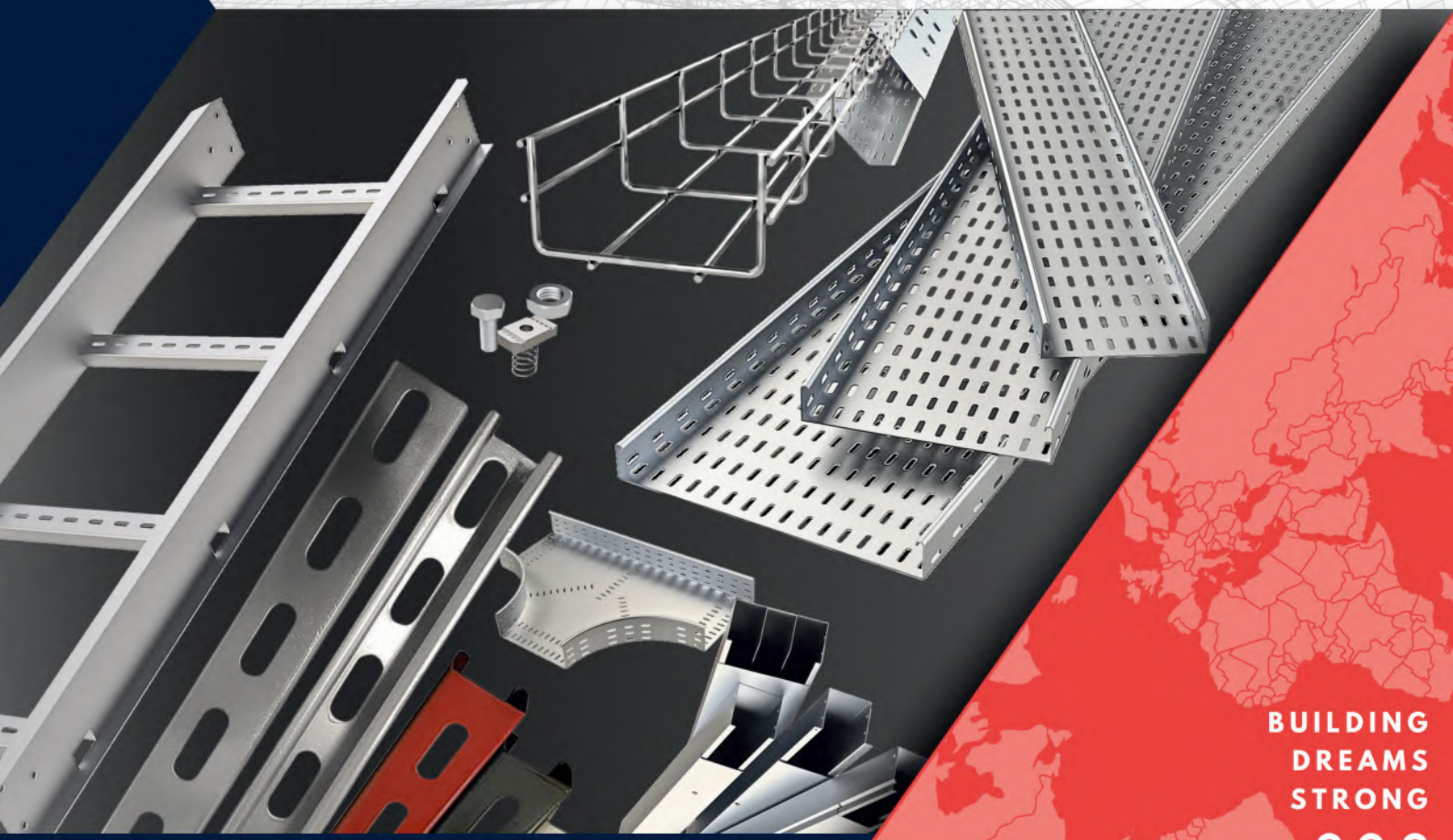
United Triangle Company

PRODUCT CATALOGUE

CABLE MANAGEMENT SYSTEMS



BUILDING
DREAMS
STRONG

www.united-triangle.com

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CABLE MANAGEMENT SYSTEMS

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United Triangle Company

Riyadh, Saudi Arabia

MESSAGE FROM CEO

Welcome to UTC, Saudi Arabia, where trading and contracting meets innovation and excellence. As a industrial company, we take pride in delivering top-notch construction solutions with a relentless commitment to quality and client satisfaction

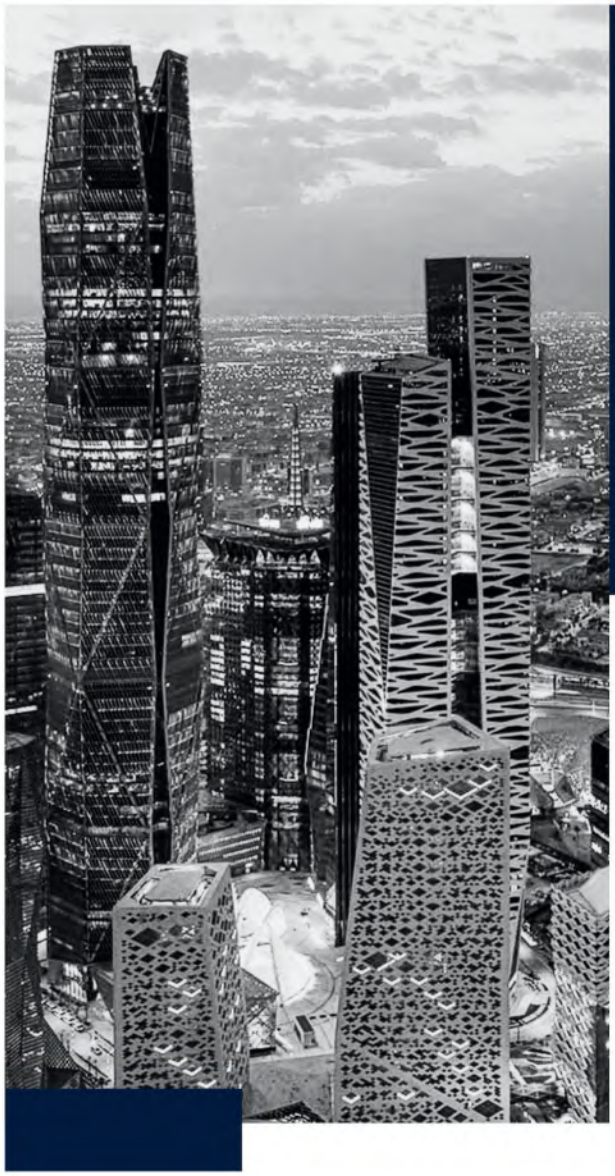
CRAFTING SOLUTIONS, DELIVERING SUCCESS

As the CEO of United Triangle Company (UTC) I am proud to present our comprehensive range of products and services tailored to meet your electrical and infrastructure needs.

From cables & wires to lighting solutions, cable management systems, steel structures, solar mounting structure, and more, UTC offers a diverse portfolio of high-quality items designed to enhance efficiency and reliability in your projects.

Our commitment to excellence extends beyond the products we offer; it encompasses the strong relationships we build with our customers. At UTC, we prioritize customer satisfaction above all else, striving to understand your unique requirements and deliver tailored solutions that exceed expectations. Our dedicated team is here to support you every step of the way, ensuring a seamless experience and lasting success for your projects.

Chief Executive Officer
United Triangle Company





WHERE VISION MEETS ACHIEVEMENTS

Empowering futures through expert trading and seamless construction—where excellence meets innovation.

OUR VISION

Our vision for the UTC factory extends beyond conventional manufacturing paradigms. We aspire to be at the forefront of engineering innovation, leveraging state-of-the-art fabrication facilities and cutting-edge machinery to produce a diverse range of engineering products. Our commitment to technological advancement drives us to continuously invest in new machinery, enabling us to push the boundaries of what is possible and stay ahead of industry trends.

