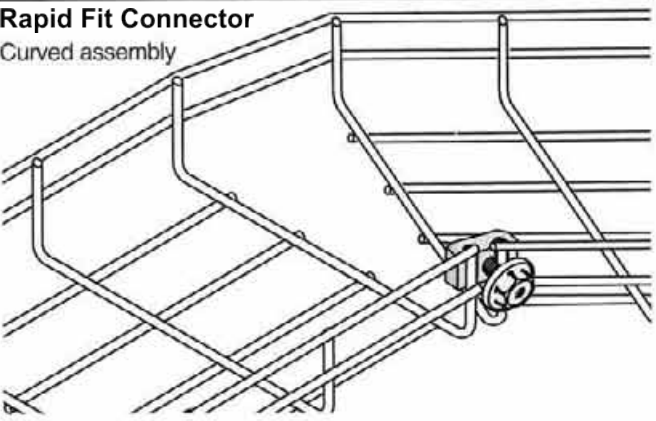
TYPICAL APPLICATIONS



STRAIGHT



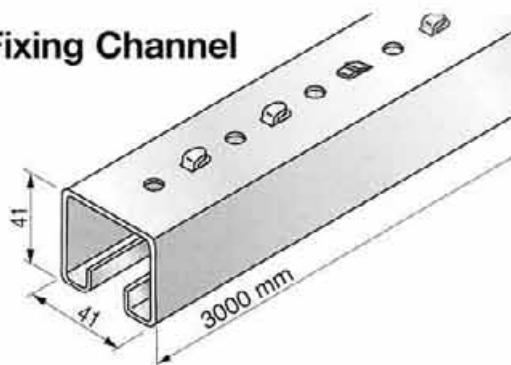
CURVED



PS 210 G Easy-lock Fixing Channel

DIMENSIONS

Length: 3000 mm
Height: 41 mm
Width: 41 mm



PS 500 E

DIMENSIONS

Length: 3000mm
Height: 21mm
Width: 41mm

PS210G : Fixing Channel

SZ	PG	Description	kg / Unit
Code	Code		
400085	548085	PS 210 G Channel	1.89

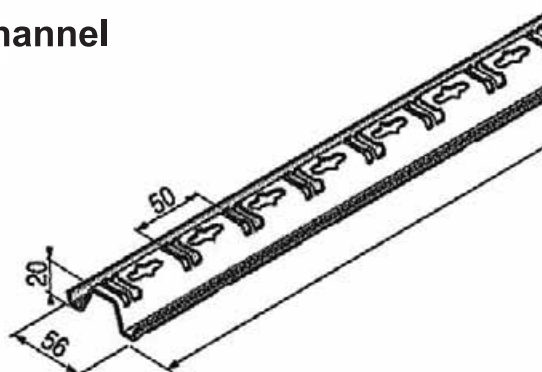
PS500E : Fixing Channel

SZ	PG	Description	kg / Unit
Code	Code		
400086	548086	PS500E Channel	1.32

Easy-lock Fixing Channel

DIMENSIONS

Length: 3000 mm
Height: 20 mm
Width: 56 mm



Fixing Channel

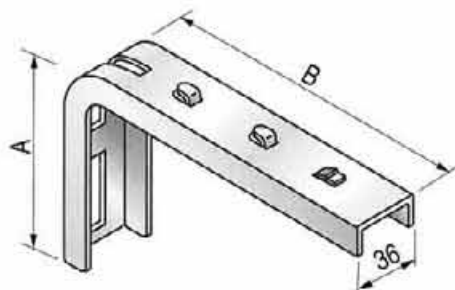
SZ	PG	Description	kg / Unit
Code	Code		
747100	5100U	Universal Channel 20x50x3000mm	1.9

Cut to length sizes available on all channels.

S 50 E Easy-lock Fixing Bracket

DIMENSIONS

A/B: 100 mm x 150 mm
A/B: 100 mm x 200 mm
A/B: 200 mm x 250 mm
Width: 36 mm



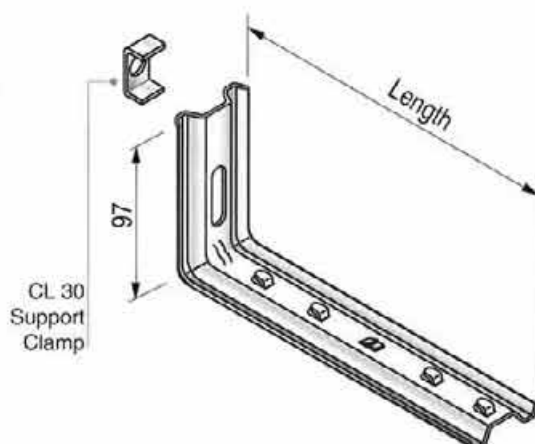
S50E : Fixing Bracket

SZ	PG	Description	kg / Unit
Code	Code		
552046	553046	C100/150E Bracket	0.18
552047	553047	C100/200E Bracket	0.21
552048	553048	C200/250E Bracket	0.38

UFL Easy-lock Fixing Bracket

DIMENSIONS

Length: 100 mm
150 mm
200 mm
250 mm
300 mm
400 mm
500 mm
Height: 97 mm
Width: 36 mm



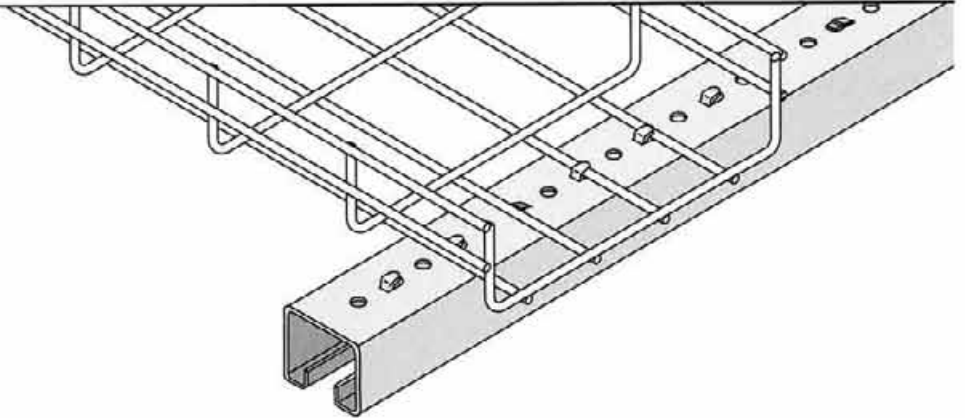
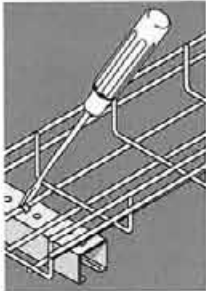
UFL : Fixing Bracket

