

Champion Fiberglass
BRIDGE DRAIN™



Champion Fiberglass is the most advanced manufacturing facility of fiberglass conduit, fiberglass bridge drain and fiberglass strut systems in the world.

Its well-trained and highly efficient workforce utilizes state-of-the-art proprietary high-speed winding equipment and high-temperature curing ovens to develop the world's most advanced, highest-quality fiberglass conduit and bridge drain systems. Our 111,300-square-foot facility includes two state-of-the-art fiberglass filament winding production lines that have now been joined by a third line. This third production line features updated technology that will speed output and double our filament winding capacity rate of manufacture - thereby increasing our ability to deliver quicker, more customized solutions for our customers.

Champion Fiberglass is both an ISO 9001:2015 and ISO 14001:2015-certified company. The Champion Fiberglass facility is currently a 100% digital, high-volume manufacturing facility. With the addition of our new third leading-edge production line, we're taking our customer commitment to a new level by delivering much higher-quality, cost-efficient products at a much faster rate.



MasterSpec®
a product of The American Institute of Architects

Bridge Drain

Champion Bridge Drain™ is a fiberglass bridge drain system that includes a complete line of fittings, non-metallic accessories and hangers. Champion Bridge Drain is a versatile, high-strength fiberglass bridge drainage system that can be used in many highly corrosive drainage applications including bridges, theme parks, aquariums, pools and underground vaults. Run-off waters commonly contain waste materials, heavy metals or hydrocarbon traces. In winter, in some cold regions, they can also contain de-icing salts.

The Champion Bridge Drain is filament wound from corrosion-resistant epoxy resins which enables the bridge drain system to be used in corrosive applications where steel and PVC drainage systems would traditionally fail. Champion Bridge Drain incorporates the highest-quality components to provide superior chemical, UV and fire resistance. Champion Bridge Drain can resist pollutants typically seen in water run-off as well as environmental and climatic stresses. Champion Bridge Drain has a complete network of Sales Representatives and distributors that can provide the necessary assistance.

Features

- **Lightweight** – Champion Fiberglass Bridge Drain features a weight that's up to 1/5 that of comparably sized steel conduit.
- **Lower installation costs** – In addition to lower material costs, Champion Fiberglass Bridge Drain features lower installation costs.
- **Excellent temperature range** – Champion Fiberglass Bridge Drain has an excellent wide temperature range (-60° to +250°), and handles well at low temperatures, allowing for year-round installation. It is also UV-stable.
- **Easier field handling** – Due to its light weight, ease of cutting and integral bell, Champion Fiberglass Bridge Drain is easier to install.
- **High-impact resistance/memory retention** – Champion Fiberglass offers excellent memory retention, with the ability to return to original shape after impact.

Why Champion Fiberglass Bridge Drain?

Customization Available

Champion Fiberglass Bridge Drain is available in a wide range of sizes – but beyond that, we work closely with our customers to develop custom solutions, from UV-resistant coating specific to your climate and sun exposure or color matching a specific shade needed for your design.

CONTACT US

LET US BUILD IT FOR YOU.

We can easily fabricate custom and specific fittings from your plans – catch basins, hoppers, oval fittings, custom-fit components and odd-degree elbows can all be made to your specifications.

LET'S GET SPECIFIC.

Reach out to us via **ChampionFiberglass.com** or email **info@championfiberglass.com** to discuss your project's needs, run costs, and talk through design, manufacture and delivery logistics. We're here to answer any questions and help make your project a success.



**MANUFACTURERS OF
BRIDGE DRAIN TO
CUSTOMER SPECS**



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Features and Advantages

		WEIGHTS PER 100/FT		
		FIBERGLASS	PVC SCH 40	CAST IRON STEEL SCH 40
Weight Comparison	6"	191	373	1,840
Champion Fiberglass Bridge Drain™	8"	259	562	2,238
dramatically reduces bridge dead loads	10"	422	797	4,050
while offering the lowest weight per/ft	12"	500	1,054	5,110
without sacrificing strength. Weights shown	14"	683	1,246	6,300
are per/100 ft.	16"	782	1,628	8,300
	18"	876	2,058	10,500
	20"	1,150	2,418	12,300
	24"	1,513	3,365	17,100
Temperature Range (°F)		-60° to +250°	+40° to +150°	N/A
Champion Fiberglass Bridge Drain has an excellent wide temperature range.				
Handling in Low Temperatures		Excellent	Brittle	Excellent
Champion Fiberglass Bridge Drain has been shown to retain its properties at low temperatures allowing year-round installations.				
		BRIDGE DRAIN MATERIAL TYPE SUPPORT SPANS		
		FIBERGLASS	PVC SCH 40	CAST IRON STEEL SCH 40
Support Spans (maximum)	6"	18 ft	7 ft	17 ft
Many codes require pipe hangers to be	8"	19 ft	7 ft	19 ft
spread every 10 ft. regardless of size.	10"	21 ft	7 ft	22 ft
Check local codes.	12"	22 ft	10 ft	23 ft
	14"	23 ft	12 ft	25 ft
	16"	24 ft	12 ft	27 ft
	18"	24 ft	12 ft	28 ft
	20"	25 ft	12 ft	30 ft
	24"	26 ft	16 ft	32 ft

	FIBERGLASS	PVC SCH 40	CAST IRON STEEL SCH 40
Ultraviolet Stable (Sunlight Resistance) (Per UL 2515 and CSA C22.2 No. 211.3-96)	Very Good	Poor	Excellent
Distance Between Expansion Joints (ft)	200	50	200
Field Handling Due to its light weight, ease of cutting and integral bell, Champion Fiberglass Bridge Drain™ is very easy to install.	Excellent	Good	Very Poor
Memory Champion Fiberglass Bridge Drain will retain its original shape after impact or compression.	Yes	No	No
Resistance to Salt	Very Good	Good	Poor unless Galvanized or Stainless
Resistance to Solvents	Very Good	Poor	Poor unless Galvanized or Stainless
Resistance to Acids	Good	Good	Poor unless Galvanized or Stainless
Resistance to Gasoline	Very Good	Good	Poor unless Galvanized or Stainless
Custom Colors	No Painting	Painting	Painting

Bridge Drain Specifications

I. References

When a standard or other referenced document referred to in this specification is superseded by an approved revision, the revision shall apply.

II. Manufacturing

The Bridge Drain Pipe, also known as Reinforced Thermosetting Resin Piping (RTRP), shall be manufactured **using the single-circuit filament winding process** (up through 12") meeting the requirements of ASTM D 2996 RTRP-12EA12122, with at least 30,000 psi short time rupture strength in the hoop tensile stress. The single-circuit wound conduit shall have a winding angle as close as possible to 54.75°. Multi-circuit winding may be incorporated on 14" and larger sizes of bridge drain straight lengths. Winding mandrels shall be straight and true so as to produce a non-tapered bridge drain pipe. Tapering is allowed at the belled end.

The bridge drain straight lengths resin system shall be epoxy based, with no fillers, using an anhydride curing agent. The fiberglass shall consist of continuous **E-glass Grade "A" roving**. All additives for increasing flame spread and lowering smoke density shall be halogen free, i.e. not contain chlorine or bromine.

Carbon black shall be used as ultraviolet inhibitor to protect the bridge drain and fittings during storage and exposure to the outdoors. Bridge drain, elbows and fabricated fittings shall be concrete-grey in color. UV-resistant exterior coating may be applied (upon customer request) to the finished products to further inhibit UV degradation on pipe exposed to extreme sunlight UV. Upon customer request, bridge drain and fittings shall incorporate an exterior surfacing veil to provide a resin-rich surface that fights corrosion and inhibits UV degradation.

Curing shall be done using an oven and shall take place in two steps. The first curing zone shall bring the bridge drain slowly to the gel temperature. The second zone shall post-cure the bridge drain at no less than 350°F. The bridge drain has to be properly cured so that when measuring the glass transition temperature with a differential calorimeter the difference between the first measurement and the second shall not exceed 5°F.

The internal bridge drain and elbow walls shall be smooth, and all fibers embedded within the epoxy.

All fiberglass bridge drain, fittings and elbows shall be pigmented throughout the wall. Color to be standard concrete-grey unless otherwise specified. Paint or any other exterior coating shall be specified by the customer.

All bridge drain, fittings and elbows shall be durably and legibly marked with the appropriate part number. In addition, the following information shall be included:

- Manufacturer Name
- Date of Manufacturing of Bridge Drain and Fittings
- Special customer markings (per request)

All bridge drain, elbows and fittings shall be **manufactured in the U.S.A. (Spring, TX) and marked as such.**

III. Dimensions

Bridge drain shall be manufactured having non-tapered sections (except for integral belled ends) and shall be manufactured with following nominal dimensions:

DRAIN PIPE SIZE	OUTSIDE DIAMETER (IN)	INSIDE DIAMETER (IN)	WALL THICKNESS (IN)
4"	4.57"	4.32"	.125"
6"	6.68"	6.43"	.125"
8"	8.48"	8.23"	.125"
10"	10.48"	10.23"	.125"
12"	12.48"	12.23"	.125"
14"	14.48"	14.23"	.125"
16"	16.48"	16.23"	.125"
18"	18.48"	18.23"	.125"
20"	20.56"	20.23"	.165"
24"	24.56"	24.23"	.165"

Tolerances are +.034"/-.028

IV. Mechanical Characteristics

The bridge drain shall have following mechanical strength when tested in accordance with referenced test method:

Hoop Tensile Strength (based on reinforced thickness @ 75°F)		ANSI/ASTM D-1599
4" through 12"	30,000 psi	
12" through 24"	30,000 psi	
Tensile Strength, Axial	11,000 psi	ASTM D-2105
Ultimate Elongation	2% psi	ASTM D-2105
Modulus of Elasticity (4" conduit)	1.4 x 10 ⁶ psi	ASTM D-2105
Thermal Conductivity	2.0 BTU/(ft ²)(hr)(°F/in)	ASTM D-5930-1
Specific Gravity	1.9	ASTM D-792
Glass Content	65–75%	API 15LR
Water Absorption	1% max	ASTM D-570
Barcol Hardness	52–56	ASTM D-2583
Coefficient of Thermal Expansion	1.2 x 10 ⁻⁵ in/in/°F	ASTM D-696
Compressive Strength (end loads):		ASTM D-2444
Size 4"	23.3 lbs/°F	
6"	36 lbs/°F	
8"	46 lbs/°F	
10"	84 lbs/°F	
12"	99 lbs/°F	
14"	105 lbs/°F	
16"	110 lbs/°F	
18"	123 lbs/°F	
20"	137 lbs/°F	
24"	142 lbs/°F	

V. Bridge Drain Support Spans

Many codes require pipe hanger supports to be spaced every 10 ft. regardless of size. Check local codes.

