

LINES METAL INDUSTRIES

Cable Management System

PERFORATED

LADDER

TRUNKING



Lines Metal Industries
Sister Company



For Earthing & Lightning Protection



Lines Metal Industries

A person in a green jacket and dark pants is ice climbing a steep, snow-covered rock face. They are using ice axes and ropes. The background shows more of the icy mountain terrain.

" Welcome to the Lines Metal Industries Cable trays Systems Catalogue , Our Catalogue designed to be help our costumers to select the right choice from cable trays systems products to meet them requirements in the application , constructions and maintenance ,,

" We looking forward to trusting us ,Our success is rooted in "listening to our customers" and using this knowledge to drive our new products development to be ready to manufacture special metal products not included in this catalogue as our costumers requirements by a good quality and realistic cost ,,

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Technical Information

Benefits of Cable Tray

Benefits of Cable Tray :-

Cable tray wiring systems offer significant advantages over conduit pipe and other wiring systems.

Cable tray is **less expensive, more reliable, more adaptable** to changing needs and easier to **maintain**. In addition, its design does not contribute to potential **safety** problems associated with other wiring systems.

An evaluation of the costs and benefits of various wiring systems should be done in the design phase. Unfortunately, many engineers who are unfamiliar with wiring systems avoid the system selection process or defer it until construction-often resulting in higher costs, scheduling delays and a system that will not meet future needs.

Selection of wiring system that is not the most suitable for a particular application in terms of cost, potential corrosion and electrical considerations can lead to numerous problems, including excessive initial cost, poor design, faulty installation, extra maintenance, future power outages and unnecessary safety concerns.

Cost :-

Extensive experience has shown that the initial cost of a cable tray installation (including conductor, material and installation labor costs) may be as much as 60% less than a comparable conduit wiring system.

Cable tray system, including trays, supports, fittings and other materials, are generally much less expensive than conduit wiring systems. In addition, major cost savings are generated by the relative ease of installation. Labor cost of installing a cable tray system can run up to 50 % less. Total cost savings will vary with the complexity and size of the installation.

Reliability :-

Cable tray systems offer unsurpassed reliability, resulting in less need for maintenance and less down time-important considerations for all installations but especially for such industries as data communication and financial services.

In addition, since cable tray isn't a closed system, moisture build up problems are eliminated and damage to cable insulation during installation is also greatly reduced.

Adaptability :-

A major advantage of cable tray systems derives from their adaptability to new needs and technology. The pace of change in the economy, constantly shifting competitive pressures and rapid introduction of innovative technologies are all accelerating. More than ever before, businesses must be prepared to quickly expand facilities; change products or introduce new processes.

Modifying a cable tray system or adding cables to meet new needs is relatively easy because cables can enter or exit a tray at any point. And initial design considerations can build-in extra capacity as part of the planning process. Cable tray's inherent adaptability allows rewiring for future expansion, building redesign or new technologies without disruption or need to replace the entire wiring system.

Technical Information

Benefits of Cable Tray

Maintenance :-

Cable tray wiring systems require less maintenance than conduit systems. When maintenance is necessary, it is easier, less time-consuming and less labor intensive.

The physical condition and status of both the cable tray and the tray cables can be inspected visually, something that is not possible with conduit systems. In addition, it is also easy to see if there is sufficient capacity in the trays for additional cables. As was noted above, changing or adding cables can also be accomplished without difficulty.

Another comparative benefit of cable tray systems is that they do not act as channels of moisture paths, as conduit wiring systems do. Conduit systems tend to collect condensation resulting from changes in temperature and then channel the moisture to electrical equipment, where it can lead to corrosion and failure.

Cable tray and tray cable are also less susceptible to fire loss than conduit. An external fire usually results in damage to only a few feet of a cable tray system, while wire insulation inside a conduit suffers significant damage and thermoplastic insulation may actually fuse to the conduit.

Safety:-

Cable tray wiring systems lack the inherent safety concerns of conduit systems.

By its nature, a conduit wiring system can serve as a flow-through for corrosive, explosive and toxic gases in the same way that it channels moisture.

The conduit installation process can also present a safety issue for electricians. The process requires that a conduit system be installed from one enclosure to another before pulling in the conductors, leaving the electricians exposed to any live,

energized equipment that may be in the enclosures. In contrast, installers can pull tray cables from near one termination

enclosure to the next before they are inserted into the enclosures and then terminated.

Finally, in installations where cable tray can be used as the equipment grounding conductor (per NEC standards), it is easy to visually check the system components as well as conduct checks for electrical continuity.

Technical Information

Cable Tray Selection

How to Select Cable Tray :-

A number of basic decisions must be made before a cable tray system can be specified. It is our pleasure to develop a simple Six-step process to guide you in the process:

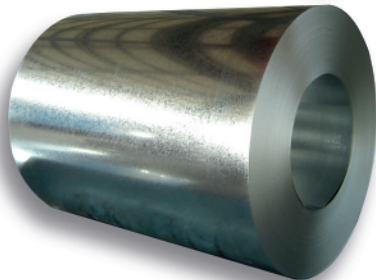
- 1-Select Material and Finish
- 2-Select the Tray Class / Load Capacity (loading)
- 3-Select the Tray Type
- 4-Select the Tray Dimensions
- 5-Select the Fittings
- 6-Consider Deflection

For many applications , however , you may also have to take the following into account :-

- Weight of the installation, which affects the cost of the support structure and the ease of installation.
- Corrosion resistance of the material is one of the most important selection criteria. Cable tray materials may not respond the same way in different environments. Chemicals or combinations of chemicals have corrosion effects on some materials that can be compounded by temperature or even the speed at which the corrosive elements contact the cable tray. For example, some grades of stainless steel may be resistant to salt water at high flow rates (perfect for heat exchangers), while exhibiting some corrosion pitting in standing salt water. Only the designer can quantify the various elements that affect the corrosion resistance of the cable tray system in a specific application.
- Galvanic effect can cause corrosion even if the cable tray material is resistant to its chemical environment. Dissimilar metals in contact (e.g., aluminum tray on steel supports or bare copper bonding conductor in aluminum tray) in the presence of an electrolyte are susceptible to galvanic effect. If there is a hazard of galvanic corrosion, it may be possible to isolate the tray system from other metals instead of using a more expensive type of tray that would resist corrosion in a given application.
- Melting point and flammability rating are primary concerns for non-metallic tray. Local building codes may restrict the use of a given product if certain performance levels are not met.
- Relative cost varies dramatically, including material costs that float with the commodity index. For example, stainless steel prices may vary significantly according to daily changes in the market.

Technical Information

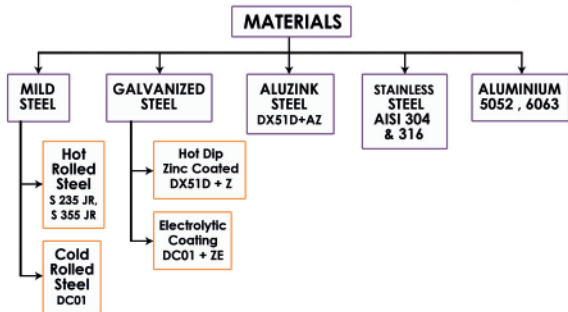
Materials and Finishing



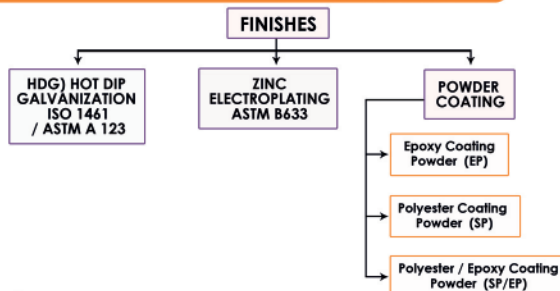
Technical Information

Materials and Finishing

The Materials Specification and kinds that used in our industries divided as follow :-



The Finishes Specification and kinds that used in our industries divided as follow :-



Technical Information

Materials

1. MILD STEEL

1.1 Hot Rolled Steel / S235 JR, S355 JR

As Per Below Standards :-

Euro Norm	Euro Norm	Euro Norm	Germany	U.K.	France	USA	USA
EN 10025- 2	EN 10025:1990 +A 1: 1993	EN 10025:1990	DIN 17100:1983	BS 4360:1996	NF A 35-501	ASTM A283M (A633M)	ASTM A 1011 -01A CS
S 235 JR	S 235 JRG2	Fe 360 B	RST 37-2	40 (A) B	E24-2	Grade C&D	SS Grade 33
S 355 JR	S 355 JR	Fe 510 B	St 52 -3	50 B	E36-2	c	SS Grade 50

Japan	Japan	China	India	Inter-national
JIS 3101	JIS 3106	GB 700 (GB/T 1591)	IS	ISO
SS 400	SM 400 A	Q 235 B	IS 226	E 235 B
SS 490	SM 490 A	Q 345 B	IS 961	E 355 C

Mechanical Specifications :

Name	Grade Number	Yield Stress ReN/mm ²	Tensile Strength Rm N/mm ²	Impact KV J	Strength T °C
S 235 JR	1.0037	≥ 235	360 - 510	27	20
S 355 JR	1.0045	≥ 355	510 - 680	27	20

For Clarify what is **S 235 JR** or **S 355 JR** Code Mean ?

S Structural Steel .
235 Minimum yield strength in N/mm² or MPA .
JR Flat products , longitudinal charpy v-notch impact strength class 27J at 20 °C .

Technical Information

Materials

1.2 Cold Rolled Steel / DC01

As Per Below Standards :-

Euro Norm	Germany	U.K.	France	Italy	USA	Japan	India	China
EN 10130	DIN 1623, Part 2	BS 1449, Part 1	NF A 36-401	UNI 5866	ASTM A366	JIS G 3141	513/94	GB 699-88
DC01	ST12 (Fe01)	CR4	F12	Fe P01	SAE 1010	SPCC	-	Grade 08/08F

Mechanical Specifications :

Name	Grade No	Yield Stress Re N/mm ²	Tensile Strength Rm N/mm ²	Fracture Elongation A 80%
DC 01	1.0330	140 - 280	270 - 410	≥ 28

Surface Quality (S.Q) :

Euro Norm	Germany	U.K.	France	Italy	USA
EN 10130	DIN 1623, Part 2	BS 1449, Part 1	NF A 36-401	UNI 5866	ASTM A366
A Normal S.Q	3	GR General Purpose	X	MA	Class 2
B Best S.Q	5	FF Full Finish	Z	MB	Class 1

Surface Finish (S.F) :

Matt Finish / Bright Finish

Surface Treatment :

P	PC	PO	C	CO	O	U
Phosphates	Phosphates & Chemically Passivity	Phosphates & Oiled	Chemically Passivity	Chemically Passivity & Oiled	Oiled	Untreated

Technical Information

Materials

2. GALVANIZED STEEL

2.1 Continuously Pre-Galvanized Hot-Dip Zinc Coated / DX 51D + Z

As Per Below Standards:

Euro Norm	Germany	U.K.	France	Italy	USA	USA	Japan	India
EN 10327 (EN DIN / EN BS)	DIN 17162/1	BS 2989	NFA 36-421	UNI 5753	ASTM (OLD)	ASTM (AMENDMENT)	JIS G 3302	IS
DX 51 D + Z	St 02 Z (Fe P02 G) Z	Z2	RST 37-2GC	Fe P02 G	A 527 M	E24-2A 653-LFQ	SG CD1	D

Mechanical Specifications :

Steel Grade	Grade Number	02% - Proof Stress Rp 0.2N/mm ²	Tensile Strength Rm N/mm ²	Fracture Elongation
DX51 D + Z	1.0226	140	270 - 500	≥ 22

Coating Thickness :

Euro Norm	Germany	U.K.	France	Italy	USA	Japan
Z 100	100	G 100 (100 g/sqm)	Z 100	Z 100	G40	Z 12 (120 g/sqm)
Z 120	-	-	-	-	-	-
Z 140	-	-	-	-	-	-
Z 200	200	G 200 (200 g/sqm)	Z 200	Z 200	G60	Z 18 (180 g/sqm)
Z 225	-	-	-	-	-	-
Z 275	275	G 275 (275 g/sqm)	Z 275	Z 275	G90	Z 27 (270 g/sqm)
Z 350	350	G 350 (350 g/sqm)	-	Z 350	-	Z 35 (350 g/sqm)

Technical Information

Materials

2.2-Electro Galvanized Steel / DC01+ZE,

As Per Below Standards:

Euro Norm	Euro Norm	Germany	U.K.	France	Italy	USA	Japan	Japan
EN 10152	EN 10152-92	DIN 17163-88	BS 1449/1	NF 36-401	UNI 5866	ASTM A146	JIS G 3313	JIS G 3141
DC01+ZE	Fe P01 ZE	St 12 ZE	CR 4	C	Fe P01	A591 - CQ	SECC	SPCC

Mechanical Specifications :

Name	Grade Number	Yield Stress Re N/mm ²	Tensile Strength Rm N/mm ²	Fracture Elongation A 80%
DC 01 + ZE	1.0330	140 - 280	270 - 410	≥ 28

3. ALUZINK STEEL :

3.1-Aluzink Steel / DX51D + AZ,

As Per Below Standards:

Euro Norm	Germany	USA
EN 10215 /10143	DIN 55928/B	ASTM A792
DX 51D + AZ	-	-

Aluzink Layer :

Weight Class	Aluzink Weight (g/sqm), Sum of both sides	
	Triple spot test	Single spot test
AZ 100	100	85
AZ 150	150	130
AZ 165	165	150
AZ 185	185	160
AZ 200	200	170

Surface Treatment :

C	O	S	CO
Chemically Passivity	Oiled	Anti finger print (ALC-Surface)	Chemically Passivity & Oiled

Technical Information

Materials

4.STAINLESS STEEL

A-Austenitic Stainless Steels / AISI 304 & 316

As Per Below Standards:

- EN 10088-2 / ASTM A240 / ASTM A480 / ASTM A666

USA	Euro Norm	Germany	U.K.	France	Italy	Japan
ASTM A240 AISI	Steel Name EN 10088-2	DIN Steel NO.17440	BS 1449, Part 2	AFNOR	EN 10088-2	JIS G 4304
304	X5 CrNi 18-10	1.4301	304S15	Z6CN 18.09	X5 CrNi 18-10	SUS304
304 L	X2 CrNi 19-11	1.4306	304S11	Z2CN 18.10	X2 CrNi 18-11	SUS304L
316	X5 CrNi MO 17-12-2	1.4401	3016S31	Z6CND 17.11	X5 CrNi MO 17-12	SUS316
316 L	X2 CrNi MO 17-12-2	1.4404	316S11	Z2CND 17.12	X2 CrNi MO 17-12-2	SUS316L

Mechanical Specifications:

ASI	Minimum 0.2 % Proof Stress Rp (N/mm ²)	Ultimate Tensile Strength Rm (N/mm ²)	Tensile/Compression (N/mm ²)	Share (N/mm ²)
304	210	520-720	140	93
304 L	185	485-650	133	89
316	220	520-670	146	97
316 L	200	500-670	146	97

Notes :

Type 304 - the most common grade; the classic 18/8 stainless steel. Also referred to as "A2" in accordance with ISO 3506

Type 304L - the 304 grade but specially modified for welding.

Type 316 - the second most common grade (after 304), alloy addition of molybdenum prevents specific forms of corrosion, also referred to as "A4" in accordance with ISO 3506.

Type 316L - the 304 grade but specially modified for welding.

Technical Information

Materials

5. ALUMINIUM 5052 & 6063 :-

Aluminum is one of the most abundant metals and therefore cost-efficient.