SZ	PG	Description	kg / Unit
Code	Code		
552123	553123	UFL-100 Bracket	0.20
552124	553124	UFL-150 Bracket	0.35
552050	553050	UFL-200 Bracket	0.38
552125	553125	UFL-250 Bracket	0.47
552051	553051	UFL-300 Bracket	0.53
552052	553052	UFL-400 Bracket	0.65
552126	553126	UFL-500 Bracket	0.80

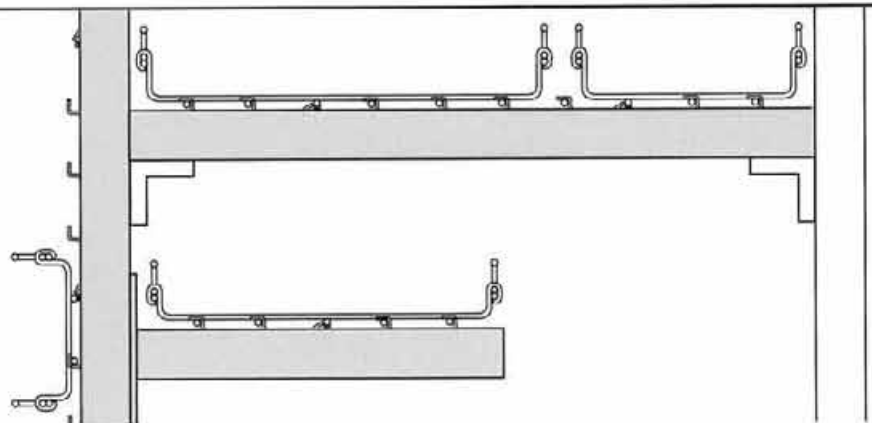
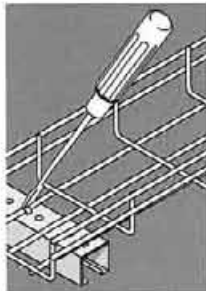
EZ: Electro zinc plated steel to NFA 90 102 - 91 472
SZ: Continuous galvanised sheet metal to NF EN 10 142
PG: Pre galvanised steel wire
HD: Hot dip galvanised steel after fabrication to ISO 1461
DACRO: A highly protective, zinc base, non-electrolytic coating
Stainless Steel Grade 304 L/316 L to EN 10088-2 - on request
Epoxy or polyester coatings - on request

TYPICAL APPLICATIONS

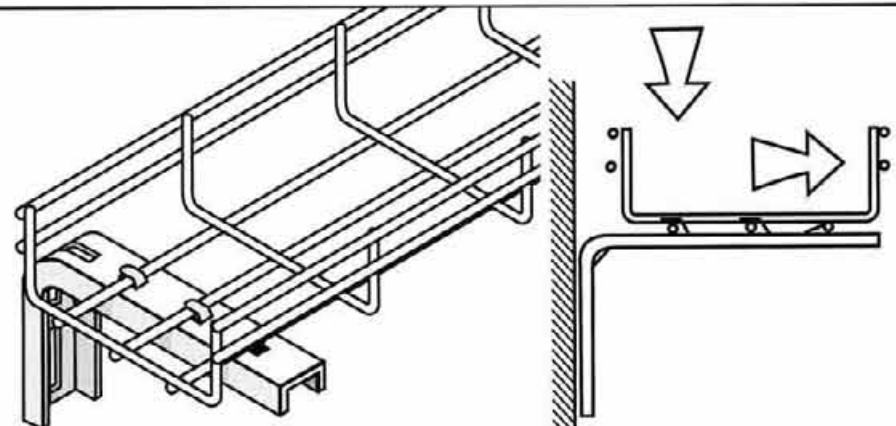
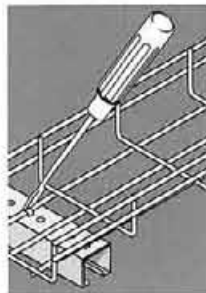
PS210G : Fixing Channel
with Easy-lock mounting system



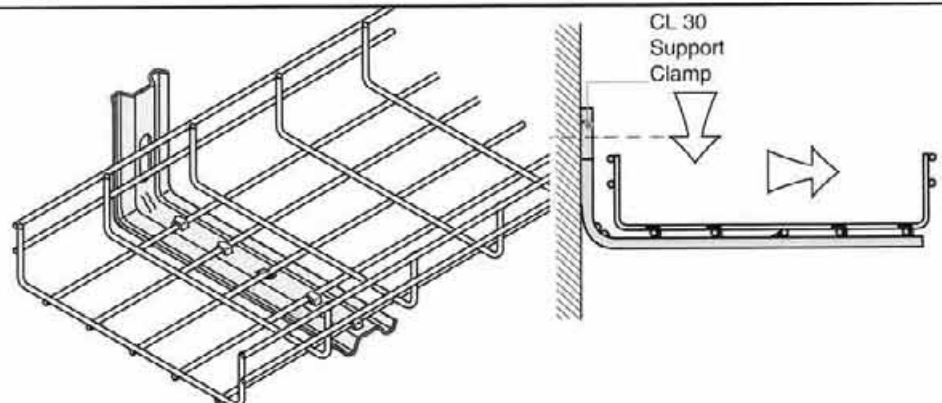
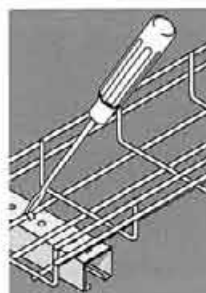
URA : Fixing Channel
with Easy-lock mounting system



S50E : Fixing Bracket
with Easy-lock mounting system



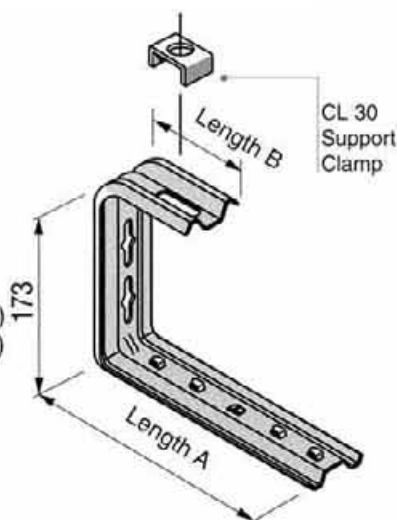
UFL : Fixing Bracket
with Easy-lock mounting system



UFC Easy-lock Fixing Bracket

DIMENSIONS

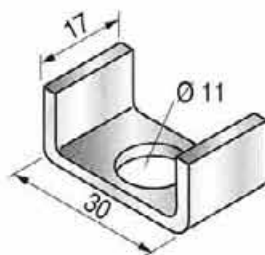
Length A: 100 mm to 400 mm
 Length B: 100 mm (100 - 200 mm)
 200 mm (250 - 400 mm)
 Height: 173 mm
 Width: 41 mm



