FIBERGLASS CONDUIT SYSTEM FOR

BELOW GROUND
applications

FRE COMPOSITES®

FIRST IN THE FIELD®

FRE Composites' plants produce North America's highest quality fiberglass conduit products, ready for shipment worldwide. These plants house up-to-date automated filament winding equipment, and contains plenty of warehousing capacity, both indoors and outdoors.

FRE COMPOSITES®

FIRST IN THE FIELD®

OUR VISION

At FRE Composites, we have the experience, having manufactured our first fiberglass products as far back as 1958. Today, the company has skilled and experienced workforce operating two (2) plants and exporting product to numerous countries worldwide.

Currently, FRE Composites is focused exclusively on the design, engineering and production of composite filament-wound fiberglass conduit products and accessories. However, in addition to core products serving electric, telecom, water and wastewater utilities, and transportation industries, FRE Composites has engineered and produced highly specialized products for use in space exploration made from carbon fibers and other exotic materials, such as rocket launch tubes and the main structure of the CANADARM robotic arm, which is used by NASA's Space Shuttle to manipulate payloads in space. The CANADARM was also used to assist in the construction of the International Space Station, and in 2005, a CANADARM system attached to the International Space Station successfully assisted in the first in-orbit repair of the Space Shuttle Discovery.

Our 100,000 sq.ft. plant in Canada and our 50,000 sq. ft. plant in the United States have the capacity to accommodate high production requirements while maintaining substantial flexibility to foster to our growing customer base needs. Although we are the only source of FRE® trademarked conduit, it's no secret that we are not the only suppliers of fiberglass conduit in North America. Considering that you have choices, why should you do business with us ?

EXPERIENCE
COMPETENCE
COMMITMENT

Quality

Our products are engineered to exacting standards, and are produced to consistent quality standards to provide superior life expectancy. Design performance and quality control always have been, and always will be, our number one priority.

Experience

Our long experience has taught us how to design and to build our products right: First in the Field®.

Production capacity

FRE Composites operates the largest production facility to produce fiberglass conduit in North America, which enables us to produce large volumes of product within tight delivery deadlines while being flexible to service ongoing requirements of numerous projects. We value distribution.

Distribution

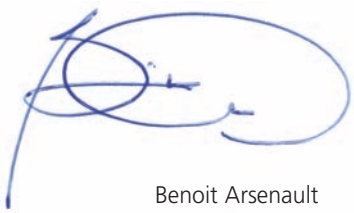
FRE Composites has always joined forces with distribution to promote its product lines. FRE® fiberglass conduit products are available in all popular sizes from stocking distributors from coast to coast in both Canada and the United States.

Service

We are organized to provide courteous and professional customer service in Chinese, English, French, Italian, Russian and Spanish. To better serve clients beyond continental North America, we are in the process of adding service capabilities in several additional languages.

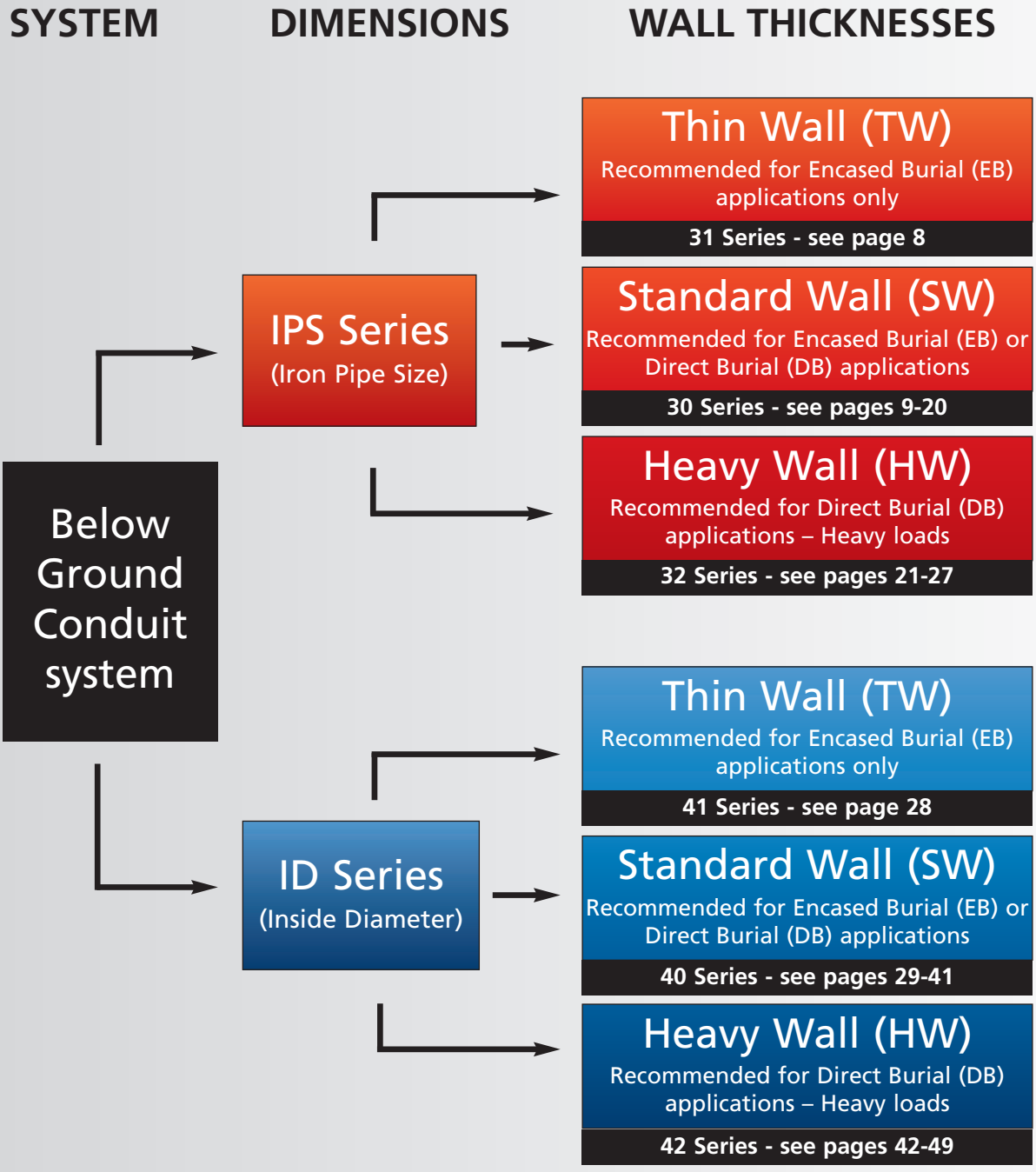
We are eager to serve you professionally and courteously, supplying you with high quality conduit systems in accordance with your requirements.

No job is too small or too big.



Benoit Arsenault
President

FRE® Below Ground Conduit System



Upon special request, FRE Composites products can be designed to meet specific requirements such as wall thickness, offset elbows, special radii elbows and adapters.

FRE COMPOSITES®

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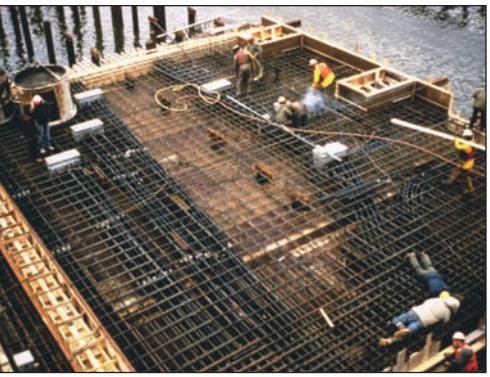


LIMITATION OF LIABILITY

Due to the varied nature of electrical system designs, field conditions and installation techniques and practices under which FRE® Below Ground Conduit may be used, no guaranty or promise can be made regarding its performance in individual applications, since these factors are beyond the control of FRE Composites (2005) Inc. ("FRE Inc."). Therefore FRE Inc. or any of its affiliates and associates, accepts no responsibility for the performance of installed Below Ground Conduit systems.

At the written request of the engineer, architect, designer or contractor responsible for the design, installation practices or supervision, FRE Inc. may provide assistance or on-site advice based on past experience but only as a guide for successful installation. However said engineer, architect, designer and contractor shall remain solely responsible for ensuring the design, installation practices and supervision are adequate for the intended application. FRE Inc. shall not be liable in any way towards anyone by reason of such assistance or on-site advice.

In all cases, FRE Inc.'s only liability will be the replacement of conduit or fittings shown to be defective in workmanship or materials prior to installation. Under no circumstances shall FRE Inc. be liable for any claims, damages, losses (including a loss of opportunity, business or profit) or costs whether based on the fault or negligence (whether gross or not) of FRE Inc., on contractual, legal or statutory warranties, strict liability or otherwise except as expressly provided herein.

FRE® Below Ground Conduit is primarily designed for use in non-exposed direct buried (DB) or encased buried (FB) environments. Should prolonged exposure be desired, please contact us for details on special protection techniques.

FRE Inc. has prepared this data as a guide only. Although FRE Inc. believes the information contained herein is accurate and reliable, this information shall not be construed as representation, warranty or guarantee, whether express or implied. FRE Inc. reserves the right to update products and /or data as necessary without notice.

Why should you consider using Fiberglass Reinforced Epoxy conduit?

Fiberglass conduit offers many advantages over other commonly used conduit, such as steel and PVC, as listed below:

EASE OF ASSEMBLY:

Epoxy fiberglass conduit is easy to install, partly resulting from its light weight, which facilitates handling. Fitting sections together using the push-fit spigot and bell design further facilitates assembly. Alternatively, fiberglass conduit can be joined through the application of epoxy adhesive, but this is usually not necessary. Contractors report that joining by way of FRE® Conduit push-fit TriSeal™ connections results in considerable labour savings.

LIGHTWEIGHT:

Epoxy fiberglass conduit weighs considerably less than PVC or steel, resulting in cost savings through reduced handling time, reduced assembly time, reduced requirements for mechanized handling, reduced freight charges, reduced system weight, and lower costs of support. By way of example, 2" (53 mm) FRE® conduit weighs 34 pounds (15 kg) per 100 ft (30 m), compared with 71 (32 kg) to 100 pounds (45 kg) for an identical length of PVC conduit, or about 330 pounds (150 kg) for a conduit made of steel. One hundred ft. of 4" (103 mm) FRE® conduit weighs in at 76 pounds (34 kg), compared with 230 pounds (104 kg) (Schedule 40) to 286 pounds (130 kg) (Schedule 80) for PVC and almost 1 000 pounds (454 kg) for steel.

LOW COEFFICIENT OF FRICTION:

The coefficient of friction of epoxy fiberglass is lower than that of steel, and considerably lower than that of PVC. This means that electrical cables are easier to pull through, resulting in labour savings, less stress on cables, and reduces the number of costly manholes. As FRE®'s minimum resin content is higher than industry standards, FRE®'s coefficient of friction is the lowest in the industry.

TEMPERATURE RANGE:

FRE® Conduit can withstand a wide array of temperature ranging from -40°F to 230°F (-40°C to 110°C). Unlike PVC which is extremely brittle in cold temperature (+40°F) and malleable in heat, FRE® Conduit maintains its unique characterics.

NO BURN-THROUGH:

Unlike rigid PVC, epoxy fiberglass bends and elbows have a strong resistance to being cavitated or pierced as a result of rope pull.

CABLE FUSION:

Fiberglass is an excellent insulator. Unlike fiberglass conduit, steel conduit will weld with cable, and PVC conduit may fuse or melt under electrical fault conditions.

FLEXIBLE AND IMPACT RESISTANT:

The flexibility of epoxy fiberglass conduit allows it to conform to mildly uneven surfaces. Epoxy fiberglass conduit has tended to survive the stresses of earthquakes better than PVC or steel.

CORROSION RESISTANT:

Epoxy fiberglass is not affected by the effects of water or most other chemicals. Contact the factory for further information, if specific information is required.

NON-TOXIC:

Unlike PVC, epoxy fiberglass is low halogen and does not release bromine or chlorine.

a complete system

Why should you specify FRE® conduit made by FRE Composites?

There are a number of reasons why FRE® conduit offers the industry the most for its money. Our **experience** and **quality record** speak for themselves. We live and breathe quality: quality is the number one priority to which everything else is subordinate. After nearly fifty years in the business, we know how to do things right, and we know how to ensure that we keep doing them right.

Our **total production capacity** is the largest in the industry enabling us to produce large volumes of product within tight delivery deadlines, and product is available from **stocking distributors** throughout Canada, the United States and elsewhere around the world.

TO ENSURE THAT YOUR PROJECT WILL BENEFIT FROM THE HIGHEST QUALITY CONDUIT PRODUCTS, SPECIFY FRE® CONDUIT:

KEY SPECIFICATION POINTS:

- Shall comply with the latest applicable UL / CSA / NEMA standards.
- Conduit shall bear UL Listing #E53373 and CSA Certification #028032S.
- Shall be manufactured from E or E-CR glass and epoxy resin with no fillers.
- Shall have a glass content of 68%, plus or minus 3%.
- All joints shall be inside tapered bell end and of even socket depth through out the raceway (conduits & fittings).
- Shall be equipped with one-piece injection molded TriSeal™ push-fit integral bell and spigot.
- Union made.
- Multiple locations to better serve your needs.

For more information, please contact us
1 888 849-9909.

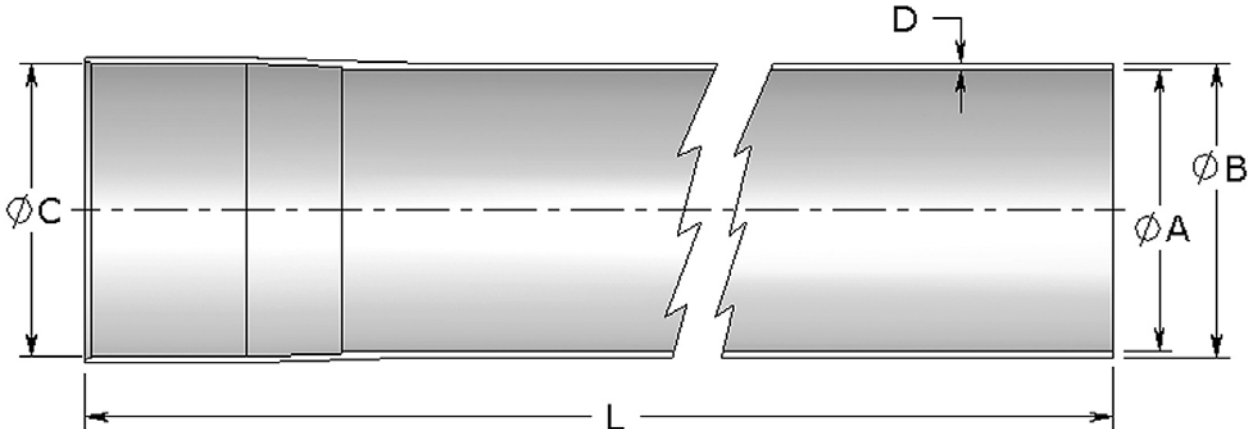
FRE®

your right choice

low cost

IPS THIN WALL (TW)
ENCASED BURIAL (EB) PRODUCTS

IPS THIN WALL (TW) CONDUIT



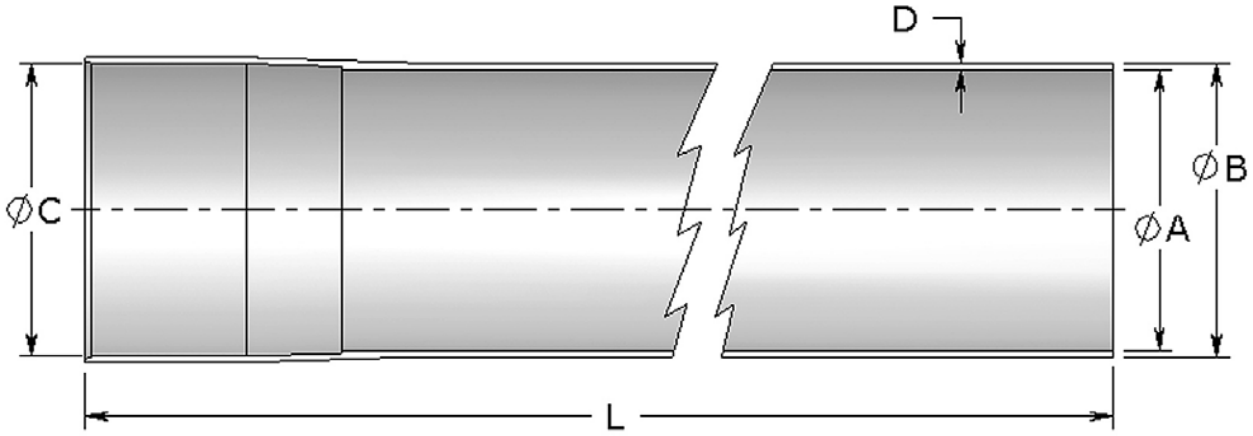
Size		Symbol	ØA	ØB	ØC	D	L	ØA	ØB	ØC	D	L
in	*mm*	No.	inches					*millimeters*				*meters*
4	*103*	**31-4000**	4.360	4.470	4.542	0.055	236.25	*110.7*	*113.5*	*115.4*	*1.4*	*6*
5	*129*	**31-5000**	5.373	5.513	5.610	0.070	236.25	*136.5*	*140.0*	*142.5*	*1.8*	*6*
6	*155*	**31-6000**	6.405	6.595	6.635	0.095	236.25	*162.7*	*167.5*	*169.5*	*2.4*	*6*
8❖	*203*	**31-8000**	8.393	8.583	8.623	0.095	236.25	*213.2*	*218.0*	*219.0*	*2.4*	*6*

- All our IPS Below Ground products can be offered with a TriSeal™ upon request for push-fit assembly
- Adhesives are available, if required.
- Standard length is 19.68 ft. (6m). Also available in 9.84 ft. section (3m), if required.
- Spigot end tapered for ease of installation

❖ Not UL Listed, CSA Certified or NEMA compliant.

IPS STANDARD WALL (SW)
ENCASED BURIAL (EB) OR DIRECT BURIAL (DB) PRODUCTS

IPS STANDARD WALL (SW) CONDUIT



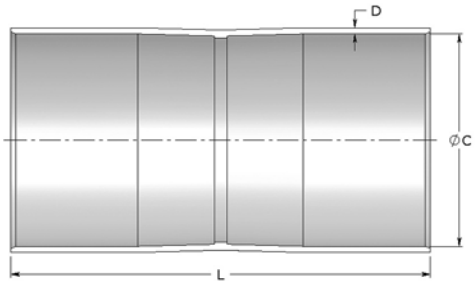
Size		Symbol	ØA	ØB	ØC	D	L	ØA	ØB	ØC	D	L
in	*mm*	No.	inches					*millimeters*				*meters*
¾	*21*	**30-7500**	0.918	1.050	1.086	0.066	118.25	*23.3*	*26.7*	*27.6*	*1.7*	*3*
1	*27*	**30-1000**	1.183	1.315	1.351	0.066	118.25	*30.0*	*33.4*	*34.3*	*1.7*	*3*
1¼	*35*	**30-1200**	1.528	1.660	1.698	0.066	118.25	*38.8*	*42.2*	*43.1*	*1.7*	*3*
1½	*41*	**30-1500**	1.768	1.900	1.938	0.066	118.25	*44.9*	*48.3*	*49.2*	*1.7*	*3*
2	*53*	**30-2000**	2.235	2.375	2.417	0.070	236.25	*56.8*	*60.3*	*61.4*	*1.8*	*6*
3	*78*	**30-3000**	3.360	3.500	3.542	0.070	236.25	*85.3*	*88.9*	*90.0*	*1.8*	*6*
4	*103*	**30-4000**	4.360	4.500	4.542	0.070	236.25	*110.7*	*114.3*	*115.4*	*1.8*	*6*
5	*129*	**30-5000**	5.373	5.563	5.610	0.095	236.25	*136.5*	*141.3*	*142.5*	*2.4*	*6*
6	*155*	**30-6000**	6.405	6.625	6.669	0.110	236.25	*162.7*	*168.3*	*169.4*	*2.8*	*6*
8❖	*203*	**30-8000**	8.393	8.623	8.667	0.115	236.25	*213.2*	*219.1*	*220.1*	*2.9*	*6*

- All our IPS Below Ground products can be offered with a TriSeal™ upon request for push-fit assembly
- Adhesives are available, if required.
- Standard length is 9.84 ft. (3m) for ¾" (19mm) to 1½" (38mm) and 19.68 ft. (6m) for 2" (51mm) to 8" (203mm) but is also available in 9.84 ft. section (3m), if required.
- Spigot end tapered for ease of installation

❖ Not UL Listed, CSA Certified or NEMA compliant.

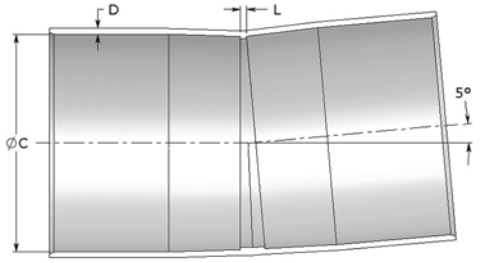
IPS SW DOUBLE BELL COUPLING

Size		Symbol	ØC	D	L	ØC	D	L
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7510**	1.086	0.066	8.250	*27.6*	*1.7*	*209.6*
1	*27*	**30-1010**	1.351	0.066	8.250	*34.3*	*1.7*	*209.6*
1¼	*35*	**30-1210**	1.698	0.066	8.250	*43.1*	*1.7*	*209.6*
1½	*41*	**30-1510**	1.938	0.066	8.250	*49.2*	*1.7*	*209.6*
2	*53*	**30-2010**	2.417	0.070	8.250	*61.4*	*1.8*	*209.6*
3	*78*	**30-3010**	3.542	0.070	8.250	*90.0*	*1.8*	*209.6*
4	*103*	**30-4010**	4.542	0.070	8.250	*115.4*	*1.8*	*209.6*
5	*129*	**30-5010**	5.610	0.095	8.250	*142.5*	*2.4*	*209.6*
6	*155*	**30-6010**	6.669	0.110	8.250	*169.4*	*2.8*	*209.6*
8❖	*203*	**30-8010**	8.667	0.115	8.250	*220.1*	*2.9*	*209.6*



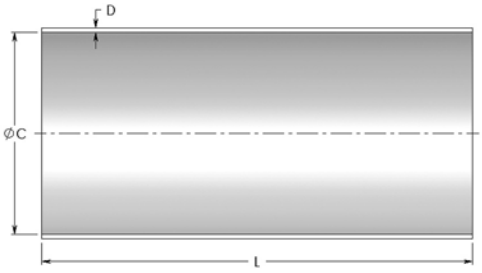
IPS SW 5° DOUBLE BELL COUPLING

Size		Symbol	ØC	D	L	ØC	D	L
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7511**	1.086	0.066	0.125	*27.6*	*1.7*	*3.2*
1	*27*	**30-1011**	1.351	0.066	0.125	*34.3*	*1.7*	*3.2*
1¼	*35*	**30-1211**	1.698	0.066	0.125	*43.1*	*1.7*	*3.2*
1½	*41*	**30-1511**	1.938	0.066	0.125	*49.2*	*1.7*	*3.2*
2	*53*	**30-2011**	2.417	0.070	0.125	*61.4*	*1.8*	*3.2*
3	*78*	**30-3011**	3.542	0.070	0.125	*90.0*	*1.8*	*3.2*
4	*103*	**30-4011**	4.542	0.070	0.125	*115.4*	*1.8*	*3.2*
5	*129*	**30-5011**	5.610	0.095	0.125	*142.5*	*2.4*	*3.2*
6	*155*	**30-6011**	6.669	0.110	0.125	*169.4*	*2.8*	*3.2*
8❖	*203*	**30-8011**	8.667	0.115	0.125	*220.1*	*2.9*	*3.2*



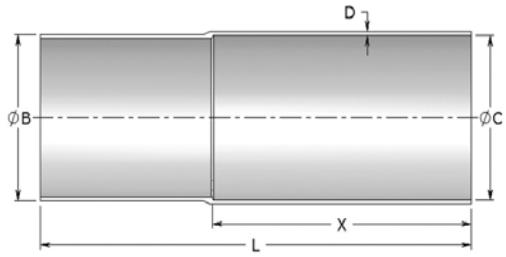
IPS SW SLEEVE

Size		Symbol	ØC	D	L	ØC	D	L
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7516**	1.086	0.066	12	*27.6*	*1.7*	*304.8*
1	*27*	**30-1016**	1.351	0.066	12	*34.3*	*1.7*	*304.8*
1¼	*35*	**30-1216**	1.698	0.066	12	*43.1*	*1.7*	*304.8*
1½	*41*	**30-1516**	1.938	0.066	12	*49.2*	*1.7*	*304.8*
2	*53*	**30-2016**	2.417	0.070	12	*61.4*	*1.8*	*304.8*
3	*78*	**30-3016**	3.542	0.070	12	*90.0*	*1.8*	*304.8*
4	*103*	**30-4016**	4.542	0.070	12	*115.4*	*1.8*	*304.8*
5	*129*	**30-5016**	5.610	0.095	12	*142.5*	*2.4*	*304.8*
6	*155*	**30-6016**	6.669	0.110	12	*169.4*	*2.8*	*304.8*
8❖	*203*	**30-8016**	8.667	0.115	12	*220.1*	*2.9*	*304.8*



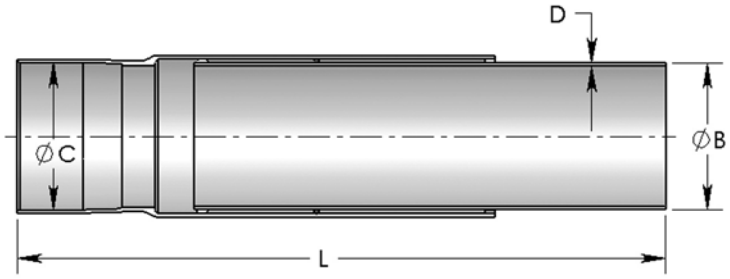
❖ Not UL Listed, CSA Certified or NEMA compliant.