High strength-to-weight ratios combined with extraordinary corrosion resistance and flexibility make aluminum a desirable solution to product design.

5.1-ALUMINIUM / 5052 :-

-5052 is the alloy most suitable to forming operations, with good workability and higher strength than that of the 1100 or 3003 alloys that are commercially available.

-5052 has very good corrosion resistance and can be easily welded. 5052 is not a good choice for extensive machining operations, as it has only a fair machine ability rating.

5.2-ALUMINIUM / 6063 :-

-6063 is often called architectural aluminum for two reasons: It has a surface finish that is far smoother than the other commercially available alloys. Its strength is significantly low (roughly half the strength of 6061), making it suitable for applications where strength is not the foremost consideration.

-6063 is rated "Good" for forming and cold working operations, "Excellent" for anodizing, and "Fair" for machining.

Technical Information

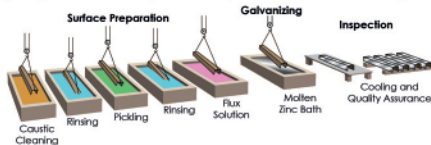
Finishes

1. Hot Dip Galvanization (HDG) After Fabrication ISO 1461/ASTM A 123 :-

The Hot Dip Galvanization process consists of dipping steel in melted Zinc at 450° Celsius temperature at which iron and zinc share great affinity, and allowing an alloy to form where pure zinc prevails to the outside.

Due to the difference of electrochemical potential between zinc and steel (cathodic protection), a zinc coating can protect steel in such a way that vigorous forces, such as cutting, scratching or piercing, are equally protected against corrosion.

What considerably affects the appearance and gauge of galvanization is the contents of allowable elements that are generally present in steel: Carbon, Magnesium, and Silicon. If the contents of these elements increase, the coating gauge also increases and it becomes matte grey. The greatest effect is produced by silicon in concentration higher than 0.12%.



2. Zinc Electroplating After Fabrication ASTM B633 :-

The Zinc Electroplating is the most common, low cost; electroplated coating that is normally applied to ferrous components to give corrosion protection. The coating can be colored to give gold; black or olive drab coatings by post treatment. The relatively low cost, protective nature and attractive appearance of zinc make it a popular coating for nuts, bolts, washers, metal stampings and automotive parts, such as interior components and gas filters. In addition, zinc serves as an effective undercoat for paints when high corrosion performance is required.

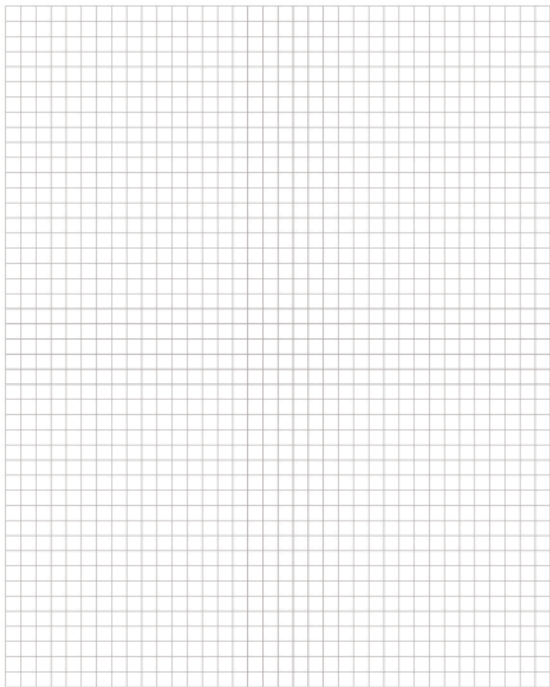
Steps of Commercial Zinc Electroplating Process On the commercial scale, zinc electroplating is done by the following steps.

1. Cleaning the surface, which is normally done in alkaline detergent type solutions, followed by acid treatments to remove any rust or surface scale

2. Depositing zinc: The work is held on specially designed racks, immersed in a chemical bath containing dissolved zinc and a DC current is applied resulting in zinc being deposited on the work (cathode). Finished Products use alkaline zinc baths, which are more environmentally friendly and produce a more consistent zinc thickness especially in recesses.

3. Post treatment: This provides increased corrosion protection to reduce the corrosion of the deposited zinc. These coating can increase the time to white rust by 10 fold with the yellow giving the best results. Finished Products also apply sealers that are now commonly being specified by the automotive industry that further increase corrosion protection and reduce fingerprinting.

NOTES



Cable Tray

Perforated Type



Cable Tray Perforated Type System Design .
Cable Tray Perforated Type Straight Section.
Cable Tray Perforated Type Fittings Section:-

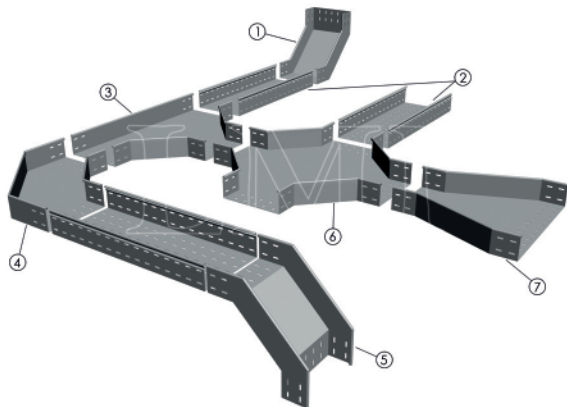


- Horizontal Elbow 90°
- Horizontal Elbow 45°
- Horizontal Cross
- Horizontal TEE
- Vertical Outside Elbow
- Vertical Inside Elbow
- Central Reducer
- Right Side Reducer
- Left Side Reducer

Cable Tray

Perforated Type

System Design



Nomenclature :-

- ① Vertical Inside Elbow Cornered Type Perforated Cable Tray.
- ② Straight Section Perforated Cable Tray.
- ③ Tee Section Perforated Cable Tray.
- ④ Horizontal Elbow Cornered Type Perforated Cable Tray.
- ⑤ Vertical Outside Elbow Cornered Type Perforated Cable Tray.
- ⑥ Cross Section Perforated Cable Tray.
- ⑦ Reducer Section Perforated Cable Tray.

Cable Tray

Perforated Type

System Design

Cable Tray Perforated Type is a prefabricated metal structure consisting of a one-piece ventilated bottom channel section. Used for light and medium Power cables .

Side Shapes :-



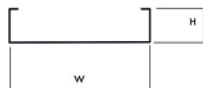
Can provide side types shapes as below :-



Return Flange inside Type
(RFI)



Click Lock Type
(CLT)



C - Type Inside
(CTI)



U - Shape Type
(UST)

Thickness (T) :-



Can provide material thickness as below :-

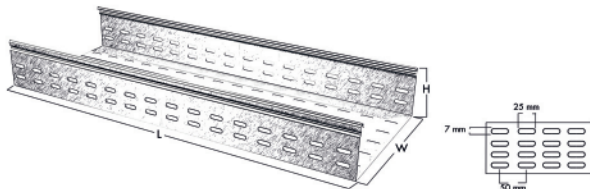
0.90 mm , 1.00 mm , 1.25 mm , 1.50 mm , 2.00 mm

System Design Cable Tray Perforated Type

System Design

Cable Tray Dimensions :-

Base width (w), Side Height (H) & Length (L)



Shape of Fittings :-



Can provide Shape of Fittings as below :-



Curved

Cornered

Inner Radius for Fittings (R) :-



Can provide Inner Radius for fittings as below :-

R = 200 mm , 300 mm , 400 mm , 500 mm , 600 mm.



Radius

Straight section Cable Tray Perforated Type

Straight Shape

Straight Section is a length of cable tray which has no change in direction or size

How to Order for straight Section ?



Example

Hot Dip Galvanized after fabrication perforated cable tray ,Straight Section , 100 mm width ,50 mm side height, Thickness 1.5 mm, Click Lock Type , Length of Piece 3000 mm.

TPS - BS - 15 - HD - CLT - 4 - 2 - 300

Cable Tray Type	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Base Width (W) (INCH)	Side Height (H) (INCH)	Length Of Piece (L)
Tray Perforated Straight Type.	BS : Black Steel	10 : 1.00 mm	HD: Hot dip Galvanization	RFI : Return Flange Inside	2" : 50 mm	1" : 25 mm	200 : 2000 mm
	GS : Galvanized Steel	12 : 1.25 mm	PC: Powder Coating		3" : 75 mm	244 : 2440 mm	
	AL: Aluminum	15 : 1.50 mm	ZE: Zinc Electroplating	UST: U-Shape Type	4" : 100 mm	250 : 2500 mm	
		20 : 2.00 mm			6" : 150 mm	300 : 3000 mm	
	A2: SS 304	22 : 2.25 mm	HP: Hot dip Galv. + Powder Coating	C-Type Inside	8" : 200 mm	3" : 75 mm	
	A4: SS 316	25 : 2.50 mm	ZP : Zinc Electroplating + Powder Coating		10" : 250 mm	4" : 100 mm	
				12" : 300 mm	5" : 125 mm		
				16" : 400 mm	6" : 150 mm		
				20" : 500 mm			
				24" : 600 mm			
				28" : 700 mm			
				32" : 800 mm			
				36" : 900 mm			
				40" : 1000 mm			

■ All types we can provide
■ Example code

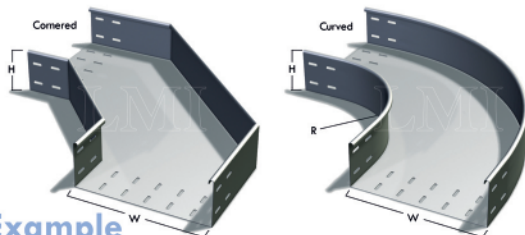
Cable Tray Perforated Type

Horizontal Elbow

Cable Tray Fitting section is a device which is used to change the direction, elevation or size of a cable tray system.

Horizontal Elbow is a cable tray fitting which changes the direction in the same plane.

How to Order for Horizontal Elbow ?



Example

Zinc Electroplating after fabrication perforated cable tray Horizontal Elbow 90°, 200 mm width, 100 mm side height, Thickness 1.5 mm, Return Flange Inside, curved type, with radius 200 mm.

TPHEV - 90 - BS - 15 - ZE - RFI - 8/8 - 4 - 20

Horizontal Elbow shape	Direction Degree	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Base Width (W1/W2)(INCH)	Side Height (H) (INCH)	Curve Radius
TPHEV : Tray Perforated Horizontal Elbow Curved	45 : 45° 90 : 90°	BS : Black Steel GS : Galvanized Steel	10:1.00 mm 12:1.25 mm 15:1.50 mm 20:2.00 mm	HD : Hot dip Galvaniza- tion PC : Powder Coating	RFI : Return Flange Inside UST : U- Shape Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm 4" : 100 mm	20 : 200 mm 30 : 300 mm 40 : 400 mm 50 : 500 mm 60 : 600 mm
TPHEN : Tray Perforated Horizontal Elbow Cornered		AL: Aluminum A2 : SS 304 A4 : SS 316	22:2.25 mm 25:2.50 mm 30:3.00 mm	HP : Hot dip Galv.+Powd er Coating ZP : Zinc Electroplat- ing +Powder Coating	CTI : C- Type Inside CLT : Click Lock Type	16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	5" : 125 mm 6" : 150 mm	

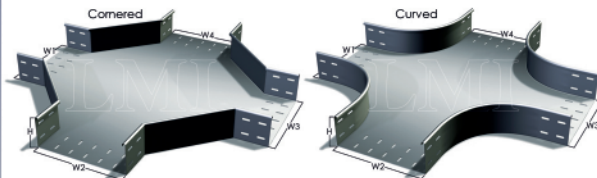
■ All types we can provide
■ Example code

Cable Tray Perforated Type

Cross Section

Cross Section is a cable tray fitting which is suitable for joining cable trays in Four directions in the same plane.

How to Order for Cross Section ?



W1 : Left Direction W2 : Down Middle Direction W3 : Right Direction W4 : Up Middle Direction

Example

Galvanized Steel perforated cable tray Cross Section, Width : 300/500/150/100 mm, side height : 50 mm, Thickness : 2 mm, Return Flange Inside, Curved type, Radius 300 mm .. Note : (It is Galvanized Steel so no finished Type in this example)

TPCRV - GS - 20 - RFI - 12/20/6/4 - 2 - 30

Cross Section Type	Kind of Materials	Materials Thickness (T)	Side Type	Width Of Direction (W1/W2/W3/W4) (INCH)	Side Height (H) (INCH)	Curve Radius
TPCRV : Tray Perforated Cross Section Curved	BS : Black Steel GS : Galvanized Steel	10 : 1.00 mm 12 : 1.25 mm 15 : 1.50 mm 20 : 2.00 mm	RFI : Return Flange Inside UST : U- Shape Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm 4" : 100 mm 5" : 125 mm 6" : 150 mm	20 : 200 mm 30 : 300 mm 40 : 400 mm 50 : 500 mm 60 : 600 mm
TPCRN : Tray Perforated Cross Section Cornered	AL: Aluminum A2 : SS 304 A4 : SS 316	22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	CTI : C- Type Inside CLT : Click Lock Type	16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm		

■ All types we can provide
■ Example code

Cable Tray Perforated Type

Tee Section

Tee Section is a cable tray fitting which is suitable for joining cable trays in Three directions in the same plane .

How to Order for TEE Section ?

Cornered



Curved



W1: Left Direction

W2 Middle Direction

W3 Right Direction

Example

Epoxy Powder Coating after fabrication perforated cable tray Tee Section, Width: 400/600/200 mm, side height : 75 mm , Thickness 2 mm, U shape type ,Cornered Shape .

Note: (It is Cornered Type so There is no Curve Radius in this example)

TPTN - BS - 20 - PC - UST - 16/24/8 - 3

TEE Section	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Width Of Direction (W1/W2/W3) (INCH)	Side Height (H) (INCH)
TPTV : Tray Perforated TEE Section curved	BS: Black Steel	10 : 1.00 mm	HD : Hot dip Galvanization	RFI : Return Flange inside	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm 4" : 100 mm
TPTN : Tray Perforated TEE Section Cornered	GS: Galvanized Steel	12 : 1.25 mm 15 : 1.50 mm	PC : Powder Coating	UST : U-Shape Type	10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	5" : 125 mm 6" : 150 mm
	AL: Aluminum	20 : 2.00 mm 22 : 2.25 mm	HP : Hot dip Galv.+ Powder Coating	CTI : C-Type Inside		
	A2: SS 304	25 : 2.50 mm	ZP : Zinc Electroplating + Powder Coating	CLT : Click Lock Type		
	A4: SS 316	30 : 3.00 mm				

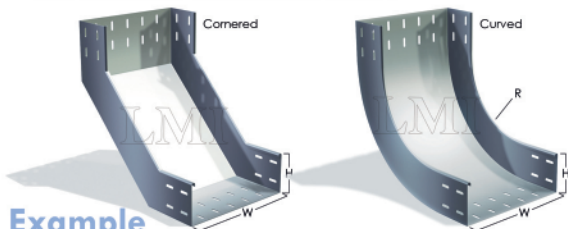
■ All types we can provide
■ Example code

Vertical Elbow

Cable Tray Perforated Type

Vertical Elbow is a cable tray fitting which changes direction to a different plane. An inside vertical elbow changes direction upward from the horizontal plane. An Outside vertical elbow changes direction downward from the horizontal plane.

How to Order for Vertical Inside Elbow ?