CL 30 Clamp

DIMENSIONS

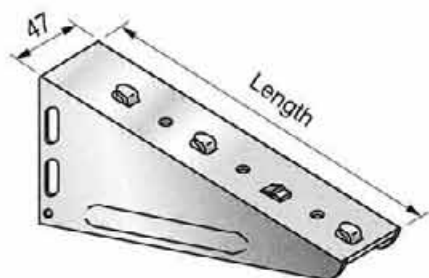
Length: 30 mm
 Height: 17 mm



S 150 E Easy-lock Fixing Bracket

DIMENSIONS

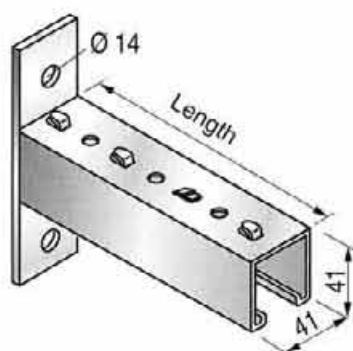
Length: 150 mm
 225 mm
 350 mm
 475 mm
 555 mm
 Width: 47 mm



UF 51 Easy-lock Fixing Bracket

DIMENSIONS

Length: 150 mm
 200 mm
 300 mm
 400 mm
 500 mm
 600 mm
 Channel: 41 mm x 41 mm



UFC : Fixing Bracket

SZ Code	PG Code	Description	kg / Unit
552053	553053	UFC-100 Bracket	0.47
552054	553054	UFC-150 Bracket	0.55
552055	553055	UFC-200 Bracket	0.58
552127	553127	UFC-250 Bracket	0.67
552056	553051	UFC-300 Bracket	0.88
552057	553057	UFC-400 Bracket	0.92

CL30 : Fixing Clamp

SZ Code	PG Code	Description	kg / Unit
552113	553113	CL30	0.02

S150E : Fixing Bracket

SZ Code	PG Code	Description	kg / Unit
552060	553060	S150E Bracket	0.13
552061	553061	S225E Bracket	0.25
552062	553062	S350E Bracket	0.43
552063	553063	S475E Bracket	0.90
552064	553064	S555E Bracket	1.12

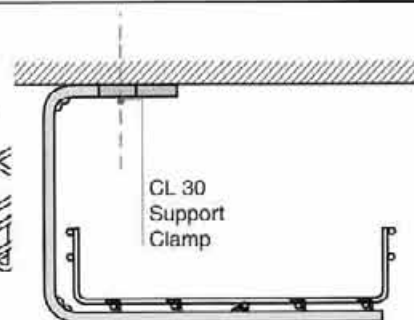
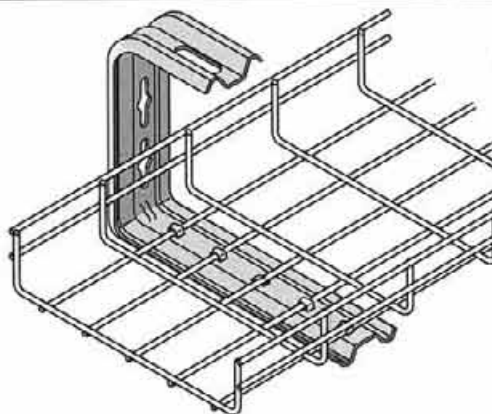
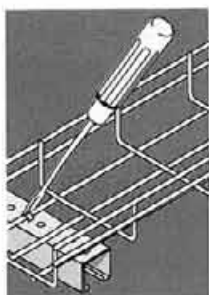
UF51 : Fixing Bracket

PG Code	Description	kg / Unit
553074	UF51-100 Bracket	0.63
553075	UF51-200 Bracket	0.75
553076	UF51-300 Bracket	0.90
553077	UF51-400 Bracket	1.10
553078	UF51-500 Bracket	1.30
553079	UF51-600 Bracket	1.50

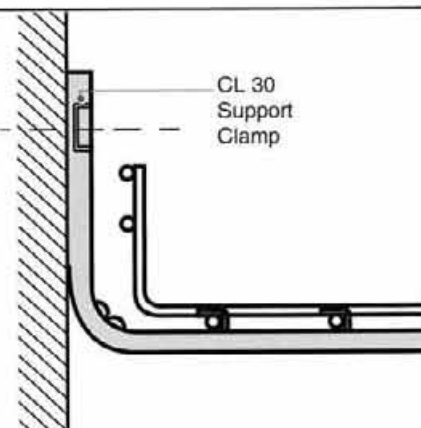
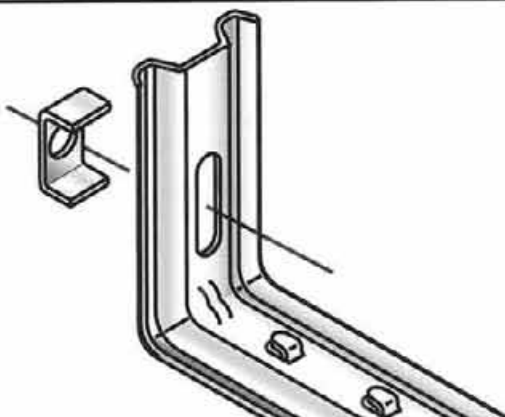
EZ: Electro zinc plated steel to NFA 90 102 - 91 472
 SZ: Continuous galvanised sheet metal to NF EN 10 142
 PG: Pre galvanised steel wire
 HD: Hot dip galvanised steel after fabrication to ISO 1461
 DACRO: A highly protective, zinc base, non-electrolytic coating
 Stainless Steel Grade 304 L/316 L to EN 10088-2 - on request
 Epoxy or polyester coatings - on request

TYPICAL APPLICATIONS

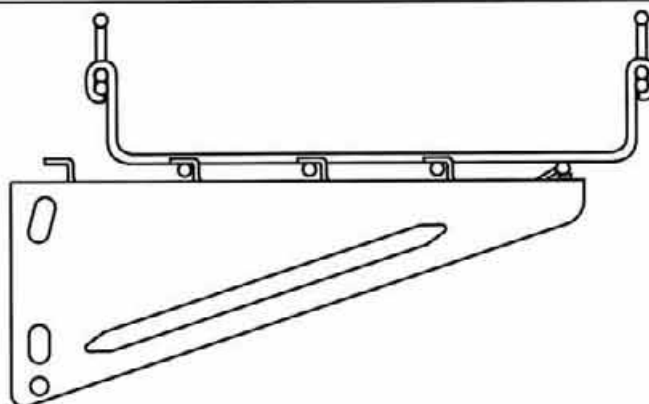
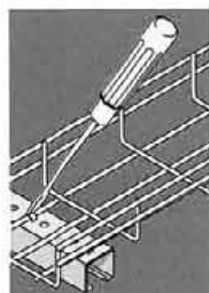
UFC : Fixing Bracket with Easy-lock mounting system