DRAIN PIPE SIZE	SUPPORT SPAN (FT)
4"	16'
6"	18'
8"	19'
10"	21'
12"	22'
14"	23'
16"	24'
18"	24'
20"	25'
24"	26'

Runs of bridge drain shall be supported at spacing no greater than those on the engineer approved drawings. Steel and fiberglass sling, clamp and clevis hangers designed for hanging and supporting pipes may be used as long as they meet the designated load ratings. Fiberglass bridge/grid hanger-type supports are recommended. If support contains less than 120° of contact, a split fiberglass pipe protective sleeve or fiberglass wear pad shall be installed and bonded to the pipe. Split sleeve length shall equal pipe diameter. This does not apply to bridge/grid-type support hangers.

VI. Hangers

Pipe strap/clevis hanger width shall be 1-1/2 in. for nominal fiberglass pipe size 6 in. to 10 in. Strap width shall be 2 in. for nominal fiberglass pipe size 12 in. to 14 in. Hanger's thickness shall be 3/16 in. This does not apply to bridge/grid-type hangers.

PIPE STRAP/HANGER WIDTH	
PIPE SIZE (IN)	MINIMUM WIDTH (IN)
4"	1-1/4"
6"	1-1/2"
8"	1-1/2"
10"	1-1/2"
12"	2"
14"	2"
16"	2-1/2"
18"	2-1/2"
20"	3"
24"	3"

VII. Bridge Drain Connections

All connections between piping systems and roadway drain scuppers shall not be rigid. The deck outlet connection shall be made with a free-floating collector assembly sized 4 in. larger than the outlet pipe. Assemblies shall include an oversized fiberglass splash guard at each collector unit. End run connections should feature a female threaded outlet. Where specifically shown as a clean out, removal pieces shall be made of a threaded PVC plug. The standard plug shall come white in color. Butt or wrap straight section joint connections shall not be allowed. Belled end connections shall be used to connect factory straight lengths. Straight socket slip couplings are acceptable when factory belled ends have been field cut.

VIII. Adhesive

UV-resistant epoxy adhesive will be used to bond pipe/fitting connections with straight slip couplings for all joints. All fiberglass pipe, fittings and bonding adhesives shall be provided from the same manufacturer.

IX. Quality Assurance Program

Manufacturer shall have a current Certificate, issued by an independent and accredited company, of compliance with an **ISO 9001:2015 Quality Management System**.

X. Joining System

The bridge drain shall be supplied with an integral wound bell on one end and a machined spigot on the other end. A two-part adhesive, epoxy resin system, designed to permanently bond fittings and joints of bridge drain shall be properly mixed and applied to the spigot end before joining the bridge drain lengths together. The adhesive shall be available for use in three different ambient temperatures, 70°F, 40°F and 20°F. The adhesive shall be supplied from the same manufacturer of bridge drain, fittings and elbows in order not to void the manufacturer's warranty.

XI. Toxicity

The bridge drain shall not contain any compounds that can release halogens, i.e. chlorine, bromine, fluorine and iodine in more than trace amounts when burning. Following shall be the maximum values when tested in accordance to ASTM E-800:

GASES	VALUES (MAX PPM)
Hydrogen Chloride	0
Hydrogen Bromide	0
Hydrogen Cyanide	<1
Hydrogen Sulfide	0
Ammonia	0
Aldehydes as HCHO	<10
Oxides of Nitrogen	<50

XII. Fittings and Accessories

Fiberglass bridge drain, fittings, elbows and accessories shall be manufactured using one of two manufacturing procedures. The first method shall use the same process (filament winding) as is used to manufacture the fiberglass bridge drain straight lengths. The second method shall use a vacuum infusion or resin transfer (RTM) molding process. All elbows shall be manufactured by vacuum infusion or RTM and shall be smooth radius. 90- and 45-degree elbows shall not be mitered. Filament-wound pipe may be used to fabricate mitered tees, laterals, Y's and crosses.

XIII. Environmental

Manufacturer shall have a current Certificate, issued by an independent and accredited company, of compliance with an **ISO 14001:2015 Environmental Management Systems and Performance**.

XIV. Installation

All fiberglass bridge drain, fittings and elbows shall be handled and installed according to the manufacturer's recommended guidelines and procedures outlined in the catalog.

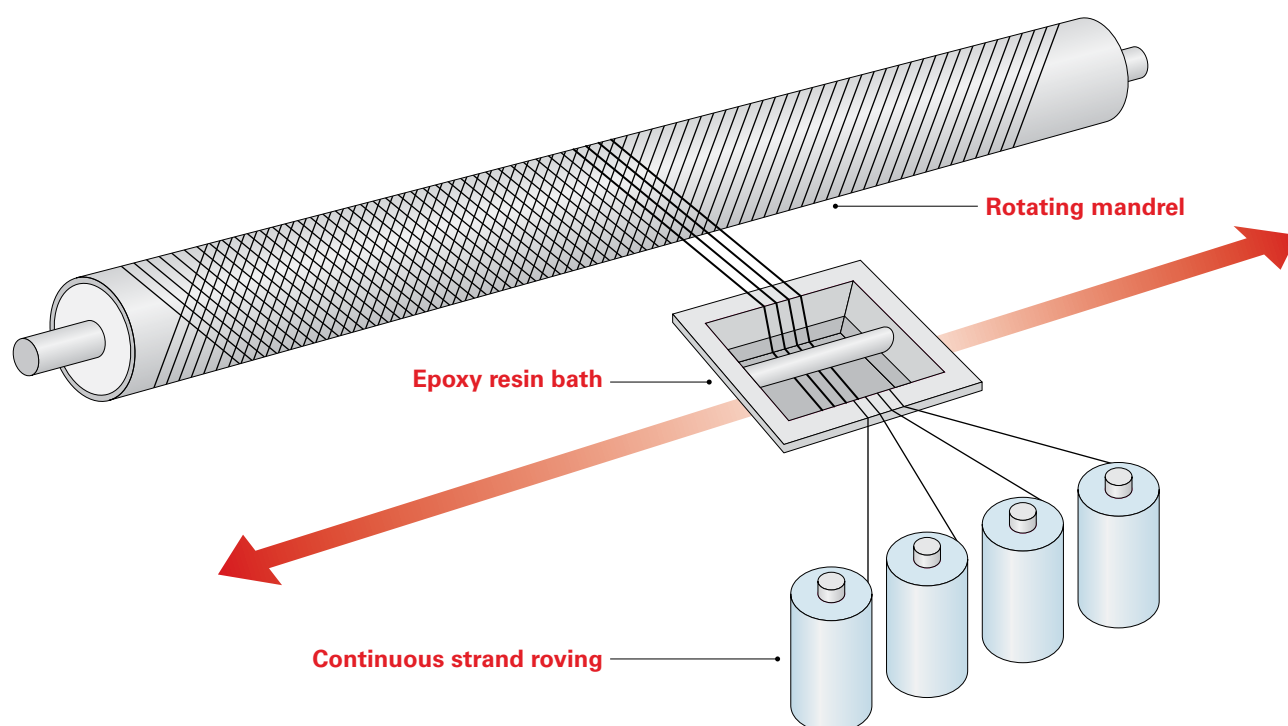
Material Comparisons – Weights

Fiberglass bridge drain offers the lowest weight and installation costs of any material type bridge drain system. See below weight comparisons for Fiberglass, PVC and Steel bridge drain piping straight lengths.

SIZE	FIBERGLASS		SCH 40 PVC		SCH 40 STEEL	
	WEIGHT PER/FT	WEIGHT FILLED W/ WATER LBS/FT	WEIGHT PER/FT	WEIGHT FILLED W/ WATER LBS/FT	WEIGHT PER/FT	WEIGHT FILLED W/ WATER LBS/FT
4"	1.3	6.8	2.1	7.6	10.8	16.3
6"	1.9	14.4	3.6	16.1	19.0	31.5
8"	2.6	24.2	5.4	27.0	28.5	50.1
10"	4.2	38.3	7.9	42.0	40.5	74.6
12"	5.0	56.0	10.5	61.5	51.1	102.1
14"	6.8	65.3	12.4	70.9	63.0	121.5
16"	7.8	84.3	16.2	92.7	83.0	159.5
18"	8.8	106.0	20.6	117.8	105.0	202.2
20"	11.5	131.9	24.2	144.6	123.0	243.4
24"	15.1	189.3	33.7	207.9	171.0	345.2

Manufacturing Process

Filament winding is a fabrication technique mainly used for manufacturing open tubing or cylinders. This manufacturing process involves winding fiberglass filaments (rovings) under tension over a rotating steel mandrel. Once the epoxy resin has cured in an oven, the steel mandrel is removed or extracted, leaving the finished 20-ft.-long bridge drain section.



Installation

These instructions are intended only to provide assistance and as a guide to obtain the most appropriate and satisfactory installation of Champion Fiberglass Bridge Drain™ systems.

These instructions are not intended to replace the responsibilities of engineers, customer representatives, owners or other persons responsible in establishing engineering design practices and procedures that are best suited for individual job site conditions.

The installation of fiberglass bridge drain and accessories doesn't differ greatly from the installation of fiberglass conduit and accessories. General installation practices will still apply. The procedures for cutting and sealing can be found below.

Labor Savings

Just as with Champion Fiberglass Conduit, Champion Fiberglass Bridge Drain can be installed much faster than traditional steel and PVC bridge drain systems. The lightweight fiberglass components weigh less than half of their steel counterparts and can be cut, drilled and fabricated in much less time than both PVC and steel bridge drain systems. The result is a substantial labor savings.

Field Cutting and Sanding

To make fiberglass bridge drain field cuts, the tools required are a reciprocating saw with an abrasive blade (circular saw) or a grinder with a diamond cutting blade. Marking the fiberglass bridge drain for cutting will require a contrasting colored marker. Remove any cutting/drilling burrs or ridges with 60-grit emery cloth. Factory finished ends are supplied pre-sanded. When field cuts are made, the bridge drain ends need to be sanded in order to make the adhesive connection.



In these cases, it is recommended the ends be sanded with an abrasive flap wheel sander or a grinder with an abrasive sanding disc. Recommended grit is 60-grit emery.



Proper field cutting and sanding PPE to include:

- Long sleeve clothing
- Gloves
- Safety glasses
- Particulate respirator (#N95 or equivalent)

Handling and Storage

Transportation

Fiberglass bridge drain lengths are shipped in self-supporting crates designed to be unloaded by forklift. Crates should not be dropped from the truck trailer flatbeds.

Storage

- **Fiberglass bridge drain** crates should be stored on a flat level surface. The wooden frames should line up so the load will be transferred to the wood frames rather than the bridge drain. The height of stacked bridge drain should be limited to 12 ft.
- **Bridge drain fittings and accessories**, when stored outdoors, should be under cover to protect items in cartons from the outdoor elements until ready for installation.