Example

Hot Dip Galvanization after fabrication perforated cable tray Vertical Inside elbow 90°, 200 mm width, 100 mm side height, Thickness 1.5 mm, U Shape Type, curved type , with radius 200 mm .

TPVEIV - 90 - BS - 15 - HD - UST - 8/8 - 4 - 20

Vertical Elbow shape	Direction Degree	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Base Width (W1/W2) (INCH)	Side Height (H) (INCH)	Curve Radius
TPVEIV : Tray Perforated Vertical Elbow Inside Cornered	45 : 45° 90 : 90°	BS : Black Steel	10 : 1.00 mm 12 : 1.25 mm	HD : Hot dip Galvanization	RFI : Return Flange inside	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm 4" : 100 mm 5" : 125 mm 6" : 150 mm	20: 200 mm 30: 300 mm 40: 400 mm 50: 500 mm 60: 600 mm
		GS : Galvanized Steel	15 : 1.50 mm	PC : Powder Coating	UST : U-Shape Type	10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm		
		AL: Aluminum	20 : 2.00 mm 22 : 2.25 mm	ZE : Zinc Electroplating	CTI : C-Type Inside			
		A2 : SS 304	25 : 2.50 mm	HP : Hot dip Galv.+Powder Coating	CLT : Click Lock Type			
		A4 : SS 316	30 : 3.00 mm	ZP : Zinc Electroplating + Powder Coating				

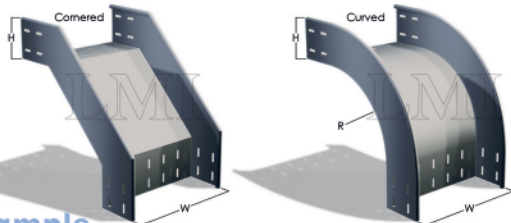
■ All types we can provide
■ Example code

Cable Tray Perforated Type

Vertical Elbow

Vertical Elbow is a cable tray fitting which changes direction to a different plane.
An Inside vertical elbow changes direction upward from the horizontal plane.
An Outside vertical elbow changes direction downward from the horizontal plane.

How to Order for Vertical Outside Elbow ?



Example

Hot Dip Galvanization after fabrication perforated cable tray Vertical Outside elbow 90°, 200 mm width, 100 mm side height, Thickness 1.5 mm, U Shape Type, cornered type. Note: it is cornered type so there is no curve radius.

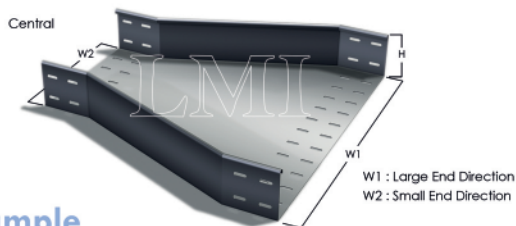
Cable Tray Perforated Type

Reducer Section

Reducer Section is a cable tray fitting which is suitable for joining cable trays of different widths in the same plane.

A Central reducer has two symmetrical offset sides.

How to Order for Central Reducer Section?



W1 : Large End Direction
W2 : Small End Direction

Example

Epoxy Powder Coating after fabrication perforated cable tray Central Reducer Section, 600/400mm width, 75 mm side height, Thickness 2 mm, U shape type.

TPVEON - 90 - BS - 15 - HD - UST - 8/8 - 4

Vertical Elbow shape	Direction Degree	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Base Width (W1/W2) (INCH)	Side Height (H) (INCH)
TPVEOV: Tray Perforated Vertical Elbow Outside Curved	45 : 45° 90 : 90°	BS : Black Steel GS : Galva-nized Steel	10 : 1.00 mm 12 : 1.25 mm 15 : 1.50 mm 20 : 2.00 mm 22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	HD : Hot dip Galvanization PC : Powder Coating ZE : Zinc Electroplating HP : Hot dip Galv.+Powder Coating ZP : Zinc Electroplating +Powder Coating	RFI : Return Flange inside U-Shape Type C-Type Inside CLT : Click Lock Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm 4" : 100 mm 5" : 125 mm 6" : 150 mm

■ All types we can provide
■ Example code

TPCR - BS - 20 - PC - UST - 24/16 - 3

Reducer Section	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Width Of Direction (W1/W2) (INCH)	Side Height (H) (INCH)
TPCR: Tray Perforated Central Reducer Section	BS : Black Steel GS : Galvanized Steel AL: Aluminum A2 : SS 304 A4 : SS 316	10: 1.00 mm 12: 1.25 mm 15: 1.50 mm 20: 2.00 mm 22: 2.25 mm 25: 2.50 mm 30: 3.00 mm	HD : Hot dip Galvanization PC : Powder Coating ZE : Zinc Electroplating HP : Hot dip Galv. + Powder Coating ZP : Zinc Electroplating + Powder Coating	RFI : Return Flange inside U-Shape Type C-Type Inside CLT : Click Lock Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm 4" : 100 mm 5" : 125 mm 6" : 150 mm

■ All types we can provide
■ Example code

Cable Tray Perforated Type

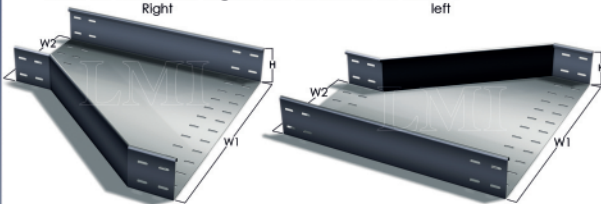
Reducer Section

A right-hand reducer, when viewed from the large end, has a straight side on the right.
A left-hand reducer, when viewed from the large end, has a straight side on the left.

How to Order for Right/Left Reducer Section ?

Right

left



W1 : Large End Direction

W2 : Small End Direction

Example

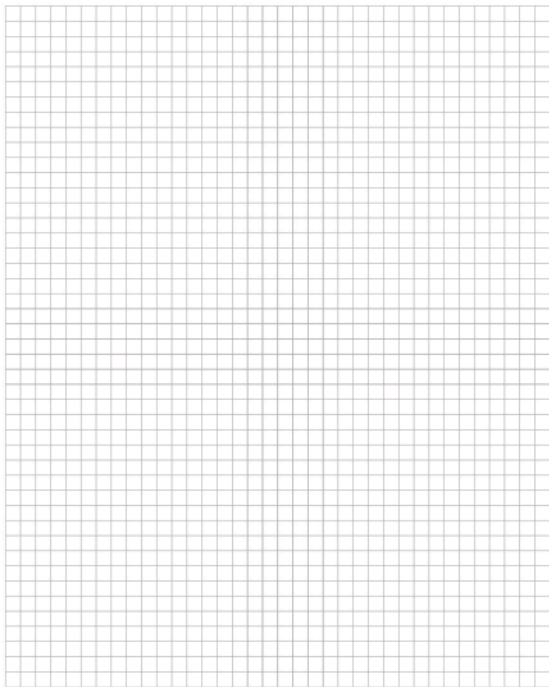
Hot Dip Galvanization after fabrication perforated cable tray Left Reducer Section , 600/400mm width , 100 mm side height, Thickness 1.5 mm, U shape type.

TPLR - BS - 15 - HD - UST - 24/16 - 4

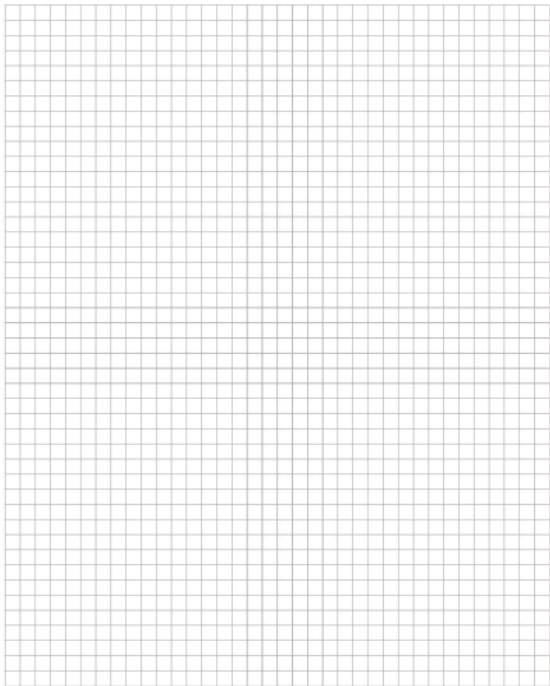
Reducer Section	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Width Of Direction (W1/W2) (INCH)	Side Height (H) (INCH)
TPCR: Tray Perforated Central Reducer Section	BS: Black Steel	10: 1.00 mm	HD : Hot dip Galvanization	RFI : Return Flange Inside	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm
TPRR: Tray Perforated Right Reducer Section	GS: Galvanized Steel	12: 1.25 mm 15: 1.50 mm	PC: Powder Coating	ZE : Zinc Electroplating	UST : U-Shape Type	4" : 100 mm 5" : 125 mm
TPLR: Tray Perforated Left Reducer Section	AL: Aluminum	20: 2.00 mm 22: 2.25 mm	HP : Hot dip Galv. + Powder Coating	HP : Hot dip Galv. + Powder Coating	CTI : C-Type Inside	6" : 150 mm
TPLR: Tray Perforated Left Reducer Section	A2: S5 304	25: 2.50 mm	ZP : Zinc Electroplating + Powder Coating	ZP : Zinc Electroplating + Powder Coating	CLT : Click Lock Type	
	A4: S5 316	30: 3.00 mm			20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	

■ All types we can provide
■ Example code

NOTES



NOTES



Cable Tray

Ladder Type



Cable Tray Ladder Type System Design .
Cable Tray Ladder Type Straight Section.
Cable Tray Ladder Type Fittings Section:-



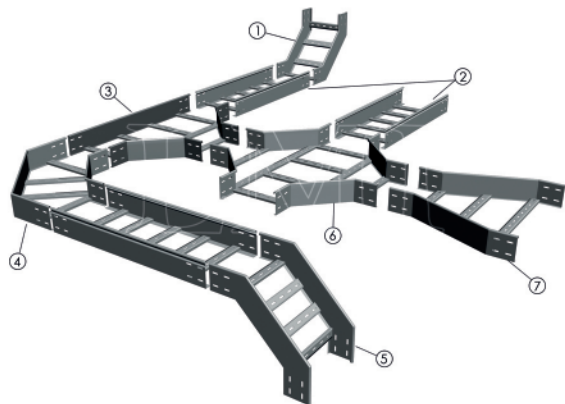
- Horizontal Elbow 90°
- Horizontal Elbow 45°
- Horizontal Cross
- Horizontal TEE
- Vertical Outside Elbow
- Vertical Inside Elbow
- Central Reducer
- Right Side Reducer
- Left Side Reducer

System Design

Cable Tray

Ladder Type

System Design



Nomenclature :-

- ① Vertical Inside Elbow Cornered Type Ladder Cable Tray.
- ② Straight Section Ladder Cable Tray.
- ③ Tee Section Ladder Cable Tray.
- ④ Horizontal Elbow Cornered Type Ladder Cable Tray.
- ⑤ Vertical Outside Elbow Cornered Type Ladder Cable Tray.
- ⑥ Cross Section Ladder Cable Tray.
- ⑦ Reducer Section Ladder Cable Tray.

System Design

System Design

Cable Tray

Ladder Type

Cable Tray Ladder Type is a prefabricated metal structure consisting of two longitudinal side rails connected by individual transverse members. Used for Heavy Power Cables.

Side Shapes :-



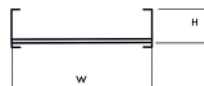
can provide side types shapes as below :-



Return Flange inside Type
(RFI)



Click Lock Type
(CLT)



C - Type Inside
(CTI)



Rib Type Inside
(RTI)

Thickness (T) :-



Can provide material thickness as below :-

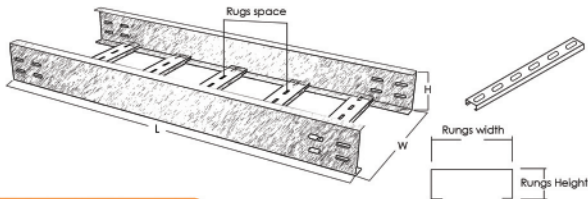
0.90 mm , 1.00 mm , 1.25 mm , 1.50 mm , 2.00 mm

System Design Cable Tray Ladder Type

System Design

Cable Tray Dimensions :-

Base width (w), Side Height (H) & Length (L)



Shape of Fittings :-



Can provide Shape of Fittings as below :-



Curved



Cornered

Inner Radius for Fittings (R) :-



Can provide Inner Radius for fittings as below :-

200 mm , 300 mm , 400 mm , 500 mm , 600 mm



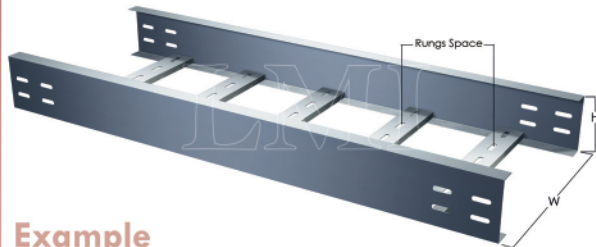
Radius

Straight Shape

Straight section Cable Tray Ladder Type

Straight Section is a length of cable tray which has no change in direction or size .

How to Order for Ladder straight section ?



Example

Hot Dip Galvanized after fabrication Ladder cable tray ,Straight Section ,400 mm width,100 mm side Rail height, Thickness 1.5 mm, Click Lock Type, Rungs spaces 250mm, Length of piece 3000 mm

TLS - BS - 15 - HD - CLT - 16 - 4 - 25 - 300

Cable Tray Type	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Base Width (W1/W2) (INCH)	Side rail Height (H) (INCH)	Rungs Spaces	Length Of Piece (L)
Tray Ladder Straight Type	BS : Black Steel	10 : 1.00 mm	HD : Hot dip Galvanization	RFH : Return Flange Inside	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm 4" : 100 mm	25: 250mm 30: 300mm 40: 400mm	200 : 2000 mm 244 : 2440 mm 250 : 2500 mm 300 : 3000 mm
	GS : Galvanized Steel	15 : 1.50 mm	ZE : Zinc Electroplating	RTI : Rib Type Inside	12" : 300 mm 16" : 400 mm	5" : 125 mm		
	AL: Aluminum	20 : 2.00 mm	HP: Hot dip Galv.+Powder Coating	CTI : C- Type Inside	20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	6" : 150 mm		
	A2 : SS 304	22 : 2.25 mm	IP: Zinc Electroplating +Powder Coating	CLT : Click Lock Type				
	A4 : SS 316	25 : 2.50 mm 30 : 3.00 mm						

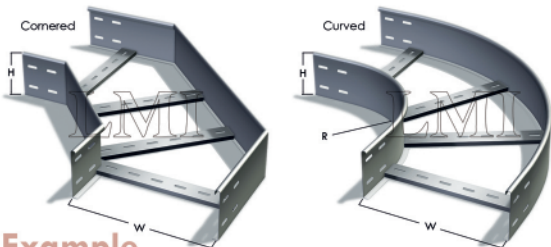
All types we can provide
Example code

Cable Tray Ladder Type

Horizontal Elbow

Horizontal Elbow is a cable tray fitting which changes the direction in the same plane.

How to Order for horizontal Elbow ?



