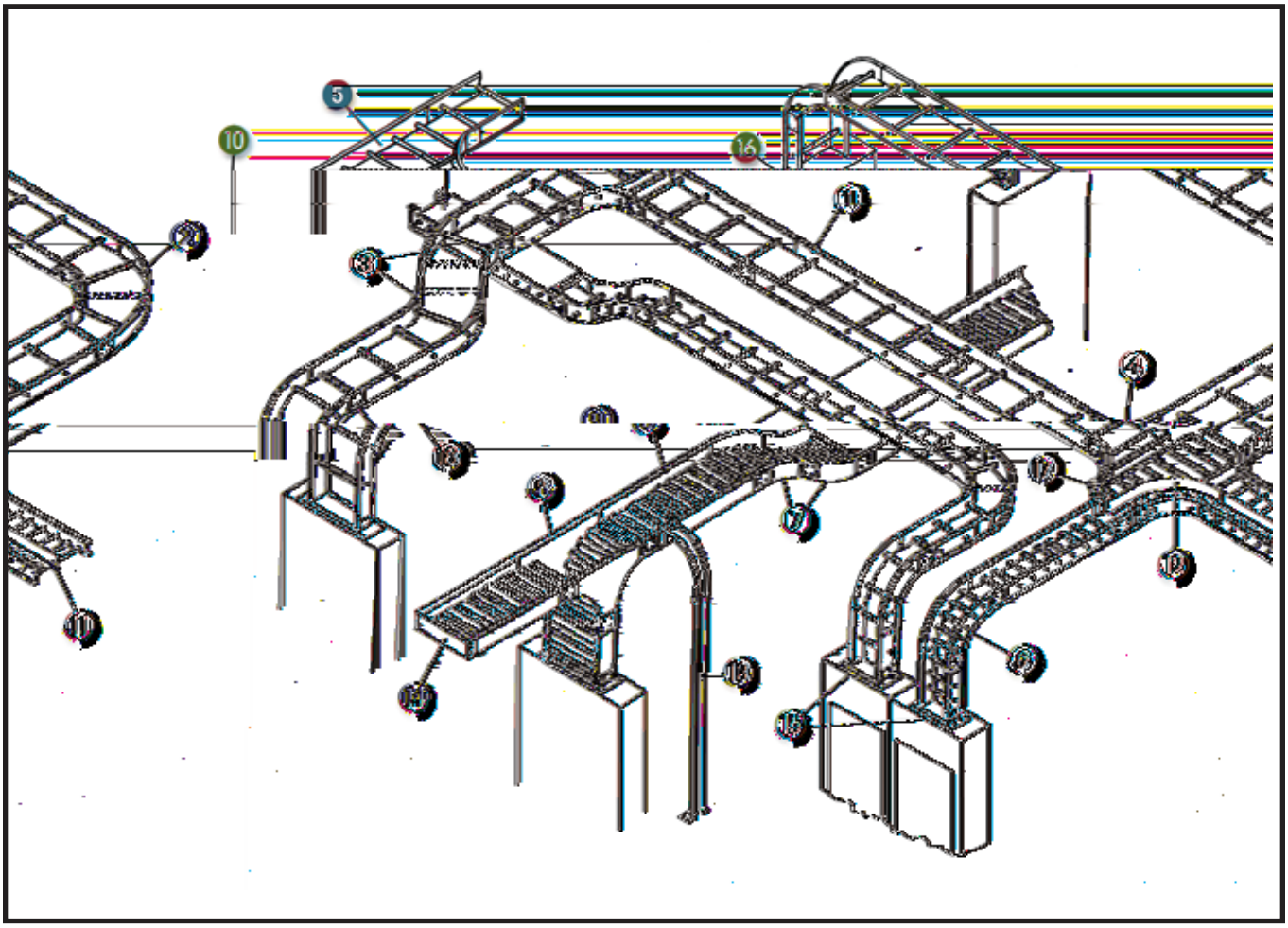
CABLE TRAY SYSTEM



LEGEND

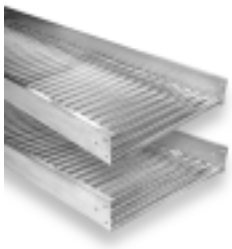
1. Straight Section, Ladder (SL)
2. Horizontal Elbow, 90°, Ladder Type (9F)
3. Horizontal Elbow, 30°, 45° or 60° (3F, 4F, 6F)
4. Horizontal Cross, Ladder Type (FC)
5. Horizontal Tee, Ladder Type (FT)
6. Vertical Elbow, Outside, 90° (9O)
7. Vertical Elbow, Outside & Inside, 30°, 45°, or 60°
   (3O, 3I, 4O, 4I, 6O, 6I)
8. Vertical Tee, Solid Bottom Trof Type (VT)
9. Straight Section, Solid Bottom Trof (SL)
10. Flanged Solid Cover (FS)
11. Barrier Strip-Straight Section (SB)
12. Barrier Strip-Flexible-Horizontal Fitting(FB)
13. Straight Section, Cope Channel (SL)
14. Blind End (BE)
15. Box Connector (BC)
16. Angle Connector (CA)
17. Reducing Connector (CO)

SECTION 1 Technical Data & Product Feature

SECTION 2 NEMA Standard VE-1

SECTION 3 COPE Swage Ladder

SECTION COPE Hat



SELECTING A T.J. COPE CABLE TRAY SYSTEM

A number of factors must be considered when selecting the proper cable tray system and planning the installation:

- Material and Finish
- Types of Cable Tray
- NEMA Class
- Cavity Size – Load Depth/Width of Tray
- Length of Straight Sections
- Radius of Fittings
- Cable Tray Support Locations
- Electrical Grounding

MATERIALS AND FINISH

The material selection is based on the environmental conditions and economic considerations for the project.

Steel – Pre-Galvanized

Hot Dip Mill-Galvanized steel (ASTM-A-653-G90 CQ) is zinc coated by a hot dip process. Steel strip from a coil is fed through a continuous zinc coater which cleans, fluxes and coats the steel with molten zinc. After cooling, the steel is recoiled.

The pregalvanized coating conforms to ASTM A-924 and provides 1.25 oz. zinc coating/sq. ft. of material. That is, 1.25 oz. total weight of coatings on both sides of one sq. ft. of material.

Mill galvanized ladder is generally used indoors or in locations not exposed to the elements or corrosives.

Steel – Hot Dip Galvanized After Fabrication

In hot dip galvanizing after fabrication (HDGAF), the finished part is immersed in a bath of molten zinc (ASTM 123). This method results in complete zinc coverage and a thicker coating than pregalvanized or electro-plated steel.

The zinc coating is typically 2.6 MIL or 1.5 oz./sq. ft. of surface area.

This is the coating of choice for applications where protection from severe corrosion is a design factor.

Stainless Steel

Type 304 and Type 316 stainless steel material in accordance with ASTM-A-240.

Aluminum

Aluminum material in accordance with AA-6063-T6. Aluminum trays are suitable for most outdoor applications and offer reductions in total installed costs.

Fiberglass

For extremely corrosive areas, T. J. Cope offers the most complete line of Fiberglass cable trays available. For a complete T. J. Cope "Cope-Glas" catalog, please contact the factory or the T. J. Cope representative in your area.

Special Finishes

For extremely corrosive areas Cope can supply a PVC (polyvinyl chloride) coating over aluminum or uncoated steel. This is applied using the fluidized bed process to a nominal thickness of 12 mils.

Weathering steel is also available; contact factory for availability.

TYPES OF CABLE TRAY

Any assembly of cable tray straight sections, fittings and accessories that form a rigid system to support cables is a cable tray. The different types of tray designs are described below.

Ladder

A prefabricated metal structure consisting of two side rails connected by individual transverse members or rungs.

Ladder tray is the most common and the most economical type of tray. It also provides maximum ventilation for cabling.

Ventilated Trough

A prefabricated metal structure with clear openings no greater than 4".

Trough cable trays are the best choice for smaller cables. Ventilated troughs offer some air-flow while completely eliminating cable sagging.

Solid Trough

A prefabricated metal structure consisting of a bottom with no openings within the cable bearing surface.

Solid bottom cable trays completely eliminate cable sagging and offer the most protection for the cables.

Channel

A prefabricated metal structure consisting of a one-piece ventilated or solid bottom channel section not exceeding 6" in width.

NEMA CLASS

The NEMA Classifications for Cable Tray were established to simplify and standardize the specification of Cable Tray. This classification is based on the working load (the total weight of the cables), and the support span (the distance between supports). The NEMA VE1 specifications are contained in Section 2.

T.J. Cope is a member of NEMA and offers designs in all NEMA cable tray classifications.

Cable Load/Working Load

The Cable load or the working load is the total weight of the cables to be placed in the tray. The NEMA classes are based on cable loads of 50#, 75#, and 100# per lineal foot. This is the total weight of cables in the tray. For purposes of selecting a suitable tray, this weight should be rounded off to the next higher NEMA working (allowable) load.

Support Spans

Support span is the distance between the supports. The NEMA standard support spans are based on 8', 12', 16' and 20'.

NEMA Classes

The following table summarizes the NEMA classes based on cable/working load and support span described previously.

NEMA Load/Span Designations

Class Designation	Support Span Feet	Working Load Lbs./Linear Ft.
8A	8	50
8B	8	75
8C	8	100
12A	12	50
12B	12	75
12C	12	100
16A	16	50
16B	16	75
16C	16	100
20A	20	50
20B	20	75
20C	20	100

In cases where cable loads cannot be determined prior to specification or purchase an estimate of cable weight may have to be made. The following table represents the maximum weight of insulated copper conductors which can be contained in a lineal foot of tray of the widths and load depths given. The National Electrical Code (NEC) greatly limits cable fill area and actual loads will be less. For example, the weight of multiconductor control and/or signal cable is close to those in the table; however, Article 318-8(3)(b) limits fill to 50% of cross section of tray, with 6" the maximum depth usable for computation. A 6" deep x 36" wide cross section would only be permitted to be loaded to 130 pounds per linear foot, using the table below. As cables increase in size and interstices get larger between cables, the total weight decreases. Total weights of cable are rarely more than NEMA categories.

Width (in.)	Loading Depth (Lbs./Ft.) 3"	4"	5"	6"
6	22	29	36	44
9	33	44	54	66
12	44	58	72	88
18	65	87	108	130
24	88	116	144	175
30	108	144	180	216
36	130	174	216	260

Other Loading Considerations

It is important to note that when specifying loading requirements, there are other loading factors that may need to be considered over and above the actual cable loads.

Destruction Load Capacity

The total weight in the tray which causes the tray to collapse, is called the "destruction load capacity". When trays do collapse, they generally do so by premature lateral buckling (compression) of the top flange.

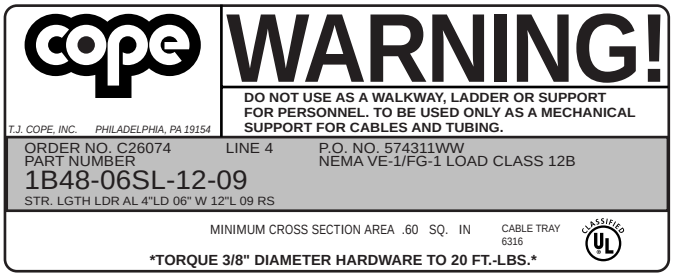
Concentrated Loads

A concentrated load is a static weight applied between the side rails at mid span. When specified, these concentrated static loads may be converted to an equivalent uniform load (We), in pounds per lineal foot, using the following formula:

$$We = \frac{2 * \text{Concentrated Load}}{\text{Support Span}}$$

This load (We) is then added to the static weight of the cable before selecting the appropriate NEMA load span designation.

Please note per the NEMA VE-1 guidelines all T.J. Cope Cable Trays are labeled as follows:



Environmental Loads

Environmental loads should be considered in any outdoor installation, particularly when cable tray is to be covered. These loads include wind loads, snow loads, and ice loads. Specific information data concerning these loads can be obtained by contacting the T.J. Cope Factory. Other sources for this type of information can be obtained through the local weather bureau.

It is important to note that these types of loads need to be considered in terms of pounds per square feet, unlike the cable loads, which are calculated in terms of pounds per lineal foot.

The following are general guidelines to follow:

- **Wind Loads**
  75 m.p.h. wind = 25 lbs./sq. ft. pressure
- **Ice Loads**
  ½" thick ice on tray surfaces weighs 2.4 lbs/sq. ft.
- **Snow Loads**
  Snow loads vary greatly depending on the latitude and altitude at the job site. Contact local weather bureau for information.

Safety Factor

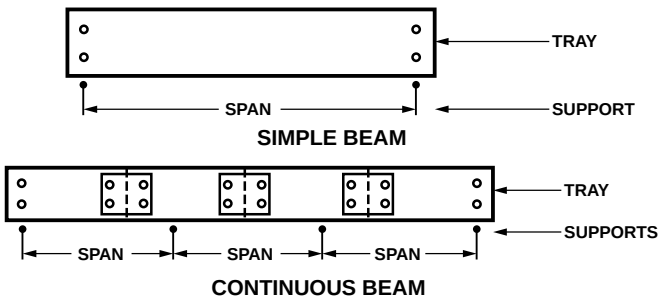
All loads stated in the Cope Selection Charts have a 1.5 safety factor, in accordance with the NEMA VE-1 Guidelines. A safety factor is the reserve strength, above the actual cable loading, for which a tray system was designed.

Conversion of Safety factor from 1.5 to 2.0

The loads stated in the Selection Charts have a safety factor of 1.5 per the NEMA VE-1 guidelines. To convert the load carrying capabilities, as listed in these charts, to a 2.0 safety factor, multiply the stated loads by 0.75.

Testing Methods

Loading data stated in the catalog has been derived from actual testing of the tray systems, or by means of structural calculations. These figures were based on Simple Beam calculation, per the NEMA VE-1 guidelines.

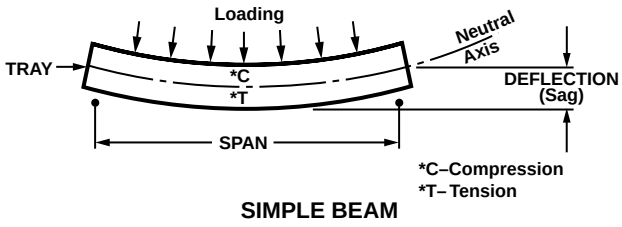


When tray is supported as a simple beam, the load causes bending moments all along the beam resulting in deflection, called sag, inducing stress in the beam. The material above the longitudinal centerline (neutral axis) is compressed. Material below, is stretched and is in tension. The *maximum stress* in a simple beam is at the center of the span. Failure of cable tray will occur in compression before tension. This is why tray rails often have stiffened top flanges.

A simple beam is present when a single straight section of tray is supported on each end. When a series of straight sections are connected and supported by more than one support it is referred to as a continuous beam. The NEMA VE-1 Standards consider only simple beams for testing purposes, due to the following reasons:

1. It requires maximum properties for a given load and support spacing.
2. It is easiest to approximate by calculation.
3. It represents the most severe or worst case loading.
4. Destruction load capacities can be easily verified.

Deflection vs. Economy



SIMPLE BEAM

Cable tray that meets all performance and dimensional criteria with the safety factor specified without regard for deflection is the most economical tray for the installation. When deflection limitations are imposed, a less economical tray system may result. Cope recommends that deflection limitations should be imposed in only the most stringent situations. If deflection is a concern, Cope recommends these maximum limits for the optimum design.

	Simple Beam Span	
	12'	20'
STEEL	1/100	1/75
ALUMINUM	1/75	1/50

Note: Continuous beams (such as installed tray) deflect approximately ½ of that of simple beams.

CAVITY SIZE – LOAD DEPTH/WIDTH OF TRAY

The size of the cable tray cavity is determined specifically by the electrical requirements and the by the specific cables being used to meet those requirements.

Article 318 of the National Ele"BP5≥al Code lists the specific requirements concerning allowable Cable Fill. It is imperative that the size of the cavity meets the conditions set forth by the NEC, specifically:

- Types of cables allowed in which type of cable trays
- Requirements for arranging the cables in the trays.

The NEC breaks down the allowable cable fill into three main categories:

- **Multi-Conductor:** The number of multi-conductor cables rated at 2000 volts or less in cable tray.
- **Single conductor:** The number of single conductor cables rated at 2000 volts or less in cable tray.
- **MV and MC Cables:** The number of MV & MC cables rated at 2001 volts or over in the cable tray.

Cable fill guidelines set forth by the NEC, are generally based on limiting heat build up in the trays. Where data or communications type cables are being installed, heat is not a critical issue and the allowable fill is determined by the total cross sectional area of the tray cavity:

Total Cross Sectional Area = (Width) x (Load Depth).

LENGTH OF STRAIGHT SECTIONS

Cope Cable Tray is available in 12' and 24' lengths in accordance with the NEMA Standards. It is also available in 10' and 20' lengths in accordance with CSA Standards. Customized lengths are also available upon request.

The following factors need to be considered when specifying the lengths of the tray:

Support Span – The support span should not be greater than the tray length. This ensures that two splice plate connections will not fall within one support span.

Space Constraints – When installing trays in a limited space, as often encountered in commercial applications, 10' and 12' lengths of tray are easier to handle and therefore are better suited for those applications.

Labor Costs – Where trays are being installed in an industrial facility, where space is not as significant an issue, handling 20' and 24' lengths may be more economical. In this instance, half as many tray connections need to be made. Additionally, if the proper tray system is specified, support spans may be lengthened.

RADIUS OF FITTINGS

Cable tray fittings are used to change directions both horizontally and vertically. The standard radii for cable tray fittings are 12", 24", and 36".

The radius of the fittings should be based upon minimum bending radius of the cables. This information can be obtained from the cable manufacturer.

Based on the total number of cables to be placed in the tray it may be more practical to use the next higher radius.

CABLE TRAY SUPPORT LOCATIONS

Straight Sections

A general rule of thumb is that the splice plates should not fall beyond the ¼ point of the span, or the distance between supports. For example: On a 20' support span the splice plates should not be further than 5' away from the support location.

Under no circumstances should two cable tray splices fall between any pair of supports.

For special applications, mid-span splice plates can be furnished. Please contact the factory.

Fittings

Supports for cable tray elbows are critical. It is important to note that the cable tray will come under its greatest stress when cables are being pulled into the tray. Therefore, proper placement of supports is necessary to insure that the integrity of the tray system is maintained during the cable pulling operation.

The diagrams on page 2-10 shows the recommended support locations for fittings.

Thermal Expansion and Contraction

It is important to use expansion connectors when installing long runs of cable tray. The number of expansion connectors required will depend on:

(1) the maximum temperature differential

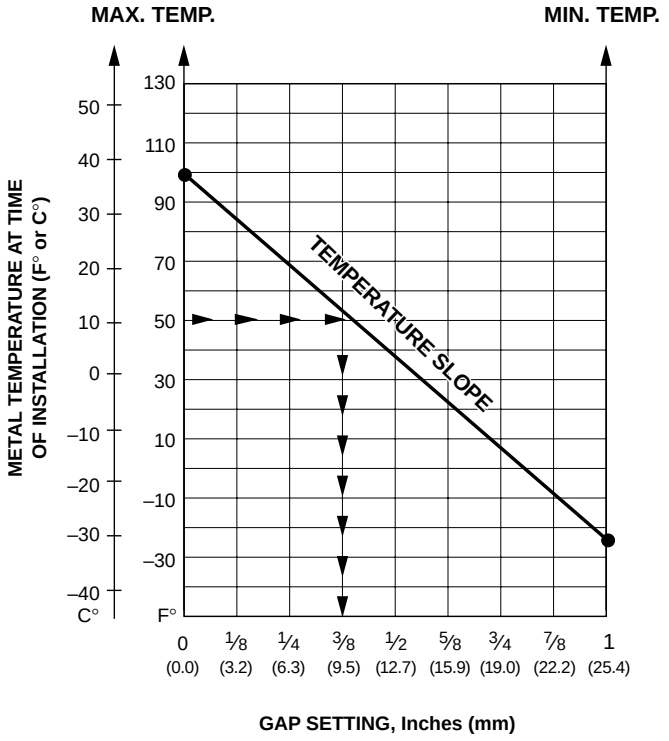
(2) the tray material being installed

Cope Expansion Connectors allow 1" of travel. This table illustrates how often expansion splice plates must be used.

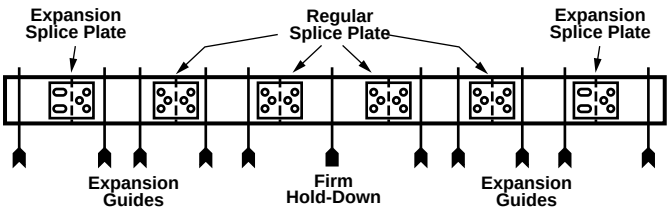
Temperature Difference		Dist. Between Expansion Joints Steel		Aluminum		Copper	
25°F	(14°C)	512'	(156m)	260'	(79m)	363'	(111m)
50°F	(28°C)	256'	(78m)	130'	(40m)	182'	(55m)
75°F	(42°C)	171'	(52m)	87'	(27m)	121'	(37m)
100°F	(56°C)	128'	(39m)	65'	(20m)	90'	(27m)
125°F	(70°C)	102'	(31m)	52'	(16m)	72'	(22m)
150°F	(83°C)	85'	(26m)	43'	(13m)	60'	(18m)
175°F	(97°C)	73'	(22m)	37'	(11m)	52'	(16m)

The following table is used to determine the proper gap setting between trays. The metal temperature determines the proper gap setting at the time of installation. Establish maximum and minimum temperatures in summer and winter for the area. Draw line connecting them. Using the metal temperature at time of installation (C° or F°) draw horizontal to temperature slope and plot straight down to find gap distance at expansion joint.

The following diagram illustrates the proper installation of an expansion system.



It is important to note that grounding straps are required when expansion connections are made. This will insure proper grounding continuity.



ELECTRICAL GROUNDING

The National Electrical Code, Article 318-7 allows for Cable Tray to be used as an equipment grounding conductor in commercial and industrial establishments. The following table lists specific ampere ratings and the minimum cross sectional area requirements for each rating.

T.J. Cope produces trays that meet the National Electrical Code (ANSI/NFPA 70), and are classified by Underwriters Laboratories, Inc. (UL) as equipment ground conductor. These can be used for any project worldwide except where another standard may take precedence, such as the Canadian Standards Association.

For projects requiring adherence to the Canadian Standards Association (CSA), Cope products as shown in the CSA Selection Charts, sections 3 and 5 are certified as complying with CSA C22.2 No. O and No. 126 and will bear the CSA Mark as shown below.

When required, the trays can be installed per the Canadian Electrical Code Parts I and II (CEC). Cope trays and splice plates meet the bonding requirements of the CSA Standards and the CEC.

Cope CSA steel designs are offered in Type 1 (HDGAF) finish and aluminum with plain finish. Available are ladder, vented and solid bottom cable troughs for 3 meter spans and ladder type for 6 meter spans.

Max. Fuse Amp Rating Circuit Breaker Amp Trip Setting or Relay Amp Trip Setting for Ground Fault Protection of any Cable Tray Circuit In the Cable Tray system	Minimum Cross Sectional Area of Metal* Steel Cable Trays		Aluminum Cable Trays	
	In²	mm²	In²	mm²
60	0.2	129	0.2	129
100	0.4	258	0.2	129
200	0.7	452	0.2	129
400	1	645	0.4	258
600	1.50**	968	0.4	258
1,000	-		0.6	387
1,200	-		1	645
1,600	-		1.5	968
2,000	-		2.00**	1,290

*Total cross sectional area of both siderails for ladder trough type trays, or the minimum cross sectional area for metal in channel type cable trays or cable trays of one piece construction.

The cross-sectional area for each T.J. Cope Cable Tray system, straight sections and fittings, can be found on the appropriate Cope Selection charts contained within this publication. In addition all Cope Cable Tray, straight sections and fittings, are supplied with a pressure sensitive labels indicating the cross sectional area of both siderails, as required by the (NEC) National Electrical Code, Article 318.

Bonding Jumpers / Straps

Cable Tray connections made with Cope's standard rigid splice plates do not exceed .00033 ohms net resistance, and are classified in Underwriters Laboratories Classification Program. These rigid type connections do not require electrical bonding straps. T. J. Cope's UL assigned number is "E60627", UL cards will be furnished upon request. T. J. Cope is listed in the UL Electrical Construction Directory under code CYNW as T.J. Cope, Inc.

Electrical bonding straps are required where cable trays are joined by connectors which allow for movement, such as; vertical adjustable connectors, horizontal adjustable connectors, and expansion connectors.

Proper grounding is also necessary where cable trays run parallel to each other, are stacked upon one another, and in other instances, where tray runs are discontinuous.

Further questions concerning grounding issue should be directed to T.J. Cope.

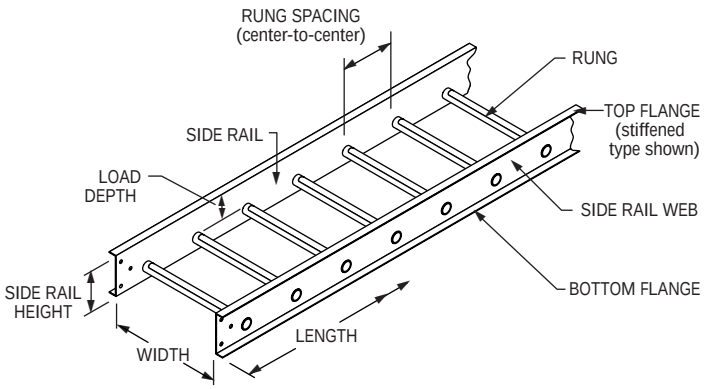
SUMMARY

You are now ready to select the best Cope Cable Tray system to meet your needs. By now, we hope you've decided to select the system using the NEMA CLASSIFICATION (8A, 12B, 20C, etc.) which makes your work so much easier. Selection is also possible using physical dimensions, performance, or any combination of these data listed in our exclusive NEMA oriented T. J. Cope selection charts. As always, should you need additional information, we suggest you contact your nearest Cope Representative or call Cope directly.

NEC Articles

Description	2002 Edition	Prior Editions
Cable Trays	392	318

COPE SWAGE LADDER is a structure consisting of two side rails, connected by individual rungs and is manufactured in accordance with NEMA Standard #VE-1. Cope rungs are fastened to the side members by an exclusive swaging process. This assembly method insures a superior mechanical and electrical connection.



Side Members – Cope side members are designed with top and bottom flanges turned outward. This simplifies fastening the cable tray to the supports. Cable tray with outward facing flanges allows complete access within the cable loading area and eliminates the possibility of cable damage from sharp edges within the cable area. The return on the top flange strengthens the side member and allows cable to be smoothly dropped over the side.

Rung – Cope ladder rungs are 1.00" diameter tubing flattened on top to provide a cable bearing surface. This construction allows cable to drop out anywhere without contacting a sharp edge.

Rung Spacing – The interval at which rungs are swaged to the side member. This is measured from centerline of rung to centerline of rung. Cope manufactures straight lengths with four standard rung spacings; 6", 9", 12", and 18". Rung spacing selected is generally determined by size and type of cable being supported. When in doubt, 9" rung spacing is a generally accepted compromise.

Length – The longitudinal dimensions of standard Cope Cable Ladder are 10', 12', 20' or 24'.

Width – The transverse dimensions of Cope Cable Ladder are measured inside, (from side member web to side member web), and are furnished in seven standard widths: 6", 9", 12", 18", 24", 30", or 36".

Overall Width – Overall ladder width is equal to the inside or nominal width plus the width of side member flanges.

Load Depth – Measured from top surface of rung to top of side member. This is not to be confused with overall height. Cope manufactures four loading depths: 3", 4", 5", and 6" in accordance with NEMA Standard VE-1.

Overall Height – Cope overall height is equal to the loading depth plus 1¼".

Fittings – For changing direction horizontally and vertically, Cope manufactures elbows, tees and crosses in all widths and loading depths. Fittings are available in three standard radii; 12", 24", and 36". Cope maintains a nominal 9" rung spacing through the centerline of all fittings.

COPE CABLE LADDER FEATURES IMPORTANT INDUSTRY-LEADING FEATURES:

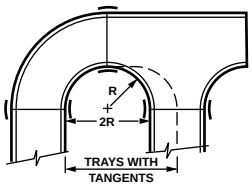
1. Universal Curvilinear Splice Plate System

The splice plates for rigid connections have a slight curve so they can be used on straight sections or fittings. Tightening of the fastener pulls the plate flush with the side rail. The fasteners are snug and the joint is superior structurally and electrically. Even when hand-tight, there is pressure on the fastener to hold it securely.

Note: *Heavy Duty, Mid Span Splice Plates available upon request .*

2. New Zero Tangent Fittings

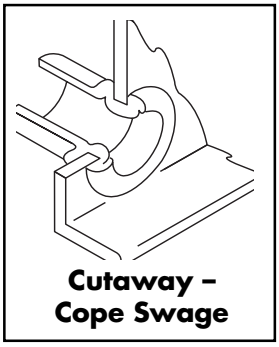
Tangent as referred to on cable tray fittings is the straight at the end of the curve to accommodate a flat splice plate. This wastes space in tightly packed areas, such as spreader rooms, where the heat of thousands of cables accumulate. Eliminating tangents allow more tray runs to distribute the heat. COPE ZERO TANGENT FITTINGS CAN SAVE UP TO 12" PER ROW OF TRAY.



BONUS: Inspection for proper installation of splice plate is visual. If the plate is bowed away from the rail, nuts must be tightened.

3. Cope's Swaged Rung Cable Ladder System

Process – The heart of the Cope design is the tubular rung and its connection to the side rail by cold swaging... a process where special machinery compresses and locks the tubular rung material around both the inside and outside of the cable tray side rails. This connection is made without the use of heat which can potentially disturb the molecular structure of the metal and weaken it.



Cutaway – Cope Swage

The tubular rung is flattened during the swaging process to ensure a proper cable bearing surface.

Testing – The superior strength of the swaged ladder tray system has been verified in independent testing conducted by the Pittsburgh Testing Laboratory. Pullout loads of 2500 lbs. were reached. Other tests show the same type rungs, when welded, had a 35% lower pullout load.

The strength of the swage also maintains the 90° relationship of the rungs to the side rail. The tubular rungs, which are very stiff, transmit the cable loads to the side rails resulting in much less deflection than in a similar system with welded rungs.

For a copy of the independent test results, please contact the factory.

Swage Advantages – Cold swaging allows for the side rails to be turned outward, simplifying cable installation and provides 100% access to the cables.

The cold swaging yields the most rigid tray system in the industry. The swaged rung connection resists stresses in all directions; up or down, side to side, or in and out. The swaged ladder also resists the camber and warping effects encountered in a typical welded system.

The increased rigidity means that a 24' section of tray can be lifted on one end with little or no twisting or bending of the tray section. Theis rigid construction makes the trays safer for field personnel to handle and reduces shipping damage.

Electrical Properties – Electrically, the 106 tons of pressure in the swaging process virtually eliminates the interstices and a homogenous electrical path results:

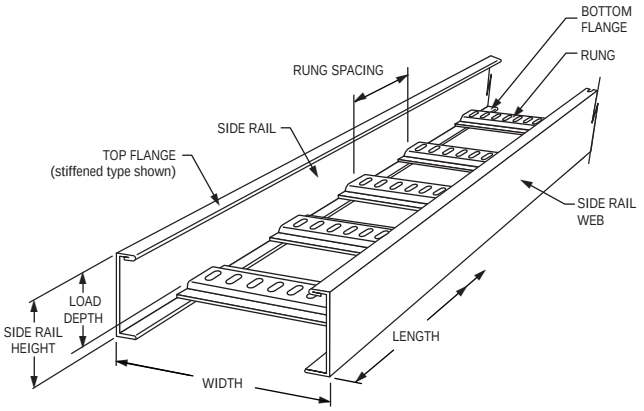
Resistance of Cope Aluminum Swaged Tray: 31 microhms

Resistance of Cope Steel Swaged Tray: 37.3 microhms

Resistance of Popular Aluminum Welded Tray: 101 microhms

Conclusion - Cold swaging yields a very strong, efficient and aesthetically pleasing system that has stood the test of time and offers installation savings due to its ease of handling.

COPE HAT is a prefabricated metal structure consisting of reinforced hat-shaped rungs, arc-welded to the side rails, and is manufactured to NEMA Standard VE-1. Cope Hat rungs are fastened to the side rails with an automatic, self-indexing MIG-arc-welding system, plug welding a ½" diameter zone. The superior strength of the Cope plug weld withstands the rigors of shipping, handling, erection and cable support service.

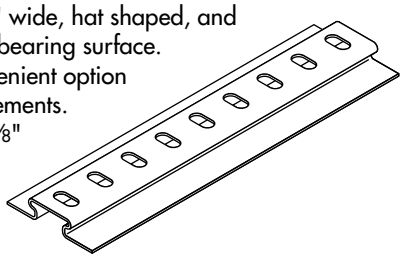


Side Members – Cope Hat side members are designed with top and bottom flanges turned inward. This minimizes the space requirements of the cable tray system, and allows a very low side rail height for each NEMA Standard VE-1 load depth.

Rungs – Cope Hat provides for hat shaped rungs.

Slotted Rungs—*Slotted Hat shaped Rungs are provided on trays 6", 9", 12", 18", and 24" wide.

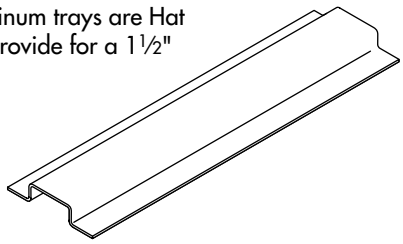
All Slotted rungs are 2½" wide, hat shaped, and provide for a 1¼" cable bearing surface. Slots provide a neat convenient option for cable tie down requirements. Slots are 5⁄16" wide and ⅝" in length, and are located on 1" centers across the entire width of the rung.



Solid Rungs—*Solid Hat shaped Rungs are provided on trays 30" and 36" wide.

Solid Hat Rungs for Steel trays are Hat shaped, 2¼" wide and provide for a ⅞" cable bearing surface.

Solid Hat Rungs for Aluminum trays are Hat shaped, 3¼" wide and provide for a 1½" cable bearing surface.



Rung Spacing – Cope manufactures straight lengths with four standard rung spacings; 6", 9", 12", and 18". The 6" rung spacing results in a 3 ¾" opening between rungs allowing the tray to be classified as a ventilated trough per NEMA Standard VE-1.

Length – The longitudinal dimensions of standard Cope Hat cable tray are 10', 12', 20' and 24'.

Width – The transverse dimensions of Cope Hat cable tray are measured inside, (from side member web to side member web), and are furnished in seven standard widths: 6", 9", 12", 18", 24", 30" and 36".

Overall Width – Overall tray width is equal to the inside or nominal width plus the thickness of the two side rail webs.

Overall Tray Width = Nominal + 3⁄16" Width

Load Depth – Measured from the top surface of the rungs to the top of the side member. Cope manufactures four loading depths; 2⅞", 3⅝", 4⅝" and 5⅝" corresponding to the four nominal loading depths in NEMA Standard VE-1; 3", 4", 5" and 6".

Overall Height – Cope Hat cable tray overall height is equal to the loading depth plus ⅝".

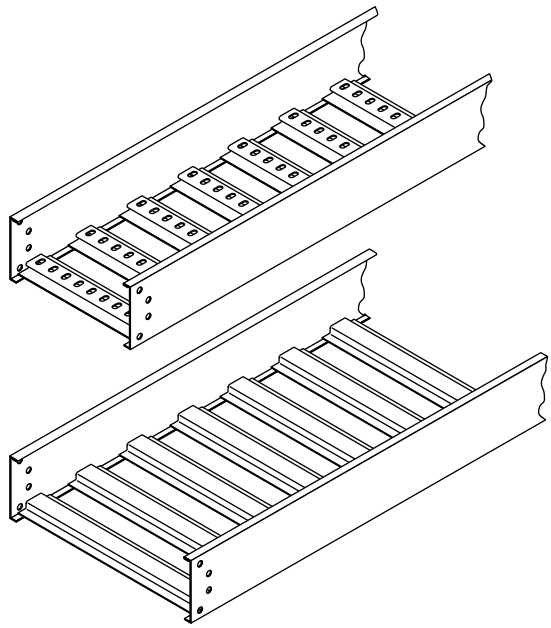
Fittings – For changing direction both horizontally and vertically, Cope manufactures elbows, tees and crosses in all widths and loading depths. Fittings are available in three standard radii; 12", 24" and 36". Standard fittings maintain a nominal 9" rung spacing through the centerline of the fitting. Cope manufactures *all* standard fittings with zero tangents.

COPE HAT CABLE TRAY WITH FOUR IMPORTANT INDUSTRY-LEADING FEATURES:

1. **Compact Economical System –** Cope Hat cable tray is an extremely compact economical flange in cable tray system which allows the designer to utilize this cable tray in tight locations. The extremely low profile Hat Rungs (⅝" high) minimize the required side rail height while maintaining NEMA Standard VE-1 nominal load depths. Overall system height is only ⅝" greater than the actual loading depth.

2. **Universal Curvilinear Splice Plate System –** The splice plates for rigid connections have a slight curve so they can be used on straight sections or fittings. Tightening of the fastener pulls the plate flush with the side rail. The fasteners are snug and the joint is superior structurally and electrically. Even when hand-tight, there is pressure on the fastener to hold it securely.

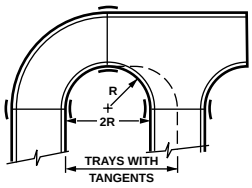
   Note: *Heavy Duty, Mid Span Splice Plates available upon request.*



Straight Lengths

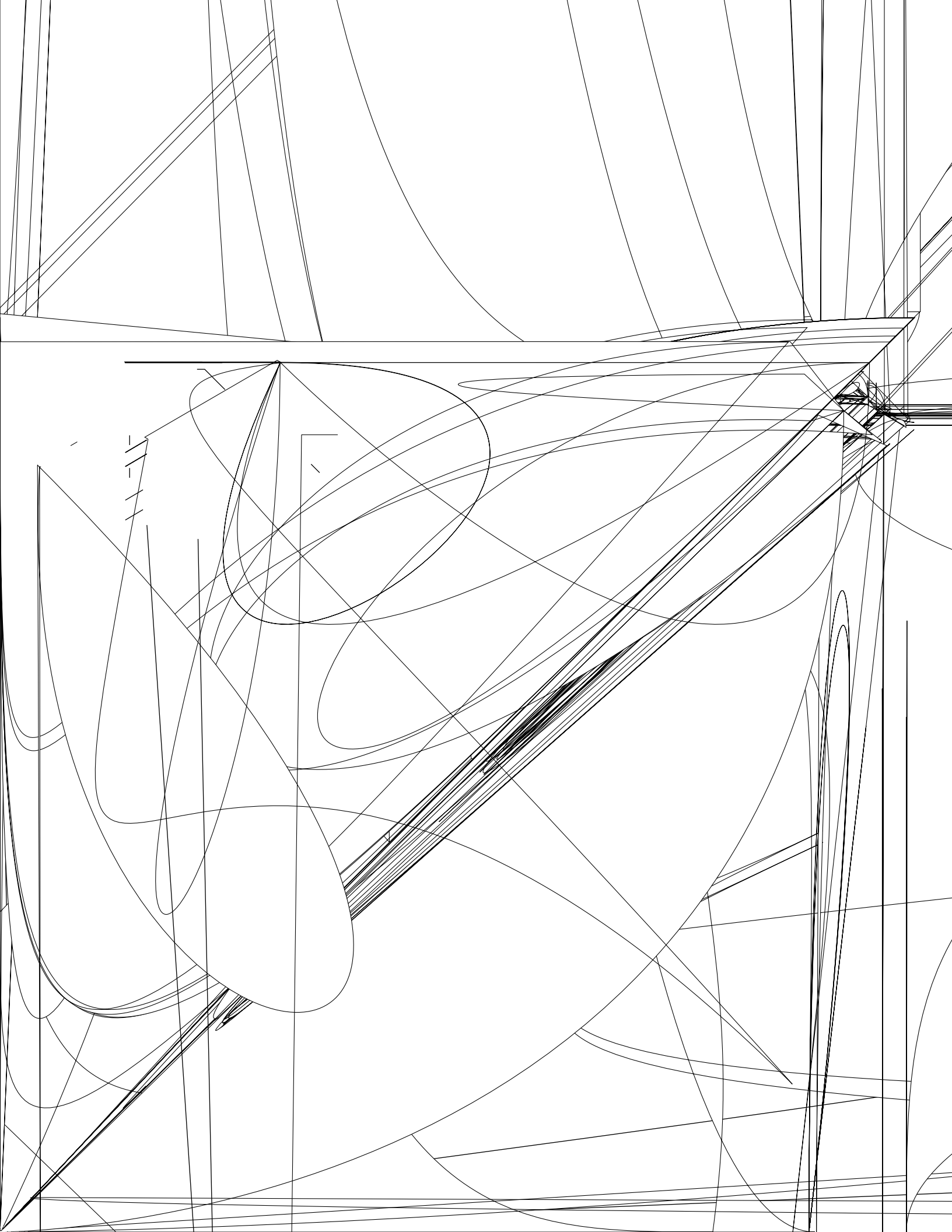
Slotted Rungs *provided on trays 6", 9", 12", 18" and 24" wide.*
Solid Rungs *provided on trays 30" and 36" wide.*

3. **Zero Tangent Fittings –** Tangent as referred to on cable tray fittings is the straight at the end of the curve to accommodate a flat splice plate. This wastes space in tightly packed areas, such as spreader rooms, where the heat of thousands of cables accumulate. Eliminating tangents allow more tray runs to distribute the heat. COPE ZERO TANGENT FITTINGS CAN SAVE UP TO 12" PER ROW OF TRAY.



   BONUS: Inspection for proper installation of splice plate is visual. If the plate is bowed away from the rail, nuts must be tightened.

4. **The Exclusive Auto MIG-Arc-Welded Assembly System –** Cope Hat rungs on straight sections are assembled to the side rails using an automatic, self indexing MIG-arc-welding system fusing a ½" diameter zone. These welds are 700% larger and stronger than the common resistance (spot) weld in use today. Electrical properties of the assembly are unequalled; are well within the NEMA requirements due to the continuous electrical path. The mechanical strength of this welded assembly withstands the rigors of shipping, handling, erection and service. The size of the weld keeps the vertical axis of the side rail from sloping inward under load. The weld maintains the 90° angle between the side rail and bottom. This allows full use of the section properties. Spot welds do not permit this. Also, stresses on spot welds (barely ⅛" in diameter) are so severe that breakage often occurs during shipping and erection. Cope Hat fittings are also assembled by MIG-arc welding.



NEMA STANDARDS

2

National Electrical Manufacturers Association

NEMA is the largest trade organization in the U.S. representing the interests of electroindustry manufacturers. Its 575 member companies manufacture products used in the generation, transmission and distribution, control, and end-use of electricity.

Many of NEMA's voluntary standards have been approved as American National Standards or adopted by the Federal Government. Over 350 NEMA standards cover a wide range of subjects including telecommunication systems, motors and generators, electrical enclosures, electrical wiring, power guidelines for X-Ray machines and many more subjects.

It is NEMA's belief that standards play a vital part in the design, production, and distribution of products destined for both national and international commerce. Sound technical standards benefit the user, as well as the manufacturer, by improving safety, bringing about economies in product, eliminating misunderstandings between manufacturer and purchaser, and assisting the purchaser in selecting and obtaining the proper product for his particular need.

NEMA STANDARDS
VE 1-1991

REV. NOVEMBER 1993

Scope

This standard covers continuous, complete, metallic systems of ladder, trough, solid-bottom or channel cable tray intended for, but not limited to, the support of power, control and signal cables.

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SECTION 1 –
Referenced Standards & Definitions

1.1 REFERENCED STANDARDS

In this publication, reference is made to the standards listed below. Copies are available from the indicated source.

ANSI/NFPA 70-93 National Electrical Code

American National Standards Institute
11 West 42nd Street
New York, NY 10036

National Fire Protection Association
Batterymarch Park
Quincy, MA 02269

A123-89 Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products, Specifications for

A525-87 General Requirements, Steel Sheet, Zinc-Coated (Galvanized) by the Hot Dip Process, Specifications for

B633-85 Electrodeposited Coatings of Zinc on Iron and Steel, Specifications for

B766-86 Electrodeposited Coatings of Cadmium, Specification for

American Society for Testing and Materials
1916 Race Street
Philadelphia, PA 19103

1.2 DEFINITIONS

Metallic Cable Tray System – ay Syste5.00T /F4 1 T 9 54 637.08 T8.89 Tw(–)Tj0.7959 0 TD0.0001 Tc00.00(A525-87)Tj/F4 Cab9ay Syste

Channel Cable Tray – A prefabricated metal structure consisting of a one-piece ventilated bottom or solid-bottom channel section, or both, not exceeding 6" (152*mm*) in width.

NEMA Standard 11-15-1984

Accessories – Devices which are used to supplement the function of straight sections and fittings, and include such items as dropouts, covers, conduit adapters, hold-down devices and dividers.

NEMA Standard 11-15-1984

Cable Tray Support – A device which provides adequate means for supporting cable tray sections and fittings.

The basic types of cable tray supports are:

1. Cantilever bracket
2. Trapeze
3. Individual rod suspension.

NEMA Standard 11-15-1984

Cable Tray Support Span – The distance between the center line of supports.

NEMA Standard 11-15-1991

SECTION 2
Manufacturing Standards

2.1 MATERIALS

Cable tray systems shall be made of either corrosion-resistant metal or metal with a corrosion-resistant finish.

NEMA Standard 11-15-1984

Aluminum and stainless steel alloys are inherently corrosion-resistant and no finish coating is required in most environments.

Authorized Engineering Information 11-15-1984

2.2 FINISHES

2.2.1 Carbon steel used for cable trays shall be protected against corrosion by one of the following processes:

A. Hot-dip mill galvanized in accordance with ASTM Publication No. A525 G90 Coating.*

NEMA Standard 11-15-1984

*Coating designation G90 of ASTM 525 has an average zinc coating weight of 1.25 oz. per square foot (0.381 kg/m^2) of steel total coating on both surfaces (1.06 mils or 0.027*mm*) average thickness per side).

Hot-dip mill galvanized coatings are produced by continuous rolling steel sheets or strips in coils through a bath of molten zinc. The process involves pretreating the steel to make the surface react readily with molten zinc as the strip moves through the bath at high speeds. During fabrication where slitting, forming, cutting, or welding is performed, the cut edges and heat-affected zone of welding are subject to superficial oxidation. These areas are then protected through electrolytic action of the adjacent zinc surfaces. The coating is smooth, ductile, and adherent.

Authorized Engineering Information 11-15-1984.

B. Hot-dip galvanized after fabrication in accordance with ASTM Publication No. A123. Class B2. It is important to specify ASTM A525 or ASTM A123 to insure the specific coating is furnished.

NEMA Standard 11-15-1991

Class B2 of ASTM A123 has an average zinc coating weight of 1.50 oz. per square foot (0.46 kg/m^2) (2.55 mils or 0.064*mm*) average thickness per side).

Fabricated products which are hot-dip galvanized are thoroughly cleaned, fluxed, and immersed into a bath of molten zinc where they react to form a metallurgically bonded zinc coating. Normal oxidation of the galvanized surfaces will, in a short period of time, appear as a dull gray or white coating. Some degree of roughness and variations of thickness can be expected due to the hot dipping process. Because the galvanizing process takes place at the low end of the stress-relieving temperature range, some stress relief occurs and some distortion or warping may result.

Authorized Engineering information 11-15-1991

C. Other equivalent commercially available coatings.

NEMA Standard 11-15-1991

2.2.2 Steel nuts and bolts shall be protected against corrosion by one of the following processes:

A. ASTM Publication No. B633
B. ASTM Publication No. B766
C. Other equivalent commercially available coatings.

NEMA Standard 11-15-1991

2.2.3 Where metallic cable tray is intended for installation in highly corrosive environments, including most alkaline and acidic conditions, further protection against corrosion shall be provided by one of the following processes:

A. PVC (Polyvinylchloride) – A PVC coating shall be applied in a fluidized bed or by electrostatic spray. The coating thickness shall be 15 mils (0.381*mm*) ± 5 mils (±0.127*mm*).

Items to be protected shall be thoroughly cleaned, primed, and then coated with a fine grain UV (ultraviolet) stabilized vinyl plastic powder.

All field cuts and damaged areas of coated tray shall be repaired with a compatible PVC compound to ensure a coating integrity.

NEMA Standard 11-15-1984.

A PVC coating is generally applied to bare steel cable tray but can also be applied in aluminum cable tray. PVC is not recommended as a coating on galvanized steel cable trays because of rough surfaces and gas emissions which cause voids and adhesion problems.

Authorized Engineering information 11-15-1984.

B. Other equivalent commercially available coatings.

NEMA Standard 11-15-1984.

2.3 DIMENSIONS

2.3.1 General

Plus or minus values stated reflect the range of nominal dimensions in cable tray designs and are not intended to represent manufacturing tolerances.

Authorized Engineering information 11-15-1984.

2.3.2 Ladder Trays

1. **Lengths of Straight Sections -** 12' (3,660*mm*) ±3⁄16" (4.76*mm*) and 24' (7,320*mm*) ±5⁄16" (7.94*mm*), not including connectors if attached.
2. **Widths -** 6", 12", 18", 24", 30", and 36" (152*mm*, 305*mm*, 457*mm*, 610*mm*, 762*mm* and 914*mm*), ±1⁄4" (6.35*mm*) inside dimension.

   Overall widths shall not exceed inside widths by more than 4" (102*mm*).
3. **Depths -** Inside depths shall be 3", 4", 5", and 6" (76.2*mm*, 102*mm*, 127.0*mm*, and 152*mm*), ±3⁄8" (9.53*mm*).

   Outside depths shall not exceed inside depths by more than 1¼" (31.7*mm*).
4. **Rung Spacing on Straight Sections -** 6", 9", 12", or 18" (152*mm*, 229*mm*, 305*mm*, or 457*mm*) on centers.
5. **Radii -** 12", 24", and 36" (305*mm*, 610*mm*, and 914*mm*).
6. **Degree of Arc for Elbows -** 30°, 45°, 60°, and 90°.

NEMA Standard 11-15-1984

2.3.3 Trough Trays

1. **Lengths of Straight Sections -** 12' (3660*mm*) ±3⁄16" (4.76*mm*) and 24' (7320*mm*) ±5⁄16" (7.94*mm*), not including connectors if attached.
2. **Widths -** 6", 12", 18", 24", 30", and 36" (152*mm*, 305*mm*, 457*mm*, 610*mm*, 762*mm* and 914*mm*), ±1⁄4" (6.35*mm*), inside dimension.

   Overall widths shall not exceed inside widths by more than 4" (102*mm*).
3. **Depths -** Inside depths shall be 3", 4", 5", and 6" (76.2*mm*, 102*mm*, 127*mm*, and 152*mm*), ±3⁄8" (9.53*mm*).

   Outside depths shall not exceed inside depths by more than 1¼" (31.7*mm*).
4. **Radii -** 12", 24", and 36" (305*mm*, 610*mm*, and 914*mm*).
5. **Degrees of Arc for Elbows -** 30°, 45°, 60°, and 90°.
6. **Transverse Elements -** The maximum open spacing between transverse elements shall be 4" (102*mm*) measured in a direction parallel to the tray side rails.

NEMA Standard 11-15-1984

2.3.4 Solid-Bottom Trays

1. **Lengths of Straight Sections -** 12' (3660*mm*) ±3⁄16" (4.76*mm*) and 24' (7320*mm*) ±5⁄16" (7.94*mm*), not including connectors if attached.
2. **Widths -** 6, 12, 18, 24, 30, and 36" (152*mm*, 305*mm*, 457*mm*, 610*mm*, 762*mm* and 914*mm*) ±1⁄4" (6.35*mm*), inside dimension.

   Overall widths shall not exceed inside widths by more than 4" (102*mm*).
3. **Depths -** inside depths shall be 3", 4", 5", and 6" (76.2*mm*, 102*mm*, 127*mm*, and 152*mm*), ±3⁄8" (9.53*mm*).

   Outside depths shall not exceed inside depths by more than 1¼" (31.7*mm*).
4. **Radii -** 12", 24", and 36" (305*mm*, 610*mm*, and 914*mm*).
5. **Degree of Arc for Elbows -** 30°, 45°, 60°, and 90°.
6. **Bottom -** Bottom is solid.

NEMA Standard 11-15-1984

2.3.5 Channel Trays

1. **Lengths of Straight Sections -** 12' (3660*mm*) ±3⁄16" (4.76*mm*) and 24' (7320*mm*) ±5⁄16" (7.94*mm*), not including connectors if attached.
2. **Widths -** 3", 4", and 6" (76.2*mm*, 102*mm*, and 152*mm*), ±1⁄4" (6.35*mm*), inside dimension.
3. **Depths -** 1¼" to 1¾" (31.7*mm* to 44.4*mm*) outside dimensions.
4. **Radii -** 12", 24", and 36" (305*mm*, 610*mm*, and 914*mm*).
5. **Degree of Arc for Elbows -** 30°, 45°, 60°, and 90°.

NEMA Standard 11-15-1984.

2.4 PROTECTION OF CABLE INSULATION

The inside of cable tray systems shall present no sharp edges, burrs, or projections which can damage cable insulation.

NEMA Standard 7-14-1976.

2.5 FITTINGS

The design and construction of fittings shall be based on the assumption that they will be supported in accordance with the recommendations given in 6.6 for support locations.

NEMA Standard 11-15-1984.

2.6 MARKING OF TRAYS WHEN USED AS EQUIPMENT GROUNDING CONDUCTORS

When steel or aluminum cable tray systems are used as equipment grounding conductors, cable tray sections and fittings shall be marked to show the minimum cross-sectional area in accordance with the Article 318 of the National Electrical Code.

NEMA Standard 7-14-1976.

SECTION 3
Performance Standards & Load/Span Class Designations

3.1 WORKING (ALLOWABLE) LOAD CAPACITY

The working (allowable) load capacity represents the ability of a cable tray to support the static weight of cables. It is equivalent to the destruction load capacity, as determined by testing in accordance with 4.1 divided by a safety factor of 1.5

NEMA Standard 3-14-1979

3.2 LOAD/SPAN CLASS DESIGNATIONS

There shall be three working load categories of cable tray:*

1. 50 lbs/linear ft. (74.4 kg/*m*) (Symbol A)
2. 75 lbs/linear ft. (111.6 kg/*m*) (Symbol B)
3. 100 lbs./linear ft. (148.8 kg/*m*) (Symbol C) and, four support span categories of:
    1. 8' (2.44*m*)
    2. 12' (3.66*m*)
    3. 16' (4.87*m*)
    4. 20' (6.09*m*)

Utilizing these, the load/span class designations of Table 3-1shall apply.

NEMA Standard 3-14-1979

Table 3-1 – LOAD/SPAN CLASS DESIGNATIONS

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

NOTE 1- The above working loads are for cable only; when considering applications requiring concentrated static load, see 6.2.

NOTE 2 - These designations do not apply to channel tray, and the manufacturer should be consulted.

NOTE 3 - For deflection see 6.1.

Authorized Engineering Information 11-15-1984.

SECTION 4
Test Standards

4.1 DESTRUCTION LOAD TEST

4.1.1 Test Specimen

For each design of cable tray, two separate tests shall be made. An unspliced straight section of the widest width shall be used in each test.

For ladder type cable trays rung spacing shall be 12" on center.

Differences in gauge, height of side rails, rung or bottom to side rail connection, or the configuration of any part constitute a different design.

NEMA Standard 11-15-1991

4.1.2 Type and Length of Span

Test spans shall be simple beam spans with free unrestrained ends. Trays shall not have side restraints. Span lengths shall be as specified ±1½" (38.1mm).

NEMA Standard 11-15-1984

4.1.3 Orientation of Specimens

Specimens shall be tested in a horizontal position. The total length of the test specimen shall be not more than the specified span length plus 20%. Any overhang shall be equal.

NEMA Standard 11-15-1984

4.1.4 Supports

Each end of the specimen shall be supported by an 1⅛" (28.6mm) wide by ¾" (19.0mm) high steel bar(s) with a 120° "Vee" notch cut in its bottom to a depth of 3⁄16" (4.76mm). The "Vee" notch shall rest on a 1" (25.4mm) solid round steel bar which is welded at a maximum of 12" (305mm) on center to a firm steel base, or the specimen shall be supported directly on a 2½" (63.5mm) maximum diameter round steel bar or heavy wall steel tube welded to a firm steel base.

NEMA Standard 11-15-1984

4.1.5 Loading Material

Loading material shall be steel strips, lead ingots, or other loading material.

Steel strips shall have rounded or deburred edges, a maximum thickness of ⅛" (3.18mm), a width of 1⅛" (28.6mm) to 2" (50.8mm), a maximum length of 4' (1,220mm).

Five lead ingots, each weighing approximately 5 pounds (2.26 kg), shall be interconnected across corners into a string of 5 ingots approximately 22" (559mm) long. Individual ingots are normally hexagonal, approximately 3" (76.2mm) in diameter, and 1½" (38.1mm) deep.

Other loading material shall have a maximum weight of 10 pounds (4.53 kg), a maximum width of 5" (127mm), and a maximum length of 12" (305mm).

NEMA Standard 11-15-1984

4.1.6 Loading

All specimens shall be loaded to destruction. The load shall be applied in at least 10 increments which are approximately equal.

Loading shall be uniformly distributed for the length and breadth of the specimen except that the loading material shall be not closer than ½" (12.7mm) nor further than 1" (25.4mm) from the innermost elements of the side rails. It shall be arranged across the tray with a minimum of ⅜" (9.53mm) between stacks so that the loading material does not bridge transversely. All loading material shall be placed between the supports without overhanging.

For loading weight in a ladder-type tray, it shall be permissible to cover the bottom of the tray between supports with a flat sheet of No. 9 gauge (3.8mm) flattened expanded material not more than 3' (910mm) long and with a wire hole size of ¾" (19.0mm), or a flat sheet of No. 16 gauge (1.5mm) sheet steel not more than 3' (910mm) long. The expanded metal or sheet steel shall not be fastened to the tray and shall be no closer than ½" (12.7mm) to the side rails. The 3' (910mm) lengths shall not overlap. The weight of the expanded metal or sheet steel shall be added to the total weight of the loading material.

NEMA Standard 11-15-1984

4.1.7 Destruction Load Capacity

The total weight of the loading material on the cable tray at the time it is destroyed shall be considered to be the destruction load capacity of the cable tray.

NEMA Standard 11-15-1984

4.1.8 Interpolation & Extrapolation of Test Data

When allowable load and deflection data are determined by load tests, values for span lengths not tested shall be determined by interpolation from a curve based on values for a minimum of three tested span lengths. Extrapolation toward shorter span lengths is permissible but shall not be used for span lengths longer than the longest span length tested.

NEMA Standard 11-15-1984

4.2 DEFLECTION TEST

The vertical deflection of the tray shall be measured at two points along the line midway between the supports and at right angles to the longitudinal axis of the tray. The two points of measurement shall be at the midpoint of the span of each side rail.

The average of these two readings shall be considered to be the vertical direction of the tray.

For application information on deflection see 6.1.

NEMA Standard 3-14-1979

4.3 ELECTRICAL CONTINUITY OF CONNECTIONS

4.3.1 Test Specimen

Each specimen shall consist of two 24" (610mm) lengths of side rail plus mechanical connecting means.

NEMA Standard 7-14-1976

4.3.2 Resistance Test Procedure

Each specimen should be joined together, using the mechanical connector and following the instructions provided by the manufacturer.

Authorized Engineering Information 7-14-1976.

A current of 30 amperes shall be passed through the specimen and the resistance measured between two points 6" (152mm) on each side of the joint. The net resistance of the joint shall be not more than 0.00033 ohm as computed from the measured voltage drop and the current passing through the specimen.

NEMA Standard 7-14-1976

SECTION 5
specifications & Drawings

5.1 DATA TO APPEAR IN SPECIFICATIONS

The following statement and minimum data, when applicable, should appear in all cable tray specifications:

1. Cable tray shall be manufactured and installed in accordance with NEMA Standard VE 1-1991
2. Load/span class designation (see Section 3)
3. Type (see Section 1.2)
4. Material (see Section 2.1)
5. Finish (see Section 2.2)
6. Rung Spacing (see Section 2.3)
7. Inside depth (see Section 2.3)
8. Width (see Section 2.3)
9. Fitting Radius (see Section 2.3)
10. Accessories (see Section 1.2).

Authorized Engineering Information 11-15-1991.

5.2 DATA TO APPEAR ON DRAWINGS

The following minimum data should appear on all cable tray drawings:

1. Type (ladder, trough, etc.)
2. Width
3. Straight section, fitting, or accessory
4. Fitting radii
5. Elevation (bottom of tray)
6. Vertical and horizontal changes in direction
7. Clearances-vertical and horizontal
8. Number of trays
9. Supports
10. Show graphic scale

Authorized Engineering Information 11-15-1991 .

SECTION 6
Application Information

6.1 DEFLECTION

Under normal applications deflection limitations should not be included in design criteria for cable trays. However, if unusual or special conditions exist, the manufacturer should be consulted. Limitations of deflection for aesthetic purpose only can result in an over-designed tray system.

Authorized Engineering Information 3-14-1979.

6.2 CONCENTRATED STATIC LOAD

(If Required by User)

A concentrated static load is not included in Table 3-1, Load/Span Designations. Some user applications may require that a given concentrated static load be imposed over and above the working load.

Such a concentrated static load represents a static weight applied between the side rails at midspan. When so specified, the concentrated static load may be converted to an equivalent, uniform load (We) in pounds per linear foot (kilograms per meter) using the formula:

$$We = \frac{2 \times (\text{Concentrated Static Load})}{\text{span length, ft. } (m)}$$

and added to the static weight of cables in the tray. This combined load may be used to select a suitable load/span designation (See Table 3-1). If the combined load exceeds the working load shown in Table 3-1, the manufacturer should be consulted.

Authorized Engineering Information 11-15-1984.

6.3 WARNING! WALKWAYS

Inasmuch as cable tray is designed as a support for power or control cables, or both, and is not intended or designed to be a walkway for personnel, the user is urged to display appropriate warnings cautioning against the use of this support as a walkway. The following language is suggested:

Warning! Not to be used as a walkway, ladder or support for personnel. To be used only as a mechanical support for cables and tubing.

Authorized Engineering Information 3-14-1979.

6.4 FITTINGS

Changes in direction should be mechanically continuous and accomplished by use of fittings having dimensions in accordance with 2.3.

Authorized Engineering Information 3-14-1979.

6.5 SUPPORTS

Supports for cable trays should provide a strength and working load capacity sufficient to meet the load requirement of the cable tray systems.

1. Horizontal and vertical tray supports should provide an adequate bearing surface for the tray and should have provisions for holddown clamps or fasteners.
2. In addition, vertical tray supports should provide secured means for fastening cable trays to supports.

Authorized Engineering Information 3-14-1979

6.6 SUPPORT LOCATIONS

6.6.1 Horizontal Cable Tray Straight Sections

Horizontal cable tray straight sections should be supported at intervals not to exceed the support span for the appropriate NEMA Class Designation shown in Table 3-1. Unspliced straight sections should be used on all simple spans and on end spans of continuous span runs. A support should be located within 2' (610*mm*) of each side of an expansion connector. Straight section lengths should be equal to or greater than the span length to ensure not more than one splice between supports.