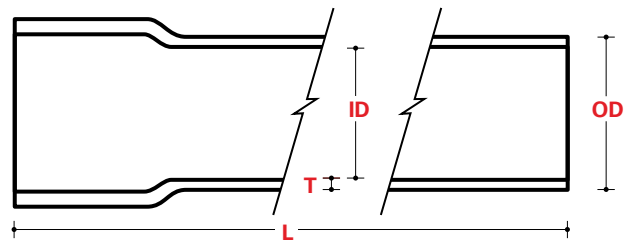
Bridge Drain Straight Lengths



CHAMPION BRIDGE DRAIN™ STRAIGHT LENGTHS

Champion Bridge Drain straight lengths are made from epoxy resin, supplied in 20-ft. lengths and come factory pre-sanded to allow for quick and easy field assembly. Sizes available range from 4" through 24."

	ITEM NO	NOMINAL SIZE	NOMINAL OD (IN)	NOMINAL ID (IN)	WALL THICKNESS (IN)	WEIGHT PER/FT (LBS)
<input type="checkbox"/>	C-DP-04-20	4"	4.57"	4.32"	.125"	1.3
<input type="checkbox"/>	C-DP-06-20	6"	6.68"	6.43"	.125"	1.9
<input type="checkbox"/>	C-DP-08-20	8"	8.48"	8.23"	.125"	2.6
<input type="checkbox"/>	C-DP-10-20	10"	10.48"	10.23"	.125"	4.2
<input type="checkbox"/>	C-DP-12-20	12"	12.48"	12.23"	.125"	5.0
<input type="checkbox"/>	C-DP-14-20	14"	14.48"	14.23"	.125"	6.8
<input type="checkbox"/>	C-DP-16-20	16"	16.48"	16.23"	.125"	7.8
<input type="checkbox"/>	C-DP-18-20	18"	18.48"	18.23"	.125"	8.8
<input type="checkbox"/>	C-DP-20-20	20"	20.56"	20.23"	.165"	11.5
<input type="checkbox"/>	C-DP-24-20	24"	24.56"	24.23"	.165"	15.1



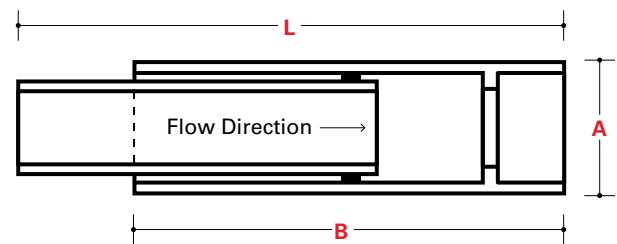
Bridge Drain Fittings

CHAMPION BRIDGE DRAIN™ EXPANSION JOINTS

One expansion joint is required for every 200 ft. of straight bridge drain length.

	ITEM NO	NOMINAL SIZE	A DIM (IN)	B DIM (IN)	L DIM MIN (IN)	L DIM MAX (IN)	TRAVEL LENGTH (IN)	WEIGHT (LBS)
<input type="checkbox"/>	C-DF-06-XJ	6"	6.68"	12.0"	21.5"	28.5"	7.0"	8.0
<input type="checkbox"/>	C-DF-08-XJ	8"	8.65"	12.0"	21.5"	28.5"	7.0"	10.0
<input type="checkbox"/>	C-DF-10-XJ	10"	10.75"	12.0"	21.5"	28.5"	7.0"	12.0
<input type="checkbox"/>	C-DF-12-XJ	12"	12.75"	15.0"	21.5"	31.5"	7.0"	15.0
<input type="checkbox"/>	C-DF-14-XJ	14"	14.40"	15.0"	21.5"	31.5"	7.0"	21.0
<input type="checkbox"/>	C-DF-16-XJ	16"	16.40"	15.0"	21.5"	31.5"	7.0"	27.0
<input type="checkbox"/>	C-DF-18-XJ	18"	18.40"	17.0"	21.5"	33.5"	7.0"	35.0
<input type="checkbox"/>	C-DF-20-XJ	20"	20.60"	17.0"	21.5"	33.5"	7.0"	48.0
<input type="checkbox"/>	C-DF-24-XJ	24"	24.60"	17.0"	21.5"	33.5"	7.0"	60.0

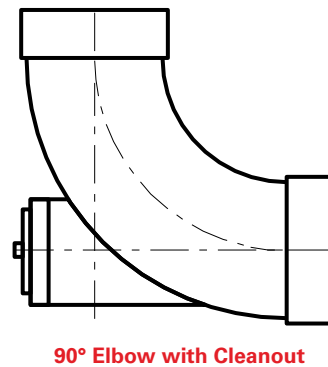
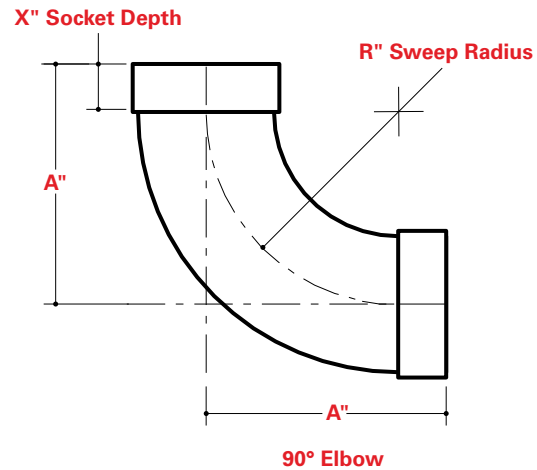
* Add suffix "-F" for fittings to be supplied with bonded fiberglass coupling.



CHAMPION BRIDGE DRAIN™ 90° ELBOWS

Champion Bridge Drain 90° elbows are vacuum infusion molded, smooth radius elbows. They are available with or without a cleanout.

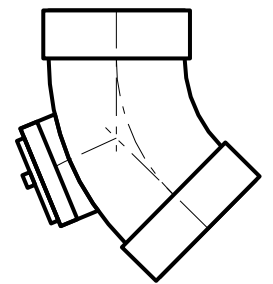
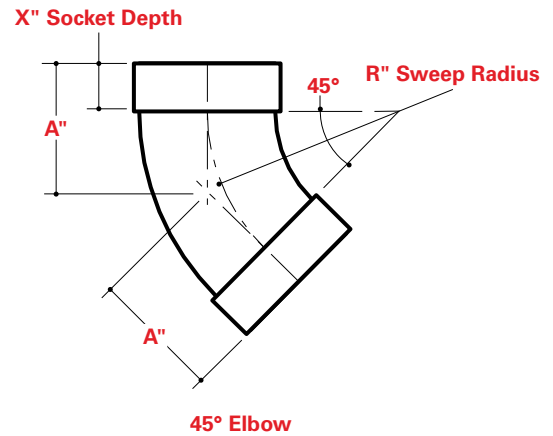
	ITEM NO	PART NUMBER W/ CLEANOUT	NOMINAL SIZE	A DIM (IN)	X DIM (IN)	R DIM (IN)	WEIGHT (LBS)	WEIGHT W/ CLEANOUT (LBS)
<input type="checkbox"/>	C-DF-04-90-EL	C-DF-04-90-EL-C	4"	10.0"	4.0"	6.0"	2.3	4.5
<input type="checkbox"/>	C-DF-06-90-EL	C-DF-06-90-EL-C	6"	13.0"	4.0"	9.0"	3.4	6.7
<input type="checkbox"/>	C-DF-08-90-EL	C-DF-08-90-EL-C	8"	16.0"	4.0"	12.0"	5.5	10.6
<input type="checkbox"/>	C-DF-10-90-EL	C-DF-10-90-EL-C	10"	19.0"	4.0"	15.0"	8.1	13.2
<input type="checkbox"/>	C-DF-12-90-EL	C-DF-12-90-EL-C	12"	23.0"	5.0"	18.0"	9.7	14.8
<input type="checkbox"/>	C-DF-14-90-EL	C-DF-14-90-EL-C	14"	26.0"	5.0"	21.0"	19.0	24.1
<input type="checkbox"/>	C-DF-16-90-EL	C-DF-16-90-EL-C	16"	29.0"	5.0"	24.0"	23.2	28.3
<input type="checkbox"/>	C-DF-18-90-EL	C-DF-18-90-EL-C	18"	32.0"	5.0"	27.0"	39.8	44.9
<input type="checkbox"/>	C-DF-20-90-EL	C-DF-20-90-EL-C	20"	35.0"	5.0"	30.0"	47.4	52.5
<input type="checkbox"/>	C-DF-24-90-EL	C-DF-24-90-EL-C	24"	41.0"	5.0"	36.0"	56.9	62.0



CHAMPION BRIDGE DRAIN™ 45° ELBOWS

Champion Bridge Drain 45° elbows are vacuum infusion molded, smooth radius elbows. They are available with or without a cleanout.

	ITEM NO	PART NUMBER W/ CLEANOUT	NOMINAL SIZE	A DIM (IN)	X DIM (IN)	R DIM (IN)	WEIGHT (LBS)	WEIGHT W/ CLEANOUT (LBS)
<input type="checkbox"/>	C-DF-04-45-EL	C-DF-04-45-EL-C	4"	6.49"	4.0"	6.0"	2.0	3.8
<input type="checkbox"/>	C-DF-06-45-EL	C-DF-06-45-EL-C	6"	7.73"	4.0"	9.0"	2.3	5.6
<input type="checkbox"/>	C-DF-08-45-EL	C-DF-08-45-EL-C	8"	8.97"	4.0"	12.0"	3.4	8.5
<input type="checkbox"/>	C-DF-10-45-EL	C-DF-10-45-EL-C	10"	10.21"	4.0"	15.0"	4.9	10.0
<input type="checkbox"/>	C-DF-12-45-EL	C-DF-12-45-EL-C	12"	12.46"	5.0"	18.0"	8.8	13.9
<input type="checkbox"/>	C-DF-14-45-EL	C-DF-14-45-EL-C	14"	13.70"	5.0"	21.0"	12.7	17.8
<input type="checkbox"/>	C-DF-16-45-EL	C-DF-16-45-EL-C	16"	14.94"	5.0"	24.0"	15.0	20.1
<input type="checkbox"/>	C-DF-18-45-EL	C-DF-18-45-EL-C	18"	16.18"	5.0"	27.0"	26.4	31.5
<input type="checkbox"/>	C-DF-20-45-EL	C-DF-20-45-EL-C	20"	17.43"	5.0"	30.0"	30.9	36.0
<input type="checkbox"/>	C-DF-24-45-EL	C-DF-24-45-EL-C	24"	19.91"	5.0"	36.0"	37.1	42.2

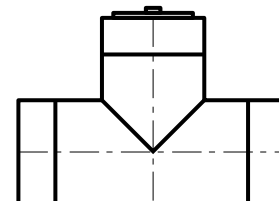
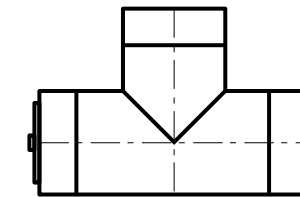
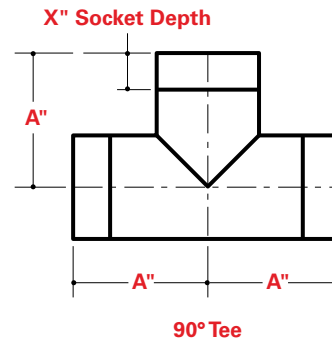


CHAMPION BRIDGE DRAIN™ 90° TEES

Champion Bridge Drain tees are fabricated from straight lengths and available with a cleanout located in one of three different positions.