Example

Zinc Electroplating after fabrication Ladder cable tray Horizontal Elbow 90° ,200 mm width ,100 mm side height, Thickness 1.5 mm, Return Flange Inside , curved type, with radius 200 mm

TLHEV - 90 - BS - 15 - ZE - RFI - 8/8 - 4 - 20

Horizontal Elbow shape	Direction Degree	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Rungs Width (W1/W2) (INCH)	Side roll Height (H) (INCH)	Curve Radius
TLHEV: Tray Ladder Horizontal Elbow Curved	45 : 45° 90 : 90°	BS : Black Steel GS : Galvanized Steel	10 : 1.00 mm 12 : 1.25 mm 15 : 1.50 mm	HD : Hot dip Galvanization PC : Powder Coating ZE : Zinc Electroplating	RFI : Return Flange Inside RTI : Rib Type Inside CTI : C-Type Inside CLT : Click Lock Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 125 mm	20 : 200 mm 30 : 300 mm 40 : 400 mm 50 : 500 mm 60 : 600 mm
TLHEN: Tray Ladder Horizontal Elbow Comered		AL: Aluminum A2 : SS 304 A4 : SS 316	20 : 2.00 mm 22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	HP : Hot dip Galv.+Powder Coating ZP : Zinc Electroplating +Powder Coating				

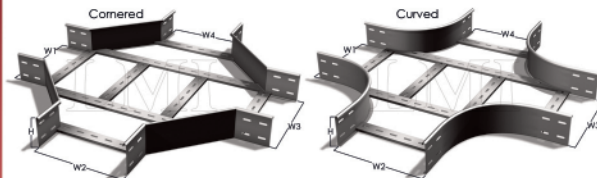
■ All types we can provide
■ Example code

Cross Section

Cable Tray Ladder Type

Cross Section is a cable tray fitting which is suitable for joining cable trays in Four directions in the same plane .

How to Order for Ladder Cross Section ?



W1 : Left Direction W2 : Down Middle Direction W3 : Right Direction W4 : Up Middle Direction

Example

Mil Galvanized Steel Ladder cable tray Cross Section, 300/500/150/100 mm, 50 mm side height, Thickness 2 mm, Return Flange Inside, Curved type . Radius 200mm .. (No finished Type in this example)

TLCRV - GS - 20 - RFI - 12/20/6/4 - 2 - 20

Cross Section Type	Kind of Materials	Materials Thickness (T)	Side Type	Width Of Direction (W1/W2/W3/W4) (INCH)	Side Height (H) (INCH)	Curve Radius
TLCRV : Tray Ladder Cross Section curved	BS : Black Steel GS : Galvanized Steel	10 : 1.00 mm 12 : 1.25 mm 15 : 1.50 mm 20 : 2.00 mm 22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	RFI : Return Flange Inside RTI : Rib Type Inside C-Type Inside CLT : Click Lock Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm 4" : 100 mm 5" : 125 mm 6" : 150 mm	20 : 200 mm 30 : 300 mm 40 : 400 mm 50 : 500 mm 60 : 600 mm
TLCRN : Tray Ladder Cross Section comered	AL: Aluminum A2 : SS 304 A4 : SS 316					

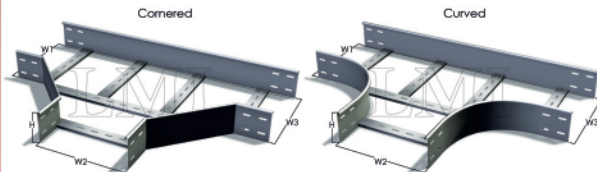
■ All types we can provide
■ Example code

Cable Tray Ladder Type

Tee Section

Tee Section is a cable tray fitting which is suitable for joining cable trays in Three directions in the same plane

How to Order for TEE Section ?



Example

Epox Powder Coating after fabrication Ladder cable tray Tee Section, 400/600/200 mm, 75 mm side height, Thickness 2 mm, Return Flange Inside, Cornered type .

Note:(It is Cornered shape so There is no Curve Radius in this example)

TLTN - BS - 20 - PC - RFI - 16/24/8 - 3

TEE Section	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Width Of Direction (W1/W2/W3) (INCH)	Side rail Height (H) (INCH)
TLTV : Tray Ladder TEE Section curved	BS : Black Steel	10 : 1.00 mm	HD : Hot dip Galvanization	RFI : Return Flange Inside	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm
	GS : Galvanized Steel	12 : 1.25 mm 15 : 1.50 mm	PC : Powder Coating	RTI : Rib Type Inside	10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	4" : 100 mm 5" : 125 mm 6" : 150 mm
TLTN : Tray Ladder TEE Section Cornered	AL : Aluminum	20 : 2.00 mm 22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	HP : Hot dip Galv.+ Powder Coating	CTI : C-Type Inside		
	A2 : SS 304		ZP : Zinc Electroplating + Powder Coating	CLT : Click Lock Type		
	A4 : SS 316					

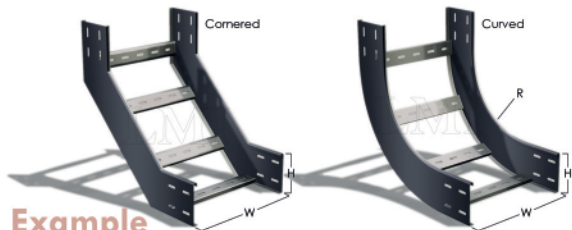
■ All types we can provide
■ Example code

Vertical Elbow

Cable Tray Ladder Type

Vertical Elbow is a cable tray fitting which changes direction to a different plane. An Inside vertical elbow changes direction upward from the horizontal plane. An Outside vertical elbow changes direction downward from the horizontal plane.

How to Order for Ladder In Side Vertical Elbow ?



Example

Hot Dip Galvanization after fabrication Ladder cable tray Vertical Inside elbow 90°, 200 mm width ,100 mm side height, Thickness 1.5 mm, Return Flange Inside , curved type , with radius 200 mm

TLVEIV - 90 - BS - 15 - HD - RFI - 8/8 - 4 - 20

Vertical Elbow shape	Direction Degree	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Base Width (W1/W2) (INCH)	Side Height (H) (INCH)	Curve Radius
TLVEIV : Tray Ladder Vertical Elbow In Side Curved	45 : 45° 90 : 90°	BS : Black Steel	10 : 1.00 mm 12 : 1.25 mm 15 : 1.50 mm 20 : 2.00 mm 22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	HD : Hot dip Galvanization	RFI : Return Flange Inside	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm 4" : 100 mm 5" : 125 mm 6" : 150 mm	20 : 200 mm 30 : 300 mm 40 : 400 mm 50 : 500 mm 60 : 600 mm
		GS : Galvanized Steel		PC : Powder Coating	RTI : Rib Type Inside			
		AL : Aluminum		ZE : Zinc Electroplating	CTI : C-Type Inside			
		A2 : SS 304		HP : Hot dip Galv.+ Powder Coating	CLT : Click Lock Type			
		A4 : SS 316		ZP : Zinc Electroplating + Powder Coating				

■ All types we can provide
■ Example code

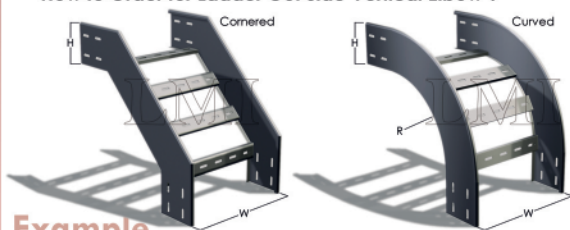
Cable Tray

Ladder Type

Vertical Elbow

Vertical Elbow is a cable tray fitting which changes direction to a different plane. An Inside vertical elbow changes direction upward from the horizontal plane. An Outside vertical elbow changes direction downward from the horizontal plane.

How to Order for Ladder Out Side Vertical Elbow ?



Example

Hot Dip Galvanization after fabrication Ladder cable tray Vertical Outside elbow 90°, 200 mm width, 100 mm side height, Thickness 1.5 mm, Return Flange Inside, curved type, with radius 200 mm

TLVEOV- 90 - BS - 15 - HD - RFI - 8/8 - 4 - 20

Vertical Elbow shape	Direction Degree	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Base Width (W1/W2) (INCH)	Side Height (H) (INCH)	Curve Radius
TLVEOV: Tray Ladder Vertical Elbow Out Side Curved	45 : 45° 90 : 90°	BS : Black Steel GS : Galvanized Steel	10 : 1.00 mm 12 : 1.25 mm 15 : 1.50 mm 20 : 2.00 mm	HD : Hot dip Galvanization PC : Powder Coating ZE : Zinc Electroplating	RFI : Return Flange Inside RTI : Rib Type Inside CTI : C-Type Inside CLT : Click Lock Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 125 mm	20 : 200 mm 30 : 300 mm 40 : 400 mm 50 : 500 mm 60 : 600 mm
TLVEON: Tray Ladder Vertical Elbow Out Side Cornered		AL: Aluminum A2 : SS 304 A4 : SS 316	22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	HP : Hot dip Galv.+Powder Coating ZP : Zinc Electroplating +Powder Coating				

■ All types we can provide
■ Example code

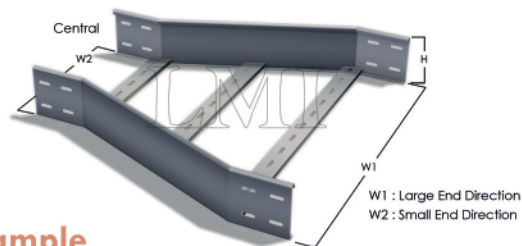
Reducer Section

Cable Tray

Ladder Type

Reducer Section is a cable tray fitting which is suitable for joining cable trays of different widths in the same plane. A central reducer has two symmetrical offset sides.

How to Order for Reducer Section ?



Example

Epoxy Powder Coating after fabrication Ladder cable tray Central Reducer Section, 600/400mm, 75 mm side height, Thickness 2 mm, Return Flange Inside.

TLCR - BS - 20 - PC - RFI - 24/16 - 3

Reducer Section	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Width Of Direction (W1/W2) (INCH)	Side Height (H) (INCH)
TLCR : Tray Ladder Central Reducer	BS : Black Steel GS : Galvanized Steel	10 : 1.00 mm 12 : 1.25 mm 15 : 1.50 mm 20 : 2.00 mm 22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	HD : Hot dip Galvanization PC : Powder Coating ZE : Zinc Electroplating	RFI : Return Flange Inside RTI : Rib Type Inside CTI : C-Type Inside CLT : Click Lock Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm 4" : 100 mm 5" : 125 mm 6" : 150 mm
TLRR : Tray Ladder Right Side Reducer	AL: Aluminum A2 : SS 304 A4 : SS 316		HP : Hot dip Galv.+ Powder Coating ZP : Zinc Electroplating + Powder Coating			
TLLR : Tray Ladder Left Side Reducer						

■ All types we can provide
■ Example code

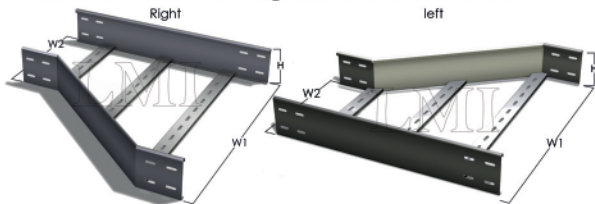
Cable Tray

Ladder Type

Reducer Section

A right-hand reducer, when viewed from the large end, has a straight side on the right.
A left-hand reducer, when viewed from the large end, has a straight side on the left.

How to Order for Ladder Right/Left Reducer Section ?



W1 : Large End Direction W2 : Small End Direction

Example

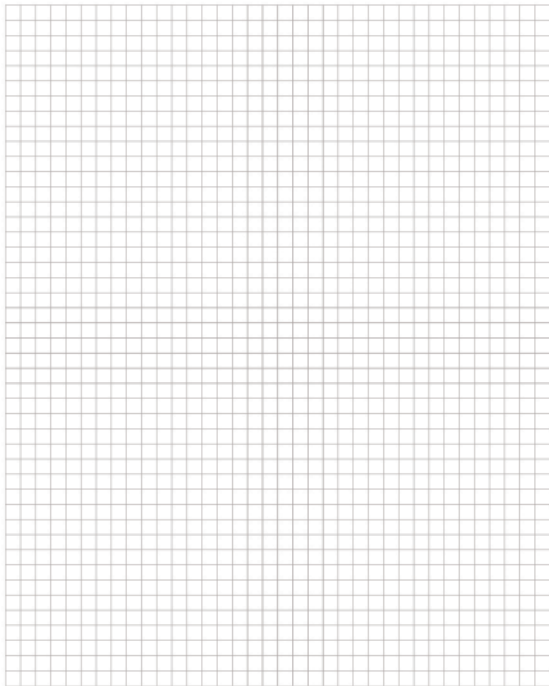
Hot Dip Galvanization after fabrication Ladder cable tray Left Reducer Section, 600/400mm, 100 mm side height, Thickness 1.5 mm, Return Flange Inside.

TLLR - BS - 15 - HD - RFI - 24/16 - 4

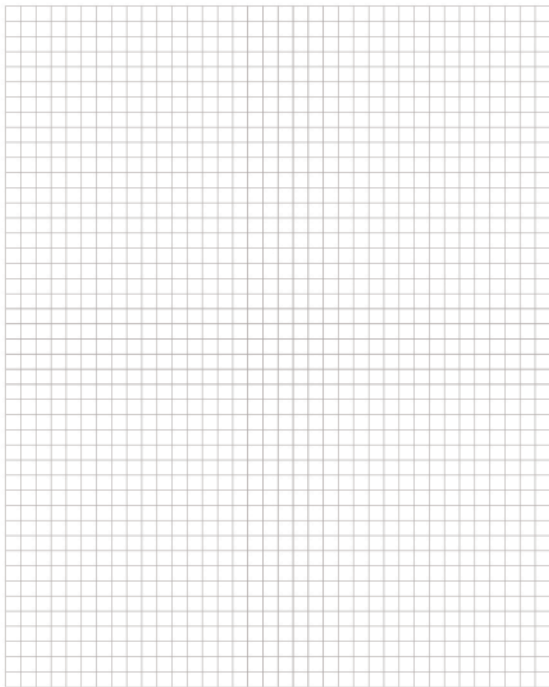
Reducer Section	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Width Of Direction (W1/W2) (INCH)	Side Height (H) (INCH)
TLCR : Tray Ladder Central Reducer	BS : Black Steel	10 : 1.00 mm	HD : Hot dip Galvanization	RFI : Return Flange Inside	2" : 50 mm	1" : 25 mm
	GS : Galvanized Steel	12 : 1.25 mm	PC : Powder Coating		3" : 75 mm	2" : 50 mm
	15 : 1.50 mm		ZE : Zinc Electroplating	RTI : Rib Type Inside	4" : 100 mm	3" : 75 mm
TLLR : Tray Ladder Right Side Reducer	AL: Aluminum	20 : 2.00 mm	HP : Hot dip Galv. + Powder Coating	CTI : C-Type Inside	8" : 200 mm	4" : 100 mm
	A2 :	22 : 2.25 mm		20" : 500 mm	10" : 250 mm	5" : 125 mm
	A4 :	25 : 2.50 mm	30 : 3.00 mm	24" : 600 mm	12" : 300 mm	6" : 150 mm
	SS 304		2P : Zinc Electroplating + Powder Coating	CLT : Click Lock Type	28" : 700 mm	
	SS 316				32" : 800 mm	
					36" : 900 mm	
					40" : 1000mm	

■ All types we can provide
■ Example code

NOTES

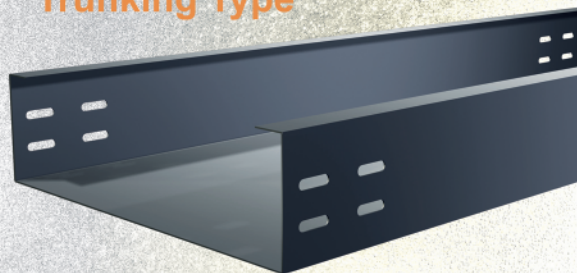


NOTES



Cable Tray

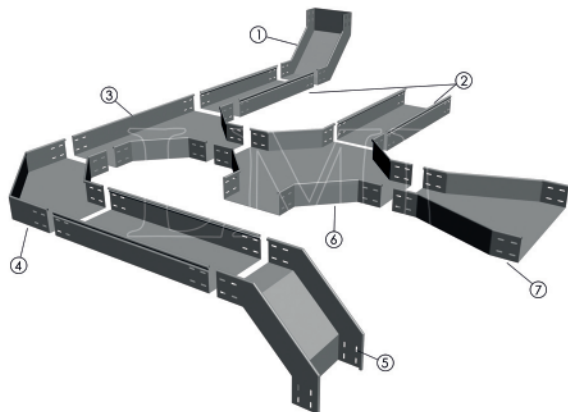
Trunking Type



Cable Tray Trunking Type System Design .
Cable Tray Trunking Type Straight Section .
Cable Tray Trunking Type Fittings Section:-



- Horizontal Elbow 90°
- Horizontal Elbow 45°
- Horizontal Cross
- Horizontal TEE
- Vertical Outside Elbow
- Vertical Inside Elbow
- Central Reducer
- Right Side Reducer
- Left Side Reducer



Nomenclature :-

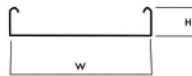
- ① Vertical Inside Elbow Cornered Type Trunking Cable Tray.
- ② Straight Section Trunking Cable Tray.
- ③ Tee Section Trunking Cable Tray.
- ④ Horizontal Elbow Cornered Type Trunking Cable Tray.
- ⑤ Vertical Outside Elbow Cornered Type Trunking Cable Tray.
- ⑥ Cross Section Trunking Cable Tray.
- ⑦ Reducer Section Trunking Cable Tray.