Authorized Engineering Information 11-15-1991

6.6.2 Horizontal Cable Tray Fittings

1. Horizontal Elbow Supports (See Figure 6-1) Supports for horizontal tray fittings should be placed within 2' (610*mm*) of each fitting extremity, and as follows:
   (a) 90° supports at the 45° point of arc.
   (b) 60° supports at the 30° point of arc.
   (c) 45° supports at the 22½° point of arc (except for the 12" (305*mm*) radii).
   (d) 30° supports at the 15° point of arc (except for the 12" (305*mm*) radii).
2. Horizontal Tee Supports (See Figure 6-2)-Within 2' (610*mm*) of each of the three openings connected to other cable tray items for the 12-inch (305*mm*) radius. On all other radii, at least one support should be placed under each side rail of the horizontal tee, preferably as shown in Figure 6-2.
3. Horizontal Cross Supports (See Figure 6- 3)-Within 2' (610*mm*) of each of the four openings connected to other cable tray items for the 12-inch (305*mm*) radius. On all other radii, at least one support should be placed under each side rail of the horizontal cross, preferably as shown in Figure 6-3.
4. Horizontal Wye Supports (See Figure 6-4)-Within 2' (610*mm*) of each of the three openings connected to other cable tray items, and at 22½° point of the arc adjacent to the branch.
5. Reducer Supports (See Figures 6-5 and 6-6) Within 2' (610*mm*) of each fitting extremity.

Authorized Engineering Information 11-15-1984.

6.6.3 Vertical Cable Tray Elbows (See Figure 6-7)

Vertical cable tray elbows at the top of runs should be supported at each end. Vertical cable tray elbows at the bottom of runs should be supported at the top of the elbow, and within 2' (610*mm*) of the lower extremity of the elbow.

Authorized Engineering Information 11-15-1984.

6.6.4 Vertical Cable Tray Tees (See Figure 6-8)

Vertical cable tray tees should be supported within 2' (610*mm*) of each fitting extremity.

Authorized Engineering Information 11-15-1984.

6.6.5 Vertical Straight Sections

Vertical straight sections should be supported indoors at appropriate intervals permitted by the building structure; outdoor support intervals should be determined by wind loading. The maximum distance between vertical supports should not exceed 24' (7,320*mm*) on centers.

Authorized Engineering Information 11-15-1984.

6.6.6 Sloping Trays

Sloping trays should be supported at intervals not exceeding those for horizontal trays of the same design for the same installation.

Authorized Engineering Information 11-15-1984.

6.6.7 Fittings as End of Run

A fitting which is used as an end of the run dropout should have a support attached to it, firmly reinforcing the fitting.

Authorized Engineering Information 11-15-1984.

6.7 PROTECTION OF CABLE INSULATION

The inside of cable tray systems should present no sharp edges, burrs, or projections which could damage cable insulation.

Authorized Engineering Information 3-14-1979.

6.8 THERMAL CONTRACTION AND EXPANSION

It is important that thermal contraction and expansion be considered when installing cable tray systems. If it is determined that expansion connectors are required, reference should be made to Table 6-1 for maximum spacing.

The cable tray should be securely fixed at the support nearest to its midpoint between the expansion connectors and secured by expansion guides at all other support locations. The cable tray should be permitted longitudinal movement in both directions from that fixed point towards the expansion connectors.

Accurate gap setting at the time of installation is necessary for the proper operation of the expansion connectors. The following procedure should assist the installer in determining the correct gap:

Step 1 - Plot the highest expected cable tray metal temperature on the maximum temperature vertical axis. Example's Value = 100°F. (See Figure 6-9).

Step 2 - Plot the lowest expected cable tray metal temperature on the minimum temperature vertical axis. Example's Value = -28° F.

Step 3 - Draw a line between these maximum and minimum temperature points on the two vertical axis.

Step 4 - To determine the required expansion joint gap setting: Plot the cable tray metal temperature at the time of the cable tray installation on the Maximum temperature vertical axis. (Example's Value = 50° F).

Project over from the 50°F point on the maximum temperature vertical axis to an intersection with the line between the maximum and minimum cable tray metal temperatures. From this intersection point, project down to the gap setting horizontal axis to find the correct gap setting value (Example's Value: 3⁄8" gap setting). This is the length of the gap to be set between the cable tray sections at the expansion joint splice plate location.

Authorized Engineering Information 11-15-1984

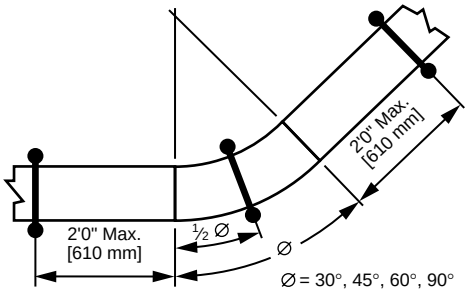
Table 6-1
MAXIMUM SPACING BETWEEN EXPANSION JOINTS THAT PROVIDE FOR 1" (25.4*mm*) MOVEMENT

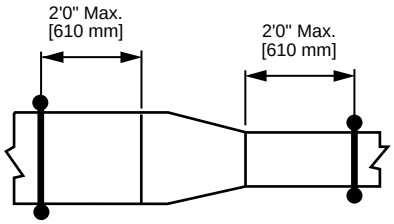
Temp. Differential		Steel		Aluminum	
F	(C)	Feet	(m)	Feet	(m)
25	(-4)	512	(156)	260	(79.2)
50	(10)	256	(78.0)	130	(39.6)
75	(24)	171	(52.1)	87	(26.5)
100	(38)	128	(39.0)	65	(19.8)
125	(51)	102	(31.1)	52	(15.8)
150	(65)	85	(25.9)	43	(13.1)
175	(79)	73	(22.2)	37	(11.3)

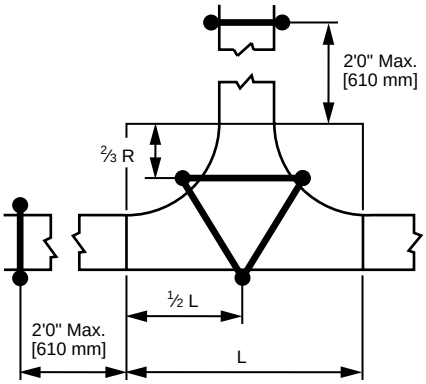
6.9 CABLE INSTALLATION

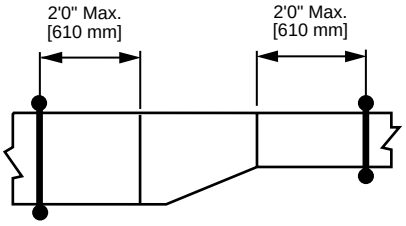
When installing cable in cable tray, it is important that care and planning be exercised so that the cable or the cable tray is not damaged or destroyed. The cable manufacturer should be contacted for maximum pulling tensions and minimum bending radii, and advice on prevention of "egging" or deformation of cable jacketing or shielding.

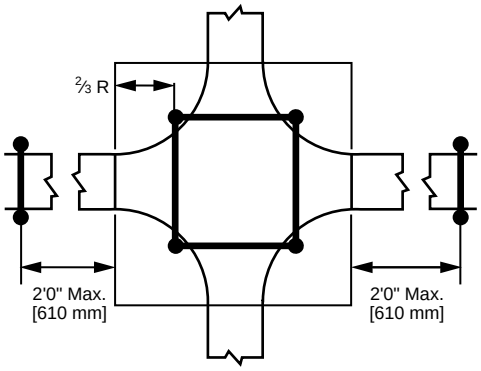
Authorized Engineering Information 11-15-1984.

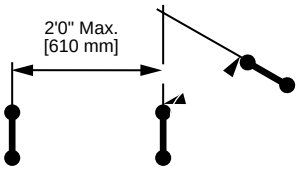

2'0" Max.
[610 mm]
½ Ø
Ø
2'0" Max.
[610 mm]
Ø = 30°, 45°, 60°, 90°

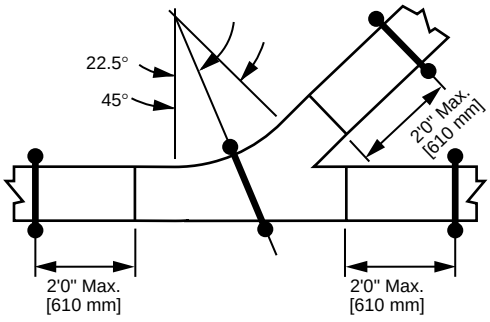

2'0" Max.
[610 mm]
2'0" Max.
[610 mm]


2'0" Max.
[610 mm]
⅔ R
½ L
2'0" Max.
[610 mm]
L


2'0" Max.
[610 mm]
2'0" Max.
[610 mm]


⅔ R
2'0" Max.
[610 mm]
2'0" Max.
[610 mm]


2'0" Max.
[610 mm]


22.5°
45°
2'0" Max.
[610 mm]
2'0" Max.
[610 mm]
2'0" Max.
[610 mm]

GAP SETTINGS

Establish maximum and minimum temperatures in summer and winter for the area. Draw line connecting them. Using the metal temperature at time of installation (C° or F°) draw horizontal to temperature slope and plot straight down to find gap distance at expansion joint.

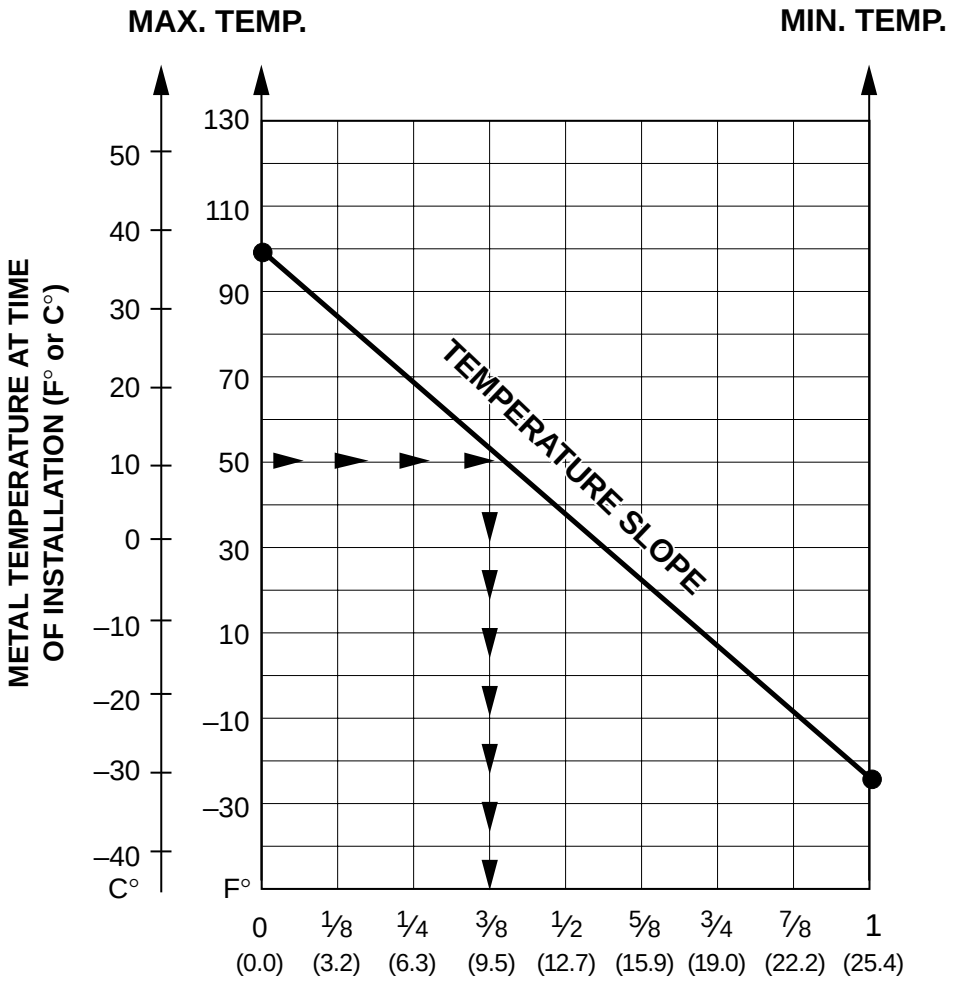
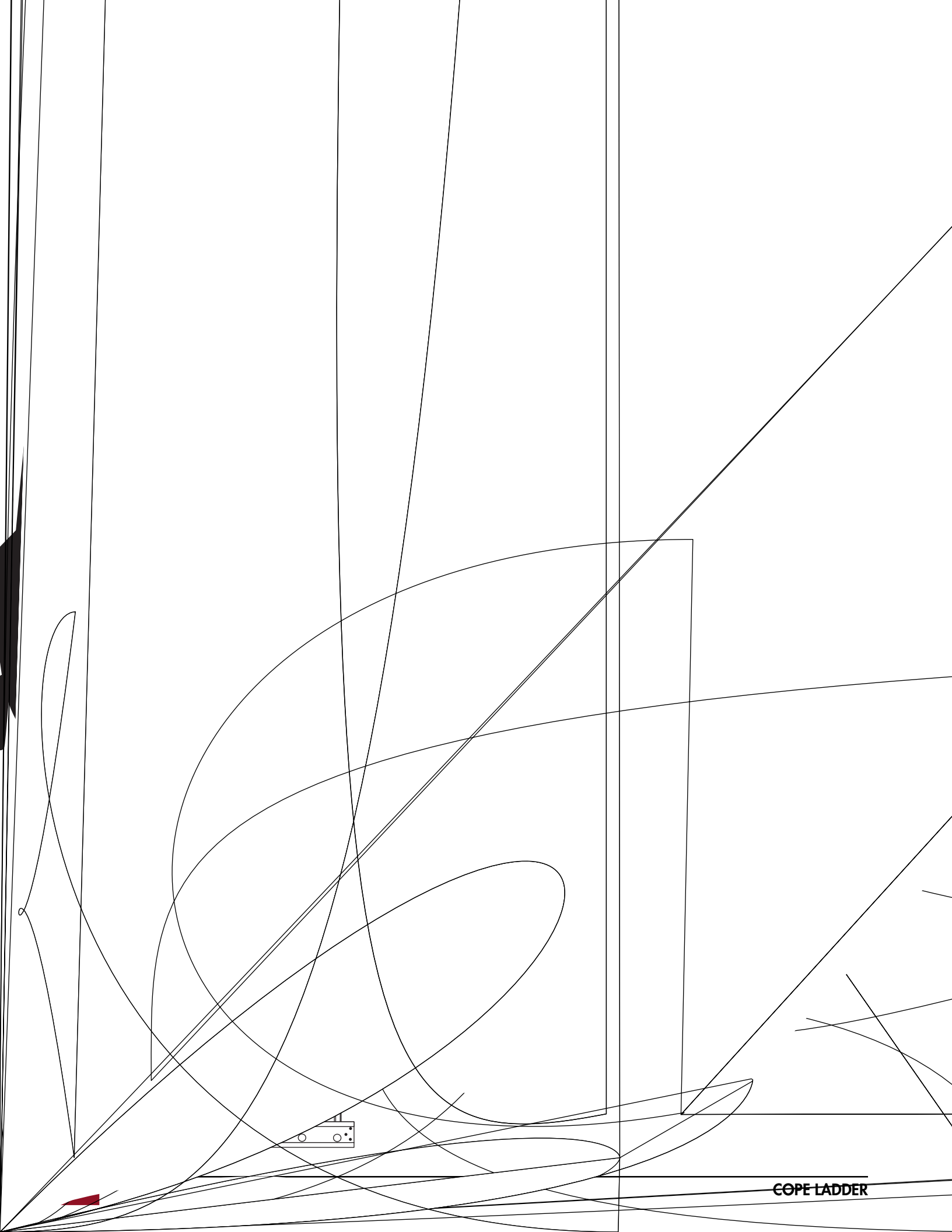


Figure 6-9

COPE LADDER

3

Cable Ladder System for Power, Control,
Instrumentation Cable & Pneumatic Tubing


ROPE LADDER

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Selection Chart:

Cope Ladder-Aluminum

NEMA CLASS, PHYSICAL AND STRUCTURAL PROPERTIES

NEMA Standard VE-1 Load/Span Class	NEMA Ld/Span	Cope System Number	Cope Systems Certified By CSA (See pg. 3-9)	Actual Load Depth	Side Rail Height	Flange Width (in.)	Sect. Mod. of 2 Rails Sx (in.^{3})	Moment of Inertia Ix (in.^{4})	Min X-Sect. Area of 2 Rails per NEC 318-7 (sq. in.)
8A-12A	50 lb./ft.	**1B38**	**1B38**	3" (76mm)	4¼" (108mm)	13/16	0.898	0.911	.60
	12' span	**1B48**	—	4" (102mm)	5¼" (133mm)	13/16	1.142	1.436	.60
		3B58	—	5" (127mm)	6¼" (159mm)	13/16	1.614	2.360	1.00
		1B68	—	6" (152mm)	7¼" (184mm)	13/16	1.874	3.284	1.00
12B	75 lb.ft.	**3B38**	—	3" (76mm)	4¼" (108mm)	13/16	1.148	0.158	.60
	12' span	**1B48**	—	4" (102mm)	5¼" (133mm)	13/16	1.142	1.436	.60
		3B58	—	5" (127mm)	6¼" (159mm)	13/16	1.614	2.360	1.00
		1B68	—	6" (152mm)	7¼" (184mm)	13/16	1.874	3.284	1.00
12C	100 lb./ft	**5B38**	—	3" (76mm)	4¼" (108mm)	13/16	1.646	1.675	1.00
	12' span	**3B48**	—	4" (102mm)	5¼" (133mm)	13/16	1.522	1.867	1.00
		5B58	—	5" (127mm)	6¼" (159mm)	13/16	1.944	2.933	1.00
		5B68	—	6" (152mm)	7¼" (184mm)	13/16	2.576	4.516	1.00
16A	50 lb./ft.	**5B38**	—	3" (76mm)	4¼" (108mm)	13/16	1.646	1.675	1.00
	16' span	**7448**	—	4" (102mm)	5¼" (133mm)	1¼	2.396	3.146	1.50
		1D58	—	5" (127mm)	6¼" (159mm)	1¼	2.378	3.601	1.00
		5D68	—	6" (152mm)	7¼" (184mm)	1¼	4.874	8.594	2.00
16B	75 lb./ft.	**3D38**	**3D38**	3" (76mm)	4¼" (108mm)	1¼	2.242	2.203	1.50
	16' span	**7448**	—	4" (102mm)	5¼" (133mm)	1¼	2.396	3.146	1.50
		1D58	—	5" (127mm)	6¼" (159mm)	1¼	2.378	3.601	1.00
		5D68	—	6" (152mm)	7¼" (184mm)	1¼	4.874	8.594	2.00
16C	100 lb./ft.	**5D38**	—	3" (76mm)	4¼" (108mm)	1¼	2.782	2.869	1.50
	16' span	**3D48**	—	4" (102mm)	5¼" (133mm)	1¼	3.434	4.373	2.00
		5D58	—	5" (127mm)	6¼" (159mm)	1¼	3.542	5.374	2.00
		5D68	—	6" (152mm)	7¼" (184mm)	1¼	4.874	8.594	2.00
20A	50 lb./ft.	**3D38**	**3D38**	3" (76mm)	4¼" (108mm)	1¼	2.242	2.203	1.50
	20' span	**7448**	—	4" (102mm)	5¼" (133mm)	1¼	2.396	3.146	1.50
		1D58	—	5" (127mm)	6¼" (159mm)	1¼	2.378	3.601	1.00
		5D68	—	6" (152mm)	7¼" (184mm)	1¼	4.874	8.594	2.00
20B	75 lb./ft.	**3D48**	—	4" (102mm)	5¼" (133mm)	1¼	3.434	4.373	2.00
	20' span	**5D58**	—	5" (127mm)	6¼" (159mm)	1¼	3.542	5.374	2.00
		5D68	—	6" (152mm)	7¼" (184mm)	1¼	4.874	8.594	2.00
20C	100 lb./ft.	**5E38**	—	3" (76mm)	4¼" (108mm)	1½	3.716	3.879	2.00
	20' span	**5D48**	—	4" (102mm)	5¼" (133mm)	1¼	3.910	5.010	2.00
		7D58	—	5" (127mm)	6¼" (159mm)	1¼	4.186	6.012	2.00
		5D68	—	6" (152mm)	7¼" (184mm)	1¼	4.874	8.594	2.00
OTHER ECONOMICAL SYSTEMS AVAILABLE									
		3658	**3658**	5" (127mm)	6¼" (159mm)	1¾	3.490	5.453	1.50
		1E68	—	6" (152mm)	7¼" (184mm)	1½	3.252	5.726	1.50
EXTRA HEAVY DUTY - VERY LONG SPAN TRAYS- 6", 9" OR 12" RUNG SPACING									
		9D58	—	5" (127mm)	6¼" (159mm)	1¼	5.130	7.850	2.00
		7G58	—	5" (127mm)	6¼" (159mm)	2	5.804	8.728	2.00

Note: Special Applications Available. Please Contact Factory.

Note: indicates most common systems.

LOAD AND DEFLECTION DATA FOR ALUMINUM LADDER

Working (Allowable) Load Capacity, Evenly Distributed-Tested per NEMA Standard VE-1, Simple Beam - SAFETY FACTOR 1.5

Cope Sys. No.	6 Ft. Span			8 Ft. Span			10 Ft. Span			12 Ft. Span			16 Ft. Span			20 Ft. Span			24 Ft. Span			25 Ft. Span		
	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k
1B38	222	.35	.002	125	.63	.005	80	.99	.012	55	1.42	.026												
1B48	324	.33	.001	125	.59	.003	117	.87	.007	77	1.26	.016												
3B58	359	.22	†	191	.37	.002	115	.55	.005	75	.74	.010												
1B68	416	.18	†	221	.31	.001	133	.46	.003	87	.62	.007												
3B38	354	.45	.001	191	.76	.004	117	1.14	.010	78	1.57	.020												
1B48	324	.33	.001	182	.59	.003	117	.87	.007	77	1.26	.016												
3B58	359	.22	†	191	.37	.002	115	.55	.005	75	.74	.010												
1B68	416	.18	†	221	.31	.001	133	.46	.003	87	.62	.007												
5B38	448	.39	†	251	.69	.003	161	1.08	.007	112	1.55	.014												
3B48	394	.31	†	222	.55	.002	142	.86	.006	100	1.24	.012												
5B58	480	.24	†	257	.40	.002	156	.60	.004	102	.81	.008												
5B68	540	.17	†	286	.29	.001	172	.43	.003	111	.57	.005												
5B38				251	.69	.003	161	1.08	.007	112	1.55	.014	51	2.26	.044	25	2.75	.110						
7448				349	.51	.001	223	.80	.004	155	1.15	.007	79	1.85	.023	51	2.89	.057						
1D58				380	.49	.001	222	.69	.003	154	1.00	.006	78	1.61	.021	50	2.51	.050						
5D68										316	.86	.003	161	1.38	.009	103	2.16	.021						
3D38				342	.72	.002	219	1.12	.005	152	1.61	.011	82	2.74	.033	52	4.27	.082						
7448				349	.51	.001	223	.80	.004	155	1.15	.007	79	1.85	.023	51	2.89	.057						
1D58				380	.49	.001	222	.69	.003	154	1.00	.006	78	1.61	.021	50	2.51	.050						
5D68										316	.86	.003	161	1.38	.009	103	2.16	.021						
5D38				444	.71	.002	284	.70	.002	188	1.53	.008	106	2.73	.026	65	4.07	.063						
3D48				525	.55	.001	336	.86	.003	233	1.24	.005	119	2.01	.017	76	3.14	.041						
5D58										229	1.00	.004	116	1.60	.014	75	2.50	.033						
5D68										316	.86	.003	161	1.38	.009	103	2.16	.021						
3D38										152	1.61	.011	82	2.74	.033	52	4.27	.082						
7448										155	1.15	.007	79	1.85	.023	51	2.89	.057						
1D58										154	1.00	.006	78	1.61	.021	50	2.51	.050						
5D68										316	.86	.003	161	1.38	.009	103	2.16	.021						
3D48										233	1.24	.005	119	2.01	.017	76	3.14	.041						
5D58										229	1.00	.004	116	1.60	.014	75	2.50	.033						
5D68										316	.86	.003	161	1.38	.009	103	2.16	.021						
5E38										298	1.79	.006	161	3.07	.019	103	4.79	.047						
5D48										290	1.35	.005	156	2.30	.015	100	3.59	.036						
7D58							404	.76	.002	281	1.09	.004	158	1.94	.012	101	3.02	.030						
5D68										316	.86	.003	161	1.38	.009	103	2.16	.021						
3658										215	.92	.004	121	1.63	.013	77	2.55	.033						
1E68										221	.90	.004	119	1.53	.013	76	2.39	.032						
9D58										412	1.22	.003	214	2.00	.009	131	3.01	.023	68	3.23	.048			
7G58										451	1.20	.003	253	2.14	.008	162	3.35	.020	112	4.79	.043	104	5.24	.050

Note: To convert 1.5 safety factor to 2.0 multiply w,d,k by 0.75.

W=Pounds per linear foot
Metric: for kg/m multiply w by 1.48
d=Deflection (inches)
k= Deflection (in.) for each pound of load
†= Denotes k is less than .001 inch

NEMA CLASS, PHYSICAL AND STRUCTURAL PROPERTIES

NEMA Standard VE-1 Class	NEMA Load/Span	Mill Galv. System Number	HDGAF System Number	Type 304 SS System Number	Cope Systems Certified By CSA	Actual Load Depth	Side Rail Height	Flange Width (in.)	Section Modulus of 2 Rails S_x (in.^{3})	Moment of Inertia I_x (in.^{4})	Min. X-Sect. Area of 2 Rails per NEC 318-7 (sq.in.)
8A-12B	75 lb./ft.	8B36	8B37	8B3T	8B37	3" (76mm)	4¼" (108mm)	13/16	0.678	0.685	.40
	12' span	8246	8247	824T	—	4" (102mm)	5¼" (133mm)	13/16	0.816	1.071	.40
		8256	8257	825T	—	5" (127mm)	6¼" (159mm)	13/16	1.072	1.676	.70
		8B66	8B67	8B6T	—	6" (152mm)	7¼" (184mm)	13/16	1.574	2.758	.70
12C	100 lb./ft.	6B36	6B37	6B3T	—	3" (76mm)	4¼" (108mm)	13/16	0.834	0.845	.70
	12' span	8B46	8B47	8B4T	—	4" (102mm)	5¼" (133mm)	13/16	0.924	1.162	.40
		6256	6257	625T	—	5" (127mm)	6¼" (159mm)	13/16	1.330	2.079	.70
		8B66	8B67	8B6T	—	6" (152mm)	7¼" (184mm)	13/16	1.574	2.758	.70
16A	50 lb./ft.	8D36	8D37	8D3T	—	3" (76mm)	4¼" (108mm)	1¼	0.852	0.868	.40
	16' span	8D46	8D47	8D4T	—	4" (102mm)	5¼" (133mm)	1¼	1.146	1.447	.70
		8456	8457	845T	—	5" (127mm)	6¼" (159mm)	1¼	1.330	2.078	.70
		6466	6467	646T	—	6" (152mm)	7¼" (184mm)	1¼	2.062	3.739	1.00
16B	75 lb./ft.	6D36	6D37	6D3T	—	3" (76mm)	4¼" (108mm)	1¼	1.056	1.076	.70
	16' span	8D46	8D47	8D4T	—	4" (102mm)	5¼" (133mm)	1¼	1.146	1.447	.70
		6456	6457	645T	—	5" (127mm)	6¼" (159mm)	1¼	1.652	2.580	1.00
		6466	6467	646T	—	6" (152mm)	7¼" (184mm)	1¼	2.062	3.739	1.00
16C	100 lb./ft.	4D36	4D37	4D3T	—	3" (76mm)	4¼" (108mm)	1¼	1.298	1.326	1.00
	16' span	6446	6447	644T	—	4" (102mm)	5¼" (133mm)	1¼	1.280	1.680	.70
		6456	6457	645T	—	5" (127mm)	6¼" (159mm)	1¼	1.652	2.580	1.00
		8D66	8D67	8D6T	—	6" (152mm)	7¼" (184mm)	1¼	1.814	3.185	.70
20A	50 lb./ft.	6D36	6D37	6D3T	—	3" (76mm)	4¼" (108mm)	1¼	1.056	1.076	.70
	20' span	6446	6447	644T	—	4" (102mm)	5¼" (133mm)	1¼	1.280	1.680	.70
		6456	6457	645T	—	5" (127mm)	6¼" (159mm)	1¼	1.652	2.580	1.00
		6466	6467	646T	—	6" (152mm)	7¼" (184mm)	1¼	2.062	3.739	1.00
20B	75 lb./ft.	2D36	2D37	2D3T	—	3" (76mm)	4¼" (108mm)	1¼	1.758	1.802	1.00
	20' span	4D46	4D47	4D4T	—	4" (102mm)	5¼" (133mm)	1¼	1.744	2.209	1.00
		6D56	6D57	6D5T	6D57	5" (127mm)	6¼" (159mm)	1¼	1.814	2.743	1.00
		6D66	6D67	6D6T	—	6" (152mm)	7¼" (184mm)	1¼	2.246	3.951	1.00
20C	100 lb./ft.	2D46	2D47	2D4T	--	4" (102mm)	5¼" (133mm)	1¼	2.370	3.013	1.50
	20' span	4D56	4D57	4D5T	—	5" (127mm)	6¼" (159mm)	1¼	2.240	3.389	1.00
		4466	4467	446T	—	6" (152mm)	7¼" (184mm)	1¼	2.556	4.632	1.00
OTHER ECONOMICAL SYSTEMS AVAILABLE											
		4B36	4B37	4B3T	—	3" (76mm)	4¼" (108mm)	13/16	1.024	1.039	.70
		6B46	6B47	6B4T	—	4" (102mm)	5¼" (133mm)	13/16	1.140	1.436	.70
		4B46	4B47	4B4T	—	4" (102mm)	5¼" (133mm)	13/16	1.402	1.769	1.00
EXTRA HEAVY DUTY - VERY LONG SPAN TRAYS- 6", 9" OR 12" RUNG SPACING											
		2D56	2D57	2D5T	—	5" (127mm)	6¼" (159mm)	1¼	3.052	4.635	1.50
		11D56	11D57	11D5T	—	5" (127mm)	6¼" (159mm)	1¼	3.536	5.315	1.50

Note: indicates most common systems.

LOAD AND DEFLECTION DATA FOR STEEL LADDER

Working (Allowable) Load Capacity, Evenly Distributed-Tested per NEMA Standard VE-1, Simple Beam - SAFETY FACTOR 1.5

Cope System Numbers	6 Ft. Span			8 Ft. Span			10 Ft. Span			12 Ft. Span			16 Ft. Span			20 Ft. Span			24 Ft. Span			25 Ft. Span		
	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k
8B36/8B37/8B3T	360	.26	†	198	.46	.002	124	.70	.006	84	.98	.012												
8246/8247/824T	383	.18	†	210	.31	.001	127	.46	.004	83	.62	.007												
8256/8257/825T	357	.11	†	194	.18	†	119	.28	.002	79	.38	.005												
8B66/8B67/8B6T	680	.12	†	328	.19	†	182	.26	.001	107	.31	.003												
6B36/6B37/6B3T	453	.27	†	249	.47	.002	156	.71	.005	106	1.00	.009												
8B46/8B47/8B4T	456	.20	†	244	.33	.001	152	.51	.003	103	.71	.007												
6256/6257/625T	460	.11	†	250	.19	†	154	.29	.002	103	.40	.004												
8B66/8B67/8B6T	680	.12	†	328	.19	†	182	.26	.001	107	.31	.003												
8D36/8D37/8D3T				290	.53	.002	182	.81	.004	126	1.17	.009	65	1.91	.029									
8D46/8D47/8D4T				382	.42	.001	245	.66	.003	170	.94	.006	86	1.54	.018									
8456/8457/845T				268	.20	†	166	.31	.002	111	.43	.004	58	.71	.012									
6466/6467/643T										178	.38	.002	93	.62	.007									
6D36/6D37/6D3T				381	.56	.001	244	.88	.004	169	1.27	.008	88	2.08	.024									
8D46/8D47/8D4T				382	.42	.001	245	.66	.003	170	.94	.006	86	1.54	.018									
6456/6457/645T				574	.35	†	367	.55	.001	245	.76	.003	123	1.22	.010									
6466/6467/643T										178	.38	.002	93	.62	.007									
4D36/4D37/4D3T				487	.58	.001	312	.91	.003	216	1.31	.006	113	2.16	.019									
6446/6447/644T				444	.42	†	273	.63	.002	186	.89	.005	100	1.51	.015									
6456/6457/645T				574	.35	†	367	.55	.001	245	.76	.003	123	1.22	.010									
8D66/8D67/8D6T				504	.25	†	306	.37	.001	202	.51	.003	101	.80	.008									
6D36/6D37/6D3T										169	1.27	.008	88	2.08	.024	52	2.98	.057						
6446/6447/644T										186	.89	.005	100	1.51	.015	53	1.94	.037						
6456/6457/645T										245	.76	.003	123	1.22	.010	66	1.59	.024						
6466/6467/643T										178	.38	.002	93	.62	.007	55	.91	.017						
2D36/2D37/2D3T										304	1.36	.004	159	2.24	.014	94	3.23	.034						
4D46/4D47/4D4T										280	1.02	.004	145	1.67	.012	85	2.40	.028						
6D56/6D57/6D5T										269	.80.	.003	139	1.28	.009	81	1.82	.022						
6D66/6D67/6D6T										291	.59	.002	148	.95	.006	85	1.33	.016						
2D46/2D47/2D4T										395	1.05	.003	206	1.74	.008	121	2.50	.021						
4D56/4D57/4D5T										296	.79	.003	152	1.28	.008	105	1.91	.018						
4466/4467/446T										379	.66	.002	191	1.05	.005	102	1.37	.013						
4B36/4B37/4B3T	569	.28	†	313	.48	.002	196	.73	.004	133	1.03	.008												
6B46/6B47/6B4T	591	.21	†	325	.36	.001	203	.55	.003	137	.77	.006												
4B46/4B47/4B4T	779	.22	†	428	.38	†	268	.59	.002	182	.83	.005												
2D56/2D57/2D5T										490	.85	.002	254	1.40	.006	149	2.00	.013	79	1.91	.024	73	2.38	.033
11D56/11D57/11D5T										434	.66	†	244	1.17	.005	156	1.82	.012	108	2.62	.024	100	2.85	.029

To convert 1.5 safety factor to 2.0 multiply w, d, k by 0.75.

W=Pounds per linear foot
Metric: for kg/m multiply w by 1.48
d=Deflection (inches)
k= Deflection (in.) for each pound of load
†= Denotes k is less than .001 inch

HOW TO ORDER:

Order by the Cope full catalog numbers given in this catalog. Please pay careful attention to the part numbering structure. Example: Catalog No. 1B48-06SL-12-09 is a 4" load depth aluminum ladder wtih a 13/16" flange, 6 inches wide, straight length 12 feet long, rungs on 9" centers.

STRAIGHT LENGTH

SYSTEM NUMBER (STRAIGHT SECTION ONLY) – The first four digits make up the system number which identifies the structural, dimensional and material characteristics of the straight length. It is made up of the side rail digits indicating the side rail thickness and flange width, the load depth (inside, in inches) and material finish (galvanized, aluminum or coated).

System Number

Thickness Steel (Ga.)	Flange Width	Load Depth	Material Finish
8 - 18 ga.	2 - 13/16" (21mm)	3" (76mm)	6 - Mill-Galv.
6 - 16 ga.	4 - 1¼" (32mm)	4" (102mm)	7 - HDGAF
4 - 14 ga.	5 - 1½" (38mm)	5" (127mm)	8 - Aluminum
2 - 12 ga.	6 - 1¾" (45mm)	6" (152mm)	T - 304SS
11 - 11 ga.	7 - 2" (51mm)		
	*B - 13/16" (21mm)		
	*D - 1¼" (32mm)		
	*E - 1½" (38mm)		
	*F - 1¾" (45mm)		
	*G - 2" (51mm)		

*Stiffened Upper Flange

**Alum. extruded side rails are individually engineered to loads and spans.

FITTINGS

PREFIX NUMBER (FITTINGS ONLY) – Fittings are ordered using the 3-digit prefix number given in the charts on the fitting pages. Fittings do not have stiffened upper flanges.

WIDTH – Identifies the inside width of the tray in inches.

BASIC PART NUMBER – Identifies the straight length, fitting or accessory.

SECONDARY DIMENSION NUMBER – Identifies the length of a straight section in feet, the radius of a fitting in inches or the second width of a reducer in inches.

RUNG SPACING – Identifies the center-to-center distance between rungs on straight length. Nominal 9" (229mm) rung spacing maintained through centerline of all fittings.

Description

Width (in.)	Basic Part Number	Length	Rung Spacing
-06=6" (152mm)	SL (Straight Len.)	- 12' (3.7m)	06=6" (152mm)
-09=9" (229mm)	9F (90° Horiz. El.)	- 24' (7.3m)	09=9" (229mm)
-12=12" (305mm)	6F (60° Horiz. El.)	- 10' (3m, CSA)	12=12" (305mm)
-18=18" (457mm)	4F (45° Horiz. El.)	- 20' (6	

CSA System Selection Chart:

Cope Ladder-Type Cabletrough

..... Performance- CSA C22.2 Classes

CSA Class See CSA Std. C22.2	Cope System Certified by CSA	Load Depth		Side Rail Height		Flange Width		Max.Load (Kg/m²)	Maximum Support Span	Deflection	Meets CSA Elec. Tests
ALUMINUM- Safety Factor: 1.5											
C1	1B38	3"	(76mm)	4¼"	(108mm)	13⁄16"	(21mm)	97	3m	19.3mm	Yes
D1	3D38	3"	(76mm)	4¼"	(108mm)	1¼"	(32mm)	67	6m	88.7mm	Yes
E	3658	5"	(127mm)	6¼"	(159mm)	1¾"	(45mm)	112	6m	60.4mm	Yes
STEEL- Class I Coating (HDGAF) Safety Factor: 1.5											
C1	8B37	3"	(76mm)	4¼"	(108mm)	13⁄16"	(21mm)	97	3m	8.9mm	Yes
E	6D57	5"	(127mm)	6¼"	(159mm)	1¼"	(32mm)	112	6m	41.4mm	Yes

CSA LOADS

Cope systems given in these charts are for projects that require cabletroughs certified by the Canadian Standards Association standard number C22.2 No. 126. Where CSA C22.2 is not mandatory you may want to consider one of the other Cope systems offered on the selection charts (page 3-4 & 3-6). Loads for CSA classes C1, D1, and E when supported on shorter spans are given in the following chart:

FACTOR OF SAFETY: 1.5

CLASS	1.5M	2.0M	2.5M	3.0M	4.0M	5.0M	6.0M
C1	259	164	119	97	-	-	-
D1	-	-	-	179	113	82	67
E	-	-	-	299	189	137	112

RECEIVING, INSTALLING, AND MAINTENANCE

The proper care and handling of cabletroughs by the receiver and installers is very important to insure a safe installation that will meet the intended service life. Cope has available an installation guide to assist the installers and those who will maintain the installed system.

DIMENSIONS AND STRUCTURAL PROPERTIES: COPE CSA SYSTEMS

The performance of the Cope cabletrough systems certified by CSA is given above. Structural properties of straight sections, though not required to be listed, are given in the Cope NEMA selection charts, in English units. Dimensions of straight sections and certified fittings are furnished in English and metric units for use in layout and/or entry into computerized systems.

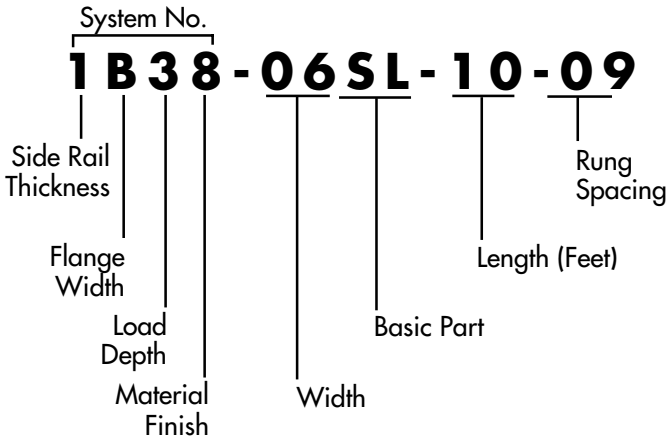
NOTE: *For other CSA approved systems please contact the factory.*

Cope CSA Standards C22-2 Cabletrough Ladder Type

HOW TO ORDER:

Explanation of Cope's Canadian Standards cable tray catalog numbers is described below. Use the system numbers given in selection charts for straight sections, or the fitting prefix numbers given in fitting tables. Be sure to follow system number or the fitting prefix with the item "description" number. The list below gives the CSA certified items carrying the CSA label.

STRAIGHT LENGTH



SYSTEM NUMBER (STRAIGHT SECTION ONLY) – The first four digits make up the system number which identifies the structural, dimensional and material characteristics of the straight length. It is made up of the side rail digits indicating the side rail thickness and flange width, the load depth (inside, in inches) and material finish (galvanized, aluminum or coated).

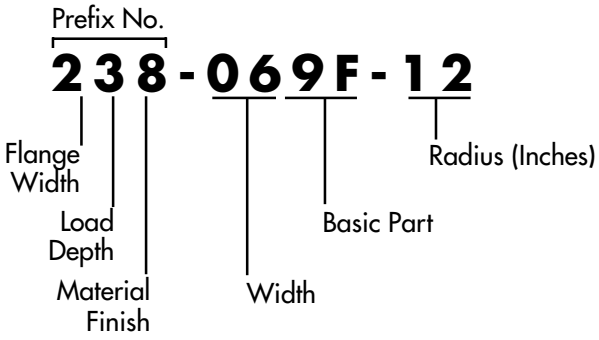
System Number

Thickness Steel (Ga.)	Flange Width	Load Depth	Material Finish
8 - 18 ga.	2 - 13/16" (21mm)	3" (76mm)	7 - HDGAF, CSA Class 1
6 - 16 ga.	6 - 1¾" (45mm)	5" (127mm)	8 - Aluminum Plain Finish
	*B - 13/16" (21mm)		
Thickness Alum (in.)**	*D - 1¼" (32mm)		
1- thinner			
↓			
3- thicker			

*Stiffened Upper Flange

**Alum. extruded side rails are individually engineered to loads and spans.

FITTINGS



PREFIX NUMBER (FITTINGS ONLY) – Fittings are ordered using the 3-digit prefix number given in the charts on the fitting pages. Fittings do not have stiffened upper flanges.

WIDTH – Identifies the inside width of the tray (in inches).

BASIC PART NUMBER – Identifies the straight length, fitting or accessory.

SECONDARY DIMENSION NUMBER – Identifies the length of a straight section (in feet), the radius of a fitting (in inches) or the second width of a reducer (in inches).

RUNG SPACING – Identifies the center-to-center distance between rungs on straight length. Nominal 9" (229mm) rung spacing maintained through centerline of all fittings.

Description

Width (in.)	Basic Part Number	Length	Rung Spacing
06=6" (152mm)	SL (Straight Len.)	10 - 10' (3m)	06=6" (152mm)
09=9" (229mm)	9F (90° Horiz. Elbow)	20 - 20' (6m)	09=9" (229mm)
12=12" (305mm)	6F (60° Horiz. Elbow)		12=12" (305mm)
18=18" (457mm)	4F (45° Horiz. Elbow)		
24=24" (610mm)	3F (30° Horiz. Elbow)		
30=30" (762mm)	90 (90° Out. Vert. Elbow)		
36=36" (914mm)	60 (60° Out. Vert. Elbow)		
	40 (45° Out. Vert. Elbow)		
	30 (30° Out. Vert. Elbow)		
	9I (90° In. Vert. Elbow)		
	6I (60° In. Vert. Elbow)		
	4I (45° In. Vert. Elbow)		
	3I (30° In. Vert. Elbow)		
	FT (Horiz. Tee)		
	FC (Horiz. Cross)		
	VT (Vert. Tee)		
	SR (Vert. Cable Support Elbow)		
	ST (Straight Reducer)		
	RH (Right Hand Reducer)		
	LH (Left Hand Reducer)		
	AF (Adjustable Elbow)		
	RY & LY (45° "Y" Branch)		

Radius (in.)
12=12" (305mm)
24=24" (610mm)
36=36" (914mm)

STRAIGHT LENGTH

Part No. SL

COPE LADDER is manufactured in 10' (CSA), 12', 20' (CSA), and 24' lengths; 6", 9", 12", 18", 24", 30" and 36" widths; and, 3", 4", 5", and 6" load depths. Rungs are 1" diameter tubes with a 7/8" flattened cable support surface. 6", 9", 12" and 18" rung spacings are available. Fittings have nominal 9" rung spacing through centerline. Dimensions given are inside. For overall widths add two flange widths of the system selected (see Selection Charts). Some systems have stiffened upper (top) flanges to obtain rigidity required (see Selection Charts).

Rungs are assembled to side rails by Cope's exclusive cold swaging process. Outward facing flanges allow full unobstructed access to contents of tray in width and depth.

Materials: Aluminum, Hot Dip Mill-Galvanized (pregalvanized) to ASTM A-924, Hot Dip Galvanized After Fabrication (HDGAF) to ASTM A-123, Stainless Steel (Type 304 and 316). Sufficient connectors are supplied to assemble straight sections and fittings for each order. Connectors for field cuts to be ordered separately (see Connectors).

Low 3" (76mm) and 4" (102mm) 61 4" (159mm) and 71 4" (184mm) 41 4" (108mm) and 51 4" (133mm) 5" (127mm)

Contact the factory for flange in systems.

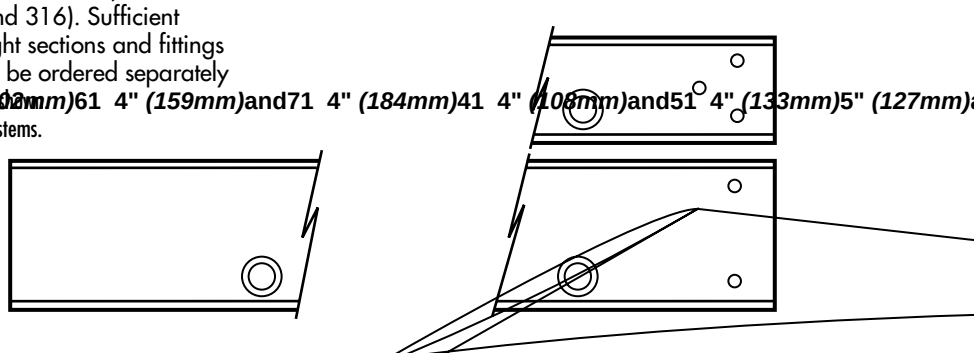
Catalog Number

System	Width	Basic No.	Rung Length	Spacing
	-06=6" (152mm)	SL	**NEMA**	-06=6" (152mm)
	-09=9" (229mm)		12' (3.7m)*	-09=9" (229mm)
See	-12=12" (305mm)		24' (7.3m)*	-12=12" (305mm)
Pages	-18=18" (457mm)			-18=18" (457mm)
3-4 – 3-7	-24=24" (610mm)		**CSA**	
	-30=30" (762mm)		-10' (3m)	
	-36=36" (914mm)		-20' (6m)	

*12' all NEMA Classes, 24' NEMA Classes 16A, 16B, 16C, 20A, 20B, 20C.
Example: Catalog No. 1B48-06SL-12-09 is a 4-inch load depth aluminum ladder with a 13/16" flange, 6 inches wide, straight length 12 feet long, rungs on 9" centers.

Conversion Table

								CSA			
English	6"	9"	12"	18"	24"	30"	36"	12'	24'	10'	20'
Metric (mm)	152	229	305	457	610	762	914	3.7m	7.3m	3m	6m

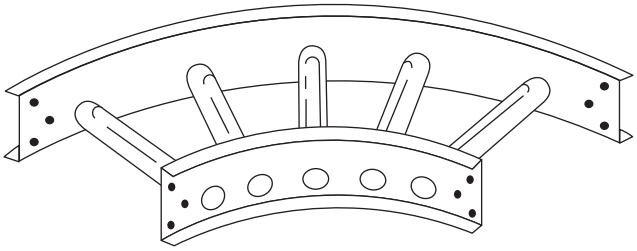


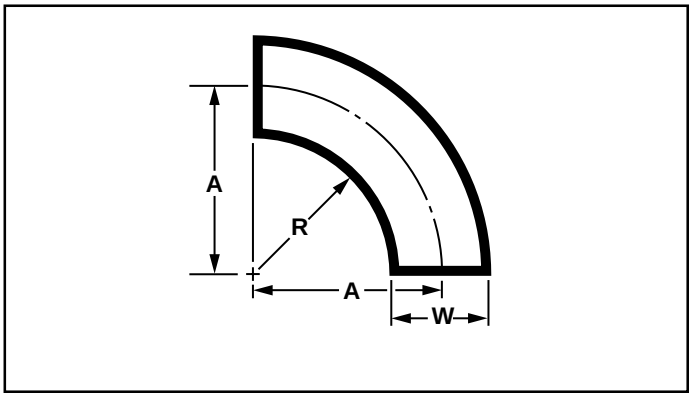
MATERIAL & FINISH SPECIFICATIONS (Ladder Cable Tray)

	Pre-Galvanized Steel	Hot-Dip Galvanized after Fabrication ASTM A-123	Aluminum	Type 304 Stainless Steel
Siderails	ASTM A-653-G90 CQ (18 & 16 Gage) ASTM A-653-G90 CQ (14 & 12 Gage)	ASTM A-366 (18 & 16 Gage) ASTM A-569 (14 & 12 Gage)	AA-6063-T6 Extruded	ASTM A-240; Type 304
Rungs	ASTM A-653-G90 CQ	ASTM A-366	AA-6063-T6 Extruded*	ASTM A-269; Type 304
Splice Plate Finish	ASTM A-569 ASTM A-591 Class C	ASTM A-569 ASTM A-123 Grade 65	AA-5052-H34	ASTM A-240; Type 304 2B Finish (Typical)
Connector Bolts	SAE J429 Grade 1 (ASTM A-307 Grade A)	SAE J429 Grade 1 (ASTM A-307 Grade A)	SAE J429 Grade 1 (ASTM A-307 Grade A)	AISI Type 304 Stainless Steel
Bolt Plating	ASTM B-633.0002" Zinc	ASTM B-633.0002" Zinc	ASTM B-633.0002" Zinc	
Covers	ASTM A-653-G90 CQ	ASTM A-653-G90 CQ	AA-3003 H14 or 3150 H14	ASTM A-240; Type 304

*Special High Strength 32 ksi Minimum Yield

Part No. 9F





COPE FITTINGS are offered in 12", 24", and 36" radius. Use Adjustable Connectors for odd angles. Nominal 9" rung spacing maintained through centerline of all fittings.

3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	6 - Mill Galv.	.60	1.00	.40	.70
	4	7 - HDGAF	.60	.60	.40	.70
	5	8 - Alum.	.60	1.00	.70	.70
	6	T - 304 SS	.60	1.00	.70	1.00

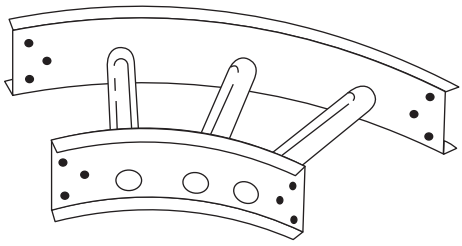
CSA Certified for CSA Systems

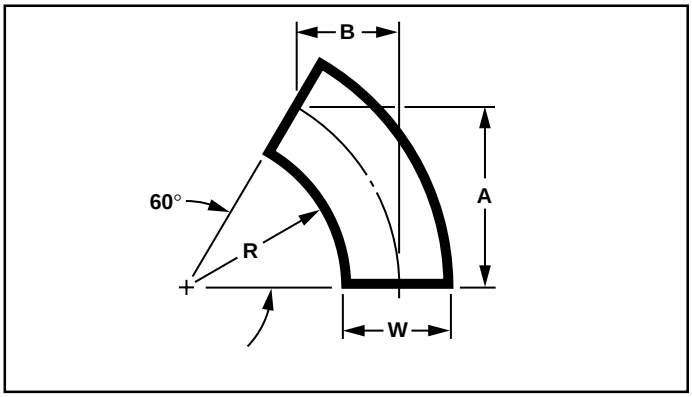
Radius - R	Width - W		Catalog Number	"A" Dimension	
12" (305mm)	6"	(152mm)	*Prefix*- 069F-12	15"	(381mm)
	9"	(229mm)	*Prefix*- 099F-12	16½"	(419mm)
	12"	(305mm)	*Prefix*- 129F-12	18"	(457mm)
	18"	(457mm)	*Prefix*- 189F-12	21"	(533mm)
	24"	(610mm)	*Prefix*- 249F-12	24"	(610mm)
	30"	(762mm)	*Prefix*- 309F-12	27"	(686mm)
	36"	(914mm)	*Prefix*- 369F-12	30"	(762mm)
24" (610mm)	6"	(152mm)	*Prefix*- 069F-24	27"	(686mm)
	9"	(229mm)	*Prefix*- 099F-24	28½"	(724mm)
	12"	(305mm)	*Prefix*- 129F-24	30"	(762mm)
	18"	(457mm)	*Prefix*- 189F-24	33"	(838mm)
	24"	(610mm)	*Prefix*- 249F-24	36"	(914mm)
	30"	(762mm)	*Prefix*- 309F-24	39"	(991mm)
	36"	(914mm)	*Prefix*- 369F-24	42"	(1067mm)
36" (914mm)	6"	(152mm)	*Prefix*- 069F-36	39"	(991mm)
	9"	(229mm)	*Prefix*- 099F-36	40½"	(1029mm)
	12"	(305mm)	*Prefix*- 129F-36	42"	(1067mm)
	18"	(457mm)	*Prefix*- 189F-36	45"	(1143mm)
	24"	(610mm)	*Prefix*- 249F-36	48"	(1219mm)
	30"	(762mm)	*Prefix*- 309F-36	51"	(1295mm)
	36"	(914mm)	*Prefix*- 369F-36	54"	(1372mm)

Example: 238-129F-12

60° Horizontal Elbow

Part No. 6F





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	6 - Mill Galv.	.60	1.00	.40	.70
	4	7 - HDGAF	.60	.60	.40	.70
	5	8 - Alum.	.60	1.00	.70	.70
	6	T - 304 SS	.60	1.00	.70	1.00

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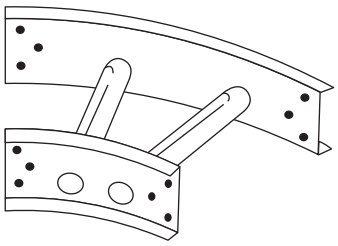
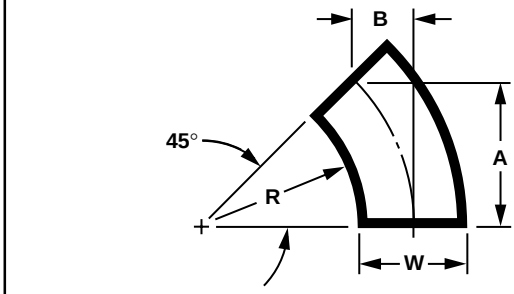
Radius - R	Width - W	Catalog Number	"A" Dimension	"B" Dimension
12" (305mm)	6" (152mm)	*Prefix*- 066F-12	13" (330mm)	7½" (191mm)
	9" (229mm)	*Prefix*- 096F-12	14¼" (362mm)	8¼" (210mm)
	12" (305mm)	*Prefix*- 126F-12	15⅜" (397mm)	9" (229mm)
	18" (457mm)	*Prefix*- 186F-12	18¼" (464mm)	10½" (267mm)
	24" (610mm)	*Prefix*- 246F-12	20¾" (527mm)	12" (305mm)
	30" (762mm)	*Prefix*- 306F-12	23⅜" (594mm)	13½" (343mm)
	36" (914mm)	*Prefix*- 366F-12	26" (660mm)	15" (381mm)
24" (610mm)	6" (152mm)	*Prefix*- 066 F-24	23⅜" (594mm)	13½" (343mm)
	9" (229mm)	*Prefix*- 096F-24	24¾" (629mm)	14¼" (362mm)
	12" (305mm)	*Prefix*- 126F-24	26" (660mm)	15" (381mm)
	18" (457mm)	*Prefix*- 186F-24	28⅝" (727mm)	16½" (416mm)
	24" (610mm)	*Prefix*- 246F-24	31¼" (794mm)	18" (457mm)
	30" (762mm)	*Prefix*- 306F-24	33¾" (857mm)	19½" (495mm)
	36" (914mm)	*Prefix*- 366 F-24	36⅜" (924mm)	21" (533mm)
36" (914mm)	6" (152mm)	*Prefix*- 066F-36	33¾" (857mm)	19½" (495mm)
	9" (229mm)	*Prefix*- 096F-36	35⅛" (892mm)	20¼" (514mm)
	12" (305mm)	*Prefix*- 126F-36	36⅜" (924mm)	21" (533mm)
	18" (457mm)	*Prefix*- 186F-36	39" (991mm)	22½" (572mm)
	24" (610mm)	*Prefix*- 246F-36	41⅝" (1057mm)	24" (610mm)
	30" (762mm)	*Prefix*- 306F-36	44⅛" (1121mm)	25½" (648mm)
	36" (914mm)	*Prefix*- 366F-36	46¾" (1187mm)	27" (686mm)

Example: 238-126F-12

PART NO. 4F





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	6 - Mill Galv.	.60	1.00	.40	.70
	4	7 - HDGAF	.60	.60	.40	.70
	5	8 - Alum.	.60	1.00	.70	.70
	6	T - 304 SS	.60	1.00	.70	1.00

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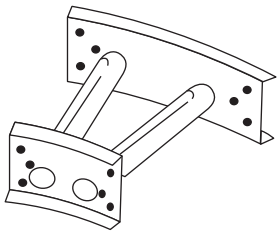
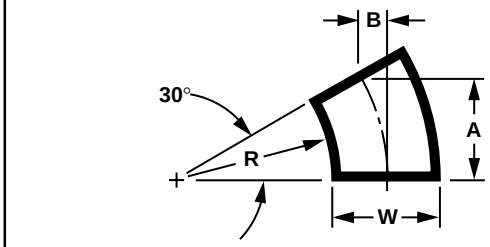
Radius - R	Width - W	Catalog Number	"A" Dimension	"B" Dimension
12" (305mm)	6" (152mm)	*Prefix*- 064F-12	10 5/8" (270mm)	4 3/8" (111mm)
	9" (229mm)	*Prefix*- 094F-12	11 5/8" (295mm)	4 7/8" (124mm)
	12" (305mm)	*Prefix*- 124F-12	12 3/4" (324mm)	5 1/4" (133mm)
	18" (457mm)	*Prefix*- 184F-12	14 7/8" (378mm)	6 1/8" (156mm)
	24" (610mm)	*Prefix*- 244F-12	17" (432mm)	7" (178mm)
	30" (762mm)	*Prefix*- 304F-12	19 1/8" (486mm)	7 7/8" (200mm)
	36" (914mm)	*Prefix*- 364F-12	21 1/4" (540mm)	8 3/4" (222mm)
24" (610mm)	6" (152mm)	*Prefix*- 064F-24	19 1/8" (486mm)	7 7/8" (200mm)
	9" (229mm)	*Prefix*- 094F-24	20 1/8" (511mm)	8 3/8" (213mm)
	12" (305mm)	*Prefix*- 124F-24	21 1/4" (540mm)	8 3/4" (222mm)
	18" (457mm)	*Prefix*- 184F-24	23 3/8" (594mm)	9 5/8" (244mm)
	24" (610mm)	*Prefix*- 244F-24	25 1/2" (648mm)	10 1/2" (267mm)
	30" (762mm)	*Prefix*- 304F-24	27 5/8" (702mm)	11 1/2" (292mm)
	36" (914mm)	*Prefix*- 364F-24	29 3/4" (756mm)	12 3/8" (314mm)
36" (914mm)	6" (152mm)	*Prefix*- 064F-36	27 5/8" (702mm)	11 1/2" (292mm)
	9" (229mm)	*Prefix*- 094F-36	28 5/8" (727mm)	11 7/8" (302mm)
	12" (305mm)	*Prefix*- 124F-36	29 3/4" (756mm)	12 3/8" (314mm)
	18" (457mm)	*Prefix*- 184F-36	31 7/8" (810mm)	13 1/4" (337mm)
	24" (610mm)	*Prefix*- 244F-36	34" (864mm)	14 1/8" (359mm)
	30" (762mm)	*Prefix*- 304F-36	36 1/8" (918mm)	15" (381mm)
	36" (914mm)	*Prefix*- 364F-36	38 1/4" (972mm)	15 7/8" (403mm)

Example: 238-124F-12

PART NO. 3F





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	6 - Mill Galv.	.60	1.00	.40	.70
	4	7 - HDGAF	.60	.60	.40	.70
	5	8 - Alum.	.60	1.00	.70	.70
	6	T - 304 SS	.60	1.00	.70	1.00

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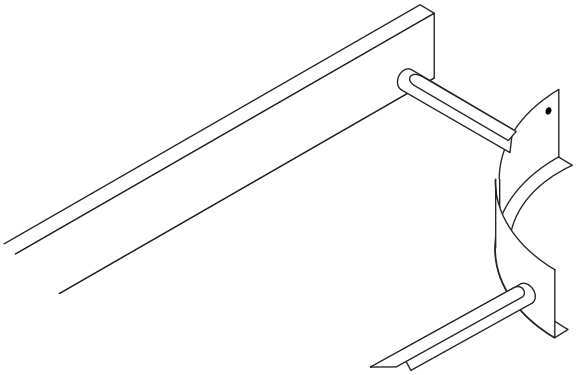
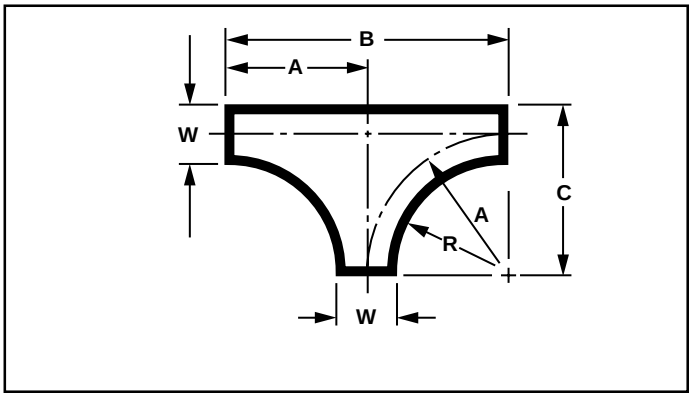
Radius - R	Width - W	Catalog Number	"A" Dimension	"B" Dimension
12" (305mm)	6" (152mm)	*Prefix*- 063F-12	7½" (191mm)	2" (51mm)
	9" (229mm)	*Prefix*- 093F-12	8¼" (210mm)	2¼" (57mm)
	12" (305mm)	*Prefix*- 123F-12	9" (229mm)	2⅜" (60mm)
	18" (457mm)	*Prefix*- 183F-12	10½" (267mm)	2⅞" (73mm)
	24" (610mm)	*Prefix*- 243F-12	12" (305mm)	3¼" (83mm)
	30" (762mm)	*Prefix*- 303F-12	13½" (343mm)	3⅝" (92mm)
	36" (914mm)	*Prefix*- 363F-12	15" (381mm)	4" (102mm)
24" (610mm)	6" (152mm)	*Prefix*- 063F-24	13½" (343mm)	3⅝" (92mm)
	9" (229mm)	*Prefix*- 093F-24	14¼" (362mm)	3⅞" (98mm)
	12" (305mm)	*Prefix*- 123F-24	15" (381mm)	4" (102mm)
	18" (457mm)	*Prefix*- 183F-24	16½" (419mm)	4⅜" (111mm)
	24" (610mm)	*Prefix*- 243F-24	18" (457mm)	4⅞" (124mm)
	30" (762mm)	*Prefix*- 303F-24	19½" (495mm)	5¼" (133mm)
	36" (914mm)	*Prefix*- 363F-24	21" (533mm)	5⅝" (143mm)
36" (914mm)	6" (152mm)	*Prefix*- 063F-36	19½" (495mm)	5¼" (133mm)
	9" (229mm)	*Prefix*- 093F-36	20¼" (514mm)	5½" (140mm)
	12" (305mm)	*Prefix*- 123F-36	21" (533mm)	5⅝" (143mm)
	18" (457mm)	*Prefix*- 183F-36	22½" (572mm)	6" (152mm)
	24" (610mm)	*Prefix*- 243F-36	24" (610mm)	6½" (165mm)
	30" (762mm)	*Prefix*- 303F-36	25½" (648mm)	6⅞" (175mm)
	36" (914mm)	*Prefix*- 363F-36	27" (686mm)	7¼" (184mm)