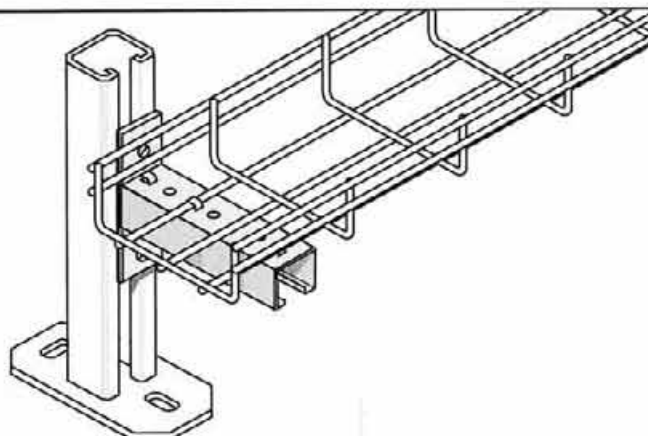
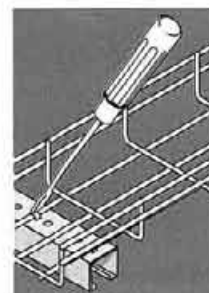
CL30 : Fixing Clamp to be used when installing UFL and UFC Easy-lock Fixing Brackets



S150E : Fixing Bracket with Easy-lock mounting system



UF51 : Fixing Bracket with Easy-lock mounting system



PRODUCT LIST

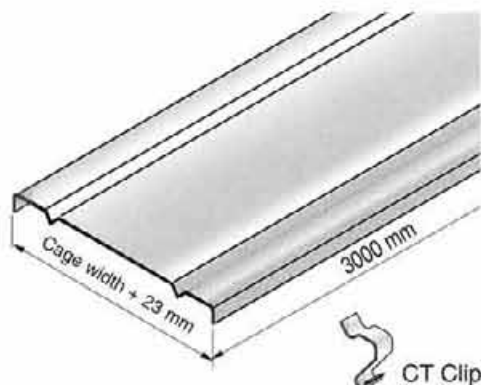
ACCESSORIES

Covers and CT Clip

DIMENSIONS

Length : 3000 mm

Width: Cage width + 23 mm



Cover

SZ Code	PG Code	Description	kg / Unit
547050	548050	W50 Cover	1.29
547051	548051	W100 Cover	1.98
547052	548052	W150 Cover	2.90
547053	548053	W200 Cover	3.60
547054	548054	W300 Cover	6.30
547055	548055	W400 Cover	10.70
547055	548055	W500 Cover	12.75

CT Clip : Cover Fixing Clip

SZ Code	Description	kg / Unit
554041	CT Cover Clip	0.006

CT Clip-on Divider

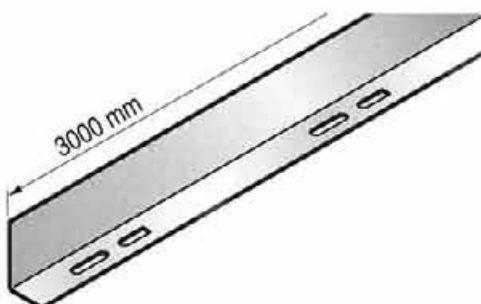
SZ Code	PG Code	Description	kg / Unit
400068	548068	CT Divider	1.20

Easy-lock Divider

DIMENSIONS

Length: 3000 mm

Height: 54 mm

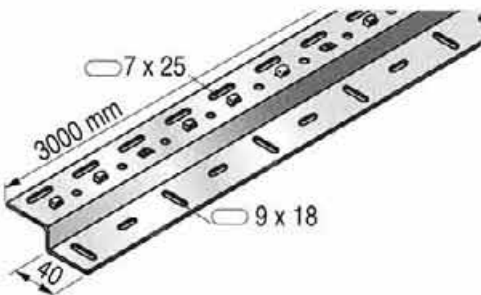


ZUF Easy-lock Fixing Channel

DIMENSIONS

Length: 3000 mm

Width: 80 mm



ZUF : Zed Fixing Channel

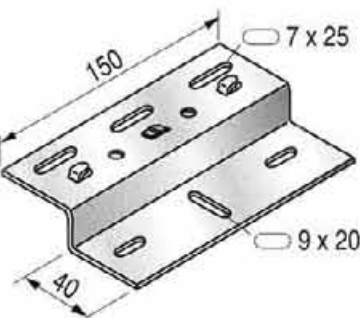
SZ Code	PG Code	Description	kg / Unit
547048	548048	ZUF Channel	3.90