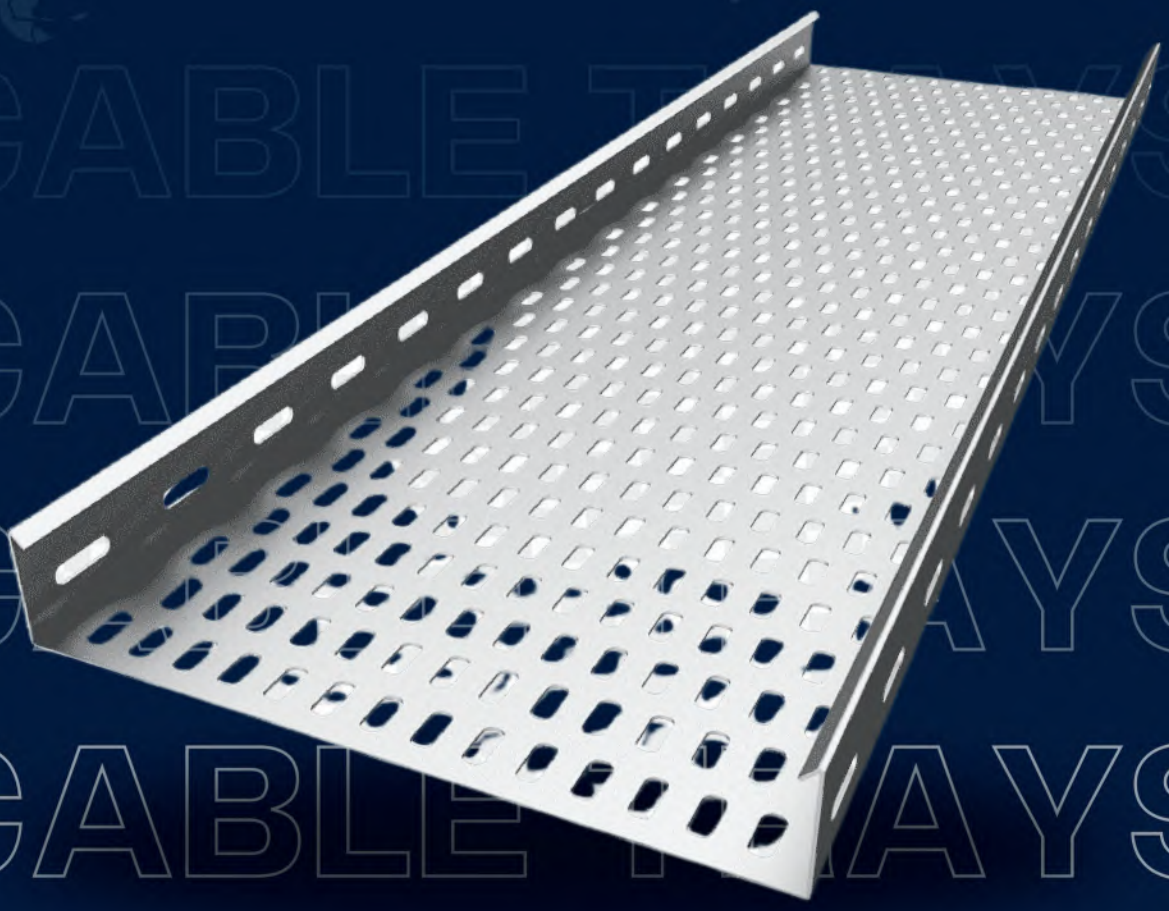
Through our advanced engineering capabilities and fabrication expertise, we aim to deliver products of unparalleled quality and precision. Our dedication to excellence is reflected in every aspect of our operations, from design conception to final assembly. By integrating the latest advancements in automation and robotics, we streamline our production processes, ensuring optimal efficiency while maintaining the highest standards of craftsmanship.

At the heart of our vision lies a passion for innovation and a relentless pursuit of perfection. We embrace challenges as opportunities for growth and welcome collaboration with partners who share our commitment to excellence.

Together, we strive to redefine the possibilities of engineering, creating solutions that not only meet the needs of today but also anticipate the demands of tomorrow.

In realizing our vision, we uphold the values of integrity, sustainability, and social responsibility. We recognize the importance of environmental stewardship and are dedicated to minimizing our ecological footprint through sustainable practices and resource-efficient manufacturing processes.

As we look to the future, our vision for the UTC factory is one of continued growth, innovation, and leadership in the global engineering landscape. We are driven by a relentless pursuit of excellence and a commitment to pushing the boundaries of what is possible. With our state-of-the-art facilities, advanced machinery, and unwavering dedication to quality, we are poised to shape the future of engineering and deliver solutions that inspire progress and transform industries.



CABLE TRAYS

UNITED TRIANGLE COMPANY

CABLE TRAY SYSTEM



Cable trays are the most common solution for supporting and routing cables at an installation, cable tray is a fabricated structure of one piece, highly perforated on sides and bottom for maximum ventilation of cables.

Cable trays are manufactured in a variety sizes and standards to cover the wide range of applications.

UTS produces Cable Tray with inside return flange and outside return flange to provide strength to the components and better load bearing capacity with standard lengths of 3.0m and 2.44m



Tray Inside Return Flange **RFI**



Tray Outside Return Flange **RFO**

* Items shown as: **PART NAME** **PART NO.**

CABLE TRAY TYPE

Cable Tray Straight Length CT (RFO or RFI)	Side Height H	Width W	Thickness THK
Medium Duty - MD	25-30	50 - 150	1.0
		200 - 300	1.2
		350 - 600	1.5
Heavy Duty - HD	50 -75	100 - 300	1.5
		350 - 900	2.0
Extra Heavy Duty - XHD	100	100 - 300	1.5
		350 - 900	2.0

All dimensions are in millimeters

STANDARD FINISHES

- Hot Dip Galvanized **HDG**
- Pre-Galvanized / Mill Galvanized **PG**
- Powder Coating **PC**
- Epoxy Coating **EC**
- PVC Coating (Polyvinyl Chloride) **PVC**
- Stainless Steel **SS**
- Aluminium **AL**
- Aluzinc **AZ**

HDG : as per standards ASTM 123 & BS EN 1461
PG: as per standard BS EN 10142 & 10143 formerly known as BS 2989

ORDER PATTERN:

Cable Tray Straight lengths / Width / Side Height / Thickness / Finish : **CTRFO/600/50/2.0/HDG**
(CTRFO/W/H/THK/FINISH)

CABLE TRAY **FITTINGS**

UTC's Cable Tray Accessories are crafted to accommodate both standard and intricate installations within the cable tray system. Should you require special sizes, gauges, or flanges, we encourage you to reach out to our sales team or factory for personalized assistance. Additionally, for unique design requirements or finishes, our dedicated sales team and factory are available for consultation to ensure your specific needs are met.

When selecting accessories based on duty application, please refer to the relevant page for guidance on width, side height, and thickness. Our range includes options such as RTI (Cable Tray with Inside Return Flange) and RTO (Cable Tray with Outside Return Flange), designed to cater to various installation demands.

Width, Side Height & thickness other than shown are made upon customer request and Specifications.

ORDER PATTERN:

Heavy duty Tray type / Fitting Part No.* / Width / Side Height / Thickness / Angle / Bending Radius / Fitting type/ Finish

For example: **HD-CTRFO / EH90/ 300 / 100 / 1.5 / 90 / 300 / C / HDG**

STANDARD FINISHES

HDG -Hot dip Galvanized
PG- Pre-galvanized
PC -Powder Coating
EP -Epoxy Painting
SS -Stainless steel
AL -Aluminium finish to required grades
AZ -Aluzinc