IPS SW SINGLE EXPANSION JOINT



Size		Symbol	ØB	ØC	D	L	X	ØB	ØC	D	L	X
in	*mm*	No.	inches					*millimeters*				
¾	*21*	**30-7512**	1.050	1.086	0.066	20	12	*26.7*	*27.6*	*1.7*	*508.0*	*304.8*
1	*27*	**30-1012**	1.315	1.351	0.066	20	12	*33.4*	*34.3*	*1.7*	*508.0*	*304.8*
1¼	*35*	**30-1212**	1.660	1.698	0.066	20	12	*42.2*	*43.1*	*1.7*	*508.0*	*304.8*
1½	*41*	**30-1512**	1.900	1.938	0.066	20	12	*48.3*	*49.2*	*1.7*	*508.0*	*304.8*
2	*53*	**30-2012**	2.375	2.417	0.070	20	12	*60.3*	*61.4*	*1.8*	*508.0*	*304.8*
3	*78*	**30-3012**	3.500	3.542	0.070	20	12	*88.9*	*90.0*	*1.8*	*508.0*	*304.8*
4	*103*	**30-4012**	4.500	4.542	0.070	20	12	*114.3*	*115.4*	*1.8*	*508.0*	*304.8*
5	*129*	**30-5012**	5.563	5.610	0.095	20	12	*141.3*	*142.5*	*2.4*	*508.0*	*304.8*
6	*155*	**30-6012**	6.625	6.669	0.110	20	12	*168.3*	*169.4*	*2.8*	*508.0*	*304.8*
8❖	*203*	**30-8012**	8.625	8.667	0.115	20	12	*219.1*	*220.1*	*2.9*	*508.0*	*304.8*

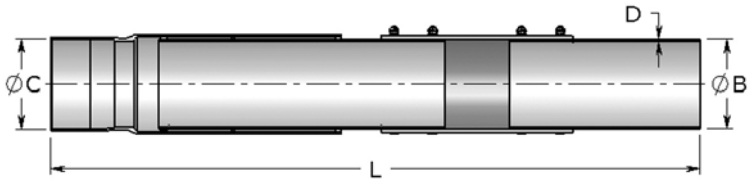
IPS SW O-RING EXPANSION JOINT



Size		Symbol	ØB	ØC	D	L min	L max	ØB	ØC	D	L min	L max
in	*mm*	No.	inches					*millimeters*				
¾	*21*	**30-7517**	1.050	1.086	0.066	24	36	*26.7*	*27.6*	*1.7*	*609.6*	*914.4*
1	*27*	**30-1017**	1.315	1.351	0.066	24	36	*33.4*	*34.3*	*1.7*	*609.6*	*914.4*
1¼	*35*	**30-1217**	1.660	1.698	0.066	24	36	*42.2*	*43.1*	*1.7*	*609.6*	*914.4*
1½	*41*	**30-1517**	1.900	1.938	0.066	24	36	*48.3*	*49.2*	*1.7*	*609.6*	*914.4*
2	*53*	**30-2017**	2.375	2.417	0.070	24	36	*60.3*	*61.4*	*1.8*	*609.6*	*914.4*
3	*78*	**30-3017**	3.500	3.542	0.070	24	36	*88.9*	*90.0*	*1.8*	*609.6*	*914.4*
4	*103*	**30-4017**	4.500	4.542	0.070	24	36	*114.3*	*115.4*	*1.8*	*609.6*	*914.4*
5	*129*	**30-5017**	5.563	5.610	0.095	24	36	*141.3*	*142.5*	*2.4*	*609.6*	*914.4*
6	*155*	**30-6017**	6.625	6.669	0.110	24	36	*168.3*	*169.4*	*2.8*	*609.6*	*914.4*
8❖	*203*	**30-8017**	8.625	8.667	0.115	24	36	*219.1*	*220.1*	*2.9*	*609.6*	*914.4*

❖ Not UL Listed, CSA Certified or NEMA compliant.

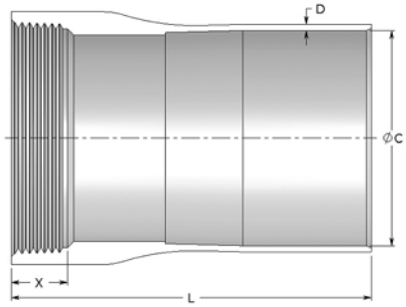
IPS SW O-RING EXPANSION / DEFLECTION JOINT



Size		Symbol	ØB	ØC	D	L min	L max	ØB	ØC	D	L min	L max
in	*mm*	No.	inches					*millimeters*				
¾	*21*	**30-7557**	1.050	1.086	0.066	40	52	*26.7*	*27.6*	*1.7*	*1016*	*1320.8*
1	*27*	**30-1057**	1.315	1.351	0.066	40	52	*33.4*	*34.3*	*1.7*	*1016*	*1320.8*
1¼	*35*	**30-1257**	1.660	1.698	0.066	40	52	*42.2*	*43.1*	*1.7*	*1016*	*1320.8*
1½	*41*	**30-1557**	1.900	1.938	0.066	40	52	*48.3*	*49.2*	*1.7*	*1016*	*1320.8*
2	*53*	**30-2057**	2.375	2.417	0.070	40	52	*60.3*	*61.4*	*1.8*	*1016*	*1320.8*
3	*78*	**30-3057**	3.500	3.542	0.070	40	52	*88.9*	*90.0*	*1.8*	*1016*	*1320.8*
4	*103*	**30-4057**	4.500	4.542	0.070	40	52	*114.3*	*115.4*	*1.8*	*1016*	*1320.8*
5	*129*	**30-5057**	5.563	5.610	0.095	40	52	*141.3*	*142.5*	*2.4*	*1016*	*1320.8*
6	*155*	**30-6057**	6.625	6.669	0.110	40	52	*168.3*	*169.4*	*2.8*	*1016*	*1320.8*
8❖	*203*	**30-8057**	8.625	8.667	0.115	40	52	*219.1*	*220.1*	*2.9*	*1016*	*1320.8*

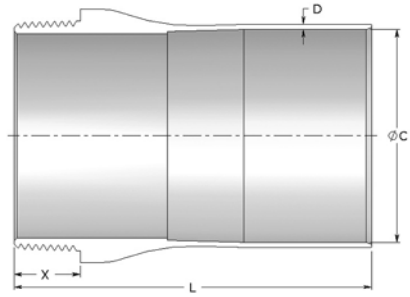
IPS SW NPT FEMALE THREADED ADAPTER

Size		Symbol	ØC	D	L	X	ØC	D	L	X
in	*mm*	No.	inches				*millimeters*			
¾	*21*	**30-7544**	1.086	0.066	6	0.553	*27.6*	*1.7*	*152.4*	*14.0*
1	*27*	**30-1044**	1.351	0.066	6	0.661	*34.3*	*1.7*	*152.4*	*16.8*
1¼	*35*	**30-1244**	1.698	0.066	6	0.681	*43.1*	*1.7*	*152.4*	*17.3*
1½	*41*	**30-1544**	1.938	0.066	6	0.681	*49.2*	*1.7*	*152.4*	*17.3*
2	*53*	**30-2044**	2.417	0.070	7	0.697	*61.4*	*1.8*	*177.8*	*17.7*
3	*78*	**30-3044**	3.542	0.070	7	1.016	*90.0*	*1.8*	*177.8*	*25.8*
4	*103*	**30-4044**	4.542	0.070	7	1.094	*115.4*	*1.8*	*177.8*	*27.8*
5	*129*	**30-5044**	5.610	0.095	7	1.187	*142.5*	*2.4*	*177.8*	*30.1*
6	*155*	**30-6044**	6.669	0.110	7	1.208	*169.4*	*2.8*	*177.8*	*30.7*
8❖	*203*	**30-8044**	8.667	0.115	7	1.313	*220.1*	*2.9*	*177.8*	*33.4*



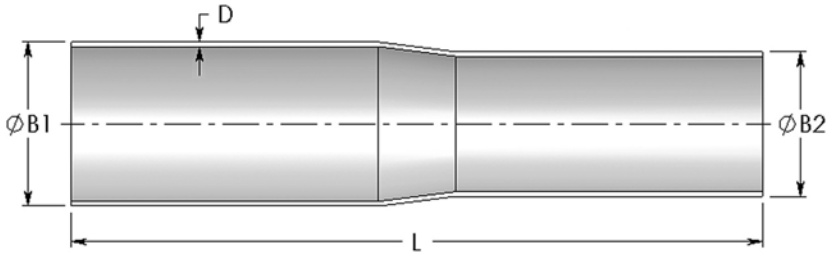
IPS SW NPT MALE THREADED ADAPTER

Size		Symbol	ØC	D	L	X	ØC	D	L	X
in	*mm*	No.	inches				*millimeters*			
¾	*21*	**30-7527**	1.086	0.066	6	0.546	*27.6*	*1.7*	*152.4*	*13.9*
1	*27*	**30-1027**	1.351	0.066	6	0.683	*34.3*	*1.7*	*152.4*	*17.3*
1¼	*35*	**30-1227**	1.698	0.066	6	0.707	*43.1*	*1.7*	*152.4*	*18.0*
1½	*41*	**30-1527**	1.938	0.066	6	0.724	*49.2*	*1.7*	*152.4*	*18.4*
2	*53*	**30-2027**	2.417	0.070	7	0.757	*61.4*	*1.8*	*177.8*	*19.2*
3	*78*	**30-3027**	3.542	0.070	7	1.200	*90.0*	*1.8*	*177.8*	*30.5*
4	*103*	**30-4027**	4.542	0.070	7	1.300	*115.4*	*1.8*	*177.8*	*33.0*
5	*129*	**30-5027**	5.610	0.095	7	1.406	*142.5*	*2.4*	*177.8*	*35.7*
6	*155*	**30-6027**	6.669	0.110	7	1.513	*169.4*	*2.8*	*177.8*	*38.4*
8❖	*203*	**30-8027**	8.667	0.115	7	1.713	*220.1*	*2.9*	*177.8*	*43.5*



❖ Not UL Listed, CSA Certified or NEMA compliant.

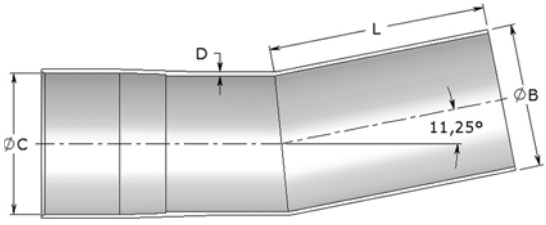
IPS SW REDUCER



Size		Symbol	ØB1	ØB2	D	L	ØB1	ØB2	D	L
in	*mm*	No.	inches				*millimeters*			
1	*27*	**30-1029**	1.315	1.050	0.066	18	*33.4*	*26.7*	*1.7*	*457.2*
1¼	*35*	**30-1229**	1.660	1.315	0.066	18	*42.2*	*33.4*	*1.7*	*457.2*
1½	*41*	**30-1529**	1.900	1.660	0.066	18	*48.3*	*42.2*	*1.7*	*457.2*
2	*53*	**30-2029**	2.375	1.900	0.070	18	*60.3*	*48.3*	*1.8*	*457.2*
3	*78*	**30-3029**	3.500	2.375	0.070	18	*88.9*	*60.3*	*1.8*	*457.2*
4	*103*	**30-4029**	4.500	3.500	0.070	18	*114.3*	*88.9*	*1.8*	*457.2*
5	*129*	**30-5029**	5.563	4.500	0.095	18	*141.3*	*114.3*	*2.4*	*457.2*
6	*155*	**30-6029**	6.625	5.563	0.110	18	*168.3*	*141.3*	*2.8*	*457.2*

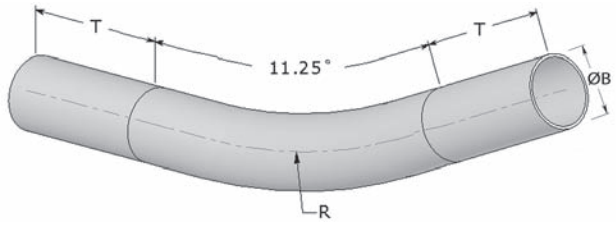
IPS SW 11.25° FITTING

Size		Symbol	ØB	ØC	D	L	ØB	ØC	D	L
in	*mm*	No.	inches				*millimeters*			
¾	*21*	**30-7535**	1.050	1.086	0.066	7	*26.7*	*27.6*	*1.7*	*177.8*
1	*27*	**30-1035**	1.315	1.351	0.066	7	*33.4*	*34.3*	*1.7*	*177.8*
1¼	*35*	**30-1235**	1.660	1.698	0.066	7	*42.2*	*43.1*	*1.7*	*177.8*
1½	*41*	**30-1535**	1.900	1.938	0.066	7	*48.3*	*49.2*	*1.7*	*177.8*
2	*53*	**30-2035**	2.375	2.417	0.070	7	*60.3*	*61.4*	*1.8*	*177.8*
3	*78*	**30-3035**	3.500	3.542	0.070	7	*88.9*	*90.0*	*1.8*	*177.8*
4	*103*	**30-4035**	4.500	4.542	0.070	7	*114.3*	*115.4*	*1.8*	*177.8*
5	*129*	**30-5035**	5.563	5.610	0.095	7	*141.3*	*142.5*	*2.4*	*177.8*
6	*155*	**30-6035**	6.625	6.669	0.110	7	*168.3*	*169.4*	*2.8*	*177.8*
8❖	*203*	**30-8035**	8.625	8.667	0.115	7	*219.1*	*220.1*	*2.9*	*177.8*



❖ Not UL Listed, CSA Certified or NEMA compliant.

IPS SW 11.25° ELBOW



12" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7535R12**	1.050	12	6	*26.7*	*304.8*	*152.4*
1	*27*	**30-1035R12**	1.315	12	6	*33.4*	*304.8*	*152.4*
1¼	*35*	**30-1235R12**	1.660	12	6	*42.2*	*304.8*	*152.4*
1½	*41*	**30-1535R12**	1.900	12	6	*48.3*	*304.8*	*152.4*
2	*53*	**30-2035R12**	2.375	12	6	*60.3*	*304.8*	*152.4*

24" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7535R24**	1.050	24	6	*26.7*	*609.6*	*152.4*
1	*27*	**30-1035R24**	1.315	24	6	*33.4*	*609.6*	*152.4*
1¼	*35*	**30-1235R24**	1.660	24	6	*42.2*	*609.6*	*152.4*
1½	*41*	**30-1535R24**	1.900	24	6	*48.3*	*609.6*	*152.4*
2	*53*	**30-2035R24**	2.375	24	6	*60.3*	*609.6*	*152.4*
3	*78*	**30-3035R24**	3.500	24	6	*88.9*	*609.6*	*152.4*

36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7535R36**	1.050	36	6	*26.7*	*914.4*	*152.4*
1	*27*	**30-1035R36**	1.315	36	6	*33.4*	*914.4*	*152.4*
1¼	*35*	**30-1235R36**	1.660	36	6	*42.2*	*914.4*	*152.4*
1½	*41*	**30-1535R36**	1.900	36	6	*48.3*	*914.4*	*152.4*
2	*53*	**30-2035R36**	2.375	36	6	*60.3*	*914.4*	*152.4*
3	*78*	**30-3035R36**	3.500	36	6	*88.9*	*914.4*	*152.4*
4	*103*	**30-4035R36**	4.500	36	6	*114.3*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7535R48**	1.050	48	6	*26.7*	*1219.2*	*152.4*
1	*27*	**30-1035R48**	1.315	48	6	*33.4*	*1219.2*	*152.4*
1¼	*35*	**30-1235R48**	1.660	48	6	*42.2*	*1219.2*	*152.4*
1½	*41*	**30-1535R48**	1.900	48	6	*48.3*	*1219.2*	*152.4*
2	*53*	**30-2035R48**	2.375	48	6	*60.3*	*1219.2*	*152.4*
3	*78*	**30-3035R48**	3.500	48	6	*88.9*	*1219.2*	*152.4*
4	*103*	**30-4035R48**	4.500	48	6	*114.3*	*1219.2*	*152.4*
5	*129*	**30-5035R48**	5.563	48	6	*141.3*	*1219.2*	*152.4*
6	*155*	**30-6035R48**	6.625	48	6	*168.3*	*1219.2*	*152.4*

60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7535R60**	1.050	60	6	*26.7*	*1524.0*	*152.4*
1	*27*	**30-1035R60**	1.315	60	6	*33.4*	*1524.0*	*152.4*
1¼	*35*	**30-1235R60**	1.660	60	6	*42.2*	*1524.0*	*152.4*
1½	*41*	**30-1535R60**	1.900	60	6	*48.3*	*1524.0*	*152.4*
2	*53*	**30-2035R60**	2.375	60	6	*60.3*	*1524.0*	*152.4*
3	*78*	**30-3035R60**	3.500	60	6	*88.9*	*1524.0*	*152.4*
4	*103*	**30-4035R60**	4.500	60	6	*114.3*	*1524.0*	*152.4*
5	*129*	**30-5035R60**	5.563	60	6	*141.3*	*1524.0*	*152.4*
6	*155*	**30-6035R60**	6.625	60	6	*168.3*	*1524.0*	*152.4*

72" RADIUS

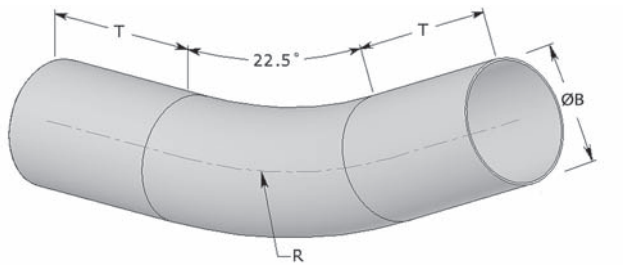
Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7535R72**	1.050	72	6	*26.7*	*1828.8*	*152.4*
1	*27*	**30-1035R72**	1.315	72	6	*33.4*	*1828.8*	*152.4*
1¼	*35*	**30-1235R72**	1.660	72	6	*42.2*	*1828.8*	*152.4*
1½	*41*	**30-1535R72**	1.900	72	6	*48.3*	*1828.8*	*152.4*
2	*53*	**30-2035R72**	2.375	72	6	*60.3*	*1828.8*	*152.4*
3	*78*	**30-3035R72**	3.500	72	6	*88.9*	*1828.8*	*152.4*
4	*103*	**30-4035R72**	4.500	72	6	*114.3*	*1828.8*	*152.4*
5	*129*	**30-5035R72**	5.563	72	6	*141.3*	*1828.8*	*152.4*
6	*155*	**30-6035R72**	6.625	72	6	*168.3*	*1828.8*	*152.4*

108" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
8❖	*203*	**30-8035R108**	8.625	108	6	*219.1*	*2743.2*	*152.4*

❖ Not UL Listed, CSA Certified or NEMA compliant.

IPS SW 22.5° ELBOW



12" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7534R12**	1.050	12	6	*26.7*	*304.8*	*152.4*
1	*27*	**30-1034R12**	1.315	12	6	*33.4*	*304.8*	*152.4*
1¼	*35*	**30-1234R12**	1.660	12	6	*42.2*	*304.8*	*152.4*
1½	*41*	**30-1534R12**	1.900	12	6	*48.3*	*304.8*	*152.4*
2	*53*	**30-2034R12**	2.375	12	6	*60.3*	*304.8*	*152.4*

24" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7534R24**	1.050	24	6	*26.7*	*609.6*	*152.4*
1	*27*	**30-1034R24**	1.315	24	6	*33.4*	*609.6*	*152.4*
1¼	*35*	**30-1234R24**	1.660	24	6	*42.2*	*609.6*	*152.4*
1½	*41*	**30-1534R24**	1.900	24	6	*48.3*	*609.6*	*152.4*
2	*53*	**30-2034R24**	2.375	24	6	*60.3*	*609.6*	*152.4*
3	*78*	**30-3034R24**	3.500	24	6	*88.9*	*609.6*	*152.4*

36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7534R36**	1.050	36	6	*26.7*	*914.4*	*152.4*
1	*27*	**30-1034R36**	1.315	36	6	*33.4*	*914.4*	*152.4*
1¼	*35*	**30-1234R36**	1.660	36	6	*42.2*	*914.4*	*152.4*
1½	*41*	**30-1534R36**	1.900	36	6	*48.3*	*914.4*	*152.4*
2	*53*	**30-2034R36**	2.375	36	6	*60.3*	*914.4*	*152.4*
3	*78*	**30-3034R36**	3.500	36	6	*88.9*	*914.4*	*152.4*
4	*103*	**30-4034R36**	4.500	36	6	*114.3*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7534R48**	1.050	48	6	*26.7*	*1219.2*	*152.4*
1	*27*	**30-1034R48**	1.315	48	6	*33.4*	*1219.2*	*152.4*
1¼	*35*	**30-1234R48**	1.660	48	6	*42.2*	*1219.2*	*152.4*
1½	*41*	**30-1534R48**	1.900	48	6	*48.3*	*1219.2*	*152.4*
2	*53*	**30-2034R48**	2.375	48	6	*60.3*	*1219.2*	*152.4*
3	*78*	**30-3034R48**	3.500	48	6	*88.9*	*1219.2*	*152.4*
4	*103*	**30-4034R48**	4.500	48	6	*114.3*	*1219.2*	*152.4*
5	*129*	**30-5034R48**	5.563	48	6	*141.3*	*1219.2*	*152.4*
6	*155*	**30-6034R48**	6.625	48	6	*168.3*	*1219.2*	*152.4*

60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	mm	No.	inches			*millimeters*		
¾	*21*	**30-7534R60**	1.050	60	6	*26.7*	*1524.0*	*152.4*
1	*27*	**30-1034R60**	1.315	60	6	*33.4*	*1524.0*	*152.4*
1¼	*35*	**30-1234R60**	1.660	60	6	*42.2*	*1524.0*	*152.4*
1½	*41*	**30-1534R60**	1.900	60	6	*48.3*	*1524.0*	*152.4*
2	*53*	**30-2034R60**	2.375	60	6	*60.3*	*1524.0*	*152.4*
3	*78*	**30-3034R60**	3.500	60	6	*88.9*	*1524.0*	*152.4*
4	*103*	**30-4034R60**	4.500	60	6	*114.3*	*1524.0*	*152.4*
5	*129*	**30-5034R60**	5.563	60	6	*141.3*	*1524.0*	*152.4*
6	*155*	**30-6034R60**	6.625	60	6	*168.3*	*1524.0*	*152.4*

72" RADIUS

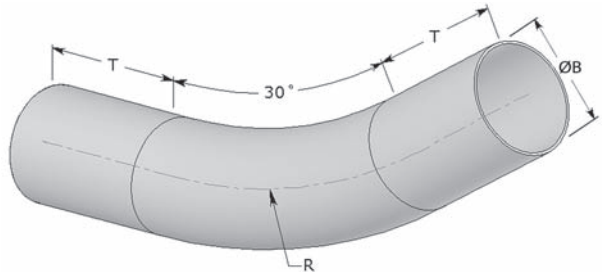
Size		Symbol	ØB	R	T	ØB	R	T
in	mm	No.	inches			*millimeters*		
¾	*21*	**30-7534R72**	1.050	72	6	*26.7*	*1828.8*	*152.4*
1	*27*	**30-1034R72**	1.315	72	6	*33.4*	*1828.8*	*152.4*
1¼	*35*	**30-1234R72**	1.660	72	6	*42.2*	*1828.8*	*152.4*
1½	*41*	**30-1534R72**	1.900	72	6	*48.3*	*1828.8*	*152.4*
2	*53*	**30-2034R72**	2.375	72	6	*60.3*	*1828.8*	*152.4*
3	*78*	**30-3034R72**	3.500	72	6	*88.9*	*1828.8*	*152.4*
4	*103*	**30-4034R72**	4.500	72	6	*114.3*	*1828.8*	*152.4*
5	*129*	**30-5034R72**	5.563	72	6	*141.3*	*1828.8*	*152.4*
6	*155*	**30-6034R72**	6.625	72	6	*168.3*	*1828.8*	*152.4*

108" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	mm	No.	inches			*millimeters*		
8❖	*203*	**30-8034R108**	8.625	108	6	*219.1*	*2743.2*	*152.4*

❖ Not UL Listed, CSA Certified or NEMA compliant.

IPS SW 30° ELBOW



12" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7533R12**	1.050	12	6	*26.7*	*304.8*	*152.4*
1	*27*	**30-1033R12**	1.315	12	6	*33.4*	*304.8*	*152.4*
1¼	*35*	**30-1233R12**	1.660	12	6	*42.2*	*304.8*	*152.4*
1½	*41*	**30-1533R12**	1.900	12	6	*48.3*	*304.8*	*152.4*
2	*53*	**30-2033R12**	2.375	12	6	*60.3*	*304.8*	*152.4*

24" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7533R24**	1.050	24	6	*26.7*	*609.6*	*152.4*
1	*27*	**30-1033R24**	1.315	24	6	*33.4*	*609.6*	*152.4*
1¼	*35*	**30-1233R24**	1.660	24	6	*42.2*	*609.6*	*152.4*
1½	*41*	**30-1533R24**	1.900	24	6	*48.3*	*609.6*	*152.4*
2	*53*	**30-2033R24**	2.375	24	6	*60.3*	*609.6*	*152.4*
3	*78*	**30-3033R24**	3.500	24	6	*88.9*	*609.6*	*152.4*

36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7533R36**	1.050	36	6	*26.7*	*914.4*	*152.4*
1	*27*	**30-1033R36**	1.315	36	6	*33.4*	*914.4*	*152.4*
1¼	*35*	**30-1233R36**	1.660	36	6	*42.2*	*914.4*	*152.4*
1½	*41*	**30-1533R36**	1.900	36	6	*48.3*	*914.4*	*152.4*
2	*53*	**30-2033R36**	2.375	36	6	*60.3*	*914.4*	*152.4*
3	*78*	**30-3033R36**	3.500	36	6	*88.9*	*914.4*	*152.4*
4	*103*	**30-4033R36**	4.500	36	6	*114.3*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7533R48**	1.050	48	6	*26.7*	*1219.2*	*152.4*
1	*27*	**30-1033R48**	1.315	48	6	*33.4*	*1219.2*	*152.4*
1¼	*35*	**30-1233R48**	1.660	48	6	*42.2*	*1219.2*	*152.4*
1½	*41*	**30-1533R48**	1.900	48	6	*48.3*	*1219.2*	*152.4*
2	*53*	**30-2033R48**	2.375	48	6	*60.3*	*1219.2*	*152.4*
3	*78*	**30-3033R48**	3.500	48	6	*88.9*	*1219.2*	*152.4*
4	*103*	**30-4033R48**	4.500	48	6	*114.3*	*1219.2*	*152.4*
5	*129*	**30-5033R48**	5.563	48	6	*141.3*	*1219.2*	*152.4*
6	*155*	**30-6033R48**	6.625	48	6	*168.3*	*1219.2*	*152.4*

60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7533R60**	1.050	60	6	*26.7*	*1524.0*	*152.4*
1	*27*	**30-1033R60**	1.315	60	6	*33.4*	*1524.0*	*152.4*
1¼	*35*	**30-1233R60**	1.660	60	6	*42.2*	*1524.0*	*152.4*
1½	*41*	**30-1533R60**	1.900	60	6	*48.3*	*1524.0*	*152.4*
2	*53*	**30-2033R60**	2.375	60	6	*60.3*	*1524.0*	*152.4*
3	*78*	**30-3033R60**	3.500	60	6	*88.9*	*1524.0*	*152.4*
4	*103*	**30-4033R60**	4.500	60	6	*114.3*	*1524.0*	*152.4*
5	*129*	**30-5033R60**	5.563	60	6	*141.3*	*1524.0*	*152.4*
6	*155*	**30-6033R60**	6.625	60	6	*168.3*	*1524.0*	*152.4*

72" RADIUS

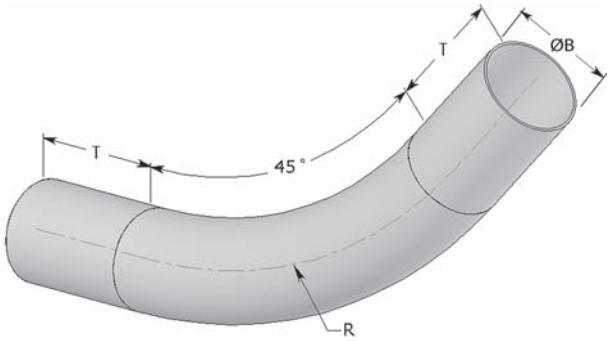
Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7533R72**	1.050	72	6	*26.7*	*1828.8*	*152.4*
1	*27*	**30-1033R72**	1.315	72	6	*33.4*	*1828.8*	*152.4*
1¼	*35*	**30-1233R72**	1.660	72	6	*42.2*	*1828.8*	*152.4*
1½	*41*	**30-1533R72**	1.900	72	6	*48.3*	*1828.8*	*152.4*
2	*53*	**30-2033R72**	2.375	72	6	*60.3*	*1828.8*	*152.4*
3	*78*	**30-3033R72**	3.500	72	6	*88.9*	*1828.8*	*152.4*
4	*103*	**30-4033R72**	4.500	72	6	*114.3*	*1828.8*	*152.4*
5	*129*	**30-5033R72**	5.563	72	6	*141.3*	*1828.8*	*152.4*
6	*155*	**30-6033R72**	6.625	72	6	*168.3*	*1828.8*	*152.4*

108" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
8❖	*203*	**30-8033R108**	8.625	108	6	*219.1*	*2743.2*	*152.4*

❖ Not UL Listed, CSA Certified or NEMA compliant.