Example: 238-123F-12

PART NO. FT





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	6 - Mill Galv.	.60	1.00	.40	.70
	4	7 - HDGAF	.60	.60	.40	.70
	5	8 - Alum.	.60	1.00	.70	.70
	6	T - 304 SS	.60	1.00	.70	1.00

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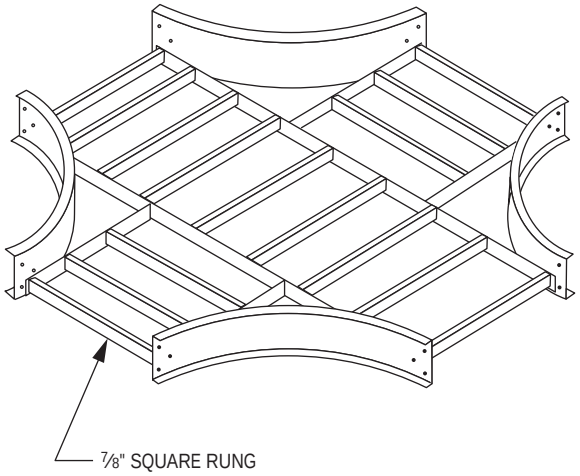
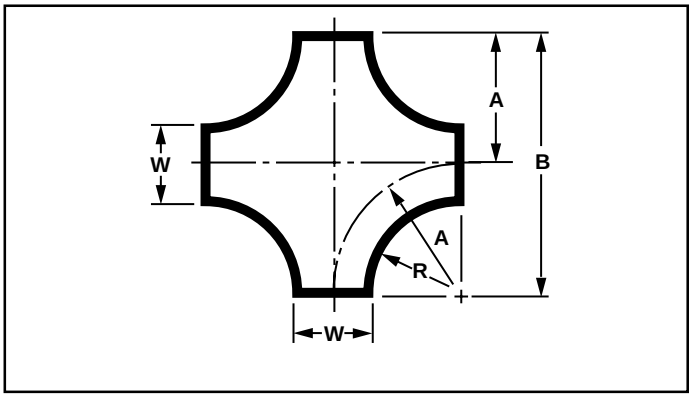
- W	Catalog Number	"A" Dimension		"B" Dimension		"C" Dimension	
152mm)	Prefix- 06FT-12	15"	(381mm)	30"	(762mm)	18"	(457mm)
229mm)	Prefix- 09FT-12	16½"	(419mm)	33"	(838mm)	21"	(533mm)
05mm)	Prefix- 12FT-12	18"	(457mm)	36"	(914mm)	24"	(610mm)
57mm)	Prefix- 18FT-12	21"	(533mm)	42"	(1067mm)	30"	(762mm)
0mm)	Prefix- 24FT-12	24"	(610mm)	48"	(1219mm)	36"	(914mm)
mm)	Prefix- 30FT-12	27"	(686mm)	54"	(1372mm)	42"	(1067mm)
nm)	Prefix- 36FT-12	30"	(762mm)	60"	(1524mm)	48"	(1219mm)
)	Prefix- 06FT-24	27"	(686mm)	54"	(1372mm)	30"	(762mm)
	Prefix- 09FT-24		(724mm)	57"	(1448mm)	33"	(838mm)
	Prefix- 12FT-24		762mm)	60"	(1524mm)	36"	(914mm)
	Prefix- 18FT-24		8mm)	66"	(1676mm)	42"	(1067mm)
	Prefix- 24FT-24		mm)	72"	(1829mm)	48"	(1219mm)
	Prefix- 30FT-24		m)	78"	(1981mm)	54"	(1372mm)
	Prefix- 36FT-24		n)	84"	(2134mm)	60"	(1524mm)
	Prefix- 06FT		m)	78"	(1981mm)	42"	(1067mm)
	Prefix- 09F		mm)	81"	(2057mm)	45"	(1143mm)
	Prefix- 12F		mm)	84"	(2134mm)	48"	(1219mm)
	Prefix- 18		43mm)	90"	(2286mm)	54"	(1372mm)
	Prefix- 24		219mm)	96"	(2438mm)	60"	(1524mm)
	Prefix- 3		(1295mm)	102"	(2591mm)	66"	(1676mm)
	Prefix- 3		(1372mm)	108"	(2743mm)	72"	(1829mm)

PART NO. FC





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16"	3	6 - Mill Galv.	.60	1.00	.40	.70
4 - 1 1/4"	4	7 - HDGAF	.60	.60	.40	.70
	5	8 - Alum.	.60	1.00	.70	.70
	6	T - 304 SS	.60	1.00	.70	1.00

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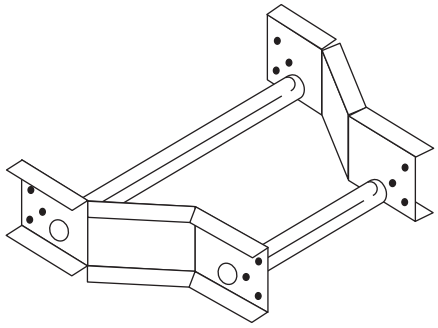
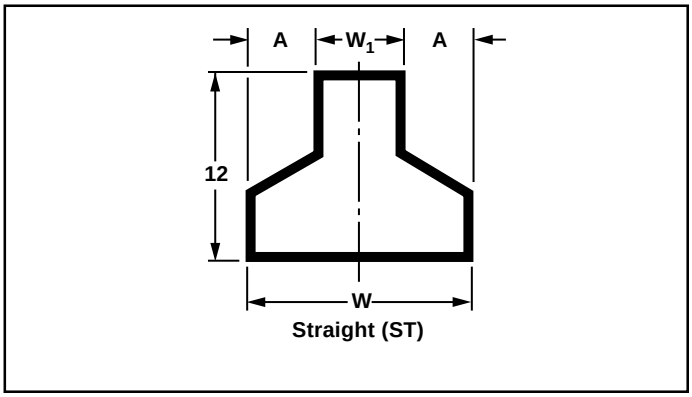
Radius - R	Width - W	Catalog Number	"A" Dimension	"B" Dimension
12" (305mm)	6" (152mm)	Prefix- 06 FC-12	15" (381mm)	30" (762mm)
	9" (229mm)	Prefix- 09 FC-12	16½" (419mm)	33" (838mm)
	12" (305mm)	Prefix- 12 FC-12	18" (457mm)	36" (914mm)
	18" (457mm)	Prefix- 18 FC-12	21" (533mm)	42" (1067mm)
	24" (610mm)	Prefix- 24 FC-12	24" (610mm)	48" (1219mm)
	30" (762mm)	Prefix- 30 FC-12	27" (686mm)	54" (1372mm)
	36" (914mm)	Prefix- 36 FC-12	30" (762mm)	60" (1524mm)
24" (610mm)	6" (152mm)	Prefix- 06 FC-24	27" (686mm)	54" (1372mm)
	9" (229mm)	Prefix- 09 FC-24	28½" (724mm)	57" (1448mm)
	12" (305mm)	Prefix- 12 FC-24	30" (762mm)	60" (1524mm)
	18" (457mm)	Prefix- 18 FC-24	33" (838mm)	66" (1676mm)
	24" (610mm)	Prefix- 24 FC-24	36" (914mm)	72" (1829mm)
	30" (762mm)	Prefix- 30 FC-24	39" (991mm)	78" (1981mm)
	36" (914mm)	Prefix- 36 FC-24	42" (1067mm)	84" (2134mm)
36" (914mm)	6" (152mm)	Prefix- 06 FC-36	39" (991mm)	78" (1981mm)
	9" (229mm)	Prefix- 09 FC-36	40½" (1029mm)	81" (2057mm)
	12" (305mm)	Prefix- 12 FC-36	42" (1067mm)	84" (2134mm)
	18" (457mm)	Prefix- 18 FC-36	45" (1143mm)	90" (2286mm)
	24" (610mm)	Prefix- 24 FC-36	48" (1219mm)	96" (2438mm)
	30" (762mm)	Prefix- 30 FC-36	51" (1295mm)	102" (2591mm)
	36" (914mm)	Prefix- 36 FC-36	54" (1372mm)	108" (2743mm)

Example: 238-12FC-12

PART NO. ST





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	6 - Mill Galv.	.60	1.00	.40	.70
	4	7 - HDGAF	.60	.60	.40	.70
	5	8 - Alum.	.60	1.00	.70	.70
	6	T - 304 SS	.60	1.00	.70	1.00

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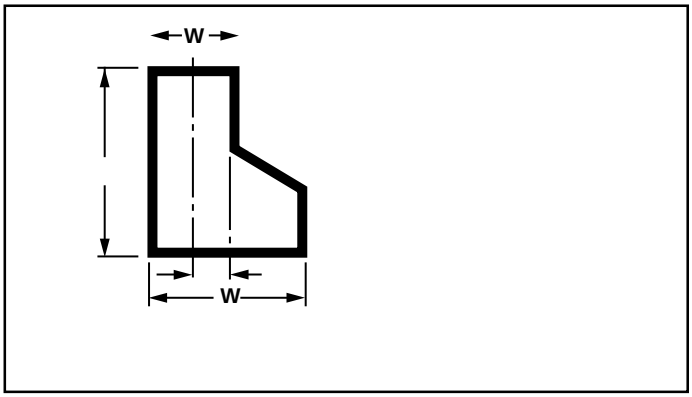
Width - W	Width - W1	Cat. No.-Straight	"A" Dimension
36" (914mm)	30" (762mm)	*Prefix*-36ST-30	3" (76mm)
	24" (610mm)	*Prefix*-36ST-24	6" (152mm)
	18" (457mm)	*Prefix*-36ST-18	9" (229mm)
	12" (305mm)	*Prefix*-36ST-12	12" (305mm)
	9" (229mm)	*Prefix*-36ST-09	13½" (343mm)
	6" (152mm)	*Prefix*-36ST-06	15" (381mm)
30" (762mm)	24" (610mm)	*Prefix*-30ST-24	3" (76mm)
	18" (457mm)	*Prefix*-30ST-18	6" (152mm)
	12" (305mm)	*Prefix*-30ST-12	9" (229mm)
	9" (229mm)	*Prefix*-30ST-09	10½" (267mm)
	6" (152mm)	*Prefix*-30ST-06	12" (304mm)
24" (610mm)	18" (457mm)	*Prefix*-24ST-18	3" (76mm)
	12" (305mm)	*Prefix*-24ST-12	6" (152mm)
	9" (229mm)	*Prefix*-24ST-09	7½" (191mm)
	6" (152mm)	*Prefix*-24ST-06	9" (229mm)
18" (457mm)	12" (305mm)	*Prefix*-18ST-12	3" (76mm)
	9" (229mm)	*Prefix*-18ST-09	4½" (114mm)
	6" (152mm)	*Prefix*-18ST-06	6" (152mm)
12" (305mm)	9" (229mm)	*Prefix*-12ST-09	1½" (38mm)
	6" (152mm)	*Prefix*-12ST-06	3" (76mm)
9" (229mm)	6" (152mm)	*Prefix*-09ST-06	1½" (38mm)

Example: 238-12ST-06

PART NO. LH (LEFT HAND)



3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	6 - Mill Galv.	.60	1.00	.40	.70
	4	7 - HDGAF	.60	.60	.40	.70
	5	8 - Alum.	.60	1.00	.70	.70
	6	T - 304 SS	.60	1.00	.70	1.00

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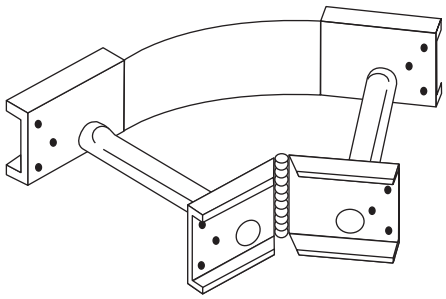
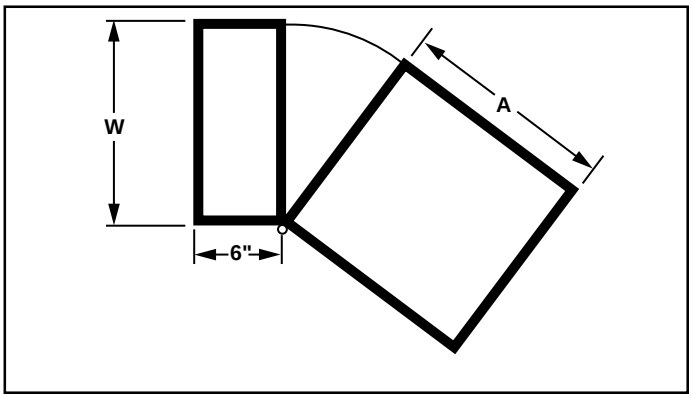
Width - W	Cat. No.–Left Hand	Cat. No.–Right Hand	"A" Dim.	"B" Dim.	"W1" Dim.
	Prefix-36LH-30	*Prefix*-36RH-30	6" (152mm)	15" (381mm)	30" (914mm)
	Prefix-36LH-24	*Prefix*-36RH-24	12" (305mm)	12" (305mm)	24" (610mm)
	Prefix-36LH-18	*Prefix*-36RH-18	18" (457mm)	9" (229mm)	18" (457mm)
	Prefix-36LH-12	*Prefix*-36RH-12	24" (610mm)	6" (152mm)	12" (305mm)
	Prefix-36LH-09	*Prefix*-36RH-09	27" (686mm)	4½" (114mm)	9" (229mm)
	Prefix-36LH-06	*Prefix*-36RH-06	30" (762mm)	3" (76mm)	6" (152mm)
	Prefix-30LH-24	*Prefix*-30RH-24	6" (152mm)	12" (305mm)	24" (610mm)
	Prefix-30LH-18	*Prefix*-30RH-18	12" (305mm)	9" (229mm)	18" (457mm)
	Prefix-30LH-12	*Prefix*-30RH-12	18" (457mm)	6" (152mm)	12" (305mm)
	Prefix-30LH-09	*Prefix*-30RH-09	21" (533mm)	4½" (114mm)	9" (229mm)
	Prefix-30LH-06	*Prefix*-30RH-06	24" (610mm)	3" (76mm)	6" (152mm)
	Prefix-24LH-18	*Prefix*-24RH-18	6" (152mm)	9" (229mm)	18" (457mm)
	Prefix-24LH-12	*Prefix*-24RH-12	12" (305mm)	6" (152mm)	12" (305mm)
	Prefix-24LH-09	*Prefix*-24RH-09	15" (381mm)	4½" (114mm)	9" (229mm)
	Prefix-24LH-06	*Prefix*-24RH-06	18" (457mm)	3" (76mm)	6" (152mm)
	Prefix-18LH-12	*Prefix*-18RH-12	6" (152mm)	6" (152mm)	12" (305mm)
	Prefix-18LH-09	*Prefix*-18RH-09	9" (229mm)	4½" (114mm)	9" (229mm)
	Prefix-18LH-06	*Prefix*-18RH-06	12" (305mm)	3" (76mm)	6" (152mm)
	Prefix-12LH-09	*Prefix*-12RH-09	3" (76mm)	4½" (114mm)	9" (229mm)
	Prefix-12LH-06	*Prefix*-12RH-06	6" (152mm)	3" (76mm)	6" (152mm)
	Prefix-09LH-06	*Prefix*-09RH-06	3" (76mm)	3" (76mm)	6" (152mm)

Example: 238-12LH-06

PART NO. AF





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	6 - Mill Galv.	.60	1.00	.40	.70
	4	7 - HDGAF	.60	.60	.40	.70
	5	8 - Alum.	.60	1.00	.70	.70
	6	T - 304 SS	.60	1.00	.70	1.00

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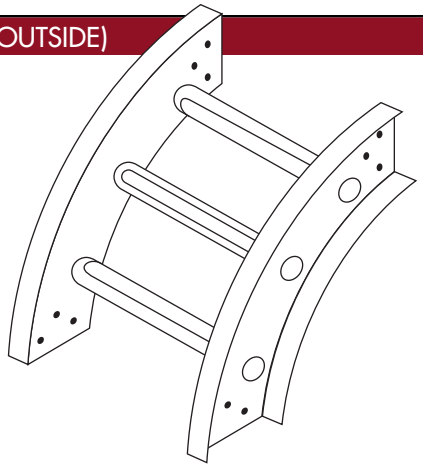
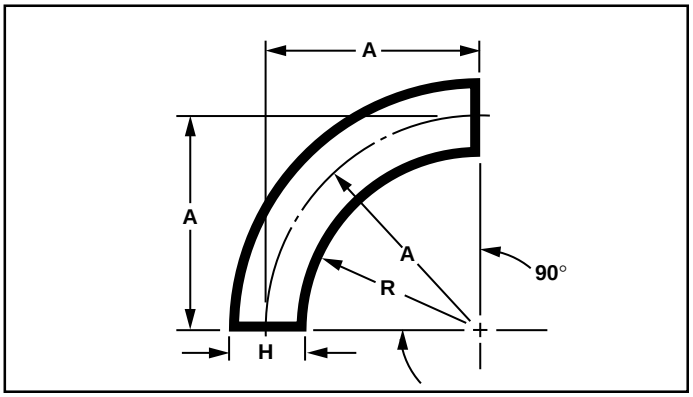
Cat. Number	Width - W		"A" Dimension	
Prefix- 06AF	6"	(152mm)	8"	(203mm)
Prefix- 09AF	9"	(229mm)	11"	(279mm)
Prefix- 12AF	12"	(305mm)	14"	(356mm)
Prefix- 18AF	18"	(457mm)	20"	(508mm)
Prefix- 24AF	24"	(610mm)	26"	(660mm)
Prefix- 30AF	30"	(762mm)	32"	(813mm)
Prefix- 36AF	36"	(914mm)	38"	(965mm)

Both rails at hinge break to be bonded if fitting is used as equipment grounding conductor.
Example: 238-12AF

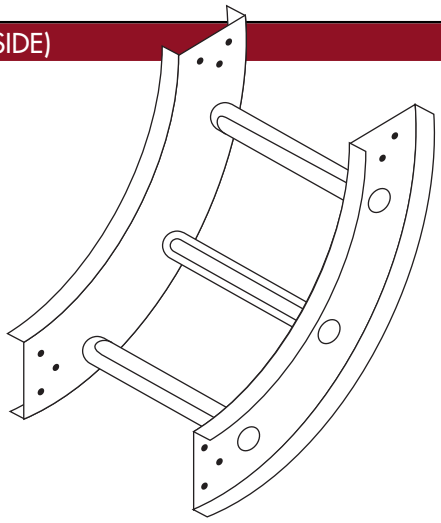
3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13	3	6 - Mill Galv.	.60	1.00	.40	.70
	4	7 - HDGAF	.60	.60	.40	.70
	5	8 - Alum.	.60	1.00	.70	.70
	6	T - 304 SS	.60	1.00	.70	1.00

PART NO. 90 (OUTSIDE)





PART NO. 91 (INSIDE)



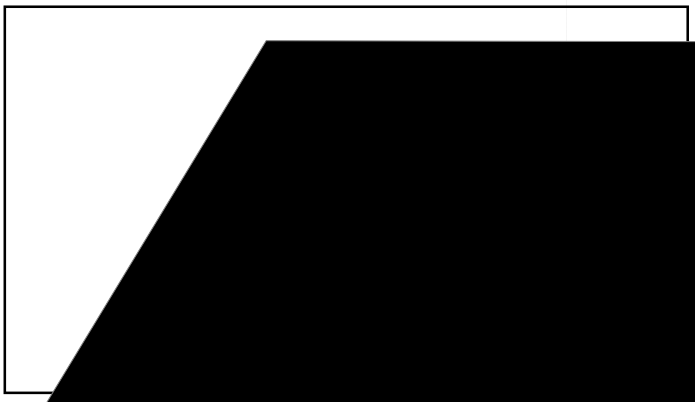
3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	6 - Mill Galv.	.60	1.00	.40	.70
	4	7 - HDGAF	.60	.60	.40	.70
	5	8 - Alum.	.60	1.00	.70	.70
	6	T - 304 SS	.60	1.00	.70	1.00

CSA Certified for CSA Systems

Radius - R	"H" Dim.		Cat. No. (Inside)	Cat. No. (Outside)	"A" Dim.	
12" (305mm)	4 1/4"	(108mm)	*Prefix*- (W)9I-12	*Prefix*- (W)90-12	14 1/8"	(359mm)
	5 1/4"	(133mm)	*Prefix*- (W)9I-12	*Prefix*- (W)90-12	14 5/8"	(372mm)
	6 1/4"	(159mm)	*Prefix*- (W)9I-12	*Prefix*- (W)90-12	15 1/8"	(384mm)
	7 1/4"	(184mm)	*Prefix*- (W)9I-12	*Prefix*- (W)90-12	15 5/8"	(397mm)
24" (610mm)	4 1/4"	(108mm)	*Prefix*- (W)9I-24	*Prefix*- (W)90-24	26 1/8"	(664mm)
	5 1/4"	(133mm)	*Prefix*- (W)9I-24	*Prefix*- (W)90-24	26 5/8"	(676mm)
	6 1/4"	(159mm)	*Prefix*- (W)9I-24	*Prefix*- (W)90-24	27 1/8"	(689mm)
	7 1/4"	(184mm)	*Prefix*- (W)9I-24	*Prefix*- (W)90-24	27 5/8"	(702mm)
36" (914mm)	4 1/4"	(108mm)	*Prefix*- (W)9I-36	*Prefix*- (W)90-36	38 1/8"	(969mm)
	5 1/4"	(133mm)	*Prefix*- (W)9I-36	*Prefix*- (W)90-36	38 5/8"	(981mm)
	6 1/4"	(159mm)	*Prefix*- (W)9I-36	*Prefix*- (W)90-36	39 1/8"	(994mm)
	7 1/4"	(184mm)	*Prefix*- (W)9I-36	*Prefix*- (W)90-36	39 5/8"	(1007mm)

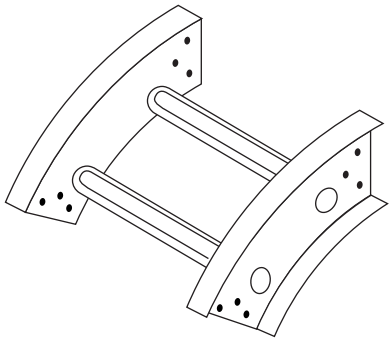
Example: 238-1290-12

(W) = Width in inches, Use:
06 for 6" w 09 for 9" w 12 for 12" w 18 for 18" w 24 for 24" w 30 for 30" w 36 for 36" w

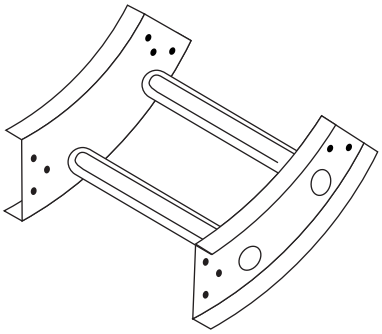


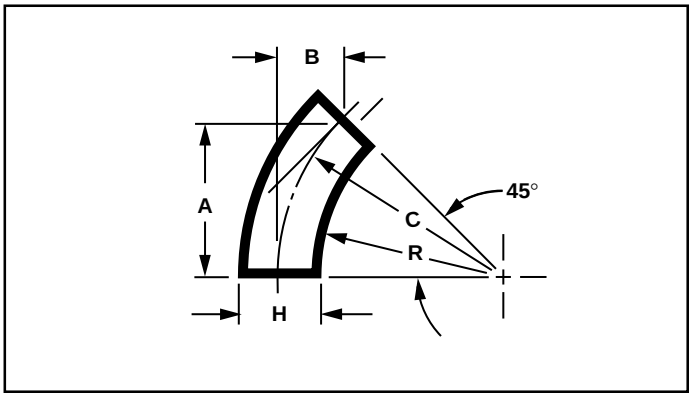
"H" Dim.									
4¼"	(108mm)								
5¼"	(133								
6¼"	(1								
7¼"									
4¼"								26⅛	(664mm)
5	(133mm)	*Prefix*- (W)61-24	*Prefix*- (W)60-24	23⅛"	(588mm)	13⅜"	(340mm)	26⅝"	

PART NO. 4O (OUTSIDE)



PART NO. 4I (INSIDE)





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	6 - Mill Galv.	.60	1.00	.40	.70
	4	7 - HDGAF	.60	.60	.40	.70
	5	8 - Alum.	.60	1.00	.70	.70
	6	T - 304 SS	.60	1.00	.70	1.00

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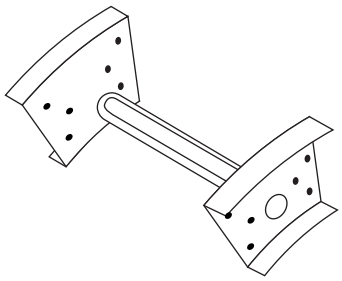
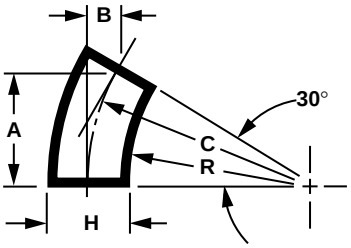
Radius - R	"H" Dim.	Cat. No. (Inside)	Cat. No. (Outside)	"A" Dim.	"B" Dim.	"C" Dim.
12" (305mm)	4 1/4" (108mm)	*Prefix*- (W)4I-12	*Prefix*- (W)4O-12	10" (254mm)	4 1/8" (105mm)	14 1/8" (359mm)
	5 1/4" (133mm)	*Prefix*- (W)4I-12	*Prefix*- (W)4O-12	10 3/8" (264mm)	4 1/4" (108mm)	14 5/8" (372mm)
	6 1/4" (159mm)	*Prefix*- (W)4I-12	*Prefix*- (W)4O-12	10 3/4" (273mm)	4 1/2" (114mm)	15 1/8" (384mm)
	7 1/4" (184mm)	*Prefix*- (W)4I-12	*Prefix*- (W)4O-12	11 1/8" (283mm)	4 5/8" (118mm)	15 1/8" (397mm)
24" (610mm)	4 1/4" (108mm)	*Prefix*- (W)4I-24	*Prefix*- (W)4O-24	18 1/2" (470mm)	7 5/8" (194mm)	26 1/8" (664mm)
	5 1/4" (133mm)	*Prefix*- (W)4I-24	*Prefix*- (W)4O-24	18 7/8" (480mm)	7 7/8" (200mm)	26 5/8" (676mm)
	6 1/4" (159mm)	*Prefix*- (W)4I-24	*Prefix*- (W)4O-24	19 1/4" (489mm)	8" (203mm)	27 1/8" (689mm)
	7 1/4" (184mm)	*Prefix*- (W)4I-24	*Prefix*- (W)4O-24	19 1/2" (495mm)	8 1/8" (207mm)	27 5/8" (702mm)
36" (914mm)	4 1/4" (108mm)	*Prefix*- (W)4I-36	*Prefix*- (W)4O-36	27" (686mm)	11 1/8" (283mm)	38 1/8" (969mm)
	5 1/4" (133mm)	*Prefix*- (W)4I-36	*Prefix*- (W)4O-36	27 3/8" (695mm)	11 3/8" (289mm)	38 5/8" (981mm)
	6 1/4" (159mm)	*Prefix*- (W)4I-36	*Prefix*- (W)4O-36	27 5/8" (702mm)	11 1/2" (292mm)	39 1/8" (994mm)
	7 1/4" (184mm)	*Prefix*- (W)4I-36	*Prefix*- (W)4O-36	8" (711mm)	11 5/8" (295mm)	39 5/8" (1007mm)

Example: 238-1240-12

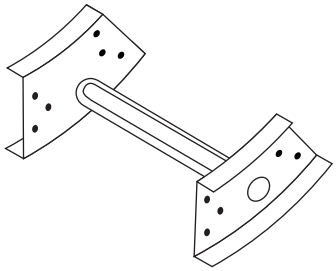
(W) = Width in inches, Use:
06 for 6" w 09 for 9" w 12 for 12" w 18 for 18" w 24 for 24" w 30 for 30" w 36 for 36" w

PART NO. 3O (OUTSIDE)





PART NO. 3I (INSIDE)



3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	6 - Mill Galv.	.60	1.00	.40	.70
	4	7 - HDGAF	.60	.60	.40	.70
	5	8 - Alum.	.60	1.00	.70	.70
	6	T - 304 SS	.60	1.00	.70	1.00

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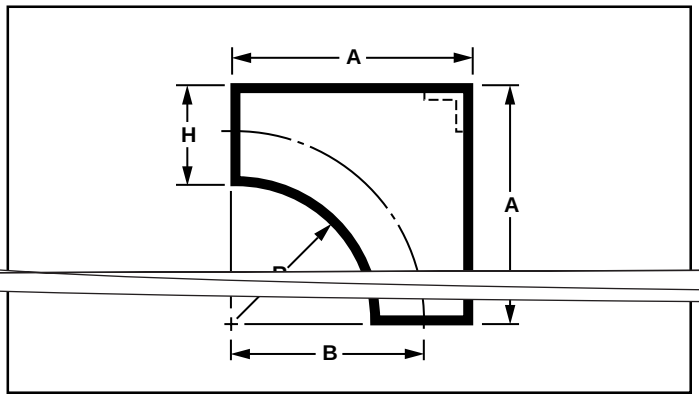
Radius - R	"H" Dim.		Cat. No. (Inside)	Cat. No. (Outside)	"A" Dim.		"B" Dim.		"C" Dim.	
12" (305mm)	4 1/4"	(108mm)	*Prefix*- (W)3I-12	*Prefix*- (W)30-12	7 1/8"	(181mm)	1 7/8"	(48mm)	14 1/8"	(359mm)
	5 1/4"	(133mm)	*Prefix*- (W)3I-12	*Prefix*- (W)30-12	7 3/8"	(187mm)	2"	(51mm)	14 5/8"	(372mm)
	6 1/4"	(159mm)	*Prefix*- (W)3I-12	*Prefix*- (W)30-12	7 5/8"	(194mm)	2"	(51mm)	15 1/8"	(384mm)
	7 1/4"	(184mm)	*Prefix*- (W)3I-12	*Prefix*- (W)30-12	7 7/8"	(200mm)	2 1/8"	(54mm)	15 5/8"	(397mm)
24" (610mm)	4 1/4"	(108mm)	*Prefix*- (W)3I-24	*Prefix*- (W)30-24	13 1/8"	(334mm)	3 1/2"	(89mm)	26 1/8"	(664mm)
	5 1/4"	(133mm)	*Prefix*- (W)3I-24	*Prefix*- (W)30-24	13 3/8"	(340mm)	3 5/8"	(92mm)	26 5/8"	(676mm)
	6 1/4"	(159mm)	*Prefix*- (W)3I-24	*Prefix*- (W)30-24	13 5/8"	(346mm)	3 5/8"	(92mm)	27 1/8"	(689mm)
	7 1/4"	(184mm)	*Prefix*- (W)3I-24	*Prefix*- (W)30-24	13 7/8"	(353mm)	3 3/4"	(95mm)	27 5/8"	(702mm)
36" (914mm)	4 1/4"	(108mm)	*Prefix*- (W)3I-36	*Prefix*- (W)30-36	19 1/8"	(486mm)	5 1/8"	(130mm)	38 1/8"	(969mm)
	5 1/4"	(133mm)	*Prefix*- (W)3I-36	*Prefix*- (W)30-36	19 3/8"	(492mm)	5 1/4"	(133mm)	38 5/8"	(981mm)
	6 1/4"	(159mm)	*Prefix*- (W)3I-36	*Prefix*- (W)30-36	19 5/8"	(499mm)	5 1/4"	(133mm)	39 1/8"	(994mm)
	7 1/4"	(184mm)	*Prefix*- (W)3I-36	*Prefix*- (W)30-36	19 7/8"	(505mm)	5 3/8"	(137mm)	39 5/8"	(1007mm)

Example: 238-1230-12

(W) = Width in inches, Use:
06 for 6" w 09 for 9" w 12 for 12" w 18 for 18" w 24 for 24" w 30 for 30" w 36 for 36" w

90° Vertical Cable Support Elbow



3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	6 - Mill Galv.	.60	1.00	.40	.70
	4	7 - HDGAF	.60	.60	.40	.70
	5	8 - Alum.	.60	1.00	.70	.70
	6	T - 304 SS	.60	1.00	.70	1.00

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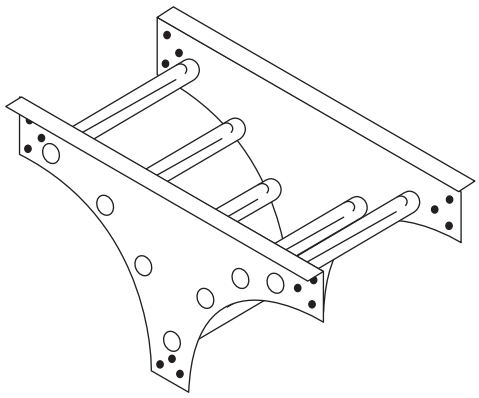
Radius - R	"H" Dim.		Catalog Number	"A" Dimension		"B" Dimension	
	4 1/4"	(108mm)	*Prefix*- (W)SR-12	16 1/4"	(413mm)	14 1/8"	(359mm)
	5 1/4"	(133mm)	*Prefix*- (W)SR-12	17 1/4"	(438mm)	14 5/8"	(371mm)
	6 1/4"	(159mm)	*Prefix*- (W)SR-12	18 1/4"	(464mm)	15 1/8"	(384mm)
	7 1/4"	(814mm)	*Prefix*- (W)SR-12	19 1/4"	(489mm)	15 5/8"	(397mm)
	4 1/4"	(108mm)	*Prefix*- (W)SR-24	28 1/4"	(718mm)	26 1/8"	(664mm)
	5 1/4"	(133mm)	*Prefix*- (W)SR-24	29 1/4"	(743mm)	26 5/8"	(676mm)
	6 1/4"	(159mm)	*Prefix*- (W)SR-24	30 1/4"	(768mm)	27 1/8"	(689mm)
	7 1/4"			31 1/4"	(794mm)	27 5/8"	(702mm)
				40 1/4"	(1022mm)	38 1/8"	(968mm)
				41 1/4"	(1048mm)	38 5/8"	(981mm)
			Prefix- (W)SR-36	42 1/4"	(1073mm)	39 1/8"	(994mm)
		mm)	*Prefix*- (W)SR-36	43 1/4"	(1099mm)	39 5/8"	(1006mm)

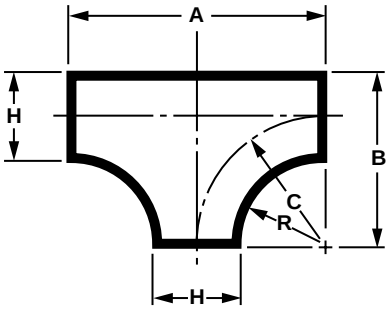
Exa

nes, Use:

6 for 6" w 09 for 9" w 12 for 12" w for 18" w 24 for 24" w 30 for 30" w 36 for 36"

PART NO. VT





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	6 - Mill Galv.	.60	1.00	.40	.70
	4	7 - HDGAF	.60	.60	.40	.70
	5	8 - Alum.	.60	1.00	.70	.70
	6	T - 304 SS	.60	1.00	.70	1.00

CSA Certified for CSA Systems

Radius - R	"H" Dim.		Catalog Number	"A" Dimension		"B" Dimension		"C" Dimension	
12" (305mm)	4 1/4"	(108mm)	*Prefix*- (W)VT-12	28 1/4"	(718mm)	16 1/4"	(413mm)	14 1/8"	(359mm)
	5 1/4"	(133mm)	*Prefix*- (W)VT-12	29 1/4"	(743mm)	17 1/4"	(438mm)	14 5/8"	(371mm)
	6 1/4"	(159mm)	*Prefix*- (W)VT-12	30 1/4"	(768mm)	18 1/4"	(464mm)	15 1/8"	(384mm)
	7 1/4"	(184mm)	*Prefix*- (W)VT-12	31 1/4"	(794mm)	19 1/4"	(489mm)	15 5/8"	(397mm)
24" (610mm)	4 1/4"	(108mm)	*Prefix*- (W)VT-24	52 1/4"	(1327mm)	28 1/4"	(718mm)	26 1/8"	(664mm)
	5 1/4"	(133mm)	*Prefix*- (W)VT-24	53 1/4"	(1353mm)	29 1/4"	(743mm)	26 5/8"	(676mm)
	6 1/4"	(159mm)	*Prefix*- (W)VT-24	54 1/4"	(1378mm)	30 1/4"	(768mm)	27 1/8"	(689mm)
	7 1/4"	(184mm)	*Prefix*- (W)VT-24	55 1/4"	(1403mm)	31 1/4"	(794mm)	27 5/8"	(702mm)
36" (914mm)	4 1/4"	(108mm)	*Prefix*- (W)VT-36	76 1/4"	(1937mm)	40 1/4"	(1022mm)	38 1/8"	(968mm)
	5 1/4"	(133mm)	*Prefix*- (W)VT-36	77 1/4"	(1962mm)	41 1/4"	(1048mm)	38 5/8"	(981mm)
	6 1/4"	(159mm)	*Prefix*- (W)VT-36	78 1/4"	(1988mm)	42 1/4"	(1073mm)	39 1/8"	(994mm)
	7 1/4"	(184mm)	*Prefix*- (W)VT-36	79 1/4"	(2013mm)	43 1/4"	(1099mm)	39 5/8"	(1006mm)

Example: 238-12VT-12

(W) = Width in inches, Use:
06 for 6" w 09 for 9" w 12 for 12" w 18 for 18" w 24 for 24" w 30 for 30" w 36 for 36" w

TRAY CONNECTORS –

Catalog Number & Finishes

Catalog Number

Load Depth	Finish	Basic Number
3″	6 (Mill Galv.)	-02RC
4″	7 (HDGAF)	-02CE
5″	8 (Alum.)	-02CV
6″	T (304SS)	-02CH
		-02CA

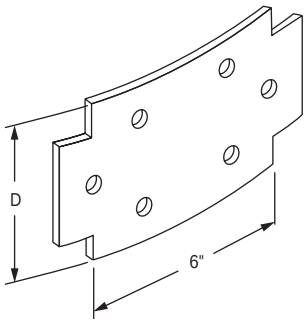
Example: 38 -02RC for 3" load depth, aluminum, universal curvilinear connector.

Part Nos. CE, CH, and CV to be bonded if used as equipment grounding conductor.

NOTE: *Hole patterns match corresponding tray.*
Three-hole pattern illustrated.
Heavy duty, mid span splice plates available upon request.

UNIVERSAL CURVILINEAR CONNECTOR

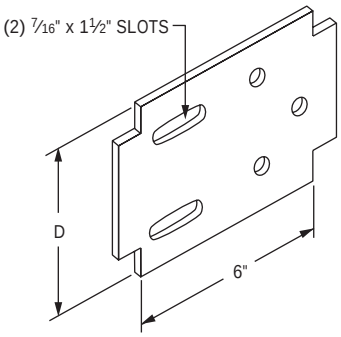
Part No. RC (Sold in pairs)



11 Gage Steel, 0.125" Aluminum
⅜"-16 spline bolts & flange nuts furnished.

EXPANSION CONNECTOR

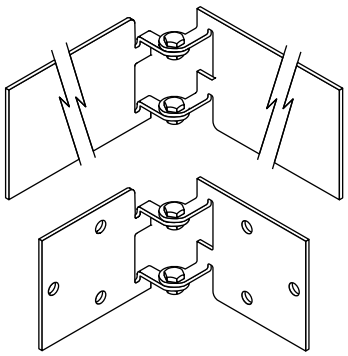
Part No. CE (Sold in pairs)



11 Gage Steel, 0.125" Aluminum
⅜"-16 cap screws & Nylok nuts furnished and
⅜"-16 spline bolts & flange nuts furnished.

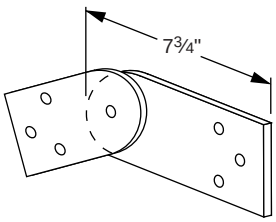
HORIZONTAL ADJUSTABLE CONNECTOR

Part No. CH (Sold in pairs–inner & outer)



VERTICAL ADJUSTABLE CONNECTORS

Part No. CV (Sold in pairs)



11 Gage Steel, 0.125" Aluminum
⅜"-16 spline bolts & flange nuts furnished.

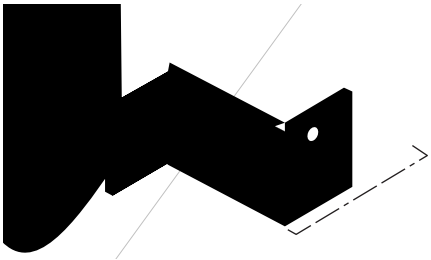
90° ANGLE CONNECTOR

Part No. CA (Sold in pairs)

11 Gage Steel, 0.125" Aluminum
⅜"-16 spline bolts and flange nuts furnished.

REDUCING CONNECTOR

Part No. CO (Not sold in pairs)

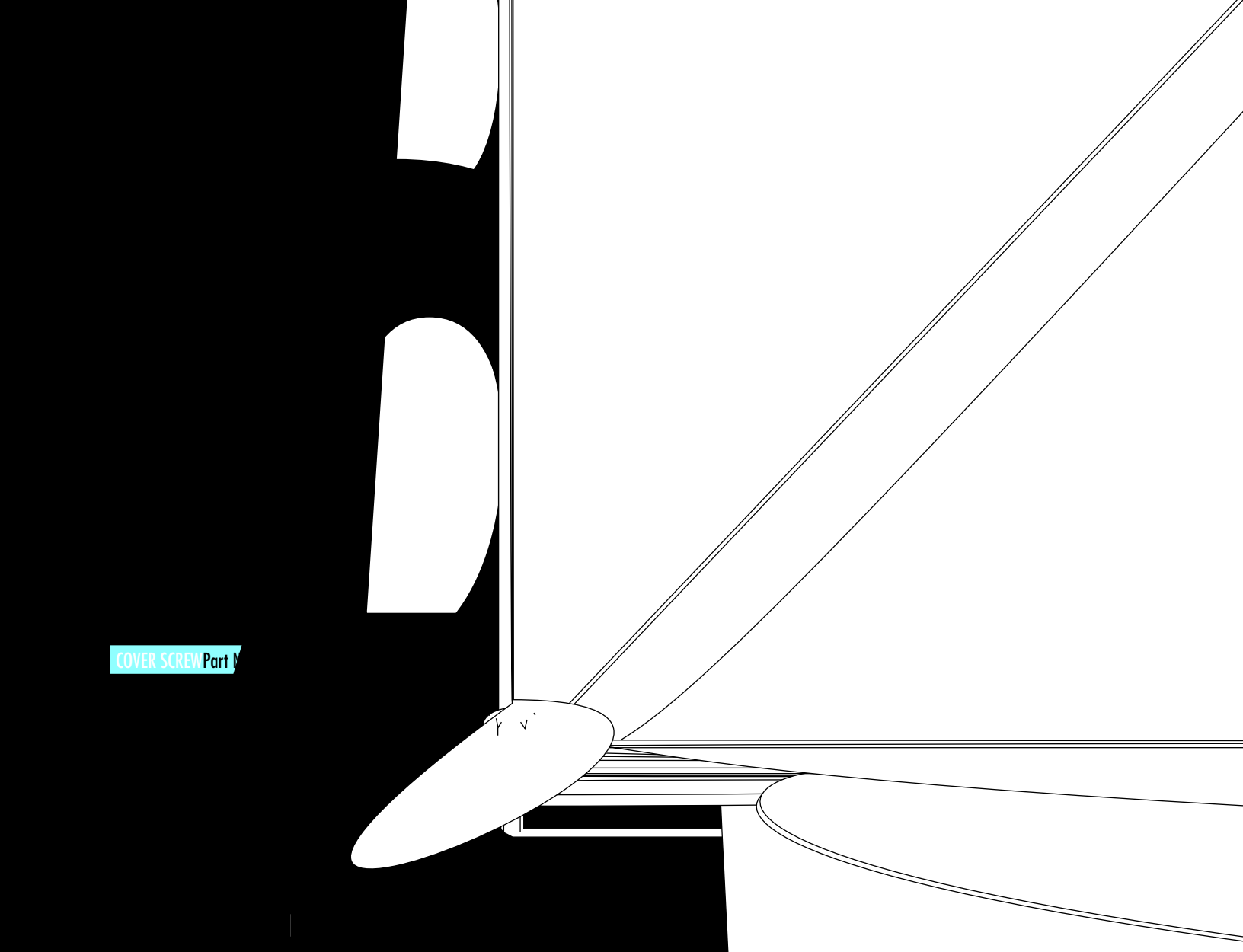


12 Gage Steel, 0.125" Aluminum
For offset reductions – use 1 of above with standard connector plate.
For straight reductions– use 2 (of ½ reduction dimension).
⅜"-16 spline bolts and flange nuts furnished.

Catalog Number

Load Depth	Finish	Basic Number	"A" Dimension
3"	6 (Mill Galv.)	-30CO	30" (762mm)
4"	7 (HDGAF)	-27CO	27" (686mm)
5"	8 (Alum.)	-24CO	24" (610mm)
6"	T (304SS)	-21CO	21" (533mm)
		-18CO	18" (457mm)
		-15CO	15" (381mm)
		-13CO	13½" (343mm)
		-12CO	12" (305mm)
		-10CO	10½" (267mm)
		-09CO	9" (229mm)
		-07CO	7½" (191mm)
		-06CO	6" (152mm)
		-04CO	4½" (114mm)
		-03CO	3" (76mm)
		-01CO	1½" (38mm)

Example: 38-03CO for 3" load depth, aluminum, 3" Reducer Connector.
Typical Use: 9" to 6", or use 2 for 12" to 6", etc.

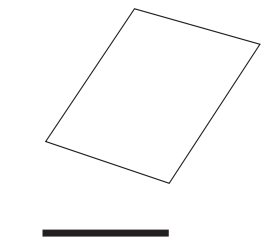


"

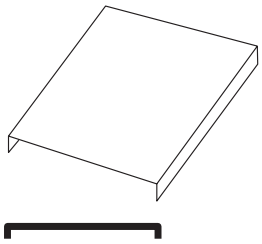
5001-4-* "

NOTE: *Standard finish is electrogalvanized. Refer to finishes above for specifications of alternate finish or material.*

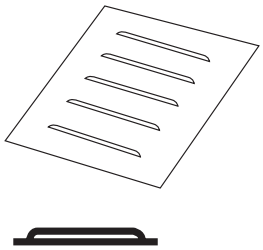
COVERS for straight sections shown. Standard fitting covers are flat solid type (NF). Aluminum covers are fabricated from 0.040" aluminum AA-3150-H14; steel covers are fabricated from 20 gage ASTM A-653-G90 CQ, mill-galvanized steel.



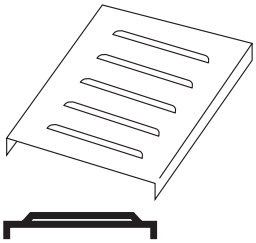
NF – Flat Solid



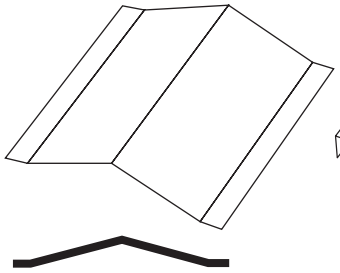
FS – Flat Solid w/Flange



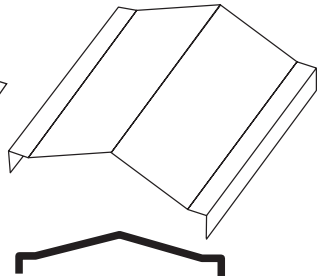
NL – Flat Louvered



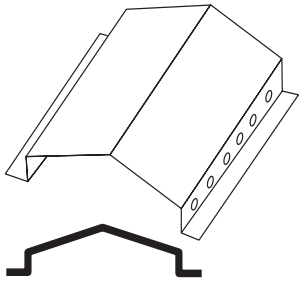
FL – Louvered w/Flange



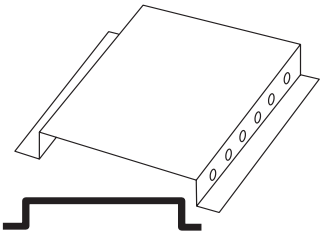
PS – Peaked Solid (suffix height)



PF – Peaked Flanged (Solid)
PH – Peaked Flanged (Vent)



PV – Peaked Hat (Vent) (suffix height)



HS – Hat (Solid)
HV – Hat (Vent) (suffix height)

Cover Catalog Number – Straight Sections

Type	Flange	Finish	Basic No. (Width)	Length	Height*
HS, HV,	2 - 13/16"	6 - Mill Galv.	-06SL = 6" (152mm)	-12'	-2*
FL, FS,	4 - 1¼"	7 - HDGAF	-09SL = 9" (229mm)	-06'	
NF, NL,	5 - 1½"	8 - Alum.	-12SL = 12" (305mm)		
PS, PF,	6 - 1¾"	T - 304SS	-18SL = 18" (457mm)		
PH, PV	7 - 2"		-24SL = 24" (610mm)		
			-30SL = 30" (762mm)		
			-36SL = 36" (914mm)		

*peak and hat only, 2" height standard. Consult factory for other heights.

Example: NL46-09SL-12 is a flat louvered mill-galv. steel cover for a 9" wide mill galvanized ladder 12' long with a 1¼" flange.

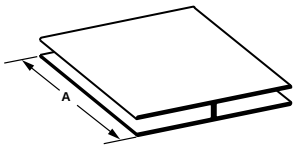
Cover Catalog Number – Fittings

Type	Flange	Load Depth	Finish	Width/Basic No.	Radius
NF	2 - 13/16"	3	6 - Mill Galv.	-06 XX**	12"
FS	4 - 1¼"	4	7 - HDGAF	-09 XX**	24"
		5	8 - Alum.	-12 XX**	36"
		6	T - 304SS	-18 XX**	
				-24 XX**	
				-30 XX**	
				-36 XX**	

*Load depth for outside riser or vertical tee only. **XX from fitting selection pages

EXAMPLE: NF26-369F-24 is a mill galvanized non-flanged solid cover for a 36" wide horizontal 90° elbow with a 24" radius.

JOINT PLATE



Joint plate is black PVC and is offered in 10' lengths to be field cut to desired length, or in precut lengths for specified covers.

JP-120 is joint plate in 10' lengths.

Joint plate for specified covers is specified as follows.

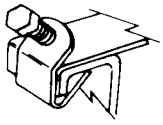
Tray Width

JP-06 = 6"	(152mm)
JP-09 = 9"	(229mm)
JP-12 = 12"	(305mm)
JP-18 = 18"	(457mm)
JP-24 = 24"	(610mm)
JP-30 = 30"	(762mm)
JP-36 = 36"	(914mm)

Example: JP-06 is a joint plate for 6" wide tray.

COVER CLIP

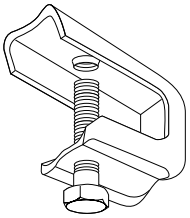
Part No. CCS-SS (Stainless Steel)

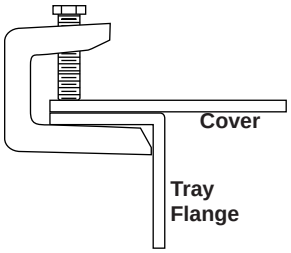


¼" - 28 stainless steel cone point machine screw.
Use with any width tray and cover. Not sold in pairs.
Indoor use only. Suggest spacing 6' max.

COVER CLIP –

Part No. CCS (Electro-Galv. Steel)

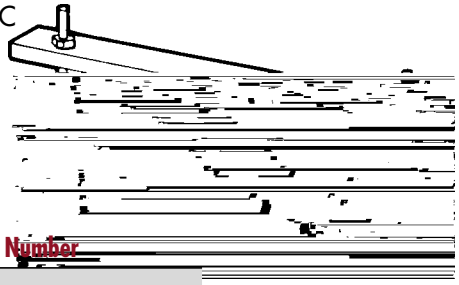




Use with any width tray. Not sold in pairs.
Indoor use only. Suggest spacing 6' max.

DOUBLE CLAMP CONNECTOR

Part No. - (W) DC



Catalog Number

Flange	Load Depth	Finish	Width	Type
2 - 13⁄16"	3	6 - Mill Galv.	-06	DC
4 - 1¼"	4	7 - HDGAF	-09	
5 - 1½"	5	8 - Alum.	-12	
6 - 1¾"	6	T - 304SS	-18	
7 - 2"			-24	
			-30	
			-36	

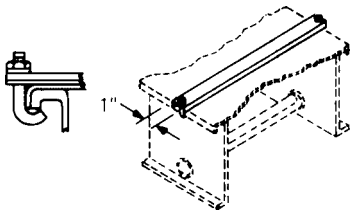
Example: 238-12DC for 3" load depth, 13⁄16" flange, aluminum, Double Clamp Connector

For all covers except hat & peak type. Furnished with:
(2) ¼"-20 all-thread rods
(4) hex nuts, flat washers and lock washers

Suggested spacing:
Indoor: 2 per 12'
Outdoor: 3 per 12'
High Wind: 5 per 12'

COVER CONNECTOR

Part No. CC (For all covers except hat & peak type)



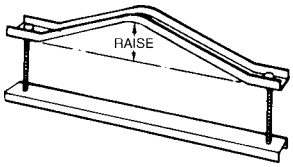
Catalog Number

Flange	Finish	Width	Type
2 - 13⁄16"	6 - Mill Galv.	-06	CC
4 - 1¼"	7 - HDGAF	-09	
5 - 1½"	8 - Alum.	-12	
6 - 1¾"	T - 304SS	-18	
7 - 2"	-24		
	-30		
	-36		

Example: 28-12CC for aluminum, 12" wide Cover Connector

PEAK COVER CONNECTOR

Part No. PC (For PS Cover)



Catalog Number

Flange	Load Depth	Finish	Width	Type	Raise (in)*
2 - 13⁄16"	3	6 - Mill Galv.	-06	PC	-2
4 - 1¼"	4	7 - HDGAF	-09		
5 - 1½"	5	8 - Alum.	-12		
6 - 1¾"	6	T - 304SS	-18		
7 - 2"			-24		
			-30		
			-36		

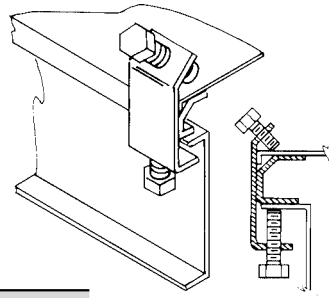
*2" standard raise. Consult factory for other peak heights.

Example: 238-12PC-2 for 3" load depth, 13⁄16" flange, aluminum, 12" wide, Peak Cover Connector with 2" peak.

ELEVATED COVER CONNECTORS

Part No. EC (For FS, NF, FL, NL covers)

HDGAF for Outdoor Use
Includes:
(2) ¼ - 20" x 1" hex head cap screws.
Suggested spacing
Indoor: 3/Side (6 total)per 12';
Outdoor: 5/Side (10 total) per 12'



Catalog Number

Flange	Finish	Type	Height*
2 - 13⁄16"	6 - Mill Galv.	EC	- Raise* (in.)
4 - 1¼"	7 - HDGAF		
5 - 1½"	8 - Alum.		
6 - 1¾"	T - 304SS		
7 - 2"			

*1", 2" or 3" standard.

Example: 28-EC-2 for 13⁄16" flange, aluminum, outdoor, Elevated Cover Connector with a 2" raise

DROP OUT – PART NO. DO

14 Gage Steel, .080" Aluminum

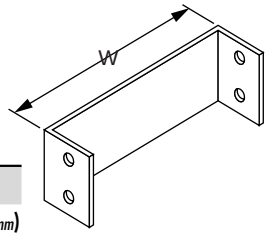
BONDING JUMPER

Part No. CBJ

BLIND END

Part No. BE

22 Gage Steel, .040" Aluminum



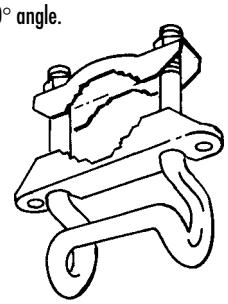
NOTE: *3/8"-16 spline bolts and flange nuts furnished.*

Catalog Number

Load Depth	Finish	Width
3	6(Mill Galv.)	-06BE = 6" (152mm)
4	7 (HDGAF)	-09BE = 9" (229mm)
5	8 (Alum.)	-12BE = 12" (305mm)
6	T (304SS)	-18BE = 18" (457mm)
		-24BE = 24" (610mm)
		-30BE = 30" (762mm)

CONDUIT-TO-CABLE TRAY CLAMP

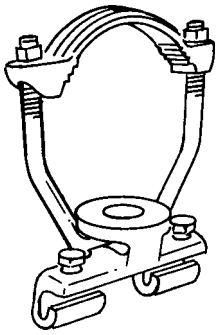
For connecting and grounding rigid conduit to tray at 90° angle.
U.L. listed as grounding means. CSA approved.



Catalog No.	Size	Std. Pkg.
TB6210	½" – ¾"	50
TB6212	1" – 1¼"	20

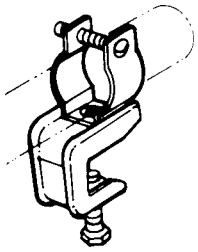
CONDUIT-TO-CABLE TRAY CLAMP- SWIVEL TYPE

Malleable iron hub and steel "U" bolt. For connecting and grounding rigid conduit to tray at any angle within 90° arc. U.L. listed as a grounding means.



Catalog No.	Size	Std. Pkg.
TB6209	½"-¾"	10
TB6211	1"-1¼"	10
TB6214	1½"-2"	5
TB6216	2½"-3"	5
TB6218	3½"-4"	2

CONDUIT CLAMP BRACKET

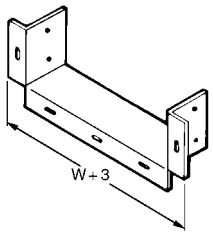


Catalog No.	Size–Rigid	Size–EMT
CCB-050	⅜" to ½"	½"
CCB-075	¾"	¾"
CCB-100	1"	1"
CCB-125	-	1¼"
CCB-150	1¼"	1½"
CCB-175	1½"	-
CCB-200	2"	2"

BOX CONNECTOR

Part No. CB

14 Gage Steel
.080" Aluminum
NOTE: *¼"-20 carriage bolts, flat washers, hex nuts furnished.*



Catalog Number

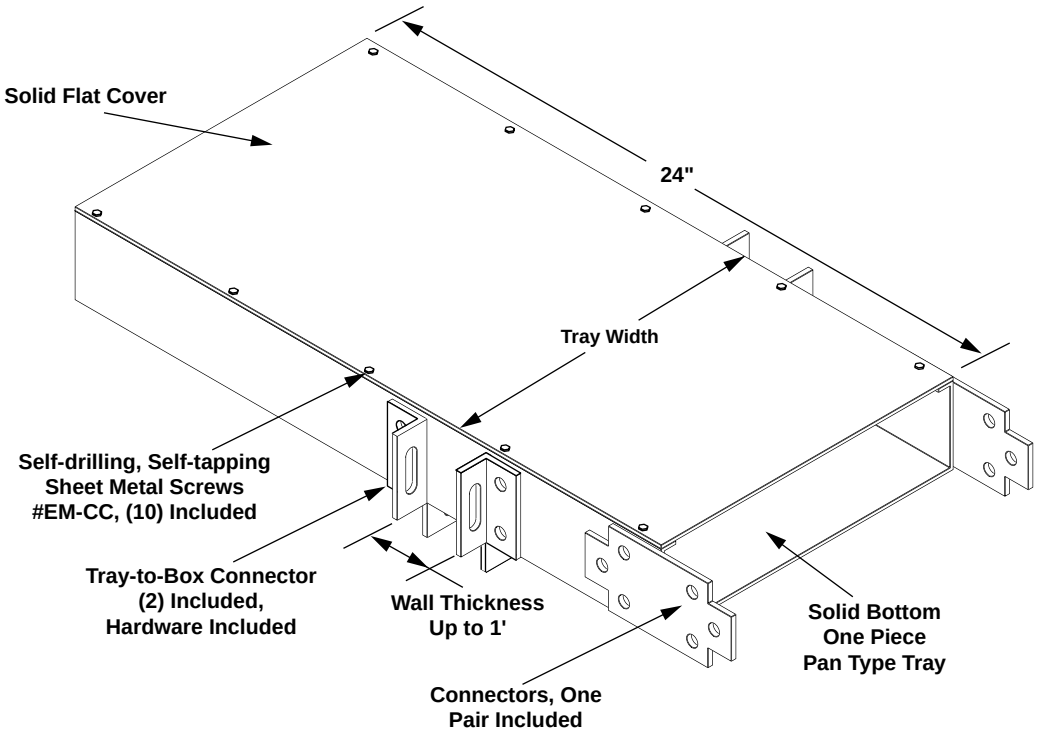
Load Depth	Finish	Width
3	6 (Mill Galv.)	-06CB = 6" (152mm)
4	7 (HDGAF)	-09CB = 9" (229mm)
5	8 (Alum.)	-12CB = 12" (305mm)
6	T (304SS)	-18CB = 18" (457mm)
		-24CB = 24" (610mm)
		-30CB = 30" (762mm)
		-36CB = 36" (914mm)

Example: 38-12CB for 3" load depth, aluminum, 12" wide, Box Connector.

WALL PENETRATING SLEEVE ASSEMBLY

Part No. SS-890-42-(W)-*

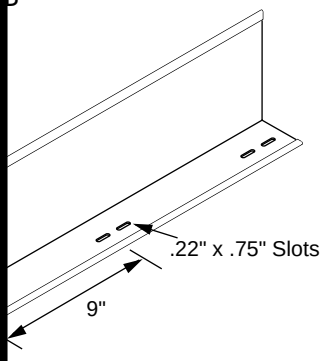
W = Tray Width
*=Fitting 3-Digit Prefix



NOTE: *Standard penetration sleeves are manufactured from mill galvanized steel. Aluminum sleeves are available upon request.*

TRIP—STRAIGHT SECTION

B



Catalog Number		
Load Depth	Finish	Basic No. 12' Length
3	6 (Mill Galv.)	-01SB-12
4	7 (HDGAF)	
5	8 (Alum.)	
6	T (304 SS)	

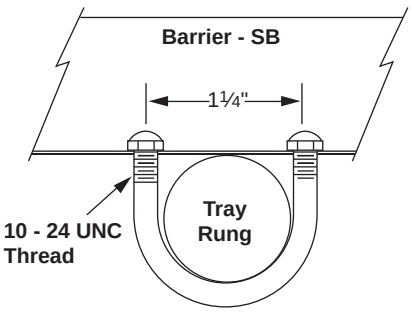
Example: 38-01SB-12 for 3" load depth, aluminum straight barrier, 12' long.

barrier strip clamps and necessary hardware.

BARRIER STRIP CLAMP

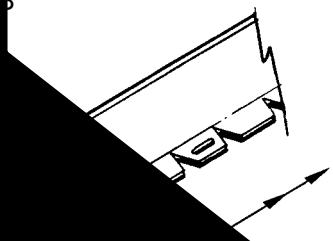
Part No. SB-HDW

Includes: 1 U-Bolt 707981504
2 Acorn Nuts 707671500



TRIP—HORIZONTAL FITTING

B



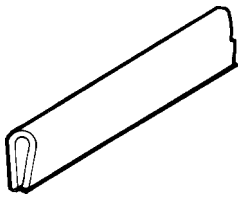
Catalog Number		
Load Depth	Finish	Basic No. 6' Length
3	6 (Mill Galv.)	-01FB-06
4	7 (HDGAF)	
5	8 (Alum.)	
6	T (304 SS)	

ample: 38-01FB-06 for 3" load depth, aluminum fitting barrier, 6' long.

