AICKINSTRUT®

Fiberglass Framing System
Product Catalog

- Non-Metallic Channel Framing System & Accessories
- Hangers, Fasteners, Clamps, & Pipe Supports
- Instrument & Pipe Stands
- Custom Fabrication

ALLIED ELECTRICAL GROUP

Electrical Infrastructure Solutions™

www .alliedeg.com

Aickinstrut framing products for your non-metallic infrastructure applications

Aickinstrut Fiberglass Strut is the most widely used and accepted non-metallic strut support system in the world because it is the most complete and highest quality non-metallic line of accessories, fasteners, hangers, pipe clamps, and channels available.

Aickinstrut is a versatile, high-strength product that has been successfully used in thousands of applications world-wide. Some of those applications include: chemical plants, waste water treatment, refineries, marinas, pulp and paper, desalination facilities, theme parks, aquariums, and underground vaults.

Made from entirely nonmetallic, corrosion resistant resins, Aickinstrut can be used in demanding environments where steel strut systems may not be compatible.

Its lightweight components can be installed quickly and easily using standard tools.
All Aickinstrut parts incorporate the highest quality materials to provide superior chemical resistance, flame resistance, strength, and ultraviolet protection.

Because Aickinstrut manufactures a complete corrosion resistant strut support system, Aickinstrut is the only single source for all non-metallic support systems requirements.

Aickinstrut stands ready to provide assistance through its network of distributors and sales representatives.

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AICKINSHAPE

AICKINGRATE

AICKINSTRUT FABRICATION

The installation of fiberglass channel and accessories is similar to the installation of metallic channel and accessories. All standard installation practices and procedures apply. In general, special handling is not required. Fabrication of Aickinstrut components requires just three simple operations; cutting, drilling and sealing as described below.

Cutting – Cutting can be accomplished with a wide variety of saws. Hand held saws, such as hack saws (24 to 32 teeth per inch) are suitable when a few number of cuts are required. For frequent cutting, a circular power saw with a carbide-tipped masonry blade yields the best results and the greatest number of cuts. When using a power saw, dust filter masks, gloves and long sleeve clothing should be worn.

Drilling – Any standard twist bit, even when used with battery-powered drills will work well. Carbide-tipped drill bits are recommended.

Sealing – To protect against future migration of corrosive elements into the cut sections, all cuts and holes should be properly sealed using Aickincoat or Aickinzap.

LABOR SAVINGS

Aickinstrut fiberglass structural members can be cut and drilled at a much faster rate than steel. Typically, fiberglass can be fabricated in less than half the time. As a result, substantial labor savings will be realized. Also, Aickinstrut products average ⅓ the weight of their steel counterparts, making them much easier to handle on the job site.

RELATIVE MATERIAL COSTS

Aickinstrut materials are advantageously priced relative to specialty metals traditionally used in corrosive environments. Aickinstrut, even though slightly more expensive than pre-galvanized channel, can be used with the knowledge that it will not have to be maintained regularly or replaced after a brief time. Should pre-galvanized channel have to be replaced once, its cost far outweighs the expense of doing the initial installation with Aickinstrut.

MATERIAL

The finished Aickinstrut application will utilize a combination of materials from the following resin families:

Material Code	Material
E	PVC (extruded)
P	Polyester (pultruded)
V	Vinyl ester (pultruded)
PU	Polyurethane (injection molded)
PP	Polypropylene (injection molded)
N	Nylon (injection molded)

The ability of each material to handle high and low temperatures, chemical exposures and static loads is covered in each of the following sections. By using these criteria, you will be able to select the optimal Aickinstrut Channel, Fittings and Accessories for your particular applications.

OPERATING ENVIRONMENT

In order to design an Aickinstrut system for your application, consideration should be given to the maximum operating conditions. These "worst case" conditions will determine which type of Aickinstrut materials are best suited for your application. The three "worst case" operating conditions to consider are:

- Temperature
- Chemical Environment
- Loading

Temperature Ranges – Aickinstrut is supplied in six different materials covering distinct temperature ranges. Materials should be chosen which meet or exceed the minimum and maximum temperatures for your applications.

Material Code	Low Temperature	High Temperature
E	-25°F	130°F
P	-35°F	200°F
V	-35°F	200°F
PU	-40°F	140°F
PP	-30°F	150°F
N	-20°F	150°F

The temperature ranges indicated are meant to be used only as a general guideline. Continual exposure to elevated temperatures reduces the strength properties of plastics and glass reinforced fiberglass. Actual resin test data confirms that a 50% reduction in strength occurs at the extreme high temperature levels.

Chemical Resistance – Each resin family has its own specifications regarding its performance against corrosion resistance. Use the following chart to determine which Aickinstrut material system will provide the best performance for your particular application. The results in the chart are based upon immersion for a 24 hour period. This is typically the **"worst case"** exposure to corrosion. Less severe contact such as spills, splashes and vapor condensate will exceed the performance results listed in the table.

Loading – Channel loading is defined on pages 13 to 15. Additional loading and design limitations for fittings and accessories are described in the appropriate section for that part.

THE PULTRUSION PROCESS

The pultruded structural component is made by reinforcing a polymer resin (usually polyester or vinyl ester resin) with multiple strands of glass filament and alternating layers of glass mat.

The glass is drawn through the liquid resin, which coats and saturates the fibers. The combination of resin and glass is then continuously guided and pulled (pultruded) through a heated die that determines the shape of the component.

In the die, the resin is cured to form a permanent, reinforced part which can be cut to a specific length. Since the hardened fiberglass pultrusion is reinforced with an internal arrangement of permanently bonded continuous glass fibers, it possesses great strength. In addition to strength, pultruded fiberglass components exhibit exceptional corrosion resistance. This attribute makes fiberglass the material of choice for many harsh industrial applications.

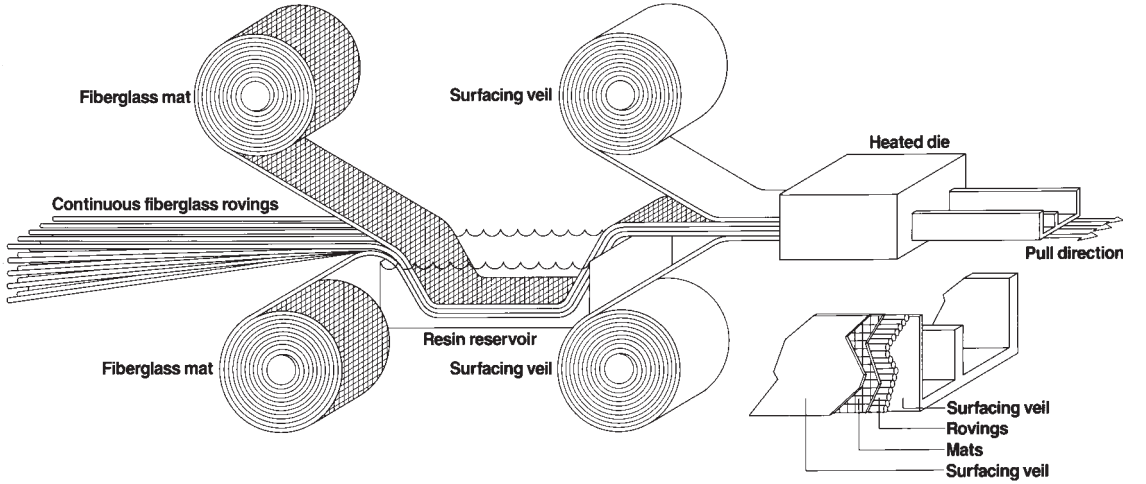
RESIN SYSTEMS

Polyester and vinyl ester resin systems are available. The vinyl ester resin system is somewhat stronger and is applied in severe corrosive applications.

Both resin systems are flame retardant, conforming to ASTM E84, Class 1 flame rating and are self extinguishing per the requirements of UL94V-0.

Consult the corrosion resistance guide on page 8 and 9 to determine the correct resin system for your application.

Typical Properties	Test Method	Direction	Unit	Typical Value Polyester	Typical Value Vinyl Ester
Mechanical					
Ultimate Tensile Strength	ASTM D-638	Longitudinal	PSI	30,000	35,000
	ASTM D-638	Transverse	PSI	7,000	10,000
Tensile Modulus	ASTM D-638	Longitudinal	PSI	2.5×10^6	3.0×10^6
	ASTM D-638	Transverse	PSI	0.8×10^6	1.0×10^6
Ultimate Compressive Strength	ASTM D-695	Longitudinal	PSI	30,000	35,000
	ASTM D-695	Transverse	PSI	15,000	20,000
Compressive Modulus	ASTM D-695	Longitudinal	PSI	2.5×10^6	2.5×10^6
	ASTM D-695	Transverse	PSI	1.0×10^6	1.2×10^6
Ultimate Flexural Strength	ASTM D-790	Longitudinal	PSI	30,000	35,000
	ASTM D-790	Transverse	PSI	10,000	14,000
Flexural Modulus	ASTM D-790	Longitudinal	PSI	1.6×10^6	2.0×10^6
	ASTM D-790	Transverse	PSI	0.8×10^6	1.0×10^6
Shear Strength Short Beam	ASTM D-2344	Longitudinal or	PSI	5,500	7,000
		Transverse	PSI	5,500	6,000
Impact Strength-Izod	ASTM D-256	Longitudinal	ft.-lb./in.	25	30
		Transverse	ft.-lb./in.	4	5
Hardness-Barcol	ASTM D-2583	Perpendicular	—	50	50
Electrical					
Electric Strength Short Time-in oil	ASTM D-149	Perpendicular	Volts/mil.	200	200
		Parallel	KV/in.	35	35
Dielectric Constant	ASTM D-150	Perpendicular	—	5.0	5.0
Dissipation Factor	ASTM D-150	Perpendicular	—	0.03	0.03
Arc Resistance	ASTM D-495	Longitudinal or	Seconds	80	120
		Transverse	Seconds	80	120



Glass Roving and Mat Reinforced Polyester and Vinyl Ester Fiberglass Components

Typical Properties	Test Method	Direction	Unit	Typical Value Polyester	Typical Value Vinyl Ester
Other					
Thermal Coefficient of Expansion	ASTM D-696	Longitudinal	in./in./°F	5 x 10^{-6}	5 x 10^{-6}
Thermal Conductivity		Longitudinal	BTU/Hr. sq. ft./in./°F	4.0	4.0
Water Absorption 24 hours	ASTM 0-570	Longitudinal	%	1	1
Density	ASTM D-792	Longitudinal	lbs./cu.in.	0.062	0.062
Color (Standard)				Dark Gray	Beige
Flammability	UL94		Classification:	V-O	V-O
Flammability	ASTME84		Rating:	25	25

The foregoing list of properties was derived from laboratory data using coupon test specimens cut from pultruded sections. Such information should only be used as a general guide in design. Many actual components (such as cable tray side rail) take advantage of the flexibility of the pultrusion process and are selectively reinforced to enhance performance in a particular load axis.The factory should be contacted for specific information on any given component.

Aickinstrut Fiberglass Threaded Rod Material Properties

Threaded rod is a proprietary combination of fiberglass and Class I vinyl ester flame retardant resin.

Properties	3/8-16 UNC	1/2-13 UNC	5/8-11 UNC
Thread shear strength using fiberglass nut in tensile (lbs.)	1,250	2,500	3,800
Transverse shear on threaded rod-double shear ASTM-B-565 (load lb.)	4,200	7,400	11,600
Transverse shear on threaded rod--single shear (load lb.)	1,600	2,600	3,800
Compressive strength-longitudinal ASTM-D-695 (psi)	55,000	55,000	55,000
Flexural strength ASTM-D-790 (psi)	60,000	60,000	60,000
Flexural modulus ASTM-D-790 (psi x 10')	2.0 x 10^6	2.0 x 10^6	2.0 x 10^6
Torque strength using fiberglass nut lubricated with SAE IOW30 motor oil (ft./lbs.)	8	15	33
Dielectric strength ASTM-D-149 (kv/in.)	40	40	40
Water absorption 24 hour immersion--threaded ASTM-D-570 (%)	1	1	1
Coefficient of thermal expansion--longitudinal (in./in./°F)	5 x 10^6	5 x 10^6	5 x 10^6
Max recommended operation temp, based on 50% retention of ultimate thread shear strength (°F)	200	200	200
Stud weight (lb./ft.)	.076	.129	.209
Flammability	Self extinguishing per UL94V-O		

1.0 SCOPE

1.1 This specification covers the requirements for the Aickinstrut Nonmetallic Channel Framing System.

2.0 MATERIAL

2.1 FRP channel shall be of pultruded glass reinforced polyester or vinyl ester resin having the physical property values listed in this catalog.

2.2 PVC channel shall be of extruded polyvinyl chloride having the physical property values listed in this catalog.

2.3 Some accessories shall be of injection molded, 40% long glass fiber reinforced polyurethane, polypropylene or nylon.

3.0 COMPOSITION

3.1 Glass reinforced channel shall have a synthetic surfacing veil applied on exterior surfaces to improve weatherability and inhibit ultraviolet degradation. An ultraviolet stabilizer shall be incorporated in the resin formulation to further inhibit ultraviolet degradation.

3.2 PVC channel shall be manufactured from a U.V. stabilized resin and incorporate dark gray pigment to improve weatherability and inhibit ultraviolet degradation.

4.0 STRUCTURAL DESIGN

4.1 Channel shall incorporate Aickinstrut's patented flange profile design which allows full and positive interlocking contact of channel accessories and prohibits premature flange failure from torqued accessories.

4.2 Channel profile dimensions shall be:

1⅝" x 1⅝" x ¼",
1½" x 1½" x ⅛", or
1½" x 1⅛" x ⅛".

4.3 All 1⅝" x 1⅝" channel profiles shall have a minimum pull out resistance of 1,000 pounds when load is applied over a ⅜" long section of the inside flanges.

4.4 Channel section lengths shall be supplied in 10' or 20' lengths (±⅛").

4.5 Universal Pipe Clamps shall have full interlocking contact with interior channel flanges to maximize pull-out resistance and be adjustable to accommodate a minimum ¾" variance in piping or conduit O.D. sizes.

5.0 STANDARDS

5.1 Glass reinforced and PVC channels covered in this specification shall have a flame spread rating of 25 or less when tested per ASTM E84 and meet the requirements of UL 94V0 thereby qualifying them as Class 1 material in the Uniform Building Code.

5.2 Glass reinforced channels covered in this specification shall comply with the requirements of ASTM D 3917 and ASTM D 4385 which govern the dimensional tolerance and visual defects of pultruded shapes.

6.0 GENERAL

6.1 Aickinstrut Nonmetallic Channel Framing shall be furnished as a system which includes all the necessary fasteners, channel splice plates, brackets, sealants, hangers, pipe clamps, etc.

6.2 Nonmetallic fasteners shall be manufactured from long glass fiber reinforced polyurethane to ensure maximum strength and corrosion resistance.

6.3 All components of the Aickinstrut Channel Framing System shall be nonmetallic except where type 316 stainless steel hardware is used as part of the assembly.

6.4 Aickinstrut is manufactured by Aickinstrut, a subsidiary of T. J. Cope, Philadelphia, Pennsylvania, 1-800-426-4293.

6.5 The manufacturer shall not have had less than 10 years experience in manufacturing strut systems.

6.6 All products are manufactured in the United States of America.

AICKINSTRUT

Chemical Compatibility Table

Chemical	Series E (Rigid PVC) 70°-160°F		Series P (Poly/Glass) 70°-160°F		Series V (Vinyl/Glass) 70°-160°F		Series K (PVDF) 70°-160°F		Series PU (Polyurethane) 70°-160°F		Series N (Nylon) 70°-160°F	
Acetic Acid, Up to 10%	R	R	R	R	R	R	R	R	R	–	NR	NR
Acetic Acid, Up to 50%	R	R	R	R	R	R	R	R	R	–	NR	NR
Acetone, Up to 10%	NR	NR	NR	NR	NR	NR	NR	NR	R	–	R	R
Aluminum Hydroxide	R	R	R	R	R	R	R	R	R	–	NR	NR
Ammonium Hydroxide (Aqueous Ammonia), Up to 5%	R	R	NR	NR	R	R	R	R	R	–	–	–
Ammonium Hydroxide, Up to 10%	R	R	NR	NR	R	150°	R	R	R	–	–	–
Ammonium Hydroxide, Up to 20%	R	R	NR	NR	R	150°	R	R	R	–	–	–
Ammonium Nitrate	R	NR	R	R	R	R	R	R	R	–	–	–
Ammonium Phosphate	R	R	R	NR	R	R	R	R	R	–	–	–
Ammenium Sulfide, saturated	R	R	NR	NR	R	120°	R	R	R	–	–	–
Aqua Regia, fumes	NR	NR	NR	NR	R	150°	R	R	NR	–	–	–
Benzene NR	NR	NR	NR	NR	NR	NR	R	R	R	R	R	
Benzoic Acid	R	R	R	R	R	R	R	R	R	–	–	–
Bromine, wet gas	R	NR	NR	NR	R	100°	R	R	–	–	–	–
Butylene Glycol, Up to 100%	R	R	R	R	R	R	R	R	R	–	R	R
Butyric Acid, Up to 50%	NR	NR	R	R	R	R	R	R	R	–	–	–
Calcium Hydroxide	R	R	R	NR	R	R	R	R	R	–	–	–
Calcium Hypochlorite	R	R	R	NR	R	R	R	R	R	–	NR	NR
Chlorine, Dry Gas	NR	NR	NR	NR	R	R	R	R	–	–	–	–
Chlorine, Wet Gas	NR	NR	NR	NR	R	R	R	R	–	–	–	–
Chlorine, Liquid	NR	NR	NR	NR	NR	NR	R	R	–	–	–	–
Chlorine, Water	NR	NR	R	R	R	R	R	R	R	–	NR	NR
Chromic Acid, Up to 5%	R	R	NR	NR	R	R	R	R	–	–	R	R
Copper Chloride	R	R	R	R	R	R	R	R	R	–	–	–
Copper Cyanide	R	R	R	NR	R	R	R	R	R	–	–	–
Copper Fluoride	R	R	R	NR	R	R	R	R	R	–	–	–
Copper Nitrate	R	R	R	R	R	R	R	R	R	–	–	
Copper Sulfate	R	R	R	R	R	R	R	R	R	–	–	–
Dechlorinated Brine Storage	R	R	–	–	R	R	R	R	R	–	–	–
Esters, Fatty Acid	NR	NR	R	R	R	R	R	R	R	–	–	–
Ferric Chloride	R	R	R	R	R	R	R	R	R	–	–	–
Ferrous Chloride	R	R	R	R	R	R	R	R	R	–	–	–
Fluoboric Acid	R	R	R	120°	R	R	R	R	–	–	–	–
Fluosilicic Acid, Up to 10%	NR	NR	NR	NR	R	R	R	R	–	–	NR	NR
Fluosilicic Acid, Up to 32%	NR	NR	NR	NR	R	100°	R	R	–	–	–	–
Formic Acid, Up to 10%	R	R	NR	NR	R	R	R	R	R	–	NR	NR
Formic Acid, Up to 50%	R	R	NR	NR	R	100°	R	R	R	–	–	–
Gasoline, Aviation	R	NR	R	NR	R	R	R	R	R	–	–	–
Green Liquor, Pulp Mill	R	R	–	–	R	R	R	R	–	–	–	–
Hydrochloric Acid Up to 15%	R	R	R	NR	R	R	R	R	R	–	–	–
Hydrochloric Acid Up to 37%	R	R	R	NR	R	R	R	R	R	–	–	–
Hydrofluoric Acid, Up to 10%	R	R	NR	NR	R	150°	R	R	–	–	–	–
Hydrofluoric Acid, Up to 20%	R	NR	NR	NR	R	100°	R	R	–	–	–	–
Hydrogen Chloride, Wet Gas	NR	NR	R	NR	R	R	R	R	NR	–	–	–
Hydrogen Sulfide, Wet Gas	R	R	R	NR	R	R	R	R	R	–	–	–

Legend: "**NR**" indicates "Not Recommended" for use;
"**R**" indicates "Recommended";
"**–**" indicates no information available

Chemical Compatibility Table

Chemical	Series E (Rigid PVC) 70°-160°F		Series P (Poly/Glass) 70°-160°F		Series V (Vinyl/Glass) 70°-160°F		Series K (PVDF) 70°-160°F		Series PU (Polyurethane) 70°-160°F		Series N (Nylon) 70°-160°F	
Lactic Acid	R	R	R	NR	R	R	R	R	R	–	–	–
Lead Nitrate	R	R	–	–	R	R	R	R	R	–	–	–
Magnesium Hydroxide	R	R	NR	NR	R	R	R	R	R	–	R	R
Nickel Sulfate, Low pH	R	R	NR	NR	R	R	R	R	R	–	–	–
Nickel Sulfate, High pH	R	R	NR	NR	R	R	R	R	R	–	–	–
Nitric Acid, Up to 5%	R	R	NR	NR	R	150°	R	R	R	–	–	–
Nitric Acid, Up to 35%	R	R	NR	NR	R	150°	R	R	R	–	–	–
Nitric Acid, Vapor	R	R	NR	NR	R	R	R	R	–	–	–	–
Perchloric Acid, Up to 10%	NR	NR	NR	NR	R	150°	R	R	–	–	NR	NR
Pickling Liquids, 3-5% H2S04	R	R	R	R	R	R	R	R	R	–	–	–
Phosphoric Acid	R	R	NR	NR	R	R	R	R	R	–	NR	NR
Phosphoric Acid, Super or Poly (115%, P20%)	R	R	NR	NR	R	R	R	R	–	–	–	–
Phosphoric Acid Vapor or Condensate	R	R	NR	NR	R	R	R	R	–	–	–	–
Potassium Chloride	R	R	R	R	R	R	R	R	R	–	–	–
Potassium Nitrate	R	R	R	R	R	R	R	R	R	–	–	–
Potassium Persulfate	R	R	NR	NR	R	R	R	R	R	–	–	–
Silver Cyanide, Up to 5%	R	R	NR	NR	R	R	R	R	R	–	–	–
Sodium Hydroxide, Up to 25%	R	R	NR	NR	R	150°	R	R	R	–	–	–
Sodium Hydroxide, up to 50%	R	R	NR	NR	R	180°	R	R	–	–	R	R
Sodium Hypochlorite, Up to 15%	R	R	NR	NR	R	150°	R	R	R	–	NR	NR
Sodium Nitrate	R	R	R	R	R	R	R	R	R	–	–	–
Sodium Sulfate	R	R	R	NR	R	R	R	R	R	–	–	–
Sodium Sulfide	R	R	NR	NR	R	R	R	R	R	–	–	–
Sulfuric Acid, Up to 25%	R	R	R	R	R	R	R	R	R	–	NR	NR
Sulfuric Acid, Up to 50%	R	R	NR	NR	R	R	R	R	R	–	–	–
Sulfuric Acid, Up to 70%	R	R	NR	NR	R	R	R	R	R	–	NR	NR
Sulfuric Acid, Up to 75%	NR	NR	NR	NR	R	120°	R	R	–	–	NR	NR
Sulfuric Acid, Up to 80%	NR	NR	NR	NR	NR	NR	NR	NR	–	–	NR	NR
Sulfuric Acid, Vapor	R	R	R	NR	R	R	R	R	–	–	–	–
Trichlorethylene, Fumes	NR	NR	NR	NR	R	120°	R	R	NR	–	–	–
Trisodium Phosphate	R	R	R	NR	R	R	R	R	R	–	–	–
Urea	R	R	R	NR	R	150°	R	R	R	–	R	R
Vegetable Oils	R	R	R	R	R	R	R	R	R	–	R	R
Vinegar	R	R	R	R	R	R	R	R	R	R	R	R
White Liquor, Pulp Mill	R	R	–	–	R	R	R	R	–	–	–	–

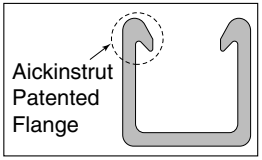
BEAM LOADING CONVERSION TABLE

Note: The recommendations contained in this table are made without guarantee of representation as to results. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by T.J. Cope, Inc. as to effects of such use or results to be obtained nor does T.J. Cope, Inc. assume any liability arising out of the use by others of the products referenced in this table. Nor is the information herein to be construed as absolutely complete since additional information may be needed or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations. We suggest that you evaluate these recommendations and suggestions in your own laboratory prior to use. Our responsibility for claims arising from breach of warranty, negligence, or otherwise is limited to the purchase price of the material.

Legend: "**NR**" indicates "Not Recommended" for use;
"**R**" indicates "Recommended";
"**–**" indicates no information available

CHANNEL FRAMING

All Aickinstrut channels, except the SST series, incorporate a patented flange design which provides reliable fastening and interlocking of Aickinstrut components and accessories.



Channels are provided in standard lengths of 10' with longer lengths available upon request. Aickinstrut single channels come packaged in boxes of 100' while the double channels are packaged in boxes containing 40'.

Aickinstrut channel is available in three materials:

- Polyester (P material),
- Vinyl Ester (V material) and
- PVC (E material)

Polyester and Vinyl Ester Materials

The polyester and vinyl ester channels are manufactured from the pultrusion process. In this process, the component is made by reinforcing a polymer resin (polyester or vinyl ester) with multiple strands of glass filament, alternating layers of glass mat and U.V. resistant surfacing veils. The glass is drawn through the liquid resin, which coats and saturates the fibers. The combination of resin, glass and veil is then continuously guided and pulled (pultruded) through a heated die that determines the shape of the component.

In the die, the resin is cured to form a permanent, reinforced part which can be cut to a specific length. Since the hardened fiberglass pultrusion is reinforced with and internal arrangement of permanently bonded continuous glass fibers, it possesses great strength.

In addition, pultruded fiberglass components exhibit exceptional corrosion and fire resistance. These attributes make fiberglass the material of choice for many harsh industrial applications.

The polyester and vinyl ester channels are color coded. Polyester channels are colored gray and the vinyl ester channels are colored beige.

PVC Materials

The PVC channels are manufactured from the extrusion process. In this process, the component is made by a PVC resin mixture being continuously fed through a heated die that determines the shape of the component.

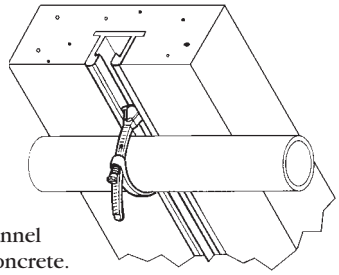
In the die, the resin is cured to form a permanent, extruded part that can be cut to a specific length. Unlike pultruded components, extruded components do not incorporate glass-reinforcement; consequently, they do not exhibit the same beam strength as their pultruded counterparts. PVC components, however; exhibit exceptional corrosion and fire resistance. These features make PVC channels an excellent alternative when excessive beam strength is not required. PVC channels are color coded dark gray.