IPS SW 45° ELBOW



12" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7532R12**	1.050	12	6	*26.7*	*304.8*	*152.4*
1	*27*	**30-1032R12**	1.315	12	6	*33.4*	*304.8*	*152.4*
1¼	*35*	**30-1232R12**	1.660	12	6	*42.2*	*304.8*	*152.4*
1½	*41*	**30-1532R12**	1.900	12	6	*48.3*	*304.8*	*152.4*
2	*53*	**30-2032R12**	2.375	12	6	*60.3*	*304.8*	*152.4*

24" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7532R24**	1.050	24	6	*26.7*	*609.6*	*152.4*
1	*27*	**30-1032R24**	1.315	24	6	*33.4*	*609.6*	*152.4*
1¼	*35*	**30-1232R24**	1.660	24	6	*42.2*	*609.6*	*152.4*
1½	*41*	**30-1532R24**	1.900	24	6	*48.3*	*609.6*	*152.4*
2	*53*	**30-2032R24**	2.375	24	6	*60.3*	*609.6*	*152.4*
3	*78*	**30-3032R24**	3.500	24	6	*88.9*	*609.6*	*152.4*

36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7532R36**	1.050	36	6	*26.7*	*914.4*	*152.4*
1	*27*	**30-1032R36**	1.315	36	6	*33.4*	*914.4*	*152.4*
1¼	*35*	**30-1232R36**	1.660	36	6	*42.2*	*914.4*	*152.4*
1½	*41*	**30-1532R36**	1.900	36	6	*48.3*	*914.4*	*152.4*
2	*53*	**30-2032R36**	2.375	36	6	*60.3*	*914.4*	*152.4*
3	*78*	**30-3032R36**	3.500	36	6	*88.9*	*914.4*	*152.4*
4	*103*	**30-4032R36**	4.500	36	6	*114.3*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7532R48**	1.050	48	6	*26.7*	*1219.2*	*152.4*
1	*27*	**30-1032R48**	1.315	48	6	*33.4*	*1219.2*	*152.4*
1¼	*35*	**30-1232R48**	1.660	48	6	*42.2*	*1219.2*	*152.4*
1½	*41*	**30-1532R48**	1.900	48	6	*48.3*	*1219.2*	*152.4*
2	*53*	**30-2032R48**	2.375	48	6	*60.3*	*1219.2*	*152.4*
3	*78*	**30-3032R48**	3.500	48	6	*88.9*	*1219.2*	*152.4*
4	*103*	**30-4032R48**	4.500	48	6	*114.3*	*1219.2*	*152.4*
5	*129*	**30-5032R48**	5.563	48	6	*141.3*	*1219.2*	*152.4*
6	*155*	**30-6032R48**	6.625	48	6	*168.3*	*1219.2*	*152.4*

60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7532R60**	1.050	60	6	*26.7*	*1524.0*	*152.4*
1	*27*	**30-1032R60**	1.315	60	6	*33.4*	*1524.0*	*152.4*
1¼	*35*	**30-1232R60**	1.660	60	6	*42.2*	*1524.0*	*152.4*
1½	*41*	**30-1532R60**	1.900	60	6	*48.3*	*1524.0*	*152.4*
2	*53*	**30-2032R60**	2.375	60	6	*60.3*	*1524.0*	*152.4*
3	*78*	**30-3032R60**	3.500	60	6	*88.9*	*1524.0*	*152.4*
4	*103*	**30-4032R60**	4.500	60	6	*114.3*	*1524.0*	*152.4*
5	*129*	**30-5032R60**	5.563	60	6	*141.3*	*1524.0*	*152.4*
6	*155*	**30-6032R60**	6.625	60	6	*168.3*	*1524.0*	*152.4*

72" RADIUS

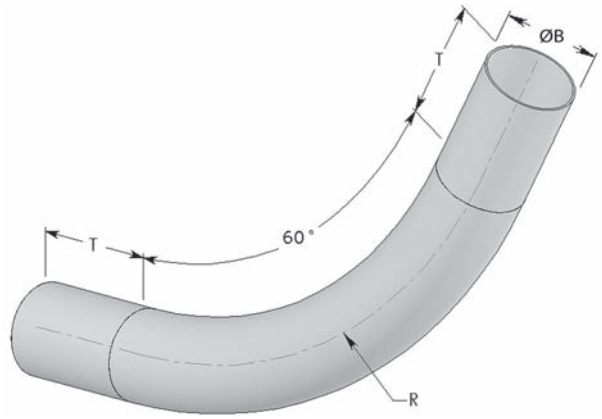
Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7532R72**	1.050	72	6	*26.7*	*1828.8*	*152.4*
1	*27*	**30-1032R72**	1.315	72	6	*33.4*	*1828.8*	*152.4*
1¼	*35*	**30-1232R72**	1.660	72	6	*42.2*	*1828.8*	*152.4*
1½	*41*	**30-1532R72**	1.900	72	6	*48.3*	*1828.8*	*152.4*
2	*53*	**30-2032R72**	2.375	72	6	*60.3*	*1828.8*	*152.4*
3	*78*	**30-3032R72**	3.500	72	6	*88.9*	*1828.8*	*152.4*
4	*103*	**30-4032R72**	4.500	72	6	*114.3*	*1828.8*	*152.4*
5	*129*	**30-5032R72**	5.563	72	6	*141.3*	*1828.8*	*152.4*
6	*155*	**30-6032R72**	6.625	72	6	*168.3*	*1828.8*	*152.4*

108" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
8❖	*203*	**30-8032R108**	8.625	108	6	*219.1*	*2743.2*	*152.4*

❖ Not UL Listed, CSA Certified or NEMA compliant.

IPS SW 60° ELBOW



12" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7531R12**	1.050	12	6	*26.7*	*304.8*	*152.4*
1	*27*	**30-1031R12**	1.315	12	6	*33.4*	*304.8*	*152.4*
1¼	*35*	**30-1231R12**	1.660	12	6	*42.2*	*304.8*	*152.4*
1½	*41*	**30-1531R12**	1.900	12	6	*48.3*	*304.8*	*152.4*

24" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7531R24**	1.050	24	6	*26.7*	*609.6*	*152.4*
1	*27*	**30-1031R24**	1.315	24	6	*33.4*	*609.6*	*152.4*
1¼	*35*	**30-1231R24**	1.660	24	6	*42.2*	*609.6*	*152.4*
1½	*41*	**30-1531R24**	1.900	24	6	*48.3*	*609.6*	*152.4*
2	*53*	**30-2031R24**	2.375	24	6	*60.3*	*609.6*	*152.4*
3	*78*	**30-3031R24**	3.500	24	6	*88.9*	*609.6*	*152.4*

36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7531R36**	1.050	36	6	*26.7*	*914.4*	*152.4*
1	*27*	**30-1031R36**	1.315	36	6	*33.4*	*914.4*	*152.4*
1¼	*35*	**30-1231R36**	1.660	36	6	*42.2*	*914.4*	*152.4*
1½	*41*	**30-1531R36**	1.900	36	6	*48.3*	*914.4*	*152.4*
2	*53*	**30-2031R36**	2.375	36	6	*60.3*	*914.4*	*152.4*
3	*78*	**30-3031R36**	3.500	36	6	*88.9*	*914.4*	*152.4*
4	*103*	**30-4031R36**	4.500	36	6	*114.3*	*914.4*	*152.4*

❖ Not UL Listed, CSA Certified or NEMA compliant.

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7531R48**	1.050	48	6	*26.7*	*1219.2*	*152.4*
1	*27*	**30-1031R48**	1.315	48	6	*33.4*	*1219.2*	*152.4*
1¼	*35*	**30-1231R48**	1.660	48	6	*42.2*	*1219.2*	*152.4*
1½	*41*	**30-1531R48**	1.900	48	6	*48.3*	*1219.2*	*152.4*
2	*53*	**30-2031R48**	2.375	48	6	*60.3*	*1219.2*	*152.4*
3	*78*	**30-3031R48**	3.500	48	6	*88.9*	*1219.2*	*152.4*
4	*103*	**30-4031R48**	4.500	48	6	*114.3*	*1219.2*	*152.4*
5	*129*	**30-5031R48**	5.563	48	6	*141.3*	*1219.2*	*152.4*
6	*155*	**30-6031R48**	6.625	48	6	*168.3*	*1219.2*	*152.4*

60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7531R60**	1.050	60	6	*26.7*	*1524.0*	*152.4*
1	*27*	**30-1031R60**	1.315	60	6	*33.4*	*1524.0*	*152.4*
1¼	*35*	**30-1231R60**	1.660	60	6	*42.2*	*1524.0*	*152.4*
1½	*41*	**30-1531R60**	1.900	60	6	*48.3*	*1524.0*	*152.4*
2	*53*	**30-2031R60**	2.375	60	6	*60.3*	*1524.0*	*152.4*
3	*78*	**30-3031R60**	3.500	60	6	*88.9*	*1524.0*	*152.4*
4	*103*	**30-4031R60**	4.500	60	6	*114.3*	*1524.0*	*152.4*
5	*129*	**30-5031R60**	5.563	60	6	*141.3*	*1524.0*	*152.4*
6	*155*	**30-6031R60**	6.625	60	6	*168.3*	*1524.0*	*152.4*

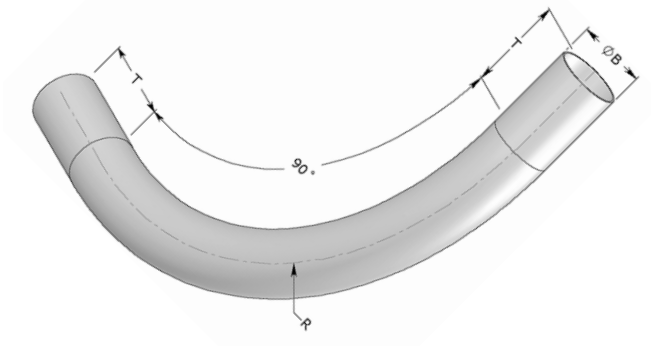
72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7531R72**	1.050	72	6	*26.7*	*1828.8*	*152.4*
1	*27*	**30-1031R72**	1.315	72	6	*33.4*	*1828.8*	*152.4*
1¼	*35*	**30-1231R72**	1.660	72	6	*42.2*	*1828.8*	*152.4*
1½	*41*	**30-1531R72**	1.900	72	6	*48.3*	*1828.8*	*152.4*
2	*53*	**30-2031R72**	2.375	72	6	*60.3*	*1828.8*	*152.4*
3	*78*	**30-3031R72**	3.500	72	6	*88.9*	*1828.8*	*152.4*
4	*103*	**30-4031R72**	4.500	72	6	*114.3*	*1828.8*	*152.4*
5	*129*	**30-5031R72**	5.563	72	6	*141.3*	*1828.8*	*152.4*
6	*155*	**30-6031R72**	6.625	72	6	*168.3*	*1828.8*	*152.4*

108" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
8❖	*203*	**30-8031R108**	8.625	108	6	*219.1*	*2743.2*	*152.4*

IPS SW 90° ELBOW



12" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7530R12**	1.050	12	6	*26.7*	*304.8*	*152.4*
1	*27*	**30-1030R12**	1.315	12	6	*33.4*	*304.8*	*152.4*
1¼	*35*	**30-1230R12**	1.660	12	6	*42.2*	*304.8*	*152.4*
1½	*41*	**30-1530R12**	1.900	12	6	*48.3*	*304.8*	*152.4*

18" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7530R18**	1.050	18	6	*26.7*	*457.2*	*152.4*
1	*27*	**30-1030R18**	1.315	18	6	*33.4*	*457.2*	*152.4*
1¼	*35*	**30-1230R18**	1.660	18	6	*42.2*	*457.2*	*152.4*
1½	*41*	**30-1530R18**	1.900	18	6	*48.3*	*457.2*	*152.4*
2	*53*	**30-2030R18**	2.375	18	6	*60.3*	*457.2*	*152.4*

24" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7530R24**	1.050	24	6	*26.7*	*609.6*	*152.4*
1	*27*	**30-1030R24**	1.315	24	6	*33.4*	*609.6*	*152.4*
1¼	*35*	**30-1230R24**	1.660	24	6	*42.2*	*609.6*	*152.4*
1½	*41*	**30-1530R24**	1.900	24	6	*48.3*	*609.6*	*152.4*
2	*53*	**30-2030R24**	2.375	24	6	*60.3*	*609.6*	*152.4*
3	*78*	**30-3030R24**	3.500	24	6	*88.9*	*609.6*	*152.4*

❖ Not UL Listed, CSA Certified or NEMA compliant.

36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7530R36**	1.050	36	6	*26.7*	*914.4*	*152.4*
1	*27*	**30-1030R36**	1.315	36	6	*33.4*	*914.4*	*152.4*
1¼	*35*	**30-1230R36**	1.660	36	6	*42.2*	*914.4*	*152.4*
1½	*41*	**30-1530R36**	1.900	36	6	*48.3*	*914.4*	*152.4*
2	*53*	**30-2030R36**	2.375	36	6	*60.3*	*914.4*	*152.4*
3	*78*	**30-3030R36**	3.500	36	6	*88.9*	*914.4*	*152.4*
4	*103*	**30-4030R36**	4.500	36	6	*114.3*	*914.4*	*152.4*
5	*129*	**30-5030R36**	5.563	36	6	*141.3*	*914.4*	*152.4*
6	*155*	**30-6030R36**	6.625	36	6	*168.3*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7530R48**	1.050	48	6	*26.7*	*1219.2*	*152.4*
1	*27*	**30-1030R48**	1.315	48	6	*33.4*	*1219.2*	*152.4*
1¼	*35*	**30-1230R48**	1.660	48	6	*42.2*	*1219.2*	*152.4*
1½	*41*	**30-1530R48**	1.900	48	6	*48.3*	*1219.2*	*152.4*
2	*53*	**30-2030R48**	2.375	48	6	*60.3*	*1219.2*	*152.4*
3	*78*	**30-3030R48**	3.500	48	6	*88.9*	*1219.2*	*152.4*
4	*103*	**30-4030R48**	4.500	48	6	*114.3*	*1219.2*	*152.4*
5	*129*	**30-5030R48**	5.563	48	6	*141.3*	*1219.2*	*152.4*
6	*155*	**30-6030R48**	6.625	48	6	*168.3*	*1219.2*	*152.4*

60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
¾	*21*	**30-7530R60**	1.050	60	6	*26.7*	*1524.0*	*152.4*
1	*27*	**30-1030R60**	1.315	60	6	*33.4*	*1524.0*	*152.4*
1¼	*35*	**30-1230R60**	1.660	60	6	*42.2*	*1524.0*	*152.4*
1½	*41*	**30-1530R60**	1.900	60	6	*48.3*	*1524.0*	*152.4*
2	*53*	**30-2030R60**	2.375	60	6	*60.3*	*1524.0*	*152.4*
3	*78*	**30-3030R60**	3.500	60	6	*88.9*	*1524.0*	*152.4*
4	*103*	**30-4030R60**	4.500	60	6	*114.3*	*1524.0*	*152.4*
5	*129*	**30-5030R60**	5.563	60	6	*141.3*	*1524.0*	*152.4*
6	*155*	**30-6030R60**	6.625	60	6	*168.3*	*1524.0*	*152.4*

72" RADIUS

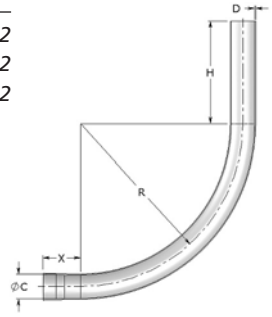
Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**30-2030R72**	1.050	72	6	*26.7*	*1828.8*	*152.4*
3	*78*	**30-3030R72**	1.315	72	6	*33.4*	*1828.8*	*152.4*
4	*103*	**30-4030R72**	1.660	72	6	*42.2*	*1828.8*	*152.4*
5	*129*	**30-5030R72**	1.900	72	6	*48.3*	*1828.8*	*152.4*
6	*155*	**30-6030R72**	6.625	72	6	*168.3*	*1828.8*	*152.4*

108" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
8❖	203	**30-8030R108**	8.625	108	6	*219.1*	*2743.2*	*152.4*

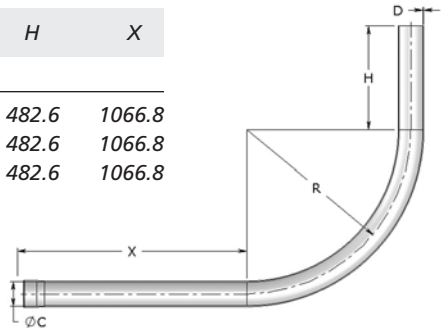
IPS SW POLERISER

Size		Symbol	ØC	D	R	H	X	ØC	D	R	H	X
in	*mm*	No.	inches					*millimeters*				
2	*53*	**30-2038**	2.417	0.130	30	19	8	*61.4*	*3.3*	*762.0*	*482.6*	*203.2*
3	*78*	**30-3038**	3.542	0.130	30	19	8	*90.0*	*3.3*	*762.0*	*482.6*	*203.2*
4	*103*	**30-4038**	4.542	0.130	30	19	8	*115.4*	*3.3*	*762.0*	*482.6*	*203.2*



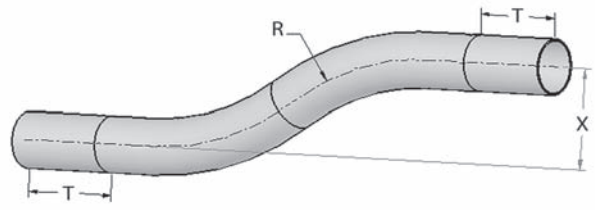
IPS SW EXTENDED POLERISER

Size		Symbol	ØC	D	R	H	X	ØC	D	R	H	X
in	*mm*	No.	inches					*millimeters*				
2	*53*	**30-2039**	2.417	0.130	30	19	42	*61.4*	*3.3*	*762.0*	*482.6*	*1066.8*
3	*78*	**30-3039**	3.542	0.130	30	19	42	*90.0*	*3.3*	*762.0*	*482.6*	*1066.8*
4	*103*	**30-4039**	4.542	0.130	30	19	42	*115.4*	*3.3*	*762.0*	*482.6*	*1066.8*



IPS SW OFFSET ELBOW

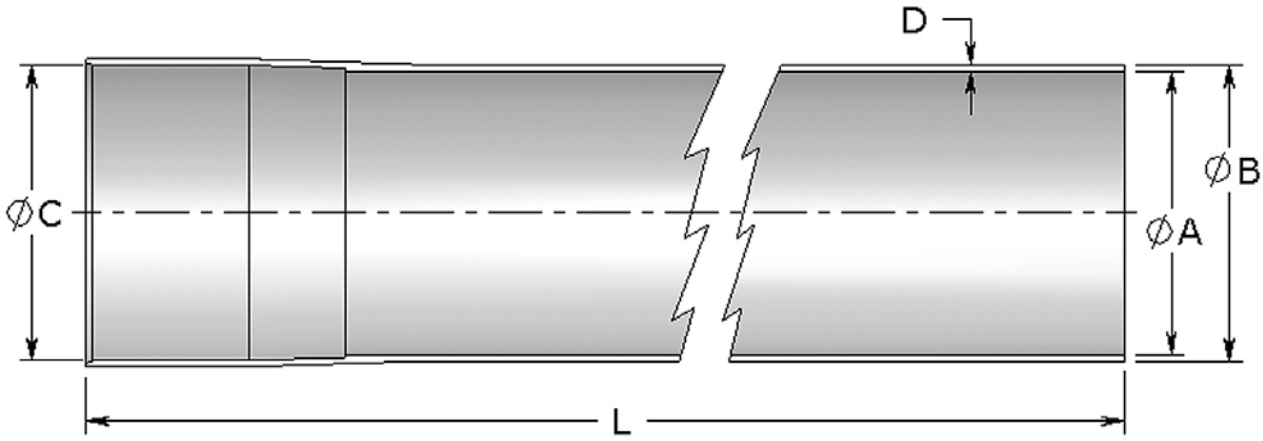
Size	Symbol No.
all	special



❖ Not UL Listed, CSA Certified or NEMA compliant.

IPS HEAVY WALL (HW)
DIRECT BURIAL (DB) PRODUCTS – HEAVY LOADS

IPS HEAVY WALL (HW) CONDUIT

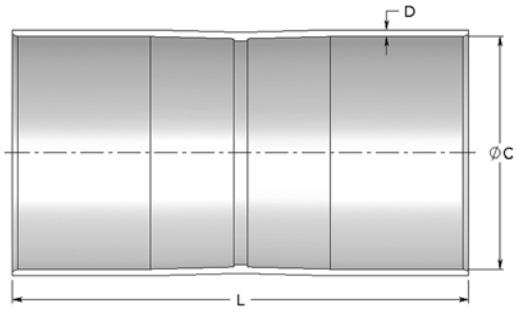


Size		Symbol	ØA	ØB	ØC	D	L	ØA	ØB	ØC	D	L
in	mm	No.	inches					*millimeters*				meters
4	*103*	**32-4000**	4.360	4.550	4.590	0.095	236.25	*110.7*	*115.6*	*116.6*	*2.4*	*6*
5	*129*	**32-5000**	5.373	5.603	5.643	0.115	236.25	*136.5*	*142.3*	*143.3*	*2.9*	*6*
6	*155*	**32-6000**	6.405	6.635	6.675	0.115	236.25	*162.7*	*168.5*	*169.5*	*2.9*	*6*

- All our IPS Below Ground products can be offered with a TriSeal™ upon request for push-fit assembly.
- Adhesives are available, if required.
- Standard length is 19.68 ft. (6m). Also available in 9.84 ft. section (3m), if required.
- Spigot end tapered for ease of installation.