NYLON BARRIER SPLICE & PROTECTOR

Part No. BSP-L

Length: Splice -5"
Protector -144"

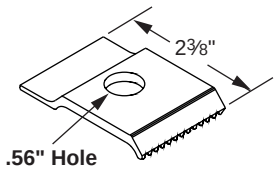


(OB v

Load Depth	Finish	Be		
3	6 (Mill Galv.)		OB = Outside	12" (305mm)
4	7 (HDGAF)	60	IB = Inside	24" (610mm)
5	8 (Alum.)	45		36" (914
6	T (304 SS)	30		

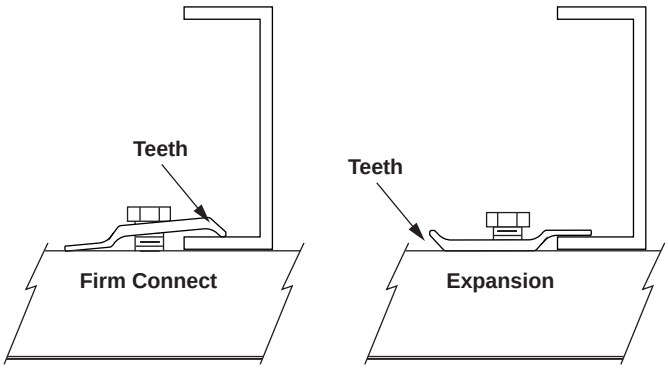
Example: 38-900B-12 for 3" load depth, aluminum 90° outside vertical barrier with 12" radius.

COMBINATION HOLD-DOWN CLAMP & EXPANSION GUIDE



Catalog No.	Material
9131	Cast Zinc
9131-DC	Dichromate Plated Zinc

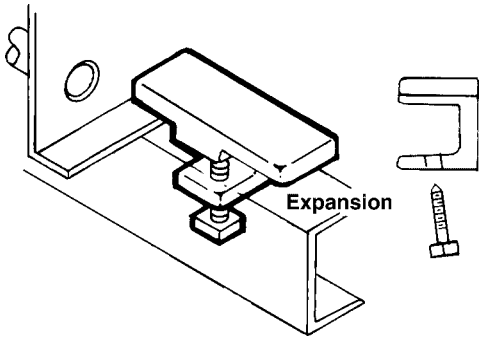
Hardware purchased separately to suit support system.



Catalog No. 9131-HDW (Complete Hardware Kit)
Hardware list:
(2) Combination hold-down clamp & expansion guide
(2) ½" - 13 x 1½" Cap Screw
(2) ½" Flat Washer
(2) Clamping Nut (Strut Nut)

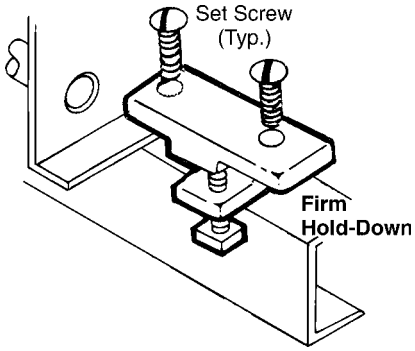
EXPANSION GUIDE

Part No. 9052



FIRM HOLD-DOWN CLAMP

Part No 9053

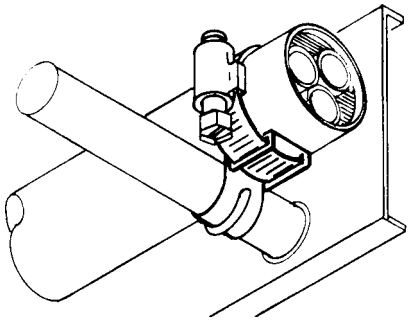


Type	Catalog No.	Finish
Expansion	6-9052	Elec. Galv.
	8-9052	Cast Alum.
Firm	6-9053	Elec. Galv.
Hold-Down	8-9053	Cast Alum.

Note: Electroplated set screws included

Universal Guide: for either side of ladder. Use when tray is mounted on I-beams or channels. No drilling required.

CABLE CLAMP



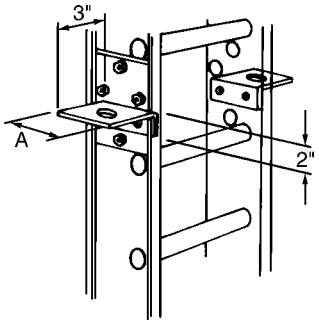
Stainless Steel – Part No. SCC

Catalog No.	Clamp Min.	Dia. (in.) Max.
SCC-150	¾	1½
SCC-250	1⅝	2½
SCC-400	2½	4
SCC-450	2⅝	4½
SCC-600	4¼	6

Galvanized Steel – Part No. GCC

Catalog No.	Clamp Min.	Dia. (in.) Max.
GCC-300	1	3½
GCC-400	1	4½
GCC-450	1	5
GCC-650	1	7
GCC-850	1	9
GCC-100	1	10½
GCC-115	1	12
GCC-135	1	14

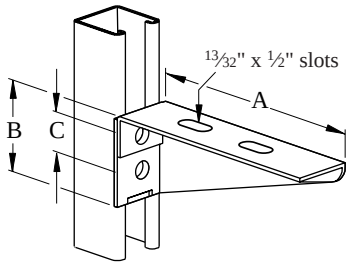
VERTICAL SUPPORTS



Catalog No.	For Use With
9043-37	4¼" Overall Height Side Members
9043	5¼" Overall Height Side Members
9025-98	6¼" & 7¼" Overall Height Side Members

Ladder Supports can be bolted anywhere along the straight runs. They can be bolted directly onto the coupler plates at splices of straight runs and riser fittings, or they can be bolted at any place in the run by field-drilling side rails. Ladder supports are used with either ⅜" or ½" hanger rods. Finish is electrogalvanized.

GUSSET-TYPE SUPPORTS

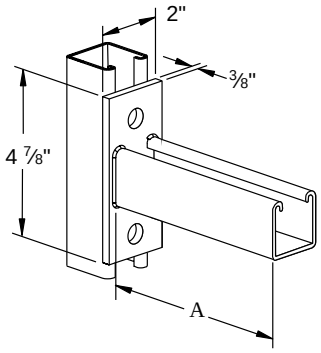


Catalog No.	Ladder Width	Dimension A	Dimension B	Dimension C	End-Load Rating*
9702-06	-	6 1/2"	4 1/2"	3"	450 lbs.
9702-09	-	9 1/2"	4 1/2"	3"	375 lbs.
9702-12	6"	12 1/2"	4 1/2"	3"	300 lbs.
9702-15	9"	15 1/2"	4 1/2"	3"	260 lbs.
9702-18	12"	18 1/2"	6"	4 1/2"	225 lbs.
9702-24	18"	24 1/2"	6"	4 1/2"	200 lbs.
9702-30	24"	30 1/2"	6"	4 1/2"	175 lbs.

* Uniform load rating is normally twice the end load rating.

For use with all types of Cope Ladder and Trough systems. Finish is mill-galvanized. Order hardware separately.

CHANNEL-TYPE SUPPORTS



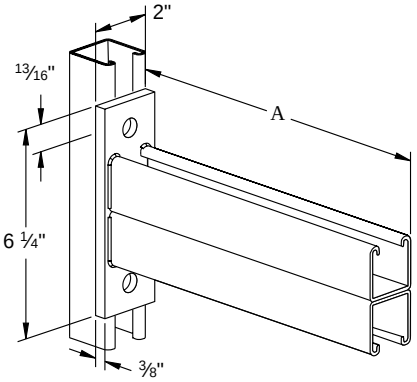
For use with all types of Cope Ladder and Trough systems. Finish is mill-galvanized. Order hardware separately.

Standard Duty for Lighter Loads.

Catalog No.	Ladder Width	Dimension A	End-Load Rating*
9720-12	6"	12"	350 lbs.
9720-15	9"	15"	275 lbs.
9720-18	12"	18"	230 lbs.
9720-24	18"	24"	175 lbs.

* Uniform load rating is normally twice the end load rating.

CHANNEL-TYPE SUPPORTS



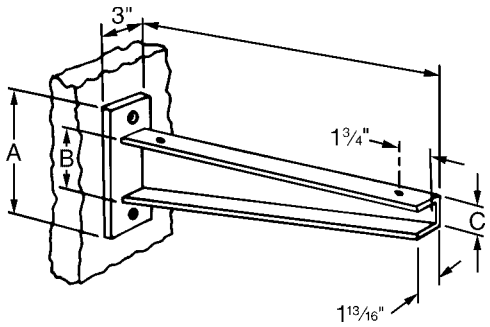
For use with all types of Cope Ladder and Trough systems. Finish is mill-galvanized. Order hardware separately.

Heavy Duty for Heavier Loads

Catalog No.	Ladder Width	Dimension A	End-Load Rating*
9721-24	18"	24"	480 lbs.
9721-30	24"	30"	385 lbs.
9721-36	30"	36"	320 lbs.
9721-42	36"	42"	305 lbs.

* Uniform load rating is normally twice the end load rating.

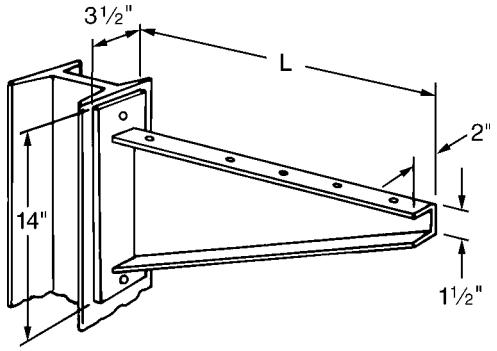
WALL SUPPORT BRACKETS



Catalog Number	Ladder Width	Length "L"	Dimensions "A"	"B"	"C"	End-Load Rating*
9037-12	6"	12¼	10"	6"	2"	2000 lbs.
9037-18	12"	18¼"	11"	7"	2½"	2000 lbs.
9037-24	18"	24¼"	11"	7"	2½"	1600 lbs.
9037-30	24"	30¼"	12"	8"	4"	1300 lbs.
9037-36	30"	36¼"	12"	8"	4"	1100 lbs.
9037-42	36"	42¼"	12"	8"	4"	900 lbs.

*Uniform load rating is normally twice the end-load rating.
Finish is hot-dip galvanized after fabrication.
Order hardware separately.

STRUCTURAL SUPPORT BRACKET

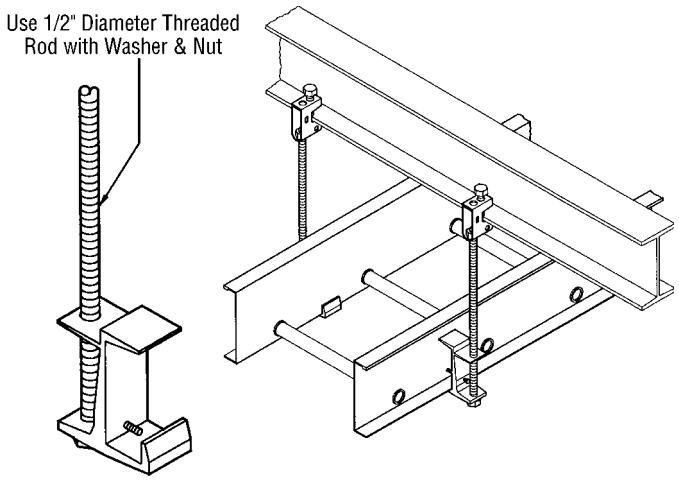


Catalog Number	Ladder Width	Length "L"	End-Load Rating*
9036-31	24"	31¼"	2000 lbs.
9036-37	30"	37¼"	1800 lbs.
9036-45	36"	45¼"	1500 lbs.

*Uniform load rating is normally twice the end-load rating.
For use with Cope Ladder 24" or wider. May be welded or bolted to building steel.
Finish is hot-dip galvanized after fabrication.
Order hardware separately.

TRAY HANGER

Part No. 7-HGR1 (Steel),
Part No. 8-HGR1 (Aluminum)
(Sold Individually)

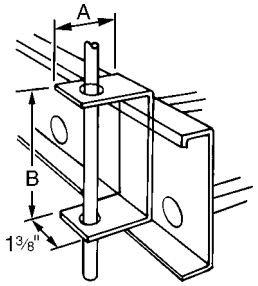


SINGLE LADDER HANGERS

Cope Ladder Hangers are sized according to the side rail height and flange dimensions of various Cope ladders. The 17/32" holes accommodate either 3/8" or ½" diameter threaded rod.

Order hardware separately.

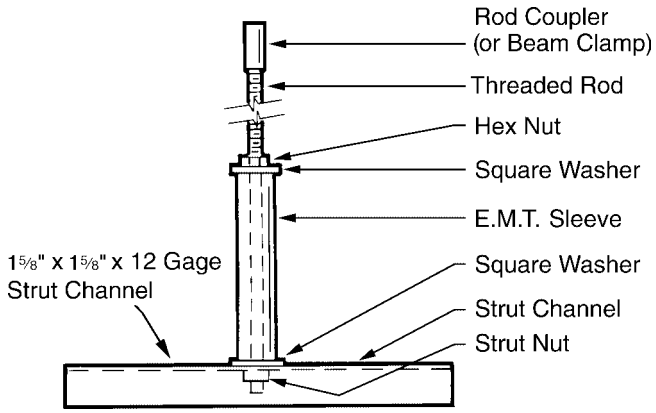
Finish is Mill-Galv., HDGAF, or Aluminum.



Catalog No.

Basic No.	Finish M.G.	H.D.G.	Alum.	Side Rail	"A" Dim.	"B" Dim.
9038-	236	237	238	4¼ x 13/16	2"	4 5/16
9038-	246	247	248	5¼ X 13/16	2"	5 5/16
9038-	256	257	258	6¼ X 13/16	2"	6 5/16
9038-	266	267	268	7¼ X 13/16	2"	7 5/16
9038-	436	437	438	4¼ x 1¼	2 9/16"	4 5/16
9038-	446	447	448	5¼ x 1¼	2 9/16"	5 5/16
9038-	456	457	458	6¼ x 1¼	2 9/16"	6 5/16
9038-	466	467	468	7¼ x 1¼	2 9/16"	7 5/16

SINGLE ROD HANGER SUPPORT

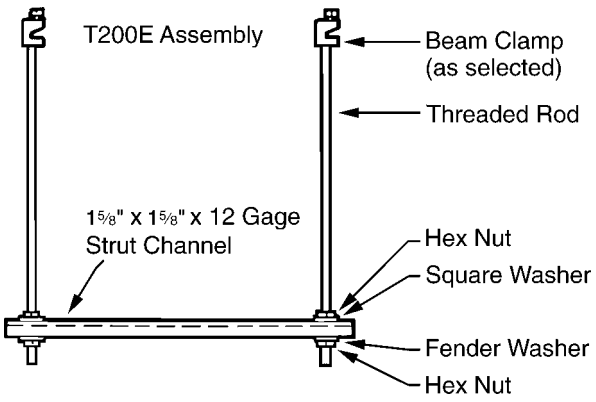


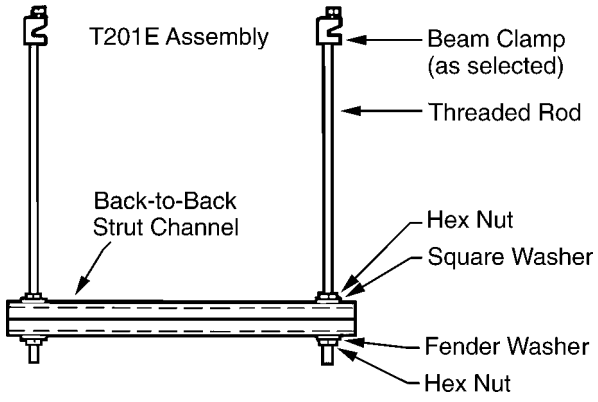
Catalog Number

Assy. Type	Channel Length*	Channel Finish**	Rod Diameter	Rod Length	Beam Clamp
P200	14" (356mm)	GV (Pre-Galv)	38=⅜" (9.53mm)	000 - No Rod	A - Bridgeport
	17" (432mm)	HG (Hot Dipped Galv)	12=½" (12.7mm)	036 - 36" (914mm)	B - P2622
	20" (508mm)			072 - 72" (1828mm)	O - No Clamp
	26" (661mm)			120 - 120" (3048mm)	R - Rod Coupler
	32" (813mm)			144 - 144" (3658mm)	S - Special
	38" (966mm)				
	44" (1118mm)				

Example: P200-20-GV-12-036-B is a Single 20" pre-galvanized channel with ½" x 36" drop rod and P2622 clamp.
Note: *Order channel length 8" longer than tray width. For example, 44" channel for 36" tray.
** Other channel types and finishes available upon request. Contact factory.

TRAPEZE HANGER SUPPORT

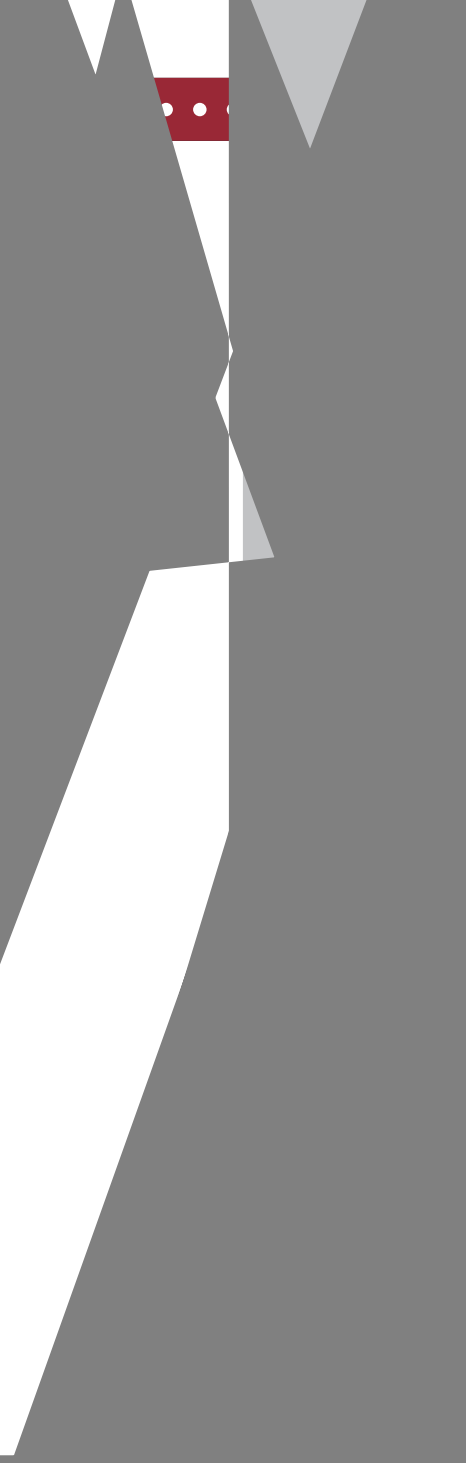




Catalog Number

Assy. Type	Channel Length*	Channel Finish**	Rod Diameter	Rod Length	Beam Clamp
T200E	16" (407mm)	GV (Pre-Galv)	38=⅜" (9.53mm)	000 - No Rod	A - Bridgeport
T201E	19" (483mm)	HG (Hot Dipped Galv)	12=½" (12.7mm)	036 - 36" (914mm)	B - P2622
	22" (559mm)			072 - 72" (1828mm)	O - No Clamp
	28" (712mm)			120 - 120" (3048mm)	R - Rod Coupler
	34" (864mm)			144 - 144" (3658mm)	S - Special
	40" (1017mm)				
	46" (1169mm)				

Example: T200E-22-GV-12-036-B is a Single 22" pre-galvanized channel with ½" x 36" drop rod and P2622 clamp.
Note: *Order channel length 10" longer than tray width. For example, 46" channel for 36" tray.
** Other channel types and finishes available upon request. Contact factory.



Cope cable rollers are easily mounted and removed and are applicable for small control cables as well as the largest armored cables. All bearing wheels turn independently with a minimum of friction. The freely running wheels are smooth surfaced and closely spaced to prevent cable damage.

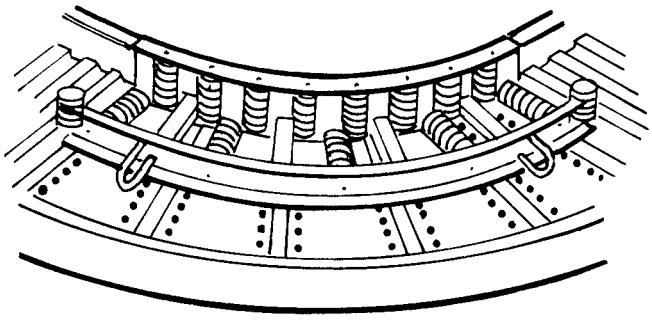
Cable roller assemblies consist of painted steel frame and zinc plated wheels. Two "J" bolts and mounting hardware are supplied with straight and radius rollers.

90° ROLLER, 24" RADIUS

Part No. 9R-0024

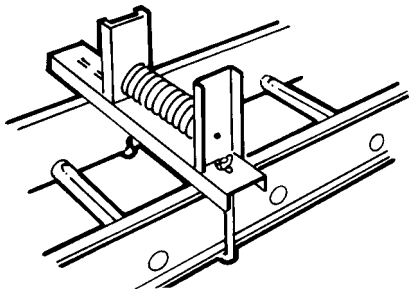
90° ROLLER, 36" RADIUS

Part No. 9R-0036



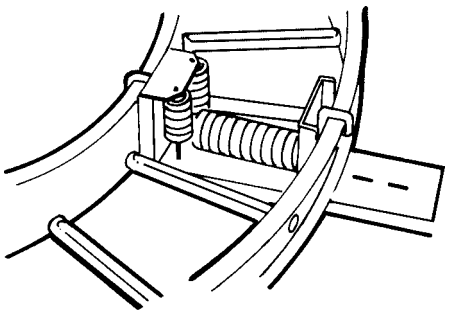
90° rollers are available in two sizes - 24" and 36" radius. Horizontal and vertical ball bearing rollers assure easy pull and control on 90° turns at all points of contact. Cope 90° rollers can be top or inside mounted on any manufacturer's tray or ladder. Handles the heaviest cable with ease.

STRAIGHT ROLLER (TOP MOUNTED)



Catalog Number	Tray Width
IR-1218	12 to 18" tray
IR-1824	18 to 24" tray
IR-2430	24 to 30" tray
IR-3036	30 to 36" tray

RADIUS ROLLER (BOTTOM MOUNTED)



Catalog Number	Tray Width
RR-1218	12 to 18" tray
RR-1824	18 to 24" tray
RR-2430	24 to 30" tray
RR-3036	30 to 36" tray

Note: Width of roller segment is constant. Length of bottom mounting channel changes to fit tray width listed.

ALUMINUM	
SYSTEM NUMBER	**FITTING PREFIX**
1B38	238
1B48	248
3B58	258
1B68	268
3B38	238
5B38	238
3B48	248
5B58	258
5B68	268
7448	448
1D58	458
1E68	468
3D38	438
5D38	438
3D48	448
3658	458
5E38	438
5D48	448
7D58	458
9D58	458
7G58	458
5D58	458
5D68	468

MILL GALV.	
SYSTEM NUMBER	**FITTING PREFIX**
8236	236
8246	246
8256	256
8266	266
8B36	236
8B66	266
8B46	246
6256	256
8D36	436
8D46	446
8D56	456
8466	466
6D36	436
4D36	436
6446	446
6456	456
8D66	466
6466	466
4D46	446
6D56	456
6D66	466
4D56	456
4466	466
4B36	236
6B46	246
4B46	246
2D36	436
2D46	446
2D56	456
11D56	456

HDGAF	
SYSTEM NUMBER	**FITTING PREFIX**
8237	237
8247	247
8257	257
8267	267
8B37	237
8B67	267
8B47	247
6257	257
8D37	437
8D47	447
8D57	457
8467	467
6D37	437
4D37	437
6447	447
6457	457
8D67	467
6467	467
4D47	447
6D57	457
6D67	467
4D57	457
4467	467
4B37	237
6B47	247
4B47	247
2D37	437
2D47	447
2D57	457
11D57	457

By specifying the NEMA class designation, you will use the simplest, clearest, and most complete method of specification available and automatically incorporate support span in feet, working (allowable) load in pounds per linear foot, a safety factor of 1.5, a concentrated load if present; and, all other design, manufacturing and test standards including electrical continuity.

All you need to do is add the desired load depth, rung spacing, radius of fittings, metal and finish. You may add accessory information pursuant to your project. Here is a typical specification for an outdoor tray system where the working (allowable) load has been determined to be approximately 75 pounds per foot on support spans of 12'.

SPECIFICATION ALUMINUM COPE LADDER SYSTEM

Cable Ladder shall be manufactured by a company regularly engaged in the manufacture of metal cable trays and shall be a member of NEMA. Trays shall conform to NEMA Metal Cable Tray Standard Publication VE-1 (latest issue).

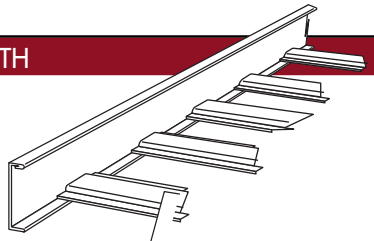
1. Cable ladder shall be NEMA Classification 12B of the widths indicated.
2. Material shall be aluminum alloy with side rails and rungs of 6063.
3. Finish shall be natural.
4. Inside load depth to be NEMA Standard 3".
5. Fittings shall be 12" radius for control cables and 24" radius for power cables. (This must be commensurate with the cable manufacturers' recommended minimum bending radius.)
6. All top level trays in stacks, and single runs to have raised peaked, aluminum ventilated covers with heavy duty hold down clamps every 3'-0".
7. Install expansion connectors, expansion guides, and hold down clamps per NEMA Standard VE-1.
8. Where slopes or horizontal bends of trays are not at the Standard NEMA angles, use adjustable connectors. If the angle is too great for cable bending radius, use combinations of fitting and adjustable connectors.
9. Separate all cables of different volt ages in the same tray using the manufacturer's standard barriers and barrier hold down system.
10. The Cable Ladder system will be used as an equipment grounding conductor.
11. To save space fittings shall have no tangents. To facilitate field installation use one pair of universal type connector plates for rigid joints.
12. Cable Ladder shall have outward facing side rails with tubular rungs assembled into side rails by cold swaging. Cable support surface on top of rungs to be flattened. Inside of tray shall not have flanges or other projections. Full access to the contents of the Cable Ladder shall be available.
13. Trays shall be Cope Cable Ladder System Number 3B38 as manufactured by T. J. Cope, Inc.

COPEHAT

4

Economical Flange in Welded Cable Ladder/Trough System for Electrical, Telephone, Computer Control & Instrumentation Cable

Slotted Rungs *provided on trays 6", 9", 12", 18" and 24" wide.*
Solid Rungs *provided on trays 30" and 36" wide.*



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Selection Chart:

COPE HAT-ALUMINUM

NEMA CLASS, PHYSICAL AND STRUCTURAL PROPERTIES

NEMA Standard VE-1 Load/Span Class	Actual NEMA Load/Span	Cope System Number	Nominal Load Depth	Side Rail Height	Flange Width (in.)	Section Modulus of 2 Rails Sx ($in.^3$)	Moment of Inertia Ix ($in.^4$)	Min X-Sect. Area of 2 Rails per NEC 318-7 (sq.in.)
8A-12A	50 lb./ft.	**523A**	3" (76mm)	3½" (89mm)	13⁄16	0.800	0.700	0.60
	12' span	**1B4A**	4" (102mm)	4¼" (108mm)	13⁄16	0.898	0.911	0.60
		1B5A	5" (127mm)	5¼" (133mm)	13⁄16	1.142	1.436	0.60
		3B6A	6" (152mm)	6¼" (159mm)	13⁄16	1.614	2.360	1.00
12B	12' span	**3B4A**	4" (102mm)	4¼" (108mm)	13⁄16	1.148	1.158	0.60
		1B5A	5" (127mm)	5¼" (133mm)	13⁄16	1.142	1.436	0.60
		3B6A	6" (152mm)	6¼" (159mm)	13⁄16	1.614	2.360	0.60
12C	100 lb./ft.	**5B4A**	4" (102mm)	4¼" (108mm)	13⁄16	1.646	1.529	1.00
	12' span	**3B5A**	5" (127mm)	5¼" (133mm)	13⁄16	1.522	1.867	1.00
		5B6A	6" (152mm)	6¼" (159mm)	13⁄16	1.944	2.933	1.00
16A	50 lb./ft.	**5B4A**	4" (102mm)	4¼" (108mm)	13⁄16	1.646	1.529	1.00
	16' span	**745A**	5" (127mm)	5¼" (133mm)	1¼	2.396	3.146	1.50
		1D6A	6" (152mm)	6¼" (159mm)	1¼	2.378	3.601	1.00
16B	75 lb./ft.	**3D4A**	4" (102mm)	4¼" (108mm)	1¼	2.242	2.203	1.00
	16' span	**745A**	5" (127mm)	5¼" (133mm)	1¼	2.396	3.146	1.50
		1D6A	6" (152mm)	6¼" (159mm)	1¼	2.378	3.601	1.00
16C	100 lb./ft.	**5D4A**	4" (102mm)	4¼" (108mm)	1¼	2.782	2.869	1.50
	16' span	**3D5A**	5" (127mm)	5¼" (133mm)	1¼	3.434	4.373	2.00
		7D6A	6" (152mm)	6¼" (159mm)	1¼	4.186	6.012	2.00
20A	50 lb./ft.	**3D4A**	4" (102mm)	4¼" (108mm)	1¼	2.242	2.203	1.00
	20' span	**745A**	5" (127mm)	5¼" (133mm)	1¼	2.396	3.146	1.50
		1D6A	6" (152mm)	6¼" (159mm)	1¼	2.378	3.601	1.00
20B	75 lb./ft.	**3D5A**	5" (127mm)	5¼" (133mm)	1¼	3.434	4.373	2.00
	20' span	**7D6A**	6" (152mm)	6¼" (159mm)	1¼	4.186	6.012	2.00
20C	100 lb./ft.	**5D5A**	5" (127mm)	5¼" (133mm)	1¼	3.910	5.010	2.00
	20' span	**7D6A**	6" (152mm)	6¼" (159mm)	1¼	4.186	6.012	2.00
EXTRA HEAVY DUTY - VERY LONG SPAN TRAYS - 4", 6" or 9" RUNG SPACING								
		9D6A	6" (152mm)	6¼" (159mm)	1¼	5.130	7.850	2.00
		7G6A	6" (152mm)	6¼" (159mm)	2	5.804	8.728	2.00

Note: Indicates most common systems.

Slotted Rungs *provided on trays 6", 9", 12", 18" and 24" wide.*
Solid Rungs *provided on trays 30" and 36" wide.*

LOAD AND DEFLECTION DATA FOR ALUMINUM HAT

Working (Allowable) Load Capacity, Evenly Distributed-Tested per NEMA Standard VE-1, Simple Beam - SAFETY FACTOR 1.5

Cope Sys. No.	6 Ft. Span			8 Ft. Span			10 Ft. Span			12 Ft. Span			16 Ft. Span			20 Ft. Span			24 Ft. Span			25 Ft. Span		
	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k
523A	207	.43	.002	117	.77	.007	75	1.20	.016	52	1.73	.033												
1B4A	222	.35	.002	125	.63	.005	80	.99	.012	55	1.42	.026												
1B5A	324	.33	.001	182	.59	.003	117	.87	.007	77	1.26	.016												
3B6A	359	.22	†	191	.37	.002	115	.55	.005	75	74	.010												
3B4A	354	.45	.001	191	.76	.004	117	1.14	.010	78	1.57	.020												
1B5A	324	.33	.001	182	.59	.003	117	.87	.007	77	1.26	.016												
3B6A	359	.22	†	191	.37	.002	115	.55	.005	75	.74	.010												
5B4A	362	.32	†	251	.69	.003	161	1.08	.007	112	1.55	.014												
3B5A	394	.31	†	222	.55	.002	142	.86	.006	100	1.24	.012												
5B6A	480	.24	†	257	.40	.002	156	.60	.004	102	.81	.008												
5B4A				251	.69	.003	161	1.08	.007	112	1.55	.014	51	2.26	.044	25	2.75	.110						
745A				349	.51	.001	223	.80	.004	155	1.15	.007	79	1.85	.023	51	2.89	.057						
1D6A										154	1.00	.006	78	1.61	.021	50	2.51	.050						
3D4A				342	.72	.002	219	l.12	.005	152	1.61	.011	82	2.74	.033	52	4.27	.082						
745A				349	.51	.001	223	.80	.004	155	1.15	.007	79	1.85	.023	51	2.89	.057						
1D6A				380	.49	.001	222	.69	.003	154	1.00	.006	78	1.61	.021	50	2.51	.050						
5D4A				444	.71	.002	284	1.10	.004	188	1.53	.008	106	2.73	.026	65	4.07	.063						
3D5A				525	.55	.001	336	.86	.003	233	1.24	.005	119	2.01	.017	76	3.14	.041						
7D6A							404	.76	.002	281	1.09	.004	158	1.94	.012	101	3.02	.030						
3D4A										152	1.61	.011	82	2.74	.033	52	4.27	.082						
745A										155	1.15	.007	79	1.85	.023	51	2.89	.057						
1D6A										154	1.00	.006	78	1.61	.021	50	2.51	.050						
3D5A										233	1.24	.005	119	2.0l	.017	76	3.14	.041						
7D6A										281	1.09	.004	158	1.94	.012	101	3.02	.030						
5D5A										290	1.35	.005	156	2.30	.015	100	3.59	.036						
7D6A										281	1.09	.004	158	1.94	.012	101	3.02	.030						
9D6A										412	1.22	.003	214	2.00	.009	131	3.01	.023	68	3.23	.048			
7G6A										451	1.20	.003	253	2.14	.008	162	3.35	.020	112	4.79	.043	104	5.24	.050

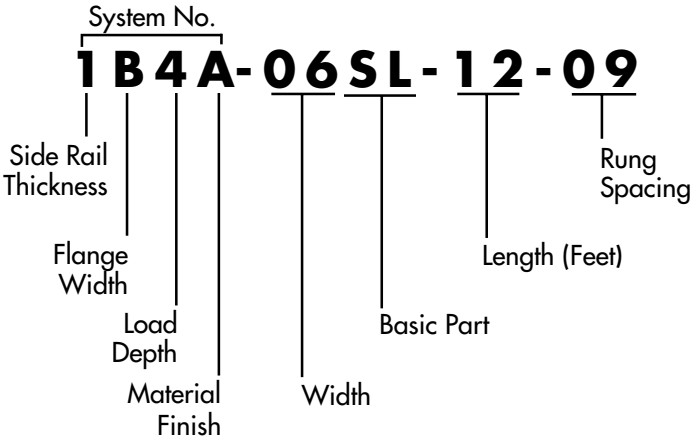
To convert 1.5 safety factor to 2.0 multiply w, d, k by .75

w=Pounds per linear foot
Metric: for kg/m multiply w by 1.48
d= Deflection (inches)
k= Deflection (in.) for each pound of load
†= Denotes k is less than .001 inch.

HOW TO ORDER:

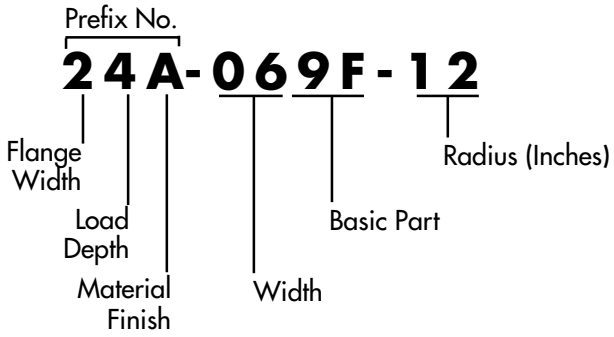
Order by the Cope full catalog numbers given in this catalog. Please pay careful attention to the part numbering structure. Example: Catalog No. 1B4A-06SL-12-09 is a 4-inch load depth aluminum ladder with a 13⁄16" flange, 6 inches wide, straight length 12 feet long, rungs on 9" centers.

STRAIGHT LENGTH



SYSTEM NUMBER (STRAIGHT SECTION ONLY) – The first four digits make up the system number which identifies the structural, dimensional and material characteristics of the straight length. It is made up of the side rail digits indicating the side rail thickness and flange width, the load depth (inside, in inches) and material finish (galvanized, aluminum or coated).

FITTINGS



PREFIX NUMBER (FITTINGS ONLY) – Fittings are ordered using the 3-digit prefix number given in the charts on the fitting pages. Fittings do not have stiffened upper flanges.

WIDTH – Identifies the inside width of the tray in inches.

BASIC PART NUMBER – Identifies the straight length, fitting or accessory.

SECONDARY DIMENSION NUMBER – Identifies the length of a straight section in feet, the radius of a fitting in inches or the second width of a reducer in inches.

RUNG SPACING – Identifies the center-to-center distance between rungs on straight length. Nominal 9" (229mm) rung spacing maintained through centerline of all fittings.

System Number

Thickness Steel (Ga.)	Flange Width	Load Depth	Material Finish
8 - 18 ga.	2 - 13⁄16" (21mm)	3" (76mm)	P - Mill-Galv.
6 - 16 ga.	4 - 1¼" (32mm)	4" (102mm)	G - HDGAF
4 - 14 ga.	7 - 2" (51mm)	5" (127mm)	A - Aluminum
2 - 12 ga.		6" (152mm)	S - 304SS
11 - 11 ga.			

Thickness Alum (in.)	
1- thinner	*B - 13⁄16" (21mm)
3-	*D - 1¼" (32mm)
5- **	*G - 2" (51mm)
7-	
9- thicker	

*Stiffened Upper Flange

**Alum. extruded side rails are individually engineered to loads and spans.

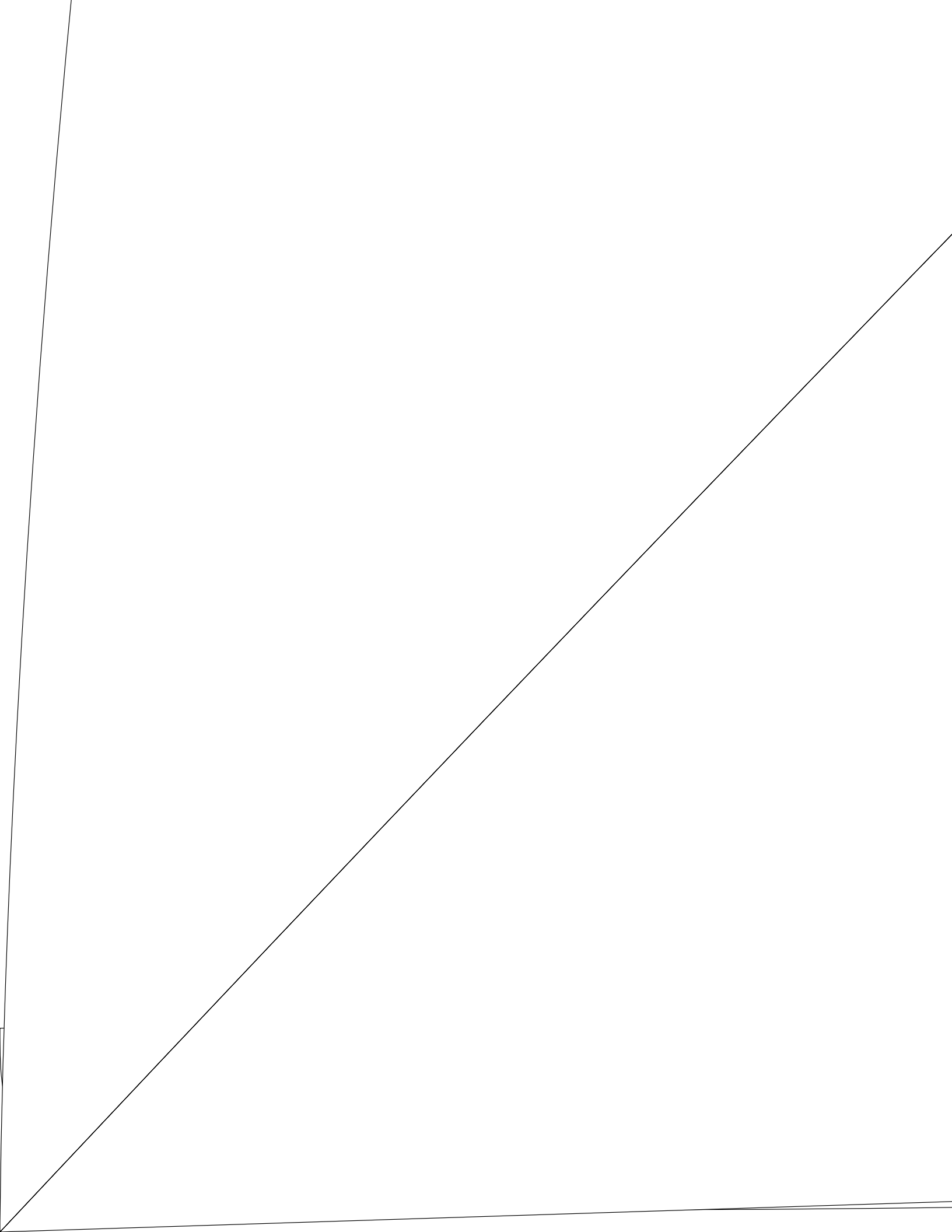
Slotted Rungs *provided on trays 6", 9", 12", 18" and 24" wide*

Solid Rungs *provided on trays 30" and 36" wide.*

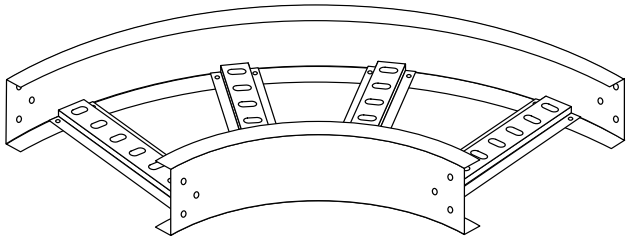
Description

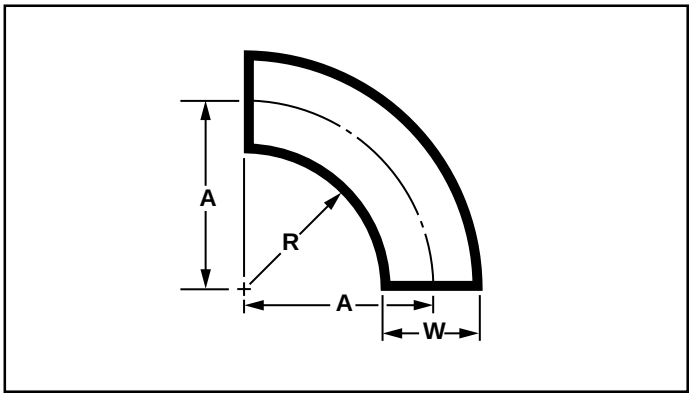
Width (in.)	Basic Part Number	Length	Rung Spacing
-06=6" (152mm)	SL (Straight Len.)	- 12' (3.7m)	06=6" (152mm)
-09=9" (229mm)	9F (90° Horiz. El.)	- 24' (7.3m)	09=9" (229mm)
-12=12" (305mm)	6F (60° Horiz. El.)	- 10' (3m)	12=12" (305mm)
-18=18" (457mm)	4F (45° Horiz. El.)	- 20' (6m)	18=18" (457mm)
-24=24" (610mm)	3F (30° Horiz. El.)		
-30=30" (762mm)	90 (90° Out. Vert.El.)		
-36=36" (914mm)	60 (60° Out. Vert. El.)		
	40 (45° Out. Vert. El.)		
	30 (30° Out. Vert. El.)		
	9I (90° In. Vert. El.)		
	6I (60° In. Vert. El.)		
	4I (45° In. Vert. El.)		
	3I (30° In. Vert. El.)		
	FT (Horiz. Tee)		
	FC (Horiz. Cross)		
	VT (Vert. Tee)		
	SR (Vert. Cable Support Elbow)		
	ST (Straight Reducer)		
	RH (Right Hand Reducer)		
	LH (Left Hand Reducer)		
	AF (Adjustable Elbow)		
	RY & LY (45° "Y" Branch)		

Radius (in.)
-12=12" (305mm)
-24=24" (610mm)
-36=36" (914mm)



PART NO. 9F





COPE FITTINGS are offered in 12", 24" and 36" radius.

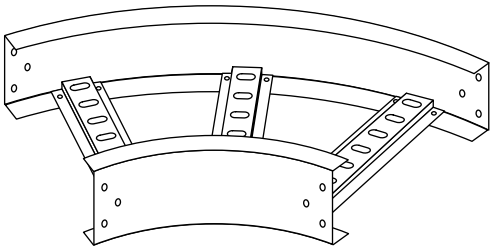
3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	P - Mill Galv.	.60	—	.40	—
	4	G - HDGAF	.60	1.00	.70	1.00
	5	A - Alum.	1.00	1.00	.70	1.00
	6	S - 304 SS	1.00	1.00	.70	1.00

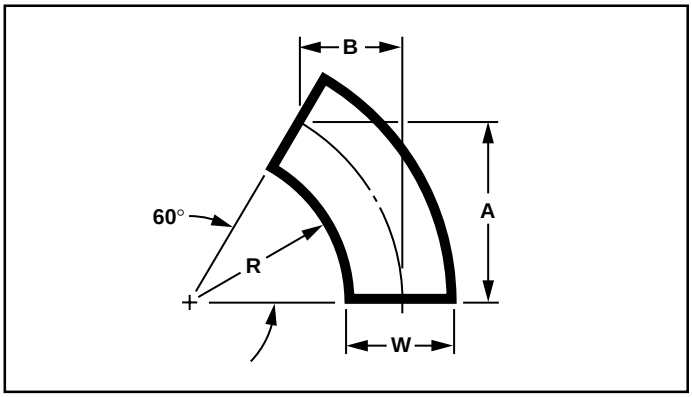
Slotted Rungs *provided on trays 6", 9", 12", 18" and 24" wide.*
Solid Rungs *provided on trays 30" and 36" wide.*

Radius - R	Width - W	Catalog Number	"A" Dimension
12" (305mm)	6" (152mm)	*Prefix*- 069F-12	15" (381mm)
	9" (229mm)	*Prefix*- 099F-12	16½" (419mm)
	12" (305mm)	*Prefix*- 129F-12	18" (457mm)
	18" (457mm)	*Prefix*- 189F-12	21" (533mm)
	24" (610mm)	*Prefix*- 249F-12	24" (610mm)
	30" (762mm)	*Prefix*- 309F-12	27" (686mm)
	36" (914mm)	*Prefix*- 369F-12	30" (762mm)
24" (610mm)	6" (152mm)	*Prefix*- 069F-24	27" (686mm)
	9" (229mm)	*Prefix*- 099F-24	28½" (724mm)
	12" (305mm)	*Prefix*- 129F-24	30" (762mm)
	18" (457mm)	*Prefix*- 189F-24	33" (838mm)
	24" (610mm)	*Prefix*- 249F-24	36" (914mm)
	30" (762mm)	*Prefix*- 309F-24	39" (991mm)
	36" (914mm)	*Prefix*- 369F-24	42" (1067mm)
36" (914mm)	6" (152mm)	*Prefix*- 069F-36	39" (991mm)
	9" (229mm)	*Prefix*- 099F-36	40½" (1029mm)
	12" (305mm)	*Prefix*- 129F-36	42" (1067mm)
	18" (457mm)	*Prefix*- 189F-36	45" (1143mm)
	24" (610mm)	*Prefix*- 249F-36	48" (1219mm)
	30" (762mm)	*Prefix*- 309F-36	51" (1295mm)
	36" (914mm)	*Prefix*- 369F-36	54" (1372mm)

Example: 24A-129F-12

PART NO. 6F





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	P - Mill Galv.	.60	—	.40	—
	4	G - HDGAF	.60	1.00	.70	1.00
	5	A - Alum.	1.00	1.00	.70	1.00
	6	S - 304 SS	1.00	1.00	.70	1.00

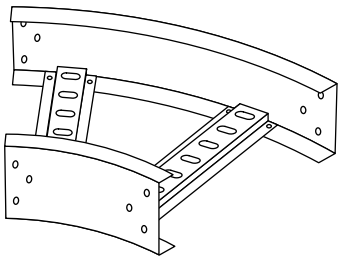
Slotted Rungs *provided on trays 6", 9", 12", 18" and 24" wide.*
Solid Rungs *provided on trays 30" and 36" wide.*

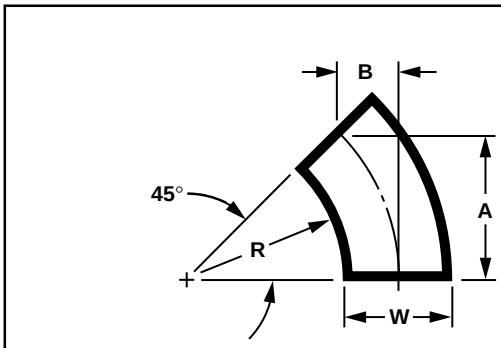
Radius - R	Width - W		Catalog Number	"A" Dimension		"B" Dimension	
12" (305mm)	6"	(152mm)	Prefix- 066F-12	13"	(330mm)	7½"	(191mm)
	9"	(229mm)	Prefix- 096F-12	14¼"	(362mm)	8¼"	(210mm)
	12"	(305mm)	Prefix- 126F-12	15⅝"	(397mm)	9"	(229mm)
	18"	(457mm)	Prefix- 186F-12	18¼"	(464mm)	10½"	(267mm)
	24"	(610mm)	Prefix- 246F-12	20¾"	(527mm)	12"	(305mm)
	30"	(762mm)	Prefix- 306F-12	23⅜"	(594mm)	13½"	(343mm)
	36"	(914mm)	Prefix- 366F-12	26"	(660mm)	15"	(381mm)
24" (610mm)	6"	(152mm)	Prefix- 066 F-24	23⅜"	(594mm)	13½"	(343mm)
	9"	(229mm)	Prefix- 096F-24	24¾"	(629mm)	14¼"	(362mm)
	12"	(305mm)	Prefix- 126F-24	26"	(660mm)	15"	(381mm)
	18"	(457mm)	Prefix- 186F-24	28⅝"	(727mm)	16½"	(416mm)
	24"	(610mm)	Prefix- 246F-24	31¼"	(794mm)	18"	(457mm)
	30"	(762mm)	Prefix- 306F-24	33¾"	(857mm)	19½"	(495mm)
	36"	(914mm)	Prefix- 366 F-24	36⅜"	(924mm)	21"	(533mm)
36" (914mm)	6"	(152mm)	Prefix- 066F-36	33¾"	(857mm)	19½"	(495mm)
	9"	(229mm)	Prefix- 096F-36	35⅛"	(892mm)	20¼"	(514mm)
	12"	(305mm)	Prefix- 126F-36	36⅜"	(924mm)	21"	(533mm)
	18"	(457mm)	Prefix- 186F-36	39"	(991mm)	22½"	(572mm)
	24"	(610mm)	Prefix- 246F-36	41⅝"	(1057mm)	24"	(610mm)
	30"	(762mm)	Prefix- 306F-36	44⅛"	(1121mm)	25½"	(648mm)
	36"	(914mm)	Prefix- 366F-36	46¾"	(1187mm)	27"	(686mm)

Example: 24A-126F-12

45° Horizontal Elbow

PART NO. 4F





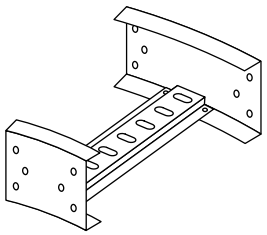
3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	P - Mill Galv.	.60	—	.40	—
	4	G - HDGAF	.60	1.00	.70	1.00
	5	A - Alum.	1.00	1.00	.70	1.00
	6	S - 304 SS	1.00	1.00	.70	1.00

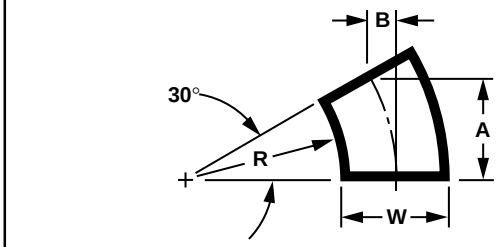
Slotted Rungs *provided on trays 6", 9", 12", 18" and 24" wide.*
Solid Rungs *provided on trays 30" and 36" wide.*

Radius - R	Width - W		Catalog Number	"A" Dimension		"B" Dimension	
12" (305mm)	6"	(152mm)	*Prefix*- 064F-12	10 5/8"	(270mm)	4 3/8"	(111mm)
	9"	(229mm)	*Prefix*- 094F-12	11 5/8"	(295mm)	4 7/8"	(124mm)
	12"	(305mm)	*Prefix*- 124F-12	12 3/4"	(324mm)	5 1/4"	(133mm)
	18"	(457mm)	*Prefix*- 184F-12	14 7/8"	(378mm)	6 1/8"	(156mm)
	24"	(610mm)	*Prefix*- 244F-12	17"	(432mm)	7"	(178mm)
	30"	(762mm)	*Prefix*- 304F-12	19 1/8"	(486mm)	7 7/8"	(200mm)
	36"	(914mm)	*Prefix*- 364F-12	21 1/4"	(540mm)	8 3/4"	(222mm)
24" (610mm)	6"	(152mm)	*Prefix*- 064F-24	19 1/8"	(486mm)	7 7/8"	(200mm)
	9"	(229mm)	*Prefix*- 094F-24	20 1/8"	(511mm)	8 3/8"	(213mm)
	12"	(305mm)	*Prefix*- 124F-24	21 1/4"	(540mm)	8 3/4"	(222mm)
	18"	(457mm)	*Prefix*- 184F-24	23 3/8"	(594mm)	9 5/8"	(244mm)
	24"	(610mm)	*Prefix*- 244F-24	25 1/2"	(648mm)	10 1/2"	(267mm)
	30"	(762mm)	*Prefix*- 304F-24	27 5/8"	(702mm)	11 1/2"	(292mm)
	36"	(914mm)	*Prefix*- 364F-24	29 3/4"	(756mm)	12 3/8"	(314mm)
36" (914mm)	6"	(152mm)	*Prefix*- 064F-36	27 5/8"	(702mm)	11 1/2"	(292mm)
	9"	(229mm)	*Prefix*- 094F-36	28 5/8"	(727mm)	11 7/8"	(302mm)
	12"	(305mm)	*Prefix*- 124F-36	29 3/4"	(756mm)	12 3/8"	(314mm)
	18"	(457mm)	*Prefix*- 184F-36	31 7/8"	(810mm)	13 1/4"	(337mm)
	24"	(610mm)	*Prefix*- 244F-36	34"	(864mm)	14 1/8"	(359mm)
	30"	(762mm)	*Prefix*- 304F-36	36 1/8"	(918mm)	15"	(381mm)
	36"	(914mm)	*Prefix*- 364F-36	38 1/4"	(972mm)	15 7/8"	(403mm)

Example: 24A-124F-12

PART NO. 3F





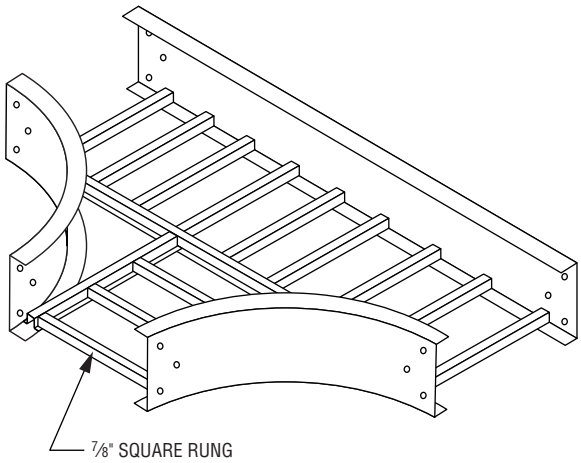
3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	P - Mill Galv.	.60	—	.40	—
	4	G - HDGAF	.60	1.00	.70	1.00
	5	A - Alum.	1.00	1.00	.70	1.00
	6	S - 304 SS	1.00	1.00	.70	1.00

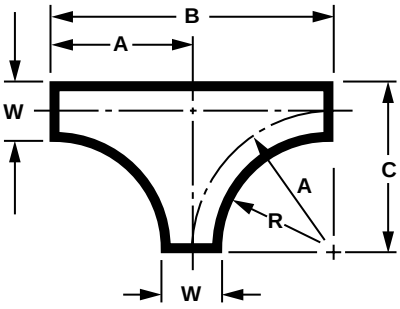
Slotted Rungs *provided on trays 6", 9", 12", 18" and 24" wide.*
Solid Rungs *provided on trays 30" and 36" wide.*

Radius - R	Width - W		Catalog Number	"A" Dimension		"B" Dimension	
12" (305mm)	6"	(152mm)	Prefix- 063F-12	7½"	(191mm)	2"	(51mm)
	9"	(229mm)	Prefix- 093F-12	8¼"	(210mm)	2¼"	(57mm)
	12"	(305mm)	Prefix- 123F-12	9"	(229mm)	2⅜"	(60mm)
	18"	(457mm)	Prefix- 183F-12	10½"	(267mm)	2⅞"	(73mm)
	24"	(610mm)	Prefix- 243F-12	12"	(305mm)	3¼"	(83mm)
	30"	(762mm)	Prefix- 303F-12	13½"	(343mm)	3⅝"	(92mm)
	36"	(914mm)	Prefix- 363F-12	15"	(381mm)	4"	(102mm)
24" (610mm)	6"	(152mm)	Prefix- 063F-24	13½"	(343mm)	3⅝"	(92mm)
	9"	(229mm)	Prefix- 093F-24	14¼"	(362mm)	3⅞"	(98mm)
	12"	(305mm)	Prefix- 123F-24	15"	(381mm)	4"	(102mm)
	18"	(457mm)	Prefix- 183F-24	16½"	(419mm)	4⅜"	(111mm)
	24"	(610mm)	Prefix- 243F-24	18"	(457mm)	4⅞"	(124mm)
	30"	(762mm)	Prefix- 303F-24	19½"	(495mm)	5¼"	(133mm)
	36"	(914mm)	Prefix- 363F-24	21"	(533mm)	5⅝"	(143mm)
36" (914mm)	6"	(152mm)	Prefix- 063F-36	19½"	(495mm)	5¼"	(133mm)
	9"	(229mm)	Prefix- 093F-36	20¼"	(514mm)	5½"	(140mm)
	12"	(305mm)	Prefix- 123F-36	21"	(533mm)	5⅝"	(143mm)
	18"	(457mm)	Prefix- 183F-36	22½"	(572mm)	6"	(152mm)
	24"	(610mm)	Prefix- 243F-36	24"	(610mm)	6½"	(165mm)
	30"	(762mm)	Prefix- 303F-36	25½"	(648mm)	6⅞"	(175mm)
	36"	(914mm)	Prefix- 363F-36	27"	(686mm)	7¼"	(184mm)

Example: 24A-123F-12

PART NO. FT



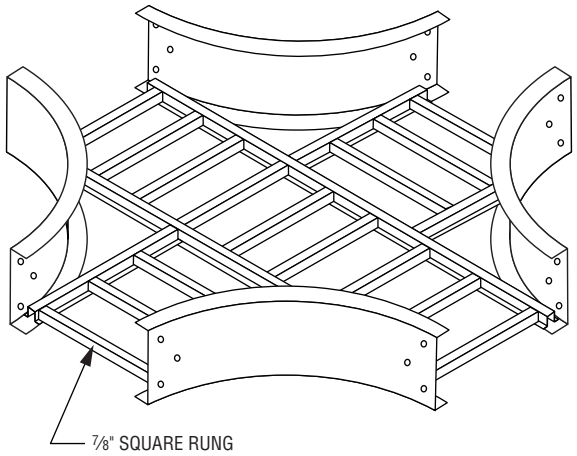


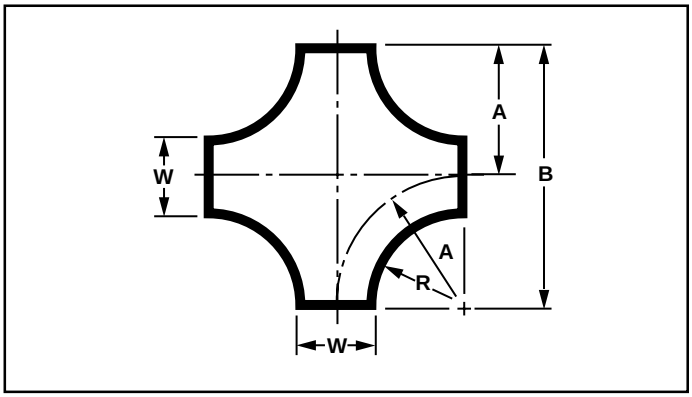
3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	P - Mill Galv.	.60	—	.40	—
	4	G - HDGAF	.60	1.00	.70	1.00
	5	A - Alum.	1.00	1.00	.70	1.00
	6	S - 304 SS	1.00	1.00	.70	1.00

Radius - R	Width - W	Catalog Number	"A" Dimension	"B" Dimension	"C" Dimension
12" (305mm)	6" (152mm)	*Prefix*- 06FT-12	15" (381mm)	30" (762mm)	18" (457mm)
	9" (229mm)	*Prefix*- 09FT-12	16½" (419mm)	33" (838mm)	21" (533mm)
	12" (305mm)	*Prefix*- 12FT-12	18" (457mm)	36" (914mm)	24" (610mm)
	18" (457mm)	*Prefix*- 18FT-12	21" (533mm)	42" (1067mm)	30" (762mm)
	24" (610mm)	*Prefix*- 24FT-12	24" (610mm)	48" (1219mm)	36" (914mm)
	30" (762mm)	*Prefix*- 30FT-12	27" (686mm)	54" (1372mm)	42" (1067mm)
	36" (914mm)	*Prefix*- 36FT-12	30" (762mm)	60" (1524mm)	48" (1219mm)
24" (610mm)	6" (152mm)	*Prefix*- 06FT-24	27" (686mm)	54" (1372mm)	30" (762mm)
	9" (229mm)	*Prefix*- 09FT-24	28½" (724mm)	57" (1448mm)	33" (838mm)
	12" (305mm)	*Prefix*- 12FT-24	30" (762mm)	60" (1524mm)	36" (914mm)
	18" (457mm)	*Prefix*- 18FT-24	33" (838mm)	66" (1676mm)	42" (1067mm)
	24" (610mm)	*Prefix*- 24FT-24	36" (914mm)	72" (1829mm)	48" (1219mm)
	30" (762mm)	*Prefix*- 30FT-24	39" (991mm)	78" (1981mm)	54" (1372mm)
	36" (914mm)	*Prefix*- 36FT-24	42" (1067mm)	84" (2134mm)	60" (1524mm)
36" (914mm)	6" (152mm)	*Prefix*- 06FT-36	39" (991mm)	78" (1981mm)	42" (1067mm)
	9" (229mm)	*Prefix*- 09FT-36	40½" (1029mm)	81" (2057mm)	45" (1143mm)
	12" (305mm)	*Prefix*- 12FT-36	42" (1067mm)	84" (2134mm)	48" (1219mm)
	18" (457mm)	*Prefix*- 18FT-36	45" (1143mm)	90" (2286mm)	54" (1372mm)
	24" (610mm)	*Prefix*- 24FT-36	48" (1219mm)	96" (2438mm)	60" (1524mm)
	30" (762mm)	*Prefix*- 30FT-36	51" (1295mm)	102" (2591mm)	66" (1676mm)
	36" (914mm)	*Prefix*- 36FT-36	54" (1372mm)	108" (2743mm)	72" (1829mm)