CHANNEL AVAILABILITY CHART

The following chart illustrates the availability of materials in the different channel profiles.

Channel Profile	Polyester (P)	Vinyl Ester (V)	PVC (E)
Series 2000, 2200, 2300	X	X	X
Series 1500, 1700, 1800	X	X	N/A
Series 1000, 1200, 1300	X	X	X
Series 2100	X	X	N/A
Series 1600	X	X	N/A
Series 1100	X	X	N/A

CONCRETE EMBEDMENT CHANNEL PART NO. – 20E-2300



In certain applications, it is necessary to embed a corrosion resistant channel into a new pouring of concrete. For these applications, Aickinstrut concrete embedment channel is recommended. Aickinstrut embedment channel is available in three material types; PVC, polyester and vinyl ester. The PVC embedment channel is extruded as one piece while the polyester and vinyl ester embedment channel is a two piece bonded type design. The PVC embedment channel is available in the 1⅝" and 1⅛" profiles while polyester and vinyl ester embedment channels are available in all three profiles (1⅝", 1½" & 1⅛").

The embedment channel utilizes two continuous protruding flanges in the profile base to retain the channel in the concrete. Mounting the embedment channel flush with the concrete surface is a convenient way to secure piping, conduits or electrical enclosures to a wall or ceiling. The PVC embedment channel is extremely high in strength. When embedded in 3,000 PSI concrete, the concrete will fail before the channel is pulled out.

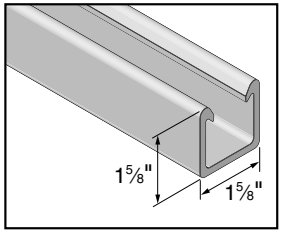
AICKINSTRUT SST CHANNEL

Aickinstrut SST Fiberglass Channel incorporates a standard channel profile that will accommodate metallic pipe straps and clamps. SST channel is available in polyester or vinyl ester resin. All standard styles (solid, slotted, concrete insert and back-to-back) are also available. Please contact the factory for loading information for the SST Channel.

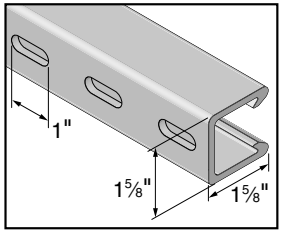
NOTE: Aickinstrut SST Channel is not compatible with the Aickinstrut pipe clamps, channel nuts, and grooved fittings shown in this catalog. Please contact Aickinstrut for information on a complete line of compatible clamps and channel nuts.

HEAVY DUTY CHANNEL – AICKINSTRUT PROFILE

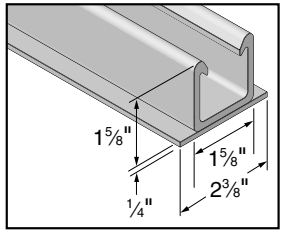
Standard
20P-2000, 20V-2000, 20E-2000



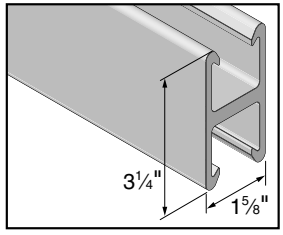
Slotted (1" x ⅜" Holes)
20P-2200, 20V-2200, 20E-2200



With Concrete Inserts
20P-2300, 20V-2300, 20E-2300

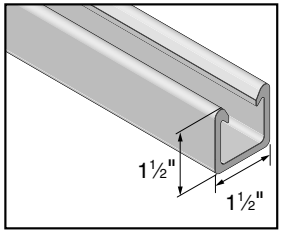


Back-to-Back
20P-2100, 20V-2100

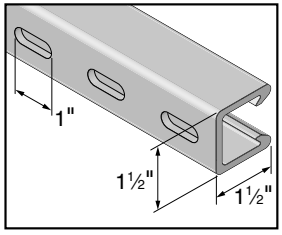


MEDIUM DUTY CHANNEL – AICKINSTRUT PROFILE

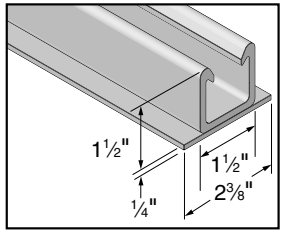
Standard
20P-1500, 20V-1500



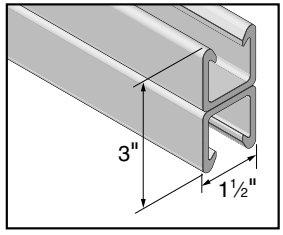
Slotted (1" x ⅜" Holes)
20P-1700, 20V-1700



With Concrete Inserts
20P-1800, 20V-1800

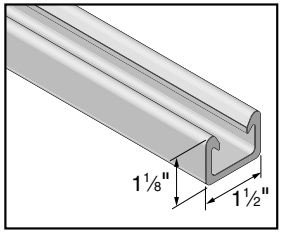


Back-to-Back
20P-1600, 20V-1600

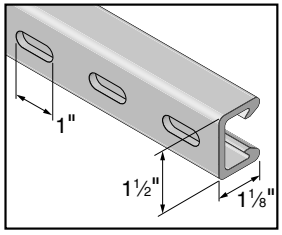


LIGHT DUTY CHANNEL – AICKINSTRUT PROFILE

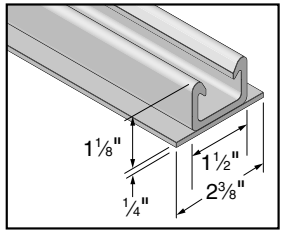
Standard
20P-1000, 20V-1000, 20E-1000



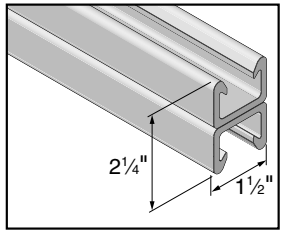
Slotted (1" x ⅜" Holes)
20P-1200, 20V-1200, 20E-1200



With Concrete Inserts
20P-1300, 20V-1300, 20E-1300

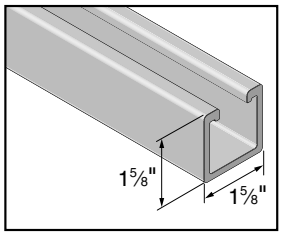


Back-to-Back
20P-1100, 20V-1100

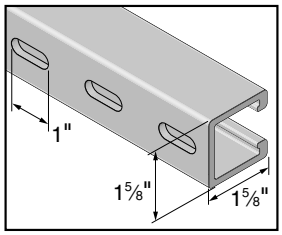


HEAVY DUTY CHANNEL – STANDARD PROFILE

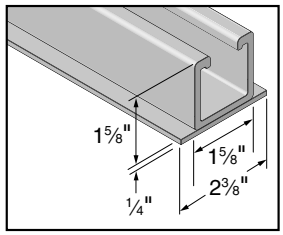
Standard
20P-2000-SST, 20V-2000-SST



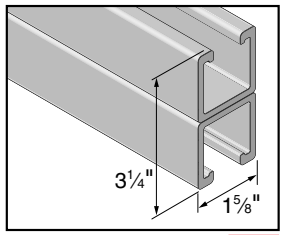
Slotted (1" x ⅜" Holes)
20P-2200-SST, 20V-2200-SST



With Concrete Inserts
20P-2300-SST, 20V-2300-SST



Back-to-Back
20P-2100-SST, 20V-2100-SST



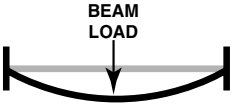
CHANNEL LOADING

Channel loading generally occurs in one of the following modes:

- beam
- column
- flange

BEAM LOADING

Beam loading data reflects the maximum uniform load allowed when using the channel horizontally as in a trapeze hanger. Refer to the table on Page 13 for simple beam loading capacity of various channels. Use the beam loading conversion chart on page 12 to calculate loading capacity for other beam loading conditions.



The Aickinstrut Trapeze hanger is an example of beam loading. To calculate the maximum allowable beam load for an Aickinstrut Trapeze hanger:

1. Measure the distance between the two threaded rod supports.
2. Using the length of the section hanger as the "beam", refer to the appropriate profile size in the Beam Loading Chart to determine whether the deflection meets your requirements.

BEAM LOADING – PVC

The data listed in the Beam Loading Chart reflects testing conducted on Polyester (Type P) and vinyl ester (Type V) channels. PVC (Type E) material will differ from the Polyester/Vinyl ester Beam Loading Chart. To obtain the beam loading for PVC channel, reduce the load as follows:

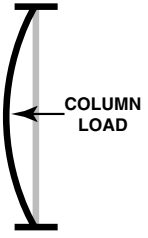
$$\text{PVC Beam Load} = \frac{\text{(Polyester/Vinyl Ester Beam Load)}}{4}$$

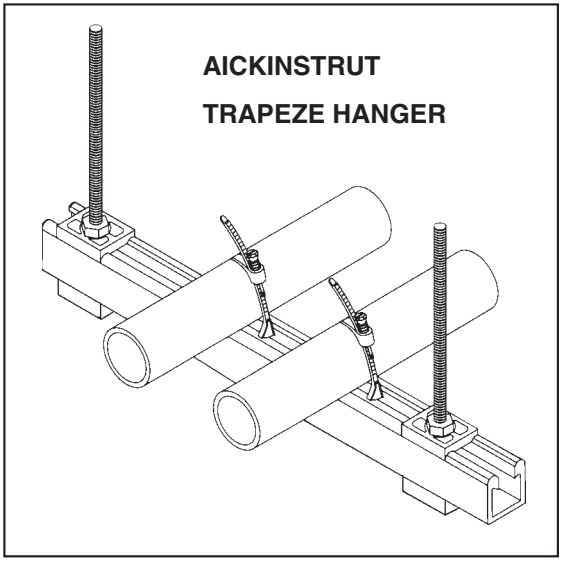
NOTE: PVC is not recommended for lengths over 24".

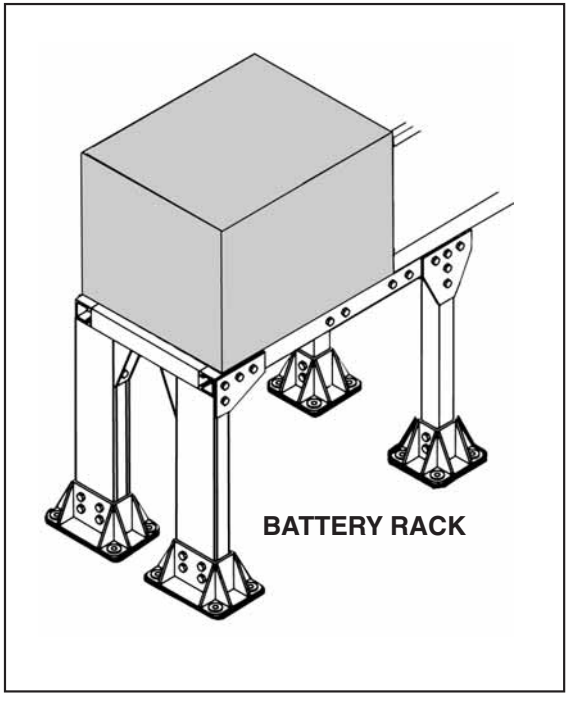
COLUMN LOADING

Column loads are forces applied directly to the end of the channel. Refer to the table on Page 13 for column loading capacity of various channels.

An example of a typical column load would be the pressure exerted on a leg of an Aickinstrut Battery Rack.

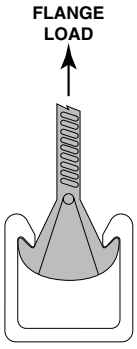






FLANGE LOADING

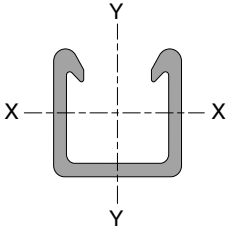
Pull-out strength is the channel's resistance to a clamp or fastener inserted under the flange and put under tension. For additional information concerning specific channels, materials and their pull-out strengths, refer to the channel flange pull-out chart on the right.

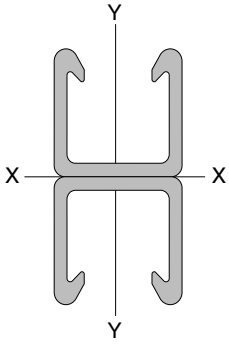


Heavy Duty Channel	Pull-Out Strength*
20V-2000	449
20P-2000	360
20E-2000	260
Medium Duty Channel	**Pull-Out Strength***
20V-1500	229
20P-1500	219
Light Duty Channel	**Pull-Out Strength***
20E-1000	239
20P-1000	213
20V-1000	213

*Values shown represent a 3:1 safety factor

SECTION PROPERTIES



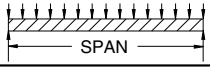
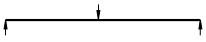
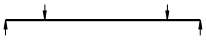
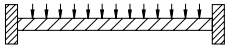
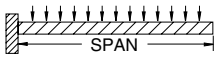
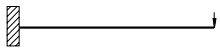
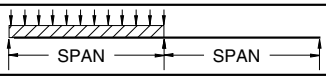
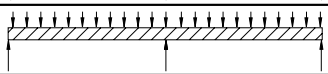
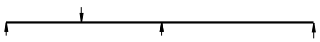
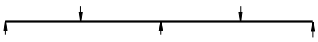


					X - X Axis				Y - Y Axis		
Section Number	Height (in.)	Width (in.)	Weight (lbs./ft.)	Area ($in.^2$)	I ($in.^4$)	R (in.)	C^1 (in.)	C^2 (in.)	I ($in.^4$)	R (in.)	C (in.)
2000	1⅝	1⅝	0.82	1.06	0.31	0.54	0.70	0.93	0.42	0.63	0.82
2100	3½	1⅝	1.64	2.12	1.77	0.91	1.63	1.63	0.85	0.63	0.82
1500	1½	1½	0.55	0.71	0.19	0.52	0.62	0.88	0.25	0.59	0.75
1600	3	1½	1.10	1.42	1.02	0.85	1.50	1.50	0.49	0.59	0.75
1000	1⅛	1½	0.47	0.61	0.10	0.40	0.51	0.62	0.22	0.60	0.75
1100	2½	1½	0.94	1.22	0.42	0.59	1.13	1.13	0.44	0.60	0.75

Channel Loading

The multipliers shown in the beam loading conversion table reflect the adjustments to be made for a variety of beam loading conditions. The multipliers should be used in conjunction with the Beam Loading Chart.

The values in the Beam Loading Chart are based on a simple beam with uniform loading. By using the Beam Loading Conversion Table, you will be able to estimate the maximum recommended loading and deflection for your particular application.

LOAD AND SUPPORT CONDITION	LOAD FACTOR	DEFLECTION FACTOR
1. Simple Beam, Uniform Load 	1.00	1.00
2. Simple Beam, Concentrated Load at Center 	0.50	0.80
3. Simple Beam, Two Equal Concentrated Loads at 1/4 pts 	1.00	1.10
4. Beam Fixed at Both Ends, Uniform Load 	1.50	0.30
5. Beam Fixed at Both Ends, Concentrated Load at Center 	1.00	0.40
6. Cantilever Beam, Uniform Load 	0.25	2.40
7. Cantilever Beam, Concentrated Load at End 	0.12	3.20
8. Continuous Beam, Two Equal Spans, Uniform Load on One Span 	1.30	0.92
9. Continuous Beam, Two Equal Spans, Uniform Load on Both Ends 	1.00	0.42
10. Continuous Beam, Two Equal Spans, Concentrated Load at Center of One Span 	0.62	0.71
11. Continuous Beam, Two Equal Spans, Concentrated Load at Center of Each Span 	0.67	0.48

EXAMPLE:

Determine load and deflection of a 30" 20P-2100 cantilever beam with a concentrated load on the end.

Solution:

1. From the load table on the previous page, the maximum load for a 30" span is 2,224 lbs. and deflec tion for that load is 0.177".

2. Multiply by factors from the table above.
   Load = 2,224 lbs. x 0.12 = 267 lbs.
   Deflection = 0.177" x 3.20 = 0.566"

3. Thus, the 30" cantilver beam will support a maximum concentrated load of 267 lbs. on the end and that load will cause a 0.566" deflection.

Polyester/Vinyl Ester Beam Loading Chart

Span	Part Number	Max. Uniform Beam Load (Safety Factor - 3:1) Load (lbs.)	Max. Uniform Beam Load (Safety Factor - 3:1) Deflection (in.)	Uniform Load at Defl. of 1/360 Span Load (lbs.)	Uniform Load at Defl. of 1/360 Span Deflection (in.)	Maximum Column Load (lbs.)
12" Span	20P/V-2100	5,559	0.028	5,559	0.033	9,454
	20P/V-1600	4,836	0.043	3,778	0.033	7,007
	20P/V-1100	3,804	0.082	1,556	0.033	5,961
	20P/V-2000	3,561	0.102	1,159	0.033	5,160
	20P/V-1500	1,950	0.093	700	0.033	3,439
	20P/V-1000	1,629	0.151	359	0.033	2,759
18" Span	20P/V-2100	3,706	0.064	2,914	0.050	8,866
	20P/V-1600	3,224	0.096	1,697	0.050	6,501
	20P/V-1100	2,536	0.183	691	0.050	5,509
	20P/V-2000	2,374	0.230	515	0.050	4,704
	20P/V-1500	1,300	0.209	311	0.050	3,136
	20P/V-1000	1,086	0.340	160	0.050	2,351
24" Span	20P/V-2100	2,780	0.113	1,639	0.067	8,181
	20P/V-1600	2,418	0.171	944	0.067	5,909
	20P/V-1100	1,902	0.326	389	0.067	4,979
	20P/V-2000	1,781	0.410	290	0.067	4,168
	20P/V-1500	975	0.371	175	0.067	2,778
	20P/V-1000	815	0.605	90	0.067	1,862
30" Span	20P/V-2100	2,224	0.177	1,049	0.083	7,405
	20P/V-1600	1,934	0.267	604	0.083	5,236
	20P/V-1100	1,522	0.509	249	0.083	4,375
	20P/V-2000	1,424	0.640	185	0.083	3,553
	20P/V-1500	780	0.580	112	0.083	2,369
	20P/V-1000	652	0.945	57	0.083	1,298
36" Span	20P/V-2100	1,853	0.254	730	0.100	6,451
	20P/V-1600	1,612	0.384	420	0.100	4,482
	20P/V-1100	1,268	0.734	173	0.100	3,698
	20P/V-2000	1,187	0.922	129	0.100	2,859
	20P/V-1500	650	0.836	78	0.100	1,906
	20P/V-1000	543	1.360	40	0.100	901
48" Span	20P/V-2100	1,390	0.452	410	0.133	4,534
	20P/V-1600	1,209	0.683	236	0.133	2,809
	20P/V-1100	951	1.304	97	0.133	2,254
	20P/V-2000	890	1.638	72	0.133	1,636
	20P/V-1500	488	1.486	44	0.133	1,091
	20P/V-1000	407	2.418	22	0.133	507
60" Span	20P/V-2100	1,112	0.707	262	0.167	2,902
	20P/V-1600	967	1.067	151	0.167	1,798
	20P/V-1100	761	2.038	62	0.167	1,442
	20P/V-2000	712	2.560	46	0.167	1,047
	20P/V-1500	390	2.321	28	0.167	698
	20P/V-1000	326	3.779	14	0.167	324
72" Span	20P/V-2100	927	1.018	182	0.200	2,015
	20P/V-1600	806	1.536	105	0.200	1,248
	20P/V-1100	634	2.935	43	0.200	1,001
	20P/V-2000	594	3.686	32	0.200	727
	20P/V-1500	325	3.343	19	0.200	485
	20P/V-1000	272	5.441	10	0.200	225

CHANNEL FITTINGS

Aickinstrut Channel Fittings are required to fabricate an Aickinstrut structure and are easily attached to Aickinstrut Channels with channel nuts and polyurethane fasteners. The fittings are offered in two types; fabricated (cut from flat stock) or molded. Fabricated fittings are made from either polyester or vinyl ester material. All molded fittings with the exception of the post bases are molded in polyurethane. Post bases are also offered in polypropylene.

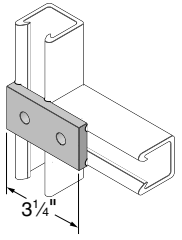
The 2500 Series Fittings are manufactured from 3/8" flat material. The 2800 Series Fittings are manufactured from 3/8" flat material and feature grooves which stabilize the fittings when mounted to the open side of the channel. All channel fittings are provided with 13/32" holes which accommodate 3/8" hardware, however several of the new molded fittings come with 9/16" holes 50PU-2616, 50PU-2611, and 50PU-2613. Larger diameter holes can be provided upon special request.

Legend
R = Right Hand L = Left Hand
P Series Fittings are Grey V Series Fittings are Beige
2500 Series - Flat 2800 Series - Grooved

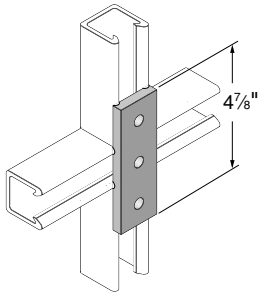
NOTE

Illustrations depict grooved channel fittings.

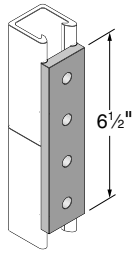
20P-2500, 20V-2500 *(Flat)* 20P-2800, 20V-2800 *(Grooved)*



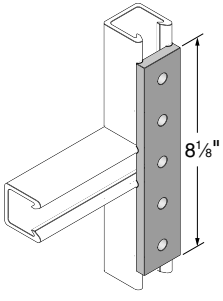
20P-2502, 20V-2502 *(Flat)* 20P-2802, 20V-2802 *(Grooved)*



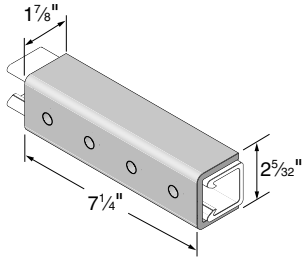
20P-2504, 20V-2504 *(Flat)* 20P-2804, 20V-2804 *(Grooved)*



20P-2506, 20V-2506 *(Flat)* 20P-2806, 20V-2806 *(Grooved)*

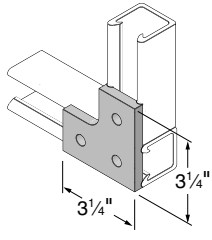


50PU-2616

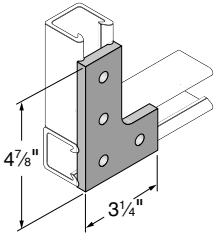


Note: 9/16" diameter holes

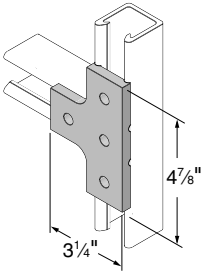
20P-2508, 20V-2508 *(Flat)* 20P-2808, 20V-2808 *(Grooved)*



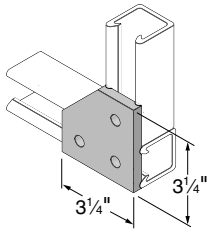
20P-2510, 20V-2510 *(Flat)*
20P-2810R, 20V-2810R *(Grooved)*
20P-2810L, 20V-2810L *(Grooved)*



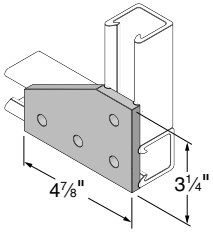
20P-2512, 20V-2512 *(Flat)*
20P-2812, 20V-2812 *(Grooved)*



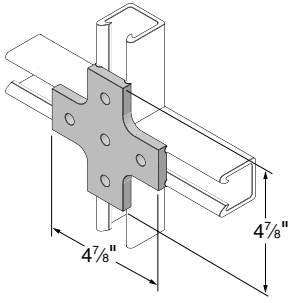
20P-2514, 20V-2514 *(Flat)*
20P-2814, 20V-2814 *(Grooved)*



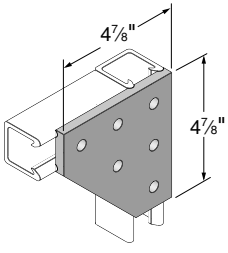
20P-2516, 20V-2516 *(Flat)*
20P-2816R, 20V-2816R *(Grooved)*
20P-2816L, 20V-2816L *(Grooved)*



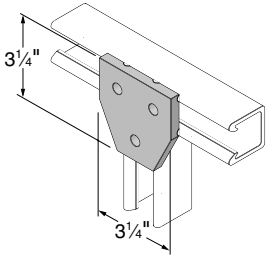
20P-2518, 20V-2518 *(Flat)*
20P-2818, 20V-2818 *(Grooved)*



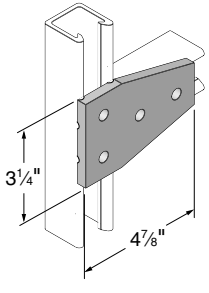
20P-2520, 20V-2520 *(Flat)*
20P-2820, 20V-2820 *(Grooved)*



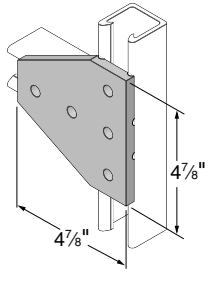
20P-2522, 20V-2522 *(Flat)*
20P-2822, 20V-2822 *(Grooved)*



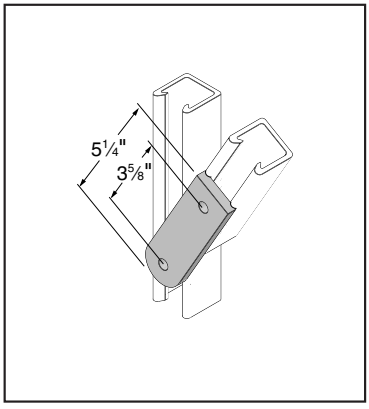
20P-2524, 20V-2524 *(Flat)*
20P-2824, 20V-2824 *(Grooved)*



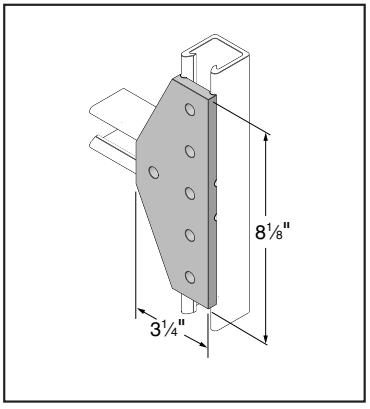
20P-2526, 20V-2526 *(Flat)*
20P-2826, 20V-2826 *(Grooved)*