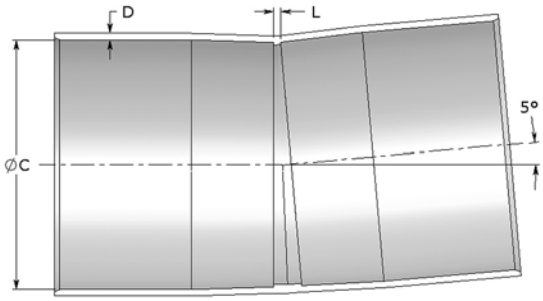
IPS HW DOUBLE BELL COUPLING

Size		Symbol	ØC	D	L	ØC	D	L
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4010**	4.590	0.095	8.250	*116.6*	*2.4*	*209.6*
5	*129*	**32-5010**	5.643	0.115	8.250	*143.3*	*2.9*	*209.6*
6	*155*	**32-6010**	6.675	0.115	8.250	*169.5*	*2.9*	*209.6*



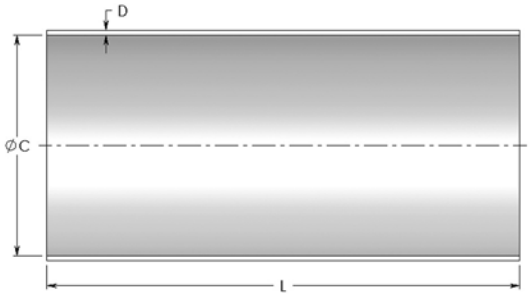
IPS HW 5° DOUBLE BELL COUPLING

Size		Symbol	ØC	D	L	ØC	D	L
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4011**	4.590	0.095	0.125	*116.6*	*2.4*	*3.2*
5	*129*	**32-5011**	5.643	0.115	0.125	*143.3*	*2.9*	*3.2*
6	*155*	**32-6011**	6.675	0.115	0.125	*169.5*	*2.9*	*3.2*

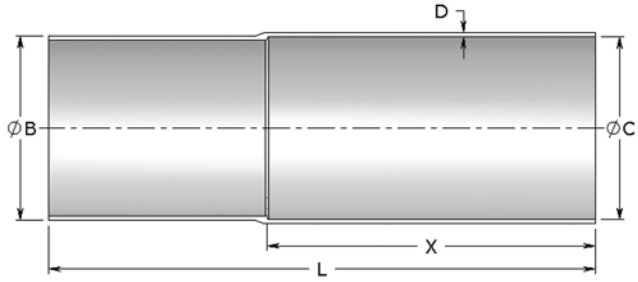


IPS HW SLEEVE

Size		Symbol	ØC	D	L	ØC	D	L
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4016**	4.590	0.095	12	*116.6*	*2.4*	*304.8*
5	*129*	**32-5016**	5.643	0.115	12	*143.3*	*2.9*	*304.8*
6	*155*	**32-6016**	6.675	0.115	12	*169.5*	*2.9*	*304.8*

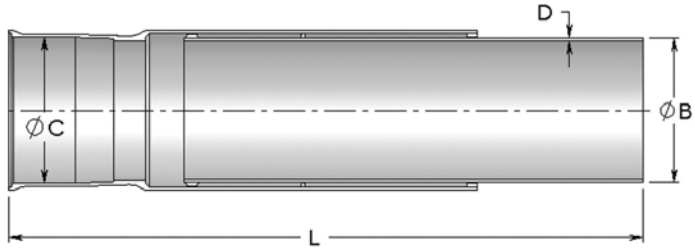


IPS HW SINGLE EXPANSION JOINT



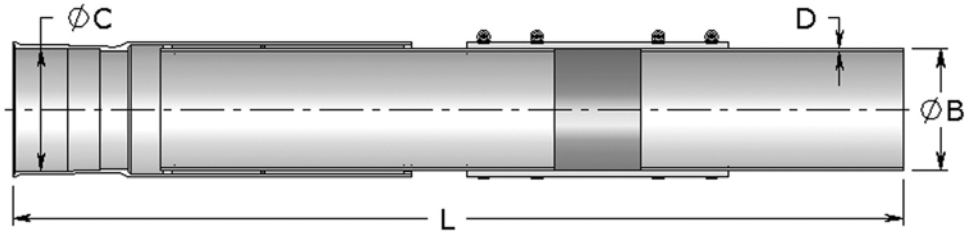
Size		Symbol	ØB	ØC	D	L	X	ØB	ØC	D	L	X
in	*mm*	No.	inches					*millimeters*				
4	*103*	**32-4012**	4.550	4.590	0.095	20	12	*115.6*	*116.6*	*2.4*	*508.0*	*304.8*
5	*129*	**32-5012**	5.603	5.643	0.115	20	12	*142.3*	*143.3*	*2.9*	*508.0*	*304.8*
6	*155*	**32-6012**	6.635	6.675	0.115	20	12	*168.5*	*169.5*	*2.9*	*508.0*	*304.8*

IPS HW O-RING EXPANSION JOINT



Size		Symbol	ØB	ØC	D	L min	L max	ØB	ØC	D	L min	L max
in	*mm*	No.	inches					*millimeters*				
4	*103*	**32-4017**	4.550	4.590	0.095	24	36	*115.6*	*116.6*	*2.4*	*609.6*	*914.4*
5	*129*	**32-5017**	5.603	5.643	0.115	24	36	*142.3*	*143.3*	*2.9*	*609.6*	*914.4*
6	*155*	**32-6017**	6.635	6.675	0.115	24	36	*168.5*	*169.5*	*2.9*	*609.6*	*914.4*

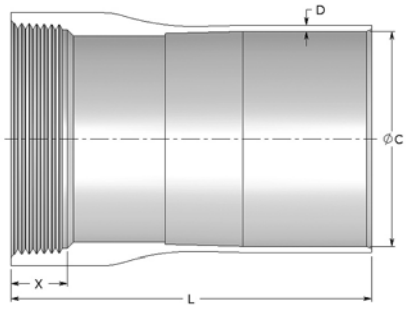
IPS HW O-RING EXPANSION / DEFLECTION JOINT



Size		Symbol	ØB	ØC	D	L min	L max	ØB	ØC	D	L min	L max
in	*mm*	No.	inches					*millimeters*				
4	*103*	**32-4057**	4.550	4.590	0.095	40	52	*115.6*	*116.6*	*2.4*	*1016.0*	*1320.8*
5	*129*	**32-5057**	5.603	5.643	0.115	40	52	*142.3*	*143.3*	*2.9*	*1016.0*	*1320.8*
6	*155*	**32-6057**	6.635	6.675	0.115	40	52	*168.5*	*169.5*	*2.9*	*1016.0*	*1320.8*

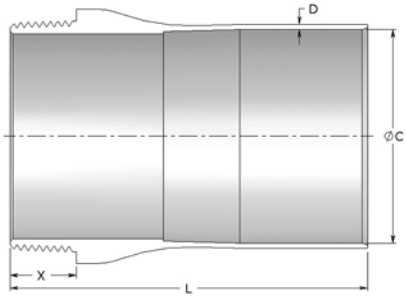
IPS HW NPT FEMALE THREADED ADAPTER

Size		Symbol	ØC	D	L	X	ØC	D	L	X
in	*mm*	No.	inches				*millimeters*			
4	*103*	**32-4044**	4.590	0.095	8	1.094	*116.6*	*2.4*	*203.2*	*27.8*
5	*129*	**32-5044**	5.643	0.115	8	1.187	*143.3*	*2.9*	*203.2*	*30.1*
6	*155*	**32-6044**	6.675	0.115	8	1.208	*169.5*	*2.9*	*203.2*	*30.7*



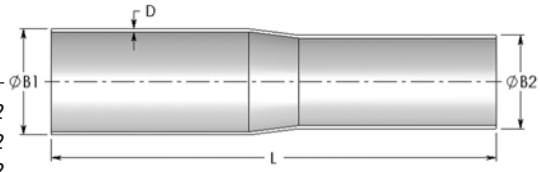
IPS HW NPT MALE THREADED ADAPTER

Size		Symbol	ØC	D	L	X	ØC	D	L	X
in	*mm*	No.	inches				*millimeters*			
4	*103*	**32-4027**	4.590	0.095	8	1.300	*116.6*	*2.4*	*203.2*	*33.0*
5	*129*	**32-5027**	5.643	0.115	8	1.406	*143.3*	*2.9*	*203.2*	*35.7*
6	*155*	**32-6027**	6.675	0.115	8	1.513	*169.5*	*2.9*	*203.2*	*38.4*



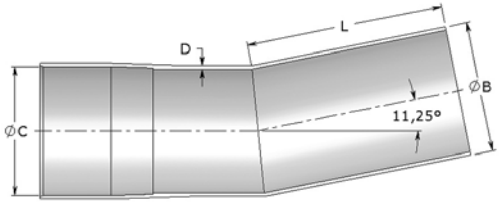
IPS HW REDUCER

Size		Symbol	ØB1	ØB2	D	L	ØB1	ØB2	D	L
in	*mm*	No.	inches				*millimeters*			
4	*103*	**32-4029**	4.550	3.550	0.095	18	*115.6*	*90.2*	*2.9*	*457.2*
5	*129*	**32-5029**	5.603	4.550	0.115	18	*142.3*	*115.6*	*2.9*	*457.2*
6	*155*	**32-6029**	6.635	5.603	0.115	18	*168.5*	*142.3*	*2.9*	*457.2*

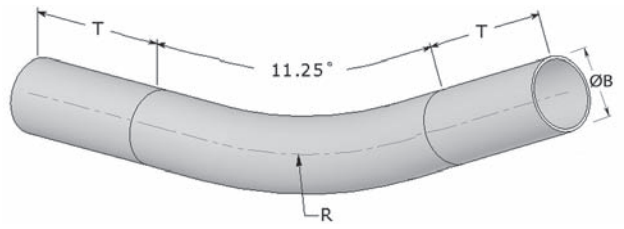


IPS HW 11.25° FITTING

Size		Symbol	ØB	ØC	D	L	ØB	ØC	D	L
in	*mm*	No.	inches				*millimeters*			
4	*103*	**32-4035**	4.550	4.590	0.095	7	*115.6*	*116.6*	*2.4*	*177.8*
5	*129*	**32-5035**	5.603	5.643	0.115	7	*142.3*	*143.3*	*2.9*	*177.8*
6	*155*	**32-6035**	6.635	6.675	0.115	7	*168.5*	*169.5*	*2.9*	*177.8*



IPS HW 11.25° ELBOW



36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4035R36**	4.550	36	6	*115.6*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4035R48**	4.550	48	6	*115.6*	*1219.2*	*152.4*
5	*129*	**32-5035R48**	5.603	48	6	*142.3*	*1219.2*	*152.4*
6	*155*	**32-6035R48**	6.635	48	6	*168.5*	*1219.2*	*152.4*

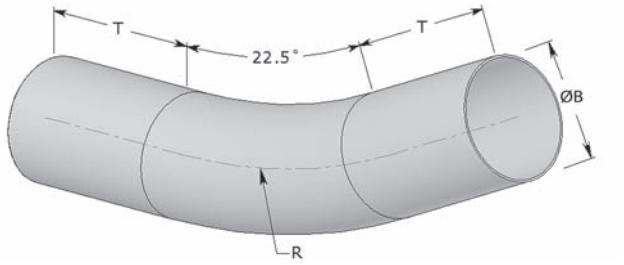
60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4035R60**	4.550	60	6	*115.6*	*1524.0*	*152.4*
5	*129*	**32-5035R60**	5.603	60	6	*142.3*	*1524.0*	*152.4*
6	*155*	**32-6035R60**	6.635	60	6	*168.5*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4035R72**	4.550	72	6	*115.6*	*1828.8*	*152.4*
5	*129*	**32-5035R72**	5.603	72	6	*142.3*	*1828.8*	*152.4*
6	*155*	**32-6035R72**	6.635	72	6	*168.5*	*1828.8*	*152.4*

IPS HW 22.5° ELBOW



36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4034R36**	4.550	36	6	*115.6*	*914.4*	*152.4*
5	*129*	**32-5034R36**	5.603	36	6	*142.3*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4034R48**	4.550	48	6	*115.6*	*1219.2*	*152.4*
5	*129*	**32-5034R48**	5.603	48	6	*142.3*	*1219.2*	*152.4*
6	*155*	**32-6034R48**	6.635	48	6	*168.5*	*1219.2*	*152.4*

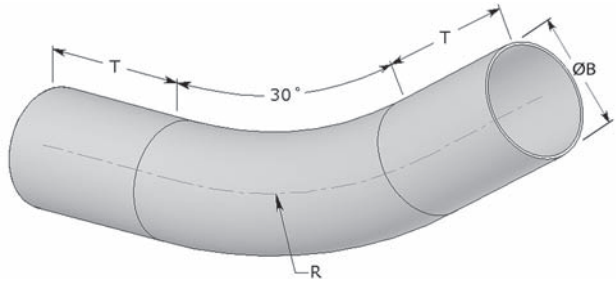
60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4034R60**	4.550	60	6	*115.6*	*1524.0*	*152.4*
5	*129*	**32-5034R60**	5.603	60	6	*142.3*	*1524.0*	*152.4*
6	*155*	**32-6034R60**	6.635	60	6	*168.5*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4034R72**	4.550	72	6	*115.6*	*1828.8*	*152.4*
5	*129*	**32-5034R72**	5.603	72	6	*142.3*	*1828.8*	*152.4*
6	*155*	**32-6034R72**	6.635	72	6	*168.5*	*1828.8*	*152.4*

IPS HW 30° ELBOW



36" RADIUS

Size		Symbol	ØB	R	T	*ØB*	*R*	*T*
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4033R36**	4.550	36	6	*115.6*	*914.4*	*152.4*
5	*129*	**32-5033R36**	5.603	36	6	*142.3*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	*ØB*	*R*	*T*
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4033R48**	4.550	48	6	*115.6*	*1219.2*	*152.4*
5	*129*	**32-5033R48**	5.603	48	6	*142.3*	*1219.2*	*152.4*
6	*155*	**32-6033R48**	6.635	48	6	*168.5*	*1219.2*	*152.4*

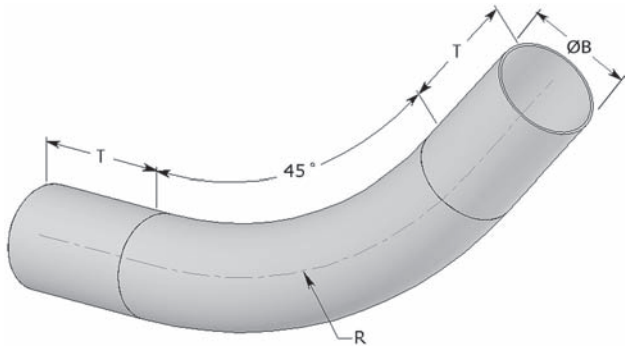
60" RADIUS

Size		Symbol	ØB	R	T	*ØB*	*R*	*T*
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4033R60**	4.550	60	6	*115.6*	*1524.0*	*152.4*
5	*129*	**32-5033R60**	5.603	60	6	*142.3*	*1524.0*	*152.4*
6	*155*	**32-6033R60**	6.635	60	6	*168.5*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	*ØB*	*R*	*T*
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4033R72**	4.550	72	6	*115.6*	*1828.8*	*152.4*
5	*129*	**32-5033R72**	5.603	72	6	*142.3*	*1828.8*	*152.4*
6	*155*	**32-6033R72**	6.635	72	6	*168.5*	*1828.8*	*152.4*

IPS HW 45° ELBOW



36" RADIUS

Size		Symbol	ØB	R	T	*ØB*	*R*	*T*
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4032R36**	4.550	36	6	*115.6*	*914.4*	*152.4*
5	*129*	**32-5032R36**	5.603	36	6	*142.3*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	*ØB*	*R*	*T*
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4032R48**	4.550	48	6	*115.6*	*1219.2*	*152.4*
5	*129*	**32-5032R48**	5.603	48	6	*142.3*	*1219.2*	*152.4*
6	*155*	**32-6032R48**	6.635	48	6	*168.5*	*1219.2*	*152.4*

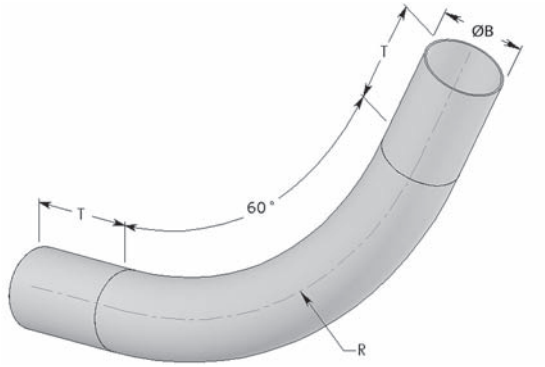
60" RADIUS

Size		Symbol	ØB	R	T	*ØB*	*R*	*T*
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4032R60**	4.550	60	6	*115.6*	*1524.0*	*152.4*
5	*129*	**32-5032R60**	5.603	60	6	*142.3*	*1524.0*	*152.4*
6	*155*	**32-6032R60**	6.635	60	6	*168.5*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	*ØB*	*R*	*T*
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4032R72**	4.550	72	6	*115.6*	*1828.8*	*152.4*
5	*129*	**32-5032R72**	5.603	72	6	*142.3*	*1828.8*	*152.4*
6	*155*	**32-6032R72**	6.635	72	6	*168.5*	*1828.8*	*152.4*

IPS HW 60° ELBOW



36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4031R36**	4.550	36	6	*115.6*	*914.4*	*152.4*
5	*129*	**32-5031R36**	5.603	36	6	*142.3*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4031R48**	4.550	48	6	*115.6*	*1219.2*	*152.4*
5	*129*	**32-5031R48**	5.603	48	6	*142.3*	*1219.2*	*152.4*
6	*155*	**32-6031R48**	6.635	48	6	*168.5*	*1219.2*	*152.4*

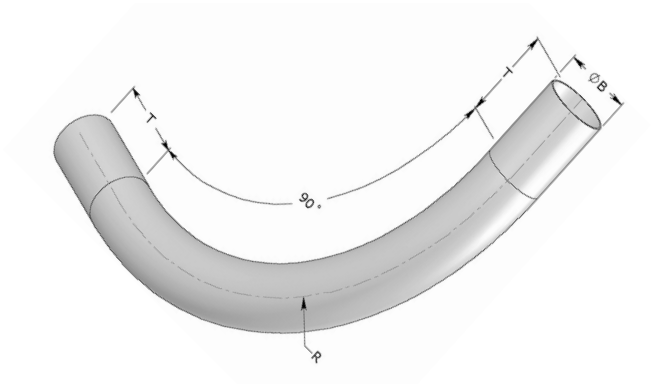
60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4031R60**	4.550	60	6	*115.6*	*1524.0*	*152.4*
5	*129*	**32-5031R60**	5.603	60	6	*142.3*	*1524.0*	*152.4*
6	*155*	**32-6031R60**	6.635	60	6	*168.5*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4031R72**	4.550	72	6	*115.6*	*1828.8*	*152.4*
5	*129*	**32-5031R72**	5.603	72	6	*142.3*	*1828.8*	*152.4*
6	*155*	**32-6031R72**	6.635	72	6	*168.5*	*1828.8*	*152.4*

IPS HW 90° ELBOW



36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4030R36**	4.550	36	6	*115.6*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4030R48**	4.550	48	6	*115.6*	*1219.2*	*152.4*
5	*129*	**32-5030R48**	5.603	48	6	*142.3*	*1219.2*	*152.4*
6	*155*	**32-6030R48**	6.635	48	6	*168.5*	*1219.2*	*152.4*

60" RADIUS

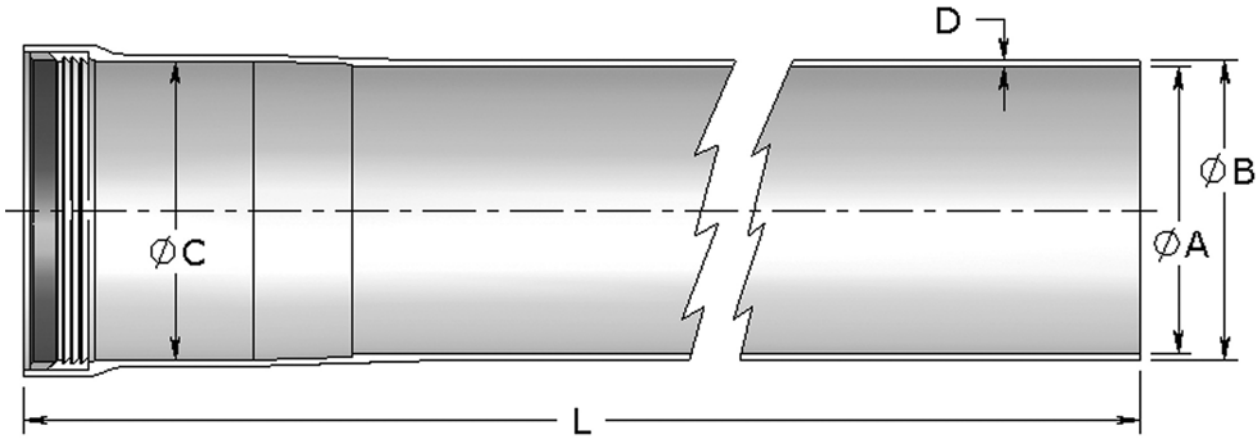
Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4030R60**	4.550	60	6	*115.6*	*1524.0*	*152.4*
5	*129*	**32-5030R60**	5.603	60	6	*142.3*	*1524.0*	*152.4*
6	*155*	**32-6030R60**	6.635	60	6	*168.5*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**32-4030R72**	4.550	72	6	*115.6*	*1828.8*	*152.4*
5	*129*	**32-5030R72**	5.603	72	6	*142.3*	*1828.8*	*152.4*
6	*155*	**32-6030R72**	6.635	72	6	*168.5*	*1828.8*	*152.4*

ID THIN WALL (TW)
ENCASED BURIAL (EB) PRODUCTS

ID THIN WALL (TW) CONDUIT

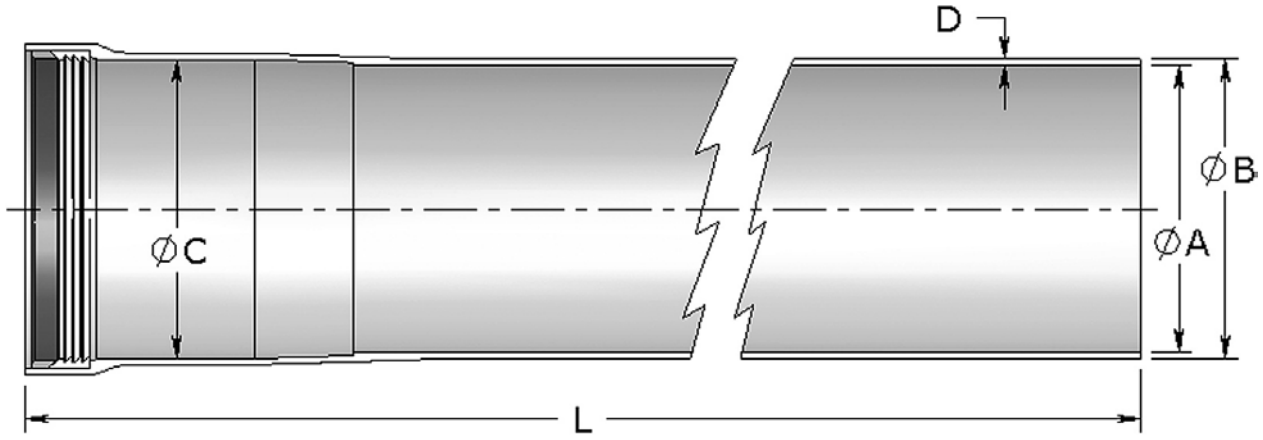


Size		Symbol	ØA	ØB	ØC	D	L	ØA	ØB	ØC	D	L
in	*mm*	No.	inches					*millimeters*				*meters*
4	*103*	**41-4000**	4.000	4.110	4.170	0.055	236.25	*101.6*	*104.4*	*105.9*	*1.4*	*6*
4½	*116*	**41-4500**	4.500	4.640	4.730	0.070	236.25	*114.3*	*117.9*	*120.1*	*1.8*	*6*
5	*129*	**41-5000**	5.000	5.140	5.230	0.070	236.25	*127.0*	*130.6*	*132.8*	*1.8*	*6*
6	*155*	**41-6000**	6.000	6.140	6.230	0.070	236.25	*152.4*	*156.0*	*158.2*	*1.8*	*6*

- All our ID Below Ground products are offered with a TriSeal™ for push-fit assembly.
- Adhesives are available, if required.
- Standard length is 19.68 ft. (6m) but can also be available in 9.84 ft. section (3m), if required.
- Spigot end tapered for ease of installation.

ID STANDARD WALL (SW)
ENCASED BURIAL (EB) OR DIRECT BURIAL (DB) PRODUCTS

ID STANDARD WALL (SW) CONDUIT

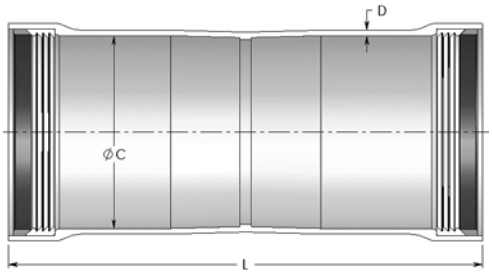


Size		Symbol	ØA	ØB	ØC	D	L	ØA	ØB	ØC	D	L
in	*mm*	No.	inches					*millimeters*				*meters*
2	*53*	**40-2000**	2.000	2.140	2.170	0.070	236.25	*50.8*	*54.4*	*55.1*	*1.8*	*6*
2½	*63*	**40-2500**	2.500	2.640	2.670	0.070	236.25	*63.5*	*67.1*	*67.8*	*1.8*	*6*
3	*78*	**40-3000**	3.000	3.140	3.170	0.070	236.25	*76.2*	*79.8*	*80.5*	*1.8*	*6*
3½	*91*	**40-3500**	3.500	3.640	3.670	0.070	236.25	*88.9*	*92.5*	*93.2*	*1.8*	*6*
4	*103*	**40-4000**	4.000	4.140	4.170	0.070	236.25	*101.6*	*105.2*	*105.9*	*1.8*	*6*
4½	*116*	**40-4500**	4.500	4.690	4.730	0.095	236.25	*114.3*	*119.1*	*120.1*	*2.4*	*6*
5	*129*	**40-5000**	5.000	5.190	5.230	0.095	236.25	*127.0*	*131.8*	*132.8*	*2.4*	*6*
6	*155*	**40-6000**	6.000	6.190	6.230	0.095	236.25	*152.4*	*157.2*	*158.2*	*2.4*	*6*

- All our ID Below Ground products are offered with a TriSeal™ push-fit assembly
- Adhesives are available, if required.
- Standard length is 19.68 ft. (6m) but can also be available in 9.84 ft. section (3m), if required.
- Spigot end tapered for ease of installation

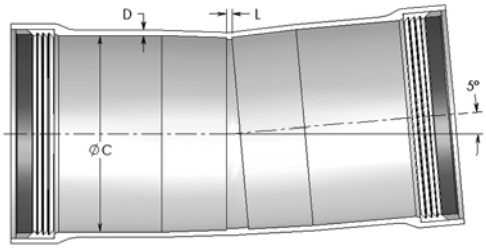
ID SW DOUBLE BELL COUPLING

Size		Symbol	ØC	D	L	ØC	D	L
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2010**	2.170	0.070	10.25	*55.1*	*1.8*	*260.4*
2½	*63*	**40-2510**	2.670	0.070	10.25	*67.8*	*1.8*	*260.4*
3	*78*	**40-3010**	3.170	0.070	10.25	*80.5*	*1.8*	*260.4*
3½	*91*	**40-3510**	3.670	0.070	10.25	*93.2*	*1.8*	*260.4*
4	*103*	**40-4010**	4.170	0.070	10.25	*105.9*	*1.8*	*260.4*
4½	*116*	**40-4510**	4.730	0.095	10.25	*120.1*	*2.4*	*260.4*
5	*129*	**40-5010**	5.230	0.095	10.25	*132.8*	*2.4*	*260.4*
6	*155*	**40-6010**	6.230	0.095	10.25	*158.2*	*2.4*	*260.4*



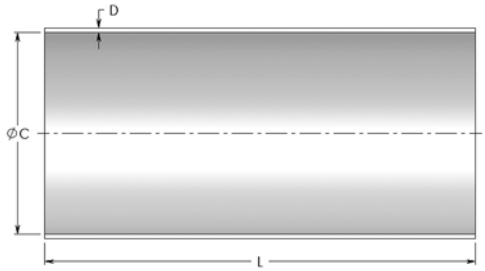
ID SW 5° DOUBLE BELL COUPLING

Size		Symbol	ØC	D	L	ØC	D	L
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2011**	2.170	0.070	0.125	*55.1*	*1.8*	*3.2*
2½	*63*	**40-2511**	2.670	0.070	0.125	*67.8*	*1.8*	*3.2*
3	*78*	**40-3011**	3.170	0.070	0.125	*80.5*	*1.8*	*3.2*
3½	*91*	**40-3511**	3.670	0.070	0.125	*93.2*	*1.8*	*3.2*
4	*103*	**40-4011**	4.170	0.070	0.125	*105.9*	*1.8*	*3.2*
4½	*116*	**40-4511**	4.730	0.095	0.125	*120.1*	*2.4*	*3.2*
5	*129*	**40-5011**	5.230	0.095	0.125	*132.8*	*2.4*	*3.2*
6	*155*	**40-6011**	6.230	0.095	0.125	*158.2*	*2.4*	*3.2*