Example: 24A-12FT-12

PART NO. FC



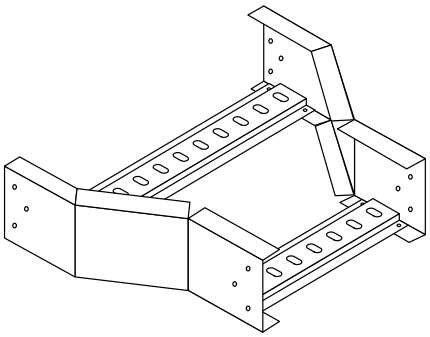


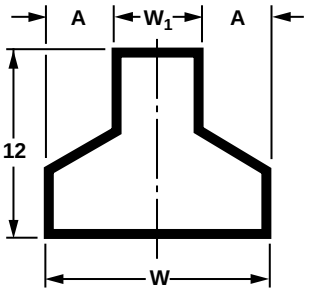
3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	P - Mill Galv.	.60	—	.40	—
	4	G - HDGAF	.60	1.00	.70	1.00
	5	A - Alum.	1.00	1.00	.70	1.00
	6	S - 304 SS	1.00	1.00	.70	1.00

Radius - R	Width - W		Catalog Number	"A" Dimension		"B" Dimension	
12" (305mm)	6"	(152mm)	*Prefix*- 06 FC-12	15"	(381mm)	30"	(762mm)
	9"	(229mm)	*Prefix*- 09 FC-12	16½"	(419mm)	33"	(838mm)
	12"	(305mm)	*Prefix*- 12 FC-12	18"	(457mm)	36"	(914mm)
	18"	(457mm)	*Prefix*- 18 FC-12	21"	(533mm)	42"	(1067mm)
	24"	(610mm)	*Prefix*- 24 FC-12	24"	(610mm)	48"	(1219mm)
	30"	(762mm)	*Prefix*- 30 FC-12	27"	(686mm)	54"	(1372mm)
	36"	(914mm)	*Prefix*- 36 FC-12	30"	(762mm)	60"	(1524mm)
24" (610mm)	6"	(152mm)	*Prefix*- 06 FC-24	27"	(686mm)	54"	(1372mm)
	9"	(229mm)	*Prefix*- 09 FC-24	28½"	(724mm)	57"	(1448mm)
	12"	(305mm)	*Prefix*- 12 FC-24	30"	(762mm)	60"	(1524mm)
	18"	(457mm)	*Prefix*- 18 FC-24	33"	(838mm)	66"	(1676mm)
	24"	(610mm)	*Prefix*- 24 FC-24	36"	(914mm)	72"	(1829mm)
	30"	(762mm)	*Prefix*- 30 FC-24	39"	(991mm)	78"	(1981mm)
	36"	(914mm)	*Prefix*- 36 FC-24	42"	(1067mm)	84"	(2134mm)
36" (914mm)	6"	(152mm)	*Prefix*- 06 FC-36	39"	(991mm)	78"	(1981mm)
	9"	(229mm)	*Prefix*- 09 FC-36	40½"	(1029mm)	81"	(2057mm)
	12"	(305mm)	*Prefix*- 12 FC-36	42"	(1067mm)	84"	(2134mm)
	18"	(457mm)	*Prefix*- 18 FC-36	45"	(1143mm)	90"	(2286mm)
	24"	(610mm)	*Prefix*- 24 FC-36	48"	(1219mm)	96"	(2438mm)
	30"	(762mm)	*Prefix*- 30 FC-36	51"	(1295mm)	102"	(2591mm)
	36"	(914mm)	*Prefix*- 36 FC-36	54"	(1372mm)	108"	(2743mm)

Example: 24A-12FC-12

PART NO. ST





Straight (ST)

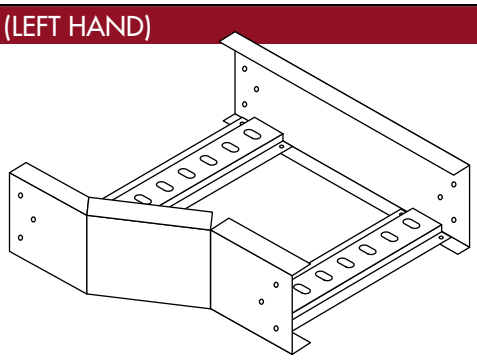
3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	P - Mill Galv.	.60	—	.40	—
	4	G - HDGAF	.60	1.00	.70	1.00
	5	A - Alum.	1.00	1.00	.70	1.00
	6	S - 304 SS	1.00	1.00	.70	1.00

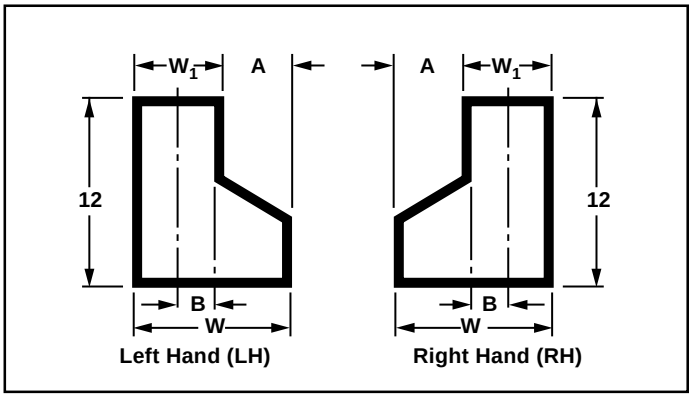
Slotted Rungs *provided on trays 6", 9", 12", 18" and 24" wide.*
Solid Rungs *provided on trays 30" and 36" wide.*

Width - W	Width - W1	Catalog No.–Straight	"A" Dimension
36" (914mm)	30" (762mm)	*Prefix*-36ST-30	3" (76mm)
	24" (610mm)	*Prefix*-36ST-24	6" (152mm)
	18" (457mm)	*Prefix*-36ST-18	9" (229mm)
	12" (305mm)	*Prefix*-36ST-12	12" (305mm)
	9" (229mm)	*Prefix*-36ST-09	13½" (343mm)
	6" (152mm)	*Prefix*-36ST-06	15" (381mm)
30" (762mm)	24" (610mm)	*Prefix*-30ST-24	3" (76mm)
	18" (457mm)	*Prefix*-30ST-18	6" (152mm)
	12" (305mm)	*Prefix*-30ST-12	9" (229mm)
	9" (229mm)	*Prefix*-30ST-09	10½" (267mm)
	6" (152mm)	*Prefix*-30ST-06	12" (304mm)
24" (610mm)	18" (457mm)	*Prefix*-24ST-18	3" (76mm)
	12" (305mm)	*Prefix*-24ST-12	6" (152mm)
	9" (229mm)	*Prefix*-24ST-09	7½" (191mm)
	6" (152mm)	*Prefix*-24ST-06	9" (229mm)
18" (457mm)	12" (305mm)	*Prefix*-18ST-12	3" (76mm)
	9" (229mm)	*Prefix*-18ST-09	4½" (114mm)
	6" (152mm)	*Prefix*-18ST-06	6" (152mm)
12" (305mm)	9" (229mm)	*Prefix*-12ST-09	1½" (38mm)
	6" (152mm)	*Prefix*-12ST-06	3" (76mm)
9" (229mm)	6" (152mm)	*Prefix*-09ST-06	1½" (38mm)

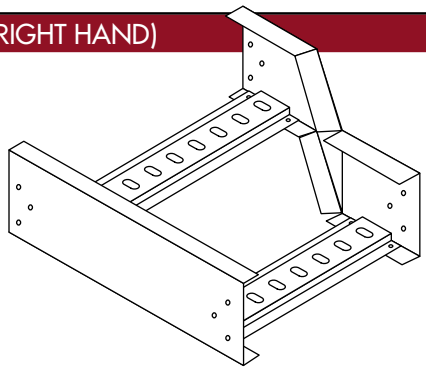
Example: 24A-12ST-06

PART NO. LH (LEFT HAND)





PART NO. RH (RIGHT HAND)



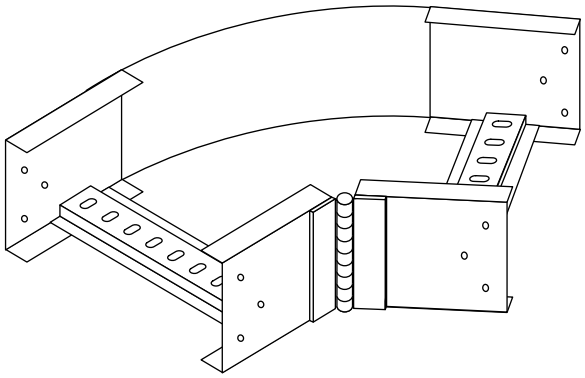
3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16"	3	P - Mill Galv.	.60	—	.40	—
4 - 1 1/4"	4	G - HDGAF	.60	1.00	.70	1.00
	5	A - Alum.	1.00	1.00	.70	1.00
	6	S - 304 SS	1.00	1.00	.70	1.00

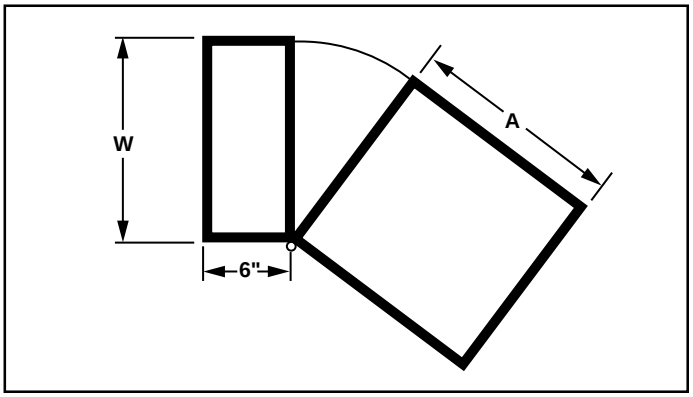
Slotted Rungs *provided on trays 6", 9", 12", 18" and 24" wide.*
Solid Rungs *provided on trays 30" and 36" wide.*

Width - W	Cat. No–Left Hand	Cat. No–Right Hand	"A" Dimension	"B" Dimension	"W1" Dimension
36" (914mm)	*Prefix*-36LH-30	*Prefix*-36RH-30	6" (152mm)	15" (381mm)	30" (914mm)
	Prefix-36LH-24	*Prefix*-36RH-24	12" (305mm)	12" (305mm)	24" (610mm)
	Prefix-36LH-18	*Prefix*-36RH-18	18" (457mm)	9" (229mm)	18" (457mm)
	Prefix-36LH-12	*Prefix*-36RH-12	24" (610mm)	6" (152mm)	12" (305mm)
	Prefix-36LH-09	*Prefix*-36RH-09	27" (686mm)	4½" (114mm)	9" (229mm)
	Prefix-36LH-06	*Prefix*-36RH-06	30" (762mm)	3" (76mm)	6" (152mm)
30" (762mm)	*Prefix*-30LH-24	*Prefix*-30RH-24	6" (152mm)	12" (305mm)	24" (610mm)
	Prefix-30LH-18	*Prefix*-30RH-18	12" (305mm)	9" (229mm)	18" (457mm)
	Prefix-30LH-12	*Prefix*-30RH-12	18" (457mm)	6" (152mm)	12" (305mm)
	Prefix-30LH-09	*Prefix*-30RH-09	21" (533mm)	4½" (114mm)	9" (229mm)
	Prefix-30LH-06	*Prefix*-30RH-06	24" (610mm)	3" (76mm)	6" (152mm)
24" (610mm)	*Prefix*-24LH-18	*Prefix*-24RH-18	6" (152mm)	9" (229mm)	18" (457mm)
	Prefix-24LH-12	*Prefix*-24RH-12	12" (305mm)	6" (152mm)	12" (305mm)
	Prefix-24LH-09	*Prefix*-24RH-09	15" (381mm)	4½" (114mm)	9" (229mm)
	Prefix-24LH-06	*Prefix*-24RH-06	18" (457mm)	3" (76mm)	6" (152mm)
18" (457mm)	*Prefix*-18LH-12	*Prefix*-18RH-12	6" (152mm)	6" (152mm)	12" (305mm)
	Prefix-18LH-09	*Prefix*-18RH-09	9" (229mm)	4½" (114mm)	9" (229mm)
	Prefix-18LH-06	*Prefix*-18RH-06	12" (305mm)	3" (76mm)	6" (152mm)
12" (305mm)	*Prefix*-12LH-09	*Prefix*-12RH-09	3" (76mm)	4½" (114mm)	9" (229mm)
	Prefix-12LH-06	*Prefix*-12RH-06	6" (152mm)	3" (76mm)	6" (152mm)
9" (229mm)	*Prefix*-09LH-06	*Prefix*-09RH-06	3" (76mm)	3" (76mm)	6" (152mm)

Example: 24A-12LH-06

PART NO. AF





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16"	3	P - Mill Galv.	.60	—	.40	—
4 - 1 1/4"	4	G - HDGAF	.60	1.00	.70	1.00
	5	A - Alum.	1.00	1.00	.70	1.00
	6	S - 304 SS	1.00	1.00	.70	1.00

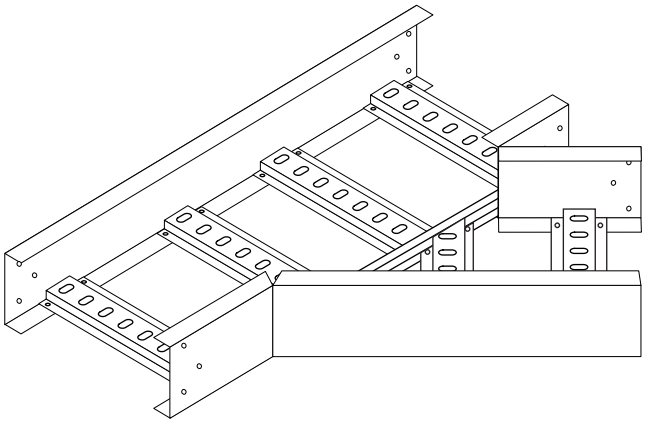
Slotted Rungs *provided on trays 6", 9", 12", 18" and 24" wide.*
Solid Rungs *provided on trays 30" and 36" wide.*

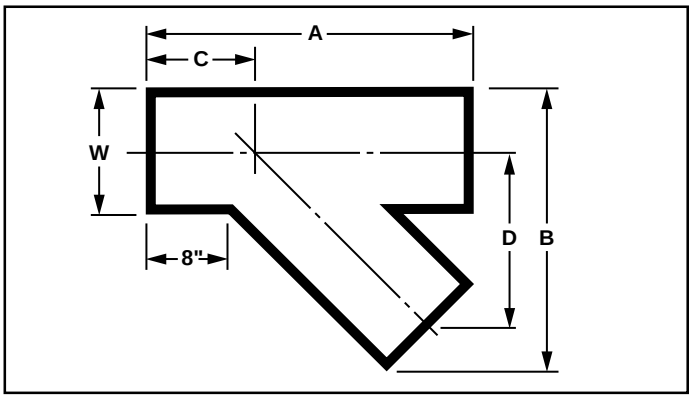
Catalog	Width - W		"A" Dimension	
Prefix- 06AF	6"	(152mm)	8"	(203mm)
Prefix- 09AF	9"	(229mm)	11"	(279mm)
Prefix- 12AF	12"	(305mm)	14"	(356mm)
Prefix- 18AF	18"	(457mm)	20"	(508mm)
Prefix- 24AF	24"	(610mm)	26"	(660mm)
Prefix- 30AF	30"	(762mm)	32"	(813mm)
Prefix- 36AF	36"	(914mm)	38"	(965mm)

Both rails at hinge break to be bonded if fitting is used as equipment grounding conductor.
Example: 24A-12AF

PART NO. LY AND RY

(RY Shown)





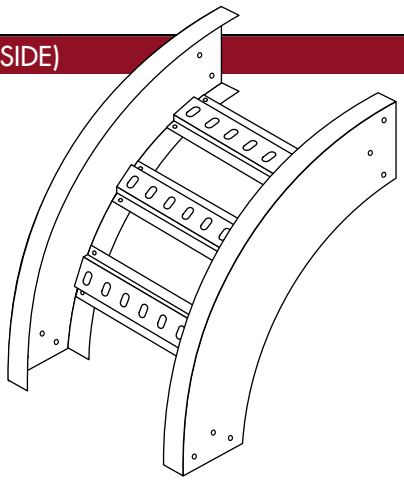
3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16"	3	P - Mill Galv.	.60	—	.40	—
4 - 1 1/4"	4	G - HDGAF	.60	1.00	.70	1.00
	5	A - Alum.	1.00	1.00	.70	1.00
	6	S - 304 SS	1.00	1.00	.70	1.00

Slotted Rungs *provided on trays 6", 9", 12", 18" and 24" wide.*
Solid Rungs *provided on trays 30" and 36" wide.*

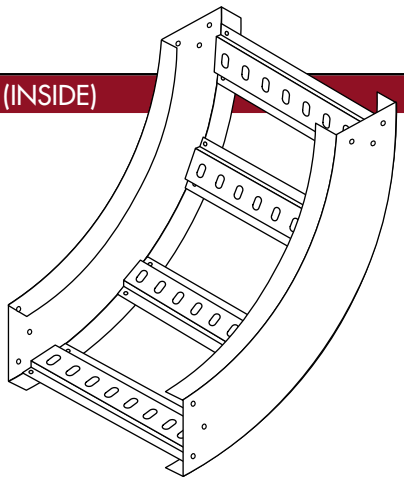
Cat No. Left Hand	Cat. No. Right Hand	Width - W	"A" Dimension	"B" Dimension	"C" Dimension	"D" Dimension
Prefix- 06LY	*Prefix*- 06RY	6" (152mm)	22½" (571mm)	16¼" (413mm)	11⅜" (289mm)	11⅛" (283mm)
Prefix- 09LY	*Prefix*- 09RY	9" (229mm)	26¾" (679mm)	21⅜" (543mm)	13" (330mm)	13¾" (349mm)
Prefix- 12LY	*Prefix*- 12RY	12" (305mm)	31" (787mm)	26½" (673mm)	14¾" (375mm)	16¼" (412mm)
Prefix- 18LY	*Prefix*- 18RY	18" (457mm)	39½" (1003mm)	36¾" (933mm)	18⅛" (460mm)	21⅜" (543mm)
Prefix- 24LY	*Prefix*- 24RY	24" (610mm)	48" (1219mm)	47" (1193mm)	21½" (546mm)	26½" (673mm)
Prefix- 30LY	*Prefix*- 30RY	30" (762mm)	56⅜" (1432mm)	57¼" (1454mm)	24¾" (629mm)	31⅝" (803mm)
Prefix- 36LY	*Prefix*- 36RY	36" (914mm)	65" (1651mm)	67½" (1714mm)	28¼" (718mm)	36¾" (933mm)

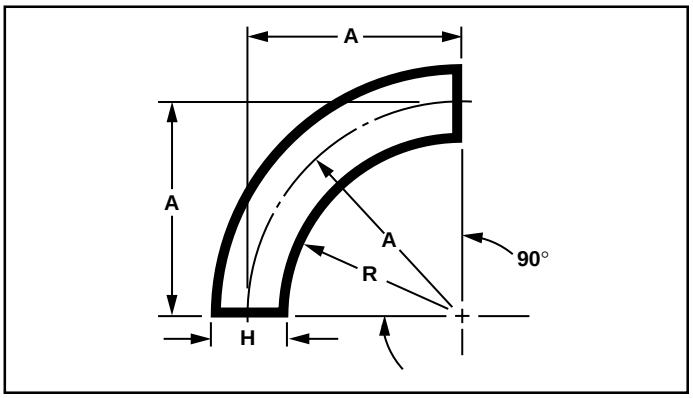
Example: 24A-12RY

PART NO. 90 (OUTSIDE)



PART NO. 91 (INSIDE)





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	P - Mill Galv.	.60	—	.40	—
	4	G - HDGAF	.60	1.00	.70	1.00
	5	A - Alum.	1.00	1.00	.70	1.00
	6	S - 304 SS	1.00	1.00	.70	1.00

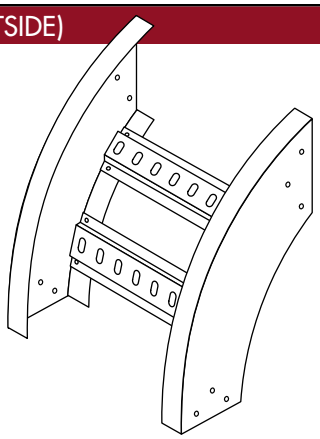
Slotted Rungs *provided on trays 6", 9", 12", 18" and 24" wide.*
Solid Rungs *provided on trays 30" and 36" wide.*

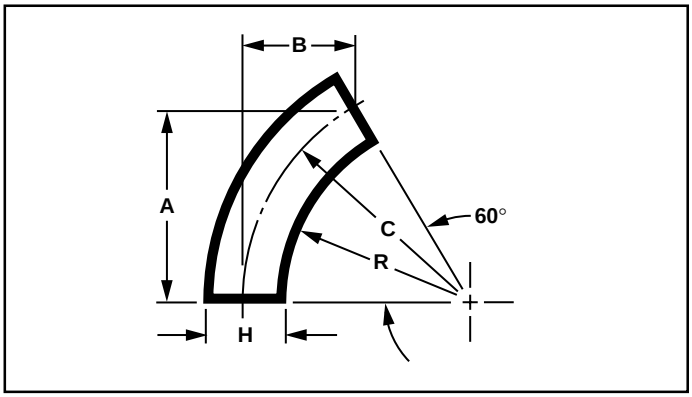
Radius - R	Height - H	Cat. No. (Inside)	Cat. No. (Outside)	"A" Dim.
12" (305mm)	3½" (89mm)	*Prefix*- (W)9I-12	*Prefix*- (W)90-12	13¾" (349mm)
	4¼" (108mm)	*Prefix*- (W)9I-12	*Prefix*- (W)90-12	14⅛" (359mm)
	5¼" (133mm)	*Prefix*- (W)9I-12	*Prefix*- (W)90-12	14⅝" (372mm)
	6¼" (159mm)	*Prefix*- (W)9I-12	*Prefix*- (W)90-12	15⅛" (384mm)
24" (610mm)	3½" (89mm)	*Prefix*- (W)9I-24	*Prefix*- (W)90-24	25¾" (654mm)
	4¼" (108mm)	*Prefix*- (W)9I-24	*Prefix*- (W)90-24	26⅛" (664mm)
	5¼" (133mm)	*Prefix*- (W)9I-24	*Prefix*- (W)90-24	26⅝" (676mm)
	6¼" (159mm)	*Prefix*- (W)9I-24	*Prefix*- (W)90-24	27⅛" (689mm)
36" (914mm)	3½" (89mm)	*Prefix*- (W)9I-36	*Prefix*- (W)90-36	37¾" (959mm)
	4¼" (108mm)	*Prefix*- (W)9I-36	*Prefix*- (W)90-36	38⅛" (969mm)
	5¼" (133mm)	*Prefix*- (W)9I-36	*Prefix*- (W)90-36	38⅝" (981mm)
	6¼" (159mm)	*Prefix*- (W)9I-36	*Prefix*- (W)90-36	39⅛" (994mm)

Example: 24A-1290-12

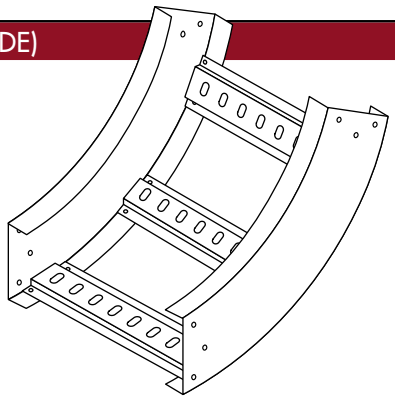
(W) = Width in inches, Use:
06 for 6" w 09 for 9" w 12 for 12" w 18 for 18" w 24 for 24" w 30 for 30" w 36 for 36" w

PART NO. 6O (OUTSIDE)





PART NO. 6I (INSIDE)



3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	P - Mill Galv.	.60	—	.40	—
	4	G - HDGAF	.60	1.00	.70	1.00
	5	A - Alum.	1.00	1.00	.70	1.00
	6	S - 304 SS	1.00	1.00	.70	1.00

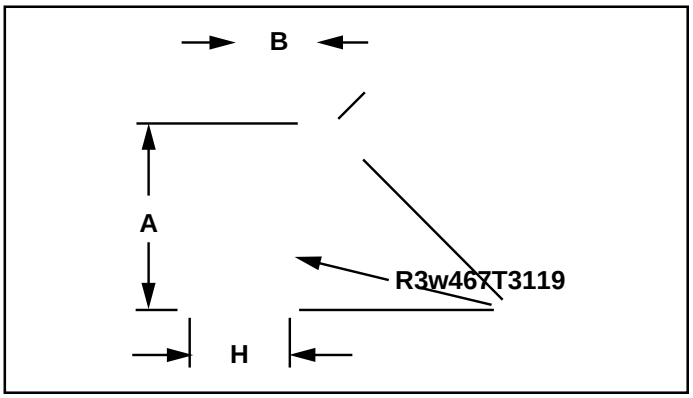
Slotted Rungs *provided on trays 6", 9", 12", 18" and 24" wide.*
Solid Rungs *provided on trays 30" and 36" wide.*

Radius - R	Height - H	Cat. No. (Inside)	Cat. No. (Outside)	"A" Dimension	"B" Dimension	"C" Dimension
12" (305mm)	3½" (89mm)	*Prefix*- (W)6I-12	*Prefix*- (W)60-12	11⅞" (302mm)	6⅞" (175mm)	13¾" (349mm)
	4¼" (108mm)	*Prefix*- (W)6I-12	*Prefix*- (W)60-12	12¼" (311mm)	7⅛" (181mm)	14⅛" (359mm)
	5¼" (133mm)	*Prefix*- (W)6I-12	*Prefix*- (W)60-12	12⅝" (321mm)	7⅜" (187mm)	14⅝" (372mm)
	6¼" (159mm)	*Prefix*- (W)6I-12	*Prefix*- (W)60-12	13⅛" (334mm)	7⅝" (194mm)	15⅛" (384mm)
24" (610mm)	3½" (89mm)	*Prefix*- (W)6I-24	*Prefix*- (W)60-24	22¼" (565mm)	12⅞" (327mm)	25¾" (654mm)
	4¼" (108mm)	*Prefix*- (W)6I-24	*Prefix*- (W)60-24	22⅝" (575mm)	13⅛" (334mm)	26⅛" (664mm)
	5¼" (133mm)	*Prefix*- (W)6I-24	*Prefix*- (W)60-24	23⅛" (588mm)	13⅜" (340mm)	26⅝" (676mm)
	6¼" (159mm)	*Prefix*- (W)6I-24	*Prefix*- (W)60-24	23½" (597mm)	13" (330mm)	27⅛" (689mm)
36" (914mm)	3½" (89mm)	*Prefix*- (W)6I-36	*Prefix*- (W)60-36	32¾" (832mm)	18⅞" (480mm)	37¾" (959mm)
	4¼" (108mm)	*Prefix*- (W)6I-36	*Prefix*- (W)60-36	33" (838mm)	19⅛" (486mm)	38⅛" (969mm)
	5¼" (133mm)	*Prefix*- (W)6I-36	*Prefix*- (W)60-36	33½" (851mm)	19⅜" (492mm)	38⅝" (981mm)
	6¼" (159mm)	*Prefix*- (W)6I-36	*Prefix*- (W)60-36	33⅞" (861mm)	19⅝" (499mm)	39⅛" (994mm)

Example: 24A-1260-12

(W) = Width in inches, Use:
06 for 6" w 09 for 9" w 12 for 12" w 18 for 18" w 24 for 24" w 30 for 30" w 36 for 36" w

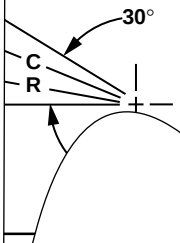
PART NO. 4O (OUTSIDE)



3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	P - Mill Galv.	.60	—	.40	—
	4	G - HDGAF	.60	1.00	.70	1.00
	5	A - Alum.	1.00	1.00	.70	1.00
	6	S - 304 SS	1.00	1.00	.70	1.00

Slotted Rungs *provided on trays 6", 9", 12", 18" and 24" wide.*
Solid Rungs *provided on trays 30" and 36" wide.*

Vertical Elbow

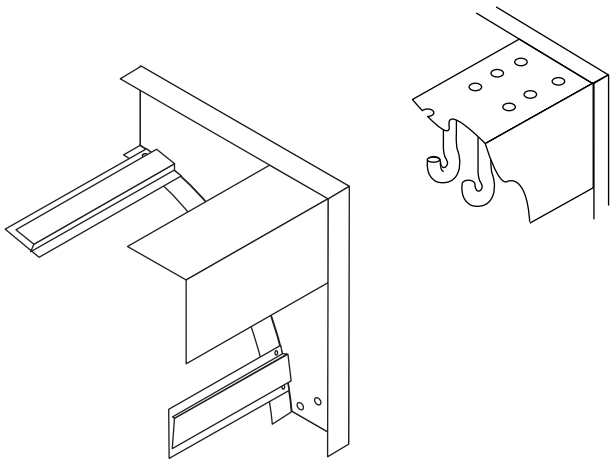


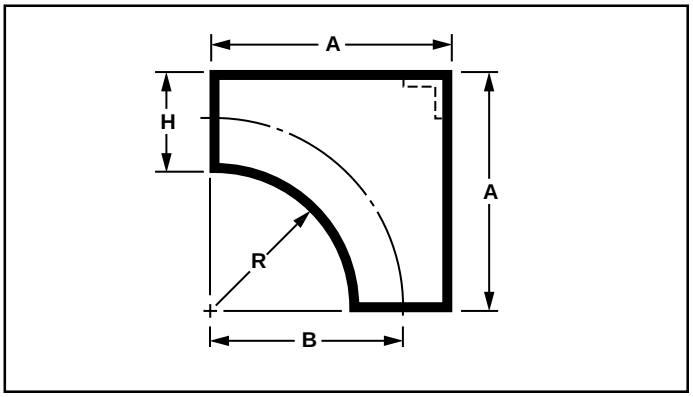
Depth (in.)	Mate / Finish	for Load Depth NEC 318-7 (sq. in.)			
		Alum		Steel	
		16"	1¼"	13⁄16"	1¼"
		.60	—	.40	—
		.60	1.00	.70	1.00
		1.00	1.00	.70	1.00
	SS	1.00	1.00	.70	1.00

nd 24" wide.

90° Vertical Cable Support Elbow

PART NO. SR



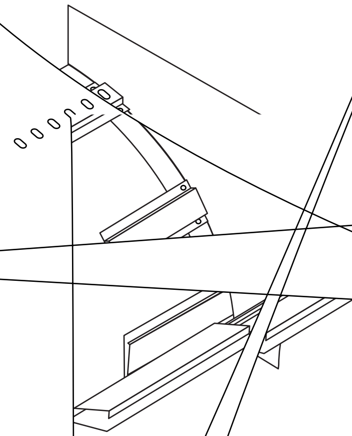


3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	P - Mill Galv.	.60	—	.40	—
	4	G - HDGAF	.60	1.00	.70	1.00
	5	A - Alum.	1.00	1.00	.70	1.00
	6	S - 304 SS	1.00	1.00	.70	1.00

Slotted Rungs *provided on trays 6", 9", 12", 18" and 24" wide.*
Solid Rungs *provided on trays 30" and 36" wide.*

"J" hooks not included.
Order separately (Cat. No. 75170).

RT NO. VT



	2nd Prefix	Finish				
			[illegible]			
			.60	[illegible]		
			[illegible]	1.00	.70	[illegible]
		SS	1.00	1.00	.70	1.00

Slotted Rung … *, 18" and 24" wide.*
Solid Rungs *prov* … *36" wide.*

TRAY CONNECTORS –

Catalog Number & Finishes

Catalog Number

Load Depth	Finish	Basic Number
3″	2 (Mill Galv.)	-02RC
4″	3 (HDGAF)	-02CE
5″	4 (Alum.)	-02CV
6″	U (304SS)	-02CH
		-02CA

Example: 34 -02RC for 3" load depth, aluminum, universal curvilinear connector.

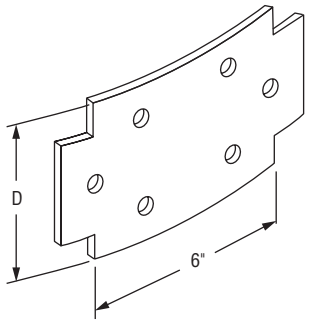
Part Nos. CE, CH, and CV to be bonded if used as equipment grounding conductor.

NOTE: *Hole patterns match corresponding tray. Three-hole pattern illustrated.*

Heavy duty, mid span splice plates available upon request.

UNIVERSAL CURVILINEAR CONNECTOR

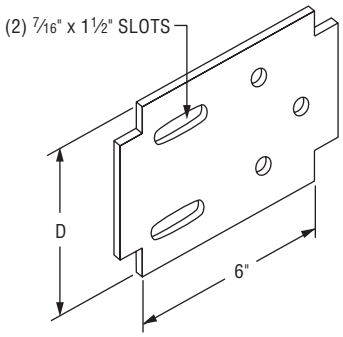
Part No. RC (Sold in pairs)



11 Gage Steel, 0.125" Aluminum
⅜"-16 spline bolts & flange nuts furnished.

EXPANSION CONNECTOR

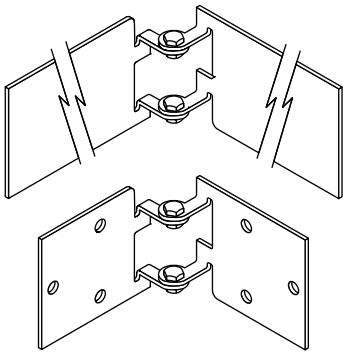
Part No. CE (Sold in pairs)



11 Gage Steel, 0.125" Aluminum
⅜"-16 cap screws & Nylok nuts furnished and
⅜"-16 spline bolts & flange nuts furnished.

HORIZONTAL ADJUSTABLE CONNECTOR

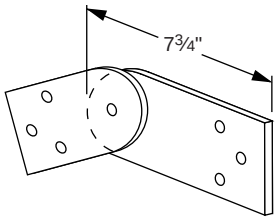
Part No. CH (Sold in pairs–inner & outer)



11 Gage Steel, 0.125" Aluminum
⅜"-16 spline bolts & flange nuts furnished.

VERTICAL ADJUSTABLE CONNECTORS

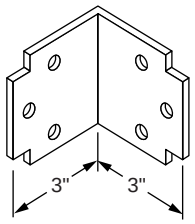
Part No. CV (Sold in pairs)



11 Gage Steel, 0.125" Aluminum
⅜"-16 spline bolts & flange nuts furnished.

90° ANGLE CONNECTOR

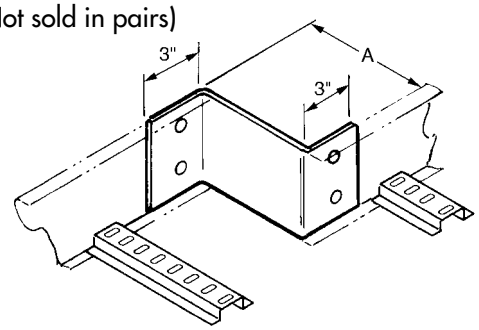
Part No. CA (Sold in pairs)



11 Gage Steel, 0.125" Aluminum
⅜"-16 spline bolts and flange nuts furnished.

REDUCING CONNECTOR

Part No. CO (Not sold in pairs)



12 Gage Steel, 0.125"Aluminum
For offset reductions – use 1 of above with standard connector plate.
For straight reductions– use 2 (of ½ reduction dimension).
⅜"-16 spline bolts and flange nuts furnished.

Catalog Number

Load Depth	Finish	Basic Number	"A" Dimension
3"	2 (Mill Galv.)	-30CO	30" (762mm)
4"	3 (HDGAF)	-27CO	27" (686mm)
5"	4 (Alum.)	-24CO	24" (610mm)
6"	U (304SS)	-21CO	21" (533mm)
		-18CO	18" (457mm)
		-15CO	15" (381mm)
		-13CO	13½" (343mm)
		-12CO	12" (305mm)
		-10CO	10½" (267mm)
		-09CO	9" (229mm)
		-07CO	7½" (191mm)
		-06CO	6" (152mm)
		-04CO	4½" (114mm)
		-03CO	3" (76mm)
		-01CO	1½" (38mm)

Example: 34-03CO for 3" load depth, aluminum, 3" Reducer Connector.
Typical Use: 9" to 6", or use 2 for 12" to 6", etc.

MATERIAL/FINISH

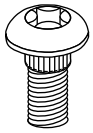
Electrogalvanized finish standard. Other finishes available; consult factory. *Use following suffix when applicable - use only where indicated.

No Suffix ..... Electrogalvanized carbon steel only
-HG ..... Hot-dip Galvanized (Except Threaded Rod)
-SS ..... 302/304 Stainless Steel
-S1 ..... 316 Stainless Steel (check factory for availability)

Example: 5112-2-HG, ⅜ x 1½ hex head bolt, hot-dip galvanized

CONNECTOR HARDWARE

(Case-hardened steel electrogalvanized)

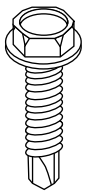


Part No. 5003-1
⅜"-16 x 1" spline bolt

Part No. 5009-1
⅜"-16 hex-flanged nut with serrated washer face.

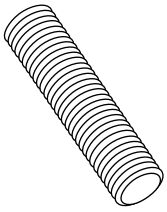
COVER SCREW

Part No. EM-CC (electrogalv. steel)
Part No. EM-CC-SS (stainless steel)



No. 10 x ⅝" long, self drilling-self tapping hex head plated steel screw.
Suggested spacing:
Indoor: 8 per 12';
Outdoor: 10 per 12'

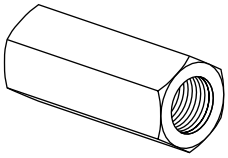
CONTINUOUS THREADED ROD



Cat. No.	Size (Diameter x Length)
8193-0-10-*	¼" x 10'
8193-1-10-*	⅜" x 10'
8193-2-10-*	½" x 10'
8193-3-10-*	⅝" x 10'
8193-4-10-*	¾" x 10'

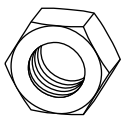
(Hot Dip Galvanized not available.)

ROD COUPLER



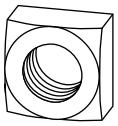
Cat. No.	Size
8195-0-*	¼"
8195-1-*	⅜"
8195-2-*	½"
8195-3-*	⅝"
8195-4-*	¾"

HEX NUTS



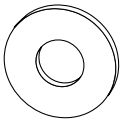
Cat. No.	Size
5001-0-*	¼"
5001-1-*	⅜"
5001-2-*	½"
5001-3-*	⅝"
5001-4-*	¾"

SQUARE NUTS



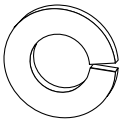
Cat. No.	Size
5002-0-*	¼"
5002-1-*	⅜"
5002-2-*	½"
5002-3-*	⅝"
5002-4-*	¾"

FLAT WASHERS



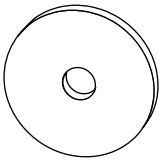
Cat. No.	Size
5006-0-*	¼"
5006-1-*	⅜"
5006-2-*	½"
5006-3-*	⅝"
5006-4-*	¾"

SPLIT-LOCK WASHERS



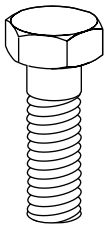
Cat. No.	Size
5007-0-*	¼"
5007-1-*	⅜"
5007-2-*	½"
5007-3-*	⅝"
5007-4-*	¾"

FENDER WASHERS

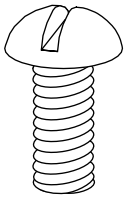


Cat. No.	Size (I.D. x O.D.)
5010-0-*	¼" x 1¼" O.D.
5010-1-*	⅜" x 1½" O.D.
5010-2-*	½" x 2" O.D.

HEX HEAD CAP SCREW / ROUND HEAD, SLOTTED CAP SCREW



Catalog No. 5100-0

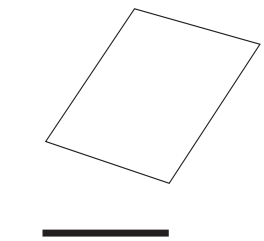


Catalog No. 6100-0

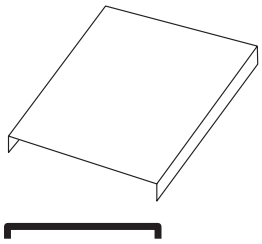
Hex Head Cap Screw Cat. No.	Round Head Cap Screw Cat. No.	Size (Dia. x Len.)
5100-0-*	6100-0-*	¼" x 1"
5112-0-*	6112-0-*	¼" x 1½"
5100-1-*	6100-1-*	⅜" x 1"
5112-1-*	6112-1-*	⅜" x 1½"
5200-1-*	6200-1-*	⅜" x 3"
5100-2-*	6100-2-*	½" x 1"
5112-2-*	6112-2-*	½" x 1½"
5200-2-*	6200-2-*	½" x 2"
5212-2-*	6212-2-*	½" x 2½"
5300-2-*	6300-2-*	½" x 3"
5312-2-*	6312-2-*	½" x 3½"
5112-3-*	6112-3-*	⅝" x 1½"
5200-3-*	6200-3-*	⅝" x 2"
5300-3-*	6300-3-*	⅝" x 3"
5400-3-*	6400-3-*	⅝" x 4"
5200-4-*	6200-4-*	¾" x 2"
5300-4-*	6300-4-*	¾" x 3"
5400-4-*	6400-4-*	¾" x 4"

NOTE: *Standard finish is electrogalvanized. Refer to finishes above for specifications of alternate finish or material.*

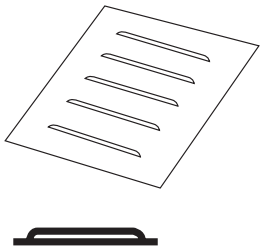
COVERS for straight sections shown. Standard fitting covers are flat solid type (NF). Aluminum covers are fabricated from 0.040" aluminum AA-3150-H14; steel covers are fabricated from 20 gage ASTM A-653-G90 CQ, mill-galvanized steel.



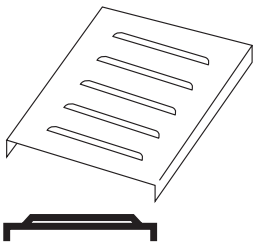
NF – Flat Solid



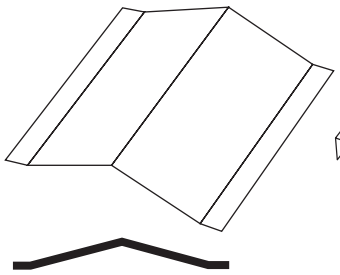
FS – Flat Solid w/Flange



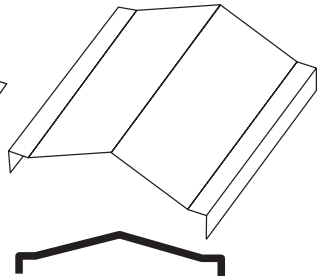
NL – Flat Louvered



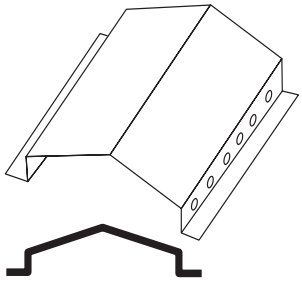
FL – Louvered w/Flange



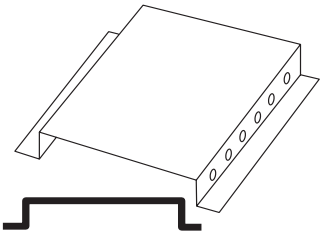
PS – Peaked Solid (suffix height)



PF – Peaked Flanged (Solid)
PH – Peaked Flanged (Vent)



PV – Peaked Hat (Vent) (suffix height)



HS – Hat (Solid)
HV – Hat (Vent) (suffix height)

Cover Catalog Number – Straight Sections

Type	Finish	Basic No. (Width)	Length	Height*
HS, HV,	2 - Mill Galv.	-06SL = 6" (152mm)	-12'	-2*
FL, FS,	3 - HDGAF	-09SL = 9" (229mm)	-06'	
NF, NL,	4 - Alum.	-12SL = 12" (305mm)		
PS, PF,	U - 304SS	-18SL = 18" (457mm)		
PH, PV		-24SL = 24" (610mm)		
		-30SL = 30" (762mm)		
		-36SL = 36" (914mm)		

*Peak and hat only, 2" height standard. Consult factory for other heights.

Example: NL2-09SL-12 is a flat louvered mill-galv. steel cover for a 9" wide mill galvanized hat 12' long.

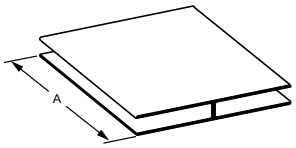
Cover Catalog Number – Fittings

Type	Load Depth	Finish	Width/Basic No.	Radius
NF	3	2 - Mill Galv.	-06 XX**	12"
FS	4	3 - HDGAF	-09 XX**	24"
	5	4 - Alum.	-12 XX**	36"
	6	U - 304SS	-18 XX**	
			-24 XX**	
			-30 XX**	
			-36 XX**	

*Load depth for outside riser or vertical tee only. **XX from fitting selection pages

Example: NF2-369F-24 is a mill galvanized non-flanged solid cover for a 36 in. wide horizontal 90° elbow with a 24 in. radius.

JOINT PLATE



Joint plate is black PVC and is offered in 10' lengths to be field cut to desired length, or in precut lengths for specified covers.

JP-120 is joint plate in 10' lengths.

Joint plate for specified covers is specified as follows.

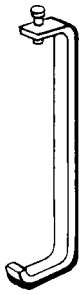
Tray Width	Flange Type
JP-06 = 6" (152mm)	
JP-09 = 9" (229mm)	-2 = 13/16" Flange
JP-12 = 12" (305mm)	-4 = 1¼" Flange
JP-18 = 18" (457mm)	-7 = 2" Flange
JP-24 = 24" (610mm)	
JP-30 = 30" (762mm)	
JP-36 = 36" (914mm)	

Example: JP-06-2 is a joint plate for 6" wide tray with a 13/16" flange.

SINGLE SIDE CONNECTOR

Part No. 01CC

Furnished with ¼"-28 stainless steel cone point machine screw.
For use with any width tray.
Not sold in pairs.
Suggested spacing:
Indoor Use Only.
Recommended: 4 per 12' section



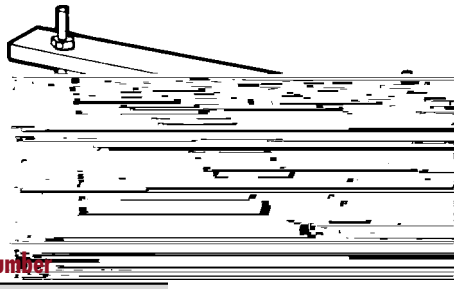
Catalog Number

Flange	Load Depth	Finish	Basic No.
2 - 13/16"	3	2 - Mill Galv.	-01CC
4 - 1¼"	4	3 - HDGAF	
7 - 2"	5	4 - Alum.	
	6	U - 304SS	

Example: 234-01CC for 3" load depth, aluminum single side connector.

DOUBLE CLAMP CONNECTOR

Part No. - (W) DC



Catalog Number

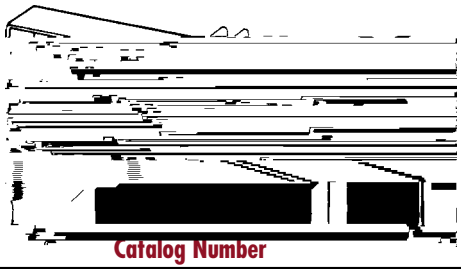
Load Depth	Finish	Width	Type
3	2 - Mill Galv.	-06	DC
4	3 - HDGAF	-09	
5	4 - Alum.	-12	
6	U - 304SS	-18	
		-24	
		-30	
		-36	

Example: 34-12DC for 3" load depth, aluminum, double clamp connector.

For all covers except hat & peak type. Furnished with:
(2) ¼"-20 all-thread rods
(4) hex nuts, flat washers and lock washers
Suggested spacing:
Indoor: 2 per 12'
Outdoor: 3 per 12'
High Wind: 5 per 12'

COVER CONNECTOR

Part No. CC (For all covers except hat & peak type)



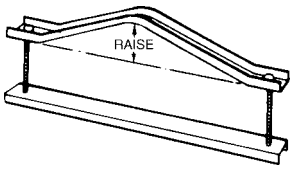
Catalog Number

Load Depth	Finish	Width	Type
3	2 - Mill Galv.	-06	CC
4	3 - HDGAF	-09	
5	4 - Alum.	-12	
6	U - 304SS	-18	
		-24	
		-30	
		-36	

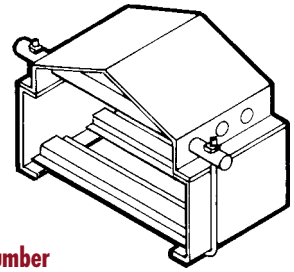
Example: 34-12CC for 3" load depth, aluminum, 12" wide connector.

PEAK COVER CONNECTOR

Part No. PC (For PS Cover)



Part No. PC (For PS Cover)



Catalog Number

Load Depth	Finish	Width	Type	Raise (in)*
3	2 - Mill Galv.	-06	PC	-2
4	3 - HDGAF	-09	VC	
5	4 - Alum.	-12		
6	U - 304SS	-18		
		-24		
		-30		
		-36		

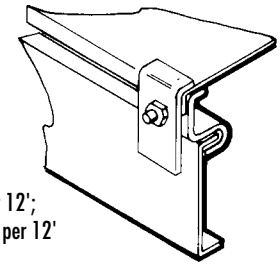
*2" standard raise. Consult factory for other peak heights.

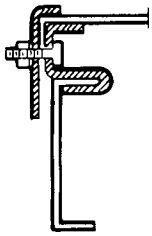
Example: 34-12VC-2 for 3" load depth, aluminum, 12" wide, Peak Cover Connector (vented cover) with 2" peak.

ELEVATED COVER CONNECTORS

Part No. EC (For FS, NF, FL, NL covers)

HDGAF for Outdoor Use.
Includes:
(2) ¼ - 20" x 1" hex head cap screws.
Suggested spacing
Indoor: 3/Side (6 total)per 12';
Outdoor: 5/Side (10 total) per 12'





Catalog Number

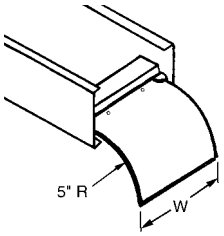
Flange	Finish	Type	Height*
2 - 13/16"	2 - Mill Galv.	EC	- Raise* (in.)
4 - 1¼"	3 - HDGAF		
7 - 2"	4 - Alum.		
	U - 304SS		

*1", 2" or 3" standard.

Example: 24-EC-2 for 13/16" flange, aluminum, outdoor, Elevated Cover Connector with a 2" raise.

DROP OUT

Part No. DO



14 Gage Steel, .080" Aluminum
NOTE: (2) #10 x ⅝" self tapping screws furnished.

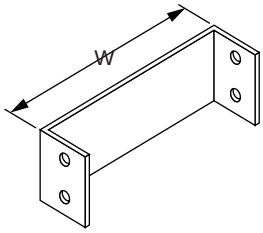
Catalog Number

Basic Finish	Width
2 (Mill Galv.)	-06DO = 6" (152mm)
3 (HDGAF)	-09DO = 9" (229mm)
4 (Alum.)	-12DO = 12" (305mm)
U (304SS)	-18DO = 18" (457mm)
	-24DO = 24" (610mm)
	-30DO = 30" (762mm)
-	36DO = 36" (914mm)

Example: 4-12DO for aluminum, 12" wide, Drop Out.

BLIND END

Part No. BE



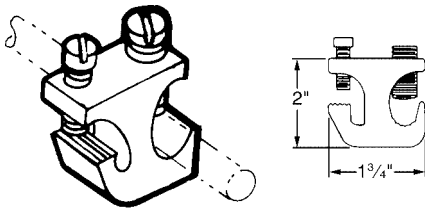
Catalog Number

Load Depth	Finish	Width
3	2 (Mill Galv.)	-06BE = 6" (152mm)
4	3 (HDGAF)	-09BE = 9" (229mm)
5	4 (Alum.)	-12BE = 12" (305mm)
6	U (304SS)	-18BE = 18" (457mm)
		-24BE = 24" (610mm)
		-30BE = 30" (762mm)
		-36BE = 36" (914mm)

Example: 34-12BE for 3" load depth, aluminum, 12'' wide Blind End.

CABLE TRAY GROUND CLAMP

Part No. 9156

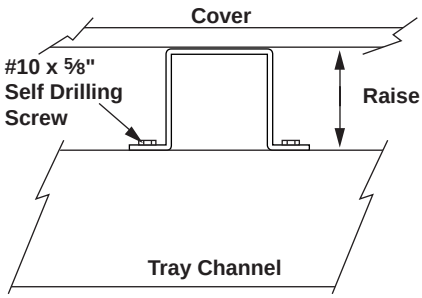


UL Listed E-24264

Certified File No. LR 9795

ELEVATED COVER CONNECTORS –

Part No. EM-CC



Catalog Number

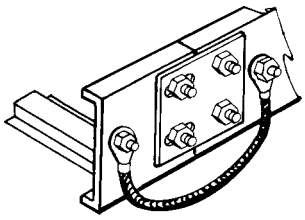
Finish	Type	Height*
2 - Mill Galv.	EM-CC	- Raise* (in.)
3 - HDGAF		
4 - Alum.		
U - 304SS		

*1", 2" or 3" standard.

Example: 3-EM-CC-2 for hot dipped galvanized, outdoor, Elevated Cover Connector with a 2" raise.

BONDING JUMPER

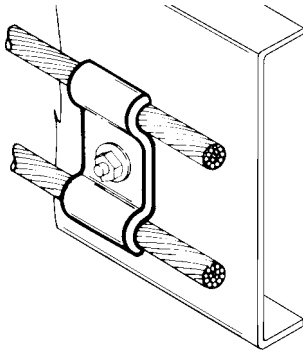
Part No. CBJ



Catalog No.	Dimensional Data	Amperes as Equipment Ground
CBJ-C	AWG 1/0 copper wire 15½" long overall	800 amperes
CBJ-4C	AWG 4/0 copper wire 15½" long overall	1,600 amperes

NOTE: No hardware supplied.

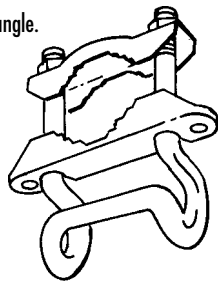
GROUND CABLE RETAINER CLAMP



Catalog No.	Capacity	Metal & Finish	Dimensions
9056-EP	1/0 2/0 3/0	Electro-Galv. Steel	1" w x 2" long
9057-EP	4/0 250 MCM		1" w x 2⅜" long
9056-SS	1/0 2/0 3/0	Stainless Steel	1" w x 2" long
9057-SS	4/0 250 MCM		1" w x 2⅜" long

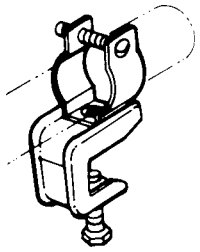
CONDUIT-TO-CABLE TRAY CLAMP

For connecting and grounding rigid conduit to tray at 90° angle.
U.L. listed as grounding means. CSA approved.



Catalog No.	Size	Std. Pkg.
TB6210	½" – ¾"	50
TB6212	1" – 1¼"	20

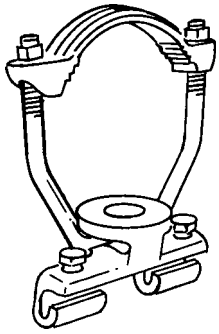
CONDUIT CLAMP BRACKET



Catalog No.	Size Rigid	Size EMT
CCB-050	⅜" to ½"	½"
CCB-075	¾"	¾"
CCB-100	1"	1"
CCB-125	-	1¼"
CCB-150	1¼"	1½"
CCB-175	1½"	-
CCB-200	2"	2"

CONDUIT-TO-CABLE TRAY CLAMP- SWIVEL TYPE

Malleable iron hub and steel "U" bolt.
For connecting and grounding rigid conduit to tray at any angle within 90° arc.
U.L. listed as a grounding means.

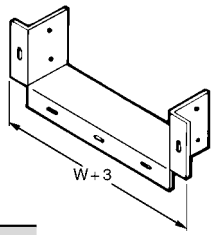


Catalog No.	Size	Std. Pkg.
TB6209	½" – ¾"	10
TB6211	1" – 1¼"	10
TB6214	1½" – 2"	5
TB6216	2½" – 3"	5
TB6218	3½" – 4"	2

BOX CONNECTOR

Part No. CB

14 Gage Steel
.080" Aluminum
NOTE: ¼"-20 carriage bolts, flat washers, hex nuts furnished.



Catalog Number

Load Depth	Finish	Width
3	2 - (Mill Galv.)	-06CB = 6" (152mm)
4	3 - (HDGAF)	-09CB = 9" (229mm)
5	4 - (Alum.)	-12CB = 12" (305mm)
6	U - (304SS)	-18CB = 18" (457mm)
		-24CB = 24" (610mm)
		-30CB = 30" (762mm)
		-36CB = 36" (914mm)

Example: 34-12CB for 3" load depth, aluminum, 12" wide, Box Connector.

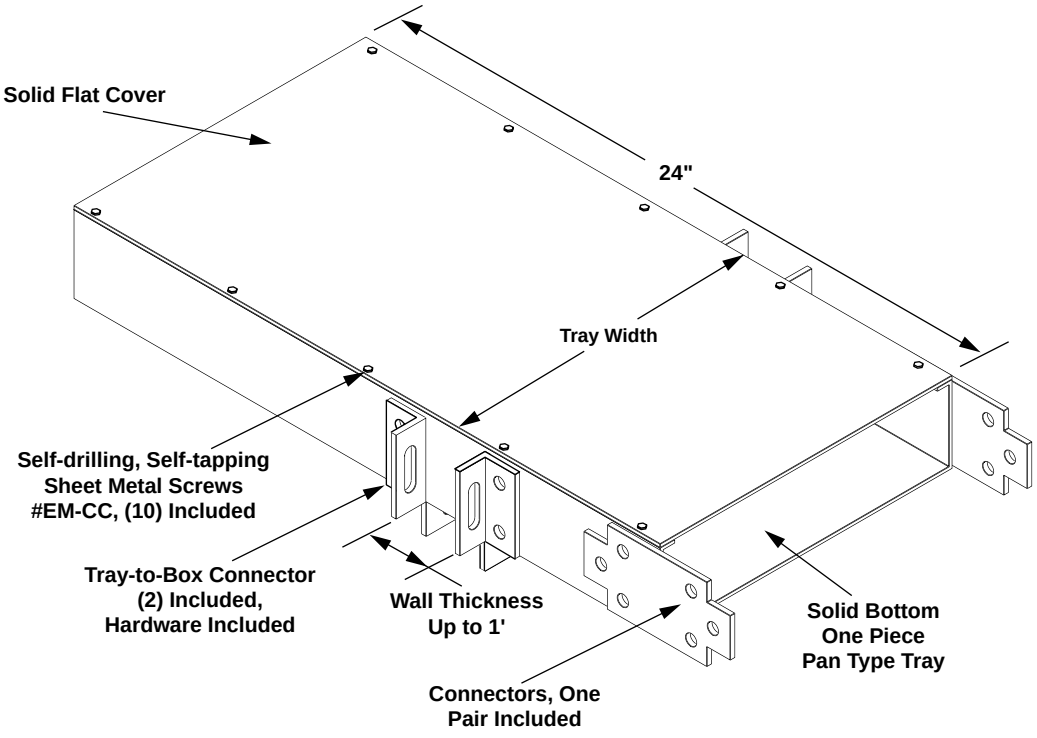
WALL PENETRATING SLEEVE ASSEMBLY –

Part No. SS-890-42-(W)-*

W = Tray Width
*=Fitting 3-Digit Prefix

.

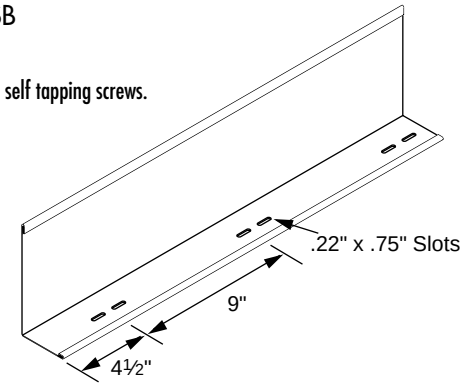
NOTE: Standard penetration sleeves are manufactured from mill galvanized steel.
Aluminum sleeves are available upon request.



BARRIER STRIP –STRAIGHT SECTION

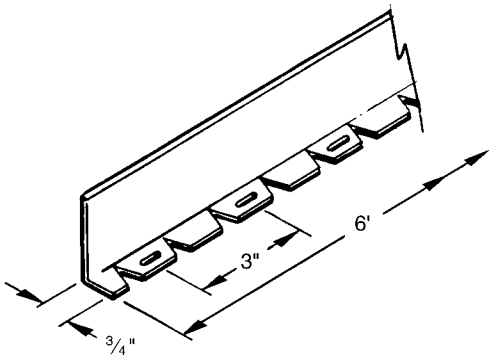
Part No. SB

Furnished with 8 self tapping screws.



BARRIER STRIP – HORIZONTAL FITTING

Part No. FB



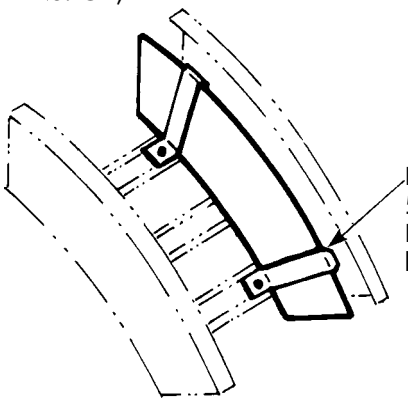
Load
3
4
5
6

Example: 34-
lon

Furnished with

BARRIER STRIP VERTICAL ELBOW – OUTSIDE & INSIDE

Part No. OB, IB



Barrier Strip Clamp Part No. 50172
Furnished with vertical elbow barriers

Catal

Load Depth	Finish	Bend
3	2 (Mill Galv.)	9
4	3 (HDGAF)	6
5	4 (Alum.)	45
6	U (304 SS)	30

Example: 34-900B-12 for 3" load depth, aluminu
radius.
(OB Vert. Elbow outside shown)
Furnished with sufficient clamp assemblies for installa
Additional clamp assemblies may be ordered separately

NYLON BARRIER SPLICE & PROTECTOR

Part No. BSP-L

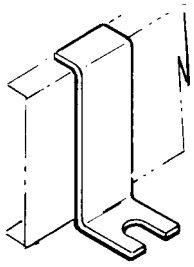
Length: Splice -5"
Protector -144"

COVER SCREW

Part No. EM-CC (electrogalv. steel)
Part No. EM-CC

HOLD-DOWN CLAMP & EXPANSION GUIDE

(For expansion guide clamp, add suffix "EX" to catalog number.)



Catalog Number

Load Depth	Basic Number
3	-9039 (Aluminum)
4	-9040 (Electrogalv. Steel)
5	-9041 (HDGAF)
6	-9042 (304SS)

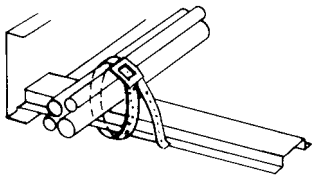
Example: 3-9039-EX for 3" load depth, expansion guide.
Hardware purchased separately to suit support system.
Complete Kit add "-HDW" to Part Number Above.
Hardware Kit List:
(2) Hold-Down Clamps
(2) 1/2" - 13 x 11/2" Cap Screw
(2) 1/2" Flat Washer
(2) Clamping Nut (Strut Nut)

CABLE STRAP (NYLON)

Part No. NSP (100')

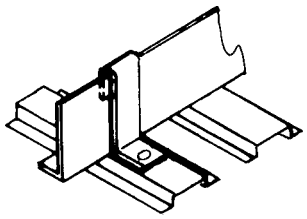
FASTENING BUCKLES

Part No. NFB (100 pcs.)