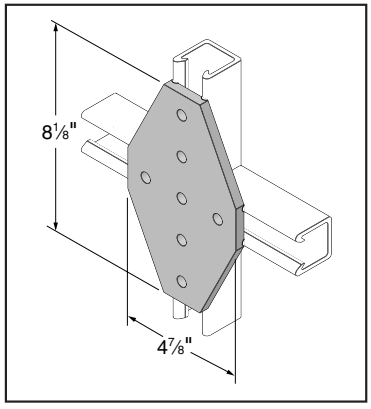
20P-2528, 20V-2528 *(Flat)*
20P-2828, 20V-2828 *(Grooved)*



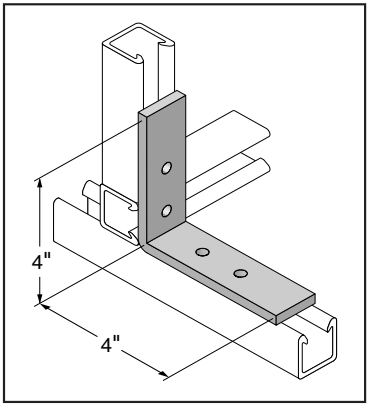
20P-2530, 20V-2530 *(Flat)*
20P-2830, 20V-2830 *(Grooved)*



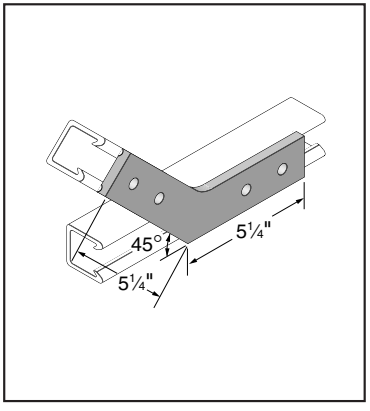
20P-2534, 20V-2534 *(Flat)*
20P-2834, 20V-2834 *(Grooved)*



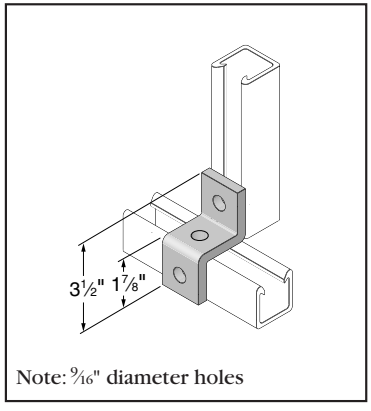
20P-2541, 20V-2541 *(Flat)*



20P-2540, 20V-2540 *(Flat)*
20P-2840, 20V-2840 *(Grooved)*

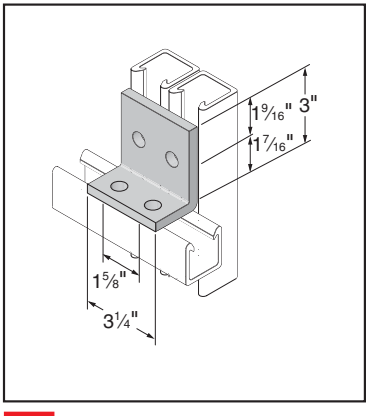


50PU-2611 *(Flat)*

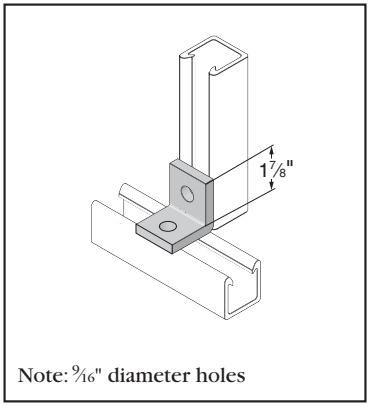


Note: 9⁄16" diameter holes

20P-2542, 20V-2542 *(Flat)*

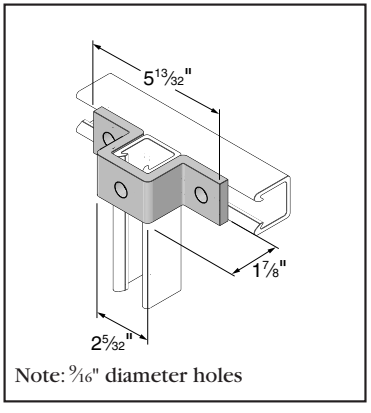


50PU-2611-SP



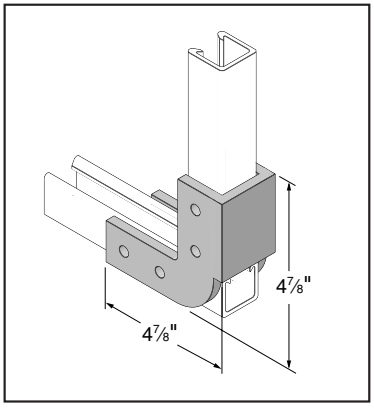
Note: 9⁄16" diameter holes

50PU-2613 *(Flat)*

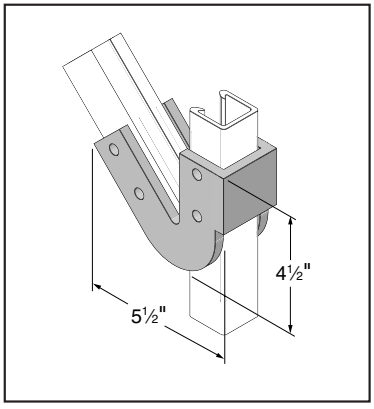


Note: 9⁄16" diameter holes

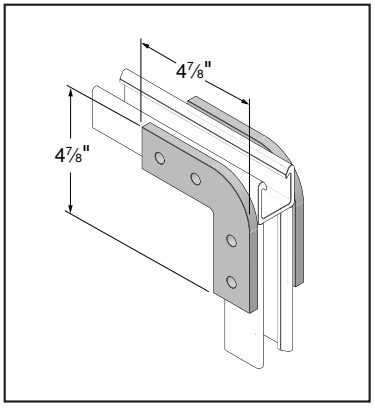
50PU-1508 (1½")
50PU-2008 (1⅝")



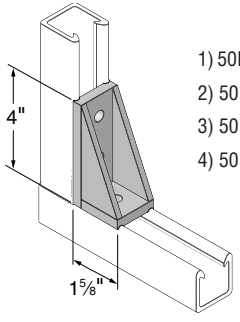
50PU-2045 (1⅝")



50PU-2090 (1⅝")

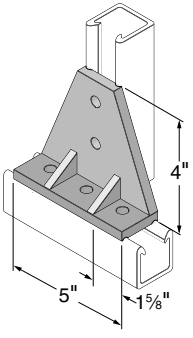


50PU-2636[1], 50PU-2636A[2], 50PU-2636B[3], 50PU-2936[4]

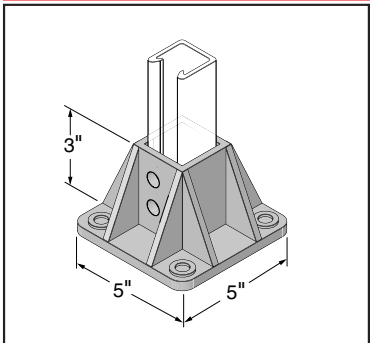


1) 50PU-2636 – Flat, without splines
2) 50PU-2636A – Splines on long side only
3) 50PU-2636B – Splines on short side only
4) 50PU-2936 – Splines on both long and short sides

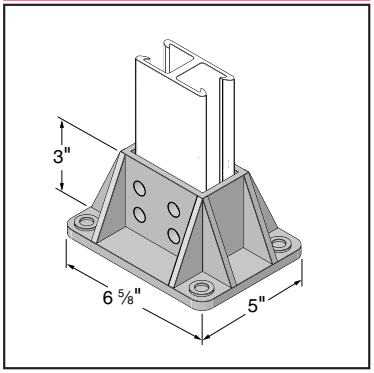
50PU-2538 *(Flat)*



20PU-5853 (1⅝"), 20PU-5854 (1½"), 20PU-5855 (1⅛"), 20PP-5853 (1⅝"), 20PP-5854 (1½"), 20PP-5855 (1⅛")



20PU-5903 (3¼"), 20PU-5904 (3"), 20PU-5905 (2¼"), 20PP-5903 (3¼"), 20PP-5904 (3"), 20PP-5905 (2¼")

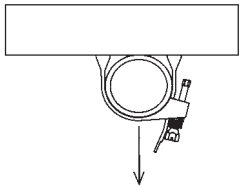


AICKINCLAMPS DESIGN LOAD INFORMATION

There are two types of piping system loadings, overhead (Type 1) and vertical (Type 2) as described below. All Aickinstrut pipe straps and clamps show the recommended loading for both types of loading.

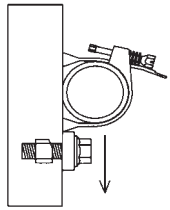
Type 1 Design Load

The design load shown represents pipes supported below the strut. The design loads shown are based on a minimum ultimate failure safety factor of 3:1.



Type 2 Design Load

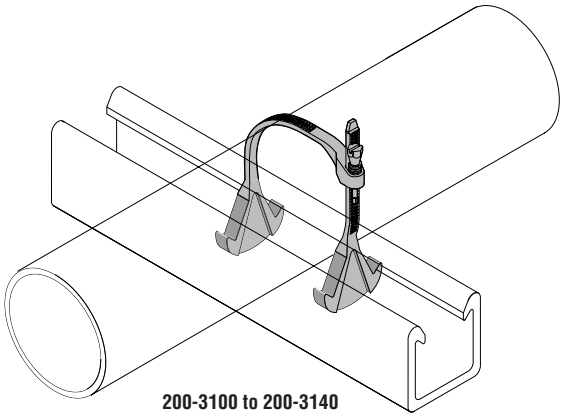
The design loading shown can be achieved with the addition of a vertical stop lock assembly (Part #200-4219) installed directly beneath the pipe clamp. The adjacent illustration shows how the vertical stop lock assembly provides additional support for pipe and how it can be used to achieve full Type 2 design loads.



Design loads are based on a minimum clamp slip safety factor or 3:1. It is recommended that stop lock assemblies be used for all vertical pipe support applications.

Adjustable Pipe Clamps

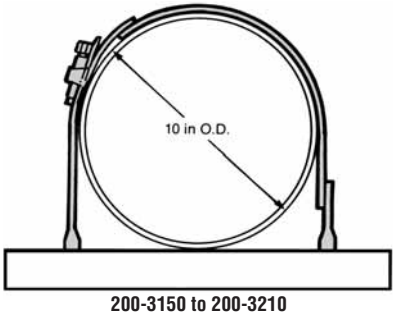
Aickinstrut Adjustable Pipe Clamps are manufactured from glass-reinforced polyurethane and are adjustable to accommodate a wide range of outside diameters. They can be utilized with a variety of piping systems including: PVC, fiberglass, copper, rigid steel conduit and PVC coated rigid steel conduit. Aickinclamps sized 6½" – 20" are to be used only in non-load bearing applications. These are applications where the weight of the pipe is being supported by Aickinstrut structural members (see figure on right). Aickinclamps can safely be used in temperatures up to 160°F. For operating temperatures of 160-230°F, it is recommended to use PVDF clamps. PVDF clamps are available as a special order. Contact the factory for pricing and availability. Care should be taken not to exceed 3 ft./lbs. of torque on the adjustable pipe straps.



200-3100 to 200-3140

Part Number	O.D. Pipe Size (in.)	Design Load (lbs.)* Type 1	Type 2	Torque (ft./lbs.)
200-3100	½ – 1½	135	65	10 in./lbs.
200-3110	1½ – 2¼	135	65	3
200-3120	2¼ – 3¼	145	70	3
200-3130	3 – 4	215	70	3
200-3140	4 – 6½	215	70	3
200-3150	6½ – 8	Non-Load Bearing		3
200-3160	8 – 10	Non-Load Bearing		3
200-3170	10 – 12	Non-Load Bearing		3
200-3180	12 – 14	Non-Load Bearing		3
200-3190	14 – 16	Non-Load Bearing		3
200-3200	16 – 18	Non-Load Bearing		3
200-3210	18 – 20	Non-Load Bearing		3

*Design loads shown represent a 3:1 safety factor.



200-3150 to 200-3210

Rigid Pipe Clamps

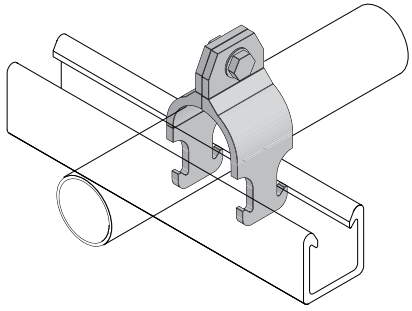
Aickinstrut Rigid Pipe Clamps resemble the more traditional style of pipe clamps. These clamps are made from glass-reinforced polyurethane and are sized based on the pipe inside diameter or nominal size.

Polyurethane clamps are recommended for applications up to 160°F. For high temperature applications (up to 230°F), PVDF clamps are available as a special order. Contact the factory for pricing and availability.

Care should be taken not to exceed the recommended torque values of the rigid pipe clamps.

Part Number	Nominal Size (in.)	PVC Sch. 80 and Rigid Metal	Design Loads (lbs.)* Type 1	Design Loads (lbs.)* Type 2	FRP Bolt Size (in.)	FRP Bolt Torque (ft./lbs.)
PCR-050	½	0.840	225	90	⅜ x 1¼	3
PCR-075	¾	1.050	225	90	⅜ x 1¼	3
PCR-100	1	1.315	225	90	⅜ x 1¼	3
PCR-125	1¼	1.660	225	90	⅜ x 1¼	3
PCR-150	1½	1.900	225	90	⅜ x 1¼	3
PCR-200	2	2.375	225	90	⅜ x 1¼	3
PCR-250	2½	2.875	225	90	⅜ x 1¼	3
PCR-300	3	3.500	225	90	⅜ x 1¼	3
PCR-400	4	4.500	300	125	⅜ x 1¼	3
PCR-600	6	6.625	300	125	⅜ x 1¼	3
PCR-800	8	8.625	300	125	⅜ x 1¼	3

*Design loads shown represent a 3:1 safety factor.



Two Hole Pipe Straps

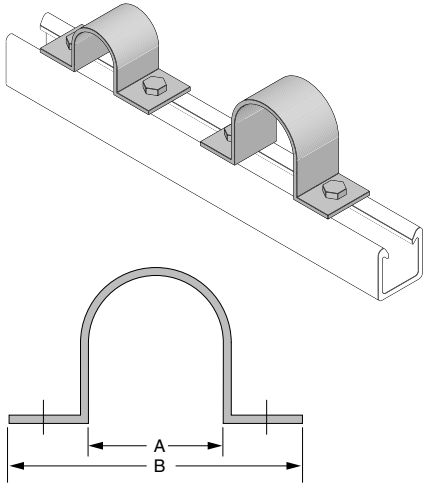
Aickinstrut Two Hole Pipe Straps are designed for use in securing pipe, conduit and ducts to Aickinstrut Channel. Two hole fiberglass straps can also be used independently from the channel for surface mounting. All sizes of the straps are suitable for load bearing applications.

The two hole pipe straps are manufactured from a fire-retardant, glass reinforced polyester resin. For extreme chemical environments, the straps can be manufactured from vinyl ester resin. Larger diameter straps for special applications are also available. Contact the factory for pricing and availability of vinyl ester and large diameter straps. Two hole pipe straps should not be torqued above recommended values.

Part Number	Dimension A (in.)	Dimension B (in.)	Bolt Size (in.)	Material Size (in.)	Design Load (lbs)* Type 1	Design Load (lbs)* Type2	Torque (ft./lbs.)
PS050	0.840	4.840	½	¼ x 1⅝	135	50	4
PS075	1.050	5.050	½	¼ x 1⅝	135	50	4
PS100	1.315	5.315	½	¼ x 1⅝	135	50	4
PS150	1.900	5.900	½	¼ x 1⅝	135	50	4
PS200	2⅜	6.375	½	¼ x 1⅝	135	50	4
PS250	2⅞	6.875	½	¼ x 1⅝	135	50	4
PS300	3½	7.500	½	¼ x 1⅝	135	50	4
PS350	4	8.000	½	¼ x 1⅝	135	50	4
PS400	4½	8.500	½	¼ x 1⅝	175	60	4
PS500	5⁹⁄₁₆	9.563	½	¼ x 1⅝	175	60	4
PS600	6⅝	10.625	½	¼ x 1⅝	175	60	4
PS800	8⅝	12.625	½	¼ x 1⅝	225	125	4
PS1000	10¾	15.750	⅝	¼ x 1⅝	225	125	10
PS1200	12¾	16.250	⅝	¼ x 1⅝	225	125	10
PS1400	14	18.000	⅝	⅜ x 1⅝	250	150	10
PS1600	16	20.000	⅝	⅜ x 1⅝	250	150	10
PS1800	18	23.000	⅝	⅜ x 1⅝	250	150	10

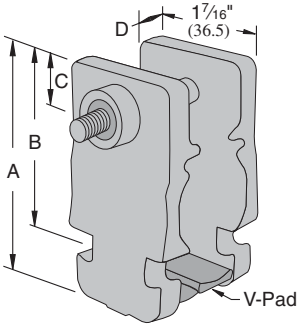
*Design loads shown represent a 3:1 safety factor.

Notes: Bolts and channel nuts are sold separately.



When bolting onto 1⅝" or 1½" channel a 1¼" long bolt is required.

Aickin-A-Grip (SST Style Channel Only)



Part Number	Nominal Pipe Size	Dimensions "A" In	"B" In	"C" In	"D" In	Hex Head Cap Screw & Lock Nut	Wt/100 pcs Lbs
NC(P or T)-025	1/4	1 15/16	1 3/8	3/8	3/16	1/4-20 x 1 1/2"	4
NC(P or T)-625	3/8	2 3/8	1 5/8	7/16	1/4	1/4-20 x 2"	6
NC(P or T)-875	1/2	2 9/16	1 13/16	7/16	5/16	1/4-20 x 2"	8
NC(P or T)-100	3/4	2 11/16	1 15/16	7/16	5/16	1/4-20 x 2"	8

Includes Cushion, V-pad, and Hardware.
Materials: Cushion: Thermoplastic elastomer.
Hardware: Stainless Steel with Captured Nylon Locknut
Temperature Rating: -40°F to +275°F
Note: For use with SST Style Strut only

Multi-Size Adjustment Capability Allows Four Clamp Sizes to Fit Seventeen Sizes of Tube & Pipe.

FEATURE

- Ten sizes of tube;
  Five sizes of pipe…
  Using just four sizes of clamp.
- Diameters from .25" to 1.31"
- Metric Sizes from 6mm to 32mm
- Non-Conducting
- Corrosion Resistant
- UV Resistant
- Temperature

ADVANTAGE

- Reduces Inventory SKU's
- Fewer parts needed on the job.
- Simplifies take-offs & component requirements on projects using both Tube & Pipe Sizes
- High pull out and slip loads

BENEFIT

- Lowers Inventory Costs.
- Always have the right clamp on hand when you need it.
- Job Costing made easier & more accurate.

Tube Sizes

Part Number	O.D. Tube Sizes In			Diameters In	PullOut Load Lbs	Slip Load Lbs
NCT-025	1/4	3/8	1/2	0.25 - 0.54	500	40
NCT-625	5/8	3/4	7/8	0.62 - 0.87	500	40
NCT-875	7/8	1	1 1/8	0.87 - 1.12	500	40
NCT-100	1	1 1/8	1 1/4	1.00 - 1.31	500	40

Pipe Sizes

Part Number	Nominal Pipe Sizes In		Diameters In	PullOut Load Lbs	Slip Load Lbs
NCP-025	1/4		0.25 - 0.54	500	40
NCP-625	3/8	1/2	0.62 - 0.87	500	40
NCP-875	3/4		0.87 - 1.12	500	40
NCP-100	3/4	1	1.00 - 1.31	500	40

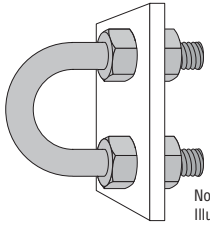
Nominal Pipe Size	Water Filled Weight	Code Required Support Spacing [3]	Pipe Load At Support	Safety Factors from Allowed Value	
(Sch 40)	(lbs/ft)	(ft)	(lbs)	Pullout	Slip
1/4"	0.470	7	3	150	12
3/8"	0.651	7	5	110	9
1/2"	0.983	7	7	70	6
3/4"	1.361	7	10	50	4
1"	2.055	7	14	30	3

[1] Based on preliminary testing
[2] SF = 5 to Ultimate Load
[3] Per MSS-SP69 & ASME B31.1 for water filled pipe

Nonmetallic U-bolts

Aickinstrut Nonmetallic U-Bolts provide a corrosion resistant alternative to traditional metallic U-Bolts. Made from glass-reinforced polyurethane, these bolts will outlast stainless steel in most corrosive applications. Nonmetallic U-Bolts have oversized diameters which allow them to hold steel conduit and plastic pipe.

Each U-Bolt comes with two polyurethane hex nuts. Additional nuts and washers can be purchased separately.

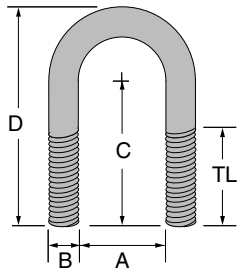


Note: Plate not included.
Illustration purpose only

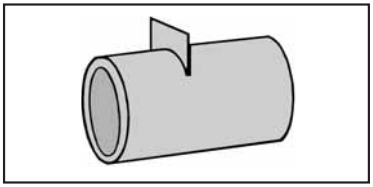
The U-Bolts can also be installed to allow for thermal expansion and contraction of plastic pipe as shown here.

Part Number	Size (in.)	"A" Dim.	"B" Dim.	"C" Dim.	"D" Dim.	"TL" Dim.	Load (lbs.)*	Torque (in./lbs.)*
UB-050	½	0.937	0.375	1.568	2.412	1.25	135	40
UB-075	¾	1.125	0.375	1.662	2.600	1.25	135	40
UB-100	1	1.375	0.375	1.787	2.850	1.25	135	40
UB-125	1¼	1.687	0.375	1.943	3.162	1.25	135	40
UB-150	1½	2.000	0.375	2.100	3.475	1.25	135	40
UB-200	2	2.437	0.500	2.468	4.187	1.50	135	80
UB-250	2½	2.937	0.500	2.718	4.687	1.50	135	80
UB-300	3	3.562	0.500	3.031	5.312	1.50	135	80
UB-350	3½	4.062	0.500	3.281	5.812	1.50	135	80
UB-400	4	4.562	0.500	3.531	6.312	1.50	135	80
UB-600	6	6.750	0.625	5.750	9.875	3.25	135	120

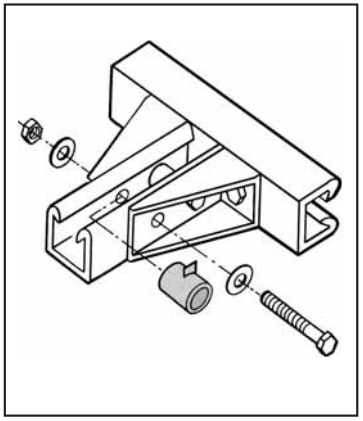
*Torque and load values shown represent a 3:1 safety factor.



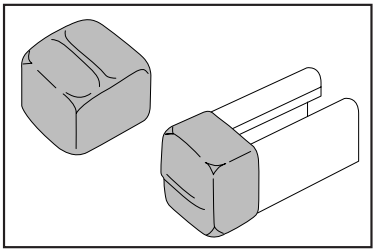
Channel Spacers 50PU-500SP



Channel spacers are designed to prevent wall compression under heavy loading conditions. Such loading occurs during the torquing of hardware for channel fittings. The spacers are molded from polyurethane and will accommodate ⅜" and ½" bolts. The spacers are designed to be used only with 1⅝" and 1½" channels.

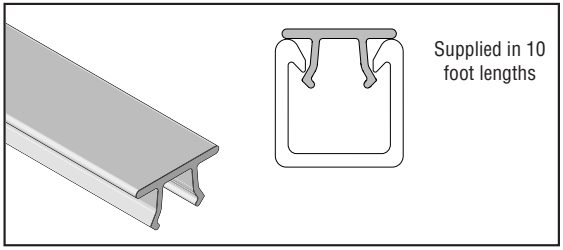


Channel End Cap AIC-EC



The Aickin-End Cap is made from red PVC and designed for 1⅝" channel. End caps are desired when the ends of the channel need to be enclosed. The Aickin-End Cap easily installs by pressing it onto the end of the channel opening.

Channel Capping Strip 20E-5000



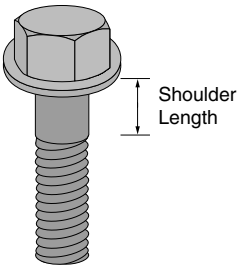
Supplied in 10 foot lengths

Channel Capping Strip is made from PVC and installs simply by pressing it onto the channel opening. It is designed to be used when a cover is desired for the channel opening (such as concrete embedment channel).

Fiberfast Bolts

Fiberfast bolts are provided in two styles and five diameters (¼", ⅜", ½", ⅝" and ¾") and range in length from 1¼" to 3½". The flanged style incorporates a molded washer collar which eliminates the need for a washer. The flanged style is provided for ¼" and ½" diameter bolts. Flanged bolts are available in ⅜" diameter as a special order item. The hex head style is provided for all ⅜", ⅝" and ¾" diameter bolts. All Fiberfast bolts are not fully threaded, therefore, shoulder length (nonthreaded portion) dimensions have been provided. Fiberfast bolts are ideal for mechanical connections that require a high degree of corrosion resistance. The ⅜" diameter fasteners are recommended for all channel fitting mechanical connections. All Fiberfast bolts are manufactured from glass-reinforced polyurethane and are packaged in bags containing 25 pieces.

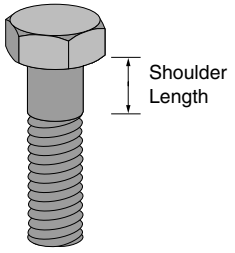
Hex Flange Bolts



Part Number	Size (in.)	Thread Shear (lbs.)*	Shank Shear (lbs.)*	Shoulder Length (in.)	Torque (ft./lbs.)
250PU-075	¼ x ¾	110	210	Full Thread	10 In./lbs.
250PU-100	¼ x 1	110	210	Full Thread	10 In./lbs.
250PU-150	¼ x 1½	110	210	½	10 In./lbs.
500PU-125	½ x 1¼	450	870	Full Thread	8
500PU-150	½ x 1½	450	870	Full Thread	8
500PU-200	½ x 2	450	870	¾	8
500PU-250	½ x 2½	450	870	¾	8
500PU-300	½ x 3	450	870	1	8
500PU-350	½ x 3½	450	870	2 3/16	8

*Thread shear values shown represent a 3:1 safety factor.