ZUF 150 Easy-lock Fixing Bracket

DIMENSIONS

Length: 150 mm

Width: 80 mm



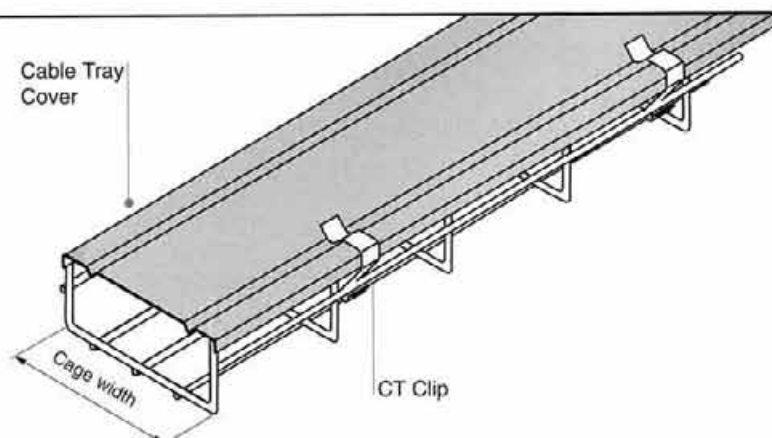
ZUF150 : Fixing Bracket

SZ Code	PG Code	Description	kg / Unit
552040	553040	ZUF150 Bracket	0.18

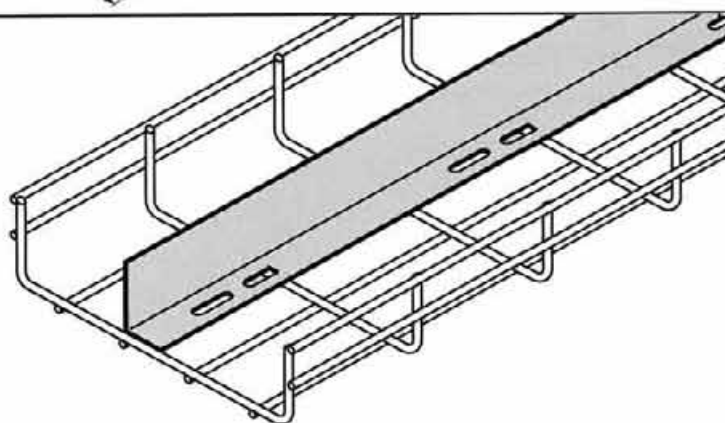
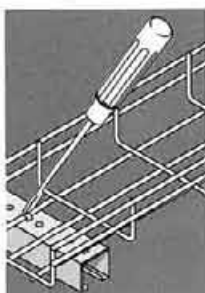
EZ: Electro zinc plated steel to NFA 90 102 - 91 472
 SZ: Continuous galvanised sheet metal to NF EN 10 142
 PG: Pre galvanised steel wire
 HD: Hot dip galvanised steel after fabrication to ISO 1461
 DACRO: A highly protective, zinc base, non-electrolytic coating
 Stainless Steel Grade 304 L/316 L to EN 10088-2 - on request
 Epoxy or polyester coatings - on request

TYPICAL APPLICATIONS

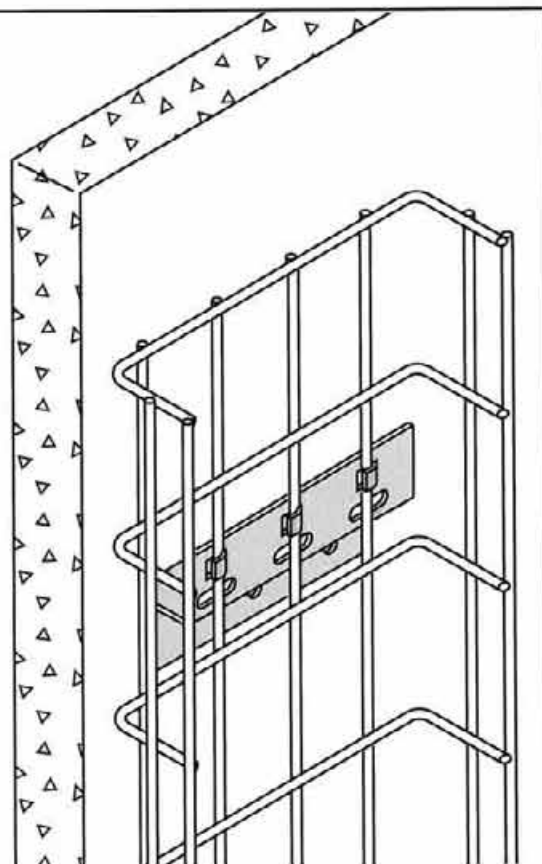
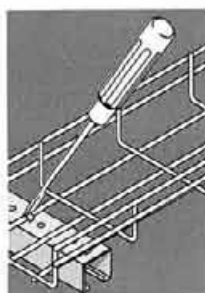
Cover and Fixing Clip



CT Clip-on Divider with Easy-lock mounting system



ZUF : Zed Fixing Channel and Zuf150 Bracket with Easy-lock mounting system



PRODUCT LIST

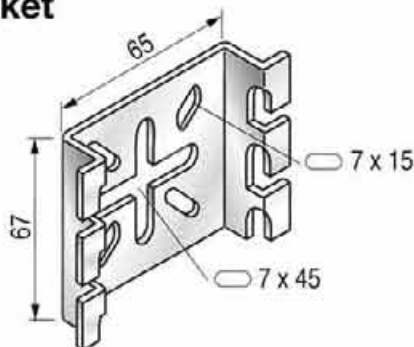
ACCESSORIES

UFU Universal Bracket

DIMENSIONS

Depth : 67 mm

Width: 65 mm



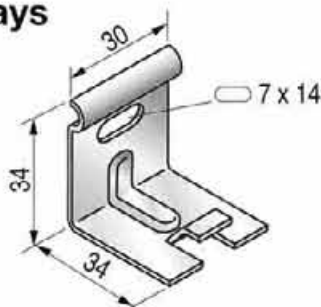
UFU : Universal Fixing Bracket

SZ Code	PG Code	Description	kg / Unit
552037	553037	UFU Bracket	0.09

PUF Bracket Wall/Fixing for CT100 Cable Trays

DIMENSIONS

34 mm x 30 mm x 34 mm



PUF Bracket for Cable Trays

SZ Code	PG Code	Description	kg / Unit
552036	553036	PUF Bracket	0.03

Easy Lock Cable Exit



Easy Lock Cable Exit

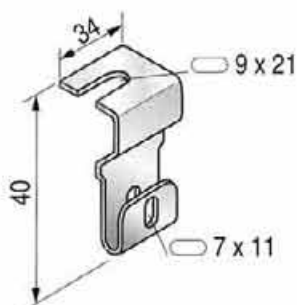
EZ Code	Description	kg / Unit
552091	Cable Exit	0.13

UFA Hanging Fastener

DIMENSIONS

Depth: 40 mm

Width: 34 mm



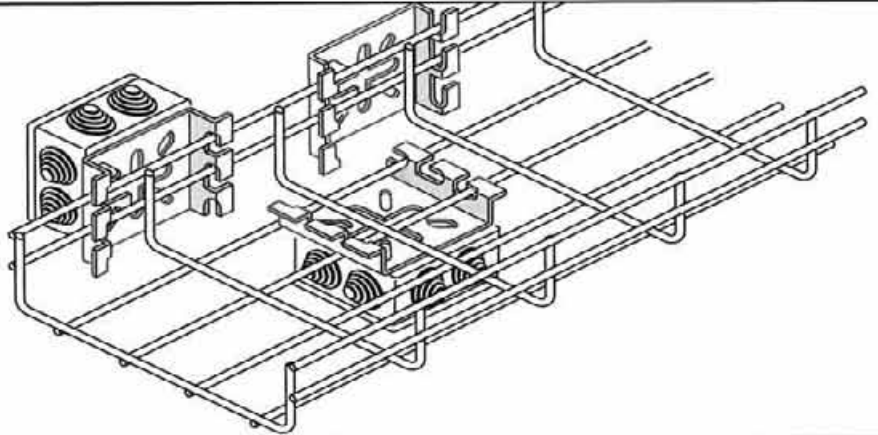
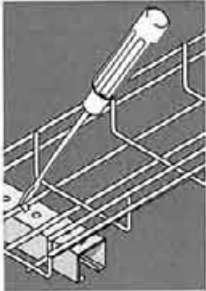
UFA : Hanging Fastener