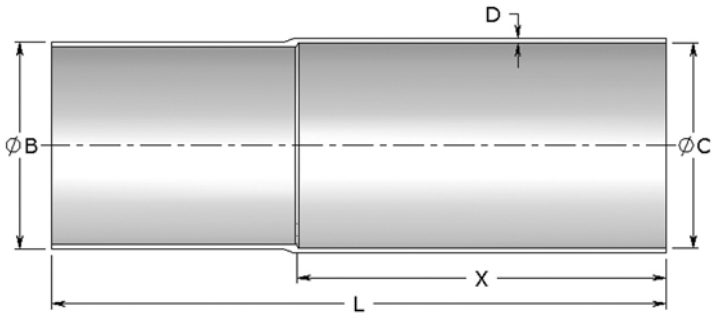


ID SW SLEEVE

Size		Symbol	ØC	D	L	ØC	D	L
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2016**	2.170	0.070	12	*55.1*	*1.8*	*304.8*
2½	*63*	**40-2516**	2.670	0.070	12	*67.8*	*1.8*	*304.8*
3	*78*	**40-3016**	3.170	0.070	12	*80.5*	*1.8*	*304.8*
3½	*91*	**40-3516**	3.670	0.070	12	*93.2*	*1.8*	*304.8*
4	*103*	**40-4016**	4.170	0.070	12	*105.9*	*1.8*	*304.8*
4½	*116*	**40-4516**	4.730	0.095	12	*120.1*	*2.4*	*304.8*
5	*129*	**40-5016**	5.230	0.095	12	*132.8*	*2.4*	*304.8*
6	*155*	**40-6016**	6.230	0.095	12	*158.2*	*2.4*	*304.8*

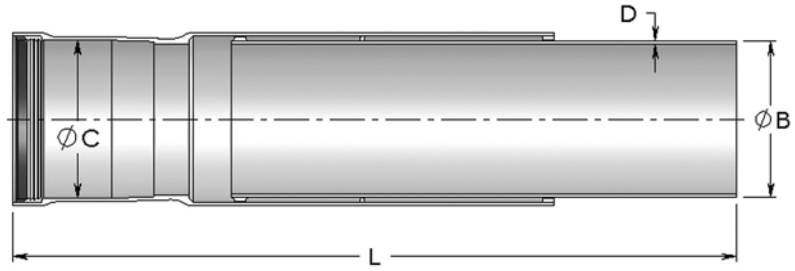


ID SW SINGLE EXPANSION JOINT



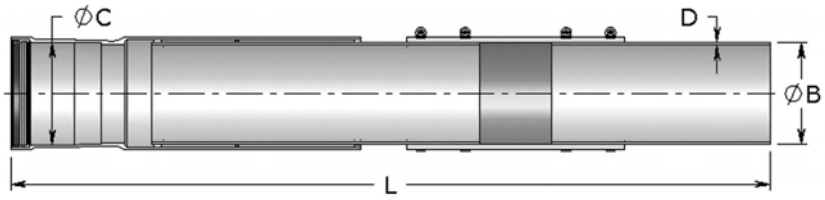
Size		Symbol	ØB	ØC	D	L	X	ØB	ØC	D	L	X
in	*mm*	No.	inches					*millimeters*				
2	*53*	**40-2012**	2.140	2.170	0.070	20	12	*54.4*	*55.1*	*1.8*	*508.0*	*304.8*
2½	*63*	**40-2512**	2.640	2.670	0.070	20	12	*67.1*	*67.8*	*1.8*	*508.0*	*304.8*
3	*78*	**40-3012**	3.140	3.170	0.070	20	12	*79.8*	*80.5*	*1.8*	*508.0*	*304.8*
3½	*91*	**40-3512**	3.640	3.670	0.070	20	12	*92.5*	*93.2*	*1.8*	*508.0*	*304.8*
4	*103*	**40-4012**	4.140	4.170	0.070	20	12	*105.2*	*105.9*	*1.8*	*508.0*	*304.8*
4½	*116*	**40-4512**	4.690	4.730	0.095	20	12	*119.1*	*120.1*	*2.4*	*508.0*	*304.8*
5	*129*	**40-5012**	5.190	5.230	0.095	20	12	*131.8*	*132.8*	*2.4*	*508.0*	*304.8*
6	*155*	**40-6012**	6.190	6.230	0.095	20	12	*157.2*	*158.2*	*2.4*	*508.0*	*304.8*

ID SW O-RING EXPANSION JOINT



Size		Symbol	ØB	ØC	D	L min	L max	ØB	ØC	D	L min	L max
in	*mm*	No.	inches					*millimeters*				
2	*53*	**40-2017**	2.140	2.170	0.070	24	36	*54.4*	*55.1*	*1.8*	*609.6*	*914.4*
2½	*63*	**40-2517**	2.640	2.670	0.070	24	36	*67.1*	*67.8*	*1.8*	*609.6*	*914.4*
3	*78*	**40-3017**	3.140	3.170	0.070	24	36	*79.8*	*80.5*	*1.8*	*609.6*	*914.4*
3½	*91*	**40-3517**	3.640	3.670	0.070	24	36	*92.5*	*93.2*	*1.8*	*609.6*	*914.4*
4	*103*	**40-4017**	4.140	4.170	0.070	24	36	*105.2*	*105.9*	*1.8*	*609.6*	*914.4*
4½	*116*	**40-4517**	4.690	4.730	0.095	24	36	*119.1*	*120.1*	*2.4*	*609.6*	*914.4*
5	*129*	**40-5017**	5.190	5.230	0.095	24	36	*131.8*	*132.8*	*2.4*	*609.6*	*914.4*
6	*155*	**40-6017**	6.190	6.230	0.095	24	36	*157.2*	*158.2*	*2.4*	*609.6*	*914.4*

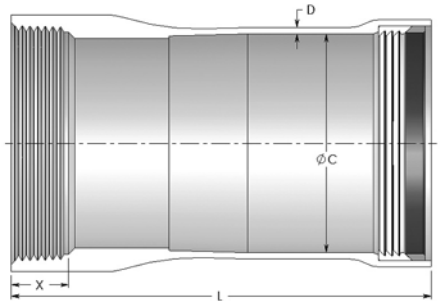
ID SW O-RING EXPANSION / DEFLECTION JOINT



Size		Symbol	ØB	ØC	D	L min	L max	ØB	ØC	D	L min	L max
in	*mm*	No.	inches					*millimeters*				
2	*53*	**40-2057**	2.140	2.170	0.070	40	52	*54.4*	*55.1*	*1.8*	*1016.0*	*1320.8*
2½	*63*	**40-2557**	2.640	2.670	0.070	40	52	*67.1*	*67.8*	*1.8*	*1016.0*	*1320.8*
3	*78*	**40-3057**	3.140	3.170	0.070	40	52	*79.8*	*80.5*	*1.8*	*1016.0*	*1320.8*
3½	*91*	**40-3557**	3.640	3.670	0.070	40	52	*92.5*	*93.2*	*1.8*	*1016.0*	*1320.8*
4	*103*	**40-4057**	4.140	4.170	0.070	40	52	*105.2*	*105.9*	*1.8*	*1016.0*	*1320.8*
4½	*116*	**40-4557**	4.690	4.730	0.095	40	52	*119.1*	*120.1*	*2.4*	*1016.0*	*1320.8*
5	*129*	**40-5057**	5.190	5.230	0.095	40	52	*131.8*	*132.8*	*2.4*	*1016.0*	*1320.8*
6	*155*	**40-6057**	6.190	6.230	0.095	40	52	*157.2*	*158.2*	*2.4*	*1016.0*	*1320.8*

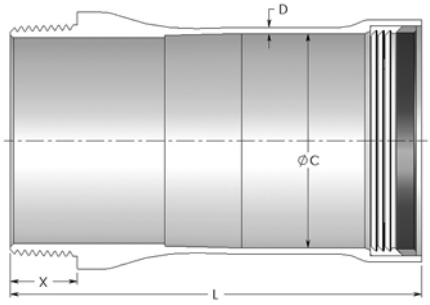
ID SW NPT FEMALE THREADED ADAPTER

Size		Symbol	ØC	D	L	X	ØC	D	L	X
in	*mm*	No.	inches				*millimeters*			
2	*53*	**40-2044**	2.170	0.070	8	0.697	*55.1*	*1.8*	*203.2*	*17.7*
2½	*63*	**40-2544**	2.670	0.070	8	0.932	*67.8*	*1.8*	*203.2*	*23.7*
3	*78*	**40-3044**	3.170	0.070	8	1.016	*80.5*	*1.8*	*203.2*	*25.8*
3½	*91*	**40-3544**	3.670	0.070	8	1.071	*93.2*	*1.8*	*203.2*	*27.2*
4	*103*	**40-4044**	4.170	0.070	8	1.094	*105.9*	*1.8*	*203.2*	*27.8*
4½	*116*	**40-4544**	4.730	0.095	8	1.350	*120.1*	*2.4*	*203.2*	*34.3*
5	*129*	**40-5044**	5.230	0.095	8	1.187	*132.8*	*2.4*	*203.2*	*30.1*
6	*155*	**40-6044**	6.230	0.095	8	1.208	*158.2*	*2.4*	*203.2*	*30.7*

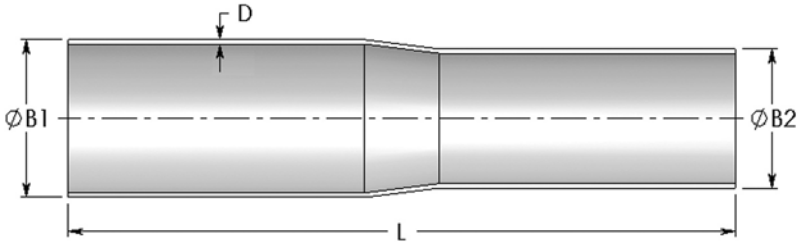


ID SW NPT MALE THREADED ADAPTER

Size		Symbol	ØC	D	L	X	ØC	D	L	X
in	*mm*	No.	inches				*millimeters*			
2	*53*	**40-2027**	2.170	0.070	8	0.757	*55.1*	*1.8*	*203.2*	*19.2*
2½	*63*	**40-2527**	2.670	0.070	8	1.138	*67.8*	*1.8*	*203.2*	*28.9*
3	*78*	**40-3027**	3.170	0.070	8	1.200	*80.5*	*1.8*	*203.2*	*30.5*
3½	*91*	**40-3527**	3.670	0.070	8	1.250	*93.2*	*1.8*	*203.2*	*31.8*
4	*103*	**40-4027**	4.170	0.070	8	1.300	*105.9*	*1.8*	*203.2*	*33.0*
4½	*116*	**40-4527**	4.730	0.095	8	1.350	*120.1*	*2.4*	*203.2*	*34.3*
5	*129*	**40-5027**	5.230	0.095	8	1.406	*132.8*	*2.4*	*203.2*	*35.7*
6	*155*	**40-6027**	6.230	0.095	8	1.513	*158.2*	*2.4*	*203.2*	*38.4*

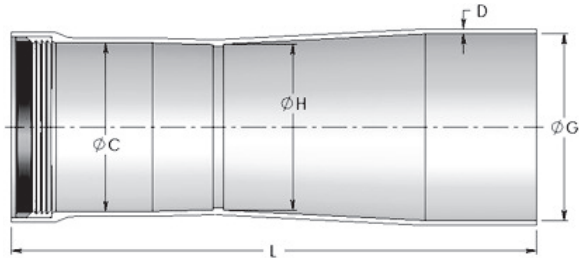


ID SW REDUCER



Size		Symbol	ØB1	ØB2	D	L	*ØB1*	*ØB2*	*D*	*L*
in	*mm*	No.	inches				*millimeters*			
2	*53*	**40-2029**	2.140	1.900	0.070	18	*54.4*	*48.3*	*1.8*	*457.2*
2½	*63*	**40-2529**	2.640	2.140	0.070	18	*67.1*	*54.4*	*1.8*	*457.2*
3	*78*	**40-3029**	3.140	2.640	0.070	18	*79.8*	*67.1*	*1.8*	*457.2*
3½	*91*	**40-3529**	3.640	3.140	0.070	18	*92.5*	*79.8*	*1.8*	*457.2*
4	*103*	**40-4029**	4.140	3.640	0.070	18	*105.2*	*92.5*	*1.8*	*457.2*
4½	*116*	**40-4529**	4.690	4.140	0.095	18	*119.1*	*105.2*	*2.4*	*457.2*
5	*129*	**40-5029**	5.190	4.690	0.095	18	*131.8*	*119.1*	*2.4*	*457.2*
6	*155*	**40-6029**	6.190	5.190	0.095	18	*157.2*	*131.8*	*2.4*	*457.2*

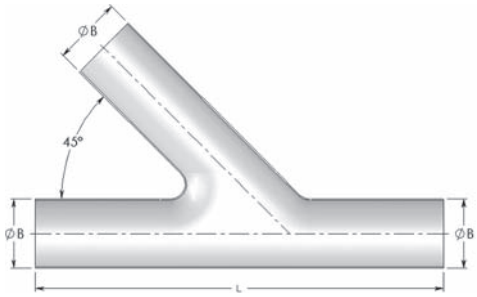
ID SW MULTIFIT ADAPTER



Size		Symbol	ØC	D	ØG	ØH	L	*ØC*	*D*	*ØG*	*ØH*	*L*
in	*mm*	No.	inches					*millimeters*				
2	*53*	**40-2037**	2.170	0.070	2.424	2.239	13	*55.1*	*1.8*	*61.6*	*56.9*	*330.2*
2½	*63*	**40-2537**	2.670	0.070	2.924	2.739	13	*67.8*	*1.8*	*74.3*	*69.6*	*330.2*
3	*78*	**40-3037**	3.170	0.070	3.549	3.239	13	*80.5*	*1.8*	*90.1*	*82.3*	*330.2*
3½	*91*	**40-3537**	3.670	0.070	4.061	3.709	13	*93.2*	*1.8*	*103.1*	*94.2*	*330.2*
4	*103*	**40-4037**	4.170	0.070	4.620	4.109	13	*105.9*	*1.8*	*117.3*	*104.4*	*330.2*
4½	*116*	**40-4537**	4.730	0.095	4.831	4.750	13	*120.1*	*2.4*	*122.7*	*120.7*	*330.2*
5	*129*	**40-5037**	5.230	0.095	5.650	5.289	13	*132.8*	*2.4*	*143.5*	*134.3*	*330.2*
6	*155*	**40-6037**	6.230	0.095	6.686	6.259	13	*158.2*	*2.4*	*169.8*	*159.0*	*330.2*

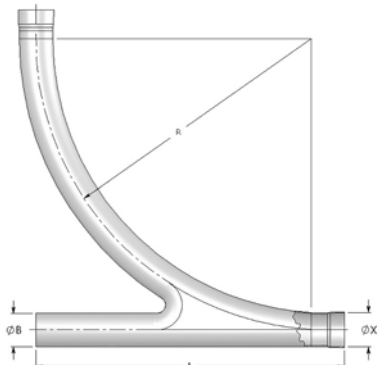
"Y" FITTING

Size		Symbol	ØB	L	*ØB*	*L*
in	*mm*	No.	inches		*millimeters*	
2	*53*	**40-2015**	2.140	24.50	*54.4*	*622.3*
2½	*63*	**40-2515**	2.640	24.50	*67.1*	*622.3*
3	*78*	**40-3015**	3.140	24.50	*79.8*	*622.3*
3½	*91*	**40-3515**	3.640	24.50	*92.5*	*622.3*
4	*103*	**40-4015**	4.140	24.50	*105.2*	*622.3*
4½	*116*	**40-4515**	4.690	24.50	*119.1*	*622.3*
5	*129*	**40-5015**	5.190	24.50	*131.8*	*622.3*
6	*155*	**40-6015**	6.190	24.50	*157.2*	*622.3*

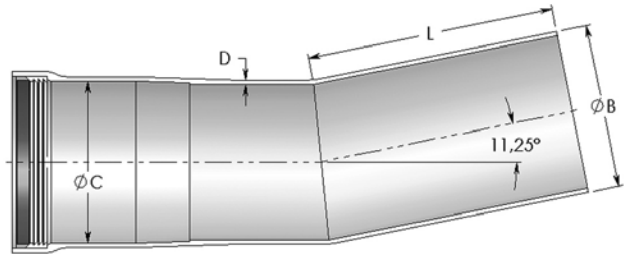


"Y" ELBOW

Size		Symbol	ØB	L	R	X	*ØB*	*L*	*R*	*X*
in	*mm*	No.	inches				*millimeters*			
3	*78*	**40-3025**	3.140	36	36	3.275	*79.756*	*914.4*	*914.4*	*83.185*
3½	*91*	**40-3525**	3.640	36	36	3.750	*92.456*	*914.4*	*914.4*	*95.250*
4	*103*	**40-4025**	4.140	36	36	4.240	*105.156*	*914.4*	*914.4*	*107.696*

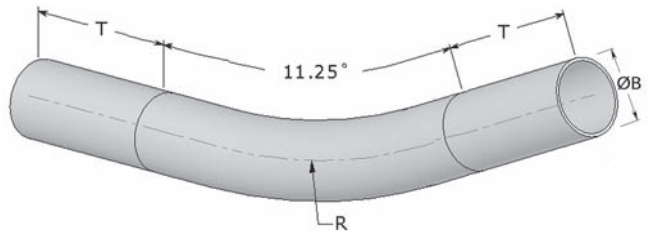


ID SW 11.25° FITTING



Size		Symbol	ØB	ØC	D	L	*ØB*	*ØC*	*D*	*L*
in	*mm*	No.	inches				*millimeters*			
2	*53*	**40-2035**	2.140	2.170	0.070	7	*54.4*	*55.1*	*1.8*	*177.8*
2½	*63*	**40-2535**	2.640	2.670	0.070	7	*67.1*	*67.8*	*1.8*	*177.8*
3	*78*	**40-3035**	3.140	3.170	0.070	7	*79.8*	*80.5*	*1.8*	*177.8*
3½	*91*	**40-3535**	3.640	3.670	0.070	7	*92.5*	*93.2*	*1.8*	*177.8*
4	*103*	**40-4035**	4.140	4.170	0.070	7	*105.2*	*105.9*	*1.8*	*177.8*
4½	*116*	**40-4535**	4.690	4.730	0.095	7	*119.1*	*120.1*	*2.4*	*177.8*
5	*129*	**40-5035**	5.190	5.230	0.095	7	*131.8*	*132.8*	*2.4*	*177.8*
6	*155*	**40-6035**	6.190	6.230	0.095	7	*157.2*	*158.2*	*2.4*	*177.8*

ID SW 11.25° ELBOW



12" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2035R12**	2.140	12	6	*54.4*	*304.8*	*152.4*

24" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2035R24**	2.140	24	6	*54.4*	*609.6*	*152.4*
2½	*63*	**40-2535R24**	2.640	24	6	*67.1*	*609.6*	*152.4*
3	*78*	**40-3035R24**	3.140	24	6	*79.8*	*609.6*	*152.4*

36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2035R36**	2.140	36	6	*54.4*	*914.4*	*152.4*
2½	*63*	**40-2535R36**	2.640	36	6	*67.1*	*914.4*	*152.4*
3	*78*	**40-3035R36**	3.140	36	6	*79.8*	*914.4*	*152.4*
3½	*91*	**40-3535R36**	3.640	36	6	*92.5*	*914.4*	*152.4*
4	*103*	**40-4035R36**	4.140	36	6	*105.2*	*914.4*	*152.4*
4½❖	*116*	**40-4535R36**	4.690	36	6	*119.1*	*914.4*	*152.4*
5 ❖	*129*	**40-5035R36**	5.190	36	6	*131.8*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2035R48**	2.140	48	6	*54.4*	*1219.2*	*152.4*
2½	*63*	**40-2535R48**	2.640	48	6	*67.1*	*1219.2*	*152.4*
3	*78*	**40-3035R48**	3.140	48	6	*79.8*	*1219.2*	*152.4*
3½	*91*	**40-3535R48**	3.640	48	6	*92.5*	*1219.2*	*152.4*
4	*103*	**40-4035R48**	4.140	48	6	*105.2*	*1219.2*	*152.4*
4½	*116*	**40-4535R48**	4.690	48	6	*119.1*	*1219.2*	*152.4*
5	*129*	**40-5035R48**	5.190	48	6	*131.8*	*1219.2*	*152.4*
6	*155*	**40-6035R48**	6.190	48	6	*157.2*	*1219.2*	*152.4*

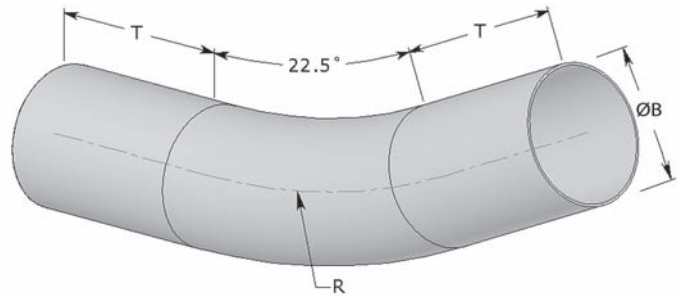
60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2035R60**	2.140	60	6	*54.4*	*1524.0*	*152.4*
2½	*63*	**40-2535R60**	2.640	60	6	*67.1*	*1524.0*	*152.4*
3	*78*	**40-3035R60**	3.140	60	6	*79.8*	*1524.0*	*152.4*
3½	*91*	**40-3535R60**	3.640	60	6	*92.5*	*1524.0*	*152.4*
4	*103*	**40-4035R60**	4.140	60	6	*105.2*	*1524.0*	*152.4*
4½	*116*	**40-4535R60**	4.690	60	6	*119.1*	*1524.0*	*152.4*
5	*129*	**40-5035R60**	5.190	60	6	*131.8*	*1524.0*	*152.4*
6	*155*	**40-6035R60**	6.190	60	6	*157.2*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2035R72**	2.140	72	6	*54.4*	*1828.8*	*152.4*
2½	*63*	**40-2535R72**	2.640	72	6	*67.1*	*1828.8*	*152.4*
3	*78*	**40-3035R72**	3.140	72	6	*79.8*	*1828.8*	*152.4*
3½	*91*	**40-3535R72**	3.640	72	6	*92.5*	*1828.8*	*152.4*
4	*103*	**40-4035R72**	4.140	72	6	*105.2*	*1828.8*	*152.4*
4½	*116*	**40-4535R72**	4.690	72	6	*119.1*	*1828.8*	*152.4*
5	*129*	**40-5035R72**	5.190	72	6	*131.8*	*1828.8*	*152.4*
6	*155*	**40-6035R72**	6.190	72	6	*157.2*	*1828.8*	*152.4*

ID SW 22.5° ELBOW



12" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2034R12**	2.140	12	6	*54.4*	*304.8*	*152.4*

24" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2034R24**	2.140	24	6	*54.4*	*609.6*	*152.4*
2½	*63*	**40-2534R24**	2.640	24	6	*67.1*	*609.6*	*152.4*
3	*78*	**40-3034R24**	3.140	24	6	*79.8*	*609.6*	*152.4*

36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2034R36**	2.140	36	6	*54.4*	*914.4*	*152.4*
2½	*63*	**40-2534R36**	2.640	36	6	*67.1*	*914.4*	*152.4*
3	*78*	**40-3034R36**	3.140	36	6	*79.8*	*914.4*	*152.4*
3½	*91*	**40-3534R36**	3.640	36	6	*92.5*	*914.4*	*152.4*
4	*103*	**40-4034R36**	4.140	36	6	*105.2*	*914.4*	*152.4*
4½❖	*116*	**40-4534R36**	4.690	36	6	*119.1*	*914.4*	*152.4*
5 ❖	*129*	**40-5034R36**	5.190	36	6	*131.8*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2034R48**	2.140	48	6	*54.4*	*1219.2*	*152.4*
2½	*63*	**40-2534R48**	2.640	48	6	*67.1*	*1219.2*	*152.4*
3	*78*	**40-3034R48**	3.140	48	6	*79.8*	*1219.2*	*152.4*
3½	*91*	**40-3534R48**	3.640	48	6	*92.5*	*1219.2*	*152.4*
4	*103*	**40-4034R48**	4.140	48	6	*105.2*	*1219.2*	*152.4*
4½	*116*	**40-4534R48**	4.690	48	6	*119.1*	*1219.2*	*152.4*
5	*129*	**40-5034R48**	5.190	48	6	*131.8*	*1219.2*	*152.4*
6	*155*	**40-6034R48**	6.190	48	6	*157.2*	*1219.2*	*152.4*

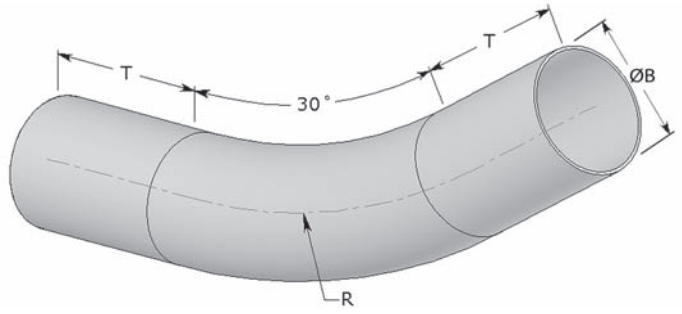
60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2034R60**	2.140	60	6	*54.4*	*1524.0*	*152.4*
2½	*63*	**40-2534R60**	2.640	60	6	*67.1*	*1524.0*	*152.4*
3	*78*	**40-3034R60**	3.140	60	6	*79.8*	*1524.0*	*152.4*
3½	*91*	**40-3534R60**	3.640	60	6	*92.5*	*1524.0*	*152.4*
4	*103*	**40-4034R60**	4.140	60	6	*105.2*	*1524.0*	*152.4*
4½	*116*	**40-4534R60**	4.690	60	6	*119.1*	*1524.0*	*152.4*
5	*129*	**40-5034R60**	5.190	60	6	*131.8*	*1524.0*	*152.4*
6	*155*	**40-6034R60**	6.190	60	6	*157.2*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2034R72**	2.140	72	6	*54.4*	*1828.8*	*152.4*
2½	*63*	**40-2534R72**	2.640	72	6	*67.1*	*1828.8*	*152.4*
3	*78*	**40-3034R72**	3.140	72	6	*79.8*	*1828.8*	*152.4*
3½	*91*	**40-3534R72**	3.640	72	6	*92.5*	*1828.8*	*152.4*
4	*103*	**40-4034R72**	4.140	72	6	*105.2*	*1828.8*	*152.4*
4½	*116*	**40-4534R72**	4.690	72	6	*119.1*	*1828.8*	*152.4*
5	*129*	**40-5034R72**	5.190	72	6	*131.8*	*1828.8*	*152.4*
6	*155*	**40-6034R72**	6.190	72	6	*157.2*	*1828.8*	*152.4*