Hex Bolts

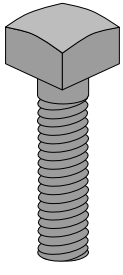


Part Number	Size (in.)	Thread Shear (lbs.)*	Shank Shear (lbs.)*	Shoulder Length (in.)	Torque (ft./lbs.)
375PU-125	⅜ x 1¼	250	470	Full Thread	3
375PU-150	⅜ x 1½	250	470	¼	3
375PU-200	⅜ x 2	250	470	½	3
375PU-250	⅜ x 2½	250	470	¾	3
375PU-300	⅜ x 3	250	470	1	3
625PU-125	⅝ x 1¼	700	1,360	¼	12
625PU-150	⅝ x 1½	700	1,360	¼	12
625PU-200	⅝ x 2	700	1,360	¼	12
625PU-250	⅝ x 2½	700	1,360	¼	12
625PU-300	⅝ x 3	700	1,360	¼	12
625PU-350	⅝ x 3½	700	1,360	1¼	12

*Thread shear values shown represent a 3:1 safety factor.

Vinyl Ester Square Head Bolts

Vinyl ester square head bolts are used for concrete mounting and general purpose fastening applications. The square head bolts are constructed from vinyl ester all-thread rod and vinyl ester square nuts. The units are bonded together with a durable two part urethane adhesive. The square head bolts are offered in ⅜" diameter but can be supplied in other diameters as a special order. Contact the factory for pricing and availability of special diameter square head bolts.



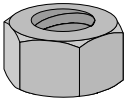
Part Number	Size (in.)	Thread Shear (lbs.)*	Torque (ft./lbs.)*
375V-100	⅜ x 1	250	10
375V-125	⅜ x 1¼	250	10
375V-150	⅜ x 1½	250	10
375V-175	⅜ x 1¾	250	10
375V-200	⅜ x 2	250	10
375V-250	⅜ x 2½	250	10
375V-300	⅜ x 3	250	10
375V-350	⅜ x 3½	250	10
375V-400	⅜ x 4	250	10

*Thread shear values shown represent a 3:1 safety factor.

Fiberfast Hex Nuts

Aickinstrut hex nuts are available in two styles; hex and hex flange nuts. The Aickinstrut hex nut is similar in design to the conventional hex nut and is preferred for channel fitting connections. The Aickinstrut hex flange nut is preferred for applications that require additional thread engagement (such as with all-thread rod) or maximum thread shear strength. All nuts are manufactured from glass-reinforced polyurethane and are packaged in bags containing 25 pieces. All hex and hex flange nuts are available in PVDF and Polypropylene and metric sizes as a special order. Contact the factory for pricing and availability.

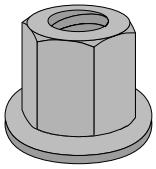
Hex Nuts



Part Number	Size (in.)	Thread Shear (lbs.)*	Height (in.)	Torque (ft./lbs.)
250PU-000	¼-20	150	0.218	10 in./lbs.
375PU-000	⅜-16	460	0.328	3
500PU-000	½-13	800	0.437	8
625PU-000	⅝-11	1,000	0.546	12
750PU-000	3-10	1,000	0.640	15
1000PU-000	1-8	1,100	0.859	17

*Thread shear values shown represent a 3:1 safety factor.

Hex Flange Nuts

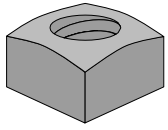


Part Number	Size (in.)	Thread Shear (lbs.)*	Height (In.)	Torque (ft./lbs.)
375PU-FN-000	⅜-16	500	0.750	3
500PU-FN-000	½-13	1,200	0.855	8
625PU-FN-000	⅝-11	2,200	1.220	12
750PU-FN-000	¾-10	2,900	1.590	15
1000PU-FN-000	1-8	2900	1.75	17

*Thread shear values shown represent a 3:1 safety factor.

Vinyl Ester Square Nuts

Square nuts are manufactured from pultruded vinyl ester square stock.They are recommended for applications that require high thread shear values. Square nuts are packaged in bags containing 25 pieces.

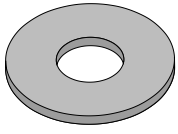


Part Number	Size (in.)	Thread Shear (lbs.)*	Height (In.)	Torque (ft./lbs.)
375V-000	⅜-16	1,300	0.437	10
500V-000	½-13	1,700	0.562	10
625V-000	⅝-11	1,700	0.687	10
750V-000	¾-10	1,700	0.812	10
1000V-000	1-8	1,700	0.937	10

*Thread shear values shown represent a 3:1 safety factor.

Flat Washers

Flat Washers are made from PVC and are available for ¼" diameter through 1". PVC washers are recommended for connections that utilize hex nuts and bolts. PVC washers are packaged in bags containing 25 pieces.



Part Number	Size (in.)	Outside Diameter (in.)
250E-999	¼	0.49
375E-999	⅜	1.00
500E-999	½	1.25
625E-999	⅝	1.50
750E-999	¾	1.50
1000E-999	1	2.25

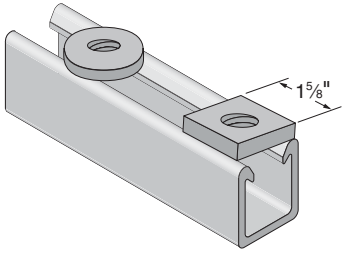
All-Thread Washers

Aickinstrut All-Thread Washers are flat fiberglass wshers for use with FRP all-thread rods. All-Thread rod washers are 1/4" thick with a 1-7/8" diameter and are available in polyester or vinyl ester resin.To order vinyl ester, add the suffix "V" to the part number. To order square washers add the suffix "-SQ" to the part number.

Part Number *	All-Thread Rod Size (in.)
WR375	⅜
WR500	½
WR625	⅝
WR750	¾

* Add the suffix "V" to the part number to specify vinyl ester Example "WR500V"

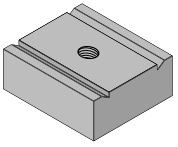
* Add the suffix "-SQ" to the part number to specify square washer Example "WR500-SQ"



Channel Nuts

Channel nuts are provided in two types; Standard Duty and Heavy Duty. Standard Duty channel nuts are designed for light duty applications that do not require high thread shear values. Standard duty channel nuts can also be used with all sizes of Aickinstrut Channel. Heavy duty channel nuts are designed to be used where high thread shear values or spring nuts are required. Heavy duty channel nuts can not be used with Series 1000 Channel (light duty). All channel nuts are manufactured from glass-reinforced polyurethane and are packaged in bags containing 50 pieces. Channel nuts are also available in PVDF as a special order. Contact the factory for pricing and availability.

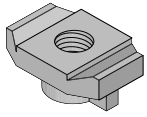
Heavy Duty Channel Nuts



Part Number	Size (in.)	Thread Shear (lbs.)*	Torque (ft./lbs.)
375PU-CNHD	3/8-16	1,400	8
500PU-CNHD	1/2-13	1,400	8
625PU-CNHD	5/8-11	1,400	10
750PU-CNHD	3/4-10	1,400	10
10PU-CNMHD	10 mm	1,400	8
12PU-CNMHD	12 mm	1,400	8
16PU-CNMHD	16 mm	1,400	10
20PU-CNMHD	20 mm	1,400	10

*Thread shear values shown represent a 3:1 safety factor.

Standard Duty Channel Nuts

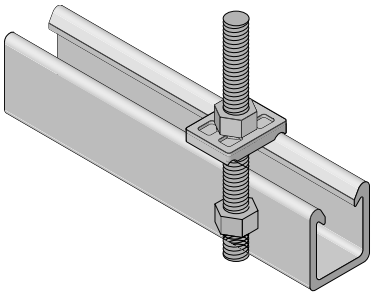


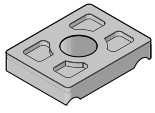
Part Number	Size (in.)	Thread Shear (lbs.)*	Torque (ft./lbs.)
250PU-CN	1/4-20	460	2
312PU-CN	5/16-18	460	2
375PU-CN	3/8-16	460	3
500PU-CN	1/2-13	460	3
10PU-CN	10 mm	460	3
12PU-CN	12 mm	460	3
10PU-CNS	#10 Screw	460	N/A

*Thread shear values shown represent a 3:1 safety factor.

Saddle Clips

Aickinstrut Saddle Clips make fastening through Aickinstrut channel much easier. The clips mate with the exterior of the channel flanges and are secured with threaded rods and nuts. The saddle clips are manufactured from glass reinforced polyurethane and are supplied in bags of 50 pieces.



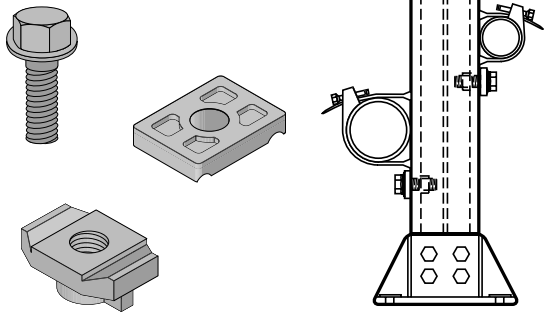


Part Number	Size (In.)
200-4226	3/8
200-4217	1/2
200-4341	5/8
200-4342	3/4

Stop-Lock Assemblies

Aickinstrut Stop-Lock Assemblies reduce the chance of pipe slippage when running supports vertically. Stop-Locks are recommended for applications that are subject to vibration, have regular contact with fluids or are vertically mounted (Type 2). The Stop-Locks fit all three sizes of channel. Stop-Locks are offered with a 3/8", 1/2" and 5/8" bolt size. The 5/8" Stop-Lock Assembly is supplied with a heavy duty channel nut (the 5/8" Stop-Lock Assembly will not work with the 1000 Series Channel).

The Stop-Lock Assemblies' components are manufactured from glass-reinforced polyurethane.



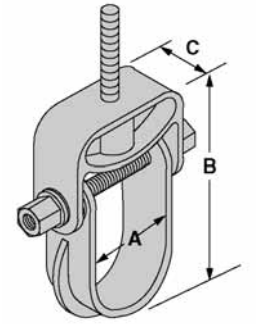
Part Number	Size (in.)	Force Resistance (lbs.)*	Torque (ft./lbs.)
200-4227	3/8	200	7
200-4219	1/2	220	12
200-4343	5/8	250	15

*Force resistance values shown represents a 3:1 safety factor.

Clevis Hangers

Clevis hangers are available in two styles; molded and hand lay-up. The molded clevis hangers are manufactured from glass-reinforced polyurethane and are available for sizes ½" through 6". The hand lay-up clevis hangers are manufactured from glass-reinforced vinyl ester resin and are available for sizes 1" through 24".

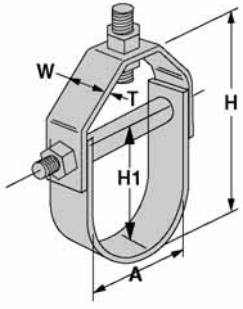
Molded Clevis Hangers



Part Number	Nominal Diameter (in.)	Max. Pipe O.D. (in.)	"A" Dim.	"B" Dim.	"C" Dim.	Hanger Rod (in.)	Load (lbs.)*
CVHPU-100	½ - 1	1	1.500	4.25	1.25	½	670
CVHPU-150	1¼ - 1½	1½	2.000	5.14	1.25	½	670
CVHPU-200	1½ - 2	2	2.500	6.52	1.25	½	730
CVHPU-400	2½ - 4	4	5.125	10.00	1.50	½	1,150
CVHPU-600	4½ - 6	6	6.750	12.33	1.50	½	1,170

*Design load values shown represent a 3:1 safety factor.

Hand Lay-Up Clevis Hangers



Part Number	Size Range (In.) A	Dimensions (in.) T	H	H1	W	Hanger Rod (in.)	Trans Rod (in.)	Spreader Rod O.D. (in.)	Loads (lbs.)*
100-1500	1 – 1½	⅛	2¾	1⅞	1½	½	⅜	½	60
100-1501	1½ – 2	⅛	3½	2⅜	1½	½	⅜	½	60
100-1502	2 – 2⅝	⅛	4¾	3	2	½	⅜	½	90
100-1503	2½ – 3¼	⅛	5½	3⅝	2	½	⅜	½	120
100-1504	3 – 3⅞	⅛	7	4¼	2	⅝	⅜	½	160
100-1505	4 – 5⅛	3⁄16	8½	5⅝	2	⅝	⅜	½	250
100-1506	6 – 7⅛	3⁄16	10⅞	7½	3	⅝	⅜	½	300
100-1507	8 – 9¼	¼	14	9¾	3	⅝	⅜	½	350
100-1508	10 – 11⅜	¼	18	12	4	⅝	½	¾	450
100-1509	12 – 13½	¼	21½	14⅛	5	⅝	½	¾	600
100-1510	14 – 15¾	¼	24½	16½	5	¾	½	¾	700
100-1511	16 – 18	⅜	27⅜	19½	6	¾	¾	1	750
100-1512	19 – 21	⅜	34½	22½	6	¾	¾	1	800
100-1513	21 – 22	½	35½	24	6	¾	¾	1	850
100-1514	22 – 24	½	41	28	6	¾	¾	1	900

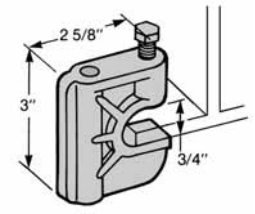
*Design load values shown represent a 3:1 safety factor.

Beam Clamps

Aickinstrut beam clamps are available in two styles; molded and fabricated. The molded beam clamps are manufactured from glass-reinforced polyurethane and can accommodate ⅜", ½" and ⅝" hanger rod sizes. The molded beam clamps utilize the traditional "C" clamp style design. The fabrication beam clamps are manufactured from vinyl ester flat stock and utilize polyurethane bolts and channel nuts for clamping. Fabricated beam clamps are available for attaching to ¼", ⅜" and ½" thick beam flanges. Each fabricated beam clamp assembly includes four (4) ½" standard duty channel nuts, four (4) ½" Polyurethane bolts and two (2) attachment clips.

All Aickinstrut beam clamps allow easy attachment of threaded rod to "I" beams or other structural assemblies.

Molded Beam Clamps

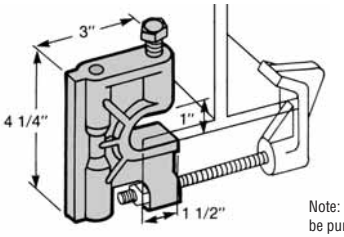


Part Number	Size (in.)	Thread Shear (lbs.)*	Torque (ft./lbs.)
375PU-BC	⅜	400	10
500PU-BC	½	400	10

*Design load values shown represent a 3:1 safety factor.

Beam Clip – 375PU-BCCLP (⅜")

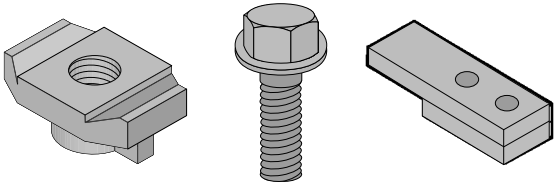
Cope-Glas Beam Clamps

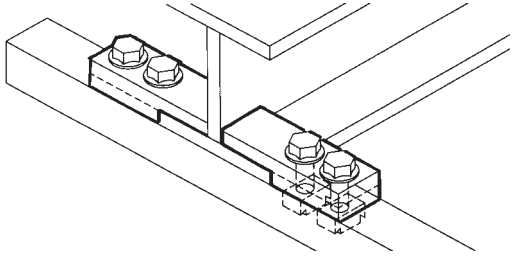


Note: Beam clamp clip must be purchased separately. Illustration purpose only

Part Number	Size (in.)	Thread Shear (lbs.)*	Torque (ft./lbs.)
RGBC-1	⅜	500	10
RGBC-2	½	500	10
RGBC-3	⅝	500	10

Fabricated Beam Clamps





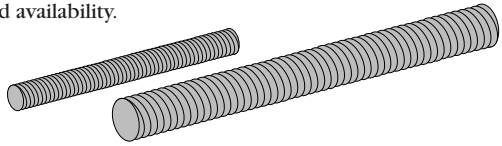
Part Number	Flange Thickness (in.)	Thread Shear (lbs.)*	Torque (ft./lbs.)
20V-2BC-25	¼	600	10
20V-2BC-37	⅜	600	10
20V-2BC-50	½	600	10

*Design load values shown represent a 3:1 safety factor.
Bolts and channel nuts are ½" diameter.

Threaded Rod

Pultruded threaded rods are an excellent choice for hanging and fastening Aickinstrut Channel. These rods can also be used with either the Aickinstrut vinyl ester square nuts, polyurethane hex nuts, hex flange nuts and Aickinstrut channel nuts. All FRP threaded rod is manufactured from pultruded vinyl ester resin and is gray in color.

The standard rod lengths are 4' and 8'. Special lengths and threading are also available. Contact the factory for pricing and availability.

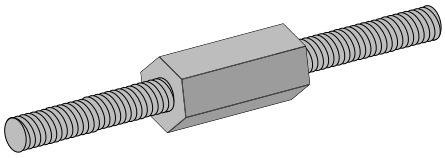


Part Number	Size (in.)	Weight (lbs.)	Thread Shear (lbs.)*	Torque (ft./lbs.)
200-3827	3/8-16	0.07	415	5
200-3828	1/2-13	0.12	570	10
200-3829	5/8-11	0.18	1,260	40
200-3830	3/4-10	0.28	1,700	50
200-3831	1-8	0.50	3,000	60

* Thread shear values shown represent a 3:1 safety factor.
* To order eight foot lengths, add suffix "-96" to part number (EX: 200-3827-96)

A-Konnector Rod Couplers

A-Konnectors provide an excellent means for extending Aickinstrut FRP all-thread rods beyond their standard lengths. A-Konnectors are manufactured from glass-reinforced polyurethane and are colored gray. A-Konnectors are packaged in bags containing 25 pieces.

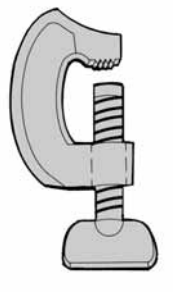


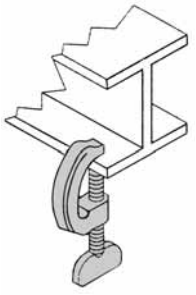
Part Number	Size (in.)	Length (In.)	Thread Shear (lbs.)*
200-3840	3/8-16	2 1/4	800
200-3841	1/2-13	2 1/4	870
200-3842	5/8-11	2 1/4	1,500
200-3843	3/4-10	2 1/4	1,500

* Thread shear values shown represent a 3:1 safety factor.

Duraclamp C-Clamps

Duraclamps are glass-reinforced polyurethane C-Clamps that are designed to replace steel C-Clamps in areas where corrosion is a problem. The individual Duraclamp components can also be purchased separately.



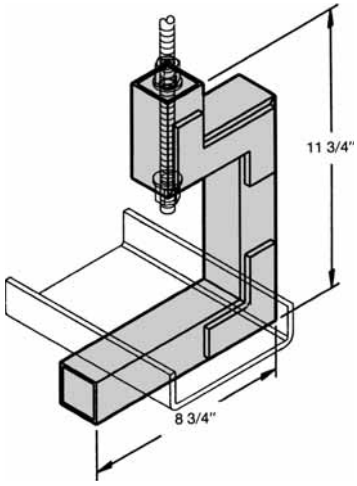


Part Number	Description	Thread Shear (lbs.)*	Torque (ft./lbs.)
390N-150	"C"-Clamp	25	17
390N-BLT	Bolt	N/A	17
390N-CLP	"C"	25	N/A

*Design load values shown represent a 3:1 safety factor.
Note: Bolt Dimension is 5/8" x 2 1/2"

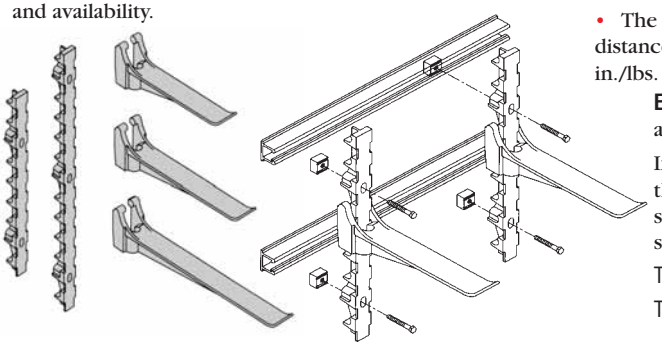
Channel Hangers — AIC-CH-P (Polyester) AIC-CH-V (Vinyl Ester)

The Aickin-Channel Hanger is designed to support fiberglass structural "C" channel that is being used as a raceway system for cables, tubing or small diameter piping. The Aickin-Channel Hanger is available in either polyester or vinyl ester resin and is simply supported from a 1/2" FRP all-thread rod and beam clamp (not provided). The Channel Hanger will accommodate "C" channel width sizes 2" through 8".



Power-Rack Stanchions

The Power-Rack Stanchion is the new alternative to traditional iron cable stanchions used for utility and industrial cable supports. Made entirely from glass-reinforced nylon, these stanchions out-perform metallic supports against corrosion. The extended life-span of the Power-Rack Stanchions makes them the logical choice over metallic cable supports. The Power-Rack Stanchion is available in two different lengths and four different arm lengths. The unique interlocking design allows the arm to "lock" into nine different levels on the 14¼" stanchions and fourteen on the 17½" stanchion. Glass-reinforced polyurethane stanchions are available as a special order. Contact the factory for pricing and availability.



Dimensions – The stanchion back is designed with 9⁄16" wide x 15⁄16" long holes to accept fasteners for mounting. There are two mounting holes in the 21⅜" long stanchion and three mounting holes in the 33⅝16" long stanchion. Thickness at the slotted mounting holes is 1⅞". The mounting holes are spaced on 12" centers and require ½" diameter fasteners.

Installation – The Power-Rack Stanchions can be anchored into existing concrete structures using any good quality industrial anchoring system. For new concrete structures, the Power-Rack Stanchions can be mounted to Aickinstrut concrete embedment channel and attached with ½" channel nuts and ½"x 3" Fiberfast Bolts.

Fire Retardance – Power-Rack materials meet or exceed the requirements of UL94 HB.

Loading – The recommended allowable loads on Power-Rack Stanchions vary depending upon the position of the arm. Following the guidelines listed below will ensure a safe, reliable installation.

- Total load on any one arm should not exceed 800 lbs.
- The sum of the loads on any arm multiplied by their distances to the wall stanchion should not exceed 1200 in./lbs.

Example – A cable weighing 200 lbs. is positioned on an arm at a distance of 5" from the wall stanchion.

If the total load is less than 800 lbs and the sum of the load multiplied by their distances to the wall stanchion does not exceed 1200 in./lbs., then the system is adequate. In this case,

Total load (200<800 lbs) = OK

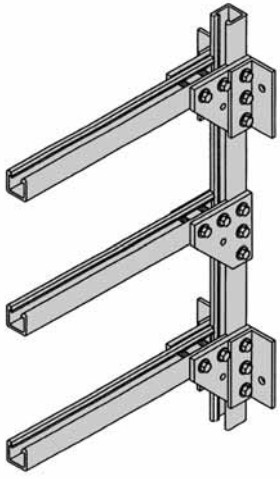
Tot. moment (200x5 in. = 1000<1200 in./lbs.) = OK

Part No.	Description	Weight (lbs.)	Load (lbs.)*
20N-ARM08	8" Arm	1.00	800
20N-ARM14	14¼" Arm	1.16	800
20N-ARM17	17½" Arm	1.45	800
20N-ARM23	23⅞" Arm	1.86	800
20N-STA21	21⅜" Stanchion	1.49	N/A
20N-STA33	33⅝16" Stanchion	2.31	N/A

*Design load values shown represent a 3:1 safety factor.

Wall Brackets

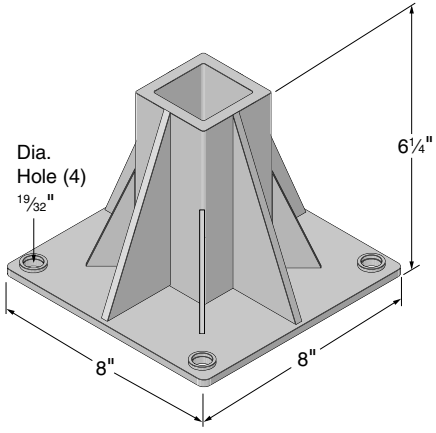
Aickin-Brackets are available in a wide variety of sizes and configurations. These wall brackets are made entirely from Aickinstrut material and are specifically designed to meet the customers requirements. They are ideal for customizing the support of piping, cables, tubing, conduits or cable trays.These brackets are available in either polyester or vinyl ester resin types and will work with all the Aickinstrut accessory items. Consult the factory for design, pricing and availability information.

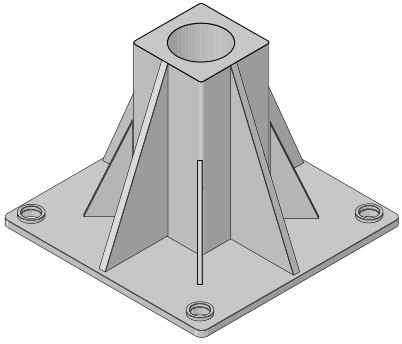


Heavy Duty Post Base

20PU-5852 *(2" Square)*, 20PU-5852 RD *(2" Round)*
20PU-5853 HD *(1⅝" Sq.)*, 20PU-5854 HD *(1½" Sq.)*

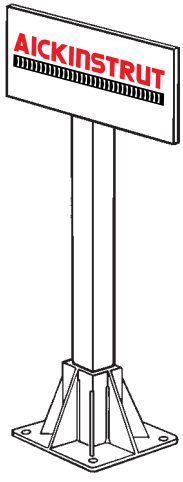
The Aickinstrut heavy duty post base is designed for applications that require a stronger base attachment than the standard Aickinstrut post base. Made from polyurethane, the heavy duty post base is available with four different openings: 1½", 1⅝", 2" square and 2" Schedule 80 round. The heavy duty post base is ideal for mounting fiberglass channel, handrails and instrument stands in corrosive environments. The standard color is gray, but special colors are available upon request.