SZ Code	PG Code	Description	kg/Unit
552033	553033	UFA Hanger	0.08

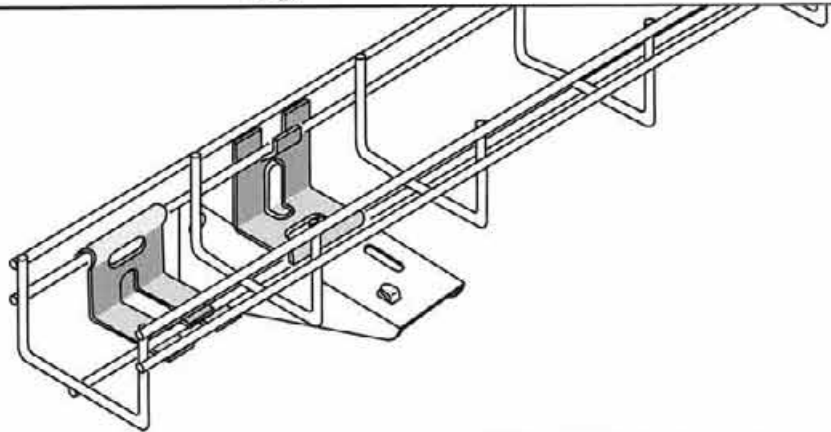
EZ: Electro zinc plated steel to NFA 90 102 - 91 472
 SZ: Continuous galvanised sheet metal to NF EN 10 142
 PG: Pre galvanised steel wire
 HD: Hot dip galvanised steel after fabrication to ISO 1461
 DACRO: A highly protective, zinc base, non-electrolytic coating
 Stainless Steel Grade 304 L/316 L to EN 10088-2 - on request
 Epoxy or polyester coatings - on request

TYPICAL APPLICATIONS

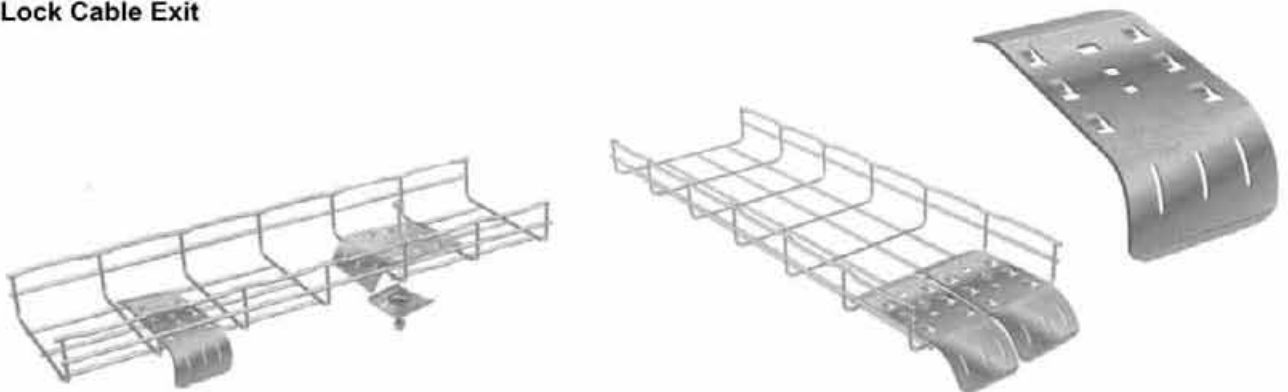
UFU : Universal Fixing Bracket
with Easy-lock mounting system



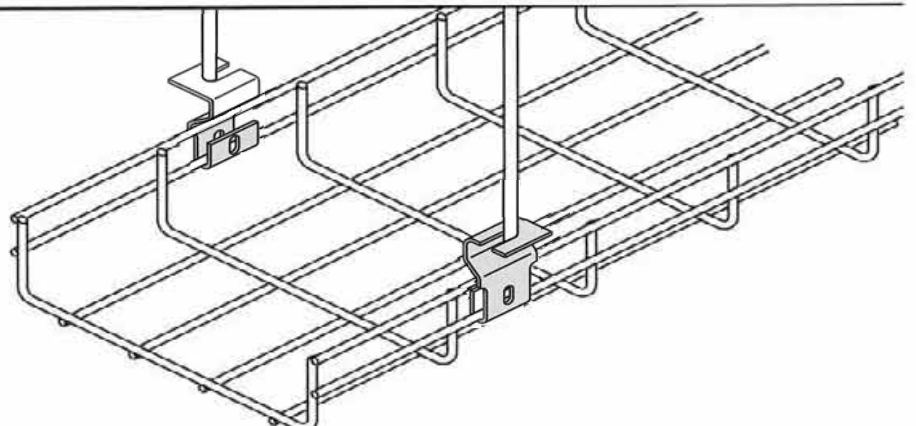
PUF Bracket for CT50 Cable Trays



Easy Lock Cable Exit



UFA : Hanging Fastener



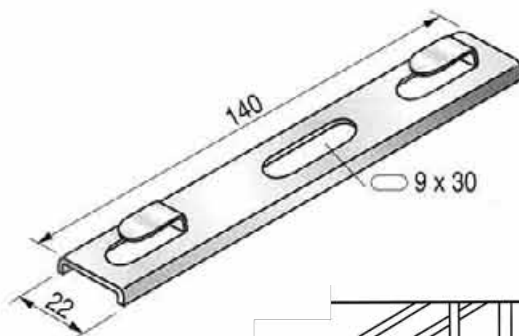
PRODUCT LIST

ACCESSORIES

SUR Rapid Fit Hanging Fastener

DIMENSIONS

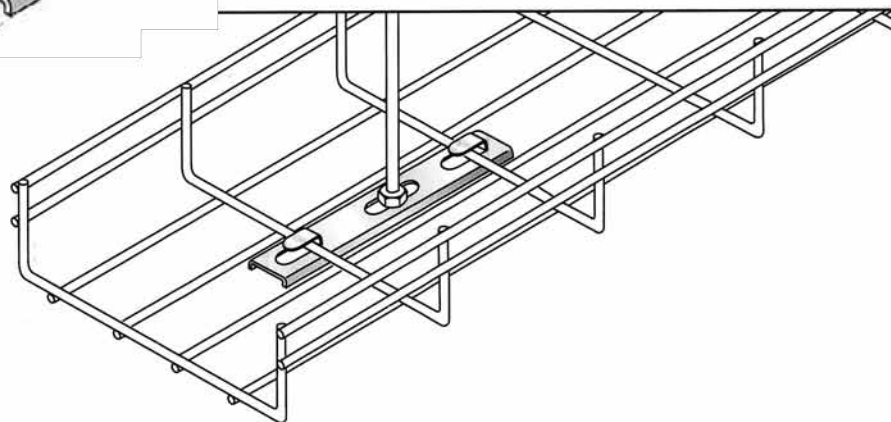
Length: 140 mm
Width: 22 mm



SUR : Rapid Fit Hanger Fastener

SZ Code	PG Code	Description	kg / Unit
552032	553032	SUR Bracket	0.04

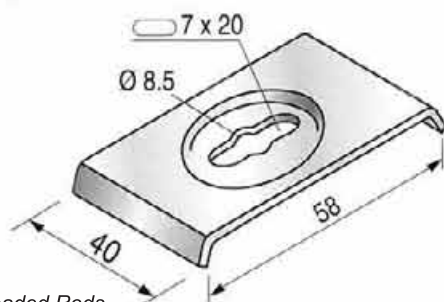
The unique multi purpose 'Unitill®' Clips are also used as hanger fasteners