ID SW 30° ELBOW



12" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2033R12**	2.140	12	6	*54.4*	*304.8*	*152.4*

24" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2033R24**	2.140	24	6	*54.4*	*609.6*	*152.4*
2½	*63*	**40-2533R24**	2.640	24	6	*67.1*	*609.6*	*152.4*
3	*78*	**40-3033R24**	3.140	24	6	*79.8*	*609.6*	*152.4*

36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2033R36**	2.140	36	6	*54.4*	*914.4*	*152.4*
2½	*63*	**40-2533R36**	2.640	36	6	*67.1*	*914.4*	*152.4*
3	*78*	**40-3033R36**	3.140	36	6	*79.8*	*914.4*	*152.4*
3½	*91*	**40-3533R36**	3.640	36	6	*92.5*	*914.4*	*152.4*
4	*103*	**40-4033R36**	4.140	36	6	*105.2*	*914.4*	*152.4*
4½❖	*116*	**40-4533R36**	4.690	36	6	*119.1*	*914.4*	*152.4*
5 ❖	*129*	**40-5033R36**	5.190	36	6	*131.8*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2033R48**	2.140	48	6	*54.4*	*1219.2*	*152.4*
2½	*63*	**40-2533R48**	2.640	48	6	*67.1*	*1219.2*	*152.4*
3	*78*	**40-3033R48**	3.140	48	6	*79.8*	*1219.2*	*152.4*
3½	*91*	**40-3533R48**	3.640	48	6	*92.5*	*1219.2*	*152.4*
4	*103*	**40-4033R48**	4.140	48	6	*105.2*	*1219.2*	*152.4*
4½	*116*	**40-4533R48**	4.690	48	6	*119.1*	*1219.2*	*152.4*
5	*129*	**40-5033R48**	5.190	48	6	*131.8*	*1219.2*	*152.4*
6	*155*	**40-6033R48**	6.190	48	6	*157.2*	*1219.2*	*152.4*

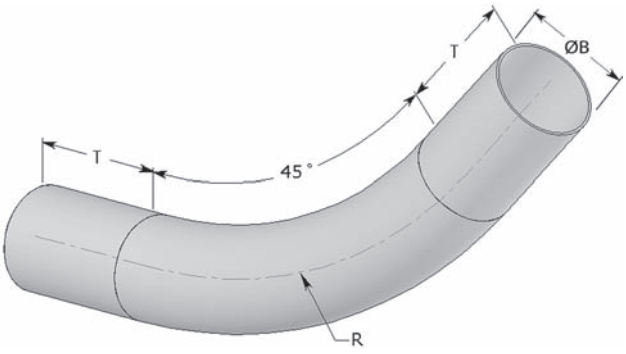
60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2033R60**	2.140	60	6	*54.4*	*1524.0*	*152.4*
2½	*63*	**40-2533R60**	2.640	60	6	*67.1*	*1524.0*	*152.4*
3	*78*	**40-3033R60**	3.140	60	6	*79.8*	*1524.0*	*152.4*
3½	*91*	**40-3533R60**	3.640	60	6	*92.5*	*1524.0*	*152.4*
4	*103*	**40-4033R60**	4.140	60	6	*105.2*	*1524.0*	*152.4*
4½	*116*	**40-4533R60**	4.690	60	6	*119.1*	*1524.0*	*152.4*
5	*129*	**40-5033R60**	5.190	60	6	*131.8*	*1524.0*	*152.4*
6	*155*	**40-6033R60**	6.190	60	6	*157.2*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2033R72**	2.140	72	6	*54.4*	*1828.8*	*152.4*
2½	*63*	**40-2533R72**	2.640	72	6	*67.1*	*1828.8*	*152.4*
3	*78*	**40-3033R72**	3.140	72	6	*79.8*	*1828.8*	*152.4*
3½	*91*	**40-3533R72**	3.640	72	6	*92.5*	*1828.8*	*152.4*
4	*103*	**40-4033R72**	4.140	72	6	*105.2*	*1828.8*	*152.4*
4½	*116*	**40-4533R72**	4.690	72	6	*119.1*	*1828.8*	*152.4*
5	*129*	**40-5033R72**	5.190	72	6	*131.8*	*1828.8*	*152.4*
6	*155*	**40-6033R72**	6.190	72	6	*157.2*	*1828.8*	*152.4*

ID SW 45° ELBOW



12" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2032R12**	2.140	12	6	*54.4*	*304.8*	*152.4*

24" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2032R24**	2.140	24	6	*54.4*	*609.6*	*152.4*
2½	*63*	**40-2532R24**	2.640	24	6	*67.1*	*609.6*	*152.4*
3	*78*	**40-3032R24**	3.140	24	6	*79.8*	*609.6*	*152.4*

36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2032R36**	2.140	36	6	*54.4*	*914.4*	*152.4*
2½	*63*	**40-2532R36**	2.640	36	6	*67.1*	*914.4*	*152.4*
3	*78*	**40-3032R36**	3.140	36	6	*79.8*	*914.4*	*152.4*
3½	*91*	**40-3532R36**	3.640	36	6	*92.5*	*914.4*	*152.4*
4	*103*	**40-4032R36**	4.140	36	6	*105.2*	*914.4*	*152.4*
4½❖	*116*	**40-4532R36**	4.690	36	6	*119.1*	*914.4*	*152.4*
5 ❖	*129*	**40-5032R36**	5.190	36	6	*131.8*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2032R48**	2.140	48	6	*54.4*	*1219.2*	*152.4*
2½	*63*	**40-2532R48**	2.640	48	6	*67.1*	*1219.2*	*152.4*
3	*78*	**40-3032R48**	3.140	48	6	*79.8*	*1219.2*	*152.4*
3½	*91*	**40-3532R48**	3.640	48	6	*92.5*	*1219.2*	*152.4*
4	*103*	**40-4032R48**	4.140	48	6	*105.2*	*1219.2*	*152.4*
4½	*116*	**40-4532R48**	4.690	48	6	*119.1*	*1219.2*	*152.4*
5	*129*	**40-5032R48**	5.190	48	6	*131.8*	*1219.2*	*152.4*
6	*155*	**40-6032R48**	6.190	48	6	*157.2*	*1219.2*	*152.4*

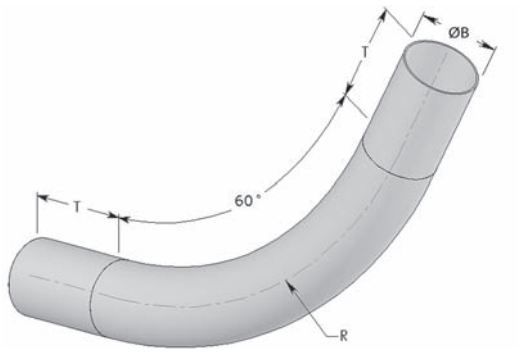
60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2032R60**	2.140	60	6	*54.4*	*1524.0*	*152.4*
2½	*63*	**40-2532R60**	2.640	60	6	*67.1*	*1524.0*	*152.4*
3	*78*	**40-3032R60**	3.140	60	6	*79.8*	*1524.0*	*152.4*
3½	*91*	**40-3532R60**	3.640	60	6	*92.5*	*1524.0*	*152.4*
4	*103*	**40-4032R60**	4.140	60	6	*105.2*	*1524.0*	*152.4*
4½	*116*	**40-4532R60**	4.690	60	6	*119.1*	*1524.0*	*152.4*
5	*129*	**40-5032R60**	5.190	60	6	*131.8*	*1524.0*	*152.4*
6	*155*	**40-6032R60**	6.190	60	6	*157.2*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2032R72**	2.140	72	6	*54.4*	*1828.8*	*152.4*
2½	*63*	**40-2532R72**	2.640	72	6	*67.1*	*1828.8*	*152.4*
3	*78*	**40-3032R72**	3.140	72	6	*79.8*	*1828.8*	*152.4*
3½	*91*	**40-3532R72**	3.640	72	6	*92.5*	*1828.8*	*152.4*
4	*103*	**40-4032R72**	4.140	72	6	*105.2*	*1828.8*	*152.4*
4½	*116*	**40-4532R72**	4.690	72	6	*119.1*	*1828.8*	*152.4*
5	*129*	**40-5032R72**	5.190	72	6	*131.8*	*1828.8*	*152.4*
6	*155*	**40-6032R72**	6.190	72	6	*157.2*	*1828.8*	*152.4*

ID SW 60° ELBOW



12" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2031R12**	2.140	12	6	*54.4*	*304.8*	*152.4*

24" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2031R24**	2.140	24	6	*54.4*	*609.6*	*152.4*
2½	*63*	**40-2531R24**	2.640	24	6	*67.1*	*609.6*	*152.4*
3	*78*	**40-3031R24**	3.140	24	6	*79.8*	*609.6*	*152.4*

36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2031R36**	2.140	36	6	*54.4*	*914.4*	*152.4*
2½	*63*	**40-2531R36**	2.640	36	6	*67.1*	*914.4*	*152.4*
3	*78*	**40-3031R36**	3.140	36	6	*79.8*	*914.4*	*152.4*
3½	*91*	**40-3531R36**	3.640	36	6	*92.5*	*914.4*	*152.4*
4	*103*	**40-4031R36**	4.140	36	6	*105.2*	*914.4*	*152.4*
4½❖	*116*	**40-4531R36**	4.690	36	6	*119.1*	*914.4*	*152.4*
5 ❖	*129*	**40-5031R36**	5.190	36	6	*131.8*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2031R48**	2.140	48	6	*54.4*	*1219.2*	*152.4*
2½	*63*	**40-2531R48**	2.640	48	6	*67.1*	*1219.2*	*152.4*
3	*78*	**40-3031R48**	3.140	48	6	*79.8*	*1219.2*	*152.4*
3½	*91*	**40-3531R48**	3.640	48	6	*92.5*	*1219.2*	*152.4*
4	*103*	**40-4031R48**	4.140	48	6	*105.2*	*1219.2*	*152.4*
4½	*116*	**40-4531R48**	4.690	48	6	*119.1*	*1219.2*	*152.4*
5	*129*	**40-5031R48**	5.190	48	6	*131.8*	*1219.2*	*152.4*
6	*155*	**40-6031R48**	6.190	48	6	*157.2*	*1219.2*	*152.4*

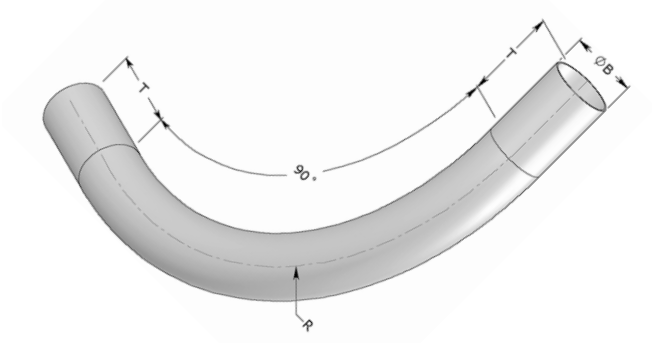
60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2031R60**	2.140	60	6	*54.4*	*1524.0*	*152.4*
2½	*63*	**40-2531R60**	2.640	60	6	*67.1*	*1524.0*	*152.4*
3	*78*	**40-3031R60**	3.140	60	6	*79.8*	*1524.0*	*152.4*
3½	*91*	**40-3531R60**	3.640	60	6	*92.5*	*1524.0*	*152.4*
4	*103*	**40-4031R60**	4.140	60	6	*105.2*	*1524.0*	*152.4*
4½	*116*	**40-4531R60**	4.690	60	6	*119.1*	*1524.0*	*152.4*
5	*129*	**40-5031R60**	5.190	60	6	*131.8*	*1524.0*	*152.4*
6	*155*	**40-6031R60**	6.190	60	6	*157.2*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2031R72**	2.140	72	6	*54.4*	*1828.8*	*152.4*
2½	*63*	**40-2531R72**	2.640	72	6	*67.1*	*1828.8*	*152.4*
3	*78*	**40-3031R72**	3.140	72	6	*79.8*	*1828.8*	*152.4*
3½	*91*	**40-3531R72**	3.640	72	6	*92.5*	*1828.8*	*152.4*
4	*103*	**40-4031R72**	4.140	72	6	*105.2*	*1828.8*	*152.4*
4½	*116*	**40-4531R72**	4.690	72	6	*119.1*	*1828.8*	*152.4*
5	*129*	**40-5031R72**	5.190	72	6	*131.8*	*1828.8*	*152.4*
6	*155*	**40-6031R72**	6.190	72	6	*157.2*	*1828.8*	*152.4*

ID SW 90° ELBOW



12" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2030R12**	2.140	12	6	*54.4*	*304.8*	*152.4*

18" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	mm	No.	inches			*millimeters*		
2	*53*	**40-2030R18**	2.140	18	6	*54.4*	*457.2*	*152.4*
2½	*63*	**40-2530R18**	2.640	18	6	*67.1*	*457.2*	*152.4*

24" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	mm	No.	inches			*millimeters*		
2	*53*	**40-2030R24**	2.140	24	6	*54.4*	*609.6*	*152.4*
2½	*63*	**40-2530R24**	2.640	24	6	*67.1*	*609.6*	*152.4*
3	*78*	**40-3030R24**	3.140	24	6	*79.8*	*609.6*	*152.4*

36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2030R36**	2.140	36	6	*54.4*	*914.4*	*152.4*
2½	*63*	**40-2530R36**	2.640	36	6	*67.1*	*914.4*	*152.4*
3	*78*	**40-3030R36**	3.140	36	6	*79.8*	*914.4*	*152.4*
3½	*91*	**40-3530R36**	3.640	36	6	*92.5*	*914.4*	*152.4*
4	*103*	**40-4030R36**	4.140	36	6	*105.2*	*914.4*	*152.4*
4½❖	*116*	**40-4530R36**	4.690	36	6	*119.1*	*914.4*	*152.4*
5 ❖	*129*	**40-5030R36**	5.190	36	6	*131.8*	*914.4*	*152.4*
6 ❖	*155*	**40-6030R36**	6.190	36	6	*157.2*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2030R48**	2.140	48	6	*54.4*	*1219.2*	*152.4*
2½	*63*	**40-2530R48**	2.640	48	6	*67.1*	*1219.2*	*152.4*
3	*78*	**40-3030R48**	3.140	48	6	*79.8*	*1219.2*	*152.4*
3½	*91*	**40-3530R48**	3.640	48	6	*92.5*	*1219.2*	*152.4*
4	*103*	**40-4030R48**	4.140	48	6	*105.2*	*1219.2*	*152.4*
4½	*116*	**40-4530R48**	4.690	48	6	*119.1*	*1219.2*	*152.4*
5	*129*	**40-5030R48**	5.190	48	6	*131.8*	*1219.2*	*152.4*
6	*155*	**40-6030R48**	6.190	48	6	*157.2*	*1219.2*	*152.4*

60" RADIUS

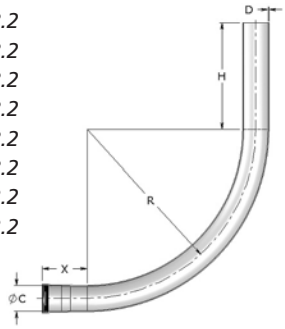
Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2030R60**	2.140	60	6	*54.4*	*1524.0*	*152.4*
2½	*63*	**40-2530R60**	2.640	60	6	*67.1*	*1524.0*	*152.4*
3	*78*	**40-3030R60**	3.140	60	6	*79.8*	*1524.0*	*152.4*
3½	*91*	**40-3530R60**	3.640	60	6	*92.5*	*1524.0*	*152.4*
4	*103*	**40-4030R60**	4.140	60	6	*105.2*	*1524.0*	*152.4*
4½	*116*	**40-4530R60**	4.690	60	6	*119.1*	*1524.0*	*152.4*
5	*129*	**40-5030R60**	5.190	60	6	*131.8*	*1524.0*	*152.4*
6	*155*	**40-6030R60**	6.190	60	6	*157.2*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
2	*53*	**40-2030R72**	2.140	72	6	*54.4*	*1828.8*	*152.4*
2½	*63*	**40-2530R72**	2.640	72	6	*67.1*	*1828.8*	*152.4*
3	*78*	**40-3030R72**	3.140	72	6	*79.8*	*1828.8*	*152.4*
3½	*91*	**40-3530R72**	3.640	72	6	*92.5*	*1828.8*	*152.4*
4	*103*	**40-4030R72**	4.140	72	6	*105.2*	*1828.8*	*152.4*
4½	*116*	**40-4530R72**	4.690	72	6	*119.1*	*1828.8*	*152.4*
5	*129*	**40-5030R72**	5.190	72	6	*131.8*	*1828.8*	*152.4*
6	*155*	**40-6030R72**	6.190	72	6	*157.2*	*1828.8*	*152.4*

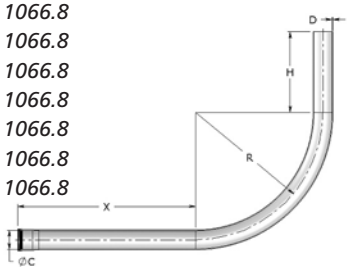
ID SW POLERISER

Size		Symbol	ØC	D	R	H	X	ØC	D	R	H	X
in	*mm*	No.	inches					*millimeters*				
2	*53*	**40-2038**	2.170	0.070	30	19	8	*55.1*	*1.8*	*762.0*	*482.6*	*203.2*
2½	*63*	**40-2538**	2.670	0.130	30	19	8	*67.8*	*3.3*	*762.0*	*482.6*	*203.2*
3	*78*	**40-3038**	3.170	0.130	30	19	8	*80.5*	*3.3*	*762.0*	*482.6*	*203.2*
3½	*91*	**40-3538**	3.670	0.130	30	19	8	*93.2*	*3.3*	*762.0*	*482.6*	*203.2*
4	*103*	**40-4038**	4.170	0.130	30	19	8	*105.9*	*3.3*	*762.0*	*482.6*	*203.2*
4½	*116*	**40-4538**	4.730	0.130	60	19	8	*120.1*	*3.3*	*1524.0*	*482.6*	*203.2*
5	*129*	**40-5038**	5.230	0.130	60	19	8	*132.8*	*3.3*	*1524.0*	*482.6*	*203.2*
6	*155*	**40-6038**	6.230	0.130	60	19	8	*158.2*	*3.3*	*1524.0*	*482.6*	*203.2*



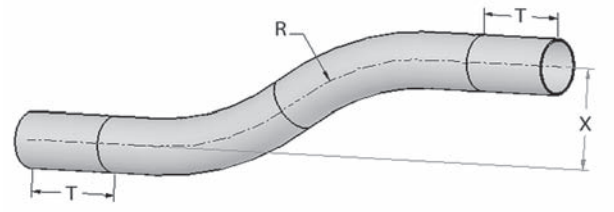
ID SW EXTENDED POLERISER

Size		Symbol	ØC	D	R	H	X	ØC	D	R	H	X
in	*mm*	No.	inches					*millimeters*				
2	*53*	**40-2039**	2.170	0.070	30	19	42	*55.1*	*1.8*	*762.0*	*482.6*	*1066.8*
2½	*63*	**40-2539**	2.670	0.130	30	19	42	*67.8*	*3.3*	*762.0*	*482.6*	*1066.8*
3	*78*	**40-3039**	3.170	0.130	30	19	42	*80.5*	*3.3*	*762.0*	*482.6*	*1066.8*
3½	*91*	**40-3539**	3.670	0.130	30	19	42	*93.2*	*3.3*	*762.0*	*482.6*	*1066.8*
4	*103*	**40-4039**	4.170	0.130	30	19	42	*105.9*	*3.3*	*762.0*	*482.6*	*1066.8*
4½	*116*	**40-4539**	4.730	0.130	60	19	42	*120.1*	*3.3*	*1524.0*	*482.6*	*1066.8*
5	*129*	**40-5039**	5.230	0.130	60	19	42	*132.8*	*3.3*	*1524.0*	*482.6*	*1066.8*
6	*155*	**40-6039**	6.230	0.130	60	19	42	*158.2*	*3.3*	*1524.0*	*482.6*	*1066.8*



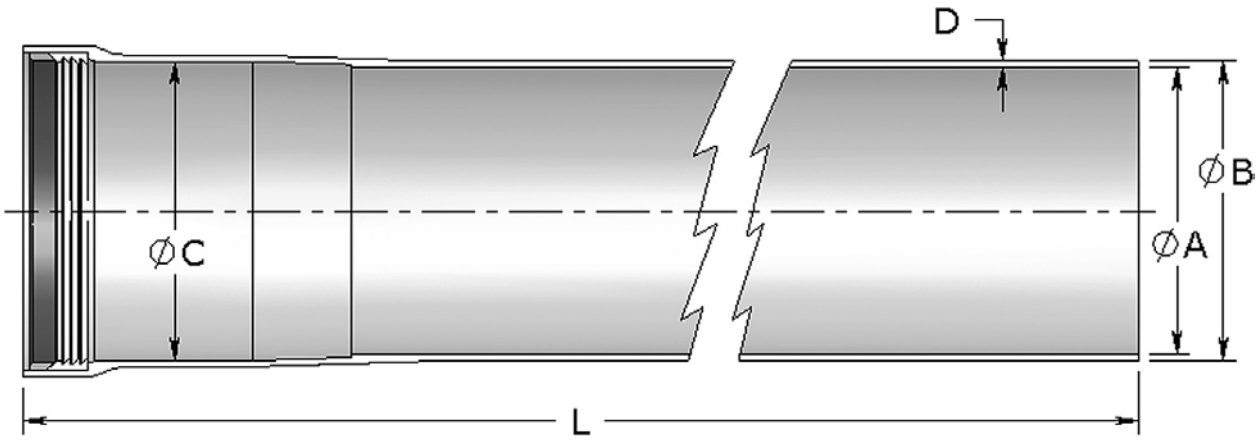
ID SW OFFSET ELBOW

Size	Symbol No.
all	special



ID HEAVY WALL (HW)
DIRECT BURIAL (DB) PRODUCTS – HEAVY LOADS

ID HEAVY WALL (HW) CONDUIT

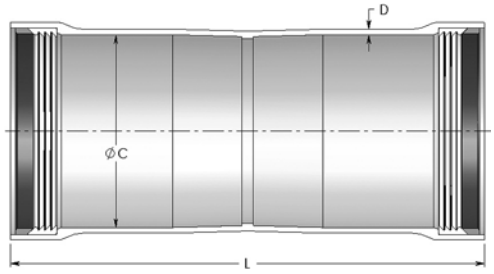


Size		Symbol	ØA	ØB	ØC	D	L	ØA	ØB	ØC	D	L
in	mm	No.	inches					millimeters				meters
4	*103*	**42-4000**	4.000	4.190	4.230	0.095	236.25	*101.6*	*106.4*	*107.4*	*2.4*	*6*
4½	*116*	**42-4500**	4.500	4.730	4.770	0.115	236.25	*114.3*	*120.1*	*121.2*	*2.9*	*6*
5	*129*	**42-5000**	5.000	5.230	5.270	0.115	236.25	*127.0*	*132.8*	*133.9*	*2.9*	*6*
6	*155*	**42-6000**	6.000	6.230	6.260	0.115	236.25	*152.4*	*158.2*	*159.0*	*2.9*	*6*

- All our ID Below Ground products are offered with a TriSeal™ for push-fit assembly.
- Adhesives are available, if required.
- Standard length is 19.68 ft. (6m) but can also be available in 9.84 ft. section (3m), if required.
- Spigot end tapered for ease of installation.