BARRIER STRIP CLAMP (OPTIONAL)

Part No. 50172

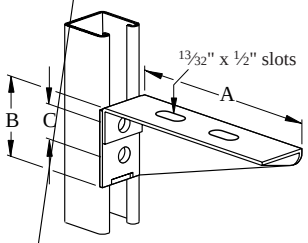


No. 10 bolt, nut, washer and lockwasher furnished.

Catalog Number

Load Depth	Finish	Basic No.
3	2 (Mill Galv.)	-50172
4	3 (HDGAF)	
5	4 (Alum.)	
6	U (304 SS)	

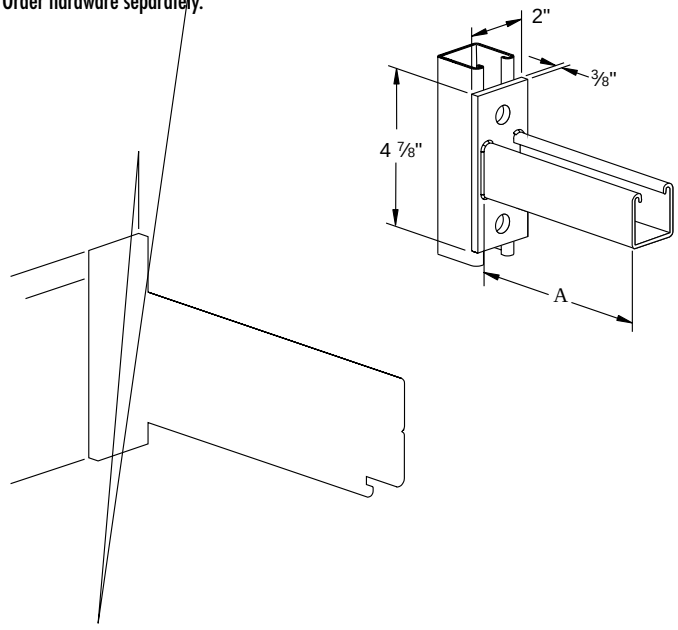
Example: 34-5072 for 3" load depth, aluminum clamp.



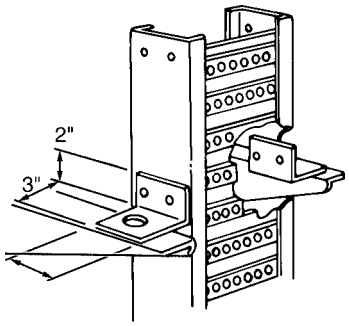
Catalog No.	Trough Width	Ladder Width	Dimension "A"	Dimension "B"	Dimension "C"	End-Load Rating*
9702-06	6"	-	6½"	4½"	3"	450 lbs.
9702-09	9"	-	9½"	4½"	3"	375 lbs.
9702-12	12"	6"	12½"	4½"	3"	300 lbs.
9702-15	-	9"	15½"	4½"	3"	260 lbs.
9702-18	18"	12"	18½"	6"	4½"	225 lbs.
9702-24	24"	18"	24½"	6"	4½"	200 lbs.
9702-30	-	24"	30½"	6"	4½"	175 lbs.

* Uniform load rating is normally twice the end load rating.

For use with all types of Cope Ladder and Trough systems. Finish is mill-galvanized.
Order hardware separately.



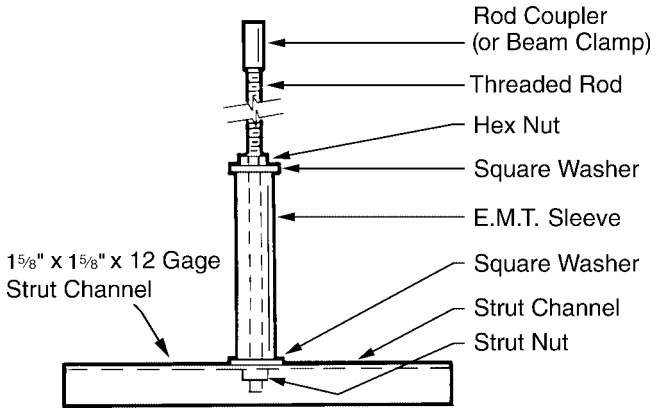
VERTICAL SUPPORTS



Cat. No.	For Use With
9043-37	4¼" Overall Height Side Members
9043	5¼" Overall Height Side Members
9025-98	6¼" & 7¼" Overall Height Side Members

Tray Supports can be bolted anywhere along the straight runs. They can be bolted directly onto the coupler plates at splices of straight runs and riser fittings, or they can be bolted at any place in the run by field-drilling side rails. Trough supports are used with either ⅜" or ½" hanger rods. Finish is electrogalvanized.

SINGLE ROD HANGER SUPPORT

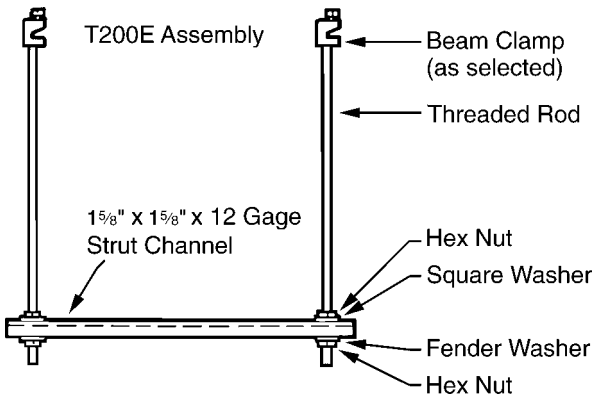


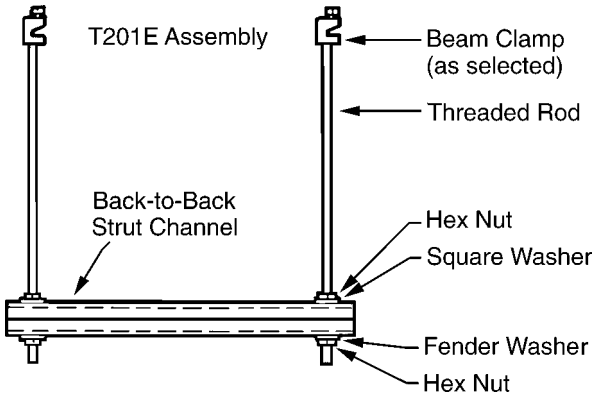
Catalog Number

Assy. Type	Channel Length*	Channel Finish**	Rod Diameter	Rod Length	Beam Clamp
P200	14" (356mm)	GV (Pre-Galv)	38=⅜" (9.53mm)	000 - No Rod	A - Bridgeport
	17" (432mm)	HG (Hot Dipped Galv)	12=½" (12.7mm)	036 - 36" (914mm)	B - P2622
	20" (508mm)			072 - 72" (1828mm)	O - No Clamp
	26" (661mm)			120 - 120" (3048mm)	R - Rod Coupler
	32" (813mm)			144 - 144" (3658mm)	S - Special
	38" (966mm)				
	44" (1118mm)				

Example: P200-20-GV-12-036-B is a Single 20" pre-galvanized channel with ½" x 36" drop rod and P2622 clamp.
NOTE: *Order channel length 8" longer than tray width. For example, 44" channel for 36" tray.
** Other channel types and finishes available upon request. Contact factory.

TRAPEZE HANGER SUPPORT



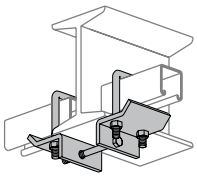


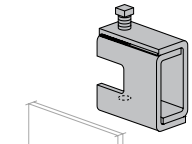
Catalog Number

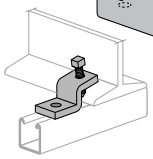
Assy. Type	Channel Length*	Channel Finish**	Rod Diameter	Rod Length	Beam Clamp
T200E	16" (407mm)	GV (Pre-Galv)	38=⅜" (9.53mm)	000 - No Rod	A - Bridgeport
T201E	19" (483mm)	HG (Hot Dipped Galv)	12=½" (12.7mm)	036 - 36" (914mm)	B - P2622
	22" (559mm)			072 - 72" (1828mm)	O - No Clamp
	28" (712mm)			120 - 120" (3048mm)	R - Rod Coupler
	34" (864mm)			144 - 144" (3658mm)	S - Special
	40" (1017mm)				
	46" (1169mm)				

Example: T200E-22-GV-12-036-B is a Single 22" pre-galvanized channel with ½" x 36" drop rod and P2622 clamp.
NOTE: *Order channel length 10" longer than tray width. For example, 46" channel for 36" tray.
** Other channel types and finishes available upon request. Contact factory.

Beam Clamps







Brackets

Concrete Inserts

Framing Fittings

Pipe Clamps

Trolleys

Post Bases

Electrical Fittings

Pipe Rollers

Pipe Hangers

Spring Nuts

Cope cable rollers are easily mounted and removed and are applicable for small control cables as well as the largest armored cables. All bearing wheels turn independently with a minimum of friction. The freely running wheels are smooth surfaced and closely spaced to prevent cable damage.

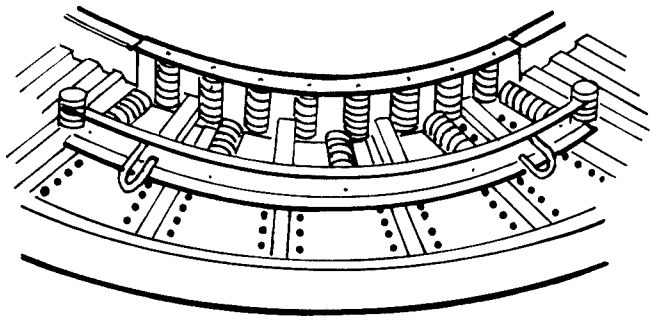
Cable roller assemblies consist of painted steel frame and zinc plated wheels. Two "J" bolts and mounting hardware are supplied with straight and radius rollers.

90° ROLLER, 24" RADIUS

Part No. 9R-0024

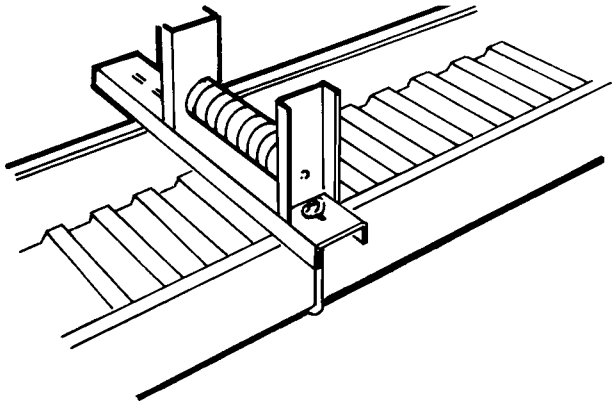
90° ROLLER, 36" RADIUS

Part No. 9R-0036



90° rollers are available in two sizes - 24" and 36" radius. Horizontal and vertical ball bearing rollers assure easy pull and control on 90° turns at all points of contact. Cope 90° rollers can be top or inside mounted on any manufacturer's tray or ladder. Handles the heaviest cable with ease.

STRAIGHT ROLLER (TOP MOUNTED)



Catalog Number	Tray Width
OR-1218	12 to 18" tray
OR-1824	18 to 24" tray
OR-2430	24 to 30" tray
OR-3036	30 to 36" tray

By specifying the NEMA class designation, you will use the simplest, clearest, and most complete method of specification available and automatically incorporate support span in feet, working (allowable) load in pounds per linear foot, a safety factor of 1.5, a concentrated load if present, and, all other design, manufacturing and test standards including electrical continuity.

All you need to do is add the desired load depth, rung spacing, radius of fittings, metal and finish. You may add accessory information pursuant to your project. Here is a typical specification for an outdoor tray system where the working (allowable) load has been determined to be approximately 75 pounds per foot on support spans of 12'-0".

SPECIFICATION - COPE HAT LADDER SYSTEM

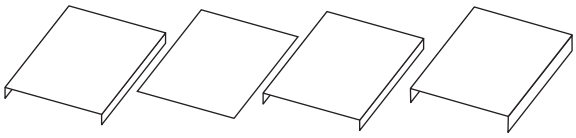
Cable Hat Ladder shall be manufactured by a company regularly engaged in the manufacture of metal cable trays and shall be a member of NEMA. Trays shall conform to NEMA Metal Cable Tray Standard Publication VE-1 (latest issue).

1. Cable ladder shall be NEMA Classification 12B of the widths indicated.
2. Material shall be aluminum alloy 6063-T6 for side rails and 5052-H34 for rungs.
3. Finish shall be natural.
4. Inside load depth to be NEMA Standard 4".
5. Fittings shall be 12" radius for control cables and 24" radius for power cables. (This must be commensurate with the cable manufacturers' recommended minimum bending radius.)
6. All top level trays in stacks, and single runs to have raised peaked, aluminum ventilated covers with heavy duty hold down clamps every 3'-0"
7. Install expansion connectors, expansion guides, and hold down clamps per NEMA Standard VE-1.
8. Where slopes or horizontal bends of trays are not at the Standard NEMA angles, use adjustable connectors. If the angle is too great for cable bending radius, use combinations of fitting and adjustable connectors.
9. Separate all cables of different voltages in the same tray using the manufacturer's standard barriers and barrier hold down system.
10. The Cable Hat Ladder system will be used as an equipment grounding conductor.
11. To save space, fittings shall have no tangents. To facilitate field installation use one pair of universal type connector plates for rigid joints.
12. Cable Ladder to have hat type rungs arc welded to side rails. Rungs shall not protrude below side rails. Outside depth shall not exceed inside depth by more than 5/8". Side rails to have flanges facing in. Trays shall be Cope Hat Ladder System No. 3B4A as manufactured by T.J. Cope, Inc.

COPETROF

5

Corrugated Bottom Cable Trough System for Power, Control, Instrumentation Cable, & Pneumatic Tubing



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NEMA CLASS, PHYSICAL AND STRUCTURAL PROPERTIES

NEMA Standard VE-1 Load/Span Class	NEMA Load/Span	Cope System Number	Cope Systems Certified by CSA	Nominal Load Depth	Side Rail Height	Flange Width (in.)	Section Modulus of 2 Rails Sx (in.3)	Moment of Inertia ix (in.4)	Min X-Sect. Area of 2 Rails per NEC 318-7 (sq. in.)
8A-12A	50 lb./ft.	**5234**	-	3" (76mm)	3½" (89mm)	13/16	0.800	.700	.60
	12' span	**1B44**	-	4" (102mm)	4¼" (108mm)	13/16	0.898	.911	.60
		1B54	**1B54**	5" (127mm)	5¼" (133mm)	13/16	1.142	1.436	.60
		3B64	-	6" (152mm)	6¼" (159mm)	13/16	.1.614	2.360	1.00
12B	75 lb./ft.	**3B44**	-	4" (102mm)	4¼" (108mm)	13/16	1.148	1.158	.60
	12' span	**1B54**	**1B54**	5" (127mm)	5¼" (133mm)	13/16	1.142	1.436	.60
		3B64	-	6" (152mm)	6¼" (159mm)	13/16	1.614	2.360	.60
12C	100 lb./ft.	**5B44**	-	4" (102mm)	4¾" (108mm)	13/16	1.646	1.529	1.00
	12' span	**3B54**	-	5" (127mm)	5¼" (133mm)	13/16	1.522	1.867	1.00
		5B64	-	6" (152mm)	6¼" (159mm)	13/16	1.944	2.933	1.00
16A	50 lb./ft.	**5B44**	-	4" (102mm)	4¼" (108mm)	13/16	1.646	1.529	1.00
	16' span	**7454**	-	5" (127mm)	5¼" (133mm)	1¼	2.396	3.146	1.50
		1D64	-	6" (152mm)	6¼" (159mm)	1¼	2.378	3.601	1.00
16B	75 lb./ft.	**3D44**	-	4" (102mm)	4¼" (108mm)	1¼	2.242	2.203	1.00
	16' span	**7454**	-	5" (127mm)	5¼" (133mm)	1¼	2.396	3.146	1.50
		1D64	-	6" (152mm)	6¼" (159mm)	1¼	2.378	3.601	1.00
16C	100 lb./ft.	**5D44**	-	4" (102mm)	4¼" (108mm)	1¼	2.782	2.869	1.50
	16' span	**3D54**	-	5" (127mm)	5¼" (133mm)	1¼	3.434	4.373	2.00
		7D64	-	6" (152mm)	6¼" (159mm)	1¼	4.186	6.012	2.00
20A	50 lb./ft.	**3D44**	-	4" (102mm)	4¼" (108mm)	1¼	2.242	2.203	1.00
	20' span	**7454**	-	5" (127mm)	5¼" (133mm)	1¼	2.396	3.146	1.50
		1D64	-	6" (152mm)	6¼" (159mm)	1¼	2.378	3.601	1.00
20B	75 lb./ft.	**3D54**	-	5" (127mm)	5¼" (133mm)	1¼	3.434	4.373	2.00
	20' span	**7D64**	-	6" (152mm)	6¼" (159mm)	1¼	4.186	6.012	2.00
20C	100 lb./ft.	**5D54**	-	5" (127mm)	5¼" (133mm)	1¼	3.910	5.010	2.00
	20' span	**7D64**	-	6" (152mm)	6¼" (159mm)	1¼	4.186	6.012	2.00
EXTRA HEAVY DUTY - VERY LONG SPAN TRAYS - SOLID OR VENTILATED BOTTOMS									
		9D64	-	6" (152mm)	6¼" (159mm)	1¼	5.130	7.850	2.00
		7G64	-	6" (152mm)	6¼" (159mm)	2	5.804	8.728	2.00

Note: indicates most common systems.

Selection Chart:

Cope Trof-Aluminum

LOAD AND DEFLECTION DATA FOR ALUMINUM TROF

Working (Allowable) Load Capacity, Evenly Distributed - Tested per NEMA Standard VE-1
Span (Ft.) - Simple Beam - SAFETY FACTOR: 1.5

Cope Sys. No.	6 Ft. Span			8 Ft. Span			10 Ft. Span			12 Ft. Span			16 Ft. Span			20 Ft. Span			24 Ft. Span			25 Ft. Span		
	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k
5234	207	.43	.002	117	.77	.007	75	1.20	.016	52	1.73	.033												
1B44	222	.35	.002	125	.63	.005	80	.99	.012	55	1.42	.026												
1B54	324	.33	.001	182	.59	.003	117	.87	.007	77	1.26	.016												
3B64	359	.22	†	191	.37	.002	115	.55	.005	75	.74	.010												
3B44	354	.45	.001	191	.76	.004	117	1.14	.010	78	1.57	.020												
1B54	324	.33	.001	182	.59	.003	117	.87	.007	77	1.26	.016												
3B64	359	.22	†	191	.37	.002	115	.55	.005	75	.74	.010												
5B44	362	.32	†	251	.69	.003	161	1.08	.007	112	1.55	.014												
3B54	394	.31	†	222	.55	.002	142	.86	.006	100	1.24	.012												
5B64	480	.24	†	257	.40	.002	156	.60	.04	102	.81	.008												
5B44				251	.69	.003	161	1.08	.007	112	1.55	.014	51	2.26	.044	25	2.75	.110						
7454				349	.51	.001	223	.80	.004	155	1.15	.007	79	1.85	.023	51	2.89	.057						
1D64				380	.49	.001	222	.69	.003	154	1.00	.006	78	1.61	.021	50	2.51	.050						
3D44				342	.72	.002	219	1.12	.005	152	1.61	.011	82	2.74	.033	52	4.27	.082						
7454				349	.51	.001	223	.80	.004	155	1.15	.007	79	1.85	.023	51	2.89	.057						
1D64				380	.49	.001	222	.69	.003	154	1.00	.006	78	1.61	.021	50	2.51	.050						
5D44				444	.71	.002	284	1.10	.004	188	1.53	.008	106	2.73	.026	65	4.07	.063						
3D54				525	.55	.001	336	.86	.003	233	1.24	.005	119	2.01	.017	76	3.14	.041						
7D64							404	.76	.002	281	1.09	.004	158	1.94	.012	101	3.02	.030						
3D44										152	1.61	.011	82	2.74	.033	52	4.27	.082						
7454										155	1.15	.007	79	1.85	.023	51	2.89	.057						
1D64										154	1.00	.006	78	1.61	.021	50	2.51	.050						
3D54										233	1.24	.005	119	2.01	.017	76	3.14	.041						
7D64										281	1.09	.004	158	1.94	.012	101	3.02	.030						
5D54										290	1.35	.005	156	2.30	.015	100	3.59	.036						
7D64										281	1.09	.004	158	1.94	.012	101	3.02	.030						
9D64										412	1.22	.003	214	2.00	.009	131	3.01	.023	68	3.23	.048			
7G64										451	1.20	.003	253	2.14	.008	162	3.35	.020	112	4.79	.043	104	5.24	.050

To convert 1.5 safety factor to 2.0 multiply w, d, k by .75

w=Pounds per linear foot
Metirc: for kg/m multiply w by 1.48
d=Deflection (inches
k=Deflection (in.) for each pound of load
†=Denotes k is less than .001 inch

NEMA CLASS, PHYSICAL AND STRUCTURAL PROPERTIES

NEMA Standard VE-1 Loan/Span Class	NEMA Load/Span	Mill Galv. System No.	HDGAF System No.	Type 304 SS System No.	Cope HDGAF Systems Certified by CSA	Nominal Load Depth	Side Rail Height	Flange Width (in.)	Section Modulus of 2 Rails Sx (in.3)	Moment of Inertia Ix (in.4)	Minimum X-Sect. Area of 2 Rails per NEC 318-7 (sq. in.)
12A	50 lb./ft.	**8232**	**8233**	**823U**	-	3" (76mm)	3½" (89mm)	13/16	0.444	.389	.40
	12' span	**8242**	**8243**	**824U**	**8243**	4" (102mm)	4¼" (108mm)	13/16	0.592	.629	.40
		8252	**8253**	**825U**	-	5" (127mm)	5¼" (133mm)	13/16	0.816	1.071	.40
		8262	**8263**	**826U**	-	6" (152mm)	6¼" (159mm)	13/16	1.072	1.676	.70
12B	75 lb./ft.	**4232**	**4233**	**423U**	-	3" (76mm)	3½" (89mm)	13/16	0.674	.590	.70
	12' span	**8B42**	**8B43**	**8B4U**	-	4" (102mm)	4¼" (108mm)	13/16	0.678	.685	.40
		8252	**8253**	**825U**	-	5" (127mm)	5¼" (133mm)	13/16	0.816	1.071	.40
		8262	**8263**	**826U**	-	6" (152mm)	6¼" (159mm)	13/16	1.072	1.676	.70
12C	100 lb./ft.	**6B42**	**6B43**	**6B4U**	-	4" (102mm)	4¼" (108mm)	13/16	0.834	.845	.70
	12' span	**6B52**	**6B53**	**GBSU**	-	5" (127mm)	5¼" (133mm)	13/16	1.140	1.436	.70
		6262	**6263**	**626U**	-	6" (152mm)	6¼" (159mm)	13/16	1.330	2.079	.70
16A	50 lb./ft.	**8D42**	**8D43**	**8D4U**	-	4" (102mm)	4¼" (108mm)	1¼	0.852	.868	.40
	16' span	**6452**	**6453**	**645U**	-	5" (127mm)	5¼" (133mm)	1¼	1.280	1.680	.70
		6462	**6463**	**646U**	-	6" (152mm)	6¼" (159mm)	1¼	1.652	2.580	.70
16B	75 lb./ft.	**6D42**	**6D43**	**6D4U**	-	4" (102mm)	4¼" (108mm)	1¼	1.056	1.076	.70
	16' span	**6452**	**6453**	**645U**	-	5" (127mm)	5¼" (133mm)	1¼	1.280	1.680	.70
		6462	**6463**	**646U**	-	6" (152mm)	6¼" (159mm)	1¼	1.652	2.580	.70
16C	100 lb./ft.	**4D42**	**4D43**	**4D4U**	-	4" (102mm)	4¼" (108mm)	1¼	1.298	1.326	1.00
	16' span	**6452**	**6453**	**645U**	-	5" (127mm)	5¼" (133mm)	1¼	1.280	1.680	.70
		6462	**6463**	**646U**	-	6" (152mm)	6¼" (159mm)	1¼	1.652	2.580	.70
20A	50 lb./ft.	**6D42**	**6D43**	**6D4U**	-	4" (102mm)	4¼" (108mm)	1¼	1.056	1.076	.70
	20' span	**6452**	**6453**	**645U**	-	5" (127mm)	5¼" (133mm)	1¼	1.280	1.680	.70
		6462	**6463**	**646U**	-	6" (152mm)	6¼" (159mm)	1¼	1.652	2.580	1.00
20B	75 lb./ft.	**2D42**	**2D43**	**2D4U**	-	4" (102mm)	4¼" (108mm)	1¼	1.758	1.802	1.00
	20' span	**4D52**	**4D53**	**4D5U**	-	5" (127mm)	5¼" (133mm)	1¼	1.744	2.209	1.00
		6D62	**6D63**	**6D6U**	-	6" (152mm)	6¼" (159mm)	1¼	1.814	2.743	1.00
20C	100 lb/ft.	**2D52**	**2D53**	**2D5U**	-	5" (127mm)	5¼" (133mm)	1¼	2.370	3.013	1.50
	20' span	**4D62**	**4D63**	**4D6U**	-	6" (152mm)	6¼" (159mm)	1¼	2.240	3.389	1.00
EXTRA HEAVY DUTY - VERY LONG SPAN TRAYS - SOLID OR VENTILATED BOTTOMS											
		2D62	**2D63**	**2D6U**	-	6" (152mm)	6¼" (159mm)	1¼	3.056	4.635	1.50
		11D62	**11D63**	**11D6U**	-	6" (152mm)	6¼" (159mm)	1¼	3.536	5.315	1.50

Note: Indicates most common systems.

LOAD AND DEFLECTION DATA FOR STEEL TROF

Working (Allowable) Load Capacity, Evenly Distributed-Tested per NEMA Standard VE-1
Span (ft.)-Simple Beam - SAFETY FACTOR: 1.5

Cope Sys. No.	6 Ft. Span			8 Ft. Span			10 Ft. Span			12 Ft. Span			16 Ft. Span			20 Ft. Span			24 Ft. Span			25 Ft. Span		
	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k	w	d	k
8232/3/U	230	.30	.001	126	.52	.004	79	.79	.010	53	1.11	.021												
8242/3/U	292	.23	†	164	.42	.003	103	.63	.006	69	.89	.013												
8252/3/U	383	.18	†	210	.31	.001	127	.46	.004	83	.62	.007												
8262/3/U	357	.11	†	194	.18	†	119	.28	.002	79	.38	.005												
4232/3/U	358	.30	†	197	.53	.003	124	.81	.007	83	1.13	.014												
8B42/3/U	360	.26	†	198	.46	.002	124	.70	.006	84	.98	.012												
8252/3/U	383	.18	†	210	.31	.001	127	.46	.004	83	.62	.007												
8262/3/U	357	.11	†	194	.18	†	119	.28	.002	79	.38	.005												
6B42/3/U	453	.27	†	249	.47	.002	156	.71	.005	106	1.00	.009												
6B52/3/U	591	.21	†	325	.36	.001	203	.55	.003	137	.77	.006												
6262/3/U	460	.11	†	250	.19	†	154	.29	.002	103	.40	.004												
8D42/3/U				290	.53	.002	182	.81	.004	126	1.17	.009	65	1.91	.029									
6452/3/U				444	.42	†	273	.63	.002	186	.89	.005	100	1.51	.015									
6462/3/U				574	.42	†	367	.55	.001	245	.76	.003	123	1.22	.010									
6D42/3/U				381	.56	.001	244	.88	.004	169	1.27	.008	88	2.08	.024									
6452/3/U				444	.42	†	273	.63	.002	186	.89	.005	100	1.51	.015									
6462/3/U				574	.42	†	367	.55	.001	245	.76	.003	123	1.22	.010									
4D42/3/U				487	.58	.001	312	.91	.003	216	1.31	.006	113	2.16	.019									
6452/3/U				444	.42	†	273	.63	.002	186	.89	.005	100	1.51	.015									
6462/3/U				574	.42	†	367	.55	.001	245	.76	.003	123	1.22	.010									
6D42/3/U										169	1.27	.008	88	2.08	.024	52	2.98	.057						
6452/3/U										186	.89	.005	100	1.51	.015	53	1.94	.037						
6462/3/U										245	.76	.003	123	1.22	.010	66	1.59	.024						
2D42/3/U										304	1.36	.004	159	2.24	.014	94	3.23	.034						
4D52/3/U										280	1.02	.004	145	1.67	.012	85	2.40	.028						
6D62/3/U										269	.80	.003	139	1.28	.009	81	1.82	.022						
2D52/3/U										395	1.05	.003	206	1.74	.008	121	2.50	.021						
4D62/3/U										296	.79	.003	152	1.28	.008	105	1.91	.018						
2D62/3/U										390	.85	.002	221	1.40	.006	149	2.00	.013	79	1.91	.024	73	2.38	.033
11D62/3/U										434	.66	†	244	1.17	.005	156	1.82	.012	108	2.62	.024	100	2.85	.029

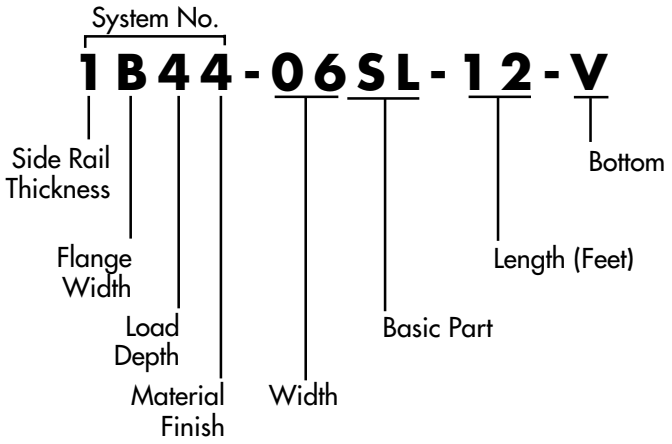
To convert 1.5 safety factor to 2.0 multiply w, d, k by .75

w = Pounds per linear foot
Metric: for kg/m multiply by 1.48
d = Deflection (inches)
k = Deflection (in.) for each pound of load
† = Denotes k is less than .001 inch

HOW TO ORDER:

Order by the Cope full catalog numbers given in this catalog. Please pay careful attention to the part numbering structure. Example: Catalog No. 1B44-06SL-12-V is a 4-inch load depth aluminum ladder with a 13⁄16" flange, 6 inches wide, straight length 12 feet long, with ventilated bottom.

STRAIGHT LENGTH



SYSTEM NUMBER (STRAIGHT SECTION ONLY) – The first four digits make up the system number which identifies the structural, dimensional and material characteristics of the straight length. It is made up of the side rail digits indicating the side rail thickness and flange width, the load depth (inside, in inches) and material finish (galvanized, aluminum or coated).

System Number

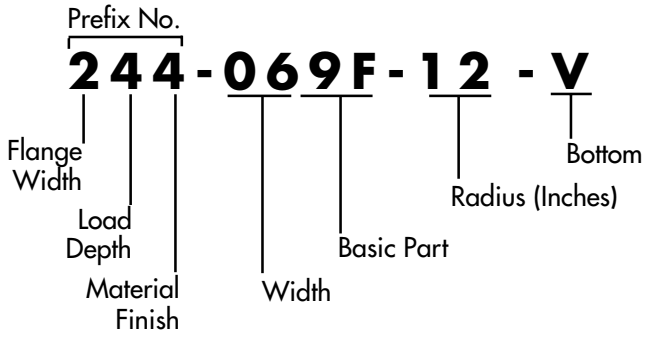
Thickness Steel (Ga.)	Flange Width	Load Depth	Material Finish
8 - 18 ga.	2 - 13⁄16" (21mm)	3" (76mm)	2 - Mill-Galv.
6 - 16 ga.	4 - 1¼" (32mm)	4" (102mm)	3 - HDGAF
4 - 14 ga.	7 - 2" (51mm)	5" (127mm)	4 - Aluminum
2 - 12 ga.		6" (152mm)	U - 304SS
11 - 11 ga.			
	*B - 13⁄16" (21mm)		
	*D - 1¼" (32mm)		
	*G - 2" (51mm)		

Thickness Alum (in.)
1- thinner
3-
5- **
7-
9- thicker

*Stiffened Upper Flange

**Alum. extruded side rails are individually engineered to loads and spans.

FITTINGS



PREFIX NUMBER (FITTINGS ONLY) – Fittings are ordered using the 3-digit prefix number given in the charts on the fitting pages. Fittings do not have stiffened upper flanges.

WIDTH – Identifies the inside width of the tray in inches.

BASIC PART NUMBER – Identifies the straight length, fitting or accessory.

SECONDARY DIMENSION NUMBER – Identifies the length of a straight section in feet, the radius of a fitting in inches or the second width of a reducer in inches.

BOTTOM TYPE – Identifies the type bottom: V (Ventilated) or S (Solid) Example: 1B44-06SL-12-V is a 4" load depth aluminum Trof with a 13⁄16" flange, 6" wide, straight length 12' long with a ventilated bottom.

Description

Width (in.)	Basic Part Number	Length	Bottom Type
-06=6" (152mm)	SL (Straight Len.)	- 12' (3.7m)	-S (Solid)
-09=9" (229mm)	9F (90° Horiz. El.)	- 24' (7.3m)	-V (Ventilated)
-12=12" (305mm)	6F (60° Horiz. El.)	- 10' (3m)	
-18=18" (457mm)	4F (45° Horiz. El.)	- 20' (6m)	
-24=24" (610mm)	3F (30° Horiz. El.)		
-30=30" (762mm)	90 (90° Out. Vert.El.)		
-36=36" (914mm)	60 (60° Out. Vert. El.)		
	40 (45° Out. Vert. El.)		
	30 (30° Out. Vert. El.)		
	9I (90° In. Vert. El.)		
	6I (60° In. Vert. El.)		
	4I (45° In. Vert. El.)		
	3I (30° In. Vert. El.)		
	FT (Horiz. Tee)		
	FC (Horiz. Cross)		
	VT (Vert. Tee)		
	SR (Vert. Cable Support Elbow)		
	ST (Straight Reducer)		
	RH (Right Hand Reducer)		
	LH (Left Hand Reducer)		
	AF (Adjustable Elbow)		
	RY & LY (45° "Y" Branch)		

Radius (in.)
-12=12" (305mm)
-24=24" (610mm)
-36=36" (914mm)

CSA System Selection Chart:

Cope Ladder-Type Cabletrough

..... Performance- CSA C22.2 Classes .....

CSA Class See CSA Std. C22.2	Cope System Certified by CSA	Load Depth	Side Rail Height	Flange Width	Max.Load (Kg/m²)	Maximum Support Span	Deflection	Meets CSA Elec. Tests
ALUMINUM- Safety Factor: 1.5								
C1	1B54	4¾" (121mm)	5¼" (133mm)	13⁄16" (21mm)	97	3m	12.3mm	Yes
STEEL- Class I Coating (HDGAF) Safety Factor: 1.5								
C1	8243	3¾" (95mm)	4¼" (108mm)	13⁄16" (21mm)	97	3m	9.7mm	Yes

CSA LOADS

Cope systems given in these charts are for projects that require cabletroughs certified by the Canadian Standards Association standard number C22.2 No. 126. Where CSA C22.2 is not mandatory you may want to consider one of the other Cope systems offered on the selection charts (page 5-4 & 5-6). Loads for CSA classes C1, D1, and E when supported on shorter spans are given in the following chart:

FACTOR OF SAFETY: 1.5

CLASS	1.5M	2.0M	2.5M	3.0M	4.0M	5.0M	6.0M
C1	259	164	119	97	-	-	-
D1	-	-	-	179	113	82	67
E	-	-	-	299	189	137	112

RECEIVING, INSTALLING, AND MAINTENANCE

The proper care and handling of cabletroughs by the receiver and installers is very important to insure a safe installation that will meet the intended service life. Cope has available an installation guide to assist the installers and those who will maintain the installed system

.

DIMENSIONS AND STRUCTURAL PROPERTIES: COPE CSA SYSTEMS

The performance of the Cope cabletrough systems certified by CSA is given above. Structural properties of straight sections, though not required to be listed, are given in the Cope NEMA selection charts, in English units. Dimensions of straight sections and certified fittings are furnished in English and metric units for use in layout and/or entry into computerized systems.

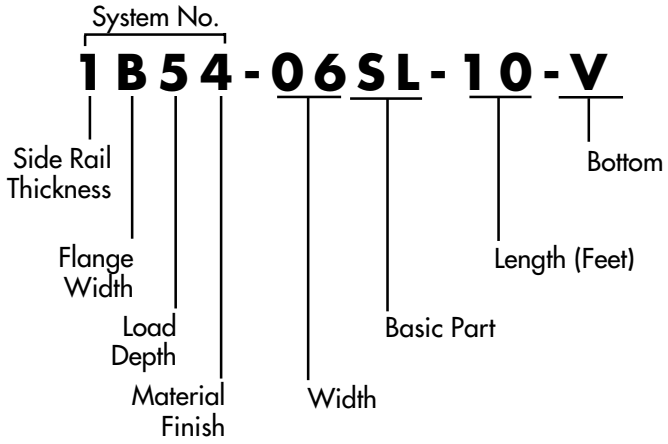
NOTE: For other CSA approved systems please contact the factory.

Cope CSA Standards C22-2 Cabletrough Ventilated & Solid Bottom Type

HOW TO ORDER:

Explanation of Cope's Canadian Standards cable tray catalog numbers is described below. Use the system numbers given in selection charts for straight sections, or the fitting prefix numbers given in fitting tables. Be sure to follow system number or the fitting prefix with the item "description" number. The list below gives the CSA certified items carrying the CSA label.

STRAIGHT LENGTH



SYSTEM NUMBER (STRAIGHT SECTION ONLY) – The first four digits make up the system number which identifies the structural, dimensional and material characteristics of the straight length. It is made up of the side rail digits indicating the side rail thickness and flange width, the load depth (inside, in inches) and material finish (galvanized, aluminum or coated).

System Number

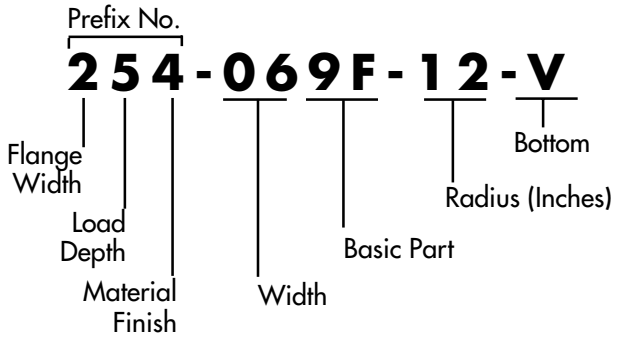
Thickness Steel (Ga.)	Flange Width	Load Depth	Material Finish
8 - 18 ga.	2 - 13/16" (21mm)	3¾" (95mm)	3 - HDGAF, CSA Class 1
6 - 16 ga.	*B - 13/16" (21mm)	5¾" (121mm)	4 - Aluminum Plain Finish
	*D - 1¼" (32mm)		

Thickness Alum (in.)**
1- thinner
↓
3- thicker

*Stiffened Upper Flange

**Alum. extruded side rails are individually engineered to loads and spans.

FITTINGS



PREFIX NUMBER (FITTINGS ONLY) – Fittings are ordered using the 3-digit prefix number given in the charts on the fitting pages. Fittings do not have stiffened upper flanges.

WIDTH – Identifies the inside width of the tray (in inches).

BASIC PART NUMBER – Identifies the straight length, fitting or accessory.

SECONDARY DIMENSION NUMBER – Identifies the length of a straight section (in feet), the radius of a fitting (in inches) or the second width of a reducer (in inches).

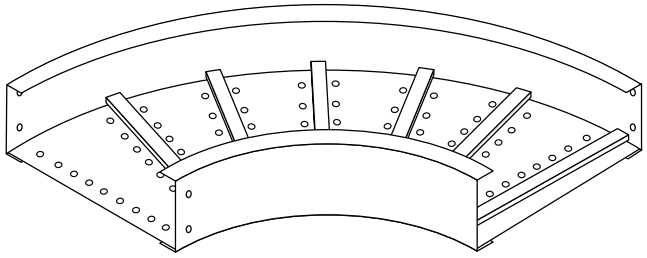
BOTTOM TYPE – Identifies the type bottom: V (Ventilated) or S (Solid)

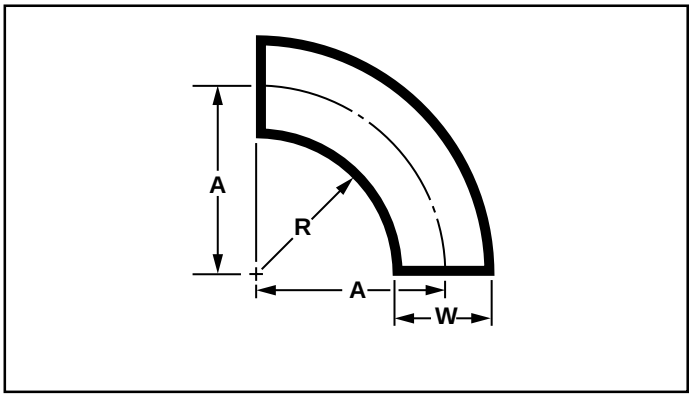
Description

Width (in.)	Basic Part Number	Length	Bottom
06=6" (152mm)	SL (Straight Length)	10 - 10' (3m)	-V (ventilated)
09=9" (229mm)	9F (90° Horiz. Elbow)	20 - 20' (6m)	-S (solid)
12=12" (305mm)	6F (60° Horiz. Elbow)		
18=18" (457mm)	4F (45° Horiz. Elbow)		
24=24" (610mm)	3F (30° Horiz. Elbow)		
30=30" (762mm)	90 (90° Out. Vert. Elbow)		
36=36" (914mm)	60 (60° Out. Vert. Elbow)		
	40 (45° Out. Vert. Elbow)		
	30 (30° Out. Vert. Elbow)		
	9I (90° In. Vert. Elbow)		
	6I (60° In. Vert. Elbow)		
	4I (45° In. Vert. Elbow)		
	3I (30° In. Vert. Elbow)		
	FT (Horiz. Tee)		
	FC (Horiz. Cross)		
	VT (Vert. Tee)		
	SR (Vert. Cable Support Elbow)		
	ST (Straight Reducer)		
	RH (Right Hand Reducer)		
	LH (Left Hand Reducer)		
	AF (Adjustable Elbow)		
	RY & LY (45° "Y" Branch)		

Radius (in.)
12=12" (305mm)
24=24" (610mm)
36=36" (914mm)

PART NO. 9F





COPE FITTINGS are offered in 12", 24" and 36" radius. When small or in-between angles are needed, use Cope's Adjustable Connectors.

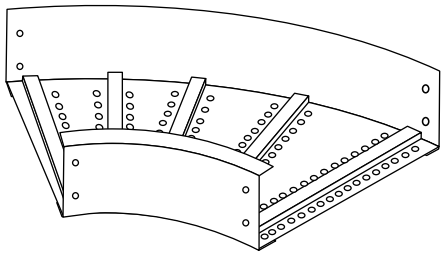
3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	2 - Mill Galv.	.60	—	.40	—
	4	3 - HDGAF	.60	.60	.40	.70
	5	4 - Alum.	1.00	1.00	.70	.70
	6	U - 304 SS	1.00	1.00	.70	1.00

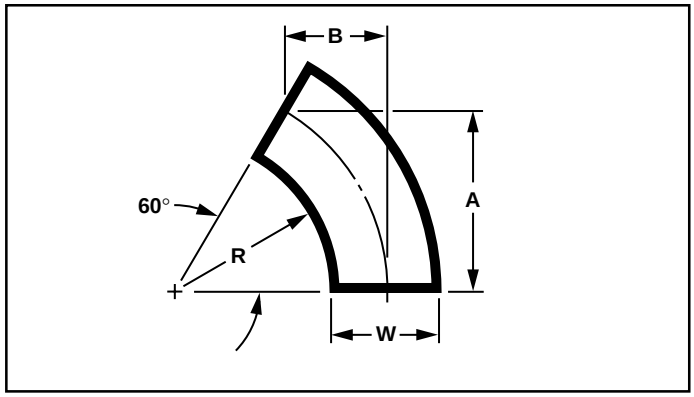
CSA Certified for CSA Systems

Radius - R	Width - W		Catalog Number	"A" Dimension	
12" (305mm)	6"	(152mm)	*Prefix*- 069F-12	15"	(381mm)
	9"	(229mm)	*Prefix*- 099F-12	16½"	(419mm)
	12"	(305mm)	*Prefix*- 129F-12	18"	(457mm)
	18"	(457mm)	*Prefix*- 189F-12	21"	(533mm)
	24"	(610mm)	*Prefix*- 249F-12	24"	(610mm)
	39"	(762mm)	*Prefix*- 309F-12	27"	(686mm)
	36"	(914mm)	*Prefix*- 369F-12	30"	(762mm)
24" (610mm)	6"	(152mm)	*Prefix*- 069F-24	27"	(686mm)
	9"	(229mm)	*Prefix*- 099F-24	28½"	(724mm)
	12"	(305mm)	*Prefix*- 129F-24	30"	(762mm)
	18"	(457mm)	*Prefix*- 189F-24	33"	(838mm)
	24"	(610mm)	*Prefix*- 249F-24	36"	(914mm)
	30"	(762mm)	*Prefix*- 309F-24	39"	(991mm)
	36"	(914mm)	*Prefix*- 369F-24	42"	(1067mm)
36" (914mm)	6"	(152mm)	*Prefix*- 069F-36	39"	(991mm)
	9"	(229mm)	*Prefix*- 099F-36	40½"	(1029mm)
	12"	(305mm)	*Prefix*- 129F-36	42"	(1067mm)
	18"	(457mm)	*Prefix*- 189F-36	45"	(1143mm)
	24"	(610mm)	*Prefix*- 249F-36	48"	(1219mm)
	30"	(762mm)	*Prefix*- 309F-36	51"	(1295mm)
	36"	(914mm)	*Prefix*- 369F-36	54"	(1372mm)

*Add Suffix -V (vented) or -S (solid) to catalog number. Example: 234-129F-12-V

PART NO. 6F





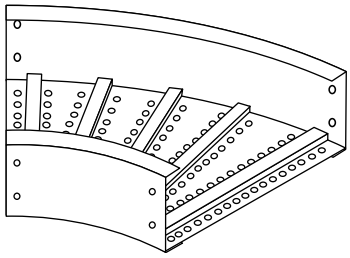
3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	2 - Mill Galv.	.60	—	.40	—
	4	3 - HDGAF	.60	.60	.40	.70
	5	4 - Alum.	1.00	1.00	.70	.70
	6	U - 304 SS	1.00	1.00	.70	1.00

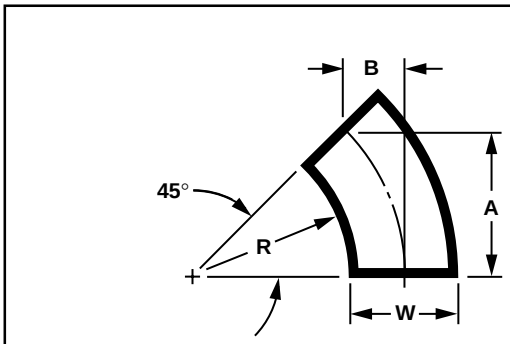
CSA Certified for CSA Systems

Radius - R	Width - W	Catalog Number	"A" Dimension	"B" Dimension
12" (305mm)	6" (152mm)	*Prefix*- 066F-12	13" (330mm)	7½" (191mm)
	9" (229mm)	*Prefix*- 096F-12	14¼" (362mm)	8¼" (210mm)
	12" (305mm)	*Prefix*- 126F-12	15⅝" (397mm)	9" (229mm)
	18" (457mm)	*Prefix*- 186F-12	18¼" (464mm)	10½" (267mm)
	24" (610mm)	*Prefix*- 246F-12	20¾" (527mm)	12" (305mm)
	30" (762mm)	*Prefix*- 306F-12	23⅜" (594mm)	13½" (343mm)
	36" (914mm)	*Prefix*- 366F-12	26" (660mm)	15" (381mm)
24" (610mm)	6" (152mm)	*Prefix*- 066F-24	23⅜" (594mm)	13½" (343mm)
	9" (229mm)	*Prefix*- 096F-24	24¾" (629mm)	14¼" (362mm)
	12" (305mm)	*Prefix*- 126F-24	26" (660mm)	15" (381mm)
	18" (457mm)	*Prefix*- 186F-24	28⅝" (727mm)	16½" (416mm)
	24" (610mm)	*Prefix*- 246F-24	31¼" (794mm)	18" (457mm)
	30" (762mm)	*Prefix*- 306F-24	33¾" (857mm)	19½" (495mm)
	36" (914mm)	*Prefix*- 366F-24	36⅜" (924mm)	21" (533mm)
36" (914mm)	6" (152mm)	*Prefix*- 066F-36	33¾" (857mm)	19½" (495mm)
	9" (229mm)	*Prefix*- 096F-36	35⅛" (892mm)	20¼" (514mm)
	12" (305mm)	*Prefix*- 126F-36	36⅜" (924mm)	21" (533mm)
	18" (457mm)	*Prefix*- 186F-36	39" (991mm)	22½" (572mm)
	24" (610mm)	*Prefix*- 246F-36	41⅝" (1057mm)	24" (610mm)
	30" (762mm)	*Prefix*- 306F-36	44⅛" (1121mm)	25½" (648mm)
	36" (914mm)	*Prefix*- 366F-36	46¾" (1187mm)	27" (686mm)

*Add suffix -V (vented) or -S (solid) to catalog number . Example: 234-126F-12-V

PART NO. 4F





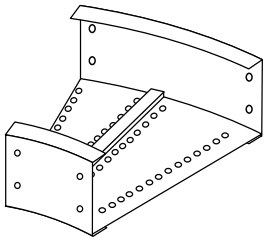
3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	2 - Mill Galv.	.60	—	.40	—
	4	3 - HDGAF	.60	.60	.40	.70
	5	4 - Alum.	1.00	1.00	.70	.70
	6	U - 304 SS	1.00	1.00	.70	1.00

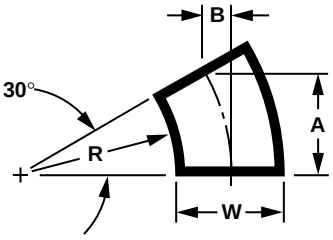
CSA Certified for CSA Systems

Radius - R	Width - W		Catalog Number	"A" Dimension		"B" Dimension	
12" (305mm)	6"	(152mm)	*Prefix*- 064F-12	10 5/8"	(270mm)	4 3/8"	(111mm)
	9"	(229mm)	*Prefix*- 094F-12	11 5/8"	(295mm)	4 7/8"	(124mm)
	12"	(305mm)	*Prefix*- 124F-12	12 3/4"	(324mm)	5 1/4"	(133mm)
	18"	(457mm)	*Prefix*- 184F-12	14 7/8"	(378mm)	6 1/8"	(156mm)
	24"	(610mm)	*Prefix*- 244F-12	17"	(432mm)	7"	(178mm)
	30"	(762mm)	*Prefix*- 304F-12	19 1/8"	(486mm)	7 7/8"	(200mm)
	36"	(914mm)	*Prefix*- 364F-12	21 1/4"	(540mm)	8 3/4"	(222mm)
24" (610mm)	6"	(152mm)	*Prefix*- 064F-24	19 1/8"	(486mm)	7 7/8"	(200mm)
	9"	(229mm)	*Prefix*- 094F-24	20 1/8"	(511mm)	8 3/8"	(213mm)
	12"	(305mm)	*Prefix*- 124F-24	21 1/4"	(540mm)	8 3/4"	(222mm)
	18"	(457mm)	*Prefix*- 184F-24	23 3/8"	(594mm)	9 5/8"	(244mm)
	24"	(610mm)	*Prefix*- 244F-24	25 1/2"	(702mm)	10 1/2"	(267mm)
	30"	(762mm)	*Prefix*- 304F-24	27 5/8"	(702mm)	11 1/2"	(292mm)
	36"	(914mm)	*Prefix*- 364F-24	29 3/4"	(756mm)	12 3/8"	(314mm)
36" (914mm)	6"	(152mm)	*Prefix*- 064F-36	27 5/8"	(702mm)	11 1/2"	(292mm)
	9"	(229mm)	*Prefix*- 094F-36	28 5/8"	(727mm)	11 7/8"	(302mm)
	12"	(305mm)	*Prefix*- 124F-36	29 3/4"	(756mm)	12 3/8"	(314mm)
	18"	(457mm)	*Prefix*- 184F-36	31 7/8"	(810mm)	13 1/4"	(337mm)
	24"	(610mm)	*Prefix*- 244F-36	34"	(864mm)	14 1/8"	(359mm)
	30"	(762mm)	*Prefix*- 304F-36	36 1/8"	(918mm)	15"	(381mm)
	36"	(914mm)	*Prefix*- 364F-36	38 1/4"	(972mm)	15 7/8"	(403mm)

*Add suffix -V (vented) or -S (solid) to catalog number. Example: 234-124F-12-V

PART NO. 3F





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	2 - Mill Galv.	.60	—	.40	—
	4	3 - HDGAF	.60	.60	.40	.70
	5	4 - Alum.	1.00	1.00	.70	.70
	6	U - 304 SS	1.00	1.00	.70	1.00

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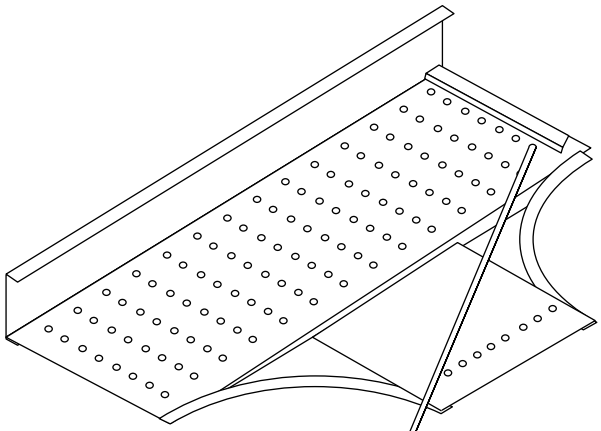
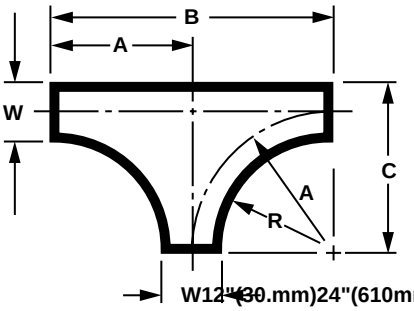
Radius - R	Width - W	Catalog Number	"A" Dimension	"B" Dimension
12" (305mm)	6" (152mm)	*Prefix*- 063F-12	7½" (191mm)	2" (51mm)
	9" (229mm)	*Prefix*- 093F-12	8¼" (210mm)	2¼" (57mm)
	12" (305mm)	*Prefix*- 123F-12	9" (229mm)	2⅜" (60mm)
	18" (457mm)	*Prefix*- 183F-12	10½" (267mm)	2⅞" (73mm)
	24" (610mm)	*Prefix*- 243F-12	12" (305mm)	3¼" (83mm)
	30" (762mm)	*Prefix*- 303F-12	13½" (343mm)	3⅝" (92mm)
	36" (914mm)	*Prefix*- 363F-12	15" (381mm)	4" (102mm)
24" (610mm)	6" (152mm)	*Prefix*- 063F-24	13½" (343mm)	3⅝" (92mm)
	9" (229mm)	*Prefix*- 093F-24	14¼" (362mm)	3⅞" (98mm)
	12" (305mm)	*Prefix*- 123F-24	15" (381mm)	4" (102mm)
	18" (457mm)	*Prefix*- 183F-24	16½" (419mm)	4⅜" (111mm)
	24" (610mm)	*Prefix*- 243F-24	18" (457mm)	4⅞" (124mm)
	30" (762mm)	*Prefix*- 303F-24	19½" (495mm)	5¼" (133mm)
	36" (914mm)	*Prefix*- 363F-24	21" (533mm)	5⅝" (143mm)
36" (914mm)	6" (152mm)	*Prefix*- 063F-36	19½" (495mm)	5¼" (133mm)
	9" (229mm)	*Prefix*- 093F-36	20¼" (514mm)	5½" (140mm)
	12" (305mm)	*Prefix*- 123F-36	21" (533mm)	5⅝" (143mm)
	18" (457mm)	*Prefix*- 183F-36	22½" (572mm)	6" (152mm)
	24" (610mm)	*Prefix*- 243F-36	24" (610mm)	6½" (165mm)
	30" (762mm)	*Prefix*- 303F-36	25½" (648mm)	6⅞" (175mm)
	36" (914mm)	*Prefix*- 363F-36	27" (686mm)	7¼" (184mm)

*Add suffix -V (vented) or -S (solid) to catalog number. Example: 234-123F-12-V

PART NO. FT





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16"	3	2 - Mill Galv.	.60	—	.40	—
4 - 1 1/4"	4	3 - HDGAF	.60	.60	.40	.70
	5	4 - Alum.	1.00	1.00	.70	.70
	6	U - 304 SS	1.00	1.00	.70	1.00

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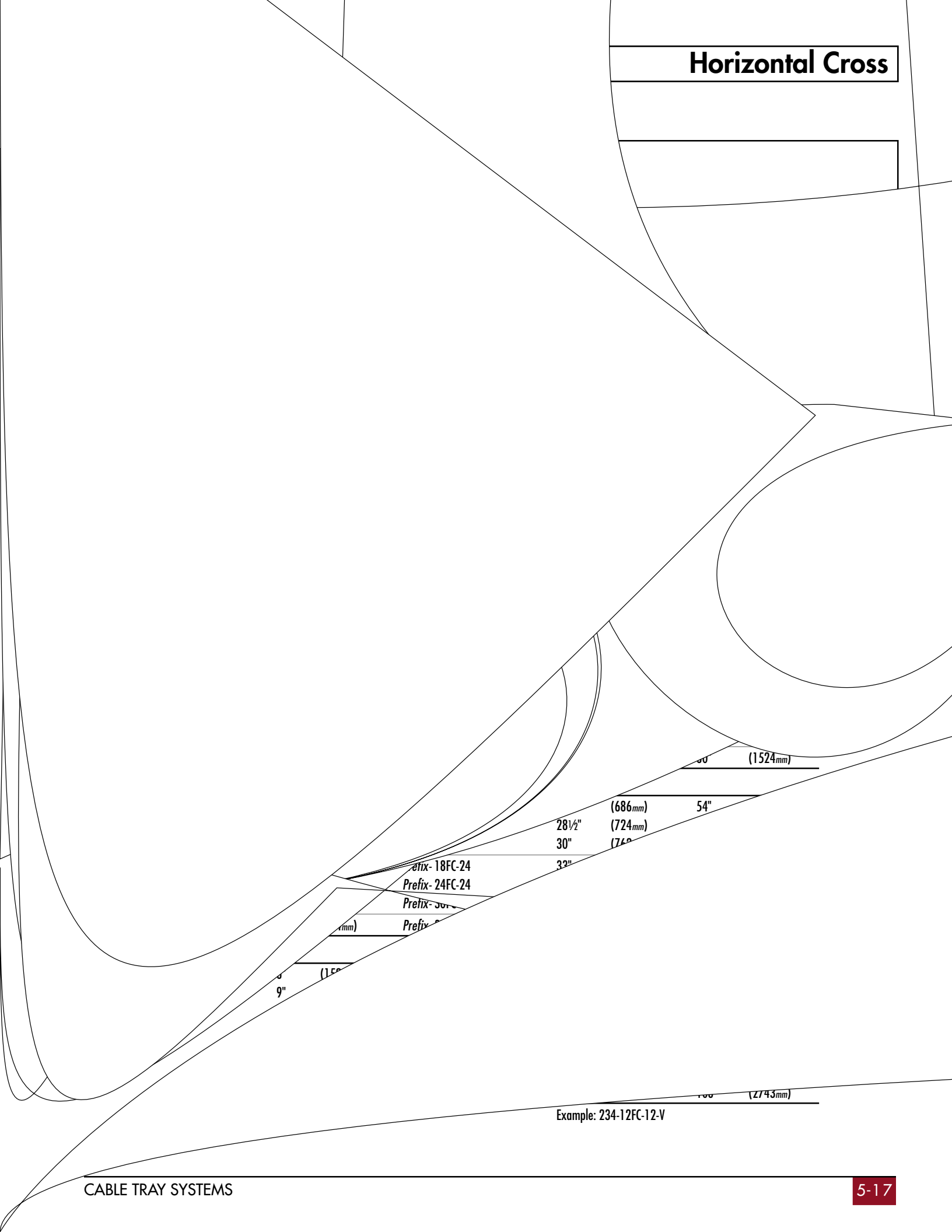
Radius - R	Width - W		Catalog Number	"A" Dimension		"B" Dimension		"C" Dimension	
	6"	(152mm)	*Prefix*- 06FT-12	15"	(381mm)	30"	(762mm)	18"	(457mm)
	9"	(229mm)	*Prefix*- 09FT-12	16½"	(419mm)	33"	(838mm)	21"	(533mm)
	12"	(305mm)	*Prefix*- 12FT-12	18"	(457mm)	36"	(914mm)	24"	(610mm)
	18"	(457mm)	*Prefix*- 18FT-12	21"	(533mm)	42	(1067mm)	30"	(762mm)
	24"	(610mm)	*Prefix*- 24FT-12	24"	(610mm)	48"	(1219mm)	36"	(914mm)
	30"	(762mm)	*Prefix*- 30FT-12	27"	(686mm)	54"	(1372mm)	42"	(1067mm)
	36"	(914mm)	*Prefix*- 36FT-12	30"	(762mm)	60"	(1524mm)	48"	(1219mm)
	6"	(152mm)	*Prefix*- 06FT-24	27"	(686mm)	54"	(1372mm)	30"	(762mm)
	9"	(229mm)	*Prefix*- 09FT-24	28½"	(724mm)	57"	(1448mm)	33"	(838mm)
	12"	(305mm)	*Prefix*- 12FT-24	30"	(762mm)	60"	(1524mm)	36"	(914mm)
	18"	(457mm)	*Prefix*- 18FT-24	33"	(838mm)	66"	(1676mm)	42"	(1067mm)
	24"	(610mm)	*Prefix*- 24FT-24	36"	(914mm)	72"	(1829mm)	48"	(1219mm)
	30"	(762mm)	*Prefix*- 30FT-24	39"	(991mm)	78"	(1981mm)	54"	(1372mm)
	36"	(914mm)	*Prefix*- 36FT-24	42"	(1067mm)	84"	(2134mm)	60"	(1524mm)
	6"	(152mm)	*Prefix*- 06FT-36	39"	(991mm)	78"	(1981mm)	42"	(106mm)
	9"	(229mm)	*Prefix*- 09FT-36	40½"	(1029mm)	81"	(2057mm)	45"	(1143mm)
	12"	(305mm)	*Prefix*- 12FT-36	42"	(1067mm)	84"	(2134mm)	48"	(1219mm)
	18"	(457mm)	*Prefix*- 18FT-36	45"	(1143mm)	90"	(2286mm)	54"	(1372mm)
	24"	(610mm)	*Prefix*- 24FT-36	48"	(1219mm)	96"	(2438mm)	60"	(1524mm)
	30"	(762mm)	*Prefix*- 30FT-36	51"	(1295mm)	102"	(2591mm)	66"	(1676mm)
	36"	(914mm)	*Prefix*- 36FT-36	54"	(1372mm)	108"	(2743mm)	72"	(1829mm)

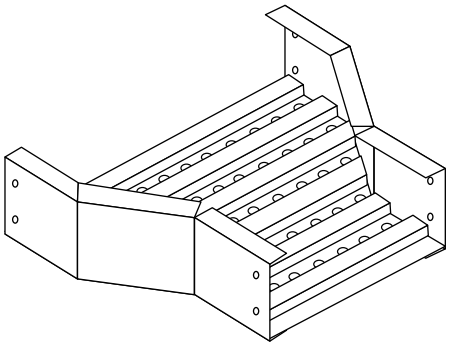
* Add suffix -V (vented) or-S (solid) to catalog number. Example: 234-12FT-12-V

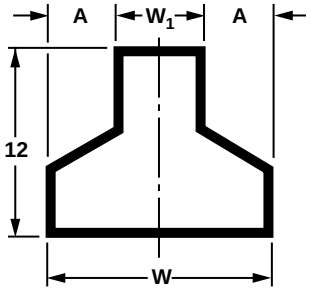
Horizontal Cross



Example: 234-12FC-12-V

PART NO. ST





Straight (ST)

3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	2 - Mill Galv.	.60	—	.40	—
	4	3 - HDGAF	.60	.60	.40	.70
	5	4 - Alum.	1.00	1.00	.70	.70
	6	U - 304 SS	1.00	1.00	.70	1.00

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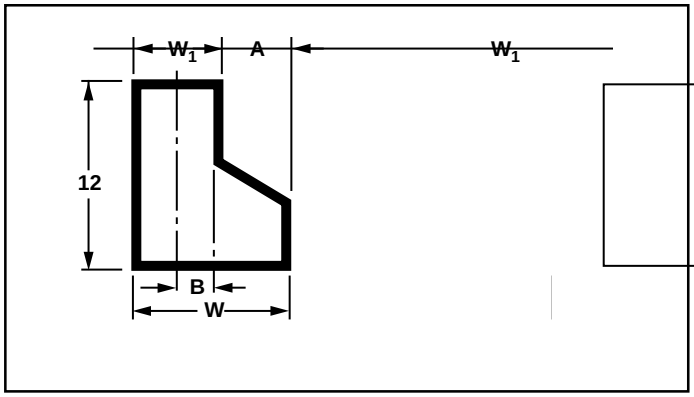
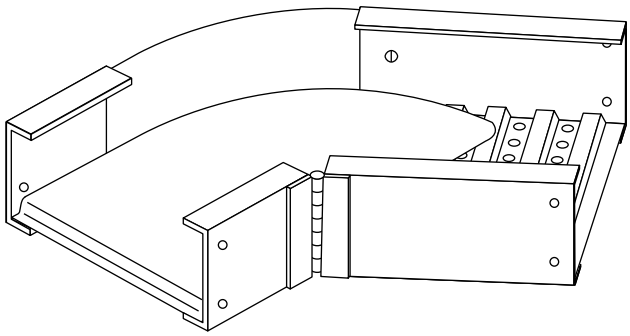
Width - W	Width - W1		Cat. No.–Straight	"A" Dimension	
36" (914mm)	30"	(762mm)	*Prefix*-36ST-30	3"	(76mm)
	24"	(610mm)	*Prefix*-36ST-24	6"	(152mm)
	18"	(457mm)	*Prefix*-36ST-18	9"	(229mm)
	12"	(305mm)	*Prefix*-36ST-12	12"	(305mm)
	9"	(229mm)	*Prefix*-36ST-09	13½"	(343mm)
	6"	(152mm)	*Prefix*-36ST-06	15"	(381mm)
30" (762mm)	24"	(610mm)	*Prefix*-30ST-24	3"	(76mm)
	18"	(457mm)	*Prefix*-30ST-18	6"	(152mm)
	12"	(305mm)	*Prefix*-30ST-12	9"	(229mm)
	9"	(229mm)	*Prefix*-30ST-09	10½"	(267mm)
	6"	(152mm)	*Prefix*-30ST-06	12"	(304mm)
24" (610mm)	18"	(457mm)	*Prefix*-24ST-18	3"	(76mm)
	12"	(305mm)	*Prefix*-24ST-12	6"	(152mm)
	9"	(229mm)	*Prefix*-24ST-09	7½"	(191mm)
	6"	(152mm)	*Prefix*-24ST-06	9"	(229mm)
18" (457mm)	12"	(305mm)	*Prefix*-18ST-12	3"	(76mm)
	9"	(229mm)	*Prefix*-18ST-09	4½"	(114mm)
	6"	(152mm)	*Prefix*-18ST-06	6"	(152mm)
12" (305mm)	9"	(229mm)	*Prefix*-12ST-09	1½"	(38mm)
	6"	(152mm)	*Prefix*-12ST-06	3"	(76mm)
9" (229mm)	6"	(152mm)	*Prefix*-09ST-06	1½"	(38mm)

*Add suffix -V (vented) or -S (solid) to catalog number. Example: 234-36ST-12-V



3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16"	3	2 - Mill Galv.	.60	—	.40	—
4 - 1 1/4"	4	3 - HDGAF	.60	.60	.40	.70
	5	4 - Alum.	1.00	1.00	.70	.70
	6	U - 304 SS	1.00	1.00	.70	1.00

PART NO. AF



3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	Alum		Steel	
			13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	2 - Mill Galv.	.60	—	.40	—
	4	3 - HDGAF	.60	.60	.40	.70
	5	4 - Alum.	1.00	1.00	.70	.70
	6	U - 304 SS	1.00	1.00	.70	1.00

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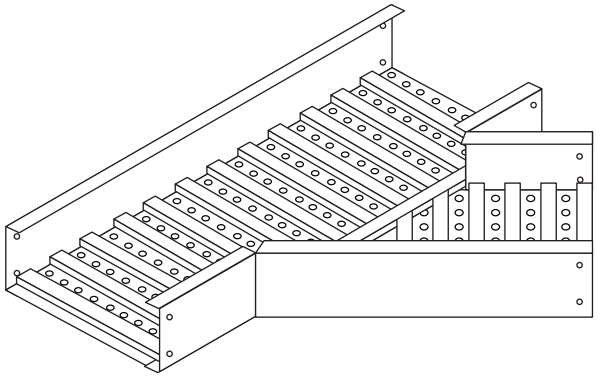
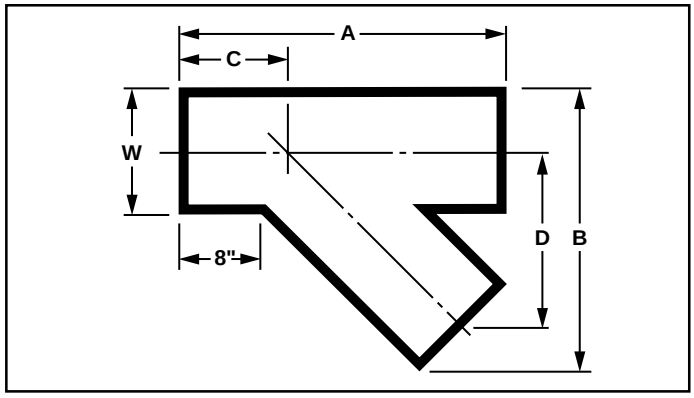
Catalog No.	Width - W		"A" Dimension	
Prefix- 06AF	6"	(152*mm*)	8"	(203*mm*)
Prefix- 09AF	9"	(229*mm*)	11"	(279*mm*)
Prefix- 12AF	12"	(305*mm*)	14"	(356*mm*)
Prefix- 18AF	18"	(457*mm*)	20"	(508*mm*)
Prefix- 24AF	24"	(610*mm*)	26"	(660*mm*)
Prefix- 30AF	30"	(762*mm*)	32"	(813*mm*)
Prefix- 36AF	36"	(914*mm*)	38"	(965*mm*)

Both rails at hinge break to be bonded if fitting is used as equipment grounding conductor. * Add suffix-V (vented) or -S (solid) to catalog number.