U 40 Hanging Clamp

DIMENSIONS

Length: 58 mm
Width: 40 mm

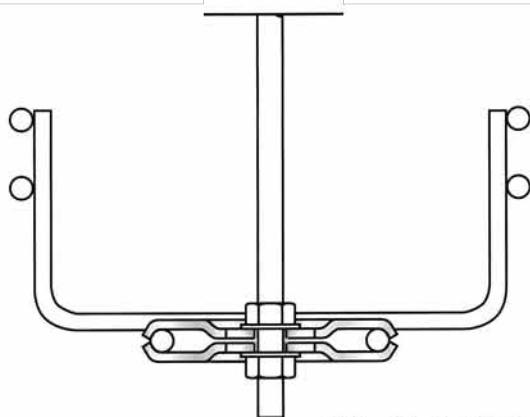


Available to suite 8 and 10mm Threaded Rods

U 40 : Hanging Clamp

SZ Code	PG Code	Description	kg / Unit
552032	553032	U40 Clamp 9mm	0.08
552031	553031	U40 Clamp 11mm	0.08

EZ: Electro zinc plated steel to NFA 90 102 - 91 472
SZ: Continuous galvanised sheet metal to NF EN 10 142
PG: Pre galvanised steel wire
HD: Hot dip galvanised steel after fabrication to ISO 1461
DACRO: A highly protective, zinc base, non-electrolytic coating
Stainless Steel Grade 304 L/316 L to EN 10088-2 - on request
Epoxy or polyester coatings - on request

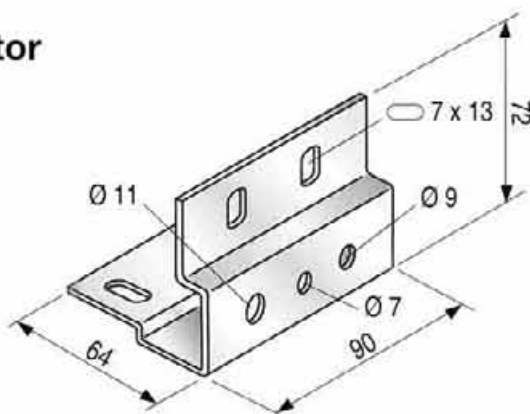


ACCESSORIES

STU Earth Connector

DIMENSIONS

72 mm x 90 mm x 64 mm



STU : Earth Connector

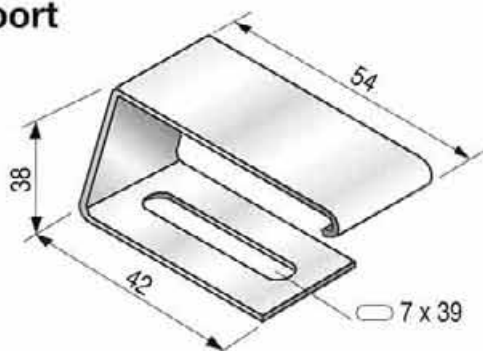
SZ Code	PG Code	Description	kg / Unit
552039	553039	STU Earth	0.23

The unique multi purpose 'Unifit'® Clips are also used as earth connectors

CLU Lighting Support

DIMENSIONS

54 mm x 38 mm x 42 mm



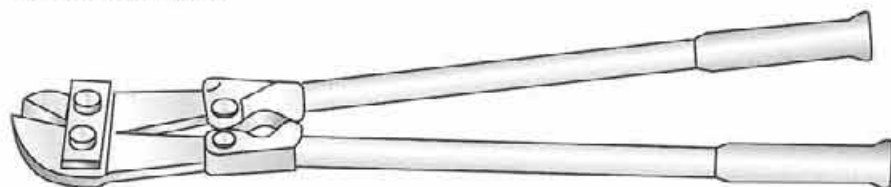
CLU : Lighting Support

SZ Code	PG Code	Description	kg / Unit
552034	553034	CLU Light Support	0.08

The unique multi purpose 'Unifit'® Clips are also used as lighting supports

Bolt Cutter

with 'offset cut' jaws



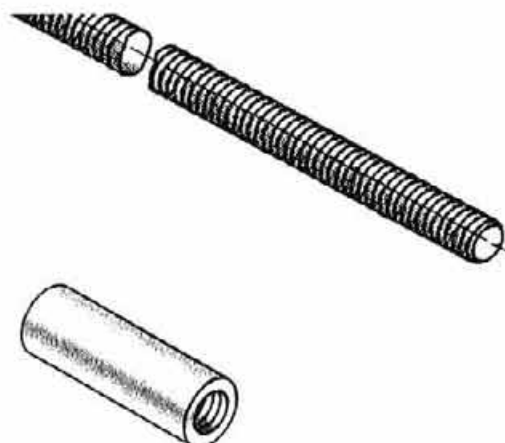
Bolt Cutter

EZ Code	Description	kg / Unit
552080	Bolt Cutter	2.75

Threaded Rod and Coupler

DIMENSIONS

Length: 1000 mm



Threaded Rod

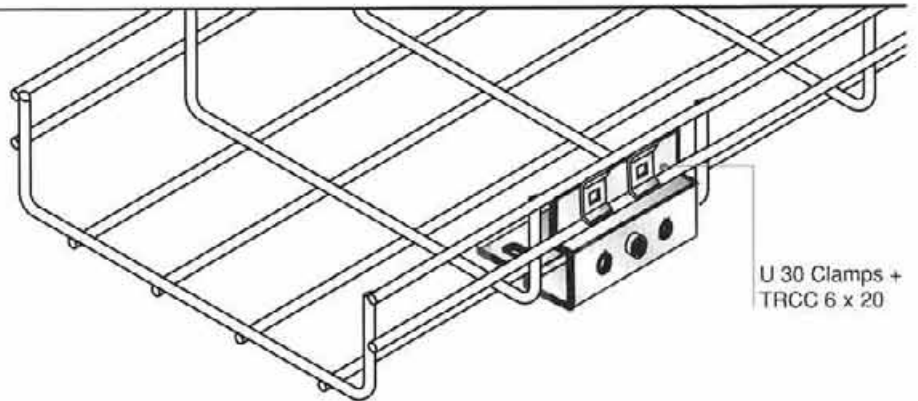
SZ Code	Description	Length	kg / Unit
644011	6 mm Rod	1000 mm	0.192
644003	8 mm Rod	1000 mm	0.336
644018	10 mm Rod	1000 mm	0.500