	ITEM NO	PART NUMBER W/ CLEANOUT #2	PART NUMBER W/ CLEANOUT #3	NOMINAL SIZE	A DIM (IN)	X DIM (IN)	WEIGHT (LBS)	WEIGHT W/ CLEANOUT (LBS)
<input type="checkbox"/>	C-DF-04-90T	C-DF-04-90T-C2	C-DF-04-90T-C3	4"	9.0"	4.0"	3.5	4.5
<input type="checkbox"/>	C-DF-06-90T	C-DF-06-90T-C2	C-DF-06-90T-C3	6"	12.0"	4.0"	6.0	7.5
<input type="checkbox"/>	C-DF-08-90T	C-DF-08-90T-C2	C-DF-08-90T-C3	8"	15.0"	4.0"	10.4	12.6
<input type="checkbox"/>	C-DF-10-90T	C-DF-10-90T-C2	C-DF-10-90T-C3	10"	18.0"	4.0"	19.0	22.0
<input type="checkbox"/>	C-DF-12-90T	C-DF-12-90T-C2	C-DF-12-90T-C3	12"	21.0"	4.0"	26.0	29.6
<input type="checkbox"/>	C-DF-14-90T	C-DF-14-90T-C2	C-DF-14-90T-C3	14"	25.0"	4.0"	43.0	48.0
<input type="checkbox"/>	C-DF-16-90T	C-DF-16-90T-C2	C-DF-16-90T-C3	16"	28.0"	4.0"	55.0	62.0
<input type="checkbox"/>	C-DF-18-90T	C-DF-18-90T-C2	C-DF-18-90T-C3	18"	32.0"	5.0"	71.0	81.0
<input type="checkbox"/>	C-DF-20-90T	C-DF-20-90T-C2	C-DF-20-90T-C3	20"	35.0"	5.0"	101.0	113.0
<input type="checkbox"/>	C-DF-24-90T	C-DF-24-90T-C2	C-DF-24-90T-C3	24"	41.0"	5.0"	155.0	171.0

* Add suffix "-F" for fittings to be supplied with bonded fiberglass coupling.



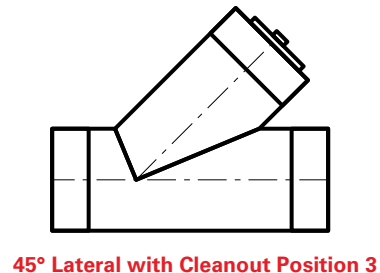
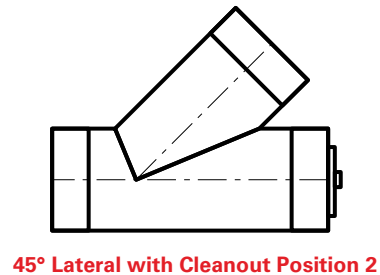
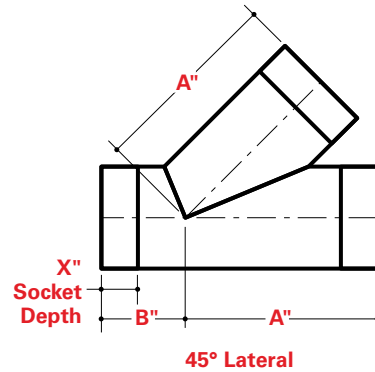
CHAMPION BRIDGE DRAIN™ 45° LATERAL

Champion Bridge Drain 45° laterals have a 6" standard cleanout except where noted below:

- 3" cleanout on 4" diameter
- 4" cleanout on 6" diameter

	ITEM NO	PART NUMBER W/ CLEANOUT #2	PART NUMBER W/ CLEANOUT #3	NOMINAL SIZE	X DIM (IN)	A DIM (IN)	B DIM (IN)	WEIGHT (LBS)	WEIGHT W/ CLEANOUT (LBS)
<input type="checkbox"/>	C-DF-04-45-L	C-DF-04-45-L-C2	C-DF-04-45-L-C3	4"	2.0"	9.0"	4.0"	3.0	4.0
<input type="checkbox"/>	C-DF-06-45-L	C-DF-06-45-L-C2	C-DF-06-45-L-C3	6"	3.0"	12.0"	6.0"	6.0	7.5
<input type="checkbox"/>	C-DF-08-45-L	C-DF-08-45-L-C2	C-DF-08-45-L-C3	8"	3.0"	16.0"	7.0"	9.5	11.7
<input type="checkbox"/>	C-DF-10-45-L	C-DF-10-45-L-C2	C-DF-10-45-L-C3	10"	3.0"	19.0"	9.0"	18.0	22.0
<input type="checkbox"/>	C-DF-12-45-L	C-DF-12-45-L-C2	C-DF-12-45-L-C3	12"	3.0"	24.0"	12.0"	27.0	31.0
<input type="checkbox"/>	C-DF-14-45-L	C-DF-14-45-L-C2	C-DF-14-45-L-C3	14"	4.0"	32.0"	16.0"	48.0	54.0
<input type="checkbox"/>	C-DF-16-45-L	C-DF-16-45-L-C2	C-DF-16-45-L-C3	16"	4.0"	36.0"	18.0"	63.0	70.0
<input type="checkbox"/>	C-DF-18-45-L	C-DF-18-45-L-C2	C-DF-18-45-L-C3	18"	5.0"	36.0"	18.0"	71.0	81.0
<input type="checkbox"/>	C-DF-20-45-L	C-DF-20-45-L-C2	C-DF-20-45-L-C3	20"	5.0"	38.0"	18.0"	95.0	108.0
<input type="checkbox"/>	C-DF-24-45-L	C-DF-24-45-L-C2	C-DF-24-45-L-C3	24"	5.0"	42.0"	18.0"	136.0	152.0

* Add suffix "-F" for fittings to be supplied with bonded fiberglass coupling.



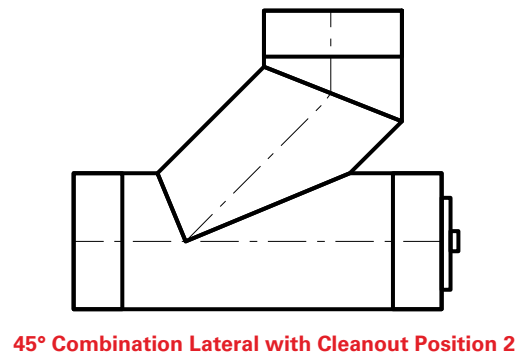
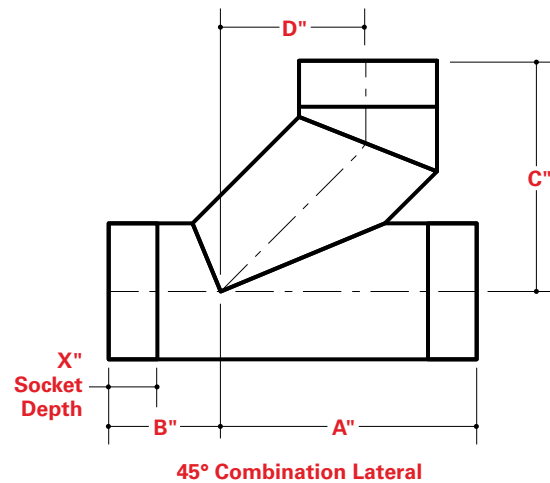
CHAMPION BRIDGE DRAIN™ 45° COMBINATION LATERAL

Champion Bridge Drain 45° combination laterals have a 6" standard cleanout except where noted below:

- 3" cleanout on 4" diameter
- 4" cleanout on 6" diameter

	ITEM NO	PART NUMBER W/ CLEANOUT #2	NOMINAL SIZE	X DIM (IN)	A DIM (IN)	B DIM (IN)	C DIM (IN)	D DIM (IN)	WEIGHT (LBS)	WEIGHT W/ CLEANOUT
<input type="checkbox"/>	C-DF-04-45-CL	C-DF-04-45-CL-C2	4"	2.0"	9.0"	4.0"	9.0"	5.0"	6.0	7.0
<input type="checkbox"/>	C-DF-06-45-CL	C-DF-06-45-CL-C2	6"	3.0"	12.0"	6.0"	11.0"	6.5"	7.0	8.5
<input type="checkbox"/>	C-DF-08-45-CL	C-DF-08-45-CL-C2	8"	3.0"	16.0"	7.0"	15.0"	9.5"	11.0	13.5
<input type="checkbox"/>	C-DF-10-45-CL	C-DF-10-45-CL-C2	10"	3.0"	19.0"	9.0"	17.0"	11.5"	16.0	19.1
<input type="checkbox"/>	C-DF-12-45-CL	C-DF-12-45-CL-C2	12"	3.0"	24.0"	12.0"	21.5"	15.0"	34.0	37.6
<input type="checkbox"/>	C-DF-14-45-CL	C-DF-14-45-CL-C2	14"	4.0"	32.0"	16.0"	27.5"	19.5"	46.0	51.7
<input type="checkbox"/>	C-DF-16-45-CL	C-DF-16-45-CL-C2	16"	4.0"	36.0"	18.0"	31.5"	23.0"	60.0	66.5
<input type="checkbox"/>	C-DF-18-45-CL	C-DF-18-45-CL-C2	18"	5.0"	36.0"	18.0"	32.5"	23.5"	72.0	81.4
<input type="checkbox"/>	C-DF-20-45-CL	C-DF-20-45-CL-C2	20"	5.0"	38.0"	18.0"	34.5"	24.0"	90.0	102.1
<input type="checkbox"/>	C-DF-24-45-CL	C-DF-24-45-CL-C2	24"	5.0"	42.0"	18.0"	38.5"	26.5"	130.0	145.7

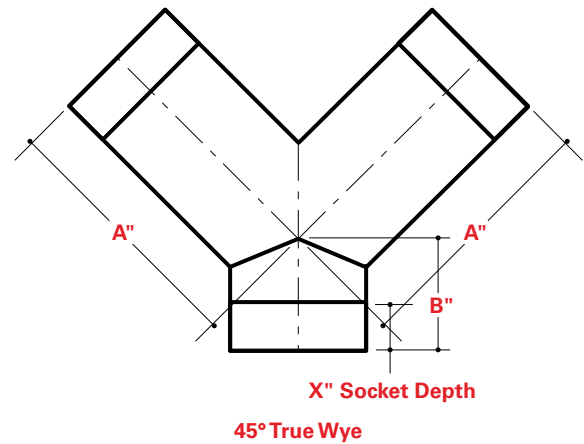
* Add suffix "-F" for fittings to be supplied with bonded fiberglass coupling.