PART NO. LY AND RY

(RY Shown)





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	2 - Mill Galv.	.60	—	.40	—
	4	3 - HDGAF	.60	.60	.40	.70
	5	4 - Alum.	1.00	1.00	.70	.70
	6	U - 304 SS	1.00	1.00	.70	1.00

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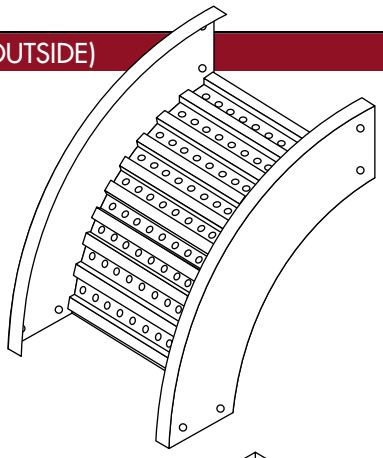
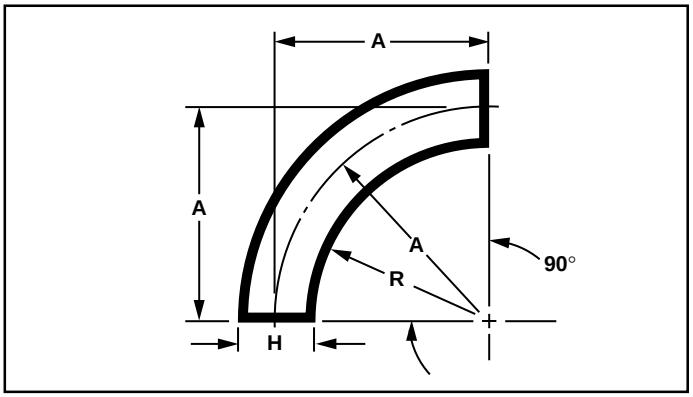
Cat. No.– Left Hand	Cat. No.–Right Hand	Width - W		"A" Dim.		"B" Dim.		"C" Dim.		"D" Dim.	
Prefix- 06LY	*Prefix*- 06RY	6"	(152mm)	22½"	(571mm)	16¼"	(413mm)	11⅜"	(289mm)	11⅛"	(283mm)
Prefix- 09LY	*Prefix*- 09RY	9"	(229mm)	26¾"	(679mm)	21⅜"	(543mm)	13"	(330mm)	13¾"	(349mm)
Prefix- 12LY	*Prefix*- 12RY	12"	(305mm)	31"	(787mm)	26½"	(673mm)	14¾"	(375mm)	16¼"	(412mm)
Prefix- 18LY	*Prefix*- 18RY	18"	(457mm)	39½"	(1003mm)	36¾"	(933mm)	18⅛"	(460mm)	21⅜"	(543mm)
Prefix- 24LY	*Prefix*- 24RY	24"	(610mm)	48"	(1219mm)	47"	(1193mm)	21½"	(546mm)	26½"	(673mm)
Prefix- 30LY	*Prefix*- 30RY	30"	(762mm)	56⅜"	(1432mm)	57¼"	(1454mm)	24¾"	(629mm)	31⅝"	(803mm)
Prefix- 36LY	*Prefix*- 36RY	36"	(914mm)	65"	(1651mm)	67½"	(1714mm)	28¼"	(718mm)	36¾"	(933mm)

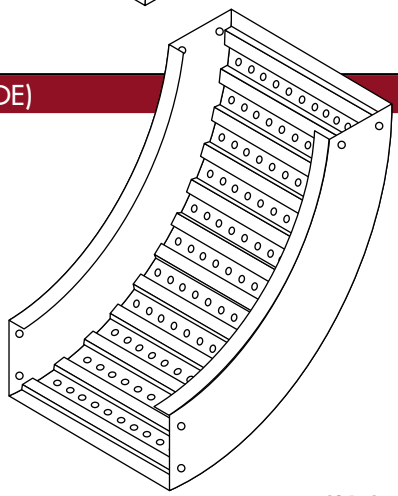
*Add suffix -V (vented) or -S (solid) to catalog number. Example: 234-12RY-V

PART NO. 90 (OUTSIDE)





PART NO. 9I (INSIDE)



3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16"	3	2 - Mill Galv.	.60	—	.40	—
4 - 1 1/4"	4	3 - HDGAF	.60	.60	.40	.70
	5	4 - Alum.	1.00	1.00	.70	.70
	6	U - 304 SS	1.00	1.00	.70	1.00

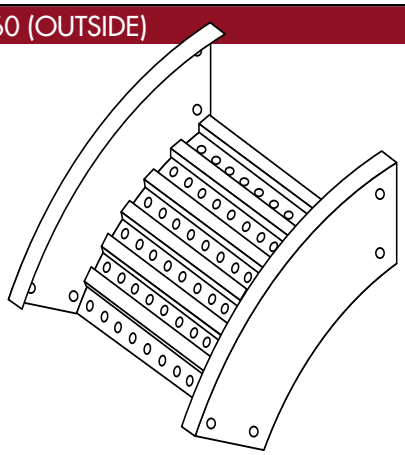
CSA Certified for CSA Systems

Radius - R	"H" Dim.		Cat. No. (Inside)	Cat. No. (Outside)	"A" Dim.	
12" (305mm)	3½"	(89mm)	*Prefix*-(W)9I-12	*Prefix*-(W)90-12	13¾"	(349mm)
	4¼"	(108mm)	*Prefix*-(W)9I-12	*Prefix*-(W)90-12	14⅛"	(359mm)
	5¼"	(133mm)	*Prefix*-(W)9I-12	*Prefix*-(W)90-12	14⅝"	(372mm)
	6¼"	(159mm)	*Prefix*-(W)9I-12	*Prefix*-(W)90-12	15⅛"	(384mm)
24" (610mm)	3½"	(89mm)	*Prefix*-(W)9I-24	*Prefix*-(W)90-24	25¾"	(654mm)
	4¼"	(108mm)	*Prefix*-(W)9I-24	*Prefix*-(W)90-24	26⅛"	(664mm)
	5¼"	(133mm)	*Prefix*-(W)9I-24	*Prefix*-(W)90-24	26⅝"	(676mm)
	6¼"	(159mm)	*Prefix*-(W)9I-24	*Prefix*-(W)90-24	27⅛"	(689mm)
36" (914mm)	3½"	(89mm)	*Prefix*-(W)9I-36	*Prefix*-(W)90-36	37¾"	(959mm)
	4¼"	(108mm)	*Prefix*-(W)9I-36	*Prefix*-(W)90-36	36⅛"	(969mm)
	5¼"	(133mm)	*Prefix*-(W)9I-36	*Prefix*-(W)90-36	36⅝"	(981mm)
	6¼"	(159mm)	*Prefix*-(W)9I-36	*Prefix*-(W)90-36	39⅛"	(994mm)

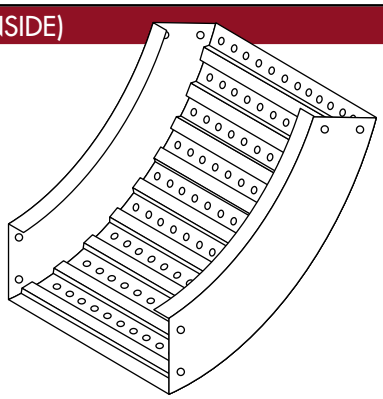
*Add suffix -V (vented) or -S"(solid) to catalog number. Example: 234-1290-12-V

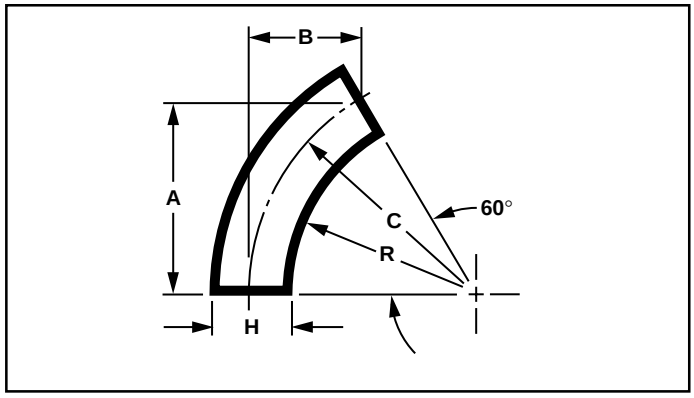
(W) = Width in inches, Use:
06 for 6" w 09 for 9" w 12 for 12" w 18 for 18" w 24 for 24" w 30 for 30" w 36 for 36" w

PART NO. 60 (OUTSIDE)



PART NO. 61 (INSIDE)





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	2 - Mill Galv.	.60	—	.40	—
	4	3 - HDGAF	.60	.60	.40	.70
	5	4 - Alum.	1.00	1.00	.70	.70
	6	U - 304 SS	1.00	1.00	.70	1.00

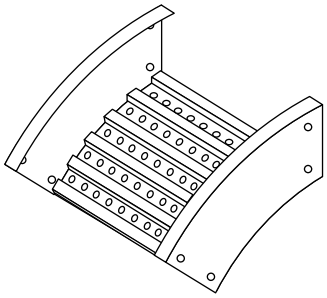
CSA Certified for CSA Systems

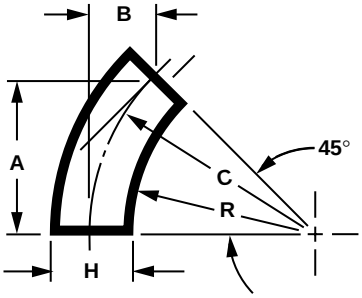
Radius - R	"H" Dim.		Cat. No." (Inside)	Cat. No." (Outside)	"A" Dim.		"B" Dim.		"C" Dim.	
12" (305mm)	3½"	(89mm)	*Prefix*-(W)6I-12	*Prefix*-(W)60-12	11⅞"	(302mm)	6⅞"	(175mm)	13¾"	(349mm)
	4¼"	(108mm)	*Prefix*-(W)6I-12	*Prefix*-(W)60-12	12¼"	(311mm)	7⅛"	(181mm)	14⅛"	(359mm)
	5¼"	(133mm)	*Prefix*-(W)6I-12	*Prefix*-(W)60-12	12⅝"	(321mm)	7⅜"	(187mm)	14⅝"	(372mm)
	6¼"	(159mm)	*Prefix*-(W)6I-12	*Prefix*-(W)60-12	13⅛"	(334mm)	7⅝"	(194mm)	15⅛"	(384mm)
24" (610mm)	3½"	(89mm)	*Prefix*-(W)6I-24	*Prefix*-(W)60-24	22¼"	(565mm)	12⅞"	(327mm)	25¾"	(654mm)
	4¼"	(108mm)	*Prefix*-(W)6I-24	*Prefix*-(W)60-24	22⅝"	(575mm)	13⅛"	(334mm)	26⅛"	(664mm)
	5¼"	(133mm)	*Prefix*-(W)6I-24	*Prefix*-(W)60-24	23⅛"	(588mm)	13⅜"	(340mm)	26⅝"	(676mm)
	6¼"	(159mm)	*Prefix*-(W)6I-24	*Prefix*-(W)60-24	23½"	(597mm)	13"	(330mm)	27⅛"	(689mm)
36" (914mm)	3½"	(89mm)	*Prefix*-(W)6I-36	*Prefix*-(W)60-36	32¾"	(832mm)	18⅞"	(480mm)	37¾"	(959mm)
	4¼"	(108mm)	*Prefix*-(W)6I-36	*Prefix*-(W)60-36	33"	(838mm)	19⅛"	(486mm)	38⅛"	(969mm)
	5¼"	(133mm)	*Prefix*-(W)6I-36	*Prefix*-(W)60-36	33½"	(851mm)	19⅜	(492mm)	38⅝"	(981mm)
	6¼"	(159mm)	*Prefix*-(W)6I-36	*Prefix*-(W)60-36	33⅞"	(861mm)	19⅝"	(499mm)	39⅛"	(994mm)

*Add suffix -V (vented) or -S (solid) to catalog number. Example: 234-1260-12-V

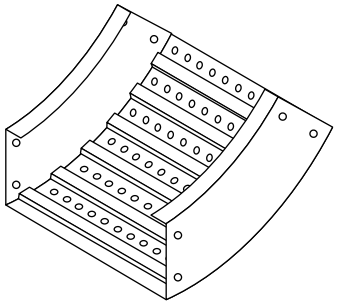
(W) = Width in inches, Use:
06 for 6" w 09 for 9" w 12 for 12" w 18 for 18" w 24 for 24" w 30 for 30" w 36 for 36" w

PART NO. 4O (OUTSIDE)





PART NO. 4I (INSIDE)



3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	2 - Mill Galv.	.60	—	.40	—
	4	3 - HDGAF	.60	.60	.40	.70
	5	4 - Alum.	1.00	1.00	.70	.70
	6	U - 304 SS	1.00	1.00	.70	1.00

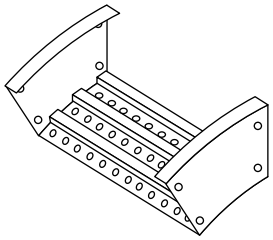
CSA Certified for CSA Systems

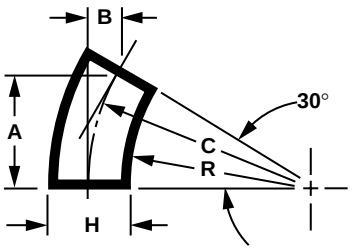
Radius - R	"H" Dim.	Cat. No." (Inside)	Cat. No." (Outside)	"A" Dim.	"B" Dim.	"C" Dim.
12" (305mm)	3½" (89mm)	*Prefix*-(W)4I-12	*Prefix*-(W)40-12	9¾" (248mm)	4" (102mm)	13¾" (349mm)
	4¼" (108mm)	*Prefix*-(W)4I-12	*Prefix*-(W)40-12	10" (254mm)	4⅛" (105mm)	14⅛" (359mm)
	5¼" (133mm)	*Prefix*-(W)4I-12	*Prefix*-(W)40-12	10⅜" (264mm)	4¼" (108mm)	14⅝" (372mm)
	6¼" (159mm)	*Prefix*-(W)4I-12	*Prefix*-(W)40-12	10¾" (273mm)	4½" (114mm)	15⅛" (384mm)
24" (610mm)	3½" (89mm)	*Prefix*-(W)4I-24	*Prefix*-(W)40-24	18¼" (464mm)	7½" (191mm)	25¾" (654mm)
	4¼" (108mm)	*Prefix*-(W)4I-24	*Prefix*-(W)40-24	18½" (470mm)	7⅝" (194mm)	26⅛" (664mm)
	5¼" (133mm)	*Prefix*-(W)4I-24	*Prefix*-(W)40-24	18⅞" (480mm)	7⅞" (200mm)	26⅝" (676mm)
	6¼" (159mm)	*Prefix*-(W)4I-24	*Prefix*-(W)40-24	19¼" (489mm)	8" (203mm)	27⅛" (689mm)
36" (914mm)	3½" (89mm)	*Prefix*-(W)4I-36	*Prefix*-(W)40-36	26¾" (679mm)	11⅛" (283mm)	37¾" (959mm)
	4¼" (108mm)	*Prefix*-(W)4I-36	*Prefix*-(W)40-36	27" (686mm)	11⅛" (283mm)	38⅛" (969mm)
	5¼" (133mm)	*Prefix*-(W)4I-36	*Prefix*-(W)40-36	27⅜" (695mm)	11⅜" (289mm)	38⅝" (981mm)
	6¼" (159mm)	*Prefix*-(W)4I-36	*Prefix*-(W)40-36	27⅝" (702mm)	11½" (292mm)	39⅛" (994mm)

*Add suffix -V (vented) or -S (solid) to catalog number. Example: 234-124I-12-V

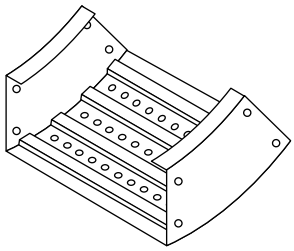
(W) = Width in inches, Use:
06 for 6" w 09 for 9" w 12 for 12" w 18 for 18" w 24 for 24" w 30 for 30" w 36 for 36" w

PART NO. 3O (OUTSIDE)





PART NO. 3I (INSIDE)



3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	2 - Mill Galv.	.60	—	.40	—
	4	3 - HDGAF	.60	.60	.40	.70
	5	4 - Alum.	1.00	1.00	.70	.70
	6	U - 304 SS	1.00	1.00	.70	1.00

CSA Certified for CSA Systems

Radius - R	"H" Dim.	Cat. No." (Inside)	Cat. No." (Outside)	"A" Dim.	"B" Dim.	"C" Dim.
12" (305mm)	3½" (89mm)	*Prefix*-(W)3I-12	*Prefix*-(W)30-12	6⅞" (175mm)	1⅞" (48mm)	13¾" (349mm)
	4¼" (108mm)	*Prefix*-(W)3I-12	*Prefix*-(W)30-12	7⅛" (181mm)	1⅞" (48mm)	14⅛" (359mm)
	5¼" (133mm)	*Prefix*-(W)3I-12	*Prefix*-(W)30-12	7⅜" (187mm)	2" (51mm)	14⅝" (372mm)
	6¼" (159mm)	*Prefix*-(W)3I-12	*Prefix*-(W)30-12	7⅝" (194mm)	2" (51mm)	15⅛" (384mm)
24" (610mm)	3½" (89mm)	*Prefix*-(W)3I-24	*Prefix*-(W)30-24	12⅞" (327mm)	3½" (89mm)	25¾" (654mm)
	4¼" (108mm)	*Prefix*-(W)3I-24	*Prefix*-(W)30-24	13⅛" (334mm)	3½" (89mm)	26⅛" (664mm)
	5¼" (133mm)	*Prefix*-(W)3I-24	*Prefix*-(W)30-24	13⅜" (340mm)	3⅝" (92mm)	26⅝" (676mm)
	6¼" (159mm)	*Prefix*-(W)3I-24	*Prefix*-(W)30-24	13⅝" (346mm)	3⅝" (92mm)	27⅛" (689mm)
36" (914mm)	3½" (89mm)	*Prefix*-(W)3I-36	*Prefix*-(W)30-36	18⅞" (480mm)	5⅛" (130mm)	37¾" (959mm)
	4¼" (108mm)	*Prefix*-(W)3I-36	*Prefix*-(W)30-36	19⅜ (486mm)	5⅛" (130mm)	38⅛" (969mm)
	5¼" (133mm)	*Prefix*-(W)3I-36	*Prefix*-(W)30-36	19⅜" (492mm)	5¼" (133mm)	38⅝" (981mm)
	6¼" (159mm)	*Prefix*-(W)3I-36	*Prefix*-(W)30-36	19⅝" (499mm)	5¼" (133mm)	39⅛" (994mm)

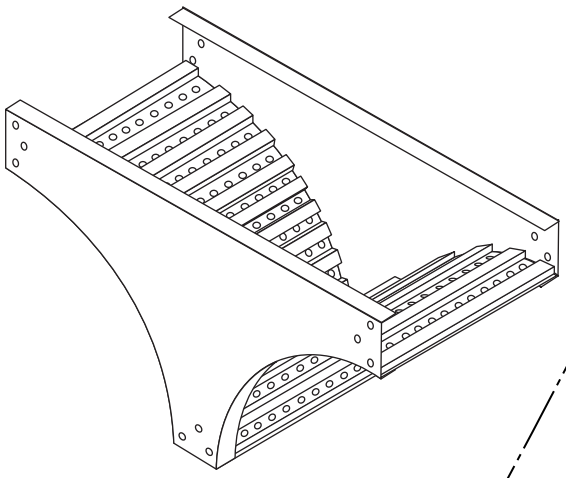
*Add suffix -V (vented) or -S (solid) to catalog number. Example: 234-123I-12-V

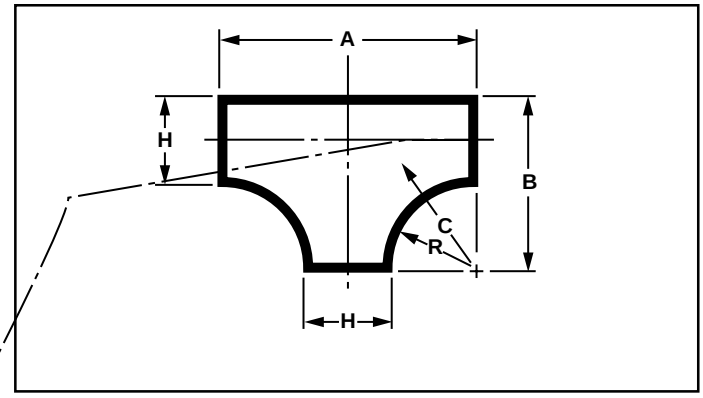
(W) = Width in inches, Use:
06 for 6" w 09 for 9" w 12 for 12" w 18 for 18" w 24 for 24" w 30 for 30" w 36 for 36" w

3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect for Lo NEC
1st Prefix Flange	2nd Prefix Load Depth	3rd Prefix Aolu Steel.	

3 in.

PART NO. VT





3-Digit "Prefix" *(see example below)* Select one digit from each column			Min. X-Sect – 2 Rails for Load Depth NEC 318-7 (sq. in.)			
			Alum		Steel	
1st Prefix Flange Width (in.)	2nd Prefix Load Depth Depth (in.)	3rd Prefix Material Finish	13/16"	1 1/4"	13/16"	1 1/4"
2 - 13/16" 4 - 1 1/4"	3	2 - Mill Galv.	.60	—	.40	—
	4	3 - HDGAF	.60	.60	.40	.70
	5	4 - Alum.	1.00	1.00	.70	.70
	6	U - 304 SS	1.00	1.00	.70	1.00

CSA Certified for CSA Systems

Radius - R	"H" Dim.		Catalog Number	"A" Dimension		"B" Dimension		"C" Dimension	
12" (305mm)	3½"	(89mm)	*Prefix*-(W)VT-12	27½"	(699mm)	15½"	(394mm)	13¾"	(349mm)
	4¼"	(108mm)	*Prefix*-(W)VT-12	28¼"	(718mm)	16¼"	(413mm)	14⅛"	(359mm)
	5¼"	(133mm)	*Prefix*-(W)VT-12	29¼"	(743mm)	17¼"	(438mm)	14⅝"	(371mm)
	6¼"	(159mm)	*Prefix*-(W)VT-12	30¼"	(768mm)	18¼"	(464mm)	15⅛"	(384mm)
24" (610mm)	3½"	(89mm)	*Prefix*-(W)VT-24	51½"	(1308mm)	27½"	(699mm)	25¾"	(654mm)
	4¼"	(108mm)	*Prefix*-(W)VT-24	52¼"	(1327mm)	28¼"	(718mm)	26⅛"	(664mm)
	5¼"	(133mm)	*Prefix*-(W)VT-24	53¼"	(1353mm)	29¼"	(743mm)	26⅝"	(676mm)
	6¼"	(159mm)	*Prefix*-(W)VT-24	54¼"	(1378mm)	30¼"	(768mm)	27⅛"	(689mm)
36" (914mm)	3½"	(89mm)	*Prefix*-(W)VT-36	75½"	(1918mm)	39½"	(1003mm)	37¾"	(959mm)
	4¼"	(108mm)	*Prefix*-(W)VT-36	76¼"	(1937mm)	40¼"	(1022mm)	38⅛"	(968mm)
	5¼"	(133mm)	*Prefix*-(W)VT-36	77¼"	(1962mm)	41¼"	(1048mm)	38⅝"	(981mm)
	6¼"	(159mm)	*Prefix*-(W)VT-36	78¼"	(1988mm)	42¼"	(1073mm)	39⅛"	(994mm)

*Add suffix -V (vented) or -S (solid) to catalog number. Example: 234-12VT-12-V

(W) = Width in inches, Use:
06 for 6" w 09 for 9" w 12 for 12" w 18 for 18" w 24 for 24" w 30 for 30" w 36 for 36" w

TRAY CONNECTORS

Catalog Number & Finishes

Catalog Number

Load Depth	Finish	Basic Number
3"	6 (Mill Galv.)	-02RC
4"	3 (HDGAF)	-02CE
5"	4 (Alum.)	-02CV
6"	U (304SS)	-02CH
		-02CA

Example: 34 -02RC for 3" load depth, aluminum, universal curvilinear connector.

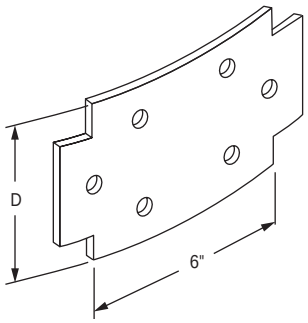
Part Nos. CE, CH, and CV to be bonded if used as equipment grounding conductor.

NOTE: Hole patterns match corresponding tray.
3-hole pattern illustrated.

Heavy Duty, Mid Span Splice Plates available upon request.

UNIVERSAL CURVILINEAR CONNECTOR

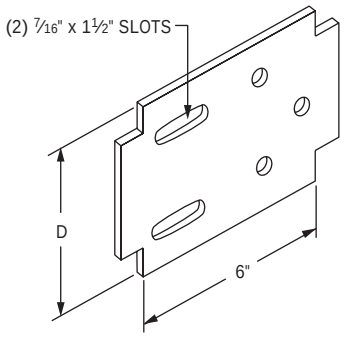
Part No. RC (Sold in pairs)



11 Gage Steel, 0.125" Aluminum
⅜"-16 spline bolts & flange nuts furnished.

EXPANSION CONNECTOR

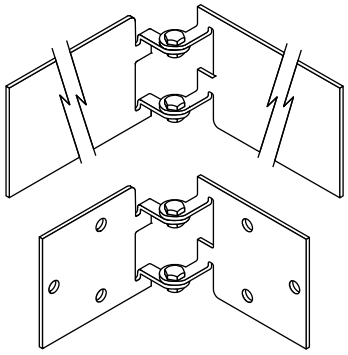
Part No. CE (Sold in pairs)



11 Gage Steel, 0.125" Aluminum
⅜"-16 cap screws & Nylok nuts furnished and
⅜"-16 spline bolts & flange nuts furnished.

HORIZONTAL ADJUSTABLE CONNECTOR

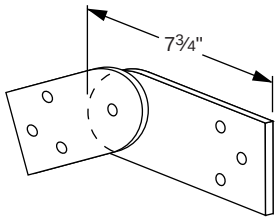
Part No. CH (Sold in pairs–inner & outer)



11 Gage Steel, 0.125" Aluminum
⅜"-16 spline bolts & flange nuts furnished.

VERTICAL ADJUSTABLE CONNECTORS

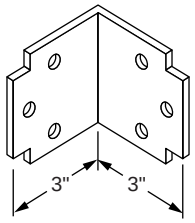
Part No. CV (Sold in pairs)



11 Gage Steel, 0.125" Aluminum
⅜"-16 spline bolts & flange nuts furnished.

90° ANGLE CONNECTOR

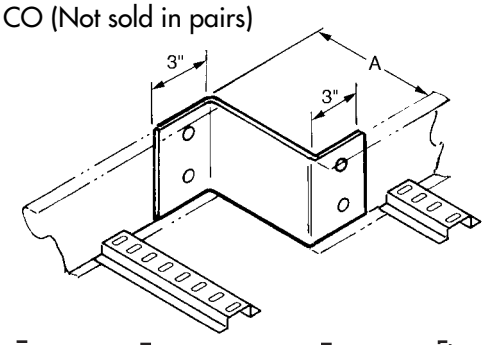
Part No. CA (Sold in pairs)



11 Gage Steel, 0.125" Aluminum
⅜"-16 spline bolts and flange nuts furnished.

REDUCING CONNECTOR

Part No. CO (Not sold in pairs)



L.H. OFFSET REDUCTION | STRAIGHT REDUCTION | R.H. OFFSET REDUCTION

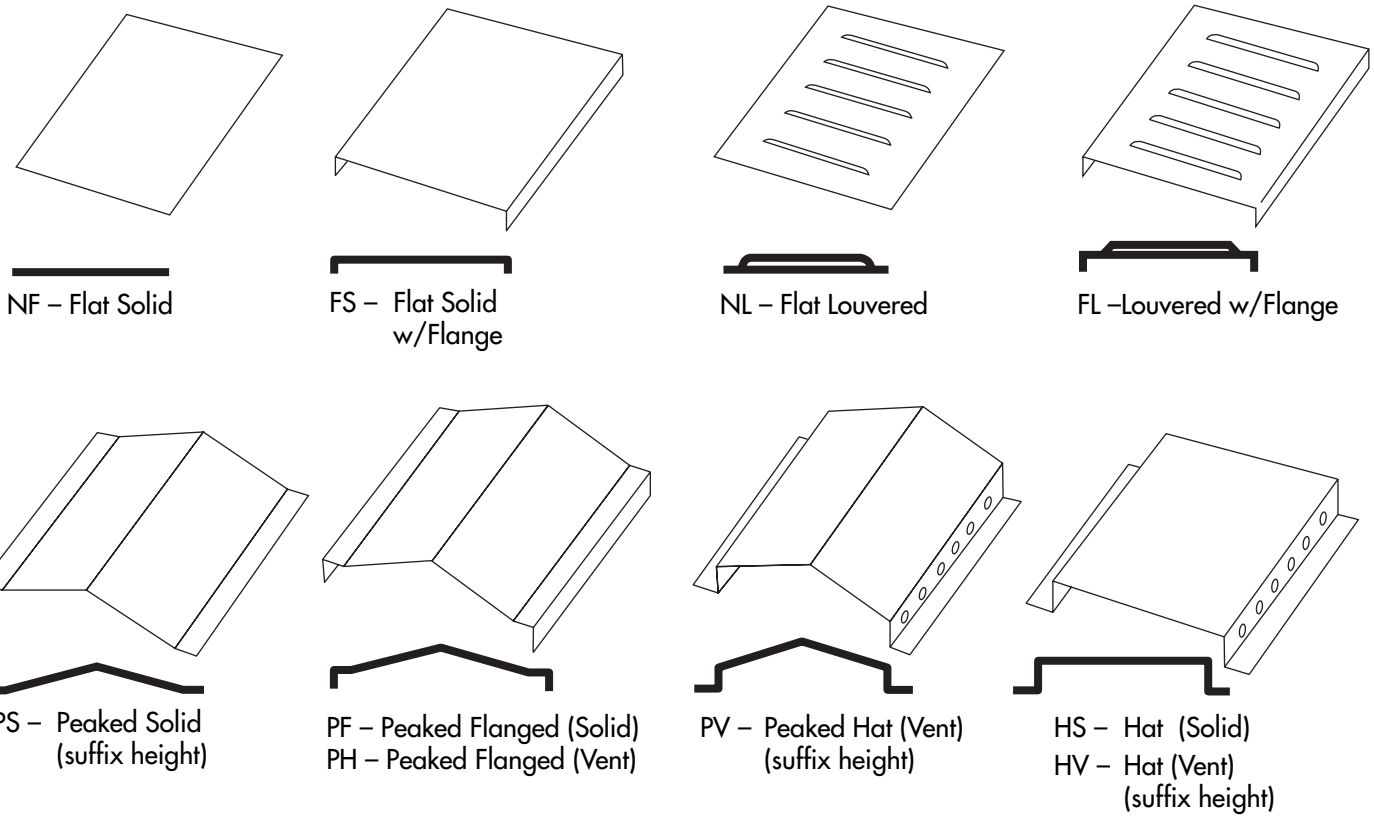
12 Gage Steel, 0.125" Aluminum
For offset reductions – use 1 of above with standard connector plate.
For straight reductions– use 2 (of ½ reduction dimension).
⅜"-16 spline bolts and flange nuts furnished.

Catalog Number

Load Depth	Finish	Basic Number	"A" Dimension
3"	2 (Mill Galv.)	-30CO	30" (762mm)
4"	3 (HDGAF)	-27CO	27" (686mm)
5"	4 (Alum.)	-24CO	24" (610mm)
6"	U (304SS)	-21CO	21" (533mm)
		-18CO	18" (457mm)
		-15CO	15" (381mm)
		-13CO	13½" (343mm)
		-12CO	12" (305mm)
		-10CO	10½" (267mm)
		-09CO	9" (229mm)
		-07CO	7½" (191mm)
		-06CO	6" (152mm)
		-04CO	4½" (114mm)
		-03CO	3" (76mm)
		-01CO	1½" (38mm)

Example: 34-03CO for 3" load depth, aluminum, 3" Reducer Connector.
Typical Use: 9" to 6", or use 2 for 12" to 6", etc.

COVERS for straight sections shown. Standard fitting covers are flat solid type (NF). Aluminum covers are fabricated from 0.040" aluminum AA-3150-H14; steel covers are fabricated from 20 gage ASTM A-653-G90 CQ, mill-galvanized steel.



NF – Flat Solid

FS – Flat Solid w/Flange

NL – Flat Louvered

FL –Louvered w/Flange

PS – Peaked Solid (suffix height)

PF – Peaked Flanged (Solid)
PH – Peaked Flanged (Vent)

PV – Peaked Hat (Vent) (suffix height)

HS – Hat (Solid)
HV – Hat (Vent) (suffix height)

Cover Catalog Number – Straight Sections

Type	Finish	Basic No. (Width)	Length	Height*
HS, HV,	2 - Mill Galv.	-06SL = 6"	(152mm)	-12' -2*
FL, FS,	3 - HDGAF	-09SL = 9"	(229mm)	-06'
NF, NL,	4 - Alum.	-12SL = 12"	(305mm)	
PS, PF,	U - 304SS	-18SL = 18"	(457mm)	
PH, PV		-24SL = 24"	(610mm)	
		-30SL = 30"	(762mm)	
		-36SL = 36"	(914mm)	

*peak and hat only, 2" height standard. Consult factory for other heights.
Example: NL2-09SL-12 is a flat louvered mill-galv. steel cover for a 9" wide mill galvanized Trof 12' long.

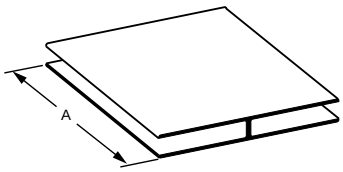
Cover Catalog Number – Fittings

Type	Load Depth	Finish	Width/Basic No.	Radius
NF	3	2 - Mill Galv.	-06 XX**	12"
FS	4	3 - HDGAF	-09 XX**	24"
	5	4 - Alum.	-12 XX**	36"
	6	U - 304SS	-18 XX**	
			-24 XX**	
			-30 XX**	
			-36 XX**	

*Load depth for outside riser or vertical tee only.

**XX from fitting selection pages.

JOINT PLATE



Joint plate is black PVC and is offered in 10' lengths to be field cut to desired length, or in precut lengths for specified covers.

JP-120 is joint plate in 10' lengths.

Joint plate for specified covers is specified as follows.

Tray Width		Flange Type
JP-06 = 6"	(152mm)	
JP-09 = 9"	(229mm)	-2 = 13/16" Flange
JP-12 = 12"	(305mm)	-4 = 1¼" Flange
JP-18 = 18"	(457mm)	-7 = 2" Flange
JP-24 = 24"	(610mm)	
JP-30 = 30"	(762mm)	
JP-36 = 36"	(914mm)	

Example: JP-06-2 is a joint plate for 6" wide tray with a 13/16" flange.

SINGLE SIDE CONNECTOR

Part No. 01CC

Furnished with ¼"-28 stainless steel cone point machine screw.
For use with any width tray.
Not sold in pairs.
Suggested spacing:
Indoor Use Only.
Recommended: 4 per 12' section

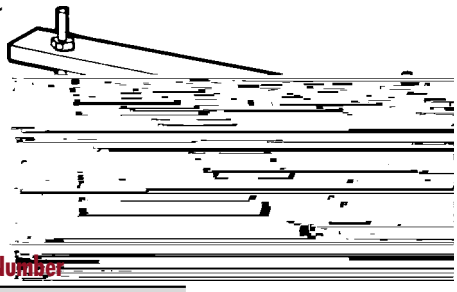
Catalog Number

Flange	Load Depth	Finish	Basic No.
2 - 13/16"	3	2 - Mill Galv.	-01CC
4 - 1¼"	4	3 - HDGAF	
7 - 2"	5	4 - Alum.	
	6	U - 304SS	

Example: 234-01CC for 3" load depth, aluminum single side connector.

DOUBLE CLAMP CONNECTOR –

Part No. - (W) DC



Catalog Number

Load Depth	Finish	Width	Type
3	2 - Mill Galv.	-06	DC
4	3 - HDGAF	-09	
5	4 - Alum.	-12	
6	U - 304SS	-18	
		-24	
		-30	
		-36	

Example: 34-12DC for 3" load depth, 13/16" flange, aluminum, Double Clamp Connector.

For all covers except hat & peak type. Furnished with:
(2) ¼"-20 all-thread rods
(4) hex nuts, flat washers and lock washers
Suggested spacing:
Indoor: 2 per 12'
Outdoor: 3 per 12'
High Wind: 5 per 12'

COVER CONNECTOR

Part No. CC

(For all covers except hat & peak type.)

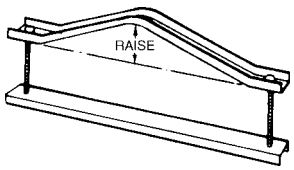
Catalog Number

Load Depth	Finish	Width	Type
3	2 - Mill Galv.	-06	CC
4	3 - HDGAF	-09	
5	4 - Alum.	-12	
6	U - 304SS	-18	
		-24	
		-30	
		-36	

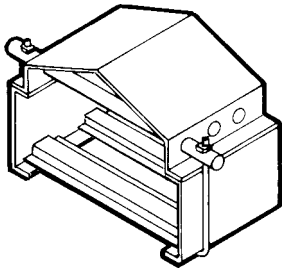
Example: 34-12CC for 13/16" flange, 3" load depth, aluminum, 12" wide connector.

PEAK COVER CONNECTOR

Part No. PC (For PS Cover)



Part No. PC (For PV Cover)



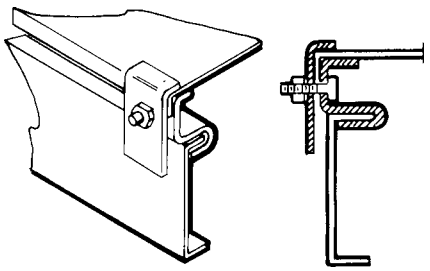
Catalog Number

Load Depth	Finish	Width	Type	Raise (in)*
3	2 - Mill Galv.	-06	PC	-2
4	3 - HDGAF	-09	VC	
5	4 - Alum.	-12		
6	U - 304SS	-18		
		-24		
		-30		
		-36		

*2" standard raise. Consult factory for other peak heights.
Example: 34-12-VC-3 for 3" load depth, aluminum, 12" wide, Peak Cover Connector (vented cover) with 2" peak.

ELEVATED COVER CONNECTORS –

Part No. EC (For FS, NF, FL, NL covers)



Catalog Number

Flange	Finish	Type	Height*
2 - 13/16"	2 - Mill Galv.	EC	- Raise* (in.)
4 - 1¼"	3 - HDGAF		
7 - 2"	4 - Alum.		
	U - 304SS		

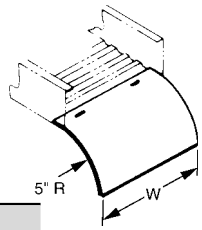
*1", 2" or 3" standard.
Example: 24-EC-2 for 13/16" flange, aluminum, outdoor, Elevated Cover Connector with a 2" raise.

HDGAF for Outdoor Use.
Includes:
(2) ¼ - 20" x 1" hex head cap screws.
Suggested spacing
Indoor: 3/Side (6 total) per 12';
Outdoor: 5/Side (10 total) per 12'

DROP OUT

Part No. DO

14 Gage Steel, .080" Aluminum
NOTE: (2) #10 x ⅝" self tapping screws furnished.



Catalog Number

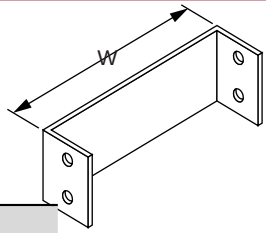
Basic Finish	Width	
2 (Mill Galv.)	-06DO = 6"	(152mm)
3 (HDGAF)	-09DO = 9"	(229mm)
4 (Alum.)	-12DO = 12"	(305mm)
U (304SS)	-18DO = 18"	(457mm)
	-24DO = 24"	(610mm)
	-30DO = 30"	(762mm)
	-36DO = 36"	(914mm)

Example: 4-12DO for aluminum, 12" wide, Drop Out.

BLIND END

Part No. BE

22 Gage Steel, .040" Aluminum
NOTE: ⅜"-16 spline bolts and flange nuts furnished.



Catalog Number

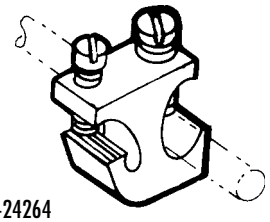
Load Depth	Finish	Width	
3	2 (Mill Galv.)	-06BE = 6"	(152mm)
4	3 (HDGAF)	-09BE = 9"	(229mm)
5	4 (Alum.)	-12BE = 12"	(305mm)
6	U (304SS)	-18BE = 18"	(457mm)
		-24BE = 24"	(610mm)
		-30BE = 30"	(762mm)
		-36BE = 36"	(914mm)

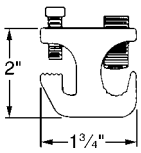
Example: 34-12BE for 3" load depth, aluminum, 12" wide Blind End.

CABLE TRAY GROUND CLAMP

Part No. 9156

Extruded Alum. with Electro-Galvanized Steel Hex Head Screws.
Capacity: #6 AWG to 250 kcmil



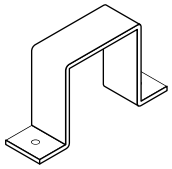


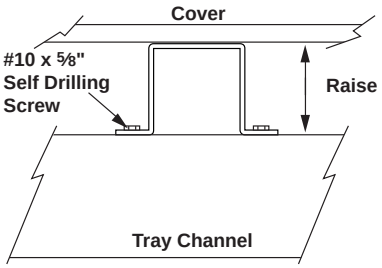
UL Listed E-24264

Certified File No. LR 9795

ELEVATED COVER CONNECTORS

Part No. EM-CC





Catalog Number

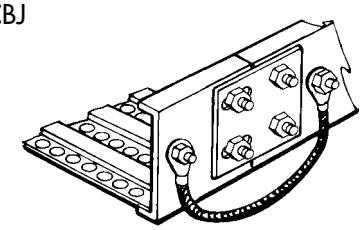
Finish	Type	Height*
2 - Mill Galv.	EM-CC	- Raise* (in.)
3 - HDGAF		
4 - Alum.		
U - 304SS		

*1", 2" or 3" standard.
Example: 3-EM-CC-2 for hot dipped galvanized, outdoor, Elevated Cover Connector with a 2" raise.

HDGAF for Outdoor Use
Includes:
(3) #10 x ⅝ Self drilling screws.
Suggested spacing:
Indoor: 3/Side (6 tot.) per 12';
Outdoor: 5/Side (10 tot.) per 12'

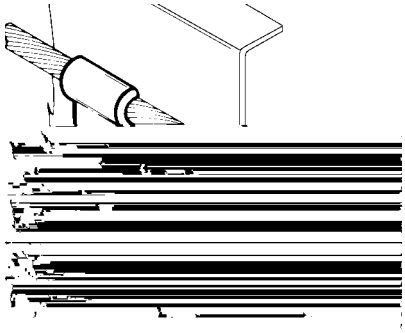
BONDING JUMPER

Part No. CBJ



Catalog No.	Dimensional Data	Amperes as Equipment Ground
CBJ-C	AWG 1/0 copper wire 15½" long overall	800 amperes
CBJ-4C	AWG 4/0 copper wire 15½" long overall	1,600 amperes
NOTE:	No hardware supplied	

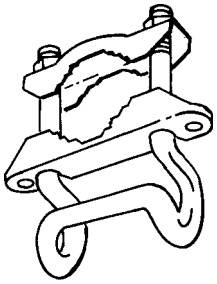
GROUND CABLE RETAINER CLAMP



Catalog No.	Capacity	Metal & Finish	Dimensions
9056-EP	1/0 2/0 3/0	Electro-Galv. Steel	1" w x 2" long
9057-EP	4/0 250 MCM		1" w x 2⅜" long
9056-SS	1/0 2/0 3/0	Stainless Steel	1" w x 2" long
9057-SS	4/0 250 MCM		1" w x 2⅜" long

CONDUIT-TO-CABLE TRAY CLAMP

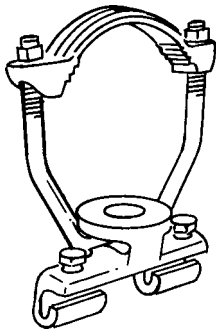
For connecting and grounding rigid conduit to tray at 90° angle.
U.L. listed as grounding means. CSA approved.



Catalog No.	Size	Std. Pkg.
TB6210	½"¾"	50
TB6212	1"-1¼"	20

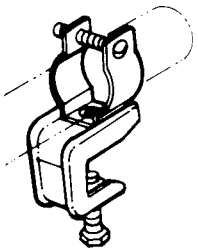
CONDUIT-TO-CABLE TRAY CLAMP- SWIVEL TYPE

Malleable iron hub and steel "U" bolt.
For connecting and grounding rigid conduit to tray at any angle within 90° arc.
U.L. listed as a grounding means.



Catalog No.	Size	Std. Pkg.
TB6209	½"-¾"	10
TB6211	1"-1¼"	10
TB6214	1½"-2"	5
TB6216	2½"-3"	5
TB6218	3½"-4"	2

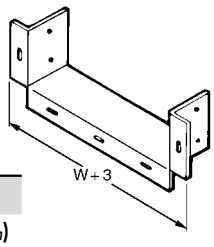
CONDUIT CLAMP BRACKET



Catalog No.	Size Rigid	Size EMT
CCB-050	⅜" to½"	½"
CCB-075	¾"	¾"
CCB-100	1"	1"
CCB-125	-	1¼"
CCB-150	1¼"	1½"
CCB-175	1½"	-
CCB-200	2"	2"

BOX CONNECTOR – PART NO. CB

14 Gage Steel
.080" Aluminum
NOTE: ¼"-20 carriage bolts,
flat washers, hex nuts furnished.



Catalog Number

Load Depth	Finish	Width
3	2 - (Mill Galv.)	-06CB = 6" (152mm)
4	3 - (HDGAF)	-09CB = 9" (229mm)
5	4 - (Alum.)	-12CB = 12" (305mm)
6	U - (304SS)	-18CB = 18" (457mm)
		-24CB = 24" (610mm)
		-30CB = 30" (762mm)
		-36CB = 36" (914mm)

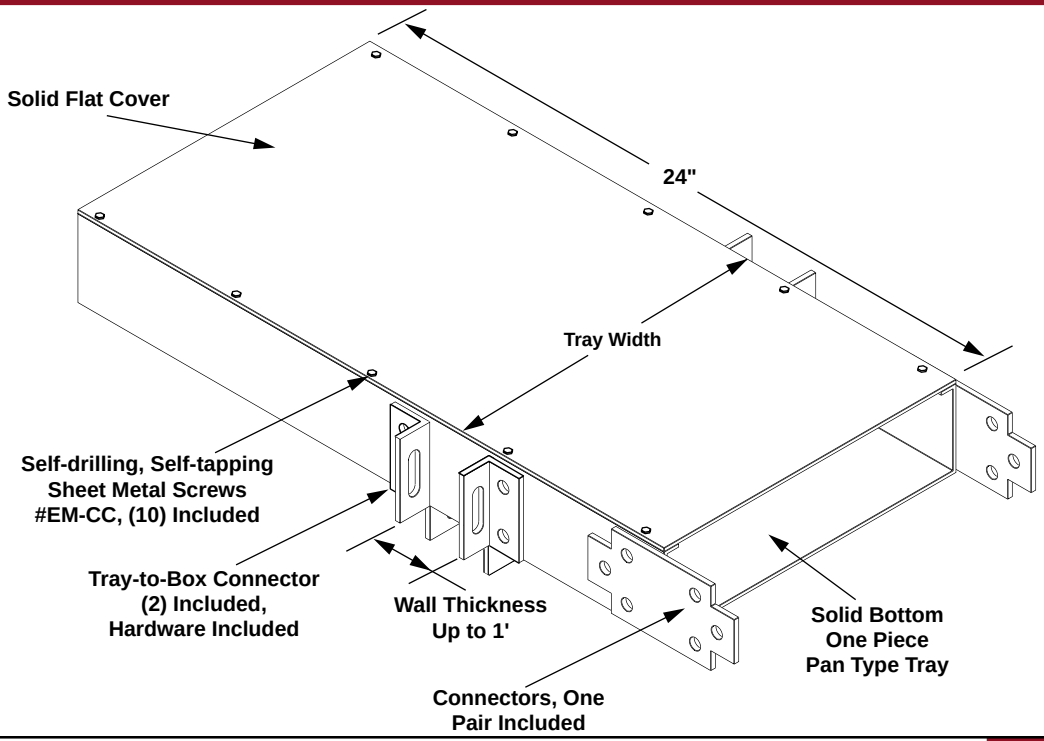
Example: 34-12CB for 3" load depth, aluminum, 12" wide, Box Connector.

WALL PENETRATING SLEEVE ASSEMBLY –

Part No. SS-890-42-(W)-*

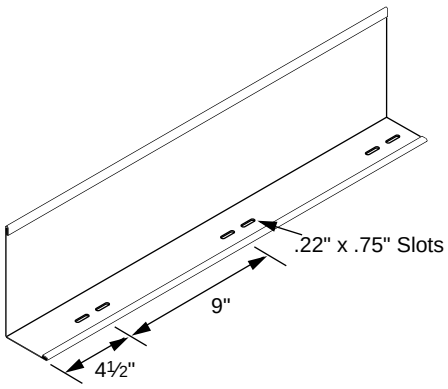
W = Tray Width
*=Fitting 3-Digit Prefix

NOTE: Standard penetration sleeves are manufactured from mill galvanized steel. Aluminum sleeves are available upon request.



BARRIER STRIP–STRAIGHT SECTION

Part No. SB



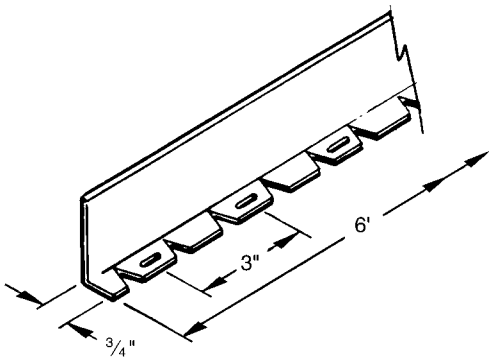
Catalog Number

Load Depth	Finish	Basic No. - Length
3	2 (Mill Galv.)	-01SB-12
4	3 (HDGAF)	
5	4 (Alum.)	
6	U (304 SS)	

Example: 34-01SB-12 for 3" load depth, aluminum straight barrier, 12' long.
Furnished with 8 self tapping screws.

BARRIER STRIP–HORIZONTAL FITTING

Part No. FB



Catalog Number

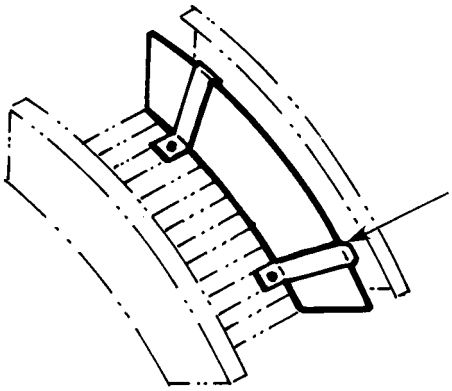
Load Depth	Finish	Basic No. - Length
3	2 (Mill Galv.)	-01FB-06
4	3 (HDGAF)	
5	4 (Alum.)	
6	U (304 SS)	

Example: 34-01FB-06 for 3" load depth, aluminum fitting barrier, 6' long.
Furnished with 4 self tapping screws.

BARRIER STRIP VERTICAL ELBOW OUTSIDE & INSIDE

Part No. OB, IB

(OB Vert. Elbow outside shown). Furnished with sufficient clamp assemblies for installation. Additional clamp assemblies may be ordered separately.



Catalog Number

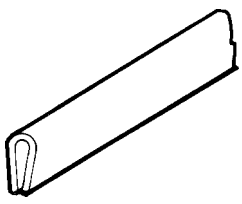
Load Depth	Finish	Bend (deg.)	Basic No.	Radius
3	2 (Mill Galv.)	90	OB = Outside	12" (305mm)
4	3 (HDGAF)	60	IB = Inside	24" (610mm)
5	4 (Alum.)	45		36" (914mm)
6	U (304 SS)	30		

Example: 34-90OB-12 for 3" load depth, aluminum 90° outside vertical barrier with 12" radius.

NYLON BARRIER SPLICE & PROTECTOR

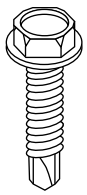
Part No. BSP-L

Length: Splice -5"
Protector -144"



COVER SCREW

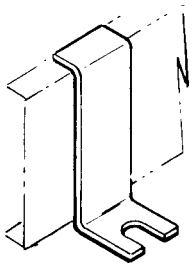
Part No. EM-CC (electrogalv. steel)
Part No. EM-CC-SS (stainless steel)



No. 10 x ⅝" long, self drilling-self tapping hex head plated steel screw.
Suggested spacing: Indoor: 8 per 12'; Outdoor: 10 per 12'

HOLD-DOWN CLAMP & EXPANSION GUIDE

(For expansion guide clamp, add suffix "EX" to catalog number.)



Catalog Number

Load Depth	Basic Number
3	-9039 (Aluminum)
4	-9040 (Electrogalv. Steel)
5	
6	

Example: 3-9039-EX for 3" load depth, expansion guide.
Hardware purchased separately to suit support system.

Complete Kit add "-HDW" to Part Number Above

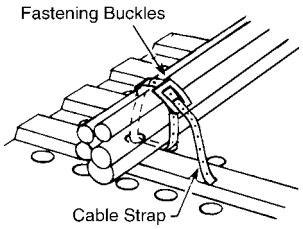
Hardware Kit List:
(2) Hold-Down Clamps
(2) 1/2" - 13 x 11/2" Cap Screw
(2) 1/2" Flat Washer
(2) Clamping Nut (Strut Nut)

CABLE STRAP (NYLON) –

Part No. NSP (100')

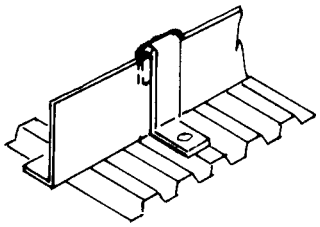
FASTENING BUCKLES –

Part No. NFB (100 pcs.)



BARRIER STRIP CLAMP (OPTIONAL)

Part No. 50172



No. 10 bolt, nut, washer and lockwasher furnished.

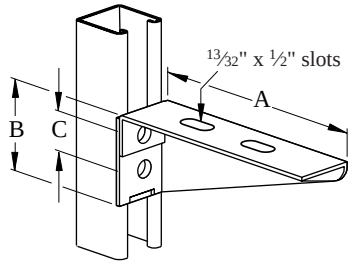
Catalog Number

Load Depth	Finish	Basic Number
3	2 (Mill Galv.)	-50172
4	3 (HDGAF)	
5	4 (Alum.)	
6	U (304 SS)	

Example: 34-5072 for 3" load depth, aluminum clamp.

GUSSET-TYPE SUPPORTS

For use with all types of Cope Ladder and Trough systems. Finish is mill-galvanized.
Order hardware separately.

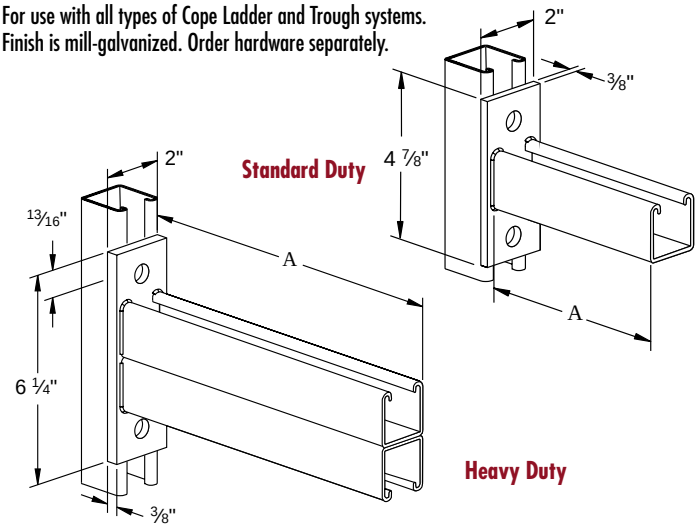


Catalog No.	Trough Width	Ladder Width	Dimension "A"	Dimension "B"	Dimension "C"	End-Load Rating*
9702-06	-	-	6½"	4½"	3"	450 lbs.
9702-09	6"	-	9½"	4½"	3"	375 lbs.
9702-12	9"	6"	12½"	4½"	3"	300 lbs.
9702-15	12"	9"	15½"	4½"	3"	260 lbs.
9702-18	-	12"	18½"	6"	4½"	225 lbs.
9702-24	18"	18"	24½"	6"	4½"	200 lbs.
9702-30	24"	24"	30½"	6"	4½"	175 lbs.