Cable Tray Trunking Type is a prefabricated metal structure consisting of a one-piece Solid bottom channel section. Used for light current cable.

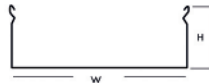
Side Shapes :-



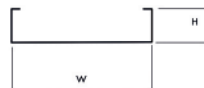
Can provide side types shapes as below :-



Return Flange inside Type
(RFI)



Click Lock Type
(CLT)



C - Type Inside
(CTI)



U - Shape Type
(UST)

Thickness (T) :-



Can provide material thickness as below :-

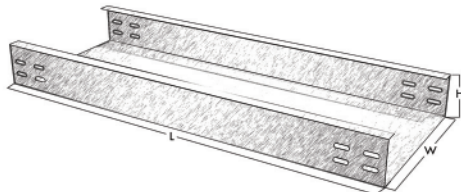
0.90 mm , 1.00 mm , 1.25 mm , 1.50 mm , 2.00 mm

System Design
Cable Tray
 Trunking Type

System Design

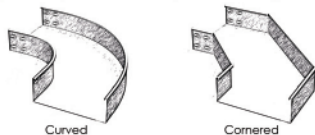
Cable Tray Dimensions :-

Base width (w), Side Height (H) & Length (L)



Shape of Fittings :-

Can provide Shape of Fittings as below :-



Inner Radius for Fittings (R) :-

Can provide Inner Radius for fittings as below :-

$R = 200 \text{ mm}, 300 \text{ mm}, 400 \text{ mm}, 500 \text{ mm}, 600 \text{ mm}.$

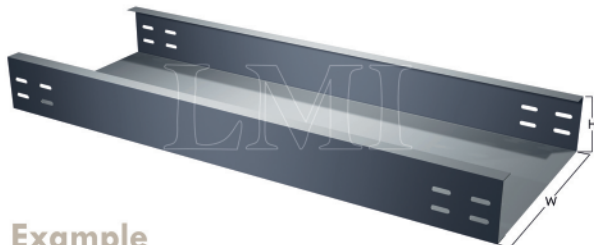


Straight Section
Cable Tray
 Trunking Type

Straight Section

Straight Section is a length of cable tray which has no change in direction or size

How to Order for straight Section ?



Example

Hot Dip Galvanized after fabrication cable tray Trunking Type, Straight Section , 100 mm width , 50 mm side height , Thickness 1.5 mm, Click Lock Type , Length of Piece 3000 mm

TTS - BS - 15 - HD - CLT - 4 - 2 - 300							
Cable Tray Type	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Base Width (W) (INCH)	Side Height (H) (INCH)	Length Of Piece (L)
Tray Trunking Straight Type	BS : Black Steel	10 : 1.00 mm	HD : Hot dip Galvanization	RFI : Return Flange Inside	2" : 50 mm 3" : 75 mm 4" : 100 mm	1" : 25 mm 2" : 50 mm	200 : 2000 mm 244 : 2440 mm
	GS : Galvanized Steel	12 : 1.25 mm 15 : 1.50 mm	PC : Powder Coating	UST : U-Shape Type	6" : 150 mm 8" : 200 mm 10" : 250 mm	3" : 75 mm 4" : 100 mm	250 : 2500 mm 300 : 3000 mm
	AL : Aluminum	20 : 2.00 mm 22 : 2.25 mm	ZE : Zinc Electroplating	CTI : C-Type Inside	12" : 300 mm 20" : 500 mm 24" : 600 mm	5" : 125 mm 6" : 150 mm	
	A2 : SS 304	25 : 2.50 mm	HP : Hot dip Galv.+ Powder Coating	CLT : Click Lock Type	20" : 500 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm		
	A4 : SS 316	30 : 3.00 mm	ZP : Zinc Electroplating + Powder Coating				

■ All types we can provide
 ■ Example code

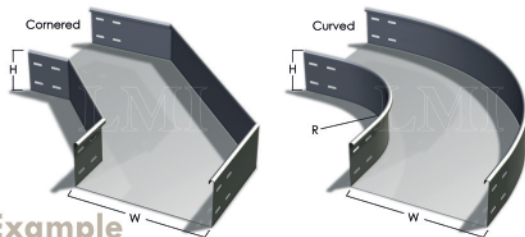
Cable Tray Trunking Type

Horizontal Elbow

Cable Tray Fitting section is a device which is used to change the direction, elevation or size of a cable tray system.

Horizontal Elbow is a cable tray fitting which changes the direction in the same plane.

How to Order for horizontal Elbow ?



Example

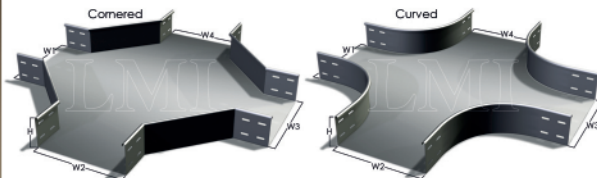
Zinc Electroplating after fabrication Trunking cable tray Horizontal Elbow 90°, 200 mm width , 100 mm side height , Thickness 1.5 mm , Return Flange Inside , curved type , with radius 200 mm

Cable Tray Trunking Type

Cross Section

Cross Section is a cable tray fitting which is suitable for joining cable trays in Four directions in the same plane.

How to Order for Cross Section ?



W1 : Left Direction W2 : Down Middle Direction W3 : Right Direction W4 : Up Middle Direction

Example

Mil Galvanized Steel Trunking cable tray Cross Section, 300/500/150/100 mm, 50 mm side height, Thickness 2 mm, Return Flange Inside, Curved type . Radius 300mm .. (No finished Type in this example)

TTHEV - 90 - BS - 15 - ZE - RFI - 8/8 - 4 - 20

Horizontal Elbow shape	Direction Degree	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Base Width (W1/W2)(INCH)	Side Height (H) (INCH)	Curve Radius
TTHEV: Tray Trunking Horizontal Elbow Curved	45 : 45° 90 : 90°	BS : Black Steel	10 : 1.00 mm 12 : 1.25 mm	HD : Hot dip Galvanization PC : Powder Coating	RFI : Return Flange Inside	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 14" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm 4" : 100 mm 5" : 125 mm 6" : 150 mm	20 : 200 mm 30 : 300 mm 40 : 400 mm 50 : 500 mm 60 : 600 mm
TTHEV: Tray Trunking Horizontal Elbow Cornered		GS : Galvanized Steel	15 : 1.50 mm 20 : 2.00 mm 22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	ZE : Zinc Electroplating HP : Hot dip Galv.+Powder Coating ZP : Zinc Electroplating +Powder Coating	UST : U-Shape Type CTI : C-Type Inside CLT : Click Lock Type			

TTCRV - GS - 20 - RFI - 12/20/6/4 - 2 - 30

Cross Section Type	Kind of Materials	Materials Thickness (T)	Side Type	Width Of Direction (W1/W2/W3/W4) (INCH)	Side Height (H) (INCH)	Curve Radius
TTCRV : Tray Trunking Cross Section curved	BS : Black Steel GS : Galvanized Steel	10 : 1.00 mm 12 : 1.25 mm 15 : 1.50 mm 20 : 2.00 mm	RFI : Return Flange Inside UST : U-Shape Type CTI : C-Type Inside CLT : Click Lock Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm 4" : 100 mm 5" : 125 mm 6" : 150 mm	20 : 200 mm 30 : 300 mm 40 : 400 mm 50 : 500 mm 60 : 600 mm
TTCRV : Tray Trunking Cross Section Cornered	AL : Aluminum A2 : SS 304 A4 : SS 316	22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm				

All types we can provide
Example code

All types we can provide
Example code

Cable Tray

Trunking Type

Tee Section

Tee Section is a cable tray fitting which is suitable for joining cable trays in Three directions in the same plane .

How to Order for TEE Section ?

Cornered



Curved



W1: Left Direction

W2: Middle Direction

W3: Right Direction

Example

Epoxy Powder Coating after fabrication Trunking cable tray Tee Section, 400/600/200 mm, 75 mm side height, Thickness 2 mm, U shape type, Cornered type .
(There is no Curve Radius in this example)

TTTN - BS - 20 - PC - UST - 16/24/8 - 3

TEE Section	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Width Of Direction (W1/W2/W3) (INCH)	Side Height (H) (INCH)
TTV: Tray Trunking TEE Curved	BS: Black Steel	10 : 1.00 mm	HD : Hot dip Galvanization	RFI : Return Flange inside	2" : 50 mm 3" : 75 mm 4" : 100 mm	1" : 25 mm 2" : 50 mm
	GS: Galvanized Steel	12 : 1.25 mm 15 : 1.50 mm	PC : Powder Coating	UST : U-Shape Type	6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm	3" : 75 mm 4" : 100 mm 5" : 125 mm 6" : 150 mm
TTTN : Tray Trunking TEE Cornered	AL: Aluminum	20 : 2.00 mm 22 : 2.25 mm	HP : Hot dip Galv.+ Powder Coating	CTI : C-Type Inside	24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	
	A2: SS 304	25 : 2.50 mm	ZP : Zinc Electroplating + Powder Coating	CLT : Click Lock Type		
	A4: SS 316	30 : 3.00 mm				

All types we can provide
Example code

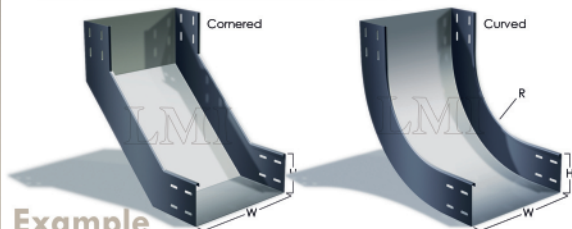
Cable Tray

Trunking Type

Vertical Elbow

Vertical Elbow is a cable tray fitting which changes direction to a different plane. An inside vertical elbow changes direction upward from the horizontal plane. An Outside vertical elbow changes direction downward from the horizontal plane.

How to Order for Vertical Inside Elbow ?



Example

Hot Dip Galvanization after fabrication Trunking cable tray Vertical Inside elbow 90°, 200 mm width ,100 mm side height , Thickness 1.5 mm , U Shape Type , curved type , with radius 200 mm

TTVEIV - 90 - BS - 15 - HD - UST - 8/8 - 4 - 20

Vertical Elbow shape	Direction Degree	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Base Width (W1/W2)(INCH)	Side Height (H) (INCH)	Curve Radius
TTVEV: Tray Trunking Vertical Elbow Inside Curved	45 : 45° 90 : 90°	BS : Black Steel	10 : 1.00 mm 12 : 1.25 mm	HD : Hot dip Galvanization	RFI : Return Flange inside	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm	1" : 25 mm 2" : 50 mm	20 : 200 mm 30 : 300 mm 40 : 400 mm
		GS: Galvanized Steel	15 : 1.50 mm 20 : 2.00 mm	PC : Powder Coating	UST : U-Shape Type	8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm	3" : 75 mm 4" : 100 mm 5" : 125 mm 6" : 150 mm	50 : 500 mm 60 : 600 mm
TTVEN: Tray Trunking Vertical Elbow Inside Cornered		AL: Aluminum	22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	HP : Hot dip Galv.+ Powder Coating	CTI : C-Type Inside	24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm		
		A2: SS 304		ZP : Zinc Electroplating + Powder Coating	CLT : Click Lock Type			
		A4: SS 316						

All types we can provide
Example code

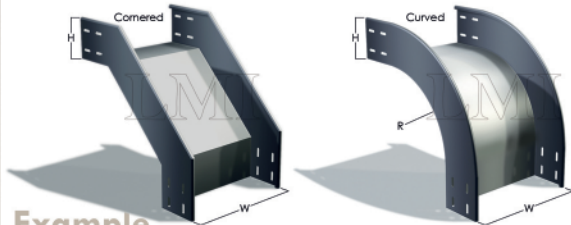
Cable Tray

Trunking Type

Vertical Elbow

Vertical Elbow is a cable tray fitting which changes direction to a different plane.
An Inside vertical elbow changes direction upward from the horizontal plane.
An Outside vertical elbow changes direction downward from the horizontal plane.

How to Order for Vertical Outside Elbow ?



Example

Hot Dip Galvanization after fabrication Trunking cable tray Vertical Outside elbow 90°, 200 mm width ,100 mm side height, Thickness 1.5 mm, U Shape Type , curved type , with radius 200 mm

Reducer Section

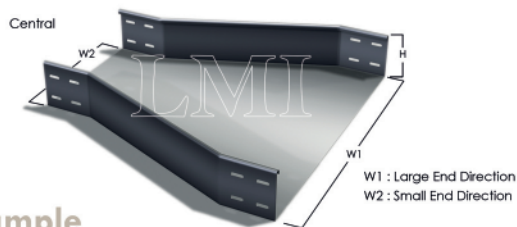
Cable Tray

Trunking Type

Reducer Section is a cable tray fitting which is suitable for joining cable trays of different widths in the same plane.

A Central reducer has two symmetrical offset sides.

How to Order for Central Reducer Section?



W1 : Large End Direction
W2 : Small End Direction

Example

Epoxy Powder Coating after fabrication Trunking cable tray Central Reducer Section, 600/400mm, 75 mm side height, Thickness 2 mm, U shape type.