* Items shown as: **PART NAME** **PART NO.**

CORNER TYPE FITTINGS C



ELBOW HORIZONTAL **EH90**

Available in 60, 45 & 30 degrees



TEE HORIZONTAL **TH**



CROSS HORIZONTAL **CH**



INTERNAL RISER 90 DEGREE **IR90**

Available in 60, 45 & 30 degrees



EXTERNAL RISER 90 DEGREE **ER90**

Available in 60, 45 & 30 degrees



ADJUSTABLE RISER **AR**



REDUCER LEFT **RL**



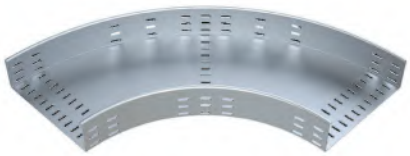
REDUCER STRAIGHT **RS**



REDUCER RIGHT **RR**

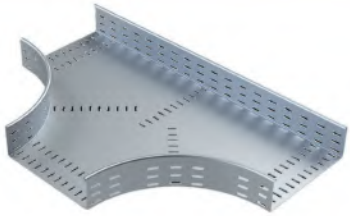
CABLE TRAY **FITTINGS**

ROUND TYPE FITTINGS R

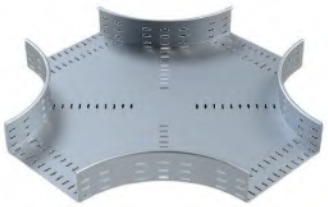


ELBOW HORIZONTAL 90 DEGREE EH90

Available in 60, 45 & 30 degrees



TEE HORIZONTAL TH



CROSS HORIZONTAL CH



INTERNAL RISER 90 DEGREE IR90

Available in 60, 45 & 30 degrees



EXTERNAL RISER 90 DEGREE ER90

Available in 60, 45 & 30 degrees

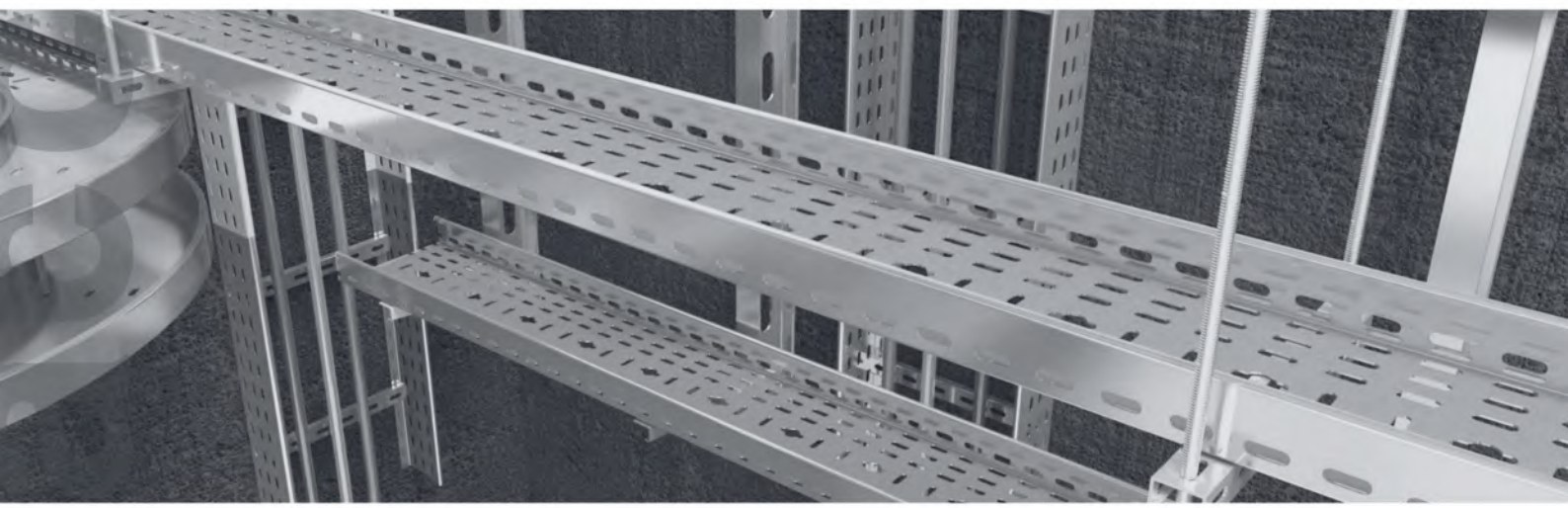
ORDER PATTERN:

Heavy duty Tray type / Fitting Part No.* / Width / Side Height / Thickness / Angle / Bending Radius / Fitting R or C type / Finish

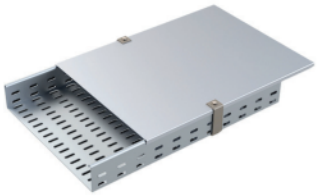
For example: **HD-CTRFO / EH90 / 300 / 100 / 1.5 / 90 / 300 / R / HDG**

STANDARD FINISHES

HDG -Hot dip Galvanized
PG- Pre-galvanized
PC -Powder Coating
EP -Epoxy Painting
SS -Stainless steel
AL -Aluminium finish to required grades
AZ -Aluzinc finish



CABLE TRAY COVERS



CLOSED COVER **CC**



VENTILATED COVER **VC**



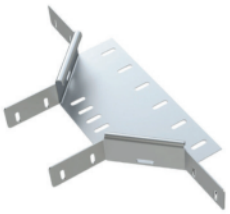
LOUVERED COVER **LC**



SNAP ON COVER **SOC**

* Items shown as: PART NAME **PART NO.**

CABLE TRAY ACCESSORIES



BRANCH TEE **BT**



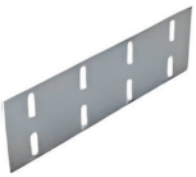
TRAY DROPOUT **TDO**



BOX CONNECTOR **BXC**



BARRIER STRAIGHT **BS**



STRAIGHT CONNECTOR **SC**



ANGLE CONNECTOR **AC**



EXPANSION CONNECTOR **EC**



ADJUSTABLE VERTICAL CONNECTOR **AVC**



REDUCING CONNECTOR **RC**



BLIND END **BE**



FISH PLATE **FP**



EARTHING JUMPER **EJT**



TECHNICAL DATA

SAFE WORKING LOADS

United Triangle Company (UTC) provides loading tables to guide you on the maximum safe working loads when utilizing our Cable Ladders & Trays, manufactured in accordance with industry standard BS EN 61537:2001.

These charts are the result of rigorous load tests that simulate real-world conditions, ensuring reliability and safety in your installations. When utilizing this information, it is crucial for installers to consider the system design considerations outlined in our presentation, ensuring optimal performance and adherence to safety standards. We emphasize that loading is assumed to be uniformly distributed, and any deviations such as point loads or installations with fewer than four spans should prompt consultation with our technical department.

Our commitment to quality extends to ensuring that installers are satisfied with the strength of supports and tightness of connections, mitigating any potential risks. While we provide this loading information in good faith based on tests conducted with UTC products, we advise caution and consultation to ensure safe and effective installations.

Medium Duty Inside Return Flange tray

150 mm	300 mm	600 mm	Span Between Supports (m)
Uniformly Distributed load (Kgs/m)	Uniformly Distributed load (Kgs/m)	Uniformly Distributed load (Kgs/m)	
92	113	142	1
38	53	64	1.5
25	32	32	2

Medium Duty Outside Return Flange tray

150 mm	300 mm	600 mm	Span Between Supports (m)
Uniformly Distributed load (Kgs/m)	Uniformly Distributed load (Kgs/m)	Uniformly Distributed load (Kgs/m)	
78	98	124	1
34	48	58	1.5
23	26	33	2

Heavy Duty Inside Return Flange tray

150 mm	300 mm	600 mm	Span Between Supports (m)
Uniformly Distributed load (Kgs/m)	Uniformly Distributed load (Kgs/m)	Uniformly Distributed load (Kgs/m)	
99	134	156	1
61	73	117	1.5
29	52	97	2

Heavy Duty Outside Return Flange tray

150 mm	300 mm	600 mm	Span Between Supports (m)
Uniformly Distributed load (Kgs/m)	Uniformly Distributed load (Kgs/m)	Uniformly Distributed load (Kgs/m)	
89	113	143	1
56	71	104	1.5
39	48	89	2

Extra Heavy Duty Inside Return Flange tray

150 mm	300 mm	600 mm	Span Between Supports (m)
Uniformly Distributed load (Kgs/m)	Uniformly Distributed load (Kgs/m)	Uniformly Distributed load (Kgs/m)	
73	98	124	2
46	58	79	2.5
31	44	54	3

Extra Heavy Duty Outside Return Flange tray

150 mm	300 mm	600 mm	Span Between Supports (m)
Uniformly Distributed load (Kgs/m)	Uniformly Distributed load (Kgs/m)	Uniformly Distributed load (Kgs/m)	
64	89	108	2
39	54	71	2.5
24	39	49	3

HOLD DOWN AND GUIDE CLAMP LOCATIONS

We emphasize the importance of bonding expansion joints for electrical continuity and recommend support placement within 600mm on each side of expansion splice plates to optimize system integrity. To ensure proper functionality of expansion splice plates, precise gap setting during installation is essential.

THERMAL EXPANSION AND CONTRACTION

Our recommended procedure, outlined in Figure 1, involves plotting the highest and lowest expected temperatures, drawing a line between these points, and determining the gap setting based on the temperature at the time of installation. By adhering to these guidelines, UTC ensures the reliability and longevity of your cable support and management systems.

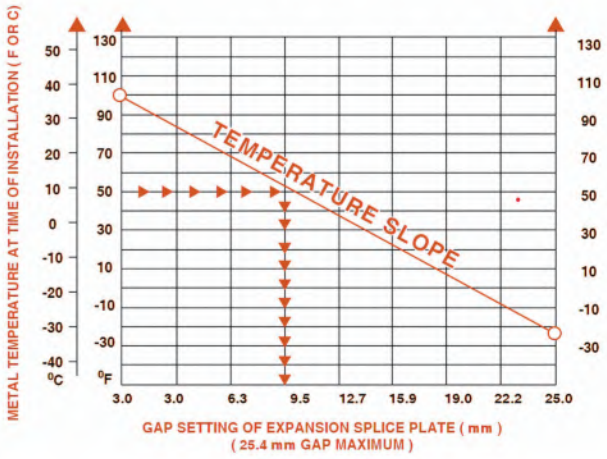


Figure 1

Careful consideration of thermal expansion and contraction is paramount during the installation of cable support and management systems.

Our approach involves anchoring the cable ladder, tray, or trunking at the support nearest to its midpoint between expansion splice plates, while securing it with expansion guides at all other support locations. This design allows for longitudinal movement in both directions from the fixed point, accommodating temperature differentials experienced throughout the year.