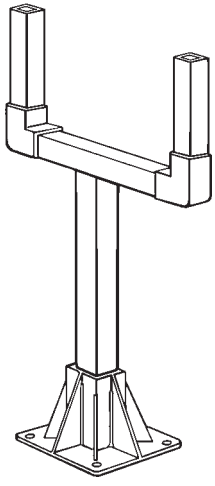




Instrument & Pipe Stands

Aickin-Instrument and Pipe Stands are available in polyester or vinyl ester resin types and are designed to meet specific customer requirements. These stands are ideal for supporting instruments and enclosures in corrosive environments. The stands utilize the Aickinstrut Heavy Duty Post Base and either 2" x 2" x ¼" square tube or 2" Schedule 80 pipe to support the instruments or enclosures. These stands can be designed or configured to meet any application. Consult the factory for design, pricing and availability information.





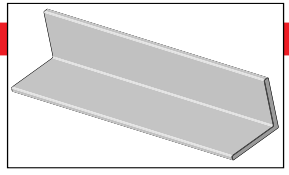
AICKINSHAPE® STRUCTURAL SHAPES

General purpose pultruded structural shapes can be used as a complement to Aickinstrut Channel Framing projects. The shapes are ideal for structural bracing, handrails, handrail kickplates, shims and supporting grating. Structural shapes are available in either polyester or vinyl ester resin and are provided in 20' lengths. Additional structural shapes not listed in this catalog are available. Contact the factory for pricing, availability and minimums. Special sizes and colors can be run based upon quantity.

NOTES

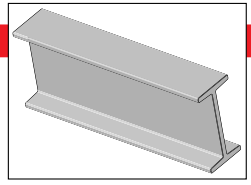
ST - Standard Isophthalic Polyester Resin; O = (Olive Green)
FR - Isophthalic Polyester Fire Retardant Resin; P = (Dark Gray)
VE - Vinyl Ester Fire Retardant Resin; V = (Beige)
■ Stock Item; ◆ Stocked in Yellow
In part numbers shown below, replace "X" with resin and color code (O, P, V).
I.E.: 18P-1200-20 Polyester Gray 2" x 1/4" Equal Leg Angle

Equal Leg Angle



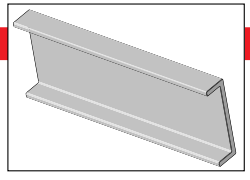
Size (In.)	Resin			#/Lin. Ft.	Part No.
	ST	FR	VE		
1 x 1/8	■	■	■	0.21	18X-1100-20
1 1/4 x 1/8	–	–	–	0.23	18X-1110-20
1 1/2 x 3/16	■	■	■	0.37	18X-1120-20
1 1/2 x 1/4	■	■	■	0.51	18X-1130-20
2 x 1/4	■	■	■	0.68	18X-1200-20
3 x 1/4	■	■	■	1.04	18X-1300-20
3 x 3/8	■	■	■	1.65	18X-1310-20
3 x 1/2	–	–	–	2.15	18X-1320-20
4 x 1/4	■	■	■	1.41	18X-1400-20
4 x 3/8	■	■	■	2.23	18X-1410-20
4 x 1/2	■	■	■	2.92	18X-1420-20
6 x 3/8	■	■	■	3.44	18X-1500-20
6 x 1/2	■	■	■	4.50	18X-1510-20

I–Beam



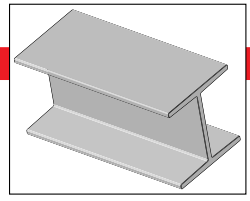
Size (In.)	Resin			#/Lin. Ft.	Part No.
	ST	FR	VE		
3 x 2 x 1 1/2 x 1/4	–	–	–	1.18	18X-2100-20
3 x 1 1/2 x 1/4	–	–	–	1.11	18X-2300-20
4 x 2 x 1/4	■	■	■	1.46	18X-2400-20
6 x 3 x 1/4	■	■	■	2.24	18X-2600-20
6 x 3 x 3/8	–	–	–	3.29	18X-2800-20
8 x 4 x 3/8	■	■	■	4.46	18X-2110-20
8 x 4 x 1/2	–	–	–	5.85	18X-2130-20
10 x 5 x 3/8	–	–	–	5.78	18X-2160-20
10 x 5 x 1/2	–	■	■	7.41	18X-2180-20
12 x 6 x 1/2	–	■	■	8.97	18X-2210-25
18 x 3/8 x 4 1/2 x 1/2	–	–	–	8.48	18X-2230-20
24 x 3/8 x 7 1/2 x 3/4	–	–	–	15.20	18X-2240-20

Channel



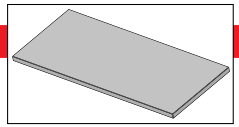
Size (In.)	Resin			#/Lin. Ft.	Part No.
	ST	FR	VE		
2 x 9/16 x 1/8	■	■	–	0.25	18X-2916-20
3 x 7/8 x 1/4	■	■	–	0.77	18X-3078-20
3 x 1 x 1/4	■	■	■	0.87	18X-3114-20
3 x 1 1/2 x 1/4	–	■	■	1.07	18X-3112-20
3 x 1/2 x 1 3/16 x 1/8	–	–	–	0.65	18X-31316-20
4 x 1 1/8 x 1/4	■	■	■	1.11	18X-4118-20
4 x 1 3/8 x 3/16	■	■	■	0.86	18X-4138-20
6 x 1 5/8 x 1/4	■	■	■	1.64	18X-6158-20
6 x 1 11/16 x 3/8	■	■	■	2.52	18X-61116-20
8 x 2 3/16 x 3/8	■	■	■	3.40	18X-82316-20
10 x 2 3/4 x 1/2	■	■	■	5.65	18X-10234-20

Wide Flange I-Beam



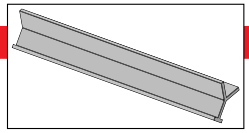
Size (In.)	Resin			#/Lin. Ft.	Part No.
	ST	FR	VE		
3 x 3 x 1/4	■	■	■	1.69	18X-2200-20
4 x 4 x 1/4	■	■	■	2.10	18X-2500-20
6 x 6 x 1/4	■	■	■	3.41	18X-2700-20
6 x 6 x 3/8	■	■	■	5.05	18X-2900-20
8 x 8 x 3/8	■	■	■	6.49	18X-2120-20
8 x 8 x 1/2	–	■	■	8.70	18X-2140-20
10 x 10 x 3/8	–	–	–	8.74	18X-2170-20
10 x 10 x 1/2	–	■	■	10.90	18X-2190-25
12 x 12 x 1/2	–	■	■	13.20	18X-2220-25

Flat Sheet



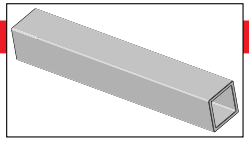
Size (In.)	Resin ST	Resin FR	Resin VE	#/Lin. Ft.	Part No.
1/8 x 48 x 96	■	■	■	1.14	18X-4100
3/16 x 48 x 96	■	■	■	1.71	18X-4200
1/4 x 48 x 96	■	■	■	2.34	18X-4300
3/8 x 48 x 96	■	■	■	3.54	18X-4400
1/2 x 48 x 96	■	■	■	4.68	18X-4500
5/8 x 48 x 96	–	–	–	5.79	18X-4600
3/4 x 48 x 96	–	–	–	6.94	18X-4700
1 x 48 x 96	–	–	–	9.27	18X-4800

Embedment Angle



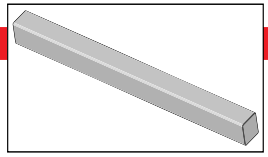
Size (In.)	Resin ST	Resin FR	Resin VE	#/Lin. Ft.	Part No.
1 x 1 1/2 x 1/4	–	–	■	1.00	18X-111214-20
1 1/2 x 1 1/2 x 1/4	–	–	■	1.10	18X-11211214-20
2 x 1 1/2 x 1/4	–	–	■	1.20	18X-211214-20

Square Tube



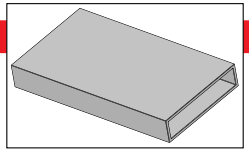
Size (In.)	Resin ST	Resin FR	Resin VE	#/Lin. Ft.	Part No.
1 x 1/8	■	■	■	0.32	18X-3100-20
1 1/8 x 1/8	–	–	–	0.37	18X-3200-20
1 1/4 x 1/8	–	–	–	0.41	18X-3300-20
1 1/4 x 1/4	–	–	–	0.68	18X-3310-20
1 1/2 x 1/8	■	◆	◆	0.54	18X-3400-20
1 1/2 x 1/4	–	–	■	0.98	18X-3410-20
1 3/4 x 1/8	–	◆	◆	0.63	18X-3500-20
1 3/4 x 1/4	–	◆	◆	1.10	18X-3510-20
2 x 1/8	■	◆	◆	0.69	18X-3600-20
2 x 1/4	■	◆	◆	1.40	18X-3610-20
2 1/4 x 1/8	–	◆	–	0.83	18X-3800-20
2 1/4 x 1/4	–	–	–	1.56	18X-3810-20
2 1/2 x 1/4	–	◆	–	1.79	18X-3900-20
3 x 1/8	–	–	–	1.12	18X-3110-20
3 x 1/4	■	■	■	2.15	18X-3111-20
4 x 1/4	■	■	■	2.93	18X-3120-20
4 x 3/8	■	–	–	4.24	18X-3121-20
6 x 3/8	■	■	■	6.42	18X-3140-20
Toe Plate					
4 x 5/8 x 1/8	–	◆	◆	0.49	18X-3130-20

Square Bar



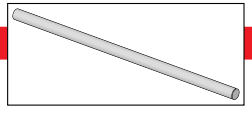
Size (In.)	Resin ST	Resin FR	Resin VE	#/Lin. Ft.	Part No.
1 x 1	■	–	–	0.87	18X-5100-20
1 1/4 x 1 1/4	–	◆	–	1.31	18X-5125-20
1 1/2 x 1 1/2	–	◆	–	1.98	18X-5150-20
2 x 2	–	–	–	3.12	18X-5200-20

Rectangular Tube



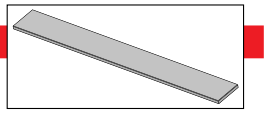
Size (In.)	Resin ST	Resin FR	Resin VE	#/Lin. Ft.	Part No.
4 x 1 x 1/8	–	–	–	0.85	18X-4118-20
4 x 1/8 x 2 x 1/4	■	■	■	1.52	18X-418214-20
4 3/8 x 1 3/8 x 1/8 x 3/16	–	–	–	1.18	18X-438138-20
4 1/2 x 1 3/4 x 1/8 x 3/16	–	–	–	1.29	18X-412138-20
5 x 2 x 1/8	–	–	–	1.32	18X-5218-20
5 1/8 x 2 1/8 x 3/16	–	–	–	1.32	18X-518218-20
6 1/2 x 1/4 x 2 x 1/2	–	–	–	3.77	18X-612212-20
6 x 4 x 1/4	–	■	–		18X-6414-20

Round Rod



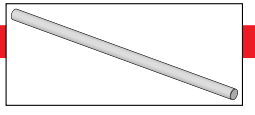
Size (In.)	Resin ST	Resin FR	Resin VE	#/Lin. Ft.	Part No.
1/8	■	–	–	0.01	18X-70018-20
3/16	■	–	–	0.02	18X-700316-20
1/4	■	–	–	0.04	18X-70014-20
5/16	■	–	–	0.07	18X-700516-20
0.35	–	–	–	0.08	18X-70035-20
3/8	■	–	■	0.09	18X-70038-20
1/2	■	–	■	0.17	18X-70012-20
5/8	■	–	■	0.27	18X-70058-20
3/4	■	–	■	0.39	18X-70034-20
13/16	–	–	–	0.46	18X-7001316-20
1	■	–	■	0.66	18X-70100-20
1 1/4	■	–	–	1.08	18X-70114-20
1 1/2	■	–	–	1.56	18X-70112-20
2	–	–	–	2.56	18X-70200-20
2 1/2	–	–	–	4.10	18X-70212-20
3	–	–	–	5.70	18X-70300-20

Flat Strip



Size (In.)	Resin			#/Lin. Ft.	Part No.
	ST	FR	VE		
5/8 x 1/4	■	–	–	0.11	18X-605814-96
3/4 x 1/4	■	–	–	0.14	18X-603414-96
1 x 1/8	–	–	–	0.11	18X-6118-96
1 1/4 x 3/16	–	–	–	0.19	18X-6114316-96
1 1/2 x 3/8	–	–	–	0.50	18X-611238-96
1 1/2 x 1	–	–	–	1.32	18X-61121-96
1 3/4 x 1/4	■	–	–	0.38	18X-613414-96
2 x 1/2	–	–	–	0.88	18X-6212-96
2 x 1	–	–	–	1.76	18X-6210-96
2 1/2 x 3/16	–	–	–	0.34	18X-6212316-96
3 x 1/4	–	–	–	0.66	18X-6314-96
3 x 3/8	–	–	–	0.99	18X-6338-96
3 x 1/2	–	–	–	1.32	18X-6312-96
4 x 1/8	–	–	–	0.44	18X-6418-96
6 x 1/4	–	–	–	1.32	18X-6614-96
6 x 1/2	–	–	–	2.16	18X-6612-96

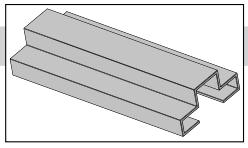
Round Tube



Size (In.)	Resin			#/Lin. Ft.	Part No.
	ST	FR	VE		
1 x .100	–	–	–	0.22	18X-7100-20
1 x 1/8	■	■	–	0.25	18X-7118-20
1 1/4 x 3/32	–	–	–	0.27	18X-7114332-20
1 1/4 x 1/8	–	–	–	0.32	18X-711418-20
1 1/4 x 1/4	–	–	–	0.60	18X-711414-20
1 1/2 x 1/8	■	■	–	0.45	18X-711218-20
1 1/2 x 1/4	–	■	–	0.79	18X-711214-20
1 3/4 x 1/8	–	–	–	0.47	18X-713418-20
1 3/4 x 1/4	–	–	–	0.94	18X-713414-20
2 x 1/4	■	■	■	1.12	18X-7214-20
3 x.100	–	–	–	0.89	18X-7300-20
3 x 1/4	–	–	–	1.68	18X-7314-20
3 x 1/2	■	–	–	2.98	18X-7312-20
4.89 x 1/8	–	–	–	2.32	18X-7418-20
4.89 x 3/16	–	–	–	2.97	18X-74316-20

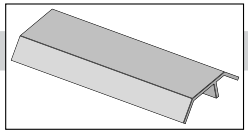
Special Shapes

Door Frame



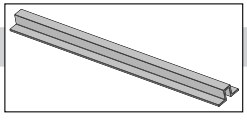
Profile/Size	Resin			#/Lin. Ft.	Part No.
	ST	FR	VE		
5 3/4 x 2 5/8 x 3/16	–	–	–	1.60	18X-DF-20

Threshold



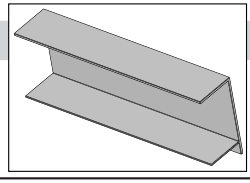
Profile/Size	Resin			#/Lin. Ft.	Part No.
	ST	FR	VE		
5 1/2 x 1/4	–	–	–	1.05	18X-TH-20

Hat Section



Profile/Size	Resin			#/Lin. Ft.	Part No.
	ST	FR	VE		
2 x 7/8 x .140	–	–	–	0.34	18X-HS-20

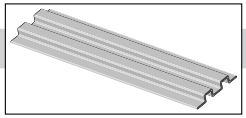
Flight Channel



Profile/Size	Resin			#/Lin. Ft.	Part No.
	ST	FR	VE		
3 x 6 x 1/8 x 3/16	■	–	–	1.31	18X-93618316-20
3 x 8 x 1/8 x 3/16	■	–	–	1.43	18X-93818316-20

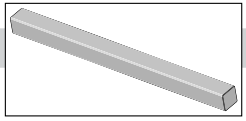
Handrail Components

Toe Plate†



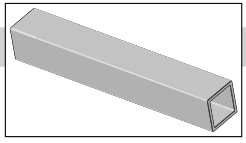
Size (in.)	#/Lin. Ft.	Part No.
4 x 5/8 x 1/8	0.49	18X-3130-20

Square Bar†



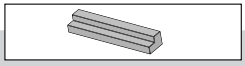
Size (in.)	#/Lin. Ft.	Part No.
1¼ x 1¼	1.31	18X*-5125-20
1½ x 1½	1.98	18X-5150-20

Square Tube†



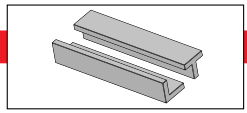
Size (in.)	#/Lin. Ft.	Part No.
1¼ x ¼	0.68	18X-3310-20
1½ x 1/8	0.54	18X-3400-20
1¾ x 1/8	0.63	18X-3500-20
1¾ x ¼	1.10	18X-3510-20
2 x 1/8	0.69	18X-3600-20
2 x ¼	1.40	18X-3610-20
2¼ x 1/8	0.83	18X-3800-20
2½ x ¼	1.69	18X-3900-20

Fixed Connector†



Size (in.)	#/Ea.	Part No.
4¼ x 1¼	0.87	AIC-FC-414
4½ x 1½	1.32	AIC-FC-412

Handrail Connectors



Fixed 90°

Size (In.)	Resin ST	Resin FR	Resin VE	#/Ea.	Part No.
1¼	–	*†	–	0.87	AIC-FIXED-90-1-1/4
1½	–	*†	–	1.32	AIC-FIXED-90-1-1/2

Adjustable 90°

1¼	–	–	–	AIC-ADJ-90-1-1/4
1½	–	–	–	AIC-ADJ-90-1-1/2

Fixed "T"

1¼	–	–	–	AIC-FIXED-T-1-1/4
1½	–	–	–	AIC-FIXED-T-1-1/2

Aickinzap 600-2200

Aickinzap is an acrylic spray that provides a corrosion resistant coating when applied to cut sections of Aickinstrut. Aickinzap is supplied in a 12 oz. can and is recommended for use as a sealant for Aickinstrut polyester and vinyl ester materials after cutting or drilling. Aickinzap is the quickest, most convenient method for sealing after fabrication.

Aickincoat 600-1500 (Quart), 600-1600 (Gallon)

Aickincoat is a "brush-on" corrosion resistant sealant that should be applied to all cut or drilled surfaces of fiberglass to seal exposed areas from corrosion. Aickincoat dries into a clear, hard, glossy coating that restores weathered fiberglass surfaces and provides an excellent barrier from ultraviolet degradation. It is available in quart and gallon cans.

Custom Fabrication and Promotional Material

Promotional materials are available for select individuals, including stocking distributors, end users, OEM's, contractors, specifying engineers, consultants and sales representatives. Please contact the factory for availability.

AICK-DIST-DISP

The Aickin Distributor Display is a counter top display for stocking distributors. This display features multiple channel sizes and materials, adjustable and rigid pipe straps, U-bolts, molded and fabricated channel fittings, post bases, clevis hangers and fasteners. All of these materials are then assembled to form a comprehensive, compact display which becomes an excellent sales tool.

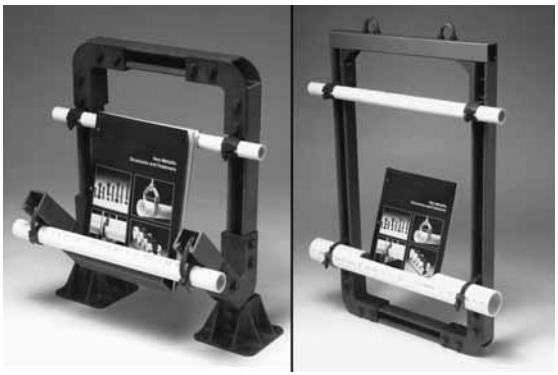
Aickin Rigid Pipe Clamp Sample ARPS2

The Aickin Rigid Pipe Clamp Sample is a desk top sample that displays the rigid pipe strap clamping a piece of PVC pipe onto a section of Aickinstrut Channel.

Aickin Adjustable Pipe Clamp Sample AJPSS2

The Aickin Adjustable Pipe Clamp Sample is a desk top sample that displays the Aickin Adjustable Pipe Strap clamping a piece of PVC pipe onto a section of Aickinstrut Channel.

Aickin Distributor Literature Displays
(Hanging) AICK-LIT-DISP
(Counter Stand) AICK-LIT-DISP-CS



The Aickin Distributor Literature Display is offered in two designs; wall hanging and counter standing. The wall hanging design is meant to be hung from the two top U-bolts while the counter standing design is a free standing counter display. Both displays incorporate Aickinstrut channel in their design and utilize the PVC display pipe as the literature container.

Aickin Sample Box AICK-SAMP-CART

The Aickin Sample Box is a convenient plastic carrying case with a complete sampling of the Aickinstrut product line.

Each Sample Box includes:

- PVC strut sample (20E-2000)
- Polyester strut sample (20P-2000)
- Polyester slotted strut sample (20P-1100)
- Vinyl ester strut sample (20V-1500)
- Polyester solid channel fitting (20V-2500)
- Vinyl ester grooved channel fitting (20V-2802)
- Saddle Clip (200-4226)
- Fiberfast bolts (250PU-000, 375PU-125 & 500PU-000)
- Fiberfast nuts (250PU-000, 375PU-125 & 500PU-CN)
- Square nut (500V-000)
- PVC washers (375E-999 & 500E-999)
- Standard duty channel nuts (375PU-CN & 500PU-CN)
- Heavy duty channel nut (500PU-CNHD)
- Adjustable pipe clamp (200-3110)
- Rigid pipe clamp (PCR-125)
- FRP threaded rod samples (200-3827 & 200-3828)

Aickingrate Fiberglass Grating was developed as a corrosion resistant alternative to traditional metallic grating. Aickingrate will not rust, resists corrosion, lasts longer than metal and is maintenance free. Aickingrate never requires painting and can be installed with standard hand tools.

Other valuable Aickingrate features include:

- Availability of polyester or vinyl ester fire retardant resin systems, which offer superior corrosion resistance, strength and fire protection.
- Applied grit anti-slip surface on molded grating, which provides superior traction.
- Panels are strong and flexible providing a comfortable working surface that enhances safety while reducing worker fatigue.
- Panels are lightweight, easy to install and easy to remove for maintenance.
- UV inhibitors are added to the base resin systems providing optimum protection from the effects of weathering. Pultruded grating is further enhanced with the addition of a synthetic surfacing veil.

Aickingrate pultruded and molded gratings are ideal for the following applications:

- Aquariums
- Chemical & Petrochemical
- Food & Beverage
- Marine
- Mining
- Offshore
- Plating
- Power Generation & Utilities
- Pulp & Paper
- Recreation & Pools
- Transportation
- Water & Wastewater

Aickingrate pultruded and molded gratings are practical, economical solutions for applications where metallic gratings are not well suited. Aickingrate offers the best solution for your industrial flooring needs.

Because Aickingrate is marketed with Aickinstrut Non-Metallic Strut Support Systems and Aickinshapes Non-Metallic Structural Shapes, the customer has the benefit of purchasing all of these items from a single source, thereby minimizing start-up and delivery delays.

Aickingrate stands ready to provide customer assistance through its network of distributors and mechanical sales representatives.

AICKINGRATE® FIBERGLASS GRATING

Aickingrate molded grating is a one piece, glass-reinforced design available in standard sized 3' x 10' and 4' x 12' panels. Each panel is composed of non-flame retardant polyester resin, flame retardant polyester resin or vinyl ester resin and continuous fiberglass rovings for optimum strength and corrosion resistance. All Aickingrate molded grating is provided with an applied grit anti-skid surface. This anti-skid surface is applied onto the meniscus surface of each panel providing an extremely long lasting, effective, anti-skid surface. Standard meniscus surface grating is also available upon request.

Aickingrate molded grating does not rust, never requires painting and resists corrosion. The panels have a high strength-to-weight ratio and are maintenance free. They also are lightweight and can easily be installed without heavy equipment. Fabricating Aickingrate can easily be accomplished with standard tools.

Aickingrate is ideal for work platforms. The resiliency designed into each panel reduces worker leg and back pain and lowers overall worker fatigue resultingin increased productivity. These worker anti-fatigue benefits make Aickingrate ideal for platforms, catwalks, flooring, work stations and mezzanines.

Resin Systems

Polyester

The Aickingrate polyester resin system has two flame spread ratings. The fire retardant system has a rating of 25 or less based on the requirements of ASTM E 84. The non-fire retardant system is not rated. Both systems are designed for applications that will see moderate exposure to corrosive elements. These resin systems are ideal when a cost-effective, corrosion resistant, system is required.

Standard Colors: Green & Yellow
Special colors are available upon request.

Vinyl ester

The Aickingrate vinyl ester resin system has a flame spread rating of 25 or less based on the requirements of ASTM E 84 **(contact the factory for applications that require a flame spread rating of 10 or less)**. It is designed to resist the highly corrosive acids and caustics found in the harshest chemical environments. This premium grade resin system is ideal in extremely harsh, wet, caustic conditions and will maintain its structural integrity at elevated temperatures. Aickingrate vinyl ester molded grating is the system to choose in extremely corrosive conditions.

Standard Colors: Orange & Dark Gray
Special colors are available upon request.

Special Optional Surfaces

The standard Aickingrate surface is an applied, sealed grit top. The other optional Aickingrate surface is a meniscus surface that also provides optimum skid resistance.

Meniscus

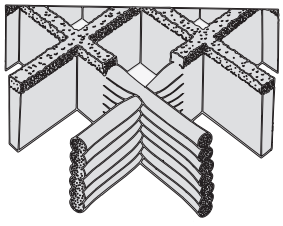
This "concave surface" grating provides excellent slip resistance and is recommended for light traffic applications.

Anti-Skid

This "applied-grit" surface is ideal for high traffic applications that require superior skid resistance.

LOADING AND DEFLECTION

The load & deflection data is intended for use only as a guide. The Aickingrate standard panel sizes are 3' x 10' and 4' x 12'. The bearing bars run across the panels making the span 3 or 4 feet. Once the design load and deflection are determined, you can calculate the max-imum allowable span from the tables.



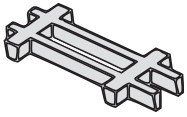
LOADING CONSIDERATIONS

Occasionally, Aickingrate will be subjected to heavy loads from wheeled traffic. For these applications, it is not recommended to use Aickingrate where solid steel or hard rubber wheels can cause sharp impact or chipping of the embedded grit surface. For the same reason, avoid dropping or sliding heavy loads on Aickingrate.