T TVEOV - 90 - BS - 15 - HD - UST - 8/8 - 4 - 20

Vertical Elbow shape	Direction Degree	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Base Width (W1/W2)(INCH)	Side Height (H) (INCH)	Curve Radius
T TVEOV: Tray Trunking Vertical Elbow Outside Curved	45 : 45° 90 : 90°	BS : Black Steel GS : Galvanized Steel	10 : 1.00 mm 12 : 1.25 mm 15 : 1.50 mm 20 : 2.00 mm 22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	HD : Hot dip Galvanization PC : Powder Coating ZE : Zinc Electroplating HP : Hot dip Galv.+Powder Coating ZP : Zinc Electroplating +Powder Coating	RFI : Return Flange Inside UST : U-Shape Type CTI : C-Type Inside CLT : Click Lock Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm 4" : 100 mm 5" : 125 mm 6" : 150 mm	20 : 200 mm 30 : 300 mm 40 : 400 mm 50 : 500 mm 60 : 600 mm

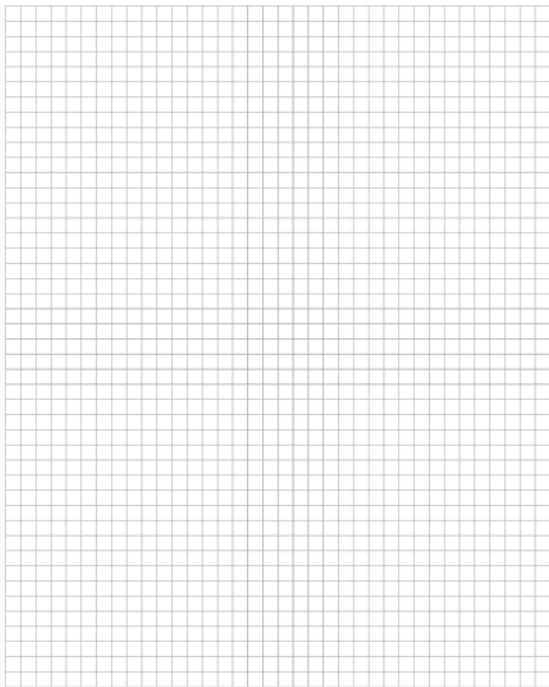
All types we can provide
Example code

T TCR - BS - 20 - PC - UST - 24/16 - 3

Reducer Section	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Width Of Direction (W1/W2)(INCH)	Side Height (H) (INCH)
T TCR :Tray Trunking Central Reducer Section	BS : Black Steel GS : Galvanized Steel	10 : 1.00 mm 12 : 1.25 mm 15 : 1.50 mm 20 : 2.00 mm 22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	HD : Hot dip Galvanization PC : Powder Coating ZE : Zinc Electroplating HP : Hot dip Galv.+ Powder Coating ZP : Zinc Electroplating + Powder Coating	RFI : Return Flange Inside UST : U-Shape Type CTI : C-Type Inside CLT : Click Lock Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	1" : 25 mm 2" : 50 mm 3" : 75 mm 4" : 100 mm 5" : 125 mm 6" : 150 mm

All types we can provide
Example code

NOTES



Cable Tray

Accessories



- Cable Tray Connectors.
- Cover Straight Section.
- Cover Fitting Section.
- Cover Clamps Section.
- Hardware Section.

Connectors

Cable Tray Accessories

Connectors

Cable Tray Accessories IS :-

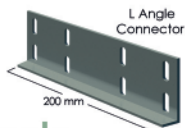
Devices which are used to supplement the function of straight sections and fittings, and include such items as Connectors, Dropouts, Covers, Conduit Adapters, Hold-Down devices and Dividers.

A- Cable Tray Connectors (Splice Plate) :-

A device which joins cable tray straight sections or fittings, or both.

The Famous types of connectors are: 1. L Angle Connector, 2. Adjustable Connector

How to Order for cable tray L Connector ?



Example

Hot Dip Galvanized after fabrication Cable Tray Connector, (L) Type, Length 200mm, for Cable tray Side Height 100 mm, 1.50 mm Thickness.

TLC - BS - 15 - HD - 8 - 4

Reducer Section	Kind of Materials	Materials Thickness (T)	Finished Type	Connector Length	Side Height (H) (INCH)
TLC : Tray L Angle Connector	BS : Black Steel	10 : 1.00 mm	HD : Hot dip Galvanization	8" : 200 mm	1" : 25 mm
	GS : Galvanized Steel	12 : 1.25 mm	PC : Powder Coating	16" : 400 mm	2" : 50 mm
TAC : Tray Adjustable Connector	AL : Aluminum	15 : 1.50 mm	ZE : Zinc Electroplating		3" : 75 mm
	A2 : SS 304	20 : 2.00 mm	HP : Hot dip Galv.+ Powder Coating		4" : 100 mm
	A4 : SS 316	22 : 2.25 mm	ZP : Zinc Electroplating + Powder Coating		5" : 125 mm
		25 : 2.50 mm			6" : 150 mm
		30 : 3.00 mm			

■ All types we can provide
 ■ Example code

Covers

Cable Tray Accessories

Covers

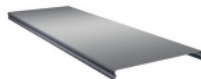
Cable Tray Covers :-

Tray covers are available for all classes of tray. They should be installed where falling objects may damage cables or where vertical tray run is accessible by pedestrian or vehicular traffic.

Cover mounting hardware must be ordered separately.

Solid Covers (VSS)

These covers provide maximum mechanical protection for cables with limited heat build up. Solid covers are available with or without flange.



Ventilated Covers (VVS)

This design offers excellent mechanical protection while allowing heat produced by cables to dissipate.



Peaked Covers : (VPS)

Peaked covers offer mechanical protection reduce pooling of liquids on the cover and accumulation of snow or ice. Peaked covers have 15° rise. Covers greater than 12" wide available in 72" and 3m lengths only.



Fittings covers are not available in Peaked

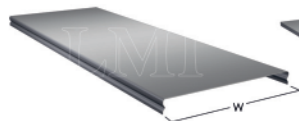
Cable Tray Accessories

Covers

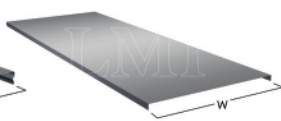
Cable Tray Cover Straight Section :-

How to Order for Cover Straight Section ?

Solid Cover
(Click Lock Type)



Solid Cover
(U Shape Type)



Example

Hot Dip Galvanized after fabrication cable tray Cover , Solid Type , Straight Section , 100 mm width , Thickness 1.50 mm, Click Lock Type , Length of Piece 3000 mm.

VSS - BS - 15 - HD - CLT - 4 - 300

Cable Tray Type	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Base Width (W) (INCH)	Length Of Piece (L)
VSS: Cover Solid Straight	BS : Black Steel	10 : 1.00 mm	HD : Hot dip Galvanization	UST : U-Shape Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000mm	200 : 2000 mm 244 : 2440 mm 250 : 2500 mm 300 : 3000 mm
VVS: Cover Ventilated Straight	GS : Galvanized Steel	12 : 1.25 mm 15 : 1.50 mm	PC : Powder Coating	CLT : Click Lock Type		
VPS: Cover Peaked Straight	AL: Aluminum	20 : 2.00 mm 22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	ZE : Zinc Electroplating	HP : Hot dip Galv.+ Powder Coating		
	A2: SS 304 A4: SS 316		ZP : Zinc Electroplating + Powder Coating			

■ All types we can provide
■ Example code

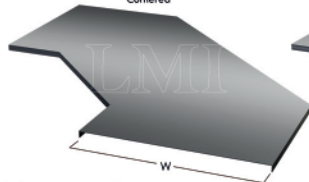
Horizontal Elbow

Cable Tray Accessories

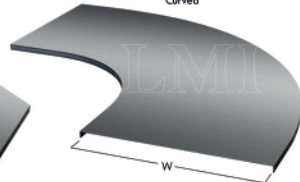
Cable Tray Cover Straight Section :-

How to Order for horizontal Elbow Cover?

Cornered



Curved



Example

Zinc Electroplating after fabrication Horizontal Elbow 90° Cover, Solid Type, 200 mm width , Thickness 1.00 mm, U Shape Type , curved type ,with radius 200 mm

VHEV - 90 - BS - 10 - ZE - UST - 8/8 - 20

Horizontal Elbow shape Cover	Direction Degree	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Base Width (W1/W2) (INCH)	Curve Radius
VHEV : Cover Horizontal Elbow Curved	45 : 45° 90 : 90°	BS : Black Steel	10 : 1.00 mm	HD:Hot dip Galvanization	UST : U- Shape Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 14" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000mm	20 : 200 mm 30 : 300 mm 40 : 400 mm 50 : 500 mm 60 : 600 mm
VHEN : Cover Horizontal Elbow Cornered		GS : Galvanized Steel	12 : 1.25 mm	PC : Powder Coating	CLT : Click Lock Type		
		AL: Aluminum	20 : 2.00 mm 22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	ZE : Zinc Electroplating			
		A2: SS 304 A4: SS 316		HP : Hot dip Galv.+Powder Coating			
				ZP : Zinc Electroplating + Powder Coating			

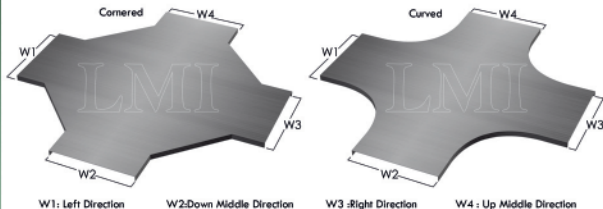
■ All types we can provide
■ Example code

Cable Tray Accessories

Cross Section

Cable Tray Cover Cross Section :-

How to Order for Cross Section Cover ?



Example

Galvanized Steel Cross Section Cover, Solid Type, Width : 300/500/150/100 mm , Thickness : 1.50 mm, U Shape Type, Curved type . Radius 300mm ..

Note : (It is Galvanized Steel so no finished Type in this example)

VCRV - GS - 15 - UST - 12/20/6/4 - 30

Cross Section Type Cover	Kind of Materials	Materials Thickness (T)	Side Type	Width Of Direction (W1/W2/W3/W4) (INCH)	Curve Radius
VCRV : Cover Cross Section Curved	BS : Black Steel	10 : 1.00 mm	UST : U- Shape Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm	20 : 200 mm 30 : 300 mm 40 : 400 mm 50 : 500 mm 60 : 600 mm
	GS : Galvanized Steel	12 : 1.25 mm 15 : 1.50 mm	CLT : Click Lock Type	24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000mm	
VCRN: Cover Cross Section Cornered	AL: Aluminum	20 : 2.00 mm			
	A2 : SS 304 A4 : SS 316	22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm			

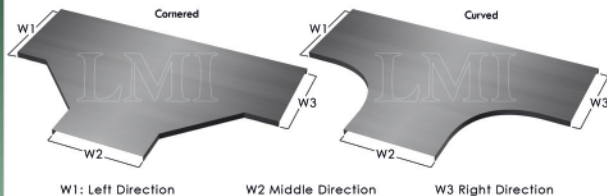
■ All types we can provide
■ Example code

Cable Tray Accessories

Tee Section

Cable Tray Cover TEE Section Section :-

How to Order for TEE Section Cover ?



Example

Epoxy Powder Coating after fabrication Tee Section Cover, Solid Type, Width: 400/600/200 mm, Thickness 2 mm, U shape type ,Cornered Shape .

Note: (It is Cornered Type so There is no Curve Radius in this example)

VTN - BS - 20 - PC - UST - 16/24/8

TEE Section Cover	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Width Of Direction (W1/W2/W3) (INCH)
VTN : Cover TEE Section curved	BS : Black Steel	10 : 1.00 mm	HD : Hot dip Galvanization	UST : U- Shape Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm
	GS : Galvanized Steel	12 : 1.25 mm 15 : 1.50 mm	PC : Powder Coating	CLT : Click Lock Type	
VTN: Cover TEE Section Cornered	AL: Aluminum	20 : 2.00 mm	ZE : Zinc Electroplating		
	A2 : SS 304 A4 : SS 316	22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	HP : Hot dip Galv.+ Powder Coating ZP : Zinc Electroplating + Powder Coating		

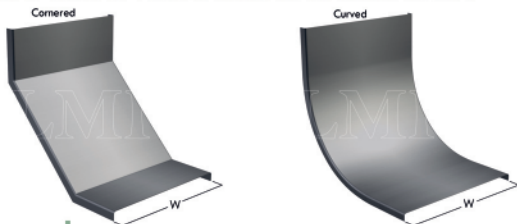
■ All types we can provide
■ Example code

Cable Tray Accessories

Vertical Inside Elbow

Cable Tray Vertical Inside Elbow Section :-

How to Order for Vertical Inside Elbow Section Cover ?



Example

Hot Dip Galvanization after fabrication Vertical Inside elbow 90° Cover , 200 mm width, Thickness 1.5 mm, U Shape Type , curved type , with radius 200 mm

VVEIV - 90 - BS - 15 - HD - UST - 8/8 - 20

Vertical Elbow shape Cover	Direction Degree	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Base Width (W1/W2) (INCH)	Curve Radius
VVEIV : Cover Vertical Elbow Inside Curved	45 : 45° 90 : 90°	BS : Black Steel	10 : 1.00 mm	HD: Hot dip Galvanization	UST : U-Shape Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm	20 : 200 mm
VVEIN : Cover Vertical Elbow Inside Cornered		G5 : Galvanized Steel	12 : 1.25 mm 15 : 1.50 mm	PC : Powder Coating	CLT : Click Lock Type	10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	30 : 300 mm 40 : 400 mm 50 : 500 mm 60 : 600 mm
		AL: Aluminum	20 : 2.00 mm 22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	ZE : Zinc Electroplating			
		A2 : SS 304		HP : Hot dip Galv.+Powder Coating			
		A4 : SS 316		ZP : Zinc Electroplating + Powder Coating			

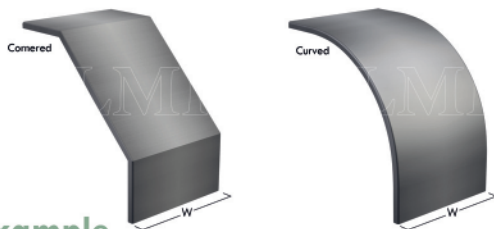
■ All types we can provide
■ Example code

Cable Tray Accessories

Vertical Outside Elbow

Cable Tray Vertical Outside Elbow Section :-

How to Order for Vertical Outside Elbow Section Cover ?



Example

Hot Dip Galvanization after fabrication Vertical Outside elbow 90° Cover , 200 mm width, Thickness 1.5 mm, U Shape Type , curved type , with radius 200 mm

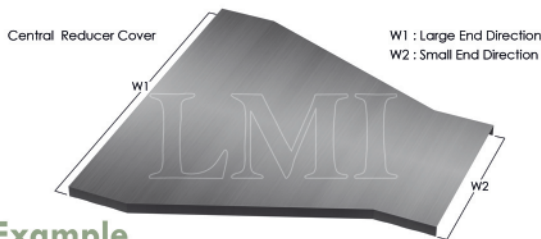
VVEOV - 90 - BS - 15 - HD - UST - 8/8 - 20

Vertical Elbow shape Cover	Direction Degree	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Base Width (W1/W2) (INCH)	Curve Radius
VVEOV : Cover Vertical Elbow Outside Curved	45 : 45° 90 : 90°	BS : Black Steel	10 : 1.00 mm	HD: Hot dip Galvanization	UST : U-Shape Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm	20 : 200 mm
VVEOV : Cover Vertical Elbow Outside Cornered		G5 : Galvanized Steel	12 : 1.25 mm 15 : 1.50 mm	PC : Powder Coating	CLT : Click Lock Type	10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	30 : 300 mm 40 : 400 mm 50 : 500 mm 60 : 600 mm
		AL: Aluminum	20 : 2.00 mm 22 : 2.25 mm 25 : 2.50 mm 30 : 3.00 mm	ZE : Zinc Electroplating			
		A2 : SS 304		HP : Hot dip Galv.+Powder Coating			
		A4 : SS 316		ZP : Zinc Electroplating + Powder Coating			

■ All types we can provide
■ Example code

Cable Tray Cover Reducer Section :-

How to Order for Reducer Section Cover ?