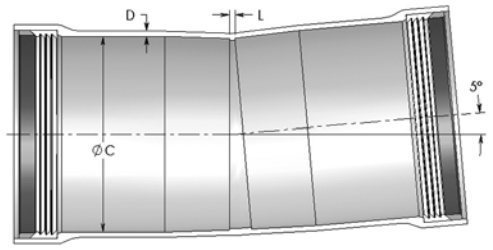
ID HW DOUBLE BELL COUPLING

Size		Symbol	ØC	D	L	ØC	D	L
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4010**	4.230	0.095	10.25	*107.4*	*2.4*	*260.4*
4½	*116*	**42-4510**	4.770	0.115	10.25	*121.2*	*2.9*	*260.4*
5	*129*	**42-5010**	5.270	0.115	10.25	*133.9*	*2.9*	*260.4*
6	*155*	**42-6010**	6.270	0.115	10.25	*159.3*	*2.9*	*260.4*



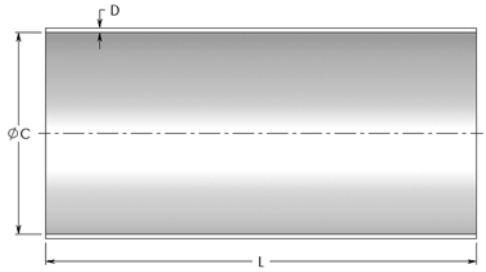
ID HW 5° DOUBLE BELL COUPLING

Size		Symbol	ØC	D	L	ØC	D	L
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4011**	4.230	0.095	0.125	*107.4*	*2.4*	*3.2*
4½	*116*	**42-4511**	4.770	0.115	0.125	*121.2*	*2.9*	*3.2*
5	*129*	**42-5011**	5.270	0.115	0.125	*133.9*	*2.9*	*3.2*
6	*155*	**42-6011**	6.270	0.115	0.125	*159.3*	*2.9*	*3.2*

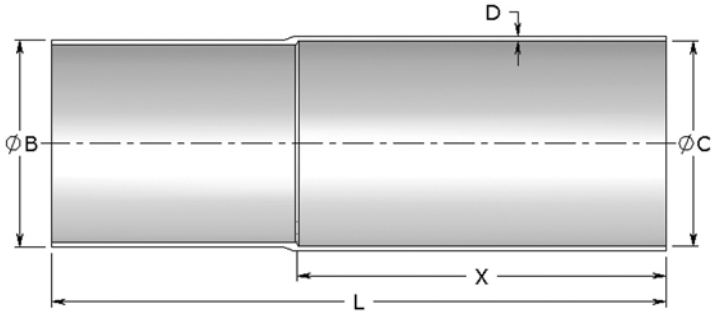


ID HW SLEEVE

Size		Symbol	ØC	D	L	ØC	D	L
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4016**	4.230	0.095	12	*107.4*	*2.4*	*304.8*
4½	*116*	**42-4516**	4.770	0.115	12	*121.2*	*2.9*	*304.8*
5	*129*	**42-5016**	5.270	0.115	12	*133.9*	*2.9*	*304.8*
6	*155*	**42-6016**	6.270	0.115	12	*159.3*	*2.9*	*304.8*

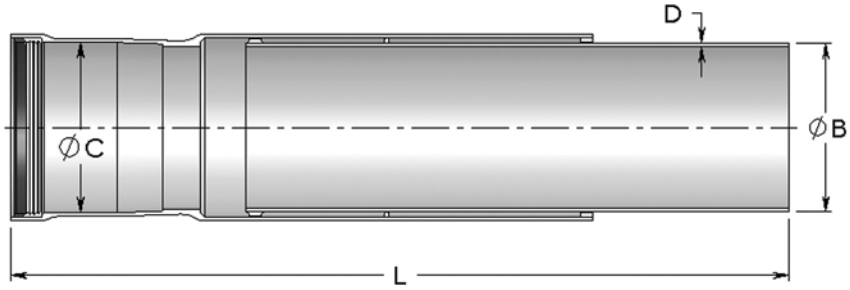


ID HW SINGLE EXPANSION JOINT



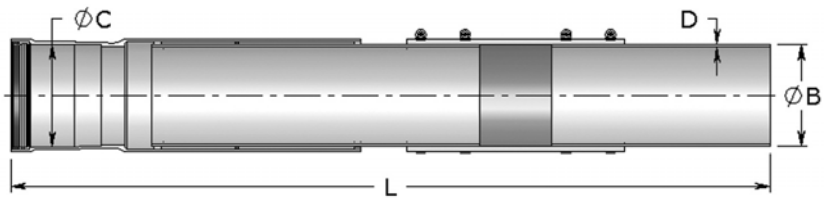
Size		Symbol	ØB	ØC	D	L	X	*ØB*	*ØC*	*D*	*L*	*X*
in	mm	No.	inches					*millimeters*				
4	*103*	**42-4012**	4.190	4.230	0.095	20	12	*106.4*	*107.4*	*2.4*	*508.0*	*304.8*
4½	*116*	**42-4512**	4.730	4.770	0.115	20	12	*120.1*	*121.2*	*2.9*	*508.0*	*304.8*
5	*129*	**42-5012**	5.230	5.270	0.115	20	12	*132.8*	*133.9*	*2.9*	*508.0*	*304.8*
6	*155*	**42-6012**	6.230	6.270	0.115	20	12	*158.2*	*159.3*	*2.9*	*508.0*	*304.8*

ID HW O-RING EXPANSION JOINT



Size		Symbol	ØB	ØC	D	L min	L max	*ØB*	*ØC*	*D*	*L min*	*L max*
in	mm	No.	inches					*millimeters*				
4	*103*	**42-4017**	4.190	4.230	0.095	24	36	*106.4*	*107.4*	*2.4*	*609.6*	*914.4*
4½	*116*	**42-4517**	4.730	4.770	0.115	24	36	*120.1*	*121.2*	*2.9*	*609.6*	*914.4*
5	*129*	**42-5017**	5.230	5.270	0.115	24	36	*132.8*	*133.9*	*2.9*	*609.6*	*914.4*
6	*155*	**42-6017**	6.230	6.270	0.115	24	36	*158.2*	*159.3*	*2.9*	*609.6*	*914.4*

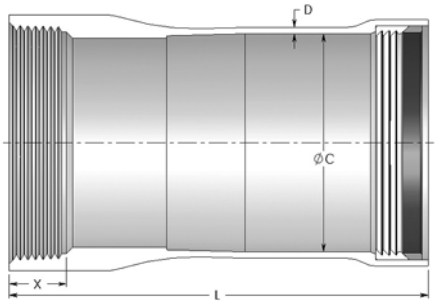
ID HW O-RING EXPANSION / DEFLECTION JOINT



Size		Symbol	ØB	ØC	D	L min	L max	ØB	ØC	D	L min	L max
in	*mm*	No.	inches					*millimeters*				
4	*103*	**42-4057**	4.190	4.230	0.095	40	52	*106.4*	*107.4*	*2.4*	*1016.0*	*1320.8*
4½	*116*	**42-4557**	4.730	4.770	0.115	40	52	*120.1*	*121.2*	*2.9*	*1016.0*	*1320.8*
5	*129*	**42-5057**	5.230	5.270	0.115	40	52	*132.8*	*133.9*	*2.9*	*1016.0*	*1320.8*
6	*155*	**42-6057**	6.230	6.270	0.115	40	52	*158.2*	*159.3*	*2.9*	*1016.0*	*1320.8*

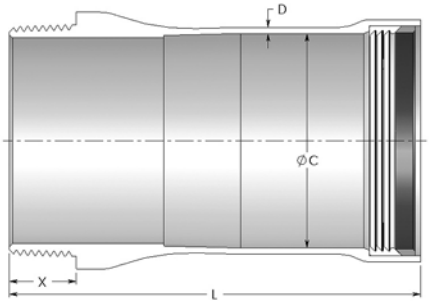
ID HW NPT FEMALE THREADED ADAPTER

Size		Symbol	ØC	D	L	X	ØC	D	L	X
in	*mm*	No.	inches				*millimeters*			
4	*103*	**42-4044**	4.230	0.095	8	1.094	*107.4*	*2.4*	*203.2*	*27.8*
4½	*116*	**42-4544**	4.770	0.115	8	1.350	*121.2*	*2.9*	*203.2*	*34.3*
5	*129*	**42-5044**	5.270	0.115	8	1.187	*133.9*	*2.9*	*203.2*	*30.1*
6	*155*	**42-6044**	6.270	0.115	8	1.208	*159.3*	*2.9*	*203.2*	*30.7*



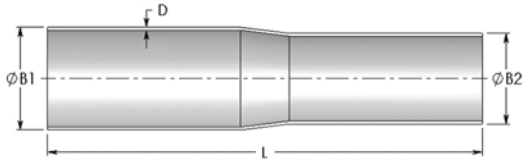
ID HW NPT MALE THREADED ADAPTER

Size		Symbol	ØC	D	L	X	ØC	D	L	X
in	*mm*	No.	inches				*millimeters*			
4	*103*	**42-4027**	4.230	0.095	8	1.300	*107.4*	*2.4*	*203.2*	*33.0*
4½	*116*	**42-4527**	4.770	0.115	8	1.350	*121.2*	*2.9*	*203.2*	*34.3*
5	*129*	**42-5027**	5.270	0.115	8	1.406	*133.9*	*2.9*	*203.2*	*35.7*
6	*155*	**42-6027**	6.270	0.115	8	1.513	*159.3*	*2.9*	*203.2*	*38.4*

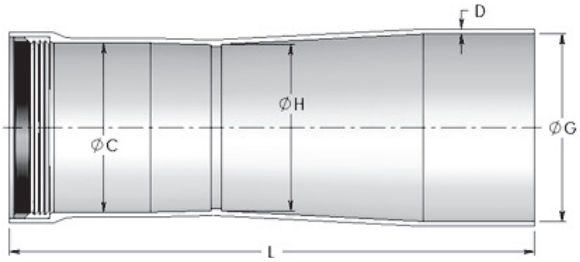


ID HW REDUCER

Size		Symbol	ØB1	ØB2	D	L	*ØB1*	*ØB2*	*D*	*L*
in	*mm*	No.	inches				*millimeters*			
4	*103*	**42-4029**	4.190	3.690	0.095	18	*106.4*	*93.7*	*2.4*	*457.2*
4½	*116*	**42-4529**	4.730	4.190	0.115	18	*120.1*	*106.7*	*2.9*	*457.2*
5	*129*	**42-5029**	5.230	4.730	0.115	18	*132.8*	*120.1*	*2.9*	*457.2*
6	*155*	**42-6029**	6.230	5.230	0.115	18	*158.2*	*132.8*	*2.9*	*457.2*



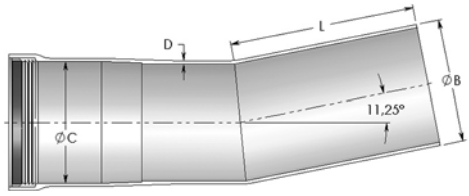
ID HW MULTIFIT ADAPTER



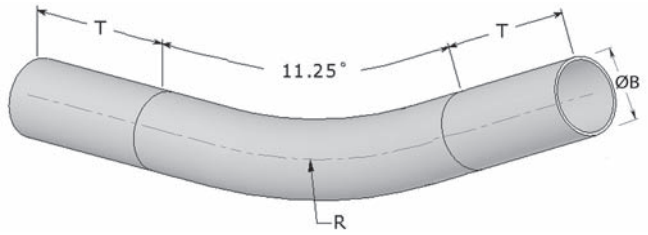
Size		Symbol	ØC	D	ØG	ØH	L	*ØC*	*D*	*ØG*	*ØH*	*L*
in	*mm*	No.	inches					*millimeters*				
4	*103*	**42-4037**	4.230	0.095	4.620	4.109	13	*107.4*	*2.4*	*117.3*	*104.4*	*330.2*
4½	*116*	**42-4537**	4.770	0.115	4.831	4.750	13	*121.2*	*2.9*	*122.7*	*120.7*	*330.2*
5	*129*	**42-5037**	5.270	0.115	5.650	5.289	13	*133.9*	*2.9*	*143.5*	*134.3*	*330.2*
6	*155*	**42-6037**	6.270	0.115	6.686	6.259	13	*159.3*	*2.9*	*169.8*	*159.0*	*330.2*

ID HW 11.25° FITTING

Size		Symbol	ØB	ØC	D	L	*ØB*	*ØC*	*D*	*L*
in	*mm*	No.	inches				*millimeters*			
4	*103*	**42-4035**	4.190	4.230	0.095	7	*106.4*	*107.4*	*2.4*	*177.8*
4½	*116*	**42-4535**	4.730	4.770	0.115	7	*120.1*	*121.2*	*2.9*	*177.8*
5	*129*	**42-5035**	5.230	5.270	0.115	7	*132.8*	*133.9*	*2.9*	*177.8*
6	*155*	**42-6035**	6.230	6.270	0.115	7	*158.2*	*159.3*	*2.9*	*177.8*



ID HW 11.25° ELBOW



36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4035R36**	4.190	36	6	*106.4*	*914.4*	*152.4*
4½	*116*	**42-4535R36**	4.730	36	6	*120.1*	*914.4*	*152.4*
5	*129*	**42-5035R36**	5.230	36	6	*132.8*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4035R48**	4.190	48	6	*106.4*	*1219.2*	*152.4*
4½	*116*	**42-4535R48**	4.730	48	6	*120.1*	*1219.2*	*152.4*
5	*129*	**42-5035R48**	5.230	48	6	*132.8*	*1219.2*	*152.4*
6	*155*	**42-6035R48**	6.230	48	6	*158.2*	*1219.2*	*152.4*

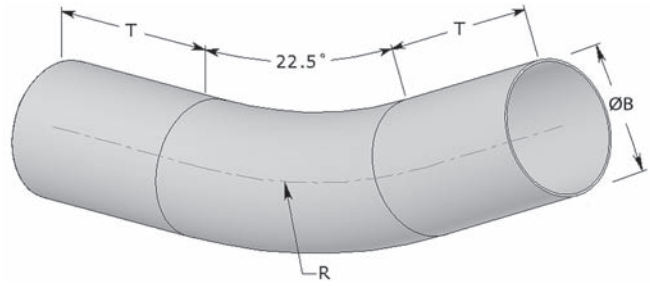
60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4035R60**	4.190	60	6	*106.4*	*1524.0*	*152.4*
4½	*116*	**42-4535R60**	4.730	60	6	*120.1*	*1524.0*	*152.4*
5	*129*	**42-5035R60**	5.230	60	6	*132.8*	*1524.0*	*152.4*
6	*155*	**42-6035R60**	6.230	60	6	*158.2*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4035R72**	4.190	72	6	*106.4*	*1828.8*	*152.4*
4½	*116*	**42-4535R72**	4.730	72	6	*120.1*	*1828.8*	*152.4*
5	*129*	**42-5035R72**	5.230	72	6	*132.8*	*1828.8*	*152.4*
6	*155*	**42-6035R72**	6.230	72	6	*158.2*	*1828.8*	*152.4*

ID HW 22.5° ELBOW



36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4034R36**	4.190	36	6	*106.4*	*914.4*	*152.4*
4½	*116*	**42-4534R36**	4.730	36	6	*120.1*	*914.4*	*152.4*
5	*129*	**42-5034R36**	5.230	36	6	*132.8*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4034R48**	4.190	48	6	*106.4*	*1219.2*	*152.4*
4½	*116*	**42-4534R48**	4.730	48	6	*120.1*	*1219.2*	*152.4*
5	*129*	**42-5034R48**	5.230	48	6	*132.8*	*1219.2*	*152.4*
6	*155*	**42-6034R48**	6.230	48	6	*158.2*	*1219.2*	*152.4*

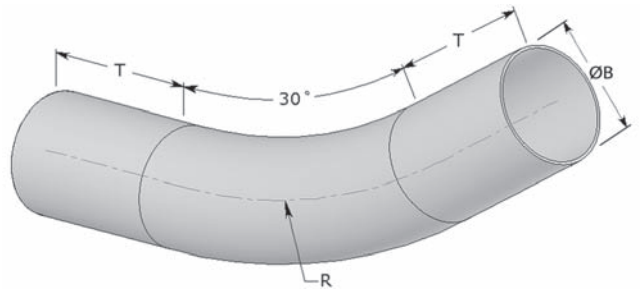
60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4034R60**	4.190	60	6	*106.4*	*1524.0*	*152.4*
4½	*116*	**42-4534R60**	4.730	60	6	*120.1*	*1524.0*	*152.4*
5	*129*	**42-5034R60**	5.230	60	6	*132.8*	*1524.0*	*152.4*
6	*155*	**42-6034R60**	6.230	60	6	*158.2*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4034R72**	4.190	72	6	*106.4*	*1828.8*	*152.4*
4½	*116*	**42-4534R72**	4.730	72	6	*120.1*	*1828.8*	*152.4*
5	*129*	**42-5034R72**	5.230	72	6	*132.8*	*1828.8*	*152.4*
6	*155*	**42-6034R72**	6.230	72	6	*158.2*	*1828.8*	*152.4*

ID HW 30° ELBOW



36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4033R36**	4.190	36	6	*106.4*	*914.4*	*152.4*
4½	*116*	**42-4533R36**	4.730	36	6	*120.1*	*914.4*	*152.4*
5	*129*	**42-5033R36**	5.230	36	6	*132.8*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4033R48**	4.190	48	6	*106.4*	*1219.2*	*152.4*
4½	*116*	**42-4533R48**	4.730	48	6	*120.1*	*1219.2*	*152.4*
5	*129*	**42-5033R48**	5.230	48	6	*132.8*	*1219.2*	*152.4*
6	*155*	**42-6033R48**	6.230	48	6	*158.2*	*1219.2*	*152.4*

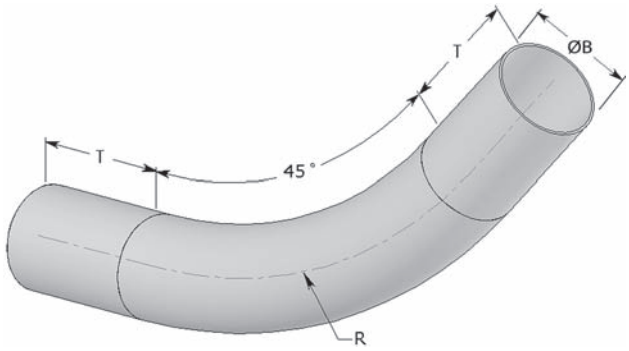
60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4033R60**	4.190	60	6	*106.4*	*1524.0*	*152.4*
4½	*116*	**42-4533R60**	4.730	60	6	*120.1*	*1524.0*	*152.4*
5	*129*	**42-5033R60**	5.230	60	6	*132.8*	*1524.0*	*152.4*
6	*155*	**42-6033R60**	6.230	60	6	*158.2*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4033R72**	4.190	72	6	*106.4*	*1828.8*	*152.4*
4½	*116*	**42-4533R72**	4.730	72	6	*120.1*	*1828.8*	*152.4*
5	*129*	**42-5033R72**	5.230	72	6	*132.8*	*1828.8*	*152.4*
6	*155*	**42-6033R72**	6.230	72	6	*158.2*	*1828.8*	*152.4*

ID HW 45° ELBOW



36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4032R36**	4.190	36	6	*106.4*	*914.4*	*152.4*
4½	*116*	**42-4532R36**	4.730	36	6	*120.1*	*914.4*	*152.4*
5	*129*	**42-5032R36**	5.230	36	6	*132.8*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4032R48**	4.190	48	6	*106.4*	*1219.2*	*152.4*
4½	*116*	**42-4532R48**	4.730	48	6	*120.1*	*1219.2*	*152.4*
5	*129*	**42-5032R48**	5.230	48	6	*132.8*	*1219.2*	*152.4*
6	*155*	**42-6032R48**	6.230	48	6	*158.2*	*1219.2*	*152.4*

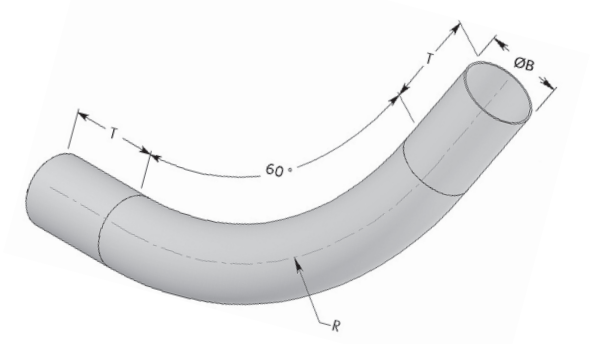
60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4032R60**	4.190	60	6	*106.4*	*1524.0*	*152.4*
4½	*116*	**42-4532R60**	4.730	60	6	*120.1*	*1524.0*	*152.4*
5	*129*	**42-5032R60**	5.230	60	6	*132.8*	*1524.0*	*152.4*
6	*155*	**42-6032R60**	6.230	60	6	*158.2*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4032R72**	4.190	72	6	*106.4*	*1828.8*	*152.4*
4½	*116*	**42-4532R72**	4.730	72	6	*120.1*	*1828.8*	*152.4*
5	*129*	**42-5032R72**	5.230	72	6	*132.8*	*1828.8*	*152.4*
6	*155*	**42-6032R72**	6.230	72	6	*158.2*	*1828.8*	*152.4*

ID HW 60° ELBOW



36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4031R36**	4.190	36	6	*106.4*	*914.4*	*152.4*
4½	*116*	**42-4531R36**	4.730	36	6	*120.1*	*914.4*	*152.4*
5	*129*	**42-5031R36**	5.230	36	6	*132.8*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4031R48**	4.190	48	6	*106.4*	*1219.2*	*152.4*
4½	*116*	**42-4531R48**	4.730	48	6	*120.1*	*1219.2*	*152.4*
5	*129*	**42-5031R48**	5.230	48	6	*132.8*	*1219.2*	*152.4*
6	*155*	**42-6031R48**	6.230	48	6	*158.2*	*1219.2*	*152.4*

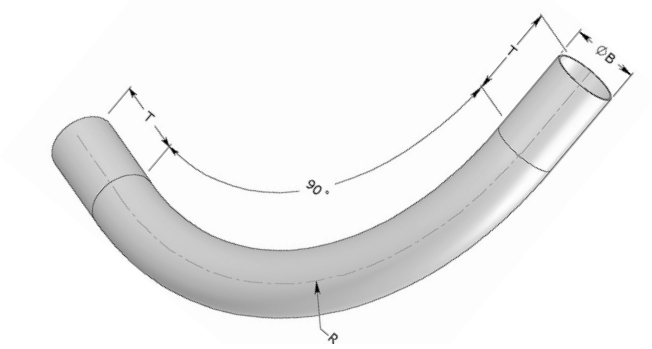
60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4031R60**	4.190	60	6	*106.4*	*1524.0*	*152.4*
4½	*116*	**42-4531R60**	4.730	60	6	*120.1*	*1524.0*	*152.4*
5	*129*	**42-5031R60**	5.230	60	6	*132.8*	*1524.0*	*152.4*
6	*155*	**42-6031R60**	6.230	60	6	*158.2*	*1524.0*	*152.4*

72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4031R72**	4.190	72	6	*106.4*	*1828.8*	*152.4*
4½	*116*	**42-4531R72**	4.730	72	6	*120.1*	*1828.8*	*152.4*
5	*129*	**42-5031R72**	5.230	72	6	*132.8*	*1828.8*	*152.4*
6	*155*	**42-6031R72**	6.230	72	6	*158.2*	*1828.8*	*152.4*

ID HW 90° ELBOW



36" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4030R36**	4.190	36	6	*106.4*	*914.4*	*152.4*
4½	*116*	**42-4530R36**	4.730	36	6	*120.1*	*914.4*	*152.4*

48" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4030R48**	4.190	48	6	*106.4*	*1219.2*	*152.4*
4½	*116*	**42-4530R48**	4.730	48	6	*120.1*	*1219.2*	*152.4*
5	*129*	**42-5030R48**	5.230	48	6	*132.8*	*1219.2*	*152.4*
6	*155*	**42-6030R48**	6.230	48	6	*158.2*	*1219.2*	*152.4*

60" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4030R60**	4.190	60	6	*106.4*	*1524.0*	*152.4*
4½	*116*	**42-4530R60**	4.730	60	6	*120.1*	*1524.0*	*152.4*
5	*129*	**42-5030R60**	5.230	60	6	*132.8*	*1524.0*	*152.4*
6	*155*	**42-6030R60**	6.230	60	6	*158.2*	*1524.0*	*152.4*

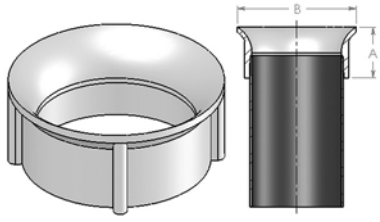
72" RADIUS

Size		Symbol	ØB	R	T	ØB	R	T
in	*mm*	No.	inches			*millimeters*		
4	*103*	**42-4030R72**	4.190	72	6	*106.4*	*1828.8*	*152.4*
4½	*116*	**42-4530R72**	4.730	72	6	*120.1*	*1828.8*	*152.4*
5	*129*	**42-5030R72**	5.230	72	6	*132.8*	*1828.8*	*152.4*
6	*155*	**42-6030R72**	6.230	72	6	*158.2*	*1828.8*	*152.4*

STANDARD WALL (SW) PRODUCT ACCESSORIES

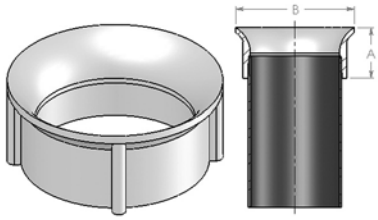
IPS SW RADIUS BELL END

Size		Symbol	ØA	ØB	*ØA*	*ØB*
in	mm	No.	inches		*millimeters*	
¾	*21*	**30-7518**	1.100	1.535	*27.9*	*39.0*
1	*27*	**30-1018**	1.210	1.815	*30.7*	*46.1*
1¼	*35*	**30-1218**	1.300	2.125	*33.0*	*54.0*
1½	*41*	**30-1518**	1.555	2.510	*39.5*	*63.8*
2	*53*	**30-2018**	1.575	2.830	*40.0*	*71.9*
3	*78*	**30-3018**	2.100	4.075	*53.3*	*103.5*
4	*103*	**30-4018**	2.345	5.250	*59.6*	*133.4*
5	*129*	**30-5018**	2.375	6.325	*60.3*	*160.7*
6	*155*	**30-6018**	2.875	7.360	*73.0*	*186.9*
8	*203*	**30-8018**	3.500	9.643	*88.9*	*244.9*



ID SW RADIUS BELL END

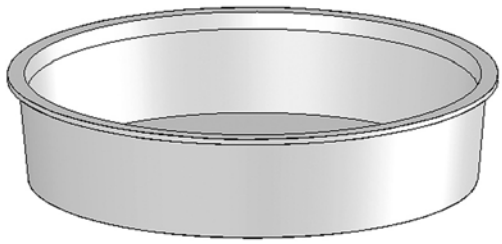
Size		Symbol	ØA	ØB	*ØA*	*ØB*
in	mm	No.	inches		*millimeters*	
2	*53*	**40-2018**	1.7	3.0	*43.2*	*76.2*
3	*78*	**40-3018**	1.7	4.0	*43.2*	*101.6*
3½	*91*	**40-3518**	1.7	4.5	*43.2*	*114.3*
4	*103*	**40-4018**	2.2	5.0	*55.9*	*127.0*
4½	*116*	**40-4518**	2.2	5.5	*55.9*	*139.7*
5	*129*	**40-5018**	2.2	6.0	*55.9*	*152.4*
6	*155*	**40-6018**	2.4	7.0	*61.0*	*177.8*



GENERAL ACCESSORIES

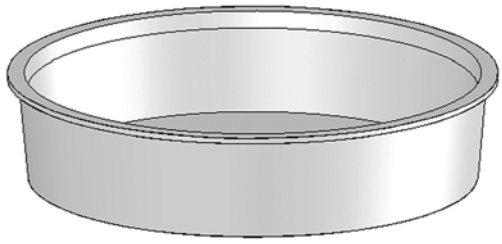
IPS THERMOPLASTIC PLUG

Size in	Size *mm*	Symbol No.	Depth in	Depth *mm*
¾	*21*	**30-7528**	0.6	*15.2*
1	*27*	**30-1028**	0.6	*15.2*
1¼	*35*	**30-1228**	0.8	*20.3*
1½	*41*	**30-1528**	0.8	*20.3*
2	*53*	**30-2028**	0.8	*20.3*
3	*78*	**30-3028**	0.8	*20.3*
4	*103*	**30-4028**	1.0	*25.4*
5	*129*	**30-5028**	1.0	*25.4*
6	*155*	**30-6028**	1.5	*38.1*
8	*203*	**30-8028**	1.5	*38.1*