Load & Deflection Application Data	Concentrated Load (lbs.)	Suggested Deflection (in.)
Occasional Foot Traffic (Inspections, etc.)	250	.250-.375
Workman with Tools (Maintenance)	300	.250-.375
Heavy Foot Traffic	400	.250-.375
Carts/Nonmotorized Vehicles	800	.250-.375
Motorized Traffic (Light)	1,500	.250-.375

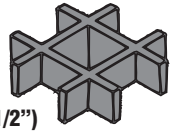
Grating Size

HEIGHT (MESH SIZE)



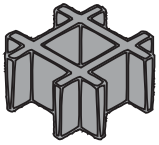
1" (1" X 4")

Panel Size:	**3' x 10' & 44" x 8'**	Space Between Bars	3/4" x 3-5/8"
Panel Weight:	83 lbs. & 83 lbs.	Bar Thickness:	
Weight Per Ft.:	2.75 lbs. sq/ft	Bearing Bar	1/4"
Open Area:	69%	Cross Bar	3/8"



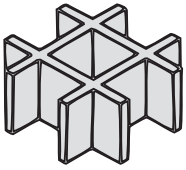
1" (1-1/2" X 1-1/2")

Panel Size:	**4' x 12', 4' x 10'**	Space Between Bars	1-1/4" x 1-1/4"
Panel Weight:	120 lbs. & 100 lbs.	Bar Thickness:	
Weight Per Ft.:	2.5 lbs. sq/ft	Bearing Bar	1/4"
Open Area:	70%	Cross Bar	1/4"



1-1/2" (1-1/2" X 1-1/2")

Panel Size:	**4' x 12', 4' x 10'**	Space Between Bars	1-1/4" x 1-1/4"
Panel Weight:	180 lbs. & 150 lbs.	Bar Thickness:	
Weight Per Ft.:	3.75 lbs. sq/ft	Bearing Bar	1/4"
Open Area:	70%	Cross Bar	1/4"



2" (2" X 2")

Panel Size:	**4' x 12', 4' x 10'**	Space Between Bars	1-3/4" x 1-3/4"
Panel Weight:	192 lbs. & 160 lbs.	Bar Thickness:	
Weight Per Ft.:	4.0 lbs. sq/ft	Bearing Bar	1/4"
Open Area:	70%	Cross Bar	1/4"

1. Material

1.1 All molded grating will be fiberglass roving reinforced and constructed from non-fire retardant polyester, fire retardant polyester or vinyl ester resin.

2. Composition

2.1 Glass content will be 35% by weight so as to achieve maximum corrosion resistance.

2.2 Fire-retardant grating will have a flame spread rating of 25 or less per the requirements of ASTM E 84.

2.3 Grating shall comply with all applicable provisions of the following flammability standards:

ASTM D-635 (Rate of Burning)
ASTM E 84 (Surface Burning)
UL 94 V0 (Flammability Standard)

2.4 Standard colors shall include the following:

Polyester: Green & Yellow
Vinyl ester: Orange & Dark Gray

2.5 Special colors are available upon customer request.

3. Structural Design

3.1 Grating shall have the following grid patterns:

1" x 4" (1" thick)
1 1/2" x 1 1/2" (1" thick)
1 1/2" x 1 1/2" (1 1/2" thick)
2" x 2" (2" thick)

3.2 Grating shall be provided in standard 3' x 10' & 4' x 12' panels.

3.3 Specially cut & fabricated grating sections will be available upon customer request.

3.4 Open areas will range from 69% to 70% depending on the selected grid pattern.

3.5 Standard surface shall be a sealed, applied grit top surface with meniscus surface available upon request.

3.6 Load and deflection values shall be as stated in this catalog.

3.7 Weights per sq/ft shall be as stated in this catalog.

4. General

4.1 Grating will be inspected prior to shipment and will be free from visual defects such as delaminations, blisters, surface crazing and voids.

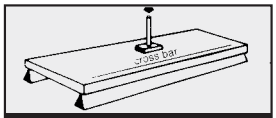
4.2 Cut grating will be sealed prior to shipment.

4.3 Use of grating accessories shall be approved by the manufacturer and installed in accordance with the manufacturers' instructions.

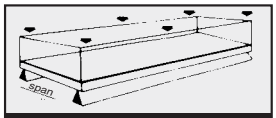
4.4 Product substitutions other than Aickingrate must meet or exceed the performance standards set forth in this catalog.

4.5 Grating supplied shall be Aickingrate as manufactured by:

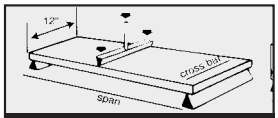
Aickinstrut/T.J. Cope
11500 Norcom Road
Philadelphia, PA 19154
800-426-4293 (toll free)



CONCENTRATED LOAD: FULL PANEL



UNIFORM LOAD: FULL PANEL



CONCENTRATED LOAD: 12" WIDE

Concentrated Load: Full Panel

2" THICK – 2" x 2" Mesh

SPAN	Load (lbs.) / Deflection (in.)							LOAD AT SPECIFIC DEF.		
(in.)	100	250	500	750	1000	1500	2000	1:180◆	1:120◊	1:100Δ
18	.004	.012	.025	.037	.049	.074	.098	2040	3063	3672
24	.007	.018	.036	.054	.072	.107	.143	1860	2793	3352
36*	.015	.037	.073	.110	.146	.219	.293	1290	1938	2326
48*	.030	.074	.149	.223	.298	.447		858	1286	1554

1½" THICK – 1½" x 1½" Mesh

SPAN	Load (lbs.) / Deflection (in.)							LOAD AT SPECIFIC DEF.		
(in.)	100	250	500	750	1000	1500	2000	1:180◆	1:120◊	1:100Δ
18	.007	.016	.032	.048	.064	.096	.128	1560	2340	2808
24	.012	.029	.058	.086	.115	.173	.230	1156	1733	2080
36*	.026	.064	.128	.192	.255	.383		738	1108	1330
48*	.055	.138	.276	.414				463	693	832
60*	.083	.208	.417					386	579	695

1" THICK – 1½" x 1½" Mesh

SPAN	Load (lbs.) / Deflection (in.)							LOAD AT SPECIFIC DEF.		
(in.)	100	250	500	750	1000	1500	2000	1:180◆	1:120◊	1:100Δ
18	.014	.034	.068	.102	.136	.203	.271	738	1105	1325
24	.026	.066	.132	.198	.265	.397		503	755	906
36*	.068	.171	.342					276	414	497
48*	.141	.353						181	272	326

1" THICK – 1" x 4" Mesh

SPAN	Load (lbs.) / Deflection (in.)							LOAD AT SPECIFIC DEF.		
(in.)	100	250	500	750	1000	1500	2000	1:180◆	1:120◊	1:100Δ
18	.011	.028	.056	.084	.113	.169	.225	887	1330	1596
24	.025	.061	.123	.184	.245	.368	.491	543	813	976
36*	.059	.147	.294	.441				321	482	578
44*	.120	.300						213	320	384

Uniform Load: Full Panel

2" THICK – 2" x 2" Mesh

SPAN	Load (lb/ft²) / Deflection (in.)							LOAD AT SPECIFIC DEF.		
(in.)	40	65	75	100	150	200	250	1:180◆	1:120◊	1:100Δ
12	.000	.000	.000	.000	.000	.000	.000	4867	5800	5800
18	.003	.004	.005	.007	.010	.014	.017	1439	2158	2590
24	.009	.014	.016	.022	.033	.044	.055	607	910	1092
36*	.044	.072	.083	.111	.167	.222	.278	180	269	323
48*	.141	.228	.264	.351				76	111	133
60*	.343							32	46	55

1½" THICK – 1½" x 1½" Mesh

SPAN	Load (lb/ft²) / Deflection (in.)							LOAD AT SPECIFIC DEF.		
(in.)	40	65	75	100	150	200	250	1:180◆	1:120◊	1:100Δ
12	.002	.003	.004	.005	.008	.010	.013	2664	5918	7102
18	.005	.008	.010	.013	.019	.025	.032	787	2358	2830
24	.016	.026	.030	.040	.060	.080	.101	331	745	894
36*	.081	.132	.153	.204	.305	.407		98	145	174
48*	.258	.419	.484		.			41	60	72

1" THICK – 1½" x 1½" Mesh

SPAN	Load (lb/ft²) / Deflection (in.)							LOAD AT SPECIFIC DEF.		
(in.)	40	65	75	100	150	200	250	1:180◆	1:120◊	1:100Δ
12	.003	.006	.008	.010	.016	.021	.026	633	950	1140
18	.021	.035	.040	.053	.080	.107	.133	187	281	337
24	.067	.110	.126	.169	.253	.337	.422	78	118	142
36	.342							23	35	42

1" THICK – 1" x 4" Mesh

SPAN	Load (lb/ft²) / Deflection (in.)							LOAD AT SPECIFIC DEF.		
(in.)	40	60	75	100	150	200	250	1:180◆	1:120◊	1:100Δ
12	.002	.004	.005	.006	.009	.012	.014	1158	1737	2084
18	.010	.016	.018	.024	.036	.048	.060	416	625	750
24	.022	.036	.042	.056	.084	.112	.140	238	356	427
36*	.110	.180	.207	.276	.414			72	108	130
44*	.310							34	50	60

Concentrated Load: 12" Wide

2" THICK – 2" x 2" Mesh

SPAN	Load (lbs.) / Deflection (in.)							LOAD AT SPECIFIC DEF.		
(in.)	100	250	500	750	1000	1500	2000	1:180◆	1:120◊	1:100Δ
12	.002	.006	.011	.017	.022	.034	.045	2900	2900	2900
18	.007	.017	.033	.050	.066	.099	.132	1510	2266	2719
24	.012	.031	.062	.093	.124	.186	.248	1074	1611	1933
36*	.037	.093	.186	.279	.372			507	760	912
48*	.084	.209	.418					306	458	550
60*	.154	.384						210	315	378

1½" THICK – 1½" x 1½" Mesh

SPAN	Load (lbs.) / Deflection (in.)							LOAD AT SPECIFIC DEF.		
(in.)	100	250	500	750	1000	1500	2000	1:180◆	1:120◊	1:100Δ
12	.005	.013	.025	.038	.051	.076	.101	1312	1968	2362
18	.012	.031	.061	.092	.123	.184	.245	815	1221	1465
24	.027	.068	.136	.204	.272	.408		490	734	881
36*	.087	.218	.436		.			216	324	389
48*	.208							122	184	221

1" THICK – 1½" x 1½" Mesh

SPAN	Load (lbs.) / Deflection (in.)							LOAD AT SPECIFIC DEF.		
(in.)	100	250	500	750	1000	1500	2000	1:180◆	1:120◊	1:100Δ
12	.012	.030	.060	.090	.120	.179	.239	557	835	1002
18	.034	.086	.172	.258	.345			289	434	517
24	.078	.196	.391					170	254	306
36*	.265							71	107	128

1" THICK – 1" x 4" Mesh

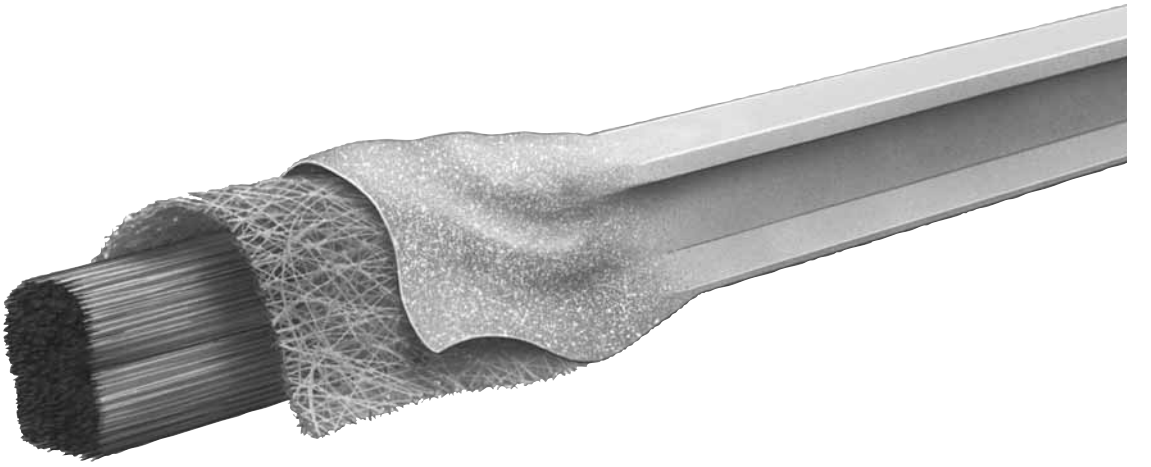
SPAN	Load (lbs.) / Deflection (in.)							LOAD AT SPECIFIC DEF.		
(in.)	100	250	500	750	1000	1500	2000	1:180◆	1:120◊	1:100Δ
12	.009	.023	.046	.069	.092	.137	.183	727	1090	1308
18	.026	.064	.128	.192	.256	.384		390	584	701
24	.059	.147	.294	.440				226	340	408
36*	.198	.495						95	142	170
44*	.359							71	107	129

Deflection to Span Ratios

For a resilient, non-fatiguing, comfortable feel use the standard (std) deflection to span ratio of 1:120. For an elevated installation where a solid feeling is desired, use the solid deflection to span ratio of 1:180. For maximum load requirements, a deflection to span ratio greater than 1:100 (1% def) is not recommended.

* Clear span is 2" less than width of grating
◆ Solid deflection to span ratio is 1:180
◊ Standard deflection to span ratio is 1:120
Δ Clear span is 2" less than width of grating

AICKINGRATE® PULTRUDED GRATING



Aickingrate pultruded grating is constructed of pultruded "I" or "T" bars which are available in varying heights (1", 1-1/2" & 2"). Each pultruded bar is connected together with recessed tie bars and covered with an anti-skid, grit top surface to provide sure footing. Each pultruded bar incorporates a synthetic surfacing veil on its exterior. The surfacing veil provides a resin rich surface which allows the grating to withstand hostile environments and inhibit ultraviolet degradation.The standard panel size is 4' x 12'.

The pultruded grating is available in the following resin systems:

Polyester

This resin system offers a low flame spread rating of 15 or less and is designed for applications where there is moderate exposure to corrosive elements.

Vinyl ester

This resin system offers a low flame spread rating of 15 or less and is designed for prolonged exposure in acidic and alkaline type environments.

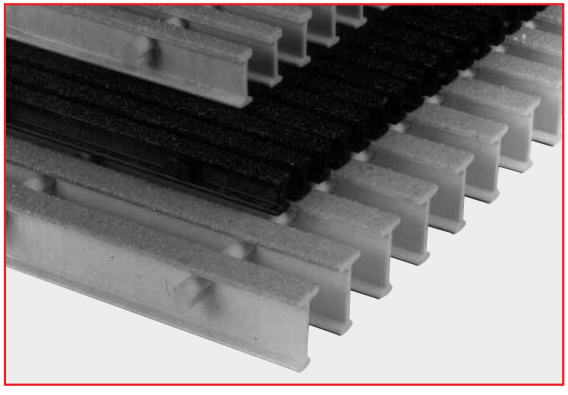
Aickingrate pultruded grating is more corrosion resistant than conventional metal grating. The lightweight, maintenance free panels make it less expensive to install than metal grating. The low installation cost combined with the maintenance free life of pultruded grating make its overall life cycle costs lower than that of metal grating.

Aickingrate pultruded grating exceeds the requirements for gratings used in the following applications:

- Aquariums and Zoos
- Chemical
- Food and Beverage
- Offshore and Marine
- Petroleum Processing
- Plating Facilities
- Pulp and Paper
- Water and Wastewater

Typical uses for Aickingrate pultruded grating would include:

- Flooring
- Ramps
- Platforms
- Stairs
- Walkways
- Trench Covers
- Catwalks
- Assembly Lines



Aickingrate Pultruded Specifications

1. MATERIAL

All pultruded grating shall be constructed of glass reinforced, fire retardant polyester resin. Vinyl ester resin is available as a special order.

2. COMPOSITION

All pultruded glass reinforced grating shall have a synthetic veil applied on all exterior surfaces to improve weatherability and inhibit ultraviolet degradation. An ultraviolet stabilizer shall be incorporated in the resin formulation to further inhibit ultraviolet degradation.

Grating will have a flame spread rating of 15 per the requirements ASTM E 84.

Grating shall comply with all applicable provisions of the following flammability standards:

ASTM D-635 (Rate of Burning)
ASTM E 84 (Surface Burning)
UL 94 V0 (Flammability Standard)

2.4 Standard colors shall include the following:

Polyester (I-bar & T-bar):
Yellow

Polyester (Wide T-bar):
Dark Gray

2.5 Special colors are available upon customer request.

3. STRUCTURAL DESIGN

3.1 Grating shall have the following bar types and heights:
I-bar (1", 1-1/2" & 2" heights)
T-bar (2" height)
Wide T-bar (1" & 1-1/2" heights)

3.2 Grating shall be provided in standard 4' x 12' panels.

3.3 Specially cut & fabricated grating sections are available upon customer request.

3.4 Standard available "open areas" will be the following:
I-bar (40% & 60%)
T-bar (33% & 50%)
Wide T-bar (25% & 38%)

3.5 Special "open areas" are available upon customer request.

3.6 Grating shall be manufactured from thermally cured pultruded structural load and tie bar components.

3.7 Grating shall be provided with a recessed tie bar design and grit top surface for maximum skid resistance.

3.8 Grating shall be an assembled and bonded notched tie bar system to provide both a mechanical and bonded panel connection.

3.9 Load, deflection and panel weight values shall be as stated in this catalog.

4. GENERAL

4.1 Grating will be inspected prior to shipment and will be free from visual defects.

4.2 All cut ends will be sealed prior to shipment.

4.3 Grating shall be fully supported according to the manufacturer guidelines.

4.4 Use of grating accessories shall be approved by the manufacturer and installed in accordance with the manufacturers' instructions.

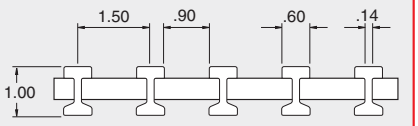
4.5 Product substitutions other than Aickingrate must meet or exceed the performance standards set forth in this catalog.

4.6 Grating supplied shall be Aickingrate as manufactured by:
Aickinstrut/T.J. Cope
11500 Norcom Road
Philadelphia, PA 19154
800-426-4293 (toll free)
215-961-2570 (phone)
215-961-2580 (fax)

'I' Bar Pultruded Grating

"I" Bar 1" THICK, 60% OPEN AREA

U	Uniform Load - lbs/ft²	C	Concentrated Line Load - lbs/ft of Width
ΔU	Uniform Load deflection (in.)	ΔC	Concentrated Line Load deflection (in.)



# of Bars/ft. of Width - 8
Load Bar Depth 1" Open Area 60%
Load Bar Centers 1-1/2" Approx. Weight 2.62 lbs./ft²

LOAD TYPES

ENGINEERING PROPERTIES PER FT OF WIDTH

A=2.64 in² **I**=0.33 in⁴ **S**=0.63 in³ **Average EI**=1,700,000 lb/in² (Span ≥24")

A=Cross Sectional Area **I**=Moment of Inertia **S**=Section Modulus

Average EI=Modulus of Elasticity x Moment of Inertia (avg. value other varying spans)

Clear Span (in.)	Load Type	Load Required For Specified Deflection .250"	.375"	See Note 3 Below	Load and Deflection						Max. Recom. Load (Note 1) All Resin Systems
	U	–	–	50	75	100	150	200	300	4576
	ΔU	–	–	<.01	<.01	<.01	<.01	<.01	.01	.09
12	C	–	–	50	75	100	150	200	300	4576
	ΔC	–	–	<.01	<.01	<.01	<.01	.01	.01	.14
	U	–	–	50	75	100	150	200	300	3051
	ΔU	–	–	<.01	.01	.01	.01	.02	.02	.25
18	C	–	–	100	200	300	400	500	750	4576
	ΔC	–	–	.01	.02	.03	.03	.04	.07	.40
	U	1059	1589	50	75	100	150	200	300	2288
	ΔU	.25	.375	.01	.02	.02	.04	.05	.07	.54
24	C	1331	1997	100	200	300	400	500	750	3833
	ΔC	.25	.375	.02	.04	.06	.08	.09	.14	.72
	U	458	686	50	75	100	150	200	300	1830
	ΔU	.25	.375	.03	.04	.05	.08	.11	.16	1.00
30	C	716	1075	100	200	300	400	500	750	3067
	ΔC	.25	.375	.03	.07	.10	.14	.17	.26	1.07
	U	241	362	50	75	100	150	200	300	1525
	ΔU	.25	.375	.05	.08	.10	.16	.21	.31	1.58
36	C	453	680	100	200	300	400	500	750	2556
	ΔC	.25	.375	.06	.11	.17	.22	.28	.41	1.41
	U	135	202	50	75	100	150	200	300	1252
	ΔU	.25	.375	.09	.14	.19	.26	.37	.56	2.32
42	C	300	450	100	200	300	400	500	750	2190
	ΔC	.25	.375	.08	.17	.25	.34	.42	.64	1.86
	U	87	131	50	75	100	200	300	400	958
	ΔU	.25	.375	.14	.21	.29	.57	.86	1.15	2.75
48	C	218	327	50	100	200	300	400	500	1917
	ΔC	.25	.375	.06	.11	.23	.34	.46	.57	2.20
	U	50	75	50	75	100	200	300	400	757
	ΔU	.25	.375	..25	.38	.51	1.02	1.52	2.03	3.85
54	C	138	208	50	100	200	300	400	500	1704
	ΔΔ	.25	.375	.09	.18	.36	.54	.72	.90	3.08
	U	30	45	50	75	100	125	150	200	613
	ΔU	.25	.375	.42	.63	.84	1.05	1.26	1.68	5.15
60	C	93	140	50	100	200	300	400	500	1533
	ΔC	.25	.375	.13	.27	.54	.81	1.08	1.34	4.12
	U	18	27	50	75	100	125	150	200	507
	ΔU	.25	.375	.69	1.04	1.38	1.73	2.08	2.77	7.02
66	C	64	96	50	100	200	300	400	500	1394
	ΔC	.25	.375	.20	.39	.78	1.18	1.57	1.96	5.46
	U	13	19	50	75	100	125	150	200	426
	ΔU	.25	.375	.96	1.45	1.93	2.41	2.89	3.86	8.22
72	C	49	73	50	100	200	300	400	500	1278
	ΔC	.25	.375	.26	.51	1.03	1.54	2.06	2.57	6.58

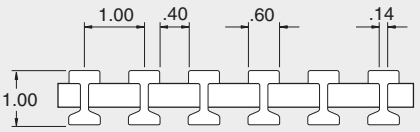
NOTES:

1. *The designer should not exceed the MAX RECOMMENDED LOAD at any given span. MAX RECOMMENDED LOAD represents a 2:1 factor of safety on ULTIMATE CAPACITY.*
2. *Walking loads, typically 50-65 PSF maximum, are recommended for pedestrian traffic. Deflections for worker comfort are typically limited to the lesser of 3/8" or CLEAR SPAN divided by 125; for a firmer feel, limit deflection to the lesser of 1/4" or CLEAR SPAN divided by 200. Typical loads are noted in the table to the left of the heavy vertical line at approximately 50 PSF uniform load.*
3. *The allowable loads in this table are for STATIC LOAD CONDITIONS at ambient temperatures only. Allowable loads for impact or dynamic conditions should be a minimum of ONE-HALF the values shown. Long term loads will result in added deflection due to creep in the material and will also require higher safety factors to ensure acceptable performance. For applications at elevated temperatures, consult factory. The designer is further referenced to ASCE Structural Plastics Design Manual.*

"I" Bar 1" THICK, 40% OPEN AREA

U	Uniform Load - lbs/ft²	C	Concentrated Line Load - lbs/ft of Width
ΔU	Uniform Load deflection (in.)	ΔC	Concentrated Line Load deflection (in.)

LOAD TYPES



# of Bars/ft. of Width - 12
Load Bar Depth 1" Open Area 40%
Load Bar Centers 1" Approx. Weight 3.41 lbs./ft²

ENGINEERING PROPERTIES PER FT OF WIDTH

A=3.96 in² **I**=0.50 in⁴ **St**=0.96 in³ **Average EI**=2,500,000 lb/in² (Span ≥24")

A=Cross Sectional Area **I**=Moment of Inertia **S**=Section Modulus

Average EI=Modulus of Elasticity x Moment of Inertia (avg. value other varying spans)

Clear Span (in.)	Load Type	Load Required For Specified Deflection .250"	.375"	See Note 3 Below	Load and Deflection				Max. Recom. Load (Note 1) All Resin Systems
	U	–	–	50	100	150	200	300	6864
	ΔU	–	–	<.01	<.01	<.01	<.01	<.01	.09
12	C	–	–	50	100	150	200	300	6864
	ΔC	–	–	<.01	<.01	<.01	<.01	.01	.14
	U	–	–	50	100	150	200	300	4576
	ΔU	–	–	<.01	.01	.01	.01	.02	.25
18	C	–	–	50	100	150	200	300	6864
	ΔC	–	–	<.01	.01	.01	.01	.02	.40
	U	1589	2383	50	100	150	200	250	2432
	ΔU	.25	.375	.01	.02	.02	.03	.04	.54
24	C	2000	3000	50	100	150	200	300	5750
	ΔC	.25	.375	.01	.01	.02	.03	.04	.72
	U	686	1030	50	100	150	200	250	2746
	ΔU	.25	.375	.02	.04	.05	.07	.09	1.00
30	C	1075	1612	50	100	150	200	300	4600
	ΔC	.25	.375	.01	.02	.03	.05	.07	1.07
	U	362	543	50	100	150	200	250	2288
	ΔU	.25	.375	.02	.07	.10	.14	.17	1.58
36	C	958	1438	50	100	150	200	300	3833
	ΔC	.25	.375	.02	.04	.06	.07	.11	1.41
	U	200	300	50	100	150	200	250	1878
	ΔU	.25	.375	.06	.12	.19	.25	.31	2.32
42	C	442	662	50	100	150	200	300	3286
	ΔC	.25	.375	.03	.06	.08	.11	.17	1.86
	U	131	196	50	100	150	200	250	1438
	ΔU	.25	.375	.10	.19	.29	.38	.48	2.75
48	C	327	491	50	100	150	200	300	2875
	ΔC	.25	.375	.04	.08	.11	.15	.23	2.20
	U	74	111	50	100	150	200	250	1136
	ΔU	.25	.375	.17	.34	.51	.68	.85	3.85
54	C	208	312	50	100	150	200	300	2556
	ΔC	.25	.375	.06	.12	.18	.24	.36	3.08
	U	45	67	50	100	150	200	250	920
	ΔU	.25	.375	.20	.56	.84	1.12	1.40	5.15
60	C	140	209	50	100	150	200	250	2300
	ΔC	.25	.375	.09	.18	.27	.36	.54	4.12
	U	27	41	50	100	150	200	300	760
	ΔU	.25	.375	.46	.92	1.38	1.85	2.77	7.02
66	C	96	144	59	100	159	200	350	2091
	ΔC	.25	.375	.13	.26	.39	.52	.91	5.46
	U	19	29	59	100	150	200	300	639
	ΔU	.25	.375	.64	1.29	1.93	2.57	3.86	8.22
72	C	73	109	50	100	150	200	350	1917
	ΔC	.25	.375	.17	.34	.51	.69	1.20	6.58

NOTES:

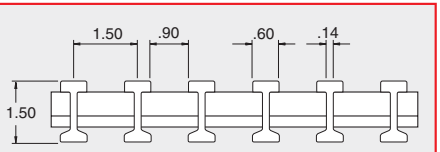
1. *The designer should not exceed the MAX RECOMMENDED LOAD at any given span. MAX RECOMMENDED LOAD represents a 2:1 factor of safety on ULTIMATE CAPACITY.*
2. *Walking loads, typically 50-65 PSF maximum, are recommended for pedestrian traffic. Deflections for worker comfort are typically limited to the lesser of 3/8" or CLEAR SPAN divided by 125; for a firmer feel, limit deflection to the lesser of 1/4" or CLEAR SPAN divided by 200. Typical loads are noted in the table to the left of the heavy vertical line at approximately 50 PSF uniform load.*
3. *The allowable loads in this table are for STATIC LOAD CONDITIONS at ambient temperatures only. Allowable loads for impact or dynamic conditions should be a minimum of ONE-HALF the values shown. Long term loads will result in added deflection due to creep in the material and will also require higher safety factors to ensure acceptable performance. For applications at elevated temperatures, consult factory. The designer is further referenced to ASCE Structural Plastics Design Manual.*

'I' Bar Pultruded Grating

AICKINGRATE

"I" Bar 1½" THICK, 60% OPEN AREA

U	Uniform Load - lbs/ft²	C	Concentrated Line Load - lbs/ft of Width
ΔU	Uniform Load deflection (in.)	ΔC	Concentrated Line Load deflection (in.)