CHAMPION BRIDGE DRAIN™ 45° WYE FITTING

	ITEM NO	NOMINAL SIZE	A DIM (IN)	B DIM (IN)	X DIM (IN)	WEIGHT (LBS)
<input type="checkbox"/>	C-DF-04-45-Y	4"	9.0"	4.0"	6.0"	3.0
<input type="checkbox"/>	C-DF-06-45-Y	6"	12.0"	6.0"	6.0"	7.0
<input type="checkbox"/>	C-DF-08-45-Y	8"	16.0"	7.0"	6.0"	9.0
<input type="checkbox"/>	C-DF-10-45-Y	10"	18.0"	9.0"	6.0"	17.0
<input type="checkbox"/>	C-DF-12-45-Y	12"	19.0"	12.0"	6.0"	23.0
<input type="checkbox"/>	C-DF-14-45-Y	14"	24.0"	16.0"	6.0"	36.0
<input type="checkbox"/>	C-DF-16-45-Y	16"	32.0"	18.0"	6.0"	55.0
<input type="checkbox"/>	C-DF-18-45-Y	18"	36.0"	18.0"	6.0"	66.0
<input type="checkbox"/>	C-DF-20-45-Y	20"	36.0"	18.0"	6.0"	86.0
<input type="checkbox"/>	C-DF-24-45-Y	24"	42.0"	18.0"	6.0"	128.0

* Add suffix "-F" for fittings to be supplied with bonded fiberglass coupling.



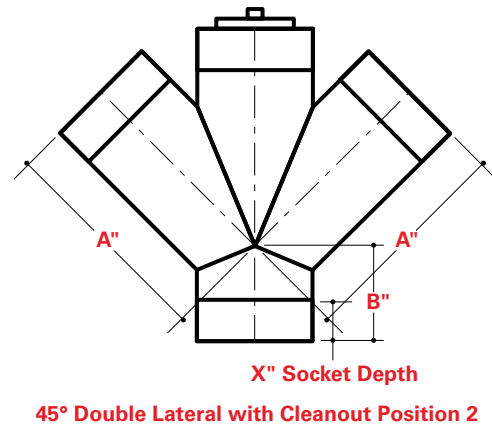
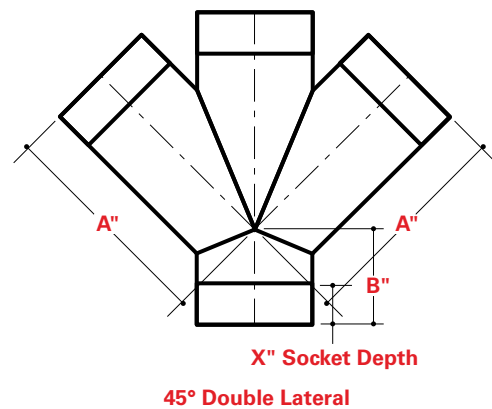
CHAMPION BRIDGE DRAIN™ 45° DOUBLE LATERAL FITTING

Champion Bridge Drain 45° double laterals have a 6" standard cleanout except where noted below:

- 3" cleanout on 4" diameter
- 4" cleanout on 6" diameter

	ITEM NO	PART NUMBER W/ CLEANOUT	NOMINAL SIZE	X DIM (IN)	A DIM (IN)	B DIM (IN)	WEIGHT (LBS)	WEIGHT W/ CLEANOUT (LBS)
<input type="checkbox"/>	C-DF-04-45-DL	C-DF-04-45-DL-C2	4"	2.0"	9.0"	4.0"	4.0	5.0
<input type="checkbox"/>	C-DF-06-45-DL	C-DF-06-45-DL-C2	6"	3.0"	12.0"	6.0"	7.0	8.5
<input type="checkbox"/>	C-DF-08-45-DL	C-DF-08-45-DL-C2	8"	3.0"	16.0"	7.0"	12.0	14.5
<input type="checkbox"/>	C-DF-10-45-DL	C-DF-10-45-DL-C2	10"	3.0"	19.0"	9.0"	23.0	26.5
<input type="checkbox"/>	C-DF-12-45-DL	C-DF-12-45-DL-C2	12"	3.0"	24.0"	12.0"	35.0	39.0
<input type="checkbox"/>	C-DF-14-45-DL	C-DF-14-45-DL-C2	14"	4.0"	32.0"	16.0"	63.0	69.0
<input type="checkbox"/>	C-DF-16-45-DL	C-DF-16-45-DL-C2	16"	4.0"	36.0"	18.0"	82.0	89.0
<input type="checkbox"/>	C-DF-18-45-DL	C-DF-18-45-DL-C2	18"	5.0"	36.0"	18.0"	93.0	103.0
<input type="checkbox"/>	C-DF-20-45-DL	C-DF-20-45-DL-C2	20"	5.0"	38.0"	18.0"	127.0	139.0
<input type="checkbox"/>	C-DF-24-45-DL	C-DF-24-45-DL-C2	24"	5.0"	42.0"	18.0"	181.0	196.0

* Add suffix "-F" for fittings to be supplied with bonded fiberglass coupling.



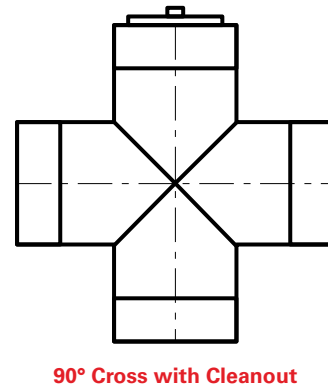
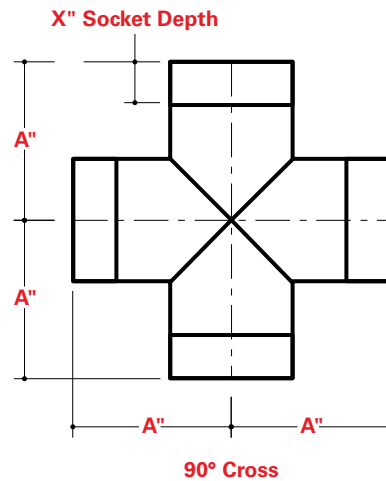
CHAMPION BRIDGE DRAIN™ 90° CROSS

The Champion Bridge Drain 90° cross has a 6" standard cleanout except where noted below:

- 3" cleanout on 4" diameter
- 4" cleanout on 6" diameter

	ITEM NO	PART NUMBER W/ CLEANOUT	NOMINAL SIZE	X DIM (IN)	A DIM (IN)	WEIGHT (LBS)	WEIGHT W/ CLEANOUT (LBS)
<input type="checkbox"/>	C-DF-04-90X	C-DF-04-90X-C	4"	2.0"	8.0"	9.0	11.0
<input type="checkbox"/>	C-DF-06-90X	C-DF-06-90X-C	6"	3.0"	8.0"	13.0	17.0
<input type="checkbox"/>	C-DF-08-90X	C-DF-08-90X-C	8"	3.0"	11.0"	19.0	23.0
<input type="checkbox"/>	C-DF-10-90X	C-DF-10-90X-C	10"	3.0"	13.0"	27.0	33.0
<input type="checkbox"/>	C-DF-12-90X	C-DF-12-90X-C	12"	3.0"	15.0"	38.5	44.0
<input type="checkbox"/>	C-DF-14-90X	C-DF-14-90X-C	14"	4.0"	17.0"	50.0	55.0
<input type="checkbox"/>	C-DF-16-90X	C-DF-16-90X-C	16"	4.0"	18.0"	80.0	85.0
<input type="checkbox"/>	C-DF-18-90X	C-DF-18-90X-C	18"	5.0"	20.0"	110.0	115.0
<input type="checkbox"/>	C-DF-20-90X	C-DF-20-90X-C	20"	5.0"	21.0"	129.0	134.0
<input type="checkbox"/>	C-DF-24-90X	C-DF-24-90X-C	24"	5.0"	23.0"	155.0	160.0

* Add suffix "-F" for fittings to be supplied with bonded fiberglass coupling.

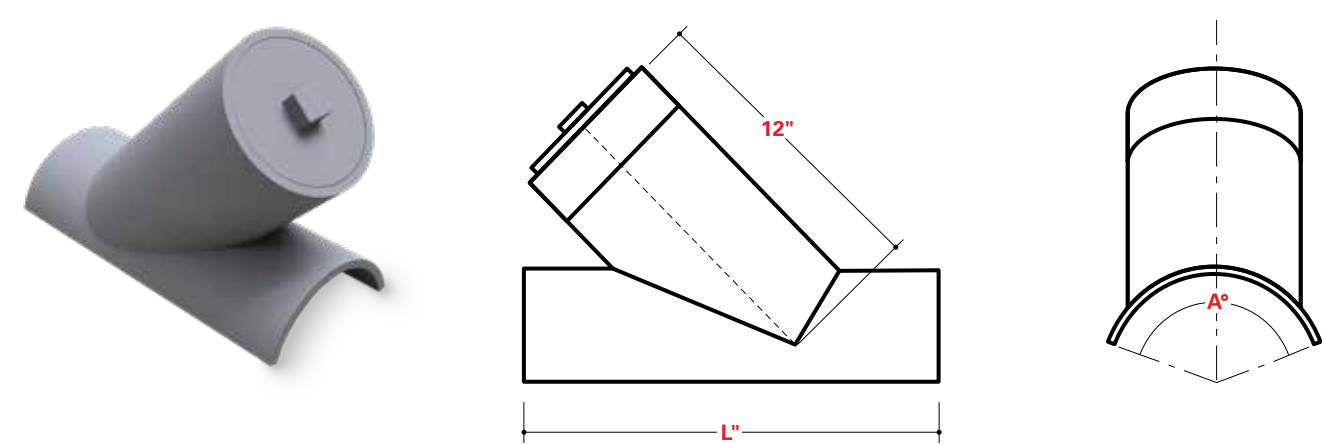


CHAMPION BRIDGE DRAIN™ 45° CLEANOUT SADDLE

The Champion Bridge Drain 45° cleanout saddle has a 6" standard cleanout except where noted below:

- 3" cleanout on 4" diameter
- 4" cleanout on 6" diameter

	PART NUMBER	NOMINAL SIZE	L DIM (IN)	A DIM (DEG)	WEIGHT (LBS)
<input type="checkbox"/>	C-DF-06-CS-45	6"	10.0"	180°	8.0
<input type="checkbox"/>	C-DF-08-CS-45	8"	14.0"	180°	10.0
<input type="checkbox"/>	C-DF-10-CS-45	10"	14.0"	180°	10.0
<input type="checkbox"/>	C-DF-12-CS-45	12"	14.0"	180°	10.0
<input type="checkbox"/>	C-DF-14-CS-45	14"	14.0"	120°	10.0
<input type="checkbox"/>	C-DF-16-CS-45	16"	14.0"	120°	10.0
<input type="checkbox"/>	C-DF-18-CS-45	18"	14.0"	90°	10.0
<input type="checkbox"/>	C-DF-20-CS-45	20"	14.0"	90°	10.0
<input type="checkbox"/>	C-DF-24-CS-45	24"	14.0"	90°	10.0

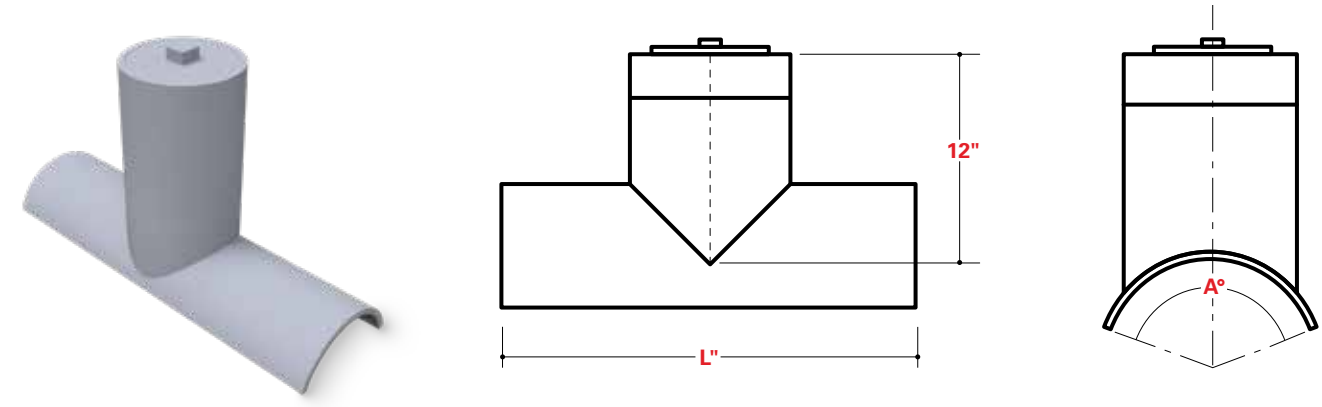


CHAMPION BRIDGE DRAIN™ 90° CLEANOUT SADDLE

The Champion Bridge Drain 90° cleanout saddle has a 6" standard cleanout except where noted below:

- 3" cleanout on 4" diameter
- 4" cleanout on 6" diameter

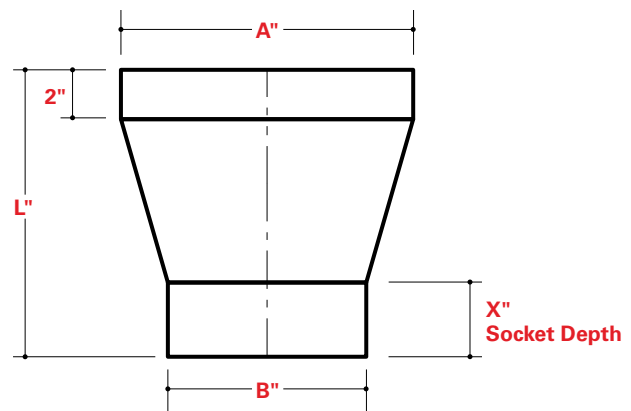
	PART NUMBER	NOMINAL SIZE	L DIM (IN)	A DIM (DEG)	WEIGHT (LBS)
<input type="checkbox"/>	C-DF-06-CS-90	6"	10.0"	180°	8.0
<input type="checkbox"/>	C-DF-08-CS-90	8"	14.0"	180°	10.0
<input type="checkbox"/>	C-DF-10-CS-90	10"	14.0"	180°	10.0
<input type="checkbox"/>	C-DF-12-CS-90	12"	14.0"	180°	10.0
<input type="checkbox"/>	C-DF-14-CS-90	14"	14.0"	120°	10.0
<input type="checkbox"/>	C-DF-16-CS-90	16"	14.0"	120°	10.0
<input type="checkbox"/>	C-DF-18-CS-90	18"	14.0"	90°	10.0
<input type="checkbox"/>	C-DF-20-CS-90	20"	14.0"	90°	10.0
<input type="checkbox"/>	C-DF-24-CS-90	24"	14.0"	90°	10.0



CHAMPION BRIDGE DRAIN™ REDUCERS

	PART NUMBER	REDUCER SIZE	X DIM (IN)	A DIM (IN)	B DIM (IN)	L DIM (IN)	WEIGHT (LBS)
<input type="checkbox"/>	C-DF-06-04-CR	6" x 4"	3.0"	6.68"	4.57"	12.0"	3.0
<input type="checkbox"/>	C-DF-08-06-CR	8" x 6"	3.0"	8.65"	6.68"	12.0"	4.0
<input type="checkbox"/>	C-DF-10-08-CR	10" x 8"	3.0"	10.75"	8.65"	12.0"	5.0
<input type="checkbox"/>	C-DF-12-10-CR	12" x 10"	3.0"	12.75"	10.75"	12.0"	7.0
<input type="checkbox"/>	C-DF-14-12-CR	14" x 12"	4.0"	14.40"	12.75"	13.0"	8.0
<input type="checkbox"/>	C-DF-16-18-CR	16" x 14"	4.0"	16.40"	14.40"	13.0"	9.0
<input type="checkbox"/>	C-DF-18-16-CR	18" x 16"	5.0"	18.40"	16.40"	14.0"	10.0
<input type="checkbox"/>	C-DF-20-18-CR	20" x 18"	5.0"	20.60"	18.40"	14.0"	13.0
<input type="checkbox"/>	C-DF-24-20-CR	24" x 20"	5.0"	24.60"	20.60"	20.0"	20.0

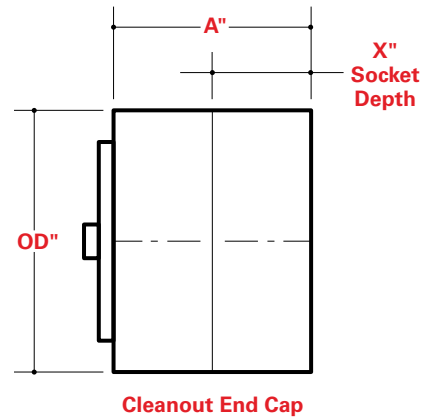
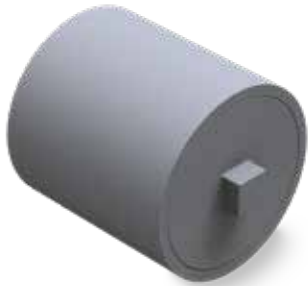
* Add suffix "-F" for fittings to be supplied with bonded fiberglass coupling.



CHAMPION BRIDGE DRAIN™ CLEANOUT END CAPS

Champion Bridge Drain cleanout end caps insert over the top of the bridge drain straight lengths.

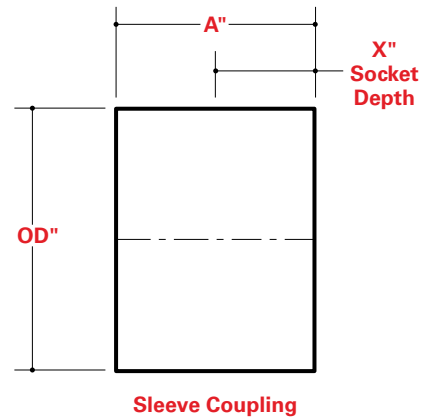
	PART NUMBER	NOMINAL SIZE	X DIM (IN)	A DIM (IN)	OD (IN)	WEIGHT (LBS)
<input type="checkbox"/>	C-DF-04-COE	4"	2.0"	7.0"	4.61"	1.0
<input type="checkbox"/>	C-DF-06-COE	6"	3.0"	7.0"	6.72"	1.5
<input type="checkbox"/>	C-DF-08-COE	8"	3.0"	7.0"	8.82"	2.2
<input type="checkbox"/>	C-DF-10-COE	10"	3.0"	7.0"	10.82"	3.1
<input type="checkbox"/>	C-DF-12-COE	12"	3.0"	7.0"	12.82"	3.6
<input type="checkbox"/>	C-DF-14-COE	14"	4.0"	9.0"	14.82"	5.7
<input type="checkbox"/>	C-DF-16-COE	16"	4.0"	9.0"	16.82"	6.5
<input type="checkbox"/>	C-DF-18-COE	18"	5.0"	11.0"	18.82"	9.4
<input type="checkbox"/>	C-DF-20-COE	20"	5.0"	11.0"	20.90"	12.1
<input type="checkbox"/>	C-DF-24-COE	24"	5.0"	11.0"	24.90"	15.7



CHAMPION BRIDGE DRAIN™ SLEEVE COUPLINGS

Champion Bridge Drain sleeve couplings are required to connect bridge drain fittings to straight bridge drain lengths or may also be required to connect straight lengths when the belled end has been removed by a field cut or modification.

	PART NUMBER	NOMINAL SIZE	X DIM (IN)	A DIM (IN)	OD (IN)	WEIGHT (LBS)
<input type="checkbox"/>	C-DF-04-CPL	4"	2.0"	7.0"	4.61"	1.0
<input type="checkbox"/>	C-DF-06-CPL	6"	3.0"	7.0"	6.72"	1.5
<input type="checkbox"/>	C-DF-08-CPL	8"	3.0"	7.0"	8.82"	2.0
<input type="checkbox"/>	C-DF-10-CPL	10"	3.0"	7.0"	10.82"	2.5
<input type="checkbox"/>	C-DF-12-CPL	12"	3.0"	7.0"	12.82"	3.0
<input type="checkbox"/>	C-DF-14-CPL	14"	4.0"	9.0"	14.82"	4.0
<input type="checkbox"/>	C-DF-16-CPL	16"	4.0"	9.0"	16.82"	5.0
<input type="checkbox"/>	C-DF-18-CPL	18"	5.0"	11.0"	18.82"	8.0
<input type="checkbox"/>	C-DF-20-CPL	20"	5.0"	11.0"	20.90"	11.0
<input type="checkbox"/>	C-DF-24-CPL	24"	5.0"	11.0"	24.90"	15.0



Bridge Drain Adhesives

CHAMPION MIX® (EPOXY ADHESIVE)

The CHAMPION MIX system is a two-part adhesive (1-to-1 mix ratio), epoxy resin system, designed to permanently bond fittings and joints of fiberglass reinforced epoxy bridge drain. It is also designed for use with pultruded polyester and vinyl ester components. Each cartridge system contains resin, hardener and one plastic mixer tip. An adhesive gun is required for applying the adhesive (ordered separately). Under normal conditions, it takes approximately 45 minutes for the CM-2040 and CM-2070 adhesives to harden at their rated temperatures. If a faster setting adhesive is desired, there are Champion Mix adhesives available that gel much faster. The "Fast Gel" adhesives can be specified by adding the suffixes, "-FG" or "-SFG" to the item numbers. Because the "Fast Gel" and "Super-Fast Gel" adhesives set up quicker, additional mixing tubes may be required. The epoxy adhesive is also available in three convenient dispensing tube sizes: 50 ML, 80 ML and 300 ML.