Example

Epoxy Powder Coating after fabrication Central Reducer Section Cover, 600/400mm, Thickness 2 mm, U shape type.

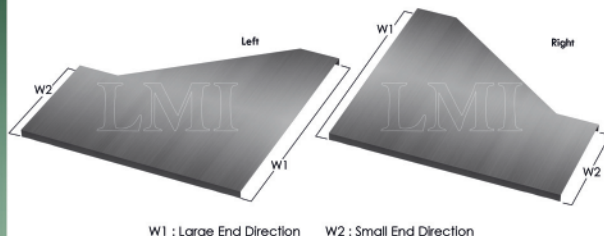
VCR - BS - 20 - PC - UST - 24/16

Reducer Section Cover	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Width Of Direction (W1/W2) (INCH)
VCR : Cover Central Reducer Section	BS : Black Steel	10 : 1.00 mm	HD : Hot dip Galvanization	UST : U-Shape Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm
	G5 : Galvanized Steel	12 : 1.25 mm 15 : 1.50 mm	PC : Powder Coating	CLT : Click Lock Type	
	AL : Aluminum	20 : 2.00 mm 22 : 2.25 mm	ZE : Zinc Electroplating		
VRR : Cover Right Reducer Section	A2 : SS 304 A4 : SS 316	25 : 2.50 mm 30 : 3.00 mm	HP : Hot dip Galv.+ Powder Coating		
VLR : Cover Left Reducer Section			ZP : Zinc Electroplating + Powder Coating		

■ All types we can provide
■ Example code

Cable Tray Reducer Section :-

How to Order for Reducer Section Cover ?



Hot Dip Galvanization after fabrication Left Reducer Section Cover, 600/400mm, Thickness 1.5 mm, U shape type.

VLR - BS - 15 - HD - UST - 24/16

Reducer Section Cover	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Width Of Direction (W1/W2) (INCH)
VCR : Cover Central Reducer Section	BS : Black Steel	10 : 1.00 mm	HD : Hot dip Galvanization	UST : U-Shape Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm
	G5 : Galvanized Steel	12 : 1.25 mm 15 : 1.50 mm	PC : Powder Coating	CLT : Click Lock Type	
	AL : Aluminum	20 : 2.00 mm 22 : 2.25 mm	ZE : Zinc Electroplating		
VRR : Cover Right Reducer Section	A2 : SS 304 A4 : SS 316	25 : 2.50 mm 30 : 3.00 mm	HP : Hot dip Galv.+ Powder Coating		
VLR : Cover Left Reducer Section			ZP : Zinc Electroplating + Powder Coating		

■ All types we can provide
■ Example code

Cable Tray Accessories

Covers Clamps

Cable Tray Cover Clamp Section :-

How to Order for Cover Clamp ?



**Cover Clamp
(C - Type) (CT)**

Universal Fitting Cover Clamp Rigid indoor cover clamp for flat and flanged covers



**Cover Clamp
(U - Type) (UT)**

Wraparound design offers added protection for rugged applications and outdoor conditions.



**Peaked Cover
Clamp (PT)**

Wraparound design formed to fit peaked cover for outdoor applications .

Example

Hot Dip Galvanized after fabrication cable tray Cover Clamp U-Type, 100 mm width , 50 mm Side Height , Thickness 1.50 mm .

VC - BS - 15 - HD - UT - 4 - 2

Item Type	Kind of Materials	Materials Thickness (T)	Finished Type	Cover Clamp Type	Cover Clamp Width (W) (INCH)	Side Height (H) (INCH)
VC: Cover Clamp	BS: Black Steel	10 : 1.00 mm	HD : Hot dip Galvanization	CT: C-Type	2" : 50 mm 3" : 75 mm	1" : 25 mm
	GS: Galva-nized Steel	12 : 1.25 mm 15 : 1.50 mm	PC : Powder Coating	UT: U-Type	4" : 100 mm 6" : 150 mm 8" : 200 mm	2" : 50 mm 3" : 75 mm
	AL: Aluminum	20 : 2.00 mm	ZE : Zinc Electroplating	PT: Peaked Type	10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000 mm	4" : 100 mm 5" : 125 mm 6" : 150 mm
	A2: SS 304	22 : 2.25 mm 25 : 2.50 mm	HP : Hot dip Galv.+ Powder Coating			
	A4: SS 316	30 : 3.00 mm	ZP : Zinc Electroplating + Powder Coating			

■ All types we can provide
■ Example code

Hardware Section

Cable Tray Accessories



Hexagon Nuts



Flat Washer



Carriage Bolt



Wedge Anchors



Drop In Anchors



Shield Anchors



Spring Nuts

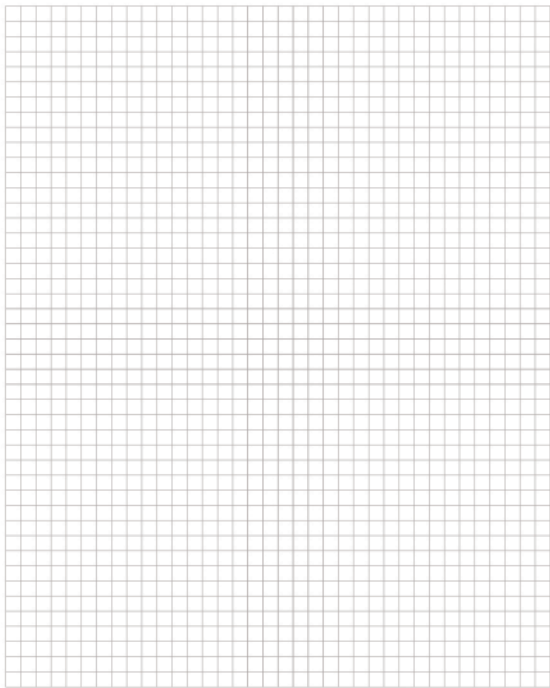


Serrated Rods

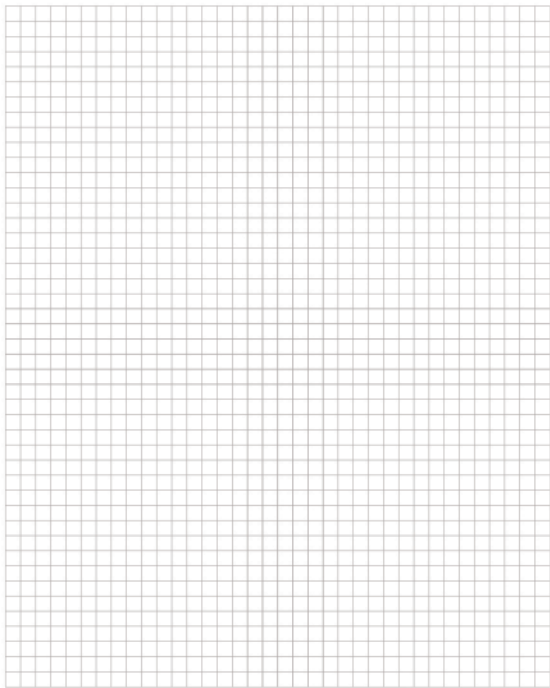


Hexagon Head Bolts

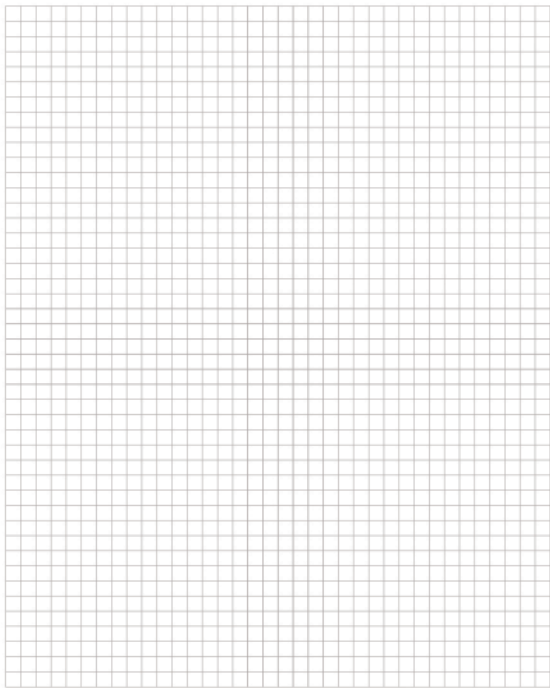
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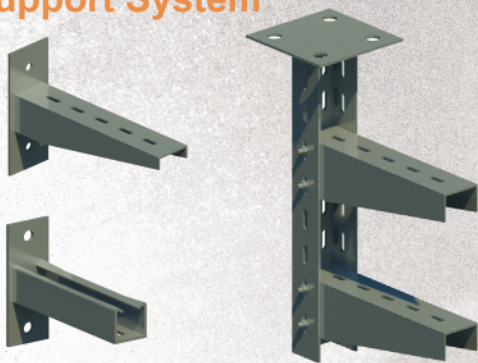


NOTES



Cable Tray

Support System



U - Channel
C- Channel
Unistrut channel
Wall Brackets
Ceiling Brackets

Cable Tray Support System

Suspension Channel

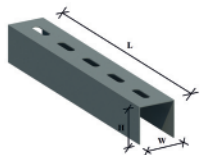
Cable Tray Support Is :-

A device which provides adequate means for supporting cable tray sections, fittings, or both. The basic types of cable tray supports are:

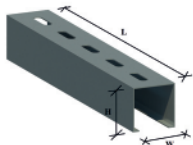
1. Suspension Channel, 2. Cantilever Bracket.

1. Suspension Channel

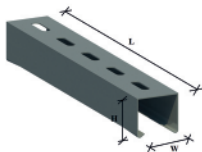
Suspension Channel are used for suspend the Cable trays systems , and the basic types of suspension channel are 1. U-Channel ;2.C- Channel ; 3.Unistrut Channel .



1.1 U - Channel (UST)



1.2 C - Channel (CTI)

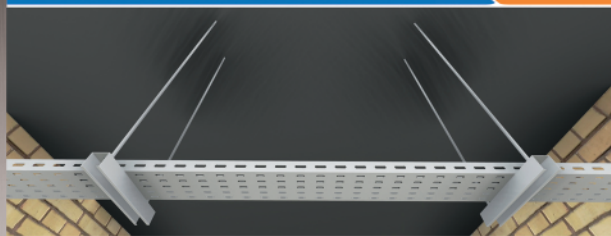


1.3 Uni - Strut Channel (RFI)



Suspension Channel

Cable Tray Support System



How to Order for Suspension Channel ?

Example

Hot Dip Galvanization after fabrication **Uni-Strut Channel (Return Flanged Type)**, 41mm Width, 21mm Height, 2 mm Thickness , 3000 mm Length

SC - BS - 20 - HD - RFI - 41 - 21 - 300

SC: Suspension Channel	Kind of Materials	Materials Thickness (T)	Finished Type	Side Type	Base Width (W) (mm)	Side Height (H) (mm)	Length Of Piece (L)
	BS : Black Steel	10 : 1.00 mm	HD : Hot dip Galvanization	RFI : Return Flange Inside (Unistrut)	30 : 30 mm	20 : 20 mm	200 : 2000 mm
	GS : Galvanized Steel	12 : 1.25 mm	PC : Powder Coating		40 : 40 mm	21 : 21 mm	244 : 2440 mm
	AL : Aluminum	15 : 1.50 mm	ZE : Zinc Electroplating	UST : U-Shape Type	41 : 41 mm	25 : 25 mm	250 : 2500 mm
	A2 : SS 304	20 : 2.00 mm	HP : Hot dip Galv.+ Powder Coating		50 : 50 mm	26 : 26 mm	300 : 3000 mm
	A4 : SS 316	22 : 2.25 mm	ZP : Zinc Electroplating + Powder Coating		60 : 60 mm	40 : 40 mm	
		25 : 2.50 mm				41 : 41 mm	
		30 : 3.00 mm					

■ All types we can provide
■ Example code

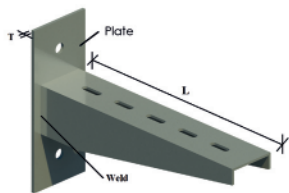
Cable Tray Support System

Cantilever Brackets

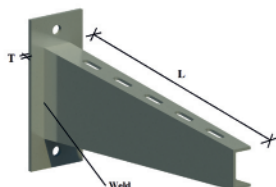
2. Wall Brackets :

A common solution for horizontal wall mounting or channel framing. Suitable for all sizes of Cable trays especially for wider trays and heavier loads , and here we can provide common Types of Wall Brackets.

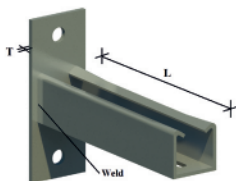
A. Wall Brackets Welded Type (WBW) :-



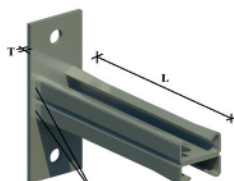
Welded Wall Bracket Hung Type (HT)



Welded Wall Bracket Deep Hung Type (DH)



Welded Wall Bracket Single Uni-Strut Type (SU)

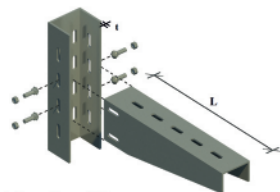
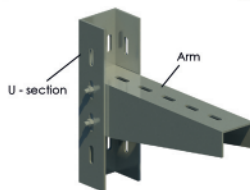


Welded Wall Bracket Double Uni-Strut Type (DU)

Cantilever Brackets

Cable Tray Support System

B. Wall Brackets Bolted Type (WBB) :-



Bolted Wall Bracket Hung Type (HT)

How to Order for Wall Brackets ?

Example

Hot Dip Galvanization after fabrication Welded Wall Bracket Hung Type, Plate Thickness 5 mm, Arm Thickness 3 mm , Arm Length 500mm, Arm Width 75mm , Arm Levels (1) level .

WBW	- BS	- 50/30	- HD	- HT	- 3/20	- 1
Wall Bracket Type	Kind of Materials	Plate (U-sec.) / Arm Materials Thickness (T)	Finished Type	Wall Bracket Shape type	Width / Length Of Arm (Inch)	Arm Levels
WBW: Wall Bracket Welded type	BS : Black Steel	GS: Galvanized Steel 20 : 2.00 mm 30 : 3.00 mm	HD: Hot dip Galvanization PC: Powder Coating ZE: Zinc Electroplating	HT : Hung Type DH : Deep Hung Type	2" : 50 mm 3" : 75 mm 4" : 100 mm 6" : 150 mm 8" : 200 mm 10" : 250 mm 12" : 300 mm 16" : 400 mm 20" : 500 mm 24" : 600 mm 28" : 700 mm 32" : 800 mm 36" : 900 mm 40" : 1000mm	1 : 1 Level 2 : 2 Levels 3 : 3 Levels 4 : 4 Levels 5 : 5 Levels 6 : 6 Levels 7 : 7 Levels 8 : 8 Levels
WBB: Wall Bracket Bolted type	AL: Aluminum A2 : SS 304 A4 : SS 316	40 : 4.00 mm 50 : 5.00 mm 60 : 6.00 mm	HP : Hot dip Galv.+ Powder Coating ZP : Zinc Electroplating + Powder Coating	SU : Single Uni-Strut Type DU : Double Uni-Strut Type		

■ All types we can provide
■ Example code

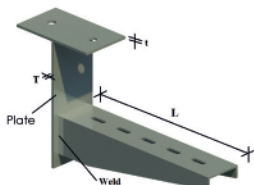
Cable Tray Support System

Cantilever Brackets

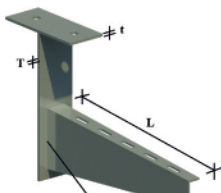
3. Ceiling Brackets

Ceiling Brackets are used to carry cable tray suspended from the ceiling.