TECHNICAL DATA

INSTALLATION GUIDELINES

- **Selection of Cable Tray Type**: Choose the appropriate type of cable tray based on the loading requirements of the installation.
- **Support Positioning:** Position supports in accordance with loading requirements, considering future cable load increases.
- **Connection Points:** Ideally connect cable trays at approximately 0.25L of a support to minimize bending moments. Avoid mid-span connections and limit to one connection per span.
- **Installation Span:** Install over a multiple span of at least 4 spans, with end spans reduced to 75% of intermediate spans and no joints in end spans.
- **Loading Distribution:** Ensure uniform distribution of loading along both length and width of the cable tray.
- **Component Assembly:** Assemble components using M6 roofing bolts and nuts, inserted correctly to prevent cable damage and torque tightened to 6Nm.
- **Deflection Consideration:** Wider cable trays may experience deflection across the width due to load distribution; install 'Fish Plates' on trays of 450mm and above if aesthetic appearance is important.
- **Additional Support for Accessories:** Install extra local support where cable tray accessories are connected (e.g., bends, tees, risers).
- **Secure Fixing:** Securely fix cable tray to all supports using appropriate fixings and/or brackets on both sides.
- **Expansion Connectors:** Incorporate expansion connectors in installations exposed to wide ambient temperature variations.
- **Electrical Bonding:** Install electrical bonding straps at all connections to ensure earth continuity.
- **Surface Repair:** Repair any drilled or cut surfaces on-site in accordance with BS EN ISO 1461 by painting with zinc-rich paint.
- **Usage Restrictions:** Cable trays are solely for cable support; do not use for other structural purposes or as a walkway. Install appropriate warning signs.
- **Installation Standards:** Installation should be performed by competent personnel familiar with electrical installation practices and safety standards, enforcing strict Health & Safety procedures including the use of PPE.
- **Performance Variation:** Loading and deflection information provided is based on testing of UTC systems; actual product performance may vary.

HANDLING AND STORAGE

- Straight lengths of UTC Cable Management and Cable Support Systems are delivered bundled and securely strapped with nylon bands.
- Fittings are palletized and wrapped in plastic stretch film, while all other accessories are sacked or boxed, palletized, and wrapped in plastic stretch film.
- When off-loading materials, care must be taken to avoid damage and adhere to Health & Safety regulations.
- Utilize suitable lifting equipment with sufficient height, reach, and weight capability; avoid using banding straps/wires for off-loading.
- Lifting straps and/or chains should wrap fully around bundles to distribute force evenly.
- Personal safety protection, such as gloves, eye glasses, and shoes, should be worn when cutting banding straps/wires.
- Fork trucks should not insert forks into the ends of bundles during off-loading.
- Store materials under cover in a dry environment, using wooden and/or steel battens to support them, rather than placing directly on the floor.
- If materials become wet during off-loading, split bundles, dry items, and restack to ensure maximum air circulation.
- In the absence of purpose-made on-site storage, arrange temporary storage with waterproof sheeting, ensuring maximum ventilation.
- Regularly inspect stored materials for general condition and signs of water ingress.
- These guidelines, provided by UTC, are essential for preserving the quality of materials on the project site. Compliance is crucial to prevent deterioration.





CABLE LADDERS

UNITED TRIANGLE COMPANY



CABLE LADDER SYSTEM



At United Triangle Company (UTC), our Cable Ladders are expertly crafted rigid structures comprising two longitudinal side members connected by individual transverse members known as rungs. These rungs can either be welded to the side members (Channel type) or swaged round tubular rungs (Swaged type), ensuring a sturdy framework that offers maximum ventilation for cables.

Cable Ladders from UTC are the ideal solution for supporting and routing heavy loads and numerous cables in installations, effectively resisting bend and deflection. Our Cable Ladders feature an outside return flange design to enhance component strength and improve load-bearing capacity. Standard lengths include 3.0 meters and 2.44 meters, providing versatility and reliability for various project requirements. Trust UTC for robust and cost-effective cable management solutions.



Ladder Outside Return Flange **CLS**
Swaged Rung Type



Ladder Outside Return Flange **CLC**
Channel Rung Type

* Items shown as: **PART NAME** **PART NO.**

CABLE LADDER TYPE

Cable Ladder Straight Length (CLC or CLS)	Outside Height H	Width W	Thickness THK
Medium Duty - MD	100	100 - 600	1.5
		750 - 1000	2.0
Heavy Duty - HD	125	100 - 1000	2.0
Extra Heavy Duty - XHD	150	100 - 1000	2.0

All dimensions are in millimeters

STANDARD FINISHES

- Hot Dip Galvanized **HDG**
- Pre-Galvanized / Mill Galvanized **PG**
- Powder Coating **PC**
- Epoxy Coating **EC**
- PVC Coating (Polyvinyl Chloride) **PVC**
- Stainless Steel **SS**
- Aluminium **AL**
- Aluzinc **AZ**

HDG : as per standards ASTM 123 & BS EN 1461
PG : as per standard BS EN 10142 & 10143 formerly known as BS 2989

The standard rung spacing is 300mm.
Optional Rung spacing is 150mm, 250mm as required.

ORDER PATTERN:

Cable Ladder Straight lengths / Width / Side Height / Thickness / Finish : **CLC/600/125/2.0/HDG/2.0/HDG**
(CLC/W/H/THK/FINISH)

CABLE LADDER **FITTINGS**

At United Triangle Company (UTC), we offer a comprehensive range of Cable Ladder accessories meticulously designed to accommodate both standard and complex installations of medium-duty ladder systems.
Whether you require standard components or specialized fittings for unique applications, our lineup includes a diverse selection to meet your needs.
To ensure precise selection, please specify the desired component, width, and finish. Our knowledgeable team is readily available to assist you in identifying the right fittings, providing guidance on angles where necessary. Trust UTC to deliver top-quality ladder fittings that enhance the efficiency and reliability of your cable management systems.

ORDER PATTERN:
Heavy duty Ladder type / Fitting Part No.* / Width / Side Height / Thickness / Angle / Bending Radius / Fitting R or C type / Finish
For example: **HD-CLC / EH90 / 300 / 100 / 1.5 / 90 / 300 / C / HDG**

* Items shown as: **PART NAME** **PART NO.**

STANDARD FINISHES
HDG -Hot dip Galvanized
PG- Pre-galvanized
PC -Powder Coating
EP -Epoxy Painting
SS -Stainless steel
AL -Aluminium finish to required grades
AZ -Aluzinc

CORNER TYPE FITTINGS C



ELBOW HORIZONTAL 90 DEGREE EH90
Available in 60, 45 & 30 degrees



TEE HORIZONTAL TH



CROSS HORIZONTAL CH



INTERNAL RISER 90 DEGREE IR90
Available in 60, 45 & 30 degrees



EXTERNAL RISER 90 DEGREE ER90
Available in 60, 45 & 30 degrees



ADJUSTABLE ELBOW AE



REDUCER LEFT RL



REDUCER STRAIGHT RS



REDUCER RIGHT RR

CABLE LADDER **FITTINGS**

ORDER PATTERN:

Heavy duty Ladder type / Fitting Part No.* /Width /Side Height / Thickness / Angle / Bending Radius / Fitting R or C or SR type/ Finish

For example: **HD-CLC / EH90 / 300 / 100 / 1.5 / 90 / 300 / R / HDG**

* Items shown as: **PART NAME** **PART NO.**

STANDARD FINISHES

HDG -Hot dip Galvanized
PG- Pre-galvanized
PC -Powder Coating
EP -Epoxy Painting
SS -Stainless steel
AL -Aluminium finish to required grades
AZ -Aluzinc