	ITEM NO	SIZE	TEMPERATURE RANGE	APPROXIMATE CURING TIME
<input type="checkbox"/>	CM-570	50 ML	70°F (21°C) and above	30–45 minutes
<input type="checkbox"/>	CM-570-FG	50 ML	70°F (21°C) and above	20–30 minutes
<input type="checkbox"/>	CM-570-SFG	50 ML	70°F (21°C) and above	3–7 minutes
<input type="checkbox"/>	CM-540	50 ML	40°–70°F (4°C–21°C)	30–45 minutes
<input type="checkbox"/>	CM-540-FG	50 ML	40°–70°F (4°C–21°C)	20–30 minutes
<input type="checkbox"/>	CM-540-SFG	50 ML	40°–70°F (4°C–21°C)	3–7 minutes
<input type="checkbox"/>	CM-1070	80 ML	70°F (21°C) and above	30–45 minutes
<input type="checkbox"/>	CM-1070-FG	80 ML	70°F (21°C) and above	20–30 minutes
<input type="checkbox"/>	CM-1070-SFG	80 ML	70°F (21°C) and above	3–7 minutes
<input type="checkbox"/>	CM-1040	80 ML	40°–70°F (4°C–21°C)	30–45 minutes
<input type="checkbox"/>	CM-1040-FG	80 ML	40°–70°F (4°C–21°C)	20–30 minutes
<input type="checkbox"/>	CM-1040-SFG	80 ML	40°–70°F (4°C–21°C)	3–7 minutes
<input type="checkbox"/>	CM-2070	300 ML	70°F (21°C) and above	30–45 minutes
<input type="checkbox"/>	CM-2070-FG	300 ML	70°F (21°C) and above	20–30 minutes
<input type="checkbox"/>	CM-2070-SFG	300 ML	70°F (21°C) and above	3–7 minutes
<input type="checkbox"/>	CM-2040	300 ML	40°–70°F (4°C–21°C)	30–45 minutes
<input type="checkbox"/>	CM-2040-FG	300 ML	40°–70°F (4°C–21°C)	20–30 minutes
<input type="checkbox"/>	CM-2040-SFG	300 ML	40°–70°F (4°C–21°C)	3–7 minutes



50 ML Tubes



80 ML Tubes



300 ML Tubes

ADHESIVE GUNS

Champion Fiberglass adhesive guns are available for all three adhesive tube sizes: 50 ML, 80 ML and 300 ML.

	ITEM NO	ADHESIVE TUBE SIZE
<input type="checkbox"/>	CMAG-5	50 ML
<input type="checkbox"/>	CMAG-8	80 ML
<input type="checkbox"/>	CMAG-20	300 ML



CMAG-5



CMAG-8



CMAG-20

BATTERY-POWERED ADHESIVE GUN

Champion Fiberglass 18V Li-Io battery-powered adhesive guns are only available for the 300 ML adhesive tube sizes. This powerful 18V cordless drive system is supplied with a sturdy 300 ML dispensing cartridge carriage.

Other features include:

- Flow control – instant drive disengagement when trigger is released
- Lightweight ergonomic design – reduces wrist and arm strain
- Rapid battery charging – 30 minutes
- Battery fuel gauge – indicates charging power battery level

All battery-powered adhesive guns are supplied fully assembled and supplied with one (1) 18V Li-Io battery and one (1) 18V charger.

	ITEM NO	ADHESIVE TUBE SIZE
<input type="checkbox"/>	CMAG-20-B	300 ML



CMAG-20-B

MIXING TIPS

Champion Fiberglass mixing tips are required for mixing together the two-part epoxy adhesive supplied in tubes. They are available for all three adhesive tube sizes: 50 ML, 80 ML and 300 ML.

	ITEM NO	ADHESIVE TUBE SIZE
<input type="checkbox"/>	CM-MT-5	50 ML
<input type="checkbox"/>	CM-MT-8	80 ML
<input type="checkbox"/>	CM-MT-20	300 ML



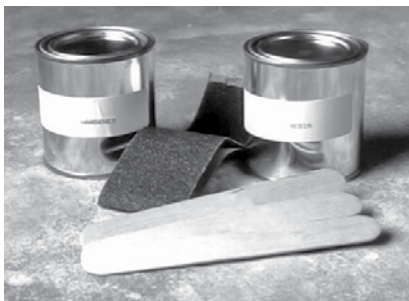
EPOXY ADHESIVE KIT

Champion Fiberglass Epoxy Adhesive Kit, contains two cans, one with base epoxy adhesive (black color) and the other with hardener (white color), stir sticks, sandpaper for abrading conduit surfaces and an instruction sheet. When properly mixed, the adhesive will be evenly grey. The cans are available in two sizes, 32 oz. and 128 oz.

The adhesive kit is offered for three different ambient curing temperatures:

- 70°F (21°C) ambient temperature
- 40°F (4°C) ambient temperature
- 20°F (-7°C) ambient temperature

	ITEM NO	CAN SIZE (OZ)	TEMPERATURE RANGE (°F)	APPROX CURING TIME (MIN)
<input type="checkbox"/>	CF-3220	32 oz	20°–40°F	30–45 minutes
<input type="checkbox"/>	CF-3240	32 oz	40°–70°F	30–45 minutes
<input type="checkbox"/>	CF-3240-FG	32 oz	40°–70°F	20–30 minutes
<input type="checkbox"/>	CF-3240-SFG	32 oz	40°–70°F	3–7 minutes
<input type="checkbox"/>	CF-3270	32 oz	70°F and above	30–45 minutes
<input type="checkbox"/>	CF-3270-FG	32 oz	70°F and above	20–30 minutes
<input type="checkbox"/>	CF-3270-SFG	32 oz	70°F and above	3–7 minutes
<input type="checkbox"/>	CF-12820	128 oz	20°–40°F	30–45 minutes
<input type="checkbox"/>	CF-12840	128 oz	40°–70°F	30–45 minutes
<input type="checkbox"/>	CF-12840-FG	128 oz	40°–70°F	20–30 minutes
<input type="checkbox"/>	CF-12840-SFG	128 oz	40°–70°F	3–7 minutes
<input type="checkbox"/>	CF-12870	128 oz	70°F and above	30–45 minutes
<input type="checkbox"/>	CF-12870-FG	128 oz	70°F and above	20–30 minutes
<input type="checkbox"/>	CF-12870-SFG	128 oz	70°F and above	3–7 minutes



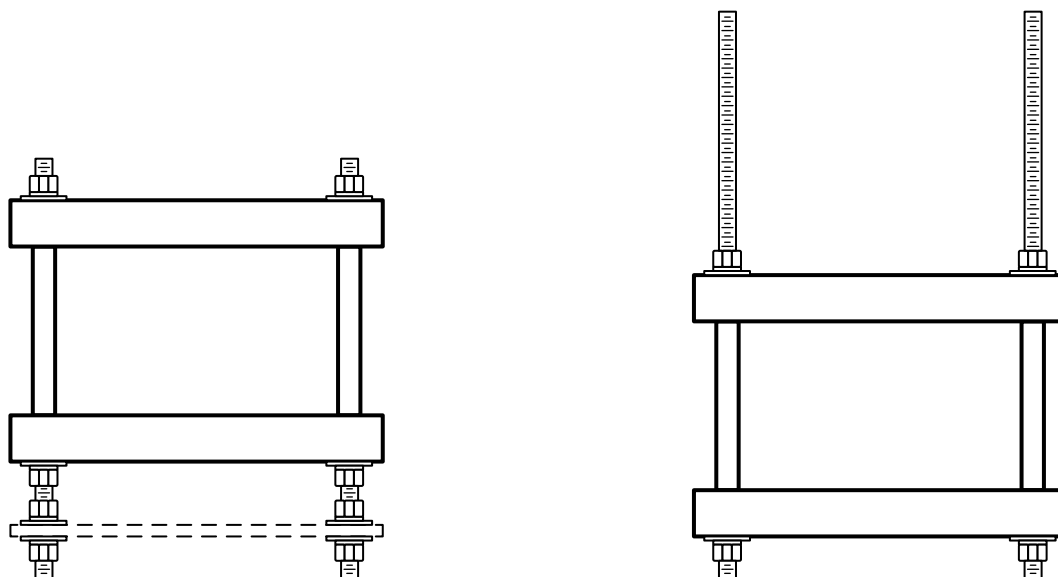
Adhesive curing time is dependent on the ambient temperature. As a guideline, the 70°F adhesive is cured at 75°F (29°C) in 30-45 minutes. Contact Champion Fiberglass for curing information at extreme temperatures (high or low). Champion Fiberglass adhesive can be used for bonding fiberglass and PVC together.

Estimated Amount of Adhesive Required per Joint Size

Estimated amounts only for one joint – to determine the amount of adhesive required for a project, multiply the number of ounces required by the number of joints by size – amounts may vary depending on amount of adhesive applied per application.

BRIDGE DRAIN SIZE	ADHESIVE OZ PER JOINT (ML)
4"	4 (118)
6"	6 (177)
8"	8 (236)
10"	10 (295)
12"	12 (354)
14"	14 (414)
16"	16 (473)
18"	18 (532)
20"	20 (591)
24"	24 (710)

Bridge Drain Hangers



Champion Fiberglass is the leading manufacturer of fiberglass bridge hangers. For over 28 years, our hangers have been recognized for their ability to make your installations easier and more cost-efficient. You'll find them on bridge and DOT applications all over the world and as every bridge application is unique, Champion Fiberglass will work with you to provide specialized designs if needed.

Features

All hangers are constructed from the following grey polyester fiberglass components; special colors are available upon request.