# of Bars/ft. of Width - 8
Load Bar Depth 1-1/2" Open Area 60%
Load Bar Centers 1-1/2" Approx. Weight 2.83 lbs./ft²

LOAD TYPES

ENGINEERING PROPERTIES PER FT OF WIDTH

A=3.20 in² **I**=0.94 in⁴ **St**=1.20 in³ **Average EI**=4,600,000 lb/in² (Span ≥24")
A=Cross Sectional Area **I**=Moment of Inertia **S**=Section Modulus
Average EI=Modulus of Elasticity x Moment of Inertia (avg. value other varying spans)

Clear Span (in.)	Load Type	Load Required For Specified Deflection .250"	.375"	See Note 3 Below	Load and Deflection				Max. Recom. Load (Note 1) All Resin Systems
	U	–	–	100	200	300	400	500	8190
	ΔU	–	–	<.01	<.01	<.01	<.01	<.01	.07
12	C	–	–	100	200	300	400	500	8190
	ΔC	–	–	<.01	<.01	<.01	.01	.01	.11
	U	–	–	50	100	200	300	400	5460
	ΔU	–	–	<.01	<.01	.01	.01	.01	.17
18	C	–	–	100	200	300	400	500	8190
	ΔC	–	–	<.01	.01	.01	.01	.02	.28
	U	2925	–	50	100	200	300	400	4095
	ΔU	.25	–	<.01	.01	.02	.03	.03	.35
24	C	3676	5515	100	200	300	400	500	6250
	ΔC	.25	.375	.01	.01	.02	.03	.03	.43
	U	1232	1847	50	100	200	300	400	3276
	ΔU	.25	.375	.01	.02	.04	.06	.08	.66
30	C	1923	2885	50	100	200	300	400	5000
	ΔC	.25	.375	.01	.01	.03	.04	.05	.65
	U	666	1000	50	100	200	300	400	2730
	ΔU	.25	.375	.02	.04	.08	.11	.15	1.02
36	C	1247	1871	50	100	200	300	400	4167
	ΔC	.25	.375	.01	.02	.04	.06	.08	.83
	U	357	535	50	100	200	300	400	2041
	ΔU	.25	.375	.04	.07	.14	.21	.28	1.43
42	C	780	1170	50	100	200	300	400	3571
	ΔC	.25	.375	.02	.03	.06	.10	.13	1.15
	U	219	329	50	100	200	300	400	1563
	ΔU	.25	.375	.06	.11	.23	.34	.46	1.78
48	C	548	822	50	100	200	300	400	3125
	ΔC	.25	.375	.02	.05	.09	.14	.18	1.43
	U	193	290	50	100	200	300	400	1852
	ΔU	.25	.375	.06	.13	.26	.39	.52	2.40
54	C	363	544	50	100	200	300	400	2778
	ΔC	.25	.375	.03	.07	.14	.21	.28	1.92
	U	81	122	50	100	200	300	400	1000
	ΔU	.25	.375	.15	.31	.62	.93	1.23	3.09
60	C	253	380	50	100	200	300	400	2500
	ΔC	.25	.375	.05	.10	.20	.30	.40	2.47
	U	50	75	50	100	200	300	400	826
	ΔU	.25	.375	.25	.49	.99	1.48	1.97	4.08
66	C	179	268	50	100	200	300	400	2273
	ΔC	.25	.375	.07	.14	.28	.42	.56	3.18
	U	37	55	50	100	200	300	400	694
	ΔU	.25	.375	.34	.68	1.36	2.03	2.71	4.71
72	C	138	208	50	75	100	250	500	2083
	ΔC	.25	.375	.09	.14	.18	.45	.90	3.77

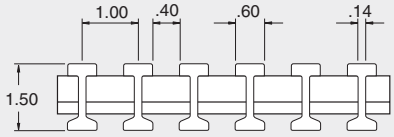
NOTES:

1. *The designer should not exceed the MAX RECOMMENDED LOAD at any given span. MAX RECOMMENDED LOAD represents a 2:1 factor of safety on ULTIMATE CAPACITY.*
2. *Walking loads, typically 50-65 PSF maximum, are recommended for pedestrian traffic. Deflections for worker comfort are typically limited to the lesser of 3/8" or CLEAR SPAN divided by 125; for a firmer feel, limit deflection to the lesser of 1/4" or CLEAR SPAN divided by 200. Typical loads are noted in the table to the left of the heavy vertical line at approximately 50 PSF uniform load.*
3. *The allowable loads in this table are for STATIC LOAD CONDITIONS at ambient temperatures only. Allowable loads for impact or dynamic conditions should be a minimum of ONE-HALF the values shown. Long term loads will result in added deflection due to creep in the material and will also require higher safety factors to ensure acceptable performance. For applications at elevated temperatures, consult factory. The designer is further referenced to ASCE Structural Plastics Design Manual.*

"I" Bar 1½" THICK, 40% OPEN AREA

U	Uniform Load - lbs/ft²	C	Concentrated Line Load - lbs/ft of Width
ΔU	Uniform Load deflection (in.)	ΔC	Concentrated Line Load deflection (in.)

LOAD TYPES



# of Bars/ft. of Width - 6
Load Bar Depth 2" Open Area 50%
Load Bar Centers 2" Approx. Weight3.10 lbs./ft²

ENGINEERING PROPERTIES PER FT OF WIDTH

A=4.80 in² **I**=1.44 in⁴ **St**=1.80 in³ **Average EI**=7,000,000 lb/in² (Span ≥24")

A=Cross Sectional Area **I**=Moment of Inertia **S**=Section Modulus

Average EI=Modulus of Elasticity x Moment of Inertia (avg. value other varying spans)

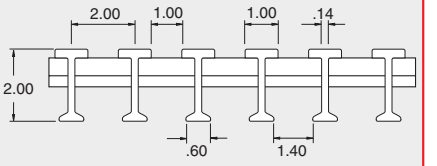
Clear Span (in.)	Load Type	Load Required For Specified Deflection .250"	.375"	See Note 3 Below	Load and Deflection				Max. Recom. Load (Note 1) All Resin Systems
	U	–	–	100	200	300	400	500	14,400
	ΔU	–	–	<.01	<.01	<.01	<.01	<.01	.07
12	C	–	–	100	200	300	400	500	12,285
	ΔC	–	–	<.01	<.01	<.01	<.01	<.01	.11
	U	–	–	50	100	200	300	400	8190
	ΔU	–	–	<.01	<.01	<.01	.01	.01	.17
18	C	–	–	100	200	300	400	500	12,285
	ΔC	–	–	<.01	<.01	<.01	.01	.01	.28
	U	4388	–	50	100	200	300	400	6143
	ΔU	.25	–	<.01	.01	.01	.02	.02	.35
24	C	5515	8272	100	200	300	400	500	9375
	ΔC	.25	.375	<.01	.01	.01	.02	.02	.43
	U	1847	2771	50	100	200	300	400	4914
	ΔU	.25	.375	.01	.01	.03	.04	.05	.66
30	C	2885	4327	100	200	300	400	500	7500
	ΔC	.25	.375	.01	.02	.03	.04	.05	.65
	U	1000	1500	50	100	200	300	400	4095
	ΔU	.25	.375	.01	.03	.05	.08	.10	1.02
36	C	1871	2807	100	200	300	400	500	6250
	ΔC	.25	.375	.01	.03	.04	.05	.07	.83
	U	535	803	50	100	200	300	400	3061
	ΔU	.25	.375	.02	.05	.09	.14	.19	1.43
42	C	1170	1754	100	200	300	400	500	5357
	ΔC	.25	.375	.02	.04	.06	.09	.11	1.15
	U	327	491	50	100	200	300	400	2344
	ΔU	.25	.375	.04	.08	.15	.23	.30	1.78
48	C	822	1234	100	200	300	400	500	4688
	ΔC	.25	.375	.03	.06	.09	.12	.15	1.43
	U	193	290	50	100	200	300	400	1852
	ΔU	.25	.375	.06	.13	.26	.39	.52	2.40
54	C	544	816	100	200	300	400	500	4167
	ΔC	.25	.375	.05	.09	.14	.18	.23	1.92
	U	122	182	50	100	200	300	400	1500
	ΔU	.25	.375	.10	.21	.41	.62	.82	3.09
60	C	380	569	100	200	300	400	500	3750
	ΔC	.25	.375	.07	.13	.20	.26	.33	2.47
	U	76	114	50	100	200	300	400	1240
	ΔU	.25	.375	.16	.33	.66	.99	1.32	4.08
66	C	268	403	100	200	300	400	500	3409
	ΔC	.25	.375	.09	.19	.28	.37	.47	3.18
	U	55	83	50	100	200	300	400	1042
	ΔU	.25	.375	.23	.45	.90	1.36	1.81	4.71
72	C	207	311	100	200	300	400	500	3125
	ΔC	.25	.375	.12	.24	.36	.48	.60	3.77

NOTES:

1. *The designer should not exceed the MAX RECOMMENDED LOAD at any given span. MAX RECOMMENDED LOAD represents a 2:1 factor of safety on ULTIMATE CAPACITY.*
2. *Walking loads, typically 50-65 PSF maximum, are recommended for pedestrian traffic. Deflections for worker comfort are typically limited to the lesser of 3/8" or CLEAR SPAN divided by 125; for a firmer feel, limit deflection to the lesser of 1/4" or CLEAR SPAN divided by 200. Typical loads are noted in the table to the left of the heavy vertical line at approximately 50 PSF uniform load.*
3. *The allowable loads in this table are for STATIC LOAD CONDITIONS at ambient temperatures only. Allowable loads for impact or dynamic conditions should be a minimum of ONE-HALF the values shown. Long term loads will result in added deflection due to creep in the material and will also require higher safety factors to ensure acceptable performance. For applications at elevated temperatures, consult factory. The designer is further referenced to ASCE Structural Plastics Design Manual.*

"T" Bar 2" THICK, 50% OPEN AREA

U Uniform Load - lbs/ft²
ΔU Uniform Load deflection (in.)
C Concentrated Line Load - lbs/ft of Width
ΔC Concentrated Line Load deflection (in.)



# of Bars/ft. of Width - 6
Load Bar Depth 2" Open Area 50%
Load Bar Centers 2" Approx. Weight3.10 lbs./ft²

LOAD TYPES

ENGINEERING PROPERTIES PER FT OF WIDTH

A=3.20 in² **I**=1.68 in⁴ **St**=1.96 in³ **Sb**=1.47 in³
Average EI=7,600,000 lb/in² (Span ≥24")
A=Cross Sectional Area **I**=Moment of Inertia **S**=Section Modulus (Top, Bottom)
Average EI=Modulus of Elasticity x Moment of Inertia (avg. value other varying spans)

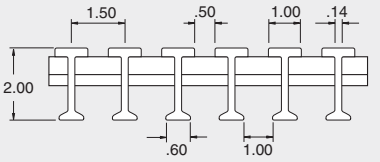
Clear Span (in.)	Load Type	Load Required For Specified Deflection .250"	.375"	See Note 3 Below	Load and Deflection						Max. Recom. Load (Note 1) All Resin Systems
	U	–	–	50	100	250	500	750	1000	10,800
	ΔU	–	–	<.01	<.01	<.01	<.01	<.01	<.01	.06
12	C	–	–	50	100	250	500	750	1000	10,800
	ΔC	–	–	<.01	<.01	<.01	<.01	.01	.01	.10
	U	–	–	50	100	250	500	666	833	7200
	ΔU	–	–	<.01	<.01	<.01	.01	.02	.02	.17
18	C	–	–	50	100	250	500	750	1000	10,800
	ΔC	–	–	<.01	<.01	<.01	.01	.02	.03	.27
	U	4737	–	50	100	250	500	666	833	5400
	ΔU	.25	–	<.01	<.01	.01	.03	.04	.04	.29
24	C	5934	8900	50	100	250	500	750	1000	10,800
	ΔC	.25	.375	<.01	<.01	.01	.02	.03	.04	.46
	U	2000	3000	50	100	250	400	500	600	4320
	ΔU	.25	.375	<.01	.01	.03	.05	.06	.08	.54
30	C	3117	4676	50	100	250	500	750	1000	8667
	ΔC	.25	.375	<.01	.01	.02	.04	.06	.08	.69
	U	1071	1607	50	100	250	400	500	600	3600
	ΔU	.25	.375	.01	.02	.06	.09	.12	.14	.84
36	C	2000	3000	50	100	250	500	750	1000	7222
	ΔC	.25	.375	.01	.01	.03	.06	.09	.12	.90
	U	553	829	50	100	250	400	500	600	3086
	ΔU	.25	.375	.02	.05	.11	.18	.23	.27	1.40
42	C	1209	1814	50	100	250	500	750	1000	6190
	ΔC	.25	.375	.01	.02	.05	.10	.16	.21	1.28
	U	343	514	50	100	250	400	500	600	2700
	ΔU	.25	.375	.04	.07	.18	.29	.36	.44	1.97
48	C	857	1286	50	100	250	500	750	1000	5417
	ΔC	.25	.375	.01	.03	.07	.15	.22	.29	1.58
	U	211	316	50	100	250	400	500	600	2140
	ΔU	.25	.375	.06	.12	.30	.47	.59	.71	2.54
54	C	592	887	50	100	250	500	750	1000	4815
	ΔC	.25	.375	.02	.04	.11	.21	.32	.42	2.03
	U	137	206	50	100	250	400	500	600	1733
	ΔU	.25	.375	.09	.18	.46	.73	.91	1.09	3.16
60	C	428	642	50	100	250	500	750	1000	4333
	ΔC	.25	.375	.03	.06	.15	.29	.44	.58	2.53
	U	94	140	50	100	250	400	500	600	1433
	ΔU	.25	.375	.13	.27	.67	1.07	1.34	1.60	3.83
66	C	328	492	50	100	250	500	750	1000	3939
	ΔC	.25	.375	.04	.08	.19	.38	.57	.76	3.00
	U	71	106	50	100	250	400	500	600	1204
	ΔU	.25	.375	.18	.35	.88	1.41	1.76	2.11	4.24
72	C	266	399	50	100	250	500	750	1000	3611
	ΔC	.25	.375	.05	.09	.23	.47	.70	.94	3.39

NOTES:
1. *The designer should not exceed the MAX RECOMMENDED LOAD at any given span. MAX RECOMMENDED LOAD represents a 2:1 factor of safety on ULTIMATE CAPACITY.*
2. *Walking loads, typically 50-65 PSF maximum, are recommended for pedestrian traffic. Deflections for worker comfort are typically limited to the lesser of 3/8" or CLEAR SPAN divided by 125; for a firmer feel, limit deflection to the lesser of 1/4" or CLEAR SPAN divided by 200. Typical loads are noted in the table to the left of the heavy vertical line at approximately 50 PS Uniform load.*
3. *The allowable loads in this table are for STATIC LOAD CONDITIONS at ambient temperatures only. Allowable loads for impact or dynamic conditions should be a minimum of ONE-HALF the values shown. Long term loads will result in added deflection due to creep in the material and will also require higher safety factors to ensure acceptable performance. For applications at elevated temperatures, consult factory. The designer is further referenced to ASCE Structural Plastics Design Manual.*

"T" Bar 2" THICK, 33% OPEN AREA

U	Uniform Load - lbs/ft²	C	Concentrated Line Load - lbs/ft of Width
ΔU	Uniform Load deflection (in.)	ΔC	Concentrated Line Load deflection (in.)

LOAD TYPES



# of Bars/ft. of Width - 12
Load Bar Depth 2" Open Area 33%
Load Bar Centers 1-1/2" Approx. Weight 4.00 lbs./ft²

ENGINEERING PROPERTIES PER FT OF WIDTH

A=4.28 in² **I**=2.24 in⁴ **St**=2.61 in³ **Sb**=1.96 in³

Average EI=9,200,000 lb/in² (Span ≥24")

A=Cross Sectional Area **I**=Moment of Inertia **S**=Section Modulus (Top, Bottom)

Average EI=Modulus of Elasticity x Moment of Inertia (avg. value other varying spans)

Clear Span (in.)	Load Type	Load Required For Specified Deflection .250"	.375"	See Note 3 Below	Load and Deflection						Max. Recom. Load (Note 1) All Resin Systems
	U	–	–	50	100	250	500	750	1000		14,400
	ΔU	–	–	<.01	<.01	<.01	<.01	<.01	<.01		.06
12	C	–	–	50	100	250	500	750	1000		14,400
	ΔC	–	–	<.01	<.01	<.01	<.01	.01	.01		.10
	U	–	–	50	100	250	500	666	833		9600
	ΔU	–	–	<.01	<.01	.01	.01	.01	.01		.17
18	C	–	–	50	100	250	500	750	1000		14,400
	ΔC	–	–	<.01	<.01	<.01	.01	.01	.02		.28
	U	6316	–	50	100	250	500	666	833		7200
	ΔU	.25	–	<.01	.01	.01	.02	.03	.03		.29
24	C	7784	11676	50	100	250	500	750	1000		14,167
	ΔC	.25	.375	<.01	<.01	.01	.02	.02	.03		.45
	U	2667	4000	50	100	250	400	500	600		5760
	ΔU	.25	.375	.01	.01	.02	.04	.05	.06		.54
30	C	4167	6250	50	100	250	500	750	1000		11,333
	ΔC	.25	.375	<.01	.01	.02	.03	.05	.06		.68
	U	1429	2143	50	100	250	400	500	600		4800
	ΔU	.25	.375	.01	.02	.04	.07	.09	.11		.84
36	C	2668	4000	50	100	250	500	750	1000		9444
	ΔC	.25	.375	<.01	.01	.02	.05	.07	.09		.88
	U	737	1106	50	100	250	400	500	600		4114
	ΔU	.25	.375	.02	.03	.08	.14	.17	.20		1.39
42	C	1613	2419	50	100	250	500	750	1000		8095
	ΔC	.25	.375	.01	.02	.04	.08	.12	.16		1.25
	U	458	686	50	100	250	400	500	600		3542
	ΔU	.25	.375	.03	.05	.14	.22	.27	.33		1.94
48	C	1143	1714	50	100	250	500	750	1000		7083
	ΔC	.25	.375	.01	.02	.05	.11	.16	.22		1.55
	U	281	421	50	100	250	400	500	600		2798
	ΔU	.25	.375	.04	.09	.22	.36	.45	.53		2.49
54	C	789	1184	50	100	250	500	750	1000		6296
	ΔC	.25	.375	.02	.03	.08	.16	.24	.32		1.99
	U	183	274	50	100	250	400	500	600		2267
	ΔU	.25	.375	.07	.14	.34	.55	.68	.82		3.10
60	C	571	857	50	100	250	500	750	1000		5667
	ΔC	.25	.375	.02	.04	.11	.22	.33	.44		2.48
	U	125	187	50	100	250	400	500	600		1873
	ΔU	.25	.375	.10	.20	.50	.80	1.00	1.20		3.75
66	C	438	657	50	100	250	500	750	1000		5152
	ΔC	.25	.375	.03	.06	.14	.29	.43	.57		2.94
	U	95	142	50	100	250	400	500	600		1574
	ΔU	.25	.375	.13	.26	.66	1.06	1.32	1.58		4.16
72	C	355	533	50	100	250	500	750	1000		4722
	ΔC	.25	.375	.04	.07	.18	.35	.53	.70		3.33

NOTES:

1. *The designer should not exceed the MAX RECOMMENDED LOAD at any given span. MAX RECOMMENDED LOAD represents a 2:1 factor of safety on ULTIMATE CAPACITY.*
2. *Walking loads, typically 50-65 PSF maximum, are recommended for pedestrian traffic. Deflections for worker comfort are typically limited to the lesser of 3/8" or CLEAR SPAN divided by 125; for a firmer feel, limit deflection to the lesser of 1/4" or CLEAR SPAN divided by 200. Typical loads are noted in the table to the left of the heavy vertical line at approximately 50 PSF uniform load.*
3. *The allowable loads in this table are for STATIC LOAD CONDITIONS at ambient temperatures only. Allowable loads for impact or dynamic conditions should be a minimum of ONE-HALF the values shown. Long term loads will result in added deflection due to creep in the material and will also require higher safety factors to ensure acceptable performance. For applications at elevated temperatures, consult factory. The designer is further referenced to ASCE Structural Plastics Design Manual.*

Wide 'T' Bar Pultruded Grating

Aickingrate Wide T-Bar pultruded grating provides a lightweight, non-skid, durable alternative to metallic grating used for pedestrian walkway traffic.

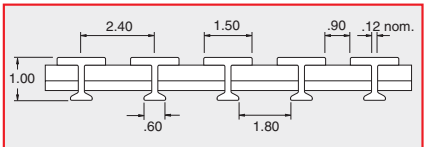
The Aickingrate Wide T-Bar grit-top grating offers excellent protection for pedestrian traffic particularly in wet environments.

This low-cost grating is an excellent alternative to metal grating for wet areas with high volumes of foot traffic.

WIDE "T" Bar 1" THICK, 38% OPEN AREA

U	Uniform Load - lbs/ft²	C	Concentrated Line Load - lbs/ft of Width
ΔU	Uniform Load deflection (in.)	ΔC	Concentrated Line Load deflection (in.)

LOAD TYPES



# of Bars/ft. of Width - 5
Load Bar Depth 1 — Open Area 38%
Load Bar Centers 2.4" — Approx. Weight 1.90 lbs./ft²

ENGINEERING PROPERTIES PER FT OF WIDTH

A=1.76 in² **I**=.23 in⁴ **S-top**=.35 in³ **S-bot**=.22 in³

Average EI=1,200,000 lb/in² (Span ≥24")

A=Cross Sectional Area **I**=Moment of Inertia **S**=Section Modulus (Top, Bottom)

Average EI=Modulus of Elasticity x Moment of Inertia (avg. value other varying spans)

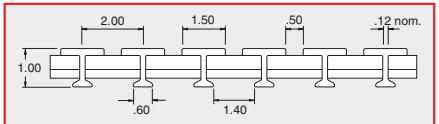
Clear Span (in.)	Load Type	Load Required For Specified Deflection .250"	.375"	See Note 3 Below	Load and Deflection				Max. Recom. Load (Note 1)
	U	–	–	50	75	100	150	200	2730
	ΔU	–	–	<.01	<.01	<.01	<.01	.01	.08
12	C	–	–	50	75	100	150	200	2730
	ΔC	–	–	<.01	<.01	<.01	.01	.01	.12
	U	–	–	50	75	100	150	200	1820
	ΔU	–	–	.01	.01	.01	.02	.02	.22
18	C	–	–	100	200	300	400	500	2587
	ΔC	–	–	.01	.03	.04	.05	.07	.34
	U	742	1113	50	75	100	150	200	1365
	ΔU	.25	.375	.02	.03	.03	.05	.07	.46
24	C	933	1399	100	200	300	400	500	1940
	ΔC	.25	.375	.03	.05	.08	.11	.13	.52
	U	312	468	50	75	100	150	200	1092
	ΔU	.25	.375	.04	.06	.08	.12	.16	.87
30	C	491	737	100	200	300	400	500	1552
	ΔC	.25	.375	.05	.10	.15	.20	.26	.79
	U	154	231	50	75	100	150	200	862
	ΔU	.25	.375	.08	.12	.16	.24	.32	1.40
36	C	290	435	100	200	300	400	500	1293
	ΔC	.25	.375	.09	.17	.26	.34	.43	1.12
	U	84	126	50	75	100	150	200	663
	vU	.25	.375	.15	.22	.30	.45	.60	1.89
42	C	184	276	100	200	300	400	500	1109
	ΔC	.25	.375	.14	.27	.41	.54	.68	1.50
	U	50	75	50	75	100	200	300	485
	ΔU	.25	.375	.25	.38	.50	1.00	1.50	2.43
48	C	125	188	50	100	200	300	400	970
	ΔC	.25	.375	.10	.20	.40	.60	.80	1.94

NOTES:

1. *The designer should not exceed the MAX RECOMMENDED LOAD at any given span. MAX RECOMMENDED LOAD represents a 2:1 factor of safety on ULTIMATE CAPACITY.*
2. *Walking loads, typically 50-65 PSF maximum, are recommended for pedestrian traffic. Deflections for worker comfort are typically limited to the lesser of 3/8" or CLEAR SPAN divided by 125; for a firmer feel, limit deflection to the lesser of 1/4" or CLEAR SPAN divided by 200. Typical loads are noted in the table to the left of the heavy vertical line at approximately 50 PSF uniform load.*
3. *The allowable loads in this table are for STATIC LOAD CONDITIONS at ambient temperatures only. Allowable loads for impact or dynamic conditions should be a minimum of ONE-HALF the values shown. Long term loads will result in added deflection due to creep in the material and will also require higher safety factors to ensure acceptable performance. For applications at elevated temperatures, consult factory. The designer is further referenced to ASCE Structural Plastics Design Manual.*

WIDE "T" Bar 1" THICK, 25% OPEN AREA

U	Uniform Load - lbs/ft²	C	Concentrated Line Load - lbs/ft of Width
ΔU	Uniform Load deflection (in.)	ΔC	Concentrated Line Load deflection (in.)