ROUND TYPE FITTINGS R



ELBOW HORIZONTAL 90 DEGREE **EH90**
Available in 60, 45 & 30 degrees



TEE HORIZONTAL **TH**



CROSS HORIZONTAL **CH**



INTERNAL RISER 90 DEGREE **IR90**
Available in 60, 45 & 30 degrees



EXTERNAL RISER 90 DEGREE **ER90**
Available in 60, 45 & 30 degrees



UNEQUAL TEE **AE**

SWAGED RUNG ROUND FITTINGS RS



ELBOW HORIZONTAL 90 DEGREE **EH90**
Available in 60, 45 & 30 degrees



TEE HORIZONTAL **TEE**



CROSS HORIZONTAL **CH**



INTERNAL RISER 90 DEGREE **IR90**
Available in 60, 45 & 30 degrees



EXTERNAL RISER 90 DEGREE **ER90**
Available in 60, 45 & 30 degrees



ADJUSTABLE ELBOW **AE**

CABLE LADDER ACCESSORIES



DOUBLE COVER CLAMP **DCC**



DROP OUT **DOT**



BOX CONNECTOR **BT**



VERTICAL TEE **BT**



BARRIER STRAIGHT **BS**



HOLD DOWN CLAMP **HDC**



HOLD DOWN BRACKET **HDB**



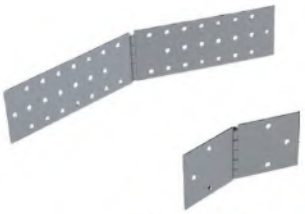
STRAIGHT CONNECTOR **SC**



EXPANSION CONNECTOR **EC**



ADJ. VERTICAL CONNECTOR **AVC**



HINGED CONNECTOR **HC**



BLIND END **BE**

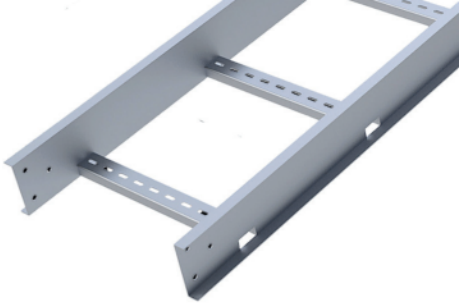


REDUCING CONNECTOR **RC**



EARTHING JUMPER **EJL**

* Items shown as: PART NAME **PART NO.**



TECHNICAL DATA

SAFE WORKING LOADS

We provide comprehensive Loading table to offer guidance on maximum safe working loads when utilizing Cable Ladders and Ladders installed horizontally. These charts adhere to the industry standard BS EN 61537:2001 and are a result of rigorous load tests simulating conditions of multiple spans, with end spans reduced to 75% of intermediate spans. Our load table establishes maximum safe working loads at specified intermediate spans, ensuring clarity and reliability for installers.

When using this information, it's essential for installers to consider the guidance offered in our system design considerations presentation. Loading is assumed to be uniformly distributed; however, consultation with our technical department is recommended if point loads are imposed or the installation comprises fewer than four spans.

Our loading information is provided in good faith based on tests conducted with UTC products, but it's important for installers to ensure supports are adequately strong and all connections are fully tightened. While UTC strives for consistent performance, variations may occur, and we cannot be held responsible for such deviations. Trust UTC for reliable guidance on safe working loads, backed by industry standards and rigorous testing protocols.

Medium Duty Ladder - MD	
Uniformly Distributed load (Kgs/m)	Span Between Supports (m)
245	2
135	3
75	4

Heavy Duty Ladder - HD	
Uniformly Distributed load (Kgs/m)	Span Between Supports (m)
275	3
175	4
95	5

Extra Heavy Duty Ladder - XHD	
Uniformly Distributed load (Kgs/m)	Span Between Supports (m)
300	3
205	4
115	5

HOLD DOWN AND GUIDE CLAMP LOCATIONS

We emphasize the importance of bonding expansion joints for electrical continuity and recommend support placement within 600mm on each side of expansion splice plates to optimize system integrity. To ensure proper functionality of expansion splice plates, precise gap setting during installation is essential.

THERMAL EXPANSION AND CONTRACTION

Our recommended procedure, outlined in Figure 1, involves plotting the highest and lowest expected temperatures, drawing a line between these points, and determining the gap setting based on the temperature at the time of installation. By adhering to these guidelines, UTC ensures the reliability and longevity of your cable support and management systems.

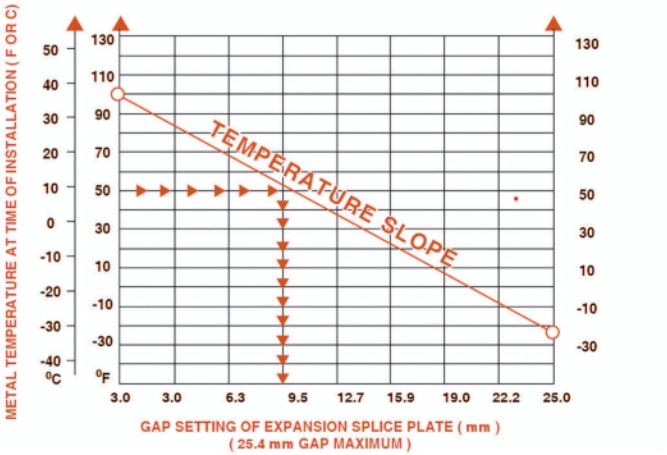


Figure 1

Careful consideration of thermal expansion and contraction is paramount during the installation of cable support and management systems. Our approach involves anchoring the cable ladder, tray, or trunking at the support nearest to its midpoint between expansion splice plates, while securing it with expansion guides at all other support locations. This design allows for longitudinal movement in both directions from the fixed point, accommodating temperature differentials experienced throughout the year.



TECHNICAL DATA

INSTALLATION GUIDELINES

For United Triangle Company (UTC), the following information serves as guidance on the installation of Cable Ladder Systems in accordance with specified parameters:

- **Selection of Appropriate Cable Ladder Type:** Choose the suitable type of cable ladder based on loading requirements.
- **Positioning of Supports:** Ensure supports are positioned to align with loading requirements.
- **Allowance for Future Cable Load:** Select ladder types and supports with consideration for potential extra cable load in the future.
- **Ideal Positioning of Connections:** Position cable ladder connections approximately at 0.25L of a support to minimize bending moments.
- **Installation Span Requirements:** Install over a multiple span of at least 4 spans, reducing end spans to 75% of intermediate spans with no joints in the end spans.
- **Uniform Loading Distribution:** Ensure uniform distribution of loading along the length and width of the cable ladder.
- **Assembly of Components:** Assemble components using M6 roofing bolts and nuts, torqued to 6Nm to avoid damage.
- **Consideration for Deflection:** Consider deflection across the width for wider cable ladders and install 'Fish Plates' on ladders of 450mm and above.
- **Provision of Extra Local Support:** Provide extra local support where cable ladder accessories are connected.
- **Secure Fixing to Supports:** Securely fix cable ladder to all supports using appropriate fixings and/or brackets.
- **Incorporation of Expansion Connectors:** Incorporate expansion connectors for cable ladder runs exposed to wide ambient temperature variations.
- **Installation of Electrical Bonding Straps:** Install electrical bonding straps at all connections to ensure earth continuity.
- **Surface Repair and Protection:** Repair damaged surfaces on-site with zinc-rich paint in accordance with BS EN ISO 1461.
- **Cautionary Measures:** Use caution to prevent using cable ladders for structural purposes or as walkways, and install appropriate warning signs.
- **Competent Installation:** Ensure installation is conducted by competent personnel familiar with standard electrical installation practices and safety procedures, including the use of PPE.

These guidelines are essential for ensuring the safe and effective installation of Cable Ladder Systems from UTC.

HANDLING AND STORAGE

- Straight lengths of UTC Cable Management and Cable Support Systems are delivered bundled and securely strapped with nylon bands.
- Fittings are palletized and wrapped in plastic stretch film, while all other accessories are sacked or boxed, palletized, and wrapped in plastic stretch film.
- When off-loading materials, care must be taken to avoid damage and adhere to Health & Safety regulations.
- Utilize suitable lifting equipment with sufficient height, reach, and weight capability; avoid using banding straps/wires for off-loading.
- Lifting straps and/or chains should wrap fully around bundles to distribute force evenly.
- Personal safety protection, such as gloves, eye glasses, and shoes, should be worn when cutting banding straps/wires.
- Fork trucks should not insert forks into the ends of bundles during off-loading.
- Store materials under cover in a dry environment, using wooden and/or steel battens to support them, rather than placing directly on the floor.
- If materials become wet during off-loading, split bundles, dry items, and restack to ensure maximum air circulation.
- In the absence of purpose-made on-site storage, arrange temporary storage with waterproof sheeting, ensuring maximum ventilation.
- Regularly inspect stored materials for general condition and signs of water ingress.
- These guidelines, provided by UTC, are essential for preserving the quality of materials on the project site. Compliance is crucial to prevent deterioration.



CABLE RACK SYSTEM

The Cable Rack system offered by UTC comprises two longitudinal side members constructed from Hollow Rectangular Tube (40x10x1.5), joined together by individual transverse members known as rungs (also made from Hollow Rectangular Tube, 40x10x1.5). This design ensures a highly rigid structure, requiring minimal installation space, offering ease of installation, and presenting a sleek appearance.

Our Cable Racks are available in two variants:

- **Heavy Duty (HD) featuring Solid Rectangular Sections (40mm x 10mm thick), and**
- **Light Duty (LD) constructed from Hollow Rectangular Tubes (40mm x 10mm x 1.5mm thick).**

Customers can choose between hot-dipped galvanized after fabrication or powder-coated finishes, providing durability and aesthetic appeal.