- 1/4" x 2" FRP square tube
- 1/4" x 3" FRP square tube
- 1/4" x 4" FRP square tube
- 1/4" x 2" x 4" rectangular tube
- 1/4" x 3-1/2" x 5-1/2" rectangular tube

Steel Bridge Drain Hanger Rods can be supplied in the following 3/4" diameter options.

- 3/4"-10 HDG
- 3/4"-10-304 stainless steel
- 3/4"-10-316 stainless steel

Domestic steel must be specified if required.

Installation

- Champion Fiberglass will provide all information and technical assistance required.
- Fiberglass hangers are recommended for RTRP Bridge Drain to prevent abrasion during expansion/contraction.
- Bridge Hangers can be installed and used with all bridge drain material types.
- Fiberglass Bridge Drain should not be supported directly on or in contact with steel hangers or components.

HANGER TYPES

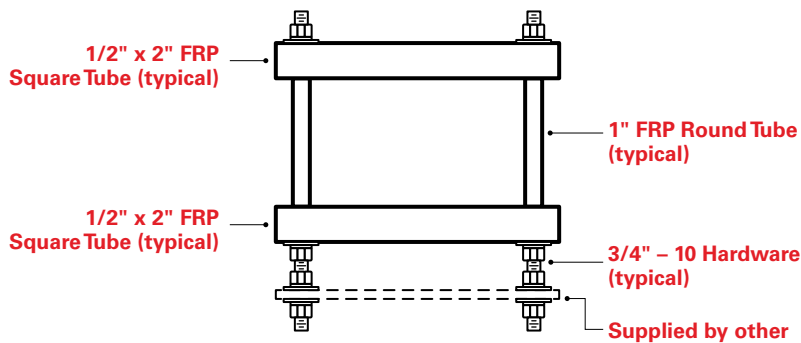
The Champion Fiberglass Bridge Hanger system consists of two hanger types, Base Mount or Intermediate Hangers.

Base Mount Hangers

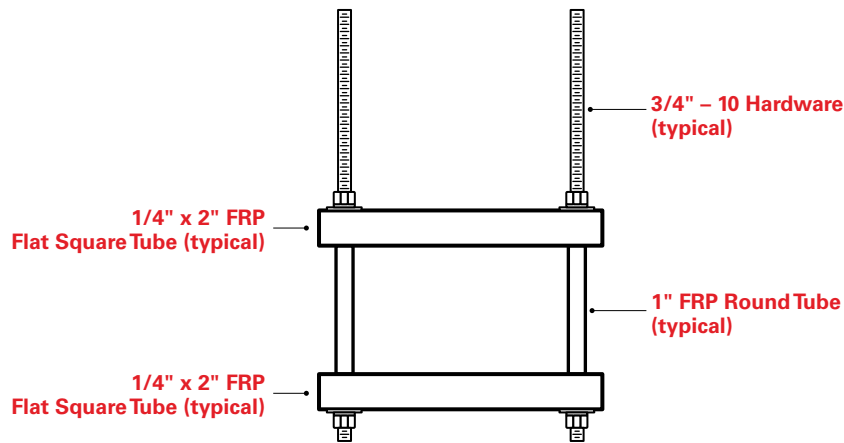
The Base Mount Hangers are constructed from the same components as the Intermediate Hangers, but are configured to be supported by the structure instead of hanging from the structure.

Intermediate Hangers

The Intermediate Hangers are the most widely used “under-bridge” type of conduit and bridge drain support hangers. The Intermediate Hanger consists of a trapeze hanging system comprised of fiberglass flat bar, (and/or) fiberglass square tube and steel threaded rods that are attached to the underside of the bridge. Fiberglass hangers are recommended for RTRP (Reinforced Thermosetting Resin Pipe) bridge drain to prevent abrasion of bridge drain during expansion/contraction.



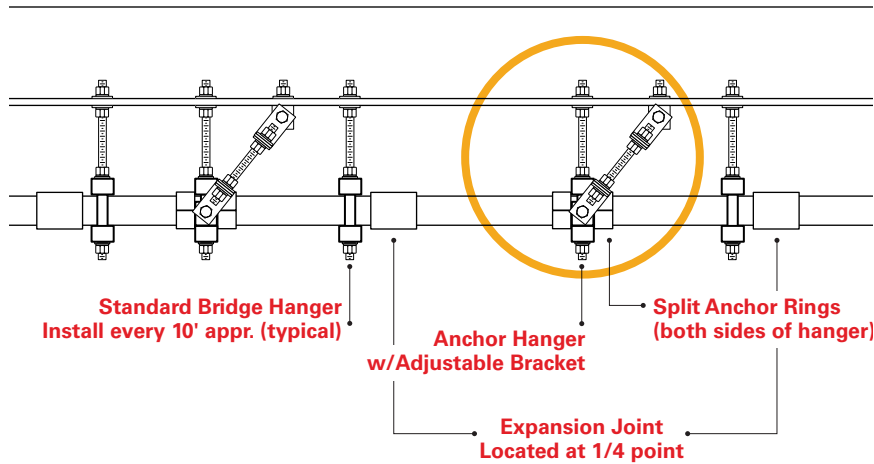
Base Mount Hanger
Square Tube Top and Bottom



Intermediate Hanger/
Square Tube Top and Bottom

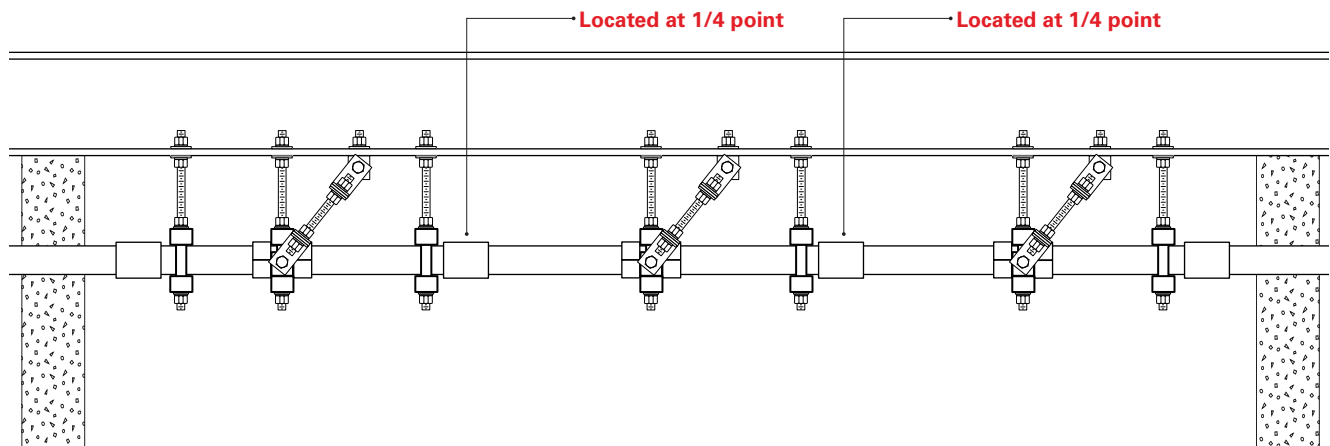
Anchor Hangers

The Anchor Hanger is the same construction as the Intermediate Hanger except that each hanger contains adjustable extending all-thread cross-members that are used to brace the hanger to the bridge structure. Anchor Hangers are recommended every 200 ft. and used with split ring anchors to lock the fiberglass bridge drain into place. Locking the bridge drain into place allows the bridge drain system expansion joints to function as designed.



Location of Supports

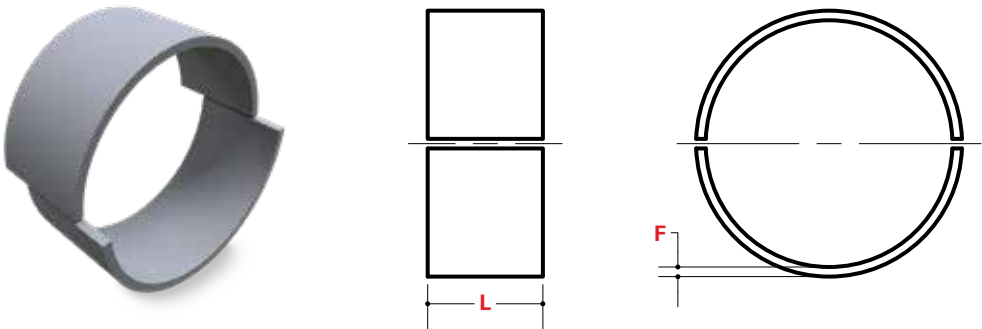
The actual location of the hanger supports should be as close as possible near the quarter point of the span. In a continuous span, the quarter point of the span has the least mechanical stress therefore it is the ideal location for all types of supports. The actual connection of two bridge drain sections is the worst area to install a support. In a continuous span such as bridge drain, this is the area of highest mechanical stress and will cause the most deflection.



Split Anchor Rings

Split anchor rings are always supplied in pairs and are used for above-ground installations in order to create fixed points. The split anchor rings are placed around the hanger closest to the mid-point between two expansion joints. One pair of split anchor rings is placed on each side of the hanger. The split anchor rings are bonded with epoxy adhesive to the outside of the conduit. The hanger where split anchor rings are used is called an anchor hanger and is normally braced.

	ITEM NO	NOMINAL SIZE	F DIM (IN)	L DIM (IN)	WEIGHT (LBS)
<input type="checkbox"/>	C-DF-04-SR	4"	.25"	3.0"	.5
<input type="checkbox"/>	C-DF-06-SR	6"	.25"	3.0"	.7
<input type="checkbox"/>	C-DF-08-SR	8"	.25"	3.0"	.8
<input type="checkbox"/>	C-DF-10-SR	10"	.25"	3.0"	1.0
<input type="checkbox"/>	C-DF-12-SR	12"	.25"	3.0"	1.3
<input type="checkbox"/>	C-DF-14-SR	14"	.25"	3.0"	1.7
<input type="checkbox"/>	C-DF-16-SR	16"	.25"	3.0"	1.9
<input type="checkbox"/>	C-DF-18-SR	18"	.25"	3.0"	2.2
<input type="checkbox"/>	C-DF-20-SR	20"	.25"	3.0"	2.8
<input type="checkbox"/>	C-DF-24-SR	24"	.25"	3.0"	3.7





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Champion Fiberglass is also a manufacturer of the following products:



Champion Duct®

Strong, durable Champion Duct conduit, fittings, duct bank and bridge hangers deliver a range of benefits including ease of installation, fire and corrosion resistance, impact resistance and more. Champion Duct is used in a variety of applications including transportation, data centers, wastewater treatment and chemical plants.



Champion Strut™

Composed of polyester or vinyl ester resins, competitively priced, corrosion-resistant Champion Strut® is a complete system of fiberglass components that includes strut (channel) and a wide variety of fittings, threaded rods, hardware and accessories.