# of Bars/ft. of Width - 6
Load Bar Depth 1" Open Area 25%
Load Bar Centers 2" Approx. Weight 2.30 lbs./ft²

LOAD TYPES

ENGINEERING PROPERTIES PER FT OF WIDTH

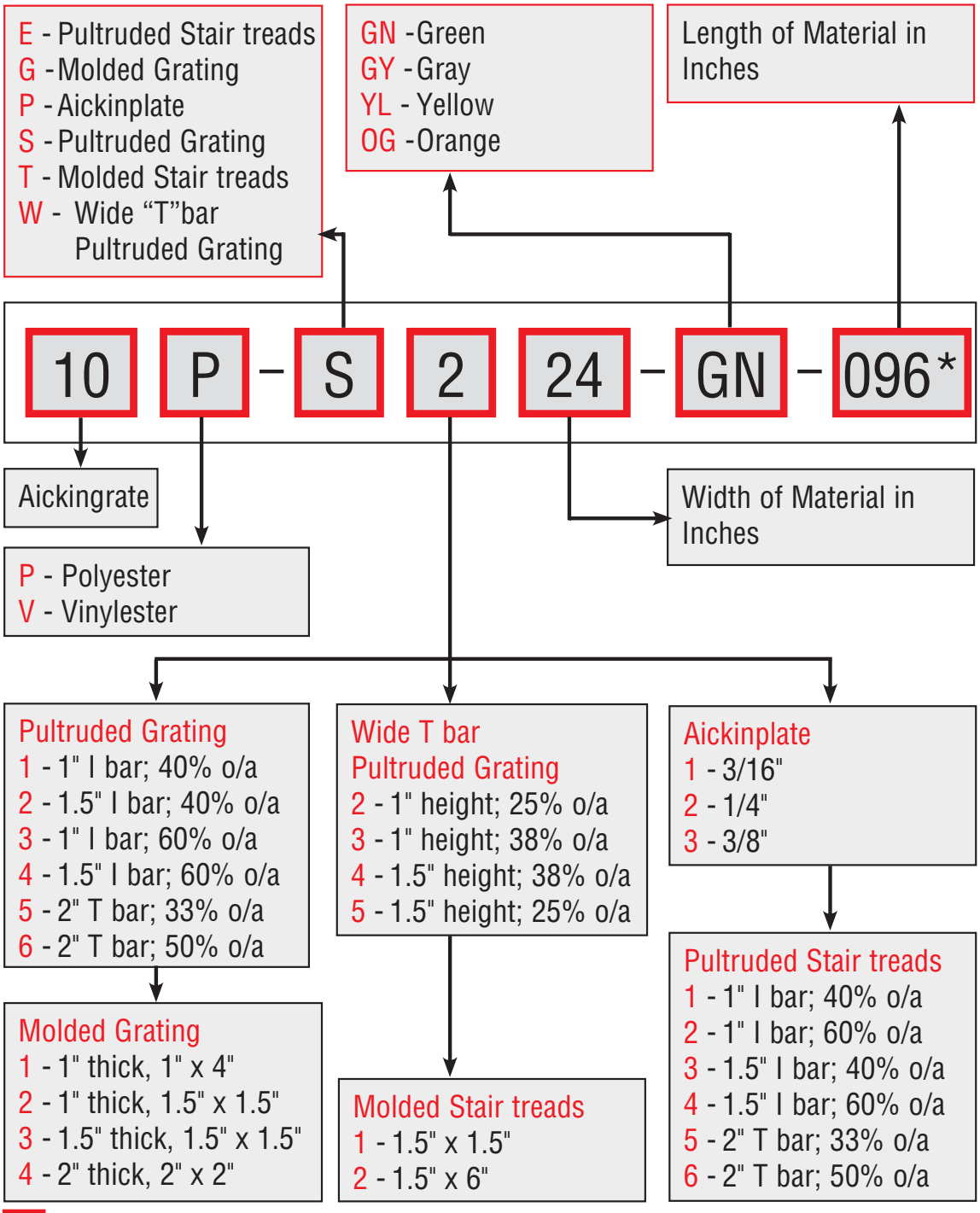
A=2.11 in² **I**=.27 in⁴ **S-top**=.42 in³ **S-bot**=.27 in³
Average EI=1,340,000 lb/in² (Span ≥24")
A=Cross Sectional Area **I**=Moment of Inertia **S**=Section Modulus (Top, Bottom)
Average EI=Modulus of Elasticity x Moment of Inertia (avg. value other varying spans)

Clear Span (in.)	Load Type	Load Required For Specified Deflection .250"	.375"	See Note 3 Below	Load and Deflection		Max. Recom. Load (Note 1)
	U	–	–	50	100	200	3276
	ΔU	–	–	<.01	<.01	<.01	.08
12	C	–	–	50	100	200	3276
	ΔC	–	–	<.01	<.01	.01	.12
	U	–	–	50	100	200	2184
	ΔU	–	–	.01	.01	.02	.22
18	C	–	–	50	100	200	3104
	ΔC	–	–	.01	.01	.02	.34
	U	890	1335	50	75	100	1638
	ΔU	.25	.375	.01	.02	.03	.46
24	C	1119	1679	50	100	200	2328
	ΔC	.25	.375	.01	.02	.04	.52
	U	374	562	50	75	100	1310
	ΔU	.25	.375	.03	.05	.07	.87
30	C	589	884	100	200	300	1862
	ΔC	.25	.375	.04	.09	.13	.79
	U	185	277	50	75	100	1035
	ΔU	.25	.375	.07	.10	.14	1.40
36	C	348	522	100	200	300	1552
	ΔC	.25	.375	.07	.14	.22	1.12
	U	100	150	50	75	100	760
	ΔU	.25	.375	.12	.19	.25	1.89
42	C	221	332	100	200	300	1330
	ΔC	.25	.375	.11	.23	.34	1.50
	U	60	90	50	75	100	582
	ΔU	.25	.375	.21	.31	.42	2.43
48	C	150	226	50	100	200	1164
	ΔC	.25	.375	.08	.17	.33	1.94

NOTES:
1. *The designer should not exceed the MAX RECOMMENDED LOAD at any given span. MAX RECOMMENDED LOAD represents a 2:1 factor of safety on ULTIMATE CAPACITY.*
2. *Walking loads, typically 50-65 PSF maximum, are recommended for pedestrian traffic. Deflections for worker comfort are typically limited to the lesser of 3/8" or CLEAR SPAN divided by 125; for a firmer feel, limit deflection to the lesser of 1/4" or CLEAR SPAN divided by 200. Typical loads are noted in the table to the left of the heavy vertical line at approximately 50 PSF uniform load.*
3. *The allowable loads in this table are for STATIC LOAD CONDITIONS at ambient temperatures only. Allowable loads for impact or dynamic conditions should be a minimum of ONE-HALF the values shown. Long term loads will result in added deflection due to creep in the material and will also require higher safety factors to ensure acceptable performance. For applications at elevated temperatures, consult factory. The designer is further referenced to ASCE Structural Plastics Design Manual.*

AICKINGRATE PART NUMBERS

To order Aickingrate, use the following part number scheme to create the correct part number.
*To order non-fire retardant polyester, add suffix "NFR" to end of part number.



Aikengrate Stair Trends are available in either molded or pultruded designs. Both designs incorporate an anti-skid, grit top surface.

Molded Stair Treads

Molded stair treads are available in the same resin formulations as the standard molded grating panels. Each panel incorporates an applied, grit surface with an extra-thick, dark colored nosing. This leading edge color contrast increases the stair tread visibility and prevents slips and falls on stairways.

All stair treads are 1-1/2" thick and provided in a 1-1/2" square mesh configuration. The standard stair tread panel size is 22-1/2" x 120". Each panel weighs approximately 105 pounds.

Standard Colors: Green, Yellow, Gray and Orange

Special colors are available upon request.

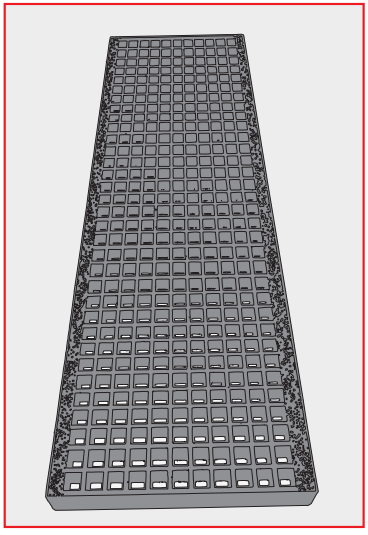
Aickingrate stair tread panels can be cut with the same tools that are used on the Aickingrate molded grating panels.

Use fiberglass or steel support angle, or wooden ledger..

Two standard hold-down clips bolt to angle support at each end. Use Aickingrate grating clips.

Leading edge in contrasting color for easy visual identification.

Use fiberglass or steel channel, or wooden stringer.



Panel size: 22-1/2" x 120"
Approx. Weight: 105 lbs.

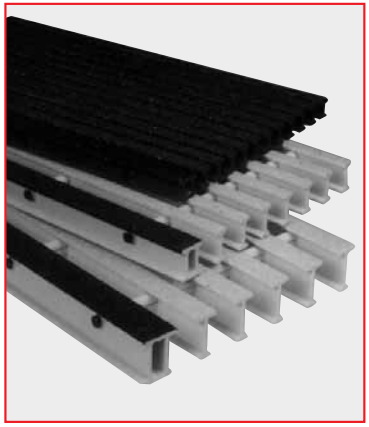
Pultruded Stair Treads

Pultruded stair treads incorporate the same performance characteristics as the Aickingrate pultruded grating panels. All stair treads are slip-resistant, non-conductive and offer a high level of safety, strength and corrosion resistance.

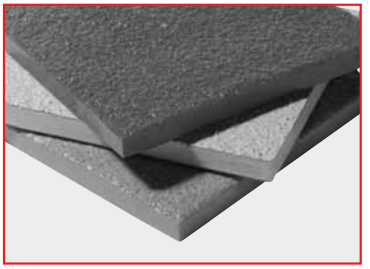
Pultruded stair treads are available in either polyester or vinyl ester resin types. The standard stair tread panel size is 1' x 10'. Stair treads are available in 1", 1-1/2" & 2" depths. The available bar shapes are "I" bar and "T" bar. All pultruded stair treads incorporate a color contrast nosing to allow for quick and easy visual distinction, which prevents slips and falls.

Standard Colors: Yellow (Polyester), Gray (Vinyl ester)

	Concentrated	Span (in.)	18	24	30	36	42	48
Tread Type	Load (lbs.)	Span/150	.12	.16	.20	.24	.28	.32
1" Deep, I-Bar	250		.03	.08	.14	.22	.34	.46
60% Open Area	500		.07	.15	.28	.44	.68	.92
1.5" Deep, I-Bar	250		.01	.02	.04	.06	.09	.13
60% Open Area	500		.02	.04	.08	.11	.18	.26
2" Deep, T-Bar	250		.01	.02	.03	.04	.06	.09
50% Open Area	500		.02	.04	.06	.09	.12	.18
1" Deep, I-Bar	250		.02	.05	.10	.16	.24	.33
40% Open Area	500		.05	.11	.20	.32	.49	.65
1.5" Deep, I-Bar	250		.01	.01	.03	.04	.06	.09
40% Open Area	500		.02	.03	.05	.07	.12	.17
2" Deep, T-Bar	250		.01	.01	.02	.03	.05	.07
33% Open Area	500		.02	.03	.04	.06	.09	.14



AICKINPLATE



Aickinplate is a molded, non-skid fiberglass plate that offers an economical, safe solution for slippery walking surfaces. The non-skid surface provides excellent traction even when oil or other slippery liquids are present. Because Aickinplate is molded from fiberglass, it provides superior corrosion resistance and never requires painting. Aikinplate is a structural floor plate that is non-porous and cleans easily with water.

Aickinplate is easy to fabricate. It can be cut with masonry blades and drilled with standard carbide-tipped drill bits. The standard panel size is 4' x 8' and they are available in three thickness'; 3/16", 1/2" and 3/8". All panels will be constructed from both non-fire retardant or fire retardant polyester resin and fire retardant vinyl ester resins. A USDA approved, polyester resin Aickinplate is available.

Some typical Aickinplate applications would be:

- Fishing boat decks
- Packing plant floors
- Swimming pools
- Work platforms

Standard Colors: Green, Gray, Yellow, & Orange

Special colors are available upon request.

Note: Install clips a maximum of every 48" and use at least 8 clips per 4'x12' panel.

Capacity

Aickinplate	Panel Weight	45 lbs.	12 (in.)	Use on flat
3/16"	Weight/Sq. Ft.	1.4 lbs.	18	solid surface only
			24	
Aickinplate	Panel Weight	60 lbs.	12 (in.)	199 lbs.
1/4"	Weight/Sq. Ft.	1.8 lbs.	18	98
			24	62
Aickinplate	Panel Weight	85 lbs.	12 (in.)	583 lbs.
3/8"	Weight/Sq. Ft.	2.6 lbs.	18	304
			24	203

Aickincoat Sealer

Aickincoat sealer is recommended after cutting Aickingrate. Aickincoat seals the exposed grating ends and maintains the corrosion resistance and integrity of the grating panel.

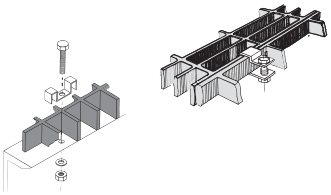
Part number	Size
600-1500	Quart
600-1600	Gallon
600-2200	Spray

Grating clips are specially designed to fasten and secure grating panels to support structures. All grating clips are made from 316 Stainless Steel.

Molded Grating Clips

M-Clips

Type M-clips secure panels to a support and restrain panel movement in all directions. M-Clips can also be installed with self-tapping screws when attaching to metal supports.



Part numbers	Aickingrate mesh configuration
M-1	1" thick, 1" x 4"
M-2	1" thick, 1-1/2" x 1-1/2"
M-3	1-1/2" thick, 1-1/2" x 1-1/2"
M-4	2" thick, 2" x 2"

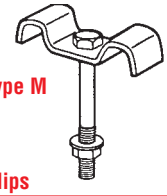
C-Clips

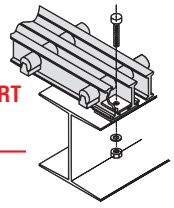
Used for joining two unsupported grating panel ends.

Part numbers	Grating panel thickness
C-1	1"
C-2	1-1/2"
C-3	2"

Pultruded Grating Clips

Part numbers	Grating panel thickness
MI-4	"I" bar, 40% open area, 1" & 1-1/2" thick
MI-6	"I" bar, 60% open area, 1" & 1-1/2" thick
MT-3	"T" bar, 33% open area, 2" thick
MT-5	"T" bar, 50% open area, 2" thick
MTW-381	Wide "T" bar, 38% open area, 1" thick
MTW-3815	Wide "T" bar, 38% open area, 1-1/2" thick



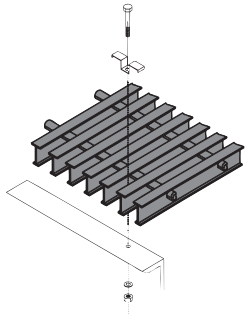


RT-Clips

Part numbers
RT-25

Grating panel thickness

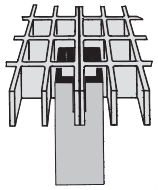
Wide "T" bar, 25% open area, 1 & 1-1/2" thick

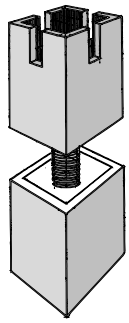


MOLDED GRATING Floor Pedestals

Aickingrate floor pedestals are an economic method for providing an elevated Aickingrate molded flooring system. Pedestal supported flooring systems are extremely versatile and can be modified or moved to meet wash-down requirements. Pedestals are designed for a maximum height of 12 inches without braces.

Part numbers	Style
P-ADJ	Adjustable (5"-12")
P-STA	Stationary (3"-12")





Pedestal Placement Table for Aickingrate Molded Grating

Aickingrate Mesh Configuration	A 300 lbs. Concentrated Load will Produce a .250" Deflection with Pedestals Spaced as Indicated Below	A 300 lbs. Concentrated Load will Produce a Deflection indicated below with Pedestals Spaced 4' x 4	3' x 3'	2' x 2'
1" Thick, 1" x 4"	27" x 27"	(1)	(1)	.200 in.
1" Thick, 1-1/2" x 1-1/2"	28" x 28"	(1)	(1)	.180 in.
1-1/2" Thick, 1-1/2" x 1-1/2"	48" x 48"	.250	.140	.065 in.
2" Thick, 2" x 2"	48" x 72"	.120	.080	.040 in.

CORROSION-RESISTANCE GUIDE

The information contained in this table is intended to only be used as a guide for molded & pultruded grating. Because actual conditions may differ, the end-user must determine if the grating will withstand the intended environment.

Chemical Environment	% Concentration	Temp. °F	POLY	VE
Acetic Acid	50	Max.	C	C
Acetone	100	75	I	N
Alcohols	100	120	I	I
Aluminum	All	Max.	C	C
Aluminum Chloride	All	Max.	C	C
Aluminum Fluoride	20	75	I	I
Ammonium Hydroxide	30	75	I	N
Ammonium Salts - Neutral	All	120	C	S
Ammonium Salts - Aggressive	All	75	T	N
Aromatic Solvents	All	75	N	N
Barium Salts	All	Max.	C	C
Benzene	100	140	I	N
Black Liquor (Pulp Mill)	All	Max.	I	N
Bleach Liquor (Pulp Mill)	All	Max.	I	N
Calcium Hydroxide	25	Max.	S	I
Calcium Hypochlorite	All	Max.	I	N
Calcium Salts	All	Max.	C	C
Carbon Tetrachloride	100	75	S	N
Chlorinated Hydrocarbons	100	75	T	T
Chlorine Dioxide	Sat.	140	S	N
Chlorine Water	Sat.	120	I	N
Chlorine, Wet	Sat.	Max.	N	N
Chlorobenzene	100	75	N	N
Chlorobenzene	All	Up to 100	N	N
Chloroform	100	75	N	N
Chromic Acid	50	140	I	N
Citric Acid	All	Max.	C	C
Copper Cyanide Plating	All	125	S	I
Copper Salts	All	Max.	C	C
Crude Oil (Sweet or Sour)	All	Max.	C	C
Dichlorobenzene	100	75	N	N
Ethers		75	N	N
Ferric Chloride	100	Max.	C	C
Ferric Salts	All	Max.	C	C
Fluoride Salts + HCl	All	75	I	N
Fluosilicic Acid	10	75	S	I
Formaldehyde	37	150	S	I
Formic Acid	25	100	S	I
Fuel (Diesel, Jet, Gasoline)	All	100	C	C
Glycerine	100	Max.	C	C
Green Liquor (Pulp Mill)	All	Max.	I	N
Hydrobromic Acid	48	Max.	I	N
Hydrochloric Acid	10	Max.	S	S
Hydrochloric Acid	30	Max.	I	I

Chemical Environment	% Concentration	Temp. °F	POLY	VE
Hydrochloric Acid (Concentrated)	All	Up to 180	N	N
Hydrocyanic Acid	All	Max.	S	I
Hydrofluoric Acid	20	75	N	N
Hydrogen Peroxide	30	75	S	N
Lactic Acid	100	Max.	C	C
Lime Slurry	Sat.	Max.	C	C
Lithium Salts	All	Max.	C	C
Magnesium Salts	All	Max.	C	I
Maleic Acid	100	Max.	S	I
Mercury Chloride	100	Max.	C	C
Nickel Salts	All	Max.	C	C
Nitric Acid	20	120	I	I
Nitric Acid	35	100	I	N
Nitric Acid	40	Ambient	N	N
Nitric Hydrofluoric	20:2	75	N	N
Nitrous Acid	10	75	C	C
Ozone for Sewage Treatment		100	C	C
Perchloroethylene	100	75	I	N
Phenol	10	75	I	N
Phenol	88	Ambient	N	N
Phosphoric Acid	85	Max.	C	S
Phosphoric Acid, Super	115	Max.	S	N
Potassium Hydroxide	10	120	S	N
Potassium Salts	All	Max.	C	C
Silver Nitrate	100	Max.	C	C
Sodium Cyanide	All	75	S	I
Sodium Hydroxide	50	Max.	I	N
Sodium Hydroxide	10	Max.	N	N
Sodium Hypochlorite (Stable)	10	100	S	I
Sodium Salts-Neutral	All	Max.	C	C
Sodium Salts-Aggressive	All	75	T	N
Sulfur Dioxide	Sat.	Max.	S	S
Sulfuric Acid	25	Max.	S	I
Sulfuric Acid	50	Max.	S	N
Sulfuric Acid	75	100	I	N
Toluene	100	120	I	N
Trichloroethane 1,1,1	All	75	I	N
Trisodium Phosphate	50	Max.	I	N
Water (Fresh, Salt, Moderate, D.I.)	100	Max.	C	C
Wet Chlorine/Hydrochloric Acid)	10-20	Up to 350	N	N
White Liquor (Pulp Mill)	All	Max.	S	N
Zinc Chloride Plating	All	75	S	N
Zinc Salts	100	Max.	C	C

C=Continuous exposure of the grating to the Chemical Environment listed at the temperature listed.

S=Frequent exposure of the grating to splashes and spills from the Chemical Environment listed with that environment at the temperature listed.

I=Infrequent exposure of the grating to splashes and spills from the Chemical Environment listed with that environment at the temperature listed and the spill immediately cleaned up or washed from the grating.

N=Not recommended for the concentrations and temperatures listed.

T=Test

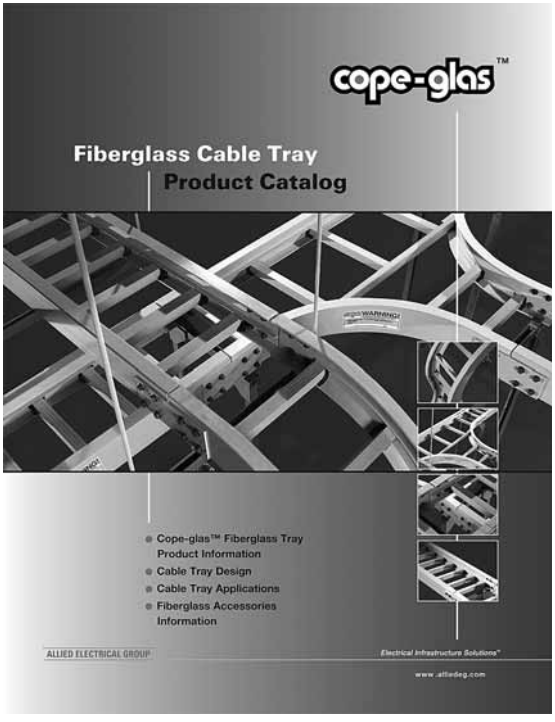
Consult Aickingrate for corrosion recommendations at concentrations, temperatures or chemicals not listed in this guide.

Max. Temp. is 180°F for Vinylester 150°F for Polyester.

Part Number Index

Other Non-Metallic products designed to work with Aickinstrut® can be found in COPE-GLAS™

cope-glas™



COPE-GLAS™ is a Fiberglass Cable Tray System of products, UL Listed, accepted industry wide and exceeds industry standards for chemical resistance, strength, flame resistance and ultraviolet protection.

To get a catalog ask your Rep, or go to our website at **www.alliedeg.com**

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ALLIED ELECTRICAL GROUP

ALLIED ELECTRICAL GROUP

Allied Electrical Conduit

Steel Conduit
- Rigid (GRC)
- IMC

Aluminum Conduit
- Rigid
- Aluminum Elbows
- Aluminum Couplings

Steel EMT
- True Color™ EMT
- Fire Alarm™
- Blue EMT
- E-Z Pull® EMT

Kwik Products
- Kwik-Fit™ EMT (built-in set-screw coupling)
- Kwik-Couple® IMC/GRC (built-in 3 piece rotating coupling)
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Flexible Conduit
- LIQUID-TUFF™ Liquid-Tight Flexible Conduit
- Full and Reduced Wall Flexible Metal Conduit

Fittings
- EMT Steel Compression & Set-Screw Fittings
- Liquid-Tight Metallic & Non-Metallic Fittings
- MC/AC Cable Connectors

AFC Accessories
- Lighting, Power, & Appliance Whips
- Temp-Lites®
- Bare Armored Ground

ACS/Uni-Fab
- Modular Lighting Systems
- Raised Floor Assemblies
- Pre-Fab Assemblies
- Custom Fabrication

Power-Strut® Framing Systems

Channel
- Steel Channel
- Aluminum Channel
- Stainless Steel Channel
- Fiberglass Channel
- Junior Strut

Fittings & Accessories
- Strut Brackets
- Strut Fittings
- Pipe Clamps
- Threaded Rods
- Fiberglass Fittings
- Junior Strut Fittings
- Concrete Inserts
- Power-Angle® Slotted Angles

Finishes
- Pre-Galvanized Channel
- Power-Green® Channel
- Hot-Dip Galv. Channel
- Power-Gold™ Channel

Cope® Cable Tray Systems

Aluminum Tray
- Aluminum Ladder Tray
- Aluminum Hat Tray
- Aluminum Trof Tray
- Aluminum Channel
- Aluminum Fittings

Steel Tray
- Steel Ladder Tray
- Steel Hat Tray
- Steel Trof Tray
- Steel Channel
- Steel Fittings

Fiberglass Tray
- Cope-glas™ Fiberglass Tray
- Fiberglass Fittings

Wire Basket
- CAT-TRAY™ Wire Basket
- CAT-TRAY™ Accessories

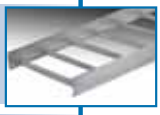
Center Hung Tray
- Centipede® Center Hung Tray
- Centipede® Accessories

Other Cope Products
- Cable Channel

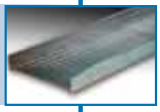
T.J. Cope®
Family of Innovative Products

- **COPELADDER**

- **COPEHAT**



- **COPETROF**



- **COPECHANNEL**

- **CAT-TRAY®**

- **CENTIPEDE®**

- **COPE-GLAS™**
  Non-Metallic Cable Tray System

- **AICKINSTRUT®**
  Non-Metallic Framing System

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