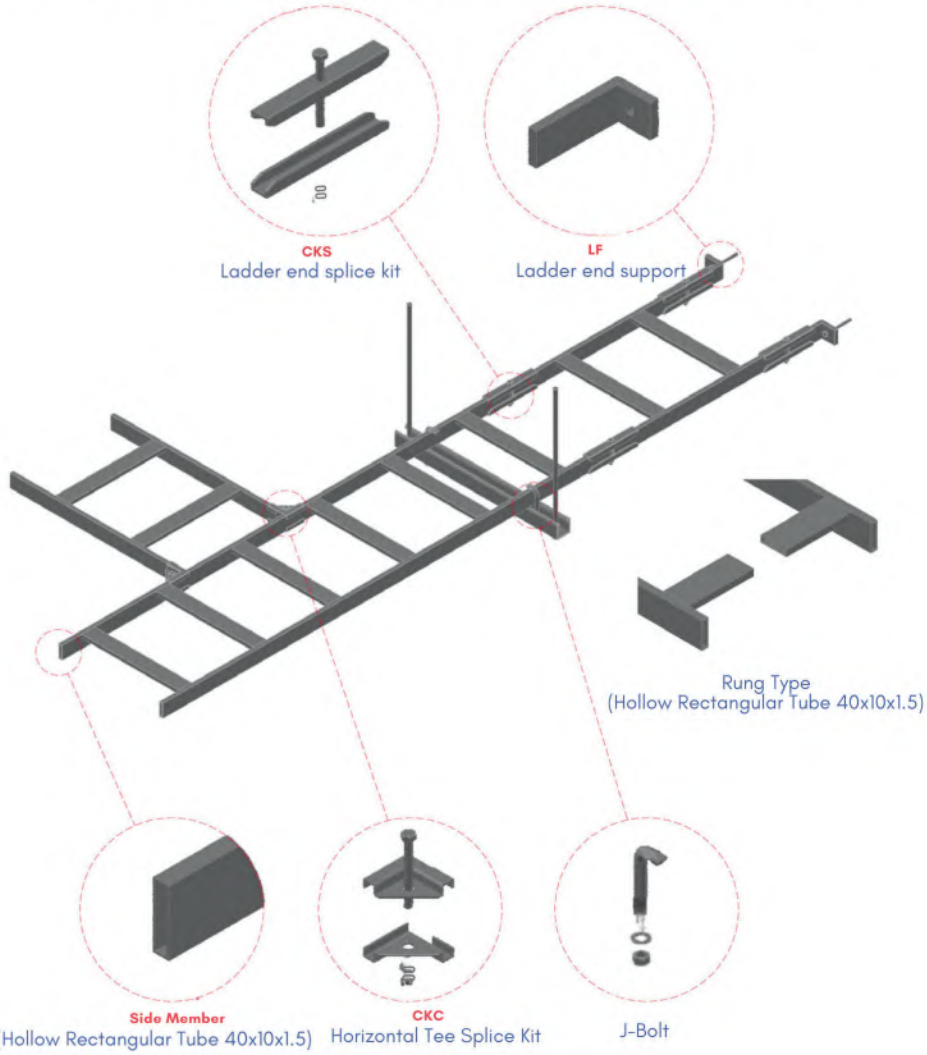
STANDARD FINISHES

- Hot Dip Galvanized HDG
- Powder Coating PC
- Epoxy Coating EC

HDG : as per standards ASTM 123 & BS EN 1461

ORDER PATTERN:

Heavy duty Rack type / Fitting Part No.* /Width / Finish:
For example: **HD-CLR / CKC/ 300 / HDG**

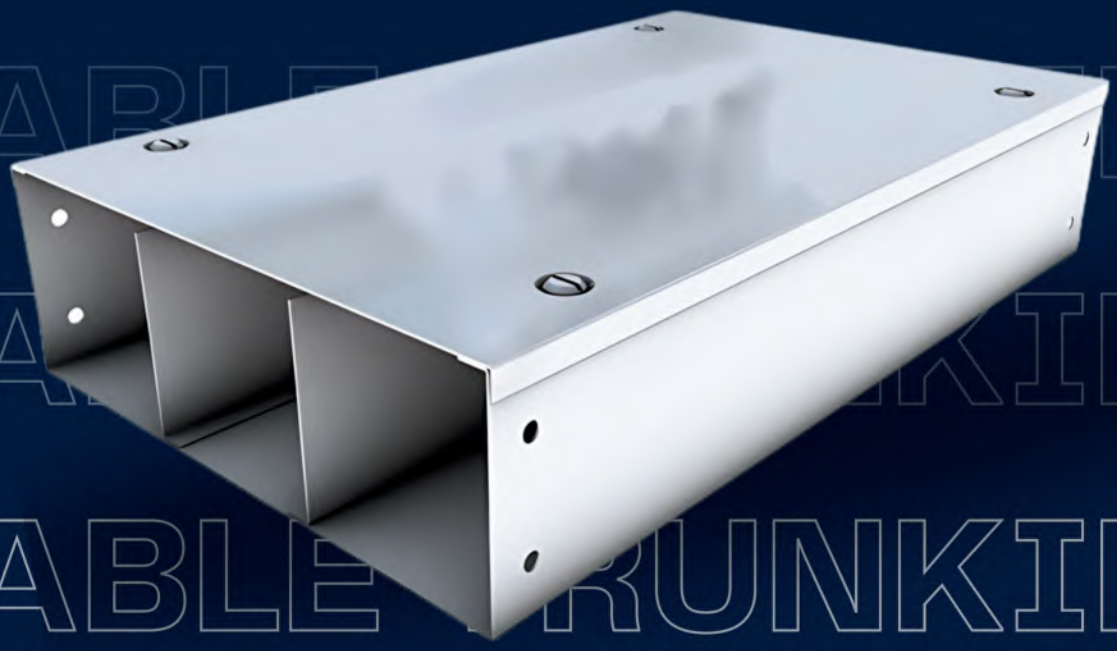


RACK FITTINGS



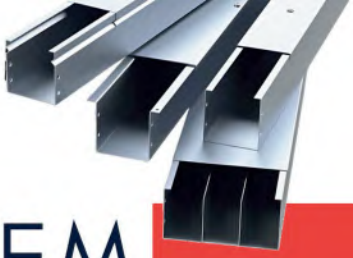
Straight Section | **90° horizontal bend** | **90° Vertical Inside Bend** | **90° Vertical Outside Bend**

CABLE TRUNKING



CABLE TRUNKING

UNITED TRIANGLE COMPANY



CABLE TRUNKING SYSTEM



UTC manufactures cable trunking as a sealed structure featuring a solid bottom, sides, and cover. Our cable trunking is available with Butterfly, Screw fixing, and Snap-on cover arrangements, and can be produced in single or multi-compartments. Standard lengths include 3.0 meters and 2.44 meters.

At UTC, we prioritize customer satisfaction by ensuring that our cable trunking is designed for easy installation and maximum durability. Our products undergo rigorous quality control measures to guarantee reliability and longevity. Additionally, we offer excellent customer support services to address any inquiries or concerns our customers may have. We are committed to providing solutions that meet the unique needs of our clients and exceed their expectations in terms of performance and service.



Butterfly Trunking **TR-BF**



Weatherproof Trunking **TR-WP**



Snap on Trunking **TR-SN**



Screw Fix Trunking **TR-SC**

* Items shown as: **PART NAME** **PART NO.**

CABLE TRUNKING TYPE

Type	Side Height H	Width W	Thickness THK	Compartment
Butterfly Trunking TR-BF	50	50	1.0	Single - C
Weatherproof Trunking TR-WP	100	100	1.2	Two - 2C
	150	150		
Snap On Trunking TR-SN			1.5	Three - 3C
	200	200		
Screw Fix Trunking TR-SC	300	300	2.0	Four - 4C

All dimensions are in millimeters

STANDARD FINISHES

- Hot Dip Galvanized **HDG**
- Pre-Galvanized / Mill Galvanized **PG**
- Powder Coating **PC**
- Epoxy Coating **EC**
- PVC Coating (Polyvinyl Chloride) **PVC**
- Stainless Steel **SS**
- Aluminium **AL**
- Aluzinc **AZ**

HDG : as per standards ASTM 123 & BS EN 1461
PG : as per standard BS EN 10142 & 10143 formerly known as BS 2989

ORDER PATTERN:
Cable Trunking Type / Width / Side Height /Compartment/ Thickness / Finish : **TR-BF/300/100/2C/1.5/HDG**

CABLE TRUNKING
FITTINGS & ACCESSORIES

UTC Cable Trunking straight lengths are seamlessly connected using various types of connectors, ensuring uninterrupted raceway continuity.
Our trunking fittings are meticulously crafted as single pieces, eliminating the need for welding. Featuring integral connectors, our fittings require no separate components for assembly, simplifying installation and enhancing efficiency.
UTC offers a diverse selection of accessories designed to complement and enhance the functionality of our trunking systems. These accessories are meticulously engineered to provide optimal support, organization, and protection for cables in various applications.