Rod Coupler

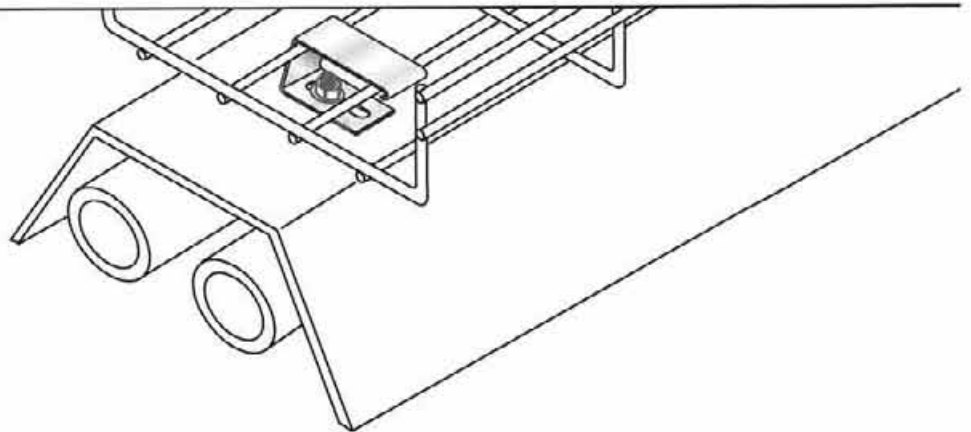
SZ Code	Description	kg / Unit
644012	To suit 6 mm Rod	0.004
644004	To suit 8 mm Rod	0.008
644022	To suit 10 mm Rod	0.012

PRODUCT LIST

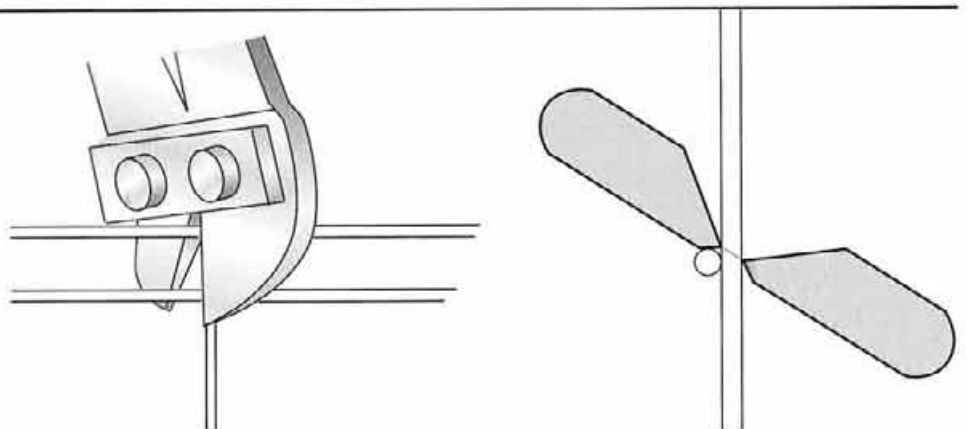
STU : Earth Connector



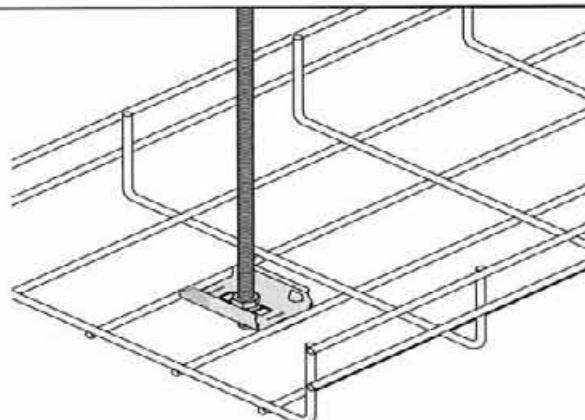
CLU : Lighting Support



Bolt Cutter
with 'offset cut' jaws



Threaded Rod



Specification

SECTION 1

Manufacturer

- 1.1.0 - Manufacturer: Wire cable trays shall be Cable Cage Systems manufactured at Seven Hills, NSW of the size and finish as shown on drawings and to comply with the specification stated below.

SECTION 2

Cable Tray Selection and Components

- 2.1.0 - General Description: The Cable Cage System wire trays are to be constructed of welded wire mesh, permitting ventilation of cables and maximum heat dissipation.

2.2.0 - Materials

- 2.2.1 - Carbon Steel: Wire trays to be manufactured from high strength steel wire. Wire to be welded, formed and finished as required.
- 2.2.2 - Stainless Steel: Wire trays to be manufactured from AISI 304 L or 316 L stainless steel for maximum corrosion resistance.
- 2.2.3 - Wire mesh openings to be 100 mm x 50 mm.

2.3.0 - Finishes

- 2.3.1 - Electro Zinc Plated Galvanising: Electrolytically deposited zinc coating to welded and formed cable tray surfaces after fabrication.
- 2.3.2 - Hot Dip Galvanised: Following surface treatment the hot dip galvanising to be applied after fabrication of the welded wire mesh trays.
- 2.3.3 - Pre Galvanised: The wire to be pre galvanised prior to fabrication of the cable tray.
- 2.3.4 - Stainless Steel: AISI 304 L and 316 L stainless steel requiring no additional treatment.
- 2.3.5 - Epoxy or Polyester Coatings: Powder coat on zinc galvanised steel in colour(s) specified.

2.4.0 - Installation Requirements

- 2.4.1 - Straight sections to be provided in 3000 mm sections. 'Unifil'® clip-on fittings may be supplied/fitted to ends if required.

- 2.4.2 - Cable Cage Systems wire trays to be 50 mm (100 mm/ 150 mm/ 200 mm/ 300 mm/ 400 mm/ 500 mm) wide.

- 2.4.3 - Cable Cage Systems wire trays to be 54 mm deep.

- 2.4.4 - Fittings: All bends, intersections, crosses, reduces, rises, etc are to be field fabricated utilising straight sections. Hardware and instructions provided by the manufacturer.

- 2.4.5 - Supports: Manufacturer's specified supports are to be used for installation.

SECTION 3

Loadings

- 3.1.0 - Wire cable trays to be installed at manufacturer's suggested support span of 2500 mm maximum, limited to L/300 in the middle of the span. (*Refer Permissible and Maximum Loads - page 5*)

NOTES