* Uniform load rating is normally twice the end load rating.

CHANNEL-TYPE SUPPORTS

For use with all types of Cope Ladder and Trough systems.
Finish is mill-galvanized. Order hardware separately.



Standard Duty for Lighter Loads.

Catalog No.	Trough Width	Ladder Width	Dimension "A"	End-Load Rating*
9720-12	9"	6"	12"	350 lbs.
9720-15	12"	9"	15"	275 lbs.
9720-18	-	12"	18"	230 lbs.
9720-24	18"	18"	24"	175 lbs.

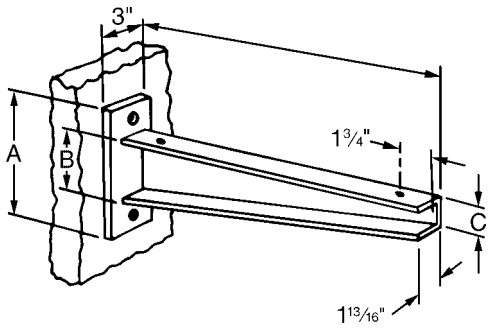
* Uniform load rating is normally twice the end load rating.

Standard Duty for Lighter Loads.

Catalog No.	Trough Width	Ladder Width	Dimension "A"	End-Load Rating*
9721-24	18"	18"	24"	480 lbs.
9721-30	24"	24"	30"	385 lbs.
9721-36	30"	30"	36"	320 lbs.
9721-42	36"	36"	42"	305 lbs.

* Uniform load rating is normally twice the end load rating.

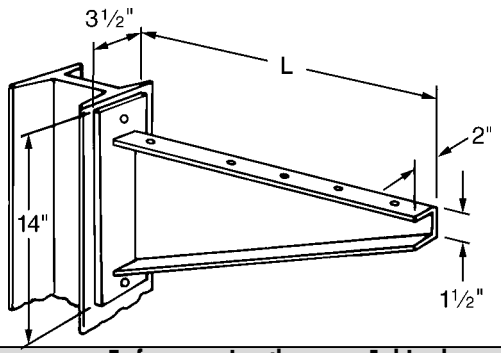
WALL SUPPORT BRACKETS



Catalog Number	Trof Width	Length "L"	Dimensions "A"	Dimensions "B"	Dimensions "C"	End-Load Rating*
9037-12	6"	12¼	10"	6"	2"	2000 lbs.
9037-18	12"	18¼"	11"	7"	2½"	2000 lbs.
9037-24	18"	24¼"	11"	7"	2½"	1600 lbs.
9037-30	24"	30¼"	12"	8"	4"	1300 lbs.
9037-36	30"	36¼"	12"	8"	4"	1100 lbs.
9037-42	36"	42¼"	12"	8"	4"	900 lbs.

*Uniform load rating is normally twice the end-load rating.
Finish is hot-dip galvanized after fabrication.
Order hardware separately.

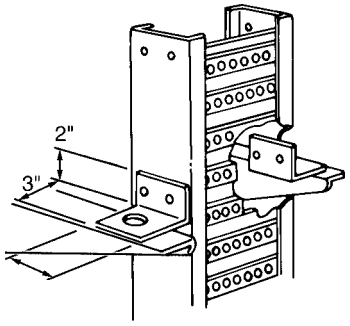
STRUCTURAL SUPPORT BRACKET



Catalog Number	Trof Width	Length "L"	End-Load Rating*
9036-31	24"	31¼"	2000 lbs.
9036-37	30"	37¼"	1800 lbs.
9036-45	36"	45¼"	1500 lbs.

*Uniform load rating is normally twice the end-load rating.
For use with Cope Trof 24" or wider. May be welded or bolted to building steel.
Finish is hot-dip galvanized after fabrication.
Order hardware separately.

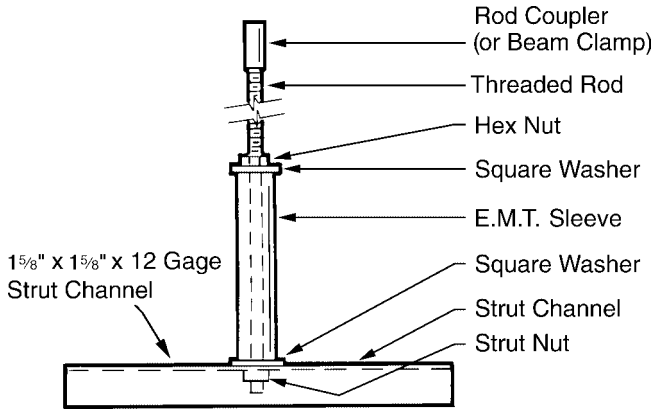
VERTICAL SUPPORTS



Cat. No.	For Use With
9043-37	4¼" Overall Height Side Members
9043	5¼" Overall Height Side Members
9025-98	6¼" & 7¼" Overall Height Side Members

Tray Supports can be bolted anywhere along the straight runs. They can be bolted directly onto the coupler plates at splices of straight runs and riser fittings, or they can be bolted at any place in the run by field-drilling side rails. Trof supports are used with either ⅜" or ½" hanger rods. Finish is electrogalvanized.

SINGLE ROD HANGER SUPPORT

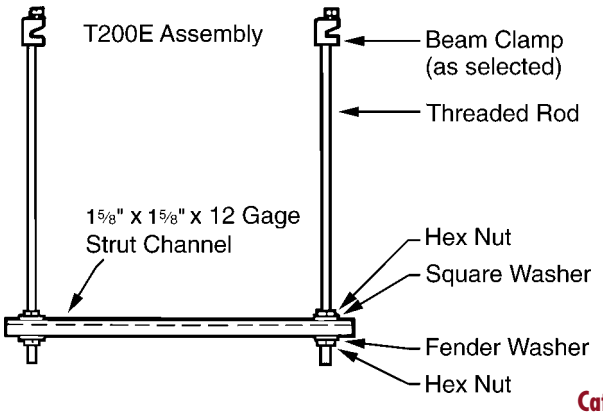


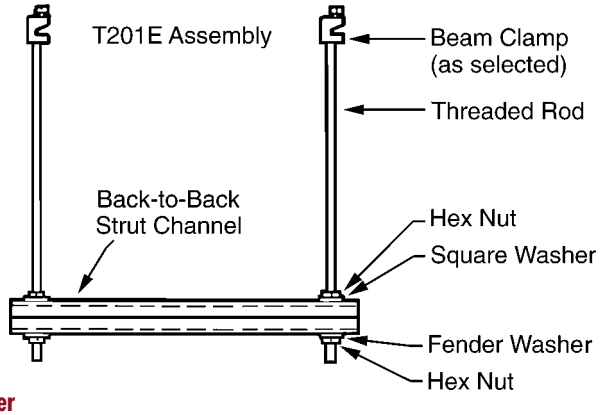
Catalog Number

Assy. Type	Channel Length*	Channel Finish**	Rod Diameter	Rod Length	Beam Clamp
P200	14" (356mm)	GV (Pre-Galv)	38=⅜" (9.53mm)	000 - No Rod	A - Bridgeport
	17" (432mm)	HG (Hot Dipped Galv)	12=½" (12.7mm)	036 - 36" (914mm)	B - P2622
	20" (508mm)			072 - 72" (1828mm)	O - No Clamp
	26" (661mm)			120 - 120" (3048mm)	R - Rod Coupler
	32" (813mm)			144 - 144" (3658mm)	S - Special
	38" (966mm)				
	44" (1118mm)				

Example: P200-20-GV-12-036-B is a Single 20" pre-galvanized channel with ½" x 36" drop rod and P2622 clamp.
Note: *Order channel length 8" longer than tray width. For example, 44" channel for 36" tray.
** Other channel types and finishes available upon request. Contact factory.

TRAPEZE HANGER SUPPORT





Catalog Number

Assy. Type	Channel Length*	Channel Finish**	Rod Diameter	Rod Length	Beam Clamp
T200E	16" (407mm)	GV (Pre-Galv)	38=⅜" (9.53mm)	000 - No Rod	A - Bridgeport
T201E	19" (483mm)	HG (Hot Dipped Galv)	12=½" (12.7mm)	036 - 36" (914mm)	B - P2622
	22" (559mm)			072 - 72" (1828mm)	O - No Clamp
	28" (712mm)			120 - 120" (3048mm)	R - Rod Coupler
	34" (864mm)			144 - 144" (3658mm)	S - Special
	40" (1017mm)				
	46" (1169mm)				

Example: T200E-22-GV-12-036-B is a Single 22" pre-galvanized channel with ½" x 36" drop rod and P2622 clamp.
Note: *Order channel length 10" longer than tray width. For example, 46" channel for 36" tray.
** Other channel types and finishes available upon request. Contact factory.

By Specifying the NEMA class designation, you will use the simplest, clearest, and most complete method of specification available and automatically incorporate support span in feet, working (allowable) load in pounds per linear foot, a safety factor or 1.5, a concentrated load if present; and, all other design, manufacturing and test standards including electrical continuity.

All you need to add is inside depth, desired radius of fittings (to protect from cable damage), metal and finish. You can add accessory information pursuant to your project. Here is a typical specification for an outdoor tray system where the working (allowable) load has been determined to be approximately 75 pounds per foot on support spans of 12'-0".

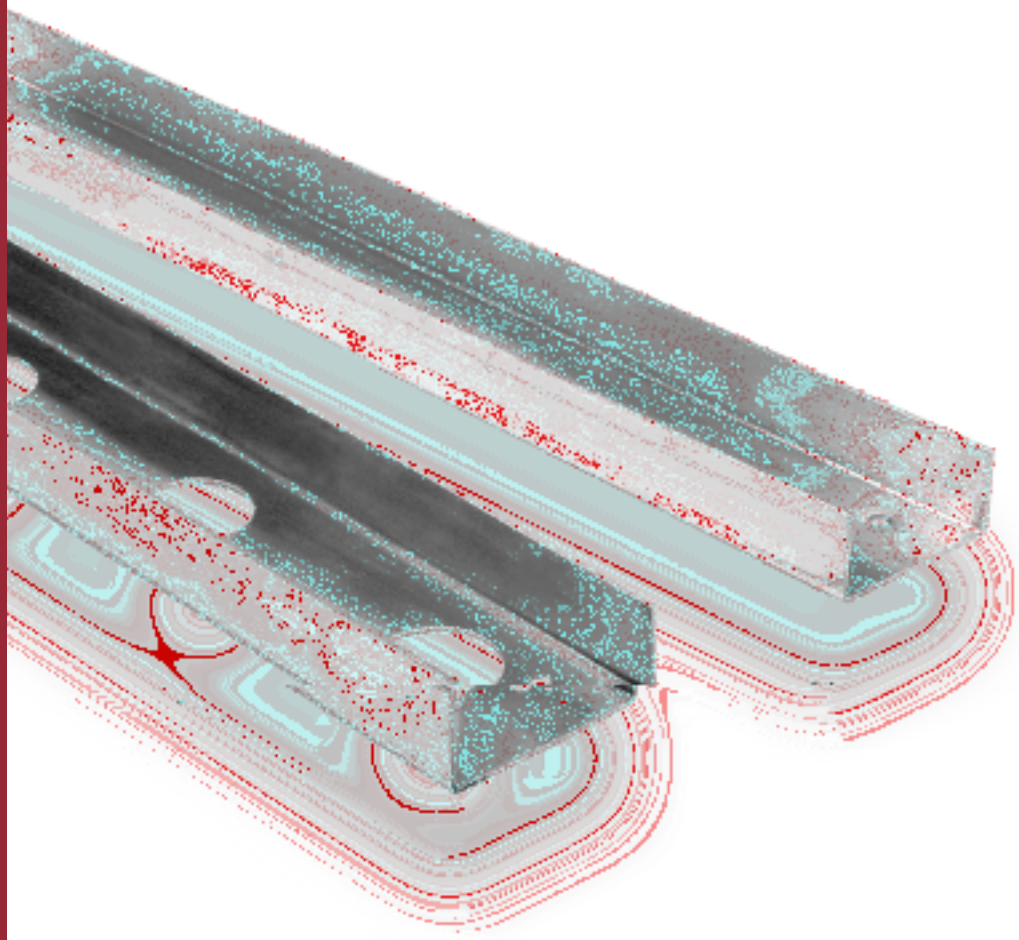
SPECIFICATION - ALUMINUM COPE TROF

Cable trough type tray shall be manufactured by a company regularly engaged in the manufacture of metal cable trays and shall be a member of NEMA. Trays shall conform to NEMA Metal Cable Tray Standard Publication VE-1 (latest issue).

1. Cable trough shall be NEMA Classification 12B of the widths indicated.
2. Material shall be aluminum alloy with side rails of 6063 and bottoms of 5052 alloy.
3. Finish shall be natural.
4. Inside load depth to be NEMA Standard 3".
5. Fittings shall be 12" radius for control cables and 24" radius for power cables. (This must be commensurate with the cable manufacturers recommended minimum bending radius.)
6. All top level trays in stacks and single runs to have raised peaked aluminum ventilated covers with heavy duty hold down clamps every 3'-0".
7. Install expansion connectors, expansion guides, and hold down clamps per NEMA Standard VE-1.
8. Where slopes or horizontal bends of trays are not at the Standard NEMA angles use adjustable connectors. If the angle is too great for cable bending radius, use combinations of fitting and adjustable connectors.
9. Separate all cables of different voltages in the same tray using the manufacturer's standard barriers and barrier hold down system.
10. The cable trough system will be used as an equipment grounding conductor.
11. To save space, fittings shall have no tangents. To facilitate field installation use one pair of universal type connector plates for rigid joints.
12. Cable Trough shall be three (3) piece construction with corrugated bottoms having 1" wide ribs on 2" centers arc welded to 3½", high side rails. Ventilating holes, 11⁄16" diameter on 1" centers, shall be provided across valleys of the corrugations. Welds shall be MIG-arc type with approximately ½", diameter fused zone for rigidity to resist the rigors of shipping, installation and service.
13. Trays shall be Cope Trof as manufactured by T. J. Cope, Inc.

COPECHANNEL

6



Cable Tray for Branch Power Circuits,
Control, Signal & Tubing Systems.

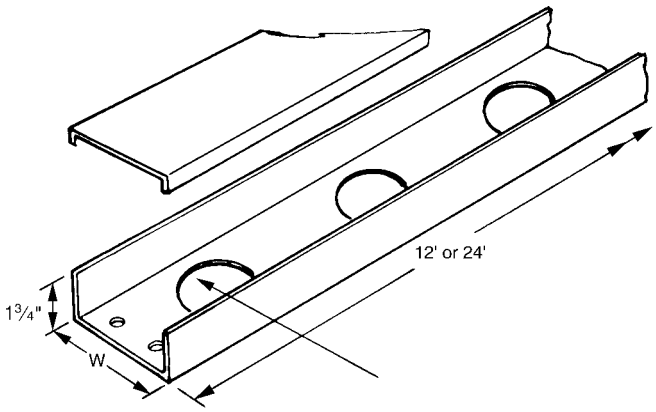
COPE CHANNEL

Cope Channel supports single branches of power or multiconductor control cable or instrument tubing. Ideal for communication, fire alarm, or call station and clock cabling. A complete line of devices are available for interfacing with Cope Ladders and Cope Trofs. Compatible with any cable tray system. Cope Channel is more economical than conduit.

Cope Channel is offered in both aluminum and steel, either hot dip mill galvanized (ASTM A 525), or hot dip galvanized after fabrication (ASTM A 386). Covers are available in aluminum and mill galvanized steel. Connectors are furnished with all straight sections and fittings. Other accessories must be ordered separately.

Cope Channel is offered ventilated or solid. Basic units are 3", 4", or 6" wide and are 1¾" high. Standard lengths are 12' (3.7m) and 24' (7.4m) long. A load chart is furnished to give you guidance on how often you should support the system. Fitting radii available are 12", 24", and 36". Cope Channel meets NEMA VE-1 standards for cable tray.

Straight Section and Flanged Cover



ORDERING

For ordering, specify by catalog number using the following prefix to specify the material and finish.

Catalog Number Prefix

	Straight Sections	Fittings, Accessories & Connectors	Covers
Aluminum	1124	24	FS24
Mill-Galv. Steel	6122	22	FS22
Hot-Dip Galv. Steel	6123	23	—

Catalog Number – Straight Section

Finish	Width	Length	Type
1124 - Alum.	3" (76mm)	SL-12 = 12' (3.65m)	V - Vented
6122 - Mill Galv.	4" (102mm)	SL-24 = 24' (7.3m)	S - Solid
6123 - HDGAF	6" (152mm)		

Example: 1124-04SL-12-V is a 4" wide, vented, 12' aluminum tray.

Catalog Number – Flanged Cover

Finish	Width	Length
FS24 - Alum.	3" (76mm)	SL-12 = 12' (3.65m)
FS22 - Mill Galv.	4" (102mm)	
	6" (152mm)	

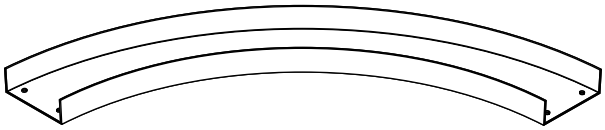
Example: FS24-04SL-12 is a 4" wide, 12' aluminum cover.
NOTE: 24' length not available.

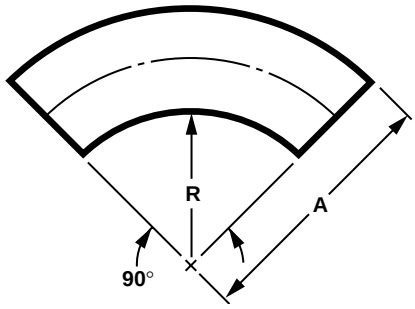
Loads and Deflection

Width	Cope Channel Basic No.	8' Span (2.4m) #/Lin Ft*	8' Span (2.4m) Deflection	10' Span (3.0m) #/Lin Ft*	10' Span (3.0m) Deflection	12' Span (3.7m) #/Lin Ft*	12' Span (3.7m) Deflection
	Aluminum-Plain Finish						
3" (76mm)	1124-03SL	8	.21" (5.3mm)	5	.33" (8.4mm)	3	.40" (10.6mm)
4" (102mm)	1124-04SL	13	.34" (8.6mm)	9	.57" (14.5mm)	6	.79" (20.2mm)
6" (152mm)	1124-06SL	15	.37" (9.4mm)	10	.61" (15.5mm)	6	.76" (19.3mm)
	Hot Dip Mill-Galvanized Steel (ASTM A-525)						
3" (76mm)	6122-03SL	8	.13" (3.3mm)	5	.20" (5 1mm)	3	.25" (6.4mm)
4" (102mm)	6122-04SL	13	.21" (5.3mm)	9	.35" (8.9mm)	6	.48" (12.2mm)
6" (152mm)	6122-06SL	15	.23" (5.8mm)	10	.37" (94mm)	6	.46" (11.7mm)
	Hot Dip Galvanized Steel (ASTM A-386), Covers Mill-Galvanized Only						
3" (76mm)	6123-03SL	8	.13" (3.3mm)	5	.20" (51mm)	3	.25" (6.4mm)
4" (102mm)	6123-04SL	13	.21" (5.3mm)	9	.35" (8.9mm)	6	.48" (12.2mm)
6" (152mm)	6123-06SL	15	.23" (5.8mm)	10	.37" (9.4mm)	6	.46" (11.7mm)

(*) For kg/m multiply #/Lin Ft by 1.48

90° HORIZONTAL ELBOW



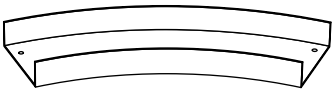


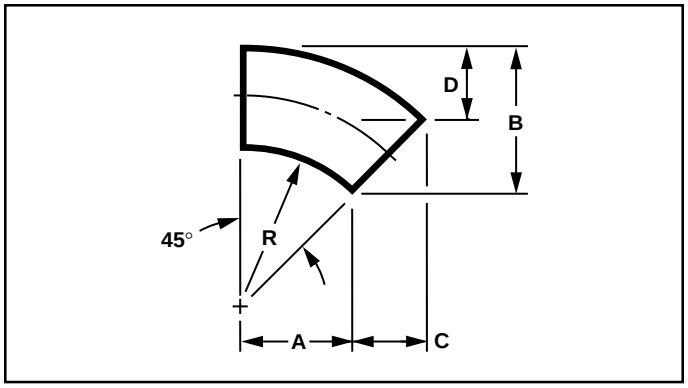
Radius - R	Width - W	Catalog No.	"A" Dim.
	3" (76mm)	*Prefix*-039F-12	15" (381mm)
	4" (102mm)	*Prefix*-049F-12	16" (406mm)
	6" (152mm)	*Prefix*-069F-12	18" (457mm)
	3" (76mm)	*Prefix*-039F-24	17" (432mm)
	4" (102mm)	*Prefix*-049F-24	28" (711mm)
	6" (152mm)	*Prefix*-069F-24	30" (762mm)
	3" (76mm)	*Prefix*-039F-36	39" (991mm)
	4" (102mm)	*Prefix*-049F-36	40" (1016mm)
	6" (152mm)	*Prefix*-069F-36	42" (1067mm)

Prefixes: 22 = Mill-Galv. Steel 23 = Hot-Dip Galv. Steel 24 = Aluminum

60° HORIZONTAL ELBOW

45° HORIZONTAL ELBOW

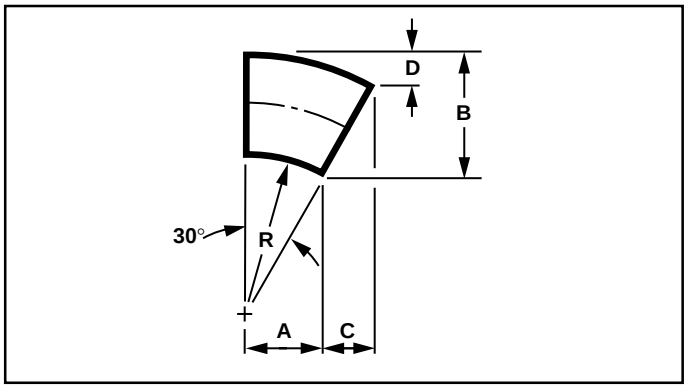




Radius-R	Width - W	Catalog No.	"A" Dim.	"B" Dim.	"C" Dim.	"D" Dim.
12" (305mm)	3" (76mm)	*Prefix*-034F-12	8½" (216mm)	6½" (165mm)	2⅛" (54mm)	4⅜" (112mm)
	4" (102mm)	*Prefix*-044F-12	8½" (216mm)	7½" (191mm)	2⅞" (71mm)	4¾" (119mm)
	6" (152mm)	*Prefix*-064F-12	8½" (216mm)	9½" (241mm)	4¼" (108mm)	5¾" (134mm)
24" (610mm)	3" (76mm)	*Prefix*-034F-24	17⅛" (431mm)	10⅛" (255mm)	2⅛" (54mm)	7⅞" (201mm)
	4" (102mm)	*Prefix*-044F-24	17⅛" (431mm)	11⅛" (280mm)	2⅞" (71mm)	8¼" (208mm)
	6" (152mm)	*Prefix*-064F-24	17⅛" (431mm)	13⅛" (331mm)	4¼" (108mm)	8¾" (223mm)
36" (914mm)	3" (76mm)	*Prefix*-034F-36	25½" (647mm)	13⅝" (344mm)	2⅛" (54mm)	11½" (291mm)
	4" (102mm)	*Prefix*-044F-36	25½" (647mm)	14⅝" (370mm)	2⅞" (71mm)	11¾" (298mm)
	6" (152mm)	*Prefix*-064F-36	25½" (647mm)	16⅝" (421mm)	4¼" (108mm)	12⅜" (313mm)

Prefixes: 22 = Mill-Galv. Steel 23 = Hot-Dip Galv. Steel 24 = Aluminum

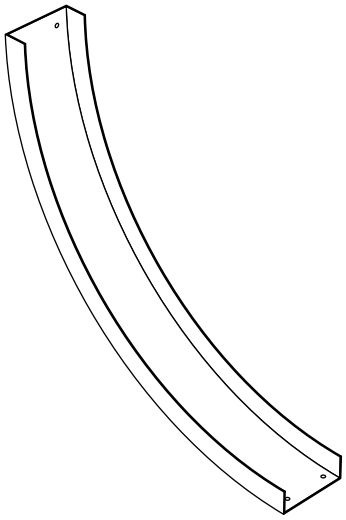
30° HORIZONTAL ELBOW

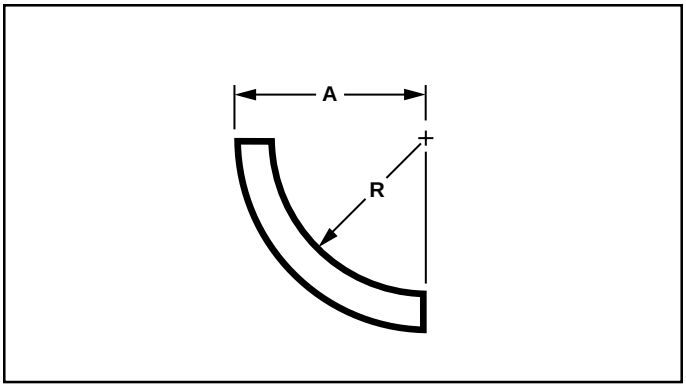


Radius-R	Width - W	Catalog No.	"A" Dim.	"B" Dim.	"C" Dim.	"D" Dim.
12" (305mm)	3" (76mm)	*Prefix*-033F-12	6" (152mm)	4⅝" (117mm)	1½" (38mm)	2" (51mm)
	4" (102mm)	*Prefix*-043F-12	6" (152mm)	5⅝" (143mm)	2" (51mm)	2⅛" (55mm)
	6" (152mm)	*Prefix*-063F-12	6" (152mm)	7⅝" (194mm)	3" (76mm)	2⅜" (61mm)
24" (610mm)	3" (76mm)	*Prefix*-033F-24	12" (305mm)	6¼" (158mm)	1½" (38mm)	3⅝" (92mm)
	4" (102mm)	*Prefix*-043F-24	12" (305mm)	7¼" (183mm)	2" (51mm)	3¾" (95mm)
	6" (152mm)	*Prefix*-063F-24	12" (305mm)	9¼" (234mm)	3" (76mm)	4" (102mm)
36" (914mm)	3" (76mm)	*Prefix*-033F-36	18" (457mm)	7⅞" (198mm)	1½" (38mm)	5¼" (133mm)
	4" (102mm)	*Prefix*-043F-36	18" (457mm)	8⅞" (224mm)	2" (51mm)	5⅜" (137mm)
	6" (152mm)	*Prefix*-063F-36	18" (457mm)	10⅞" (275mm)	3" (76mm)	5⅝" (143mm)

Prefixes: 22 = Mill-Galv. Steel 23 = Hot-Dip Galv. Steel 24 = Aluminum

90° VERTICAL INSIDE ELBOW

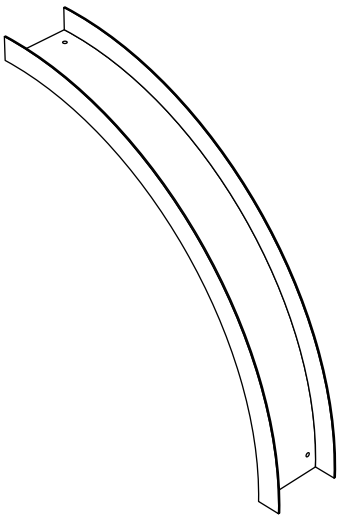


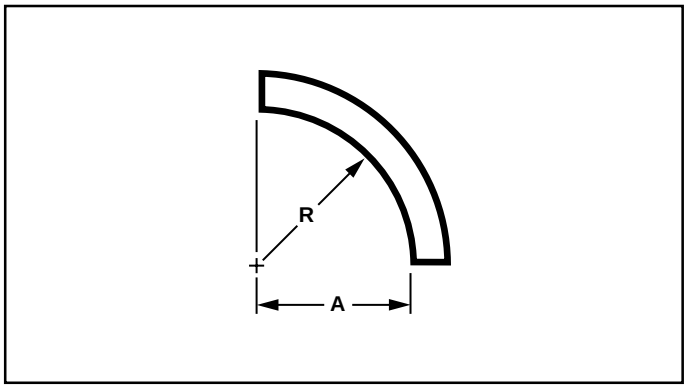


Radius - R	Width - W	Catalog No.	"A" Dimension
12" (305mm)	3" (76mm)	*Prefix*-039I-12	12" (305mm)
	4" (102mm)	*Prefix*-049I-12	12" (305mm)
	6" (152mm)	*Prefix*-069I-12	12" (305mm)
24" (610mm)	3" (76mm)	*Prefix*-039I-24	24" (610mm)
	4" (102mm)	*Prefix*-049I-24	24" (610mm)
	6" (152mm)	*Prefix*-069I-24	24" (610mm)
36" (914mm)	3" (76mm)	*Prefix*-039I-36	36" (914mm)
	4" (102mm)	*Prefix*-049I-36	36" (914mm)
	6" (152mm)	*Prefix*-069I-36	36" (914mm)

Prefixes: 22 = Mill-Galv. Steel 23 = Hot-Dip Galv. Steel 24 = Aluminum

90° VERTICAL OUTSIDE ELBOW

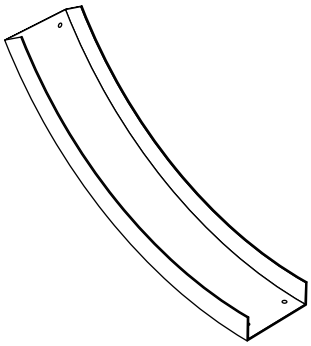


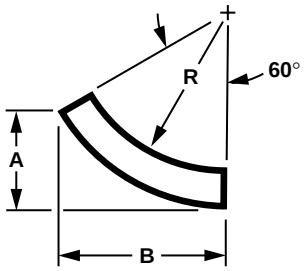


Radius - R	Width - W	Catalog No.	"A" Dimension
12" (305mm)	3" (76mm)	*Prefix*-0390-12	13¾" (349mm)
	4" (102mm)	*Prefix*-0490-12	13¾" (349mm)
	6" (152mm)	*Prefix*-0690-12	13¾" (349mm)
24" (610mm)	3" (76mm)	*Prefix*-0390-24	25¾" (654mm)
	4" (102mm)	*Prefix*-0490-24	25¾" (654mm)
	6" (152mm)	*Prefix*-0690-24	25¾" (654mm)
36" (914mm)	3" (76mm)	*Prefix*-0390-36	37¾" (959mm)
	4" (102mm)	*Prefix*-0490-36	37¾" (959mm)
	6" (152mm)	*Prefix*-0690-36	37¾" (959mm)

Prefixes: 22 = Mill-Galv. Steel 23 = Hot-Dip Galv. Steel 24 = Aluminum

60° VERTICAL INSIDE ELBOW

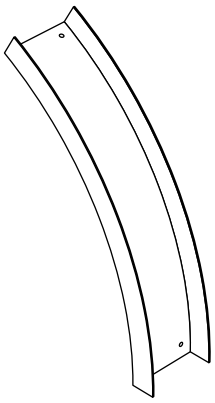


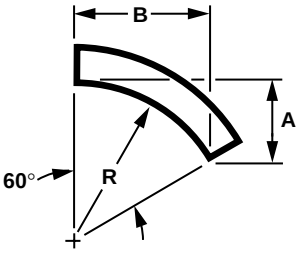


Radius - R	Width - W	Catalog No.	"A" Dim.	"B" Dim.
12" (305mm)	3" (76mm)	*Prefix*-036I-12	6⅞" (175mm)	11⅞" (302mm)
	4" (102mm)	*Prefix*-046I-12	6⅞" (175mm)	11⅞" (302mm)
	6" (152mm)	*Prefix*-064I-12	6⅞" (175mm)	11⅞" (302mm)
24" (610mm)	3" (76mm)	*Prefix*-036I-24	12⅞" (327mm)	22¼" (567mm)
	4" (102mm)	*Prefix*-046I-24	12⅞" (327mm)	22¼" (567mm)
	6" (152mm)	*Prefix*-066I-24	12⅞" (327mm)	22¼" (567mm)
36" (914mm)	3" (76mm)	*Prefix*-036I-36	18⅞" (479mm)	32¾" (830mm)
	4" (102mm)	*Prefix*-046I-36	18⅞" (479mm)	32¾" (830mm)
	6" (152mm)	*Prefix*-066I-36	18⅞" (479mm)	32¾" (830mm)

Prefixes: 22 = Mill-Galv. Steel 23 = Hot-Dip Galv. Steel 24 = Aluminum

60° VERTICAL OUTSIDE ELBOW

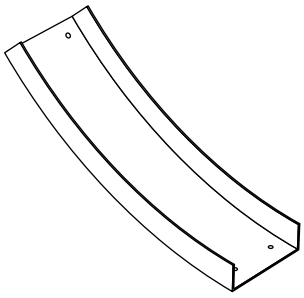


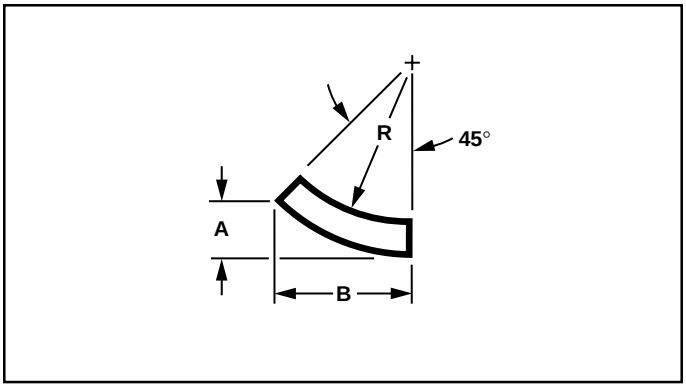


Radius - R	Width - W	Catalog No.	"A" Dim.	"B" Dim.
12" (305mm)	3" (76mm)	*Prefix*-0360-12	6" (152mm)	10⅜" (264mm)
	4" (102mm)	*Prefix*-0460-12	6" (152mm)	10⅜" (264mm)
	6" (152mm)	*Prefix*-0660-12	6" (152mm)	10⅜" (264mm)
24" (610mm)	3" (76mm)	*Prefix*-0360-24	12" (305mm)	20¾" (528mm)
	4" (102mm)	*Prefix*-0460-24	12" (305mm)	20¾" (528mm)
	6" (152mm)	*Prefix*-0660-24	12" (305mm)	20¾" (528mm)
36" (914mm)	3" (76mm)	*Prefix*-0360-36	18" (457mm)	31¼" (792mm)
	4" (102mm)	*Prefix*-0460-36	18" (457mm)	31¼" (792mm)
	6" (152mm)	*Prefix*-0660-36	18" (457mm)	31¼" (792mm)

Prefixes: 22 = Mill-Galv. Steel 23 = Hot-Dip Galv. Steel 24 = Aluminum

45° VERTICAL INSIDE ELBOW

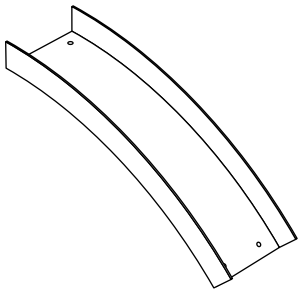


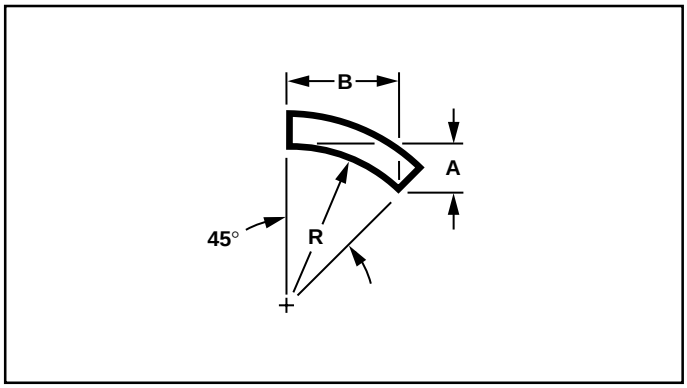


Radius - R	Width - W	Catalog No.	"A" Dim.	"B" Dim.
12" (305mm)	3" (76mm)	*Prefix*-034I-12	4⅛" (102mm)	9¾" (247mm)
	4" (102mm)	*Prefix*-044I-12	4⅛" (102mm)	9¾" (247mm)
	6" (152mm)	*Prefix*-064I-12	4⅛" (102mm)	9¾" (247mm)
24" (610mm)	3" (76mm)	*Prefix*-034I-24	7½" (191mm)	18¼" (463mm)
	4" (102mm)	*Prefix*-044I-24	7½" (191mm)	18¼" (463mm)
	6" (152mm)	*Prefix*-064I-24	7½" (191mm)	18¼" (463mm)
36" (914mm)	3" (76mm)	*Prefix*-034I-36	11⅛" (281mm)	26¾" (678mm)
	4" (102mm)	*Prefix*-044I-36	11⅛" (281mm)	26¾" (678mm)
	6" (152mm)	*Prefix*-064I-36	11⅛" (281mm)	26¾" (678mm)

Prefixes: 22 = Mill-Galv. Steel 23 = Hot-Dip Galv. Steel 24 = Aluminum

45° VERTICAL OUTSIDE ELBOW

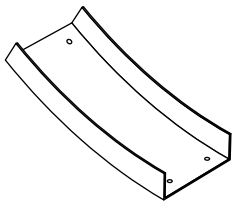


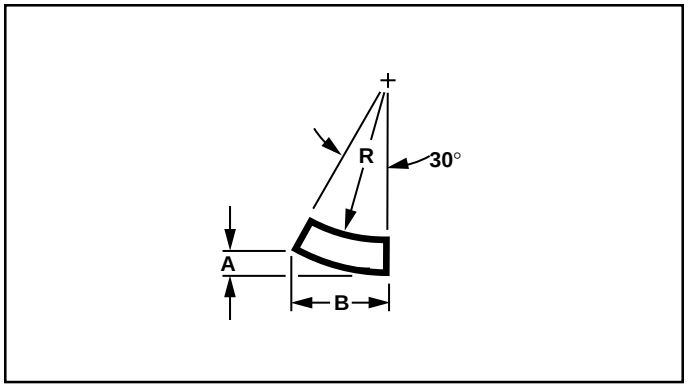


Radius - R	Width - W	Catalog No.	"A" Dim.	"B" Dim.
12" (305mm)	3" (76mm)	*Prefix*-0340-12	3½" (89mm)	8½" (216mm)
	4" (102mm)	*Prefix*-0440-12	3½" (89mm)	8½" (216mm)
	6" (152mm)	*Prefix*-0640-12	3½" (89mm)	8½" (216mm)
24" (610mm)	3" (76mm)	*Prefix*-0340-24	7⅛" (179mm)	17⅛" (431mm)
	4" (102mm)	*Prefix*-0440-24	7⅛" (179mm)	17⅛" (431mm)
	6" (152mm)	*Prefix*-0640-24	7⅛" (179mm)	17⅛" (431mm)
36" (914mm)	3" (76mm)	*Prefix*-0340-36	10½" (268mm)	25⅛" (646mm)
	4" (102mm)	*Prefix*-0440-36	10½" (268mm)	25⅛" (646mm)
	6" (152mm)	*Prefix*-0640-36	10½" (268mm)	25⅛" (646mm)

Prefixes: 22 = Mill-Galv. Steel 23 = Hot-Dip Galv. Steel 24 = Aluminum

30° VERTICAL INSIDE ELBOW

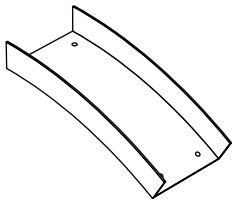


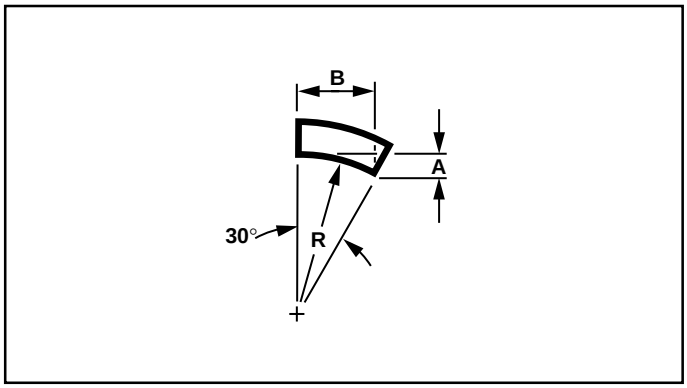


Radius - R	Width - W	Catalog No.	"A" Dim.	"B" Dim.
12" (305mm)	3" (76mm)	*Prefix*-033I-12	1⅞" (47mm)	6⅞" (175mm)
	4" (102mm)	*Prefix*-043I-12	1⅞" (47mm)	6⅞" (175mm)
	6" (152mm)	*Prefix*-063I-12	1⅞" (47mm)	6⅞" (175mm)
24" (610mm)	3" (76mm)	*Prefix*-033I-24	3½" (87mm)	12⅞" (327mm)
	4" (102mm)	*Prefix*-043I-24	3½" (87mm)	12⅞" (327mm)
	6" (152mm)	*Prefix*-063I-24	3½" (87mm)	12⅞" (327mm)
36" (914mm)	3" (76mm)	*Prefix*-033I-36	5⅛" (129mm)	18⅞" (479mm)
	4" (102mm)	*Prefix*-043I-36	5⅛" (129mm)	18⅞" (479mm)
	6" (152mm)	*Prefix*-063I-36	5⅛" (129mm)	18⅞" (479mm)

Prefixes: 22 = Mill-Galv. Steel 23 = Hot-Dip Galv. Steel 24 = Aluminum

30° VERTICAL OUTSIDE ELBOW

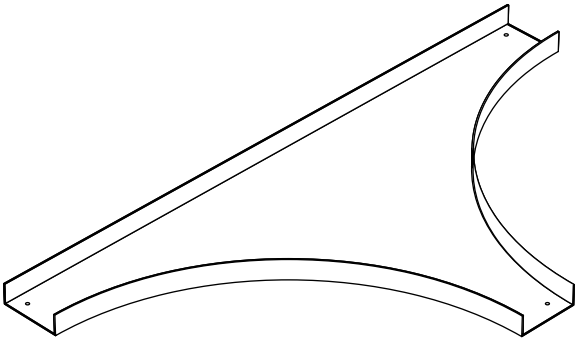


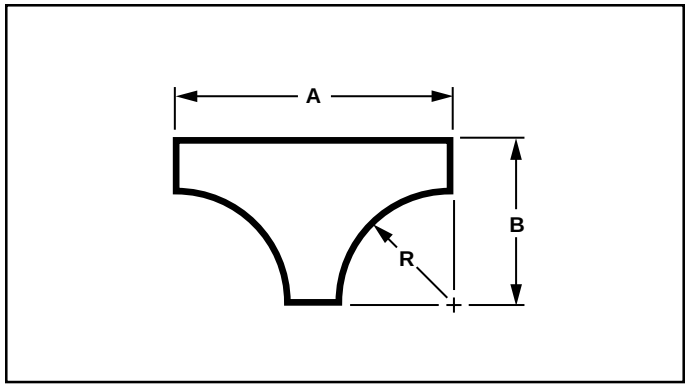


Radius - R	Width - W	Catalog No.	"A" Dim.	"B" Dim.
12" (305mm)	3" (76mm)	*Prefix*-0330-17	1⅝" (40mm)	6" (152mm)
	4" (102mm)	*Prefix*-0430-12	1⅝" (40mm)	6" (152mm)
	6" (152mm)	*Prefix*-0630-12	1⅝" (40mm)	6" (152mm)
24" (610mm)	3" (76mm)	*Prefix*-0330-24	3¼" (82mm)	12" (305mm)
	4" (102mm)	*Prefix*-0430-24	3¼" (82mm)	12" (305mm)
	6" (152mm)	*Prefix*-0630-24	3¼" (82mm)	12" (305mm)
36" (914mm)	3" (76mm)	*Prefix*-0330-36	4⅞" (122mm)	18" (457mm)
	4" (102mm)	*Prefix*-0430-36	4⅞" (122mm)	18" (457mm)
	6" (152mm)	*Prefix*-0630-36	4⅞" (122mm)	18" (457mm)

Prefixes: 22 = Mill-Galv. Steel 23 = Hot-Dip Galv. Steel 24 = Aluminum

HORIZONTAL TEE

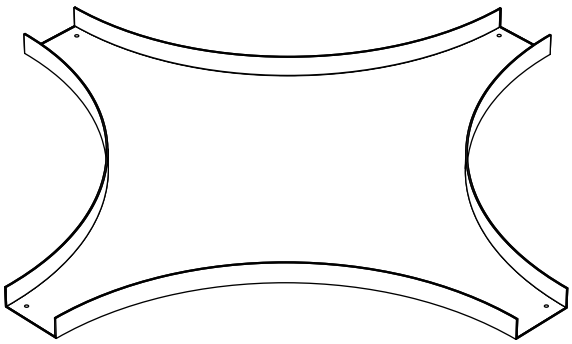


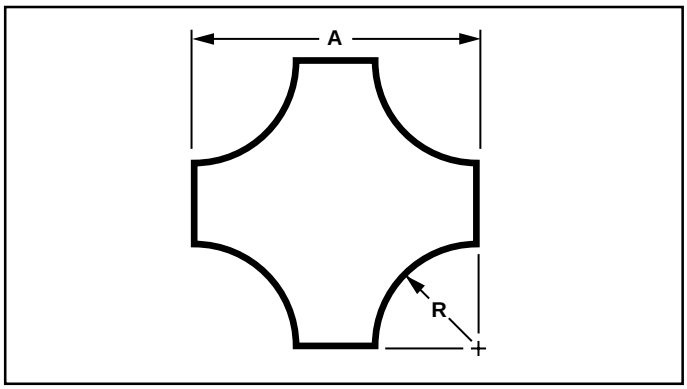


Radius - R	Width - W	Catalog No.	"A" Dim.	"B" Dim.
12" (305mm)	3" (76mm)	*Prefix*-03FT-12	27" (686mm)	15" (381mm)
	4" (102mm)	*Prefix*-04FT-12	28" (711mm)	16" (406mm)
	6" (152mm)	*Prefix*-06FT-12	30" (762mm)	18" (457mm)
24" (610mm)	3" (76mm)	*Prefix*-03FT-24	51" (1275mm)	27" (686mm)
	4" (102mm)	*Prefix*-04FT-24	52" (1321mm)	28" (711mm)
	6" (152mm)	*Prefix*-06FT-24	54" (1372mm)	30" (762mm)
36" (914mm)	3" (76mm)	*Prefix*-03FT-36	75" (1905mm)	39" (991mm)
	4" (102mm)	*Prefix*-04FT-36	76" (1930mm)	40" (1016mm)
	6" (152mm)	*Prefix*-06FT-36	78" (1981mm)	42" (1067mm)

Prefixes: 22 = Mill-Galv. Steel 23 = Hot-Dip Galv. Steel 24 = Aluminum

HORIZONTAL CROSS

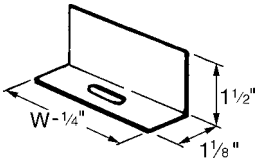




Radius - R	Width - W	Catalog No.	"A" Dim.
12" (305mm)	3" (76mm)	*Prefix*-03FC-12	27" (686mm)
	4" (102mm)	*Prefix*-04FC-12	28" (711mm)
	6" (152mm)	*Prefix*-06FC-12	30" (762mm)
24" (610mm)	3" (76mm)	*Prefix*-03FC-24	51" (1295mm)
	4" (102mm)	*Prefix*-04FC-24	52" (1321mm)
	6" (152mm)	*Prefix*-06FC-24	54" (1372mm)
36" (914mm)	3" (76mm)	*Prefix*-03FC-36	75" (1905mm)
	4" (102mm)	*Prefix*-04FC-36	76" (1930mm)
	6" (152mm)	*Prefix*-06FC-36	78" (1981mm)

Prefixes: 22 = Mill-Galv. Steel 23 = Hot-Dip Galv. Steel 24 = Aluminum

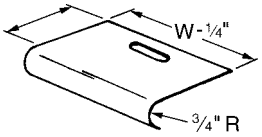
BLIND END



W	Catalog Number
3" (76mm)	*Prefix*-03BE
4" (102mm)	*Prefix*-04BE
6" (152mm)	*Prefix*-06BE

Steel Plated, Furnished with one set ¼" x ¾" bolt, nut and washer.

END DROPOUT

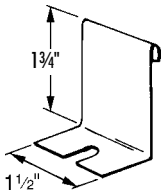


W	Catalog Number
3" (76mm)	*Prefix*-03D0
4" (102mm)	*Prefix*-04D0
6" (152mm)	*Prefix*-06D0

Prefixes: 22 = Mill-Galv. Steel,
23 = Hot-Dip Galv. Steel,
24 = Aluminum
Steel plated, Furnished with one set ¼" x ¾" bolt, nut and washer.

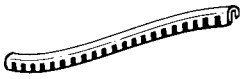
CHANNEL HOLDDOWN CLAMP (STAINLESS STEEL)

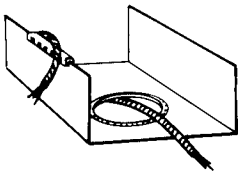
Part No. 9079



For use with steel or aluminum systems.
(No hardware included.)

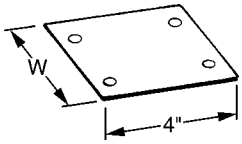
NYLON DROPOUT GROMMET – PART NO. DOG-1





Use at cable dropouts, over sides or thru vent holes.
Furnished in 12' lengths. Cut to length in field.

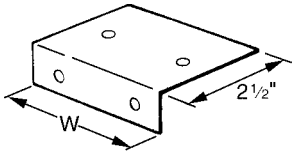
STANDARD CONNECTOR



W	Catalog Number
3" (76mm)	*Prefix*-03CS
4" (102mm)	*Prefix*-04CS
6" (152mm)	*Prefix*-06CS

Prefixes: 22 = Mill-Galv. Steel,
23 = Hot-Dip Galv. Steel,
24 = Aluminum
Hardware: ⅜" x ¾" Bolt and flanged nut
Steel plated incl. (4-sets)

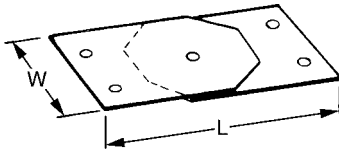
CHANNEL TO BOX OR WALL CONNECTOR



W	Catalog Number
3" (76mm)	*Prefix*-03CB
4" (102mm)	*Prefix*-04CB
6" (152mm)	*Prefix*-06CB

Prefixes: 22 = Mill-Galv. Steel,
23 = Hot-Dip Galv. Steel,
24 = Aluminum
Furnished with two sets ⅜" x ¾" bolt, nut and washer
Steel plated.

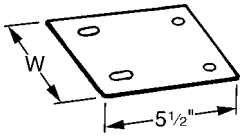
ADJUSTABLE HORIZONTAL CONNECTOR



W	L	Catalog No.
3" (76mm)	7½" (191mm)	*Prefix*-03CH
4" (102mm)	8½" (216mm)	*Prefix*-04CH
6" (152mm)	10½" (267mm)	*Prefix*-06CH

Prefixes: 22 = Mill-Galv. Steel,
23 = Hot-Dip Galv. Steel,
24 = Aluminum
Hardware: ⅜" x ¾" Bolt and flanged nut
Steel plated incl. (4-sets)

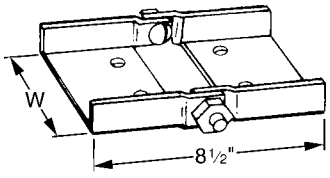
EXPANSION CONNECTOR



W	Catalog Number
3" (76mm)	*Prefix*-03CE
4" (102mm)	*Prefix*-04CE
6" (152mm)	*Prefix*-06CE

Prefixes: 22 = Mill-Galv. Steel,
23 = Hot-Dip Galv. Steel,
24 = Aluminum
Hardware: ⅜" x ¾" Bolt and flanged nut
Steel plated incl. (4-sets)

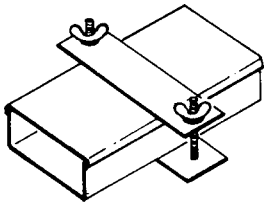
ADJUSTABLE RISER CONNECTOR



W	Catalog Number
3" (76mm)	*Prefix*-03CV
4" (102mm)	*Prefix*-04CV
6" (152mm)	*Prefix*-06CV

Prefixes: 22 = Mill-Galv. Steel,
23 = Hot-Dip Galv. Steel,
24 = Aluminum
Hardware: 3/8" x 3/4" Bolt and flanged nut
Steel plated incl. (4-sets)

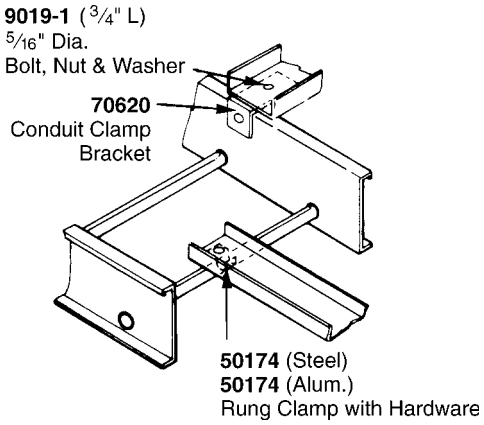
COVER CONNECTOR

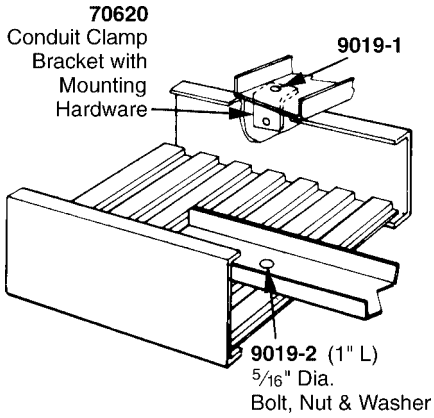


W	Catalog Number
3" (76mm)	*Prefix*-03CC
4" (102mm)	*Prefix*-04CC
6" (152mm)	*Prefix*-06CC

Prefixes: 22 = Mill-Galv. Steel,
23 = Hot-Dip Galv. Steel,
24 = Aluminum
Hardware: 1/4" x 2 1/4" Machine screw and wing nut
Steel plated incl. (2-sets)

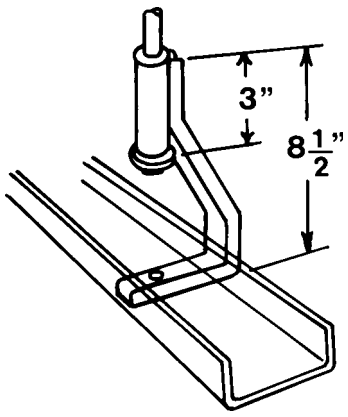
INTERCONNECTIONS





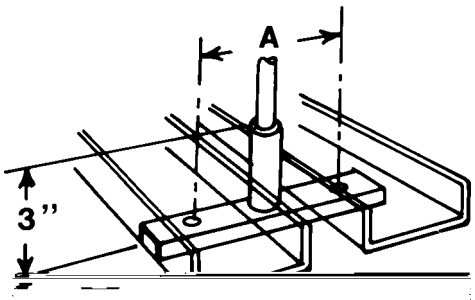
CHANNEL HANGERS

For 3"-, 4"- or 6"- wide Cope Channel raceways. Pipe sleeve accommodates either 3/8" or 1/2" diameter rods.
Finish is hot-dip galvanized after fabrication. Order hardware separately.



SINGLE CHANNEL HANGER

Catalog No.	Use With
9013	3"- & 4"-wide channel
9013-1	6"-wide channel



DOUBLE CHANNEL HANGER

Catalog No.	Use With	Dimension "A"
9014	3"- & 4-wide channel	5"
9014-1	6"-wide channel	7"

Table of Conversions

ENLISH TO METRIC CONVERSION			METRIC TO ENGLISH CONVERISON		
To Convert From	**To**	**Multiply By**	**To Convert From**	**To**	**Multiply By**
Length					
Inch [in]	Millimeter [mm]	25.400 000	Millimeter [mm]	Inch [in]	0.039 370
Foot [ft]	Meter [m]	0.304 800	Meter [m]	Foot [ft]	3.280 840
Yard [yd]	Meter [m]	0.914 400	Meter [m]	Yard [yd]	1.093 613
Mile (U.S. Statute) [mi]	Kilometer [km]	1.609 347	Kilometer [km]	Mile (U.S. Statute) [mi]	0.621 370
Area					
Square Inch [in^2]	Square Millimeter [mm^2]	645.16	Square Millimeter [mm^2]	Square Inch [in^2]	0.001550
Square Foot [ft^2]	Square Meter [m^2]	0.092 903	Square Meter [m^2]	Square Foot [ft^2]	10.763 915
Square Yard [yd^2]	Sqare Meter [m^2]	0.836 127	Sqare Meter [m^2]	Square Yard [yd^2]	1.195 991
Square Mile [mi^2] (U.S. Statute)	Square Kilometer [km^2]	2.589 998	Square Kilometer [km2]	Square Mile [mi^2] (U.S. Statute)	0.386 101
Acre	Square Meter [m^2]	4046.873	Square Meter [m^2]	Acre	0.000 247
Acre	Hectare	0.404 687	Hectare	Acre	2.471 046
Volume					
Cubic Inch [in^3]	Cubic Millimeter [mm^3]	16387.06	Cubic Millimeter [mm^3]	Cubic Inch [in^3]	0.000061
Cubic Foot [ft^3]	Cubic Meter [m^3]	0.028 317	Cubic Meter [m^3]	Cubic Foot [ft^3]	35.314 662
Cubic Yard [yd^3]	Cubic Meter [m^3]	0.764 555	Cubic Meter [m^3]	Cubic Yard [yd^3]	1.307 950
Gallon (U.S. Liquid) [gal]	Litre [l]	3.785 412	Litre [l]	Gallon (U.S. Liquid) [gal]	0.264 172
Quart (U.S. Liquid) [qt]	Litre [l]	0.946 353	Litre [l]	Quart (U.S. Liquid) [qt]	1.056 688
Mass					
Ounce (Avoirdupois) [oz]	Gram [g]	28.349 520	Gram [g]	Ounce (Avoirdupois) [oz]	0.035 274
Pound (Avoirdupois) [lb]	Kilogram [kg]	0.453 592	Kilogram [kg]	Pound (Avoirdupois) [lb]	2.204 624
Short Ton	Kilogram [kg]	907.185	Kilogram [kg]	Short Ton	0.00110
Force					
Ounce-Force	Newton [N]	0.278 014	Newton [N]	Ounce-Force	3.596 941
Pound-Force [lbf]	Newton [N]	4.448 222	Newton [N]	Pound-Force [lbf]	0.224 809
Bending Moment					
Pound-Force-Inch [lbf-in]	Netwon-Meter [N-m]	0.112 985	Netwon-Meter [N-m]	Pound-Force-Inch [lbf-in]	8.850 732
Pound-Force-Foot [lbf-ft]	Newton-Meter [N-m]	1.355 818	Newton-Meter [N-m]	Pound-Force-Foot [lbf-ft]	0.737 562
Pressure, Stress					
Pound-Force per Square Inch [lbf/in^2]	Kilopascal [kPa]	6.894 757	Kilopascal [kPa]	Pound-Force per Square Inch [lbf/in^2]	0.145 038
Foot of Water (39.2 F)	Kilopascal [kPa]	2.988 980	Kilopascal [kPa]	Foot of Water (39.2 F)	0.334 562
Inch of Mercury (32 F)	Kilopascal [kPa]	3.386 380	Kilopascal [kPa]	Inch of Mercury (32 F)	0.295 301
Energy, Work, Heat					
Foot-Pound-Force [ft-lbf]	Joule [J]	1.355 818	Joule [J]	Foot-Pound-Force [ft-lbf]	0.737 562
British Thermal Unit [Btu]	Joule [J]	1055.056	Joule [J]	British Thermal Unit [Btu]	0.000948
Calorie [cal]	Joule [J]	4.186 800	Joule [J]	Calorie [cal]	0.238 846
Kilowatt Hour [kW-h]	Joule [J]	3600000	Joule [J]	Kilowatt Hour [kW-h]	2.78^{-7}
Power					
Foot-Pound-Force /Second [ft-lbs/s]	Watt [W]	1.355 818	Watt [W]	Foot-Pound-Force /Second [ft-lbs/s]	0.737 562
British Thermal Unit /Hour [Btu/h]	Watt [W]	0.293 071	Watt [W]	British Thermal Unit /Hour [Btu/h]	3.412 142
Horsepower (550 Ft. Lbf/s) [hp]	Kilowatt [kW]	0.745 700	Kilowatt [kW]	Horsepower (550 Ft. Lbf/s) [hp]	1.341 022
Angle					
Degree	Radian [rad]	0.017 453	Radian [rad]	Degree	57.295 788
Temperature					
Degree Fahrenheit [F]	Degree Celsius [C]	(F° -32)/1.8	Degree Celsius [C]	Degree Fahrenheit [F]	1.8xC°+32

Fractions & Decimal Equivalents

1/64	0.015625
1/32	0.03125
3/64	0.046875
1/16	0.0625
5/64	0.078125
3/32	0.09375
7/64	0.109375
1/8	0.125
9/64	0.140625
5/32	0.15625
11/64	0.171875
3/16	0.1875
13/64	0.203125
7/32	0.21875
15/64	0.234375
1/4	0.25
17/64	0.265625
9/32	0.28125
19/64	0.296875
5/16	0.3125
21/64	0.328125
11/32	0.34375
23/64	0.359375
3/8	0.375
25/64	0.390625
13/32	0.40625
27/64	0.421875
7/16	0.4375
29/64	0.453125
15/32	0.46875
31/64	0.484375
1/2	0.5
33/64	0.515625
17/32	0.53125
35/64	0.546875
9/16	0.5625
37/64	0.578125
19/32	0.59375
39/64	0.609375
5/8	0.625
41/64	0.640625
21/32	0.65625
43/64	0.671875
11/16	0.6875
45/64	0.703125
23/32	0.71875
47/64	0.734375
3/4	0.75
49/64	0.765625
25/32	0.78125
51/64	0.796875
13/16	0.8125
53/64	0.828125
27/32	0.84375
55/64	0.859375
7/8	0.875
57/64	0.890625
29/32	0.90625
59/64	0.921875
15/16	0.9375
61/64	0.953125
31/32	0.96875
63/64	0.984375
1	1.

COPE QUOTATION CHECK LIST

allied SUPPORT SYSTEMS

T.J. Cope, Inc.
11500 Norcom Road • Philadelphia, PA 19154
Phone: 800-688-4857 • Fax: 215-961-2580

PROJECT NAME: _____ DATE: _____

LOCATION: _____

TRAY TYPE

_____ Cope Ladder*
_____ Cope Hat*
_____ Cope Ventilated Trough
_____ Cope Solid Trough
_____ Cope Channel
_____ Cope Centipede*
_____ Cope CatTray

*RUNG SPACING
_____ 6"
_____ 9"
_____ 12"
_____ 18"

TRAY MATERIAL

_____ Aluminum
_____ Steel, Pre-Galvanized
_____ Steel, HDGAF
_____ 304 Stainless Steel
_____ 316 Stainless Steel
_____ Fiberglass
_____ Other

STRUCTURAL REQUIRMENTS

NEMA CLASS

	8A	12A	16A	20A
	8B	12B	16B	20B
	8C	12C	16C	20C

OR Cable Weight _____
Support Span _____

LOAD DEPTH

_____ 3"
_____ 4"
_____ 5"
_____ 6"

FITTING RADIUS

_____ 12"
_____ 24"
_____ 36"

SPECIAL REQUIREMENTS

_____
_____
_____
_____

DELIVERY REQUIREMENTS

_____
_____