ORDER PATTERN:

Cable Trunking Fitting no. / Width / Side Height /Compartment/ Thickness / Finish :

TR-EH90/300/100/2C/1.5/HDG

* Items shown as: **PART NAME** **PART NO.**

STANDARD FINISHES

HDG -Hot dip Galvanized
PG- Pre-galvanized
PC -Powder Coating
EP -Epoxy Painting
SS -Stainless steel
AL -Aluminium finish to required grades
AZ -Aluzinc



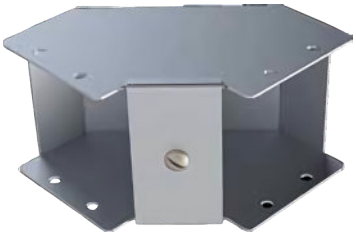
ELBOW HORIZONTAL 90 DEGREE **EH90**



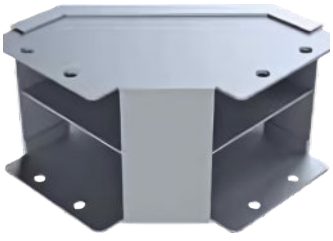
TEE HORIZONTAL **TEE**



CROSS HORIZONTAL **CH**



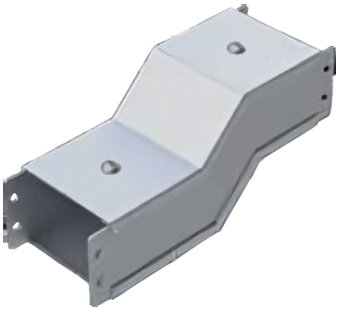
INTERNAL RISER 90 DEGREE **IR90**



EXTERNAL RISER 90 DEGREE **ER90**



OFFSET HORIZONTAL **OH**



OFFSET VERTICAL **OV**



REDUCER STRAIGHT **RS**



BLIND END **BE**

CABLE TRUNKING
FITTINGS & ACCESSORIES

ORDER PATTERN:
Cable Trunking Fitting no. / Width / Side Height /Compartment/ Thickness / Finish :
TR-EH90/300/100/2C/1.5/HDG

* Items shown as: **PART NAME** **PART NO.**

STANDARD FINISHES
HDG -Hot dip Galvanized
PG- Pre-galvanized
PC -Powder Coating
EP -Epoxy Painting
SS -Stainless steel
AL -Aluminium finish to required grades
AZ -Aluzinc



FLANGE CONNECTOR **FC**



BELL MOUNT **PM**



HANGER **H**



U CONNECTOR **UC**



EXPANSION CONNECTOR **EC**

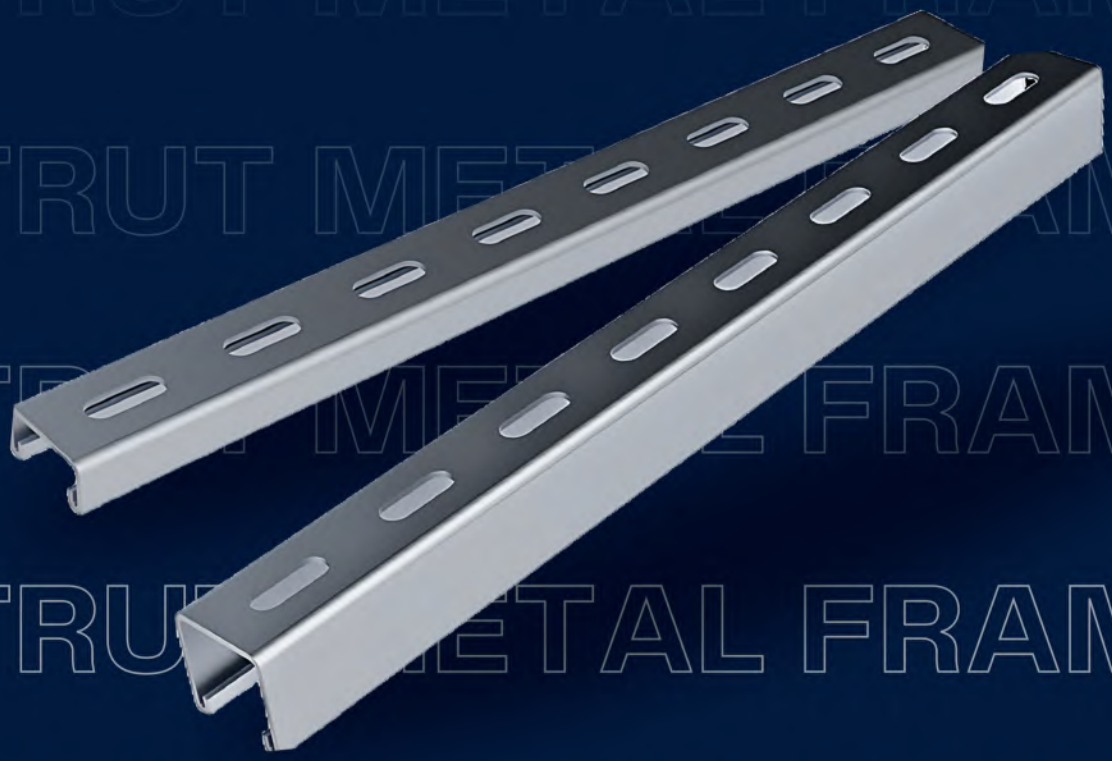


STRAIGHT CONNECTOR **SC**



BONDING JUMPER **EJ**

STRUT METAL FRAMES

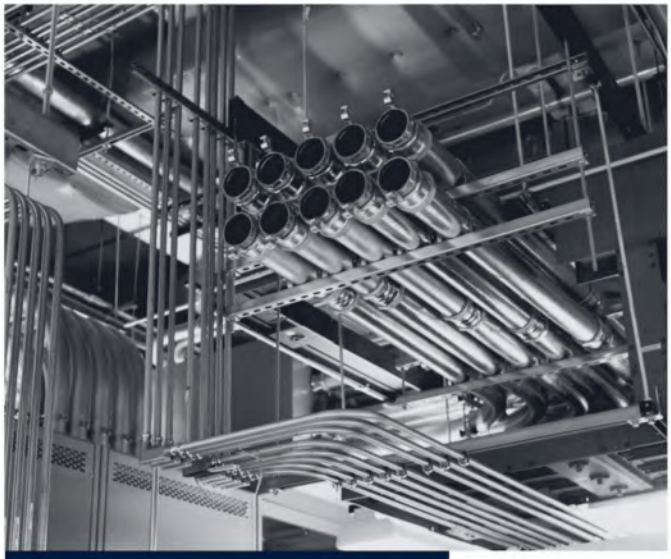


STRUT METAL FRAMES

UNITED TRIANGLE COMPANY



STRUT METAL FRAMING SYSTEM



UTC offers a comprehensive Metal Framing System that adheres to BS 6946:1988 (Metal Channel Cable Support Systems for electrical installations).

The UTC Metal Framing System provides a versatile range of components that seamlessly integrate to form a cost-effective support system for various applications, including electrical, mechanical, and plumbing services.

The UTC Strut Metal Framing System incorporates the following features:

- **Flexibility**: Elements of the system can be combined to create an extensive range of structural designs.
- **Rigidity**: Easily assembled rigid structures can be created without the need for drilling and welding.
- **Adjustability**: Components can be easily repositioned, and structures can be disassembled and reused.
- **Competitiveness**: High strength-to-weight ratio and ease of assembly make this system a cost-effective solution for structural support.
- **Multiple Applications**: Suitable for supporting mechanical and electrical services across a wide range of industries and construction projects.



41 x 41 Plain Channel **CP44**



41 x 21 Plain Channel **CP42**



41 x 41 Slotted Channel **CS44**



41 x 21 Slotted Channel **CS42**



41 x 41 Back-to-Back **BTB44**



41 x 21 Back-to-Back **BTB42**



41 x 41 Concrete Insert **CI44**



41 x 21 Concrete Insert **CI42**

Note:

- **STANDARD LENGTH :** ALL CHANNELS ARE 3 METERS AND 6 METERS.
- **THICKNESS :** 1.5MM / 2MM / 2.5MM

ORDER PATTERN:
Strut Channel Type / Length / Thickness / Finish : **BTB44/3/2/HDG**

STANDARD FINISHES
HDG -Hot dip Galvanized
PG- Pre-galvanized
PC -Powder Coating
EP -Epoxy Painting

STRUT METAL FRAMING
CANTILEVER ARMS

UTC Cantilever arms and brackets are rigid systems with ease of installation, which are used for various applications ,including mechanical and electrical .
Our in house fabrication and design department has designed according these systems on par with the industry standards and are tailored to meet all your requirement.