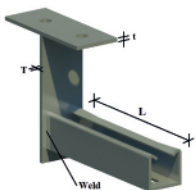
A. Ceiling Brackets Welded Type (CBW) :-



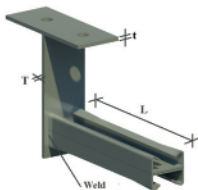
Welded Ceiling Bracket Hung Type (HT)



Welded Ceiling Bracket Deep Hung Type (DH)



Welded Ceiling Bracket Single Uni-Strut Type (SU)

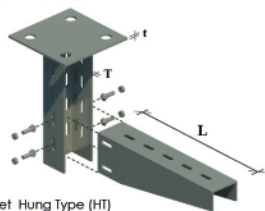
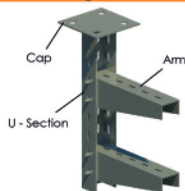


Welded Ceiling Bracket Double Uni-Strut Type (DU)

Cantilever Brackets

Cable Tray Support System

B. Ceiling Brackets Bolted Type (CBB) :-



Bolted Ceiling Bracket Hung Type (HT)

How to Order for Ceiling Brackets ?

Example

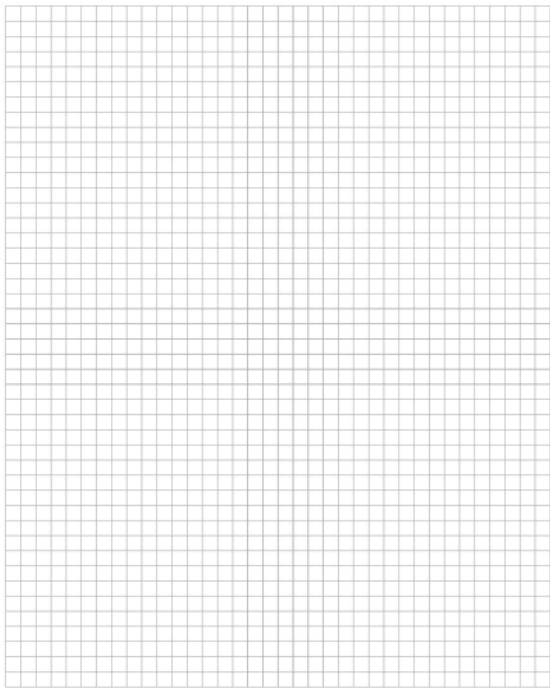
Hot Dip Galvanization after fabrication **Bolted Ceiling Bracket Hung Type**, Cap Thickness 6mm , U-Section Thickness 5 mm , Arm Thickness 3 mm , Arm Length 500 mm , Arm width 100 mm , 2 Levels arm .

CBB - BS - 60/50/30 - HD - HT - 4/20 - 2

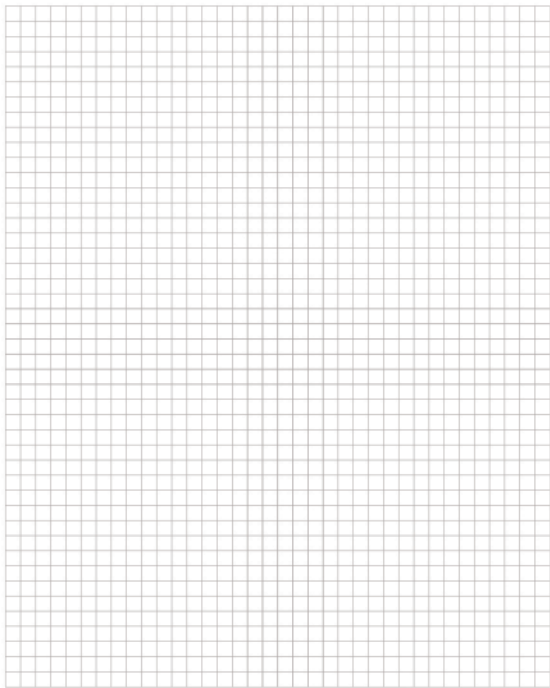
Ceiling Bracket Type	Kind of Materials	Cap/Plate (U-Sec)/Arm Materials Thickness (T)	Finished Type	Wall Bracket Shape type	Width / Length Of Arm (Inch) (L)	Arm Levels Pieces
CBW: Ceiling Bracket Welded type	BS: Black Steel	20 : 2.00 mm	HD: Hot dip Galvanization	HT: Hung Type	2" : 50 mm	1 : 1 Level
	GS: Galvanized Steel	30 : 3.00 mm	PC: Powder Coating	DH: Deep Hung Type	3" : 75 mm	2 : 2 Levels
	AL: Aluminum	40 : 4.00 mm	ZE: Zinc Electroplating	SU: Single Uni-Strut Type	4" : 100 mm	3 : 3 Levels
CBB: Ceiling Bracket Bolted type	A2: SS 304	50 : 5.00 mm	HP: Hot dip Galv.+ Powder Coating	DU: Double Uni-Strut Type	6" : 150 mm	4 : 4 Levels
	A4: SS 316	60 : 6.00 mm	ZP: Zinc Electroplating + Powder Coating		8" : 200 mm	5 : 5 Levels
					10" : 250 mm	6 : 6 Levels
					12" : 300 mm	7 : 7 Levels
					16" : 400 mm	8 : 8 Levels
					20" : 500 mm	
					24" : 600 mm	
					28" : 700 mm	
					32" : 800 mm	
					36" : 900 mm	

■ All types we can provide
■ Example code

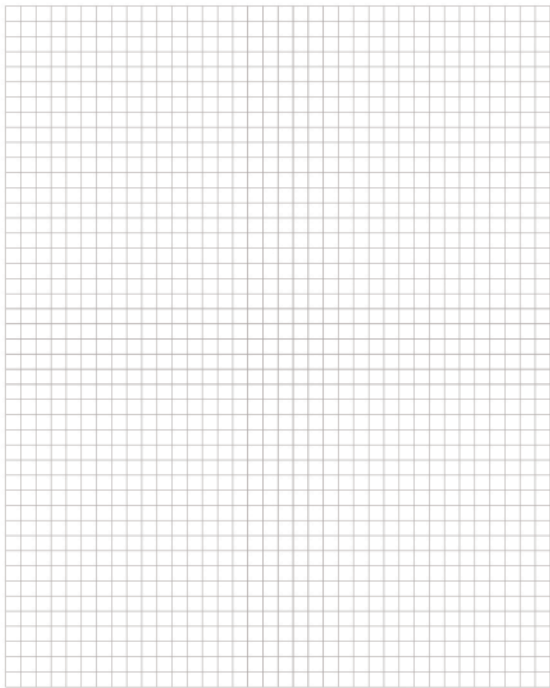
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Useful Information



Useful Information

Surface Area & Volume Formulas Calculate Surface Area and Volume

Surface area and volume formulas are part of the math used in common science calculations. You may need to calculate surface area and volume to determine density, pressure and Forces, for example. While it's a good idea to memorize these formulas, here a list of surface area and volume formulas to use as a handy reference.



Area Calculation :-



Triangle
Perimeter = $a + b + c$
Area = $\frac{1}{2} \times b \times h$
 b = base
 h = vertical height



Circle
Area = $\pi \times r^2$, Area = $\pi \times d^2 / 4$
Circumference = $2 \times \pi \times r$
Circumference = $\pi \times d$
 r = radius, d = diameter



Rectangle
Perimeter = $2h + 2w$
Area = $w \times h$
 w = width
 h = height



Ellipse
Area = $\pi \times r1 \times r2$



Trapezoid
Perimeter = $a + b1 + b2 + c$
Area = $\frac{1}{2}(b1 + b2) \times h$
 h = vertical height



Sector
 $L = r \times \theta$
Area = $\frac{1}{2} \times r^2 \times \theta$
 r = radius
 θ = angle in radians



Square
Perimeter = $4a$
Area = a^2
 a = length of side



Hexagon
Perimeter = $6r$
Area = $[3\sqrt{3}/2]r^2$



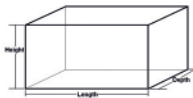
Parallelogram
Perimeter = $2a + 2b$
Area = $b \times h$
 b = base
 h = vertical height



Octagon
Perimeter = $8a$
Area = $[2 + 2\sqrt{2}]a^2$

Useful Information

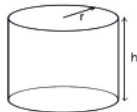
Volume Calculation : $\pi = 3.141592$



Rectangular Solid

Surface Area = $2(lh) + 2(lw) + 2(wh)$

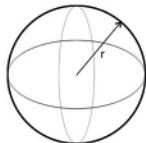
Volume = $l \times h \times w$
where :
 l = length
 h = height
 w = width



Cylinder

A cylinder is a prism with a circular base.

Surface Area = $2\pi r^2 + 2\pi rh$
Volume = $\pi r^2 h$

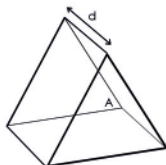


Sphere

A sphere is a shape where the distance from the center to the edge is the same in all directions.

This distance is called the radius (r).

Surface area = $4\pi r^2$
Volume = $4/3\pi r^3$

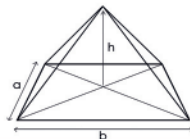


Prism

A prism can be described as a stack of shapes. The figure shows a prism of triangles stacked (d) thick, but any shape could be used.

Surface area = $2A + Pd$
where
 A = area of the base shape
 P = perimeter of base shape
 d = height of prism

Volume = Ad



Pyramid

A pyramid is a solid figure with a polygonal base and triangular faces that meet at a common point over the center of the base.

The height (h) is the distance from the base to the apex or top of the pyramid.

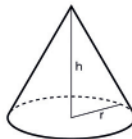
The side length (s) is the height of the face triangles.

The perimeter (P) and the area (A) of the base is calculated according to the shape of the base.

Surface Area = $\frac{1}{2} \times P \times s + A$
Volume = $1/3 Ah$

The figure shows a pyramid with a square base ($a = b$) with equilateral triangles for faces.

Surface area = $a^2 + \sqrt{3}(a^2)$
Volume = $\sqrt{3}(a^3/6)$



Cone

A cone is a pyramid with a circular base of radius (r) and the side length (s) is the length of the side.

$s = \sqrt{(r^2 + h^2)}$

Surface Area = $\pi r^2 + \pi(r \times s)$

Volume = $1/3(\pi r^2 h)$

Useful Information

Density & Weight Formulas :-

Calculate Density and Weight :-

Density is defined as Weight divided by volume, or Weight per unit volume. The density in kilograms per cubic meter can be obtained by multiplying the table values by 1000.

And here in this table you will find the common materials densities, and some formulas that you will need it in your weight & loads calculation.

Substance Relative density

Liquids	
Alcohol	0.82
Mercury	13.95
Paraffin	0.80
Petrol	0.72
Water (40C)	1.00
Sea water	1.02

Solids	
Aluminum	2.72
Brass	8.48
Cadmium	8.57
Chromium	7.03
Copper	8.79
Cast iron	7.20
Lead	11.35
Nickel	8.73
Nylon	1.12
PVC	1.36
Rubber	0.96
Steel	7.82
Tin	7.28
Zinc	7.12

Gases at STP	
Acetylene	0.0017
Dry air	0.0013
Carbon dioxide	0.00198
Carbon monoxide	0.00126
Hydrogen	0.00009
Nitrogen	0.00125
Oxygen	0.00143

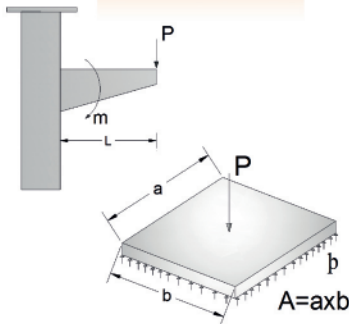
1- Volume (v) =
Weight (w) / Density (d)

2- Weight (w) =
Volume (v) x Density (d)

3- Density (d) =
Weight (w) / Volume (v)

4- Moment (m) =
Load (P) x arm length (L)

5- Pressure (b) =
Load (P) / Area (A)



Useful Information

COMMON UNIT OF MEASURE CONVERSIONS :-

COMMONLY USED ABBREVIATIONS

Abbreviations may stand for singular or plural usage

cm = centimeter	cu. = cubic	ft. = foot	gal. = gallon (US)
gr. = gram	Imp. = Imperial	in. = inch	kg. = kilogram
km. = kilometer	l. = liter	lb. = pound	m. = meter
mi. = mile	oz. = ounce	qt. = quart	std. = standard
US = United States	yd. = yard		

Weight Measures :-

Common Usage :-

1 lb. = 16 oz. | 1 oz. = 0.0625 lb.
1 ton = 2000 lb. | 1 lb. = 0.0005 ton

METRIC

1 oz. = 28.35 gr. | 1 gr. = 0.03527 oz.
1 kg = 1000 gm | 1 gr. = 0.001 kg.
1 lb. = 0.4536 kg. | 1 kg. = 2.2046 lb.

1 metric ton = 1 English ton =
0.9842 English ton | 1.016 metric tons

Temperature :-

Celsius or Fahrenheit

1 degree Celsius (C) = 5/9 x (F - 32)
(9/5 x C) + 32 = 1 degree Fahrenheit (F)

Length Measures :-

Common Usage :-

1 ft. = 12 in.	1 in. = 0.0833 ft.
1 yd. = 3 ft.	1 ft. = 0.3333 yd.
1 mi. = 5,280 ft.	1 ft. = 0.000189 mi.
1 mi. = 1,760 yd.	1 yd. = 0.000568 mi.
1 in. = 2.54 cm.	1 cm. = 0.3937 in.
1 ft. = 30.48 cm.	1 cm. = 0.0328 ft.
1 m. = 3.2808 ft.	1 ft. = 0.3048 m.
1 m. = 39.37 in.	1 in. = 0.0254 m.
1 m. = 1.0936 yd.	1 yd. = 0.9144 m.
1 rod = 5.029 m.	1 m. = 0.1988 rod
1 km = 1000 m.	1 m. = 0.001 km.
1 km = 0.621 mi.	1 mi. = 1.6103 km.

Reciprocal Value :-

Area (Square Measures) :-

Common Usage :-

1 sq. ft. = 144 sq. in.	1 sq. in. = 0.0069 sq. ft.
1 sq. yd. = 9 sq. ft.	1 sq. ft. = 0.1111 sq. yd.
1 sq. rod = 30.25 sq. yd.	1 sq. yd. = 0.0331 sq. rods
1 sq. mi. = 640 acres	1 acre = 0.0016 sq. mi.
1 sq. cm. = 0.1550 sq. in.	1 sq. in. = 6.452 sq. cm.
1 sq. ft. = 0.0929 sq. m.	1 sq. m. = 10.7643 sq. ft.
1 sq. m. = 1.196 sq. yd.	1 sq. yd. = 0.8361 sq. m.
1 hectare = 2.47 acres	1 acre = 0.4049 hectares
1 sq. km. = 0.386 sq. mi.	1 sq. mi. = 2.59 sq. km.

Reciprocal Value :-