ORDER PATTERN:
Cantilever part no. / Size / Thickness / Finish :
CA11/300/2.0/HDG
2MM THICKNESS CONSIDERED BY DEFAULT , IF THICKNESS NOT SPECIFIED.

STANDARD FINISHES
HDG -Hot dip Galvanized
PG- Pre-galvanized
PC -Powder Coating
EP -Epoxy Painting

* Items shown as: **PART NO.**


CA11


CA12


CA13


CA14


CA15


CA16

Contact us for your custom requirement:
Our sound design and team indulge in designing custom size and fittings, tailored to fit your specific use or load requirements.
Kindly request load calculation report for your custom requirement , if required.

STRUT METAL FRAMING
BASE POSTS

UTC base posts for all the strut framing are fabricated and finished in our factory . Please contact us for any custom requirement .

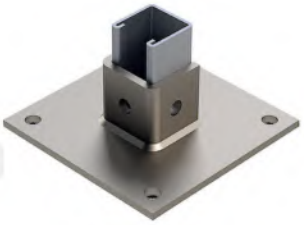
base posts

ORDER PATTERN:
Base post part no. / Finish :
BP301/HDG

STANDARD MATERIAL THICKNESS: 6 MM
Contatct us for custom thickness

STANDARD FINISHES
HDG -Hot dip Galvanized
PG- Pre-galvanized
PC -Powder Coating
EP -Epoxy Painting

* Items shown as: **PART NO.**


BP301


BP302


BP303


BP304


BP305


BP306


BP307


BP308


BP309


BP310

STRUT METAL FRAMING
FITTINGS

ORDER PATTERN:
Strut fitting no / Type/ Finish :
ST201/HDG

* Items shown as: **PART NO.** / **PART NAME**

MATERIAL THICKNESS:
Standard Plates : 6 mm
Floor Bracket : 2mm
Channel Hanger : 2.5 mm
Beam clamps : 6mm / 8 mm

STANDARD FINISHES
HDG -Hot dip Galvanized
PG- Pre-galvanized
PC -Powder Coating
EP -Epoxy Painting



ST201
SQUARE WASHER



ST202
DOUBLE HOLE PLATE



ST203
3 HOLE CORNER PLATE



ST204
2 HOLE CORNER ANGLE



ST205
4 HOLE CORNER ANGLE



ST206
UNIVERSAL BRACKET



ST207
8 HOLE WING CONNECTION



ST208
U CLAMP 44



ST209
BEAM CLAMP Z



ST210
BEAM CLAMP



ST211
U EXTERNAL CONNECTOR



ST212
U INTERNAL CONNECTOR



ST213
CHANNEL HANGER



ST214
FLOOR BRACKET



ST215
BEAM CLAMP C

STRUT METAL FRAMING
FASTENERS



CHANNEL NUT WITH SPRING



CHANNEL NUT WITHOUT SPRING



ROOFING BOLT



HEXAGONAL BOLT



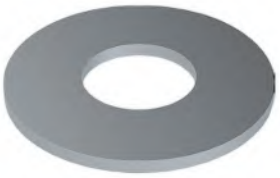
MACHINE SCREW



CARRIAGE BOLT



HEXAGONAL NUT



FLAT WASHER

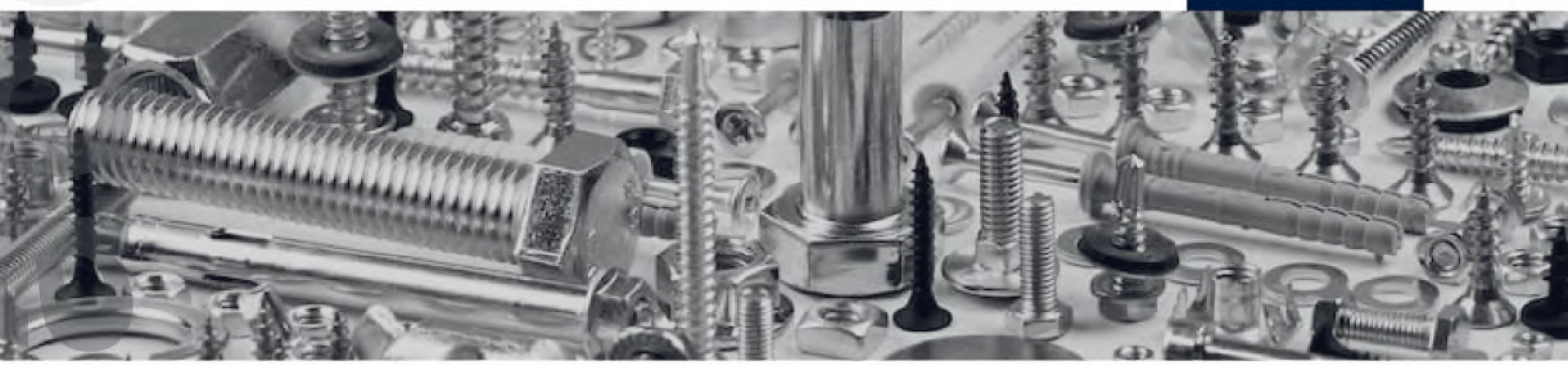


U BOLT



THREADED ROD

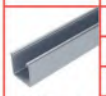
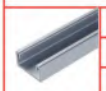
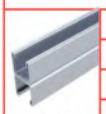
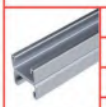
STANDARD FINISHES
HDG -Hot dip Galvanized
PG- Pre-galvanized
SS -Stainless steel





TECHNICAL DATA

SAFE WORKING LOAD AND DEFLECTION LIMIT

LOAD TABLE					
Item	Distance between supports L (mm)	Safe Working Load as total UDL across span (kN)	UDL at L/180 Deflection (kN)	UDL at L/360 Deflection (kN)	Maximum Axial Column Load (kN)
 CP44	500	8.6	-	-	50.2
	1000	4.20	-	3.35	33.4
	1500	2.78	-	1.46	20.11
	2000	2.05	1.66	0.82	12.71
	2500	1.65	1.05	0.52	9.2
	3000	1.35	0.72	0.35	7.1
 CP42	500	2.45	-	2.30	29.3
	1000	1.20	1.15	0.56	11.4
	1500	0.80	0.50	0.25	5.1
	2000	0.60	0.26	0.15	-
	2500	0.45	0.19	0.085	-
	3000	0.39	0.13	-	-
 BTB44	500	23.2	-	-	104.8
	1000	11.55	-	-	91.05
	1500	7.75	-	7.45	63.25
	2000	5.8	-	4.25	40.18
	2500	4.62	-	2.66	26.75
	3000	3.85	3.75	1.87	18.9
 BTB42	500	6.92	-	-	68.8
	1000	3.45	-	2.56	44.05
	1500	2.30	2.25	1.18	22.9
	2000	1.72	1.28	0.59	13.2
	2500	1.33	0.95	0.37	8.6
	3000	1.12	0.61	0.31	-

Important considerations for loads :

1. Loads have been regarded as imposed loads, adhering to BS 5950 standards, with a load factor of 1.6.
2. Assumptions regarding beam loads:
   - Beams are supported simply over a span of L.
   - Load is applied perpendicular to the axis XX.
   - There exists lateral restraint to the beams.
   - No restrictions are imposed on loads that may exceed the slip resistance of bracket fixings.
3. Assumptions regarding column loads:
   - The distance between supports defines the "effective length" of the column.
   - Slenderness ratio is determined using the smaller value of the profile's radius of gyration and is constrained to L/r < 180.
4. In practical assembly conditions, utilizing brackets, it will be necessary to calculate the bending moment and combine it with axial column loading to determine a safe working load.

Notes:

- *If no values are specified in the table, the load should be determined based on the respective safe working load.*

FASTENER PULLOUT STRENGTH

PULL OUT LOADS	
Bolt Size	Recommended maximum load (kN)
M12	16
M10	11
M8	7
M6	3.6

- To ensure resistance to slip at bolted connections, it is advised to utilize M12 set bolts (Grade 4.6) in conjunction with M12 strut channel nuts. These components should be torque tightened to 40 N-m. When considering the loading data for bracket connections, adherence to this recommendation is crucial for maintaining structural integrity and safety.
- In practical terms, the M12 set bolts, along with the compatible strut channel nuts, form the connection between structural elements, such as beams or columns, and supporting brackets. By torque tightening them to the specified value of 40 N-m, a sufficient clamping force is applied, enhancing the frictional resistance at the connection interface.
- This approach ensures that the bracket connection can withstand imposed loads without slipping or compromising the structural integrity of the assembly. It is essential to follow these specifications meticulously to guarantee the stability and safety of the structure under various loading conditions.

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BUILDING
DREAMS STRONG

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