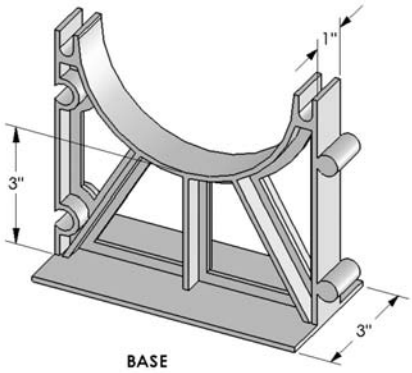


ID THERMOPLASTIC PLUG

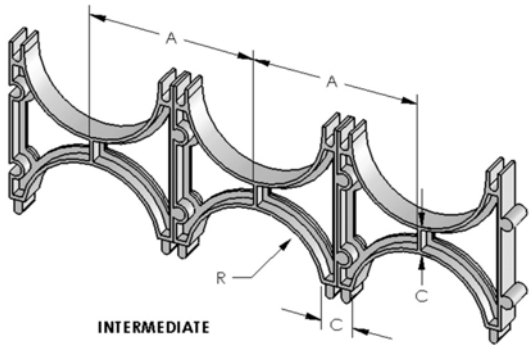
Size in	Size *mm*	Symbol No.	Depth in	Depth *mm*
2	*53*	**40-2028**	1.0	*25.4*
3	*78*	**40-3028**	1.0	*25.4*
3½	*91*	**40-3528**	1.0	*25.4*
4	*103*	**40-4028**	1.3	*33.0*
4½	*116*	**40-4528**	1.0	*25.4*
5	*129*	**40-5028**	1.0	*25.4*
6	*155*	**40-6028**	1.5	*38.1*



BASE & INTERMEDIATE SPACER (IPS & ID)



BASE

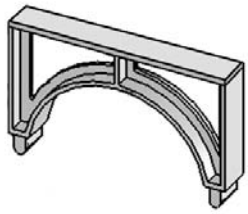


INTERMEDIATE

Conduit size		Base	Intermediate	C	R	A	C	R	A
in	*mm*	Spacer No.	Spacer No.	inches			*millimeters*		
2	*53*	**45-0131**	**45-0137**	1½	1.2	4.0	*38.1*	*30.5*	*101.6*
3	*78*	**45-0138**	**45-0139**	1½	1.8	5.1	*38.1*	*45.7*	*129.5*
4	*103*	**45-0115**	**45-0124**	1½	2.3	6.1	*38.1*	*58.4*	*154.9*
5	*129*	**45-0143**	**45-0136**	1½	2.9	7.3	*38.1*	*73.7*	*185.4*
6	*155*	**45-0144**	**45-0145**	1½	3.3	8.2	*38.1*	*83.8*	*208.3*
8	*203*	**45-0119**	**45-0146**	1½	4.3	10.2	*38.1*	*109.2*	*259.1*
2	*53*	**45-0109**	**45-0110**	2	1.2	4.5	*50.8*	*30.5*	*114.3*
3	*78*	**45-0104**	**45-0140**	2	1.8	5.6	*50.8*	*45.7*	*142.2*
4	*103*	**45-0103**	**45-0108**	2	2.3	6.6	*50.8*	*58.4*	*167.6*
5	*129*	**45-0116**	**45-0125**	2	2.9	7.9	*50.8*	*73.7*	*200.7*
6	*155*	**45-0117**	**45-0127**	2	3.4	8.7	*50.8*	*83.8*	*221.0*
8	*203*	**45-0128**	**45-0118**	2	4.3	10.7	*50.8*	*109.2*	*271.8*
2	*53*	**45-0123**	**45-0111**	3	1.2	5.5	*76.2*	*30.5*	*139.7*
3	*78*	**45-0121**	**45-0122**	3	1.8	6.6	*76.2*	*45.7*	*167.6*
4	*103*	**45-0105**	**45-0112**	3	2.3	7.6	*76.2*	*58.4*	*193.0*
5	*129*	**45-0101**	**45-0134**	3	2.9	8.9	*76.2*	*73.7*	*226.1*
6	*155*	**45-0135**	**45-0147**	3	3.4	9.8	*76.2*	*83.8*	*248.9*

CAPLOCK FOR SPACER (IPS & ID)

Conduit size		Caplock
in	*mm*	No.
2	*53*	**45-0133**
3	*78*	**45-0130**
4	*103*	**45-0126**
5	*129*	**45-0129**
6	*155*	**45-0132**



SPLICE & REPAIR KIT

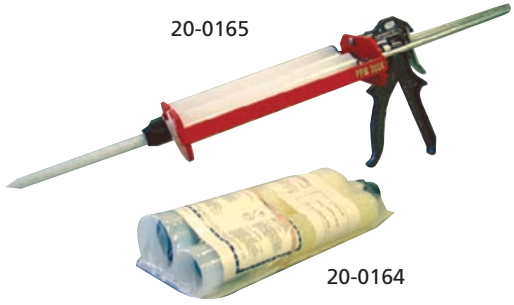
Size	Symbol No.
All	**40-0174**

Conduit size		Length of cut mat		Splices per kit
in	mm	in	cm	
2	*53*	10	*25*	14
3	*78*	12	*31*	11
4	*103*	15	*38*	9
5	*129*	19	*48*	7
6	*155*	23	*59*	6

ADHESIVE KIT

Size	Symbol No.	
All	**40-0161**	Epoxy Kit
All	**20-0164**	Dual Cartridge
All	**20-0165**	Dual Cartridge Applicator

20-0165



20-0164

40-0161

MECHANICAL PROPERTIES (40-0161)	
Shore D Hardness	81
Tensile strength	3 060 Psi
Lap shear strength	252 Psi
Viscosity	3 700 cP
Mix ratio	2 : 1
Color	Opaque
Solid content	100%

MECHANICAL PROPERTIES (20-0164)	
Shore D Hardness	90
Tensile strength	9 900 Psi
Lap shear strength	2 600 Psi
Viscosity	40 000 cP
Mix ratio	2 : 1
Color	Opaque
Solid content	100%

JOINT CALCULATION TABLE (ADHESIVE KIT)

IPS BASED

Size		Joints made	Pull-Out Strength	
in	*mm*	per kit	lbs	*kg*
¾	*21*	28	1 700	*771*
1	*27*	26	2 000	*907*
1¼	*35*	24	2 000	*907*
1½	*41*	20	2 000	*907*
2	*53*	16	2 000	*907*
3	*78*	11	3 000	*1 360*
4	*103*	8	4 000	*1 814*
5	*129*	6	5 000	*2 268*
6	*155*	5	6 000	*2 722*
8	*203*	3	8 000	*3 628*

ID BASED

Size		Joints made	Pull-Out Strength	
in	*mm*	per kit	lbs	*kg*
2	*53*	18	2 000	*907*
2½	*63*	16	2 500	*1 134*
3	*78*	13	3 000	*1 360*
3½	*91*	11	3 500	*1 587*
4	*103*	10	4 000	*1 814*
4½	*116*	8	4 500	*2 041*
5	*129*	7	5 000	*2 268*
6	*155*	6	6 000	*2 722*

MIXER TIP

Size	Symbol No.
All	**20-0166**

PRODUCT TEST DATA

FRE® Below Ground fiberglass conduit

MATERIAL	TEST RESULTS	TEST PROTOCOL
Resin	Epoxy (no fillers)	
Glass	Fiberglass (E or E-CR Glass)	CSA C22.2 No. 2420
Toxicity (Toxic Gas Emission)	< 0.2% halogens by weight	UL 2420

PHYSICAL PROPERTIES	TEST RESULTS	TEST PROTOCOL
Glass Content	68% ± 3%	API 15LR
Specific Gravity	1.94 g/cm^3	ASTM D792
Barcol Hardness	54 ± 2	ASTM D2583
Water Absorption	< 1%	ASTM D570
U.V. Resistance	> 3 500 Hrs (Xenon Arc)	CSA C22.2 No. 2420

MECHANICAL DATA	TEST RESULTS	TEST PROTOCOL
Tensile Strength (axial)	≥ 7 000 Psi (48,26 Mpa)	ASTM D638
Elasticity Modulus (4") (103 mm)	1.3 E6 Psi (8 963 Mpa)	ASTM D2105
TriSeal™ Joint Pull-Out Load	500 lbs (227 kg)	ASTM D2105
Adhesive Joint Pull-Out Load	1 000 lbs per inch trade size	ASTM D2105

SURFACE FINISH	TEST RESULTS	TEST PROTOCOL
Exterior (average)	<2 000 microinches (50.8 micrometers)	
Interior (average)	<125 microinches (3.2 micrometers)	
Color	Black (standard), Other (upon request only)	

THERMAL PROPERTIES	TEST RESULTS	TEST PROTOCOL
Coefficient of Thermal Expansion	1.37 E-5 in./in./°F (2.47 E-5 m./m./°C)	ASTM D696
Thermal Conductivity	2 Btu.in/ft^2.h. °F (0.288W/ m.K)	ASTM D335
Thermal Resistivity	0.5°F. ft^2.h/Btu.in (3.47 mK/W)	ASTM D335
Flammability	HB	UL 94
Heat Deflection Temperature (HDT)	312°F (156°C)	ASTM D648

ELECTRICAL DATA	TEST RESULTS	TEST PROTOCOL
Dielectric Strength	500 volts/mil (19.68 kV/mm)	ASTM D149
Dielectric Breakdown Voltage	29.7 kV	ASTM D149
Dissipation Factor	0.5%	ASTM D150

COEFFICIENT OF FRICTION	TEST RESULTS	TEST PROTOCOL
Cross Linked Polyethylene Cable	0.233 ± .02	CSA B196.1
PVC Jacketed Cable	0.385 ± .06	CSA B196.1
Concentric Neutral Cable	0.160 ± .03	CSA B196.1
Teck (Armored) Cable	0.161 ± .03	CSA B196.1

CHEMICAL RESISTANCE

	after 45 days	after 90 days		after 45 days	after 90 days
Sodium chloride, 10% aq. sin.	E	E	Nitric acid, 10% aq. sin.	E	E
Diesel fuel	E	E	Sodium carbonate, 10% aq. sin.	E	E
Unleaded gasoline	E	E	Benzene	NR	NR
Jet fuel	E	E	Toluene	E	E
Hydrochloric acid, 10% aq. sin.	E	E	Xylene	E	E
Sulfuric acid, 10% aq. sin.	E	E	Acetone	NR	NR

E: excellent chemical resistance

NR: not recommended for long term contact.

Note : **Chemical resistance tests reported here were conducted according to UL-651 section 38. Samples were immersed in the specified chemical reagent for 45 and 90 days, respectively. Weight gains or weight losses at the end of the immersion period were recorded. Mechanical integrity was determined by the parallel plate crush (ASTM D2412) test. Loads were measured at 5% deflection and at failure at the end of the immersion period and compared to the reference values of control specimens not exposed to any chemical attack. Weight gains or losses above 2% and drops in crushing resistance (load at 5% deflection or load at failure) above 15% were considered as evidence of insufficient chemical resistance.**

REPRESENTATIVE PERFORMANCE SPECS

Size in	Size mm	Wall in	Wall mm	Weight lbs/ft.	Weight Kg/m	Failure Load (ASTM D2412) lbs/ft.	Failure Load (ASTM D2412) Kg/m	Impact (ASTM D2444) lbs ft.	Impact (ASTM D2444) Kg m	Field Bending Radius at 0.2% strain ft.	Field Bending Radius at 0.2% strain m	Moment of inertia in^4	Moment of inertia cm^4
IPS THIN WALL (for Encased Burial (EB))													
4	*102*	.070	1.8	.64	.95	n/a	n/a	80	11.07	n/a	n/a	1.859	77.37
5	*127*	.070	1.8	1.01	1.50	n/a	n/a	100	13.84	n/a	n/a	4.433	184.5
6	*152*	.095	2.4	1.64	2.44	n/a	n/a	120	16.61	n/a	n/a	10.247	426.5
IPS STANDARD WALL (for Encased Burial (EB) or Direct Burial (DB))													
¾	*21*	.066	1.7	.17	.25	5 000	7 439	25	3.46	42	13	0.024	1.0
1	*27*	.066	1.7	.22	.32	4 200	6 249	30	4.15	42	13	0.050	2.1
1¼	*35*	.066	1.7	.28	.41	3 800	5 654	30	4.15	46	14	0.103	4.3
1½	*41*	.066	1.7	.32	.46	3 500	5 207	35	4.84	54	16	0.157	6.5
2	*53*	.070	1.8	.42	.63	3 000	4 463	80	11.07	68	21	0.337	14.0
3	*78*	.070	1.8	.63	.94	2 300	3 422	120	16.60	100	30	1.110	46.2
4	*103*	.070	1.8	.82	1.22	2 000	2 976	160	22.14	132	40	2.390	99.5
5	*129*	.095	2.4	1.39	2.07	3 000	4 463	200	27.67	160	49	6.101	253.9
6	*155*	.110	2.8	1.89	2.82	2 800	4 166	240	33.21	190	58	11.948	478.6
8	*203*	.115	2.9	2.61	3.88	2 400	3 571	280	38.75	235	72	27.818	1157.9
IPS HEAVY WALL (for Direct Burial (DB))													
4	*103*	.095	1.8	.82	1.22	n/a	n/a	160	22.14	n/a	n/a	3.300	137.4
5	*129*	.115	2.4	1.39	2.07	n/a	n/a	200	27.68	n/a	n/a	7.468	310.8
6	*155*	.115	2.8	1.89	2.82	n/a	n/a	240	33.22	n/a	n/a	12.521	521.2
ID THIN WALL (for Encased Burial (EB))													
4	*103*	.055	1.4	.59	.88	n/a	n/a	80	11.07	n/a	n/a	1.440	59.9
4½	*116*	.070	1.8	.85	1.27	n/a	n/a	90	12.46	n/a	n/a	2.624	109.2
5	*129*	.070	1.8	.95	1.41	n/a	n/a	100	13.84	n/a	n/a	3.583	149.1
6	*155*	.070	1.8	1.52	2.26	n/a	n/a	100	13.84	n/a	n/a	6.149	255.9
ID STANDARD WALL (for Encased Burial (EB) or Direct Burial (DB))													
2	*53*	.070	1.8	.38	.57	3 200	4 761	60	8.30	68	21	0.244	10.2
2½	*63*	.070	1.8	.48	.71	2 700	4 017	80	11.06	80	24	0.467	19.4
3	*78*	.070	1.8	.57	.85	2 400	3 571	120	16.60	100	30	0.796	33.1
3½	*91*	.070	1.8	.66	.98	2 200	3 273	140	19.37	116	35	1.251	52.1
4	*103*	.070	1.8	.75	1.12	2 100	3 124	160	22.14	132	40	1.854	77.2
4½	*116*	.095	2.4	1.16	1.72	3 400	5 059	180	24.90	150	46	3.621	150.7
5	*129*	.095	2.4	1.28	1.90	3 800	5 654	200	27.67	166	51	4.936	205.4
6	*155*	.095	2.4	1.53	2.28	3 600	5 356	200	27.67	198	60	8.449	351.7
ID HEAVY WALL (for Direct Burial (DB))													
4	*103*	.095	2.4	1.03	1.53	n/a	n/a	160	22.14	n/a	n/a	2.563	106.7
4½	*116*	.115	2.4	1.16	1.72	n/a	n/a	180	24.91	n/a	n/a	4.442	184.9
5	*129*	.115	2.4	1.28	1.90	n/a	n/a	200	27.68	n/a	n/a	6.047	251.7
6	*155*	.115	2.4	1.53	2.28	n/a	n/a	200	27.68	n/a	n/a	10.330	429.9

Note: **Impact resistance tests were carried out at -40°C, as required by UL 2420/CSA C22.2 No. 2420, and at 23°C. The values reported here are the lowest of the two measurements (normally those taken at -40°C).**

n/a: not available, please consult FRE Composites® for details.

FLEXURAL DATA

Size in	Size mm	Stifness factor (SF) lbs/in.	Pipe stifness (PS) $lbs/in.^2$	Stifness factor (SF) Kg/m	Pipe stifness (PS) MPa
IPS THIN WALL (for Encased Burial (EB))					
4	*103*	30.50	19.03	0.35	0.13
5	*129*	62.88	20.94	0.73	0.14
6	*155*	157.19	30.73	1.81	0.21
IPS STANDARD WALL (for Encased Burial (EB) or Direct Burial (DB))					
¾	*21*	52.71	2 970.24	0.61	20.50
1	*27*	52.71	1 452.41	0.61	10.03
1¼	*35*	52.71	698.73	0.61	4.82
1½	*41*	52.71	458.75	0.61	3.17
2	*53*	62.88	275.69	0.73	1.90
2.5	*63*	62.88	150.55	0.73	1.04
3	*78*	62.88	83.67	0.73	0.58
4	*103*	62.88	38.84	0.73	0.27
5	*129*	157.19	51.62	1.81	0.36
6	*155*	244.02	47.38	2.81	0.33
8	*203*	278.83	24.31	3.21	0.17
IPS HEAVY WALL (for Direct Burial (DB))					
4	*103*	157.19	95.45	1.81	0.66
5	*129*	278.83	90.57	3.21	0.63
6	*155*	278.83	54.01	3.21	0.37
ID THIN WALL (for Encased Burial (EB))					
4	*103*	30.50	24.56	0.35	0.17
4½	*116*	62.88	35.37	0.73	0.24
5	*129*	62.88	25.91	0.73	0.18
6	*155*	62.88	15.10	0.73	0.10
ID STANDARD WALL (for Encased Burial (EB) or Direct Burial (DB))					
2	*53*	62.88	380.65	0.73	2.63
2½	*63*	62.88	198.90	0.73	1.37
3	*78*	62.88	116.69	0.73	0.81
3½	*91*	62.88	74.21	0.73	0.51
4	*103*	62.88	50.08	0.73	0.35
4½	*116*	157.19	86.99	1.81	0.60
5	*129*	157.19	63.81	1.81	0.44
6	*155*	157.19	37.27	1.81	0.26
ID HEAVY WALL (for Direct Burial (DB))					
4	*103*	157.19	122.90	1.81	0.85
4½	*116*	278.83	152.31	3.21	1.05
5	*129*	278.83	111.87	3.21	0.77
6	*155*	278.83	65.47	3.21	0.45

CONDUIT DEFLECTION DATA

IPS STANDARD WALL (for Encased Burial (EB) or Direct Burial (DB))

Burial Depth (ft)		2	3	4	5	6	7	8	9	10
Soil Mod. (Psi)	Diameter (inches)	Deflection (inches)								
E' = 200	¾	0.005	0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.005
	1	0.011	0.010	0.009	0.009	0.010	0.010	0.011	0.012	0.013
	1¼	0.027	0.024	0.022	0.023	0.024	0.025	0.027	0.029	0.032
	1½	0.044	0.038	0.036	0.037	0.038	0.041	0.044	0.047	0.051
	2	0.077	0.066	0.063	0.064	0.067	0.071	0.077	0.083	0.089
	2½	0.135	0.117	0.112	0.113	0.119	0.126	0.136	0.147	0.158
	3	0.216	0.186	0.178	0.180	0.189	0.200	0.217	0.233	0.251
	4	0.351	0.304	0.290	0.294	0.308	0.326	0.354	0.380	0.409
	5	0.404	0.349	0.333	0.338	0.354	0.375	0.406	0.437	0.470
	6	0.492	0.426	0.407	0.412	0.432	0.457	0.495	0.533	0.573
	8	0.737	0.638	0.609	0.617	0.647	0.685	0.742	0.798	0.859
E' = 400	¾	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.005	0.005
	1	0.010	0.009	0.009	0.009	0.009	0.010	0.010	0.011	0.012
	1¼	0.023	0.020	0.019	0.020	0.021	0.022	0.024	0.025	0.027
	1½	0.036	0.031	0.029	0.030	0.031	0.033	0.036	0.039	0.042
	2	0.058	0.050	0.048	0.049	0.051	0.054	0.059	0.063	0.068
	2½	0.093	0.080	0.077	0.078	0.081	0.086	0.093	0.100	0.108
	3	0.134	0.116	0.111	0.112	0.118	0.125	0.135	0.145	0.156
	4	0.199	0.172	0.164	0.166	0.174	0.185	0.200	0.215	0.231
	5	0.236	0.204	0.195	0.197	0.207	0.219	0.237	0.255	0.274
	6	0.284	0.246	0.235	0.238	0.249	0.264	0.286	0.308	0.331
	8	0.401	0.346	0.331	0.335	0.351	0.372	0.403	0.433	0.466
E' = 700	¾	0.004	0.004	0.003	0.003	0.004	0.004	0.004	0.005	0.005
	1	0.009	0.008	0.008	0.008	0.008	0.009	0.009	0.010	0.011
	1¼	0.019	0.017	0.016	0.016	0.017	0.018	0.020	0.021	0.023
	1½	0.028	0.024	0.023	0.023	0.024	0.026	0.028	0.030	0.033
	2	0.043	0.037	0.035	0.036	0.038	0.040	0.043	0.046	0.050
	2½	0.063	0.054	0.052	0.053	0.055	0.058	0.063	0.068	0.073
	3	0.086	0.074	0.071	0.072	0.075	0.080	0.086	0.093	0.100
	4	0.120	0.104	0.099	0.101	0.106	0.112	0.121	0.130	0.140
	5	0.145	0.125	0.120	0.121	0.127	0.135	0.146	0.157	0.169
	6	0.174	0.151	0.144	0.146	0.153	0.162	0.175	0.188	0.203
	8	0.238	0.205	0.196	0.199	0.208	0.221	0.239	0.257	0.277
E' = 1000	¾	0.004	0.003	0.003	0.003	0.003	0.004	0.004	0.004	0.005
	1	0.008	0.007	0.007	0.007	0.007	0.008	0.008	0.009	0.010
	1¼	0.017	0.014	0.014	0.014	0.014	0.015	0.017	0.018	0.019
	1½	0.023	0.020	0.019	0.019	0.020	0.021	0.023	0.025	0.027
	2	0.034	0.029	0.028	0.028	0.030	0.031	0.034	0.037	0.039
	2½	0.048	0.041	0.039	0.040	0.042	0.044	0.048	0.052	0.055
	3	0.063	0.054	0.052	0.053	0.055	0.058	0.063	0.068	0.073
	4	0.086	0.075	0.071	0.072	0.076	0.080	0.087	0.093	0.100
	5	0.105	0.091	0.086	0.088	0.092	0.097	0.105	0.113	0.122
	6	0.125	0.108	0.104	0.105	0.110	0.117	0.126	0.136	0.146
	8	0.169	0.146	0.140	0.141	0.148	0.157	0.170	0.183	0.197
E' = 2000	¾	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.004	0.004
	1	0.006	0.006	0.005	0.005	0.006	0.006	0.006	0.007	0.007
	1¼	0.011	0.010	0.009	0.009	0.010	0.010	0.011	0.012	0.013
	1½	0.014	0.012	0.012	0.012	0.013	0.013	0.014	0.016	0.017
	2	0.020	0.017	0.016	0.017	0.017	0.018	0.020	0.022	0.023
	2½	0.026	0.023	0.022	0.022	0.023	0.024	0.026	0.028	0.031
	3	0.033	0.029	0.028	0.028	0.029	0.031	0.034	0.036	0.039
	4	0.044	0.038	0.037	0.037	0.039	0.041	0.045	0.048	0.052
	5	0.054	0.047	0.045	0.046	0.048	0.051	0.055	0.059	0.063
	6	0.065	0.056	0.054	0.054	0.057	0.060	0.065	0.070	0.076
	8	0.086	0.074	0.071	0.072	0.075	0.080	0.087	0.093	0.100

CONDUIT DEFLECTION DATA

IPS HEAVY WALL (for Direct Burial (DB))

Burial Depth (ft)		2	3	4	5	6	7	8	9	10
Soil Mod. (Psi)	Diameter (inches)	Deflection (inches)								
E' = 200	4	0.303	0.262	0.250	0.254	0.266	0.281	0.305	0.328	0.353
	5	0.353	0.305	0.291	0.295	0.309	0.328	0.355	0.382	0.411
	6	0.488	0.422	0.403	0.408	0.428	0.453	0.491	0.528	0.568
E' = 400	4	0.176	0.152	0.146	0.147	0.154	0.164	0.177	0.191	0.205
	5	0.211	0.183	0.175	0.177	0.185	0.196	0.213	0.229	0.246
	6	0.275	0.238	0.227	0.230	0.241	0.255	0.277	0.297	0.320
E' = 700	4	0.108	0.094	0.089	0.091	0.095	0.101	0.109	0.117	0.126
	5	0.132	0.114	0.109	0.111	0.116	0.123	0.133	0.143	0.154
	6	0.166	0.144	0.137	0.139	0.146	0.154	0.167	0.180	0.193
E' = 1000	4	0.078	0.068	0.065	0.065	0.068	0.073	0.079	0.085	0.091
	5	0.096	0.083	0.079	0.080	0.084	0.089	0.097	0.104	0.112
	6	0.119	0.103	0.098	0.100	0.104	0.110	0.120	0.129	0.139
E' = 2000	4	0.041	0.035	0.033	0.034	0.036	0.038	0.041	0.044	0.047
	5	0.050	0.043	0.042	0.042	0.044	0.047	0.051	0.054	0.059
	6	0.061	0.053	0.051	0.051	0.054	0.057	0.062	0.066	0.071

CONDUIT DEFLECTION DATA

ID STANDARD WALL (for Encased Burial (EB) or Direct Burial (DB))

Burial Depth (ft)		2	3	4	5	6	7	8	9	10
Soil Mod. (Psi)	Diameter (inches)	Deflection (inches)								
E' = 200	2	0.055	0.048	0.045	0.046	0.048	0.051	0.055	0.059	0.064
	2½	0.105	0.091	0.087	0.088	0.092	0.098	0.106	0.114	0.123
	3	0.167	0.145	0.138	0.140	0.147	0.155	0.168	0.181	0.195
	3½	0.235	0.203	0.194	0.196	0.206	0.218	0.236	0.254	0.273
	4	0.303	0.262	0.250	0.254	0.266	0.281	0.305	0.328	0.353
	4½	0.285	0.246	0.235	0.238	0.249	0.264	0.286	0.308	0.331
	5	0.353	0.305	0.291	0.295	0.309	0.328	0.355	0.382	0.411
	6	0.488	0.422	0.403	0.408	0.428	0.453	0.491	0.528	0.568
E' = 400	2	0.044	0.038	0.036	0.037	0.038	0.041	0.044	0.047	0.051
	2½	0.076	0.065	0.063	0.063	0.066	0.070	0.076	0.082	0.088
	3	0.110	0.095	0.091	0.092	0.096	0.102	0.110	0.119	0.128
	3½	0.144	0.124	0.119	0.120	0.126	0.133	0.145	0.155	0.167
	4	0.176	0.152	0.146	0.147	0.154	0.164	0.177	0.191	0.205
	4½	0.178	0.154	0.147	0.149	0.156	0.165	0.179	0.193	0.208
	5	0.211	0.183	0.175	0.177	0.185	0.196	0.213	0.229	0.246
	6	0.275	0.238	0.227	0.230	0.241	0.255	0.277	0.297	0.320
E' = 700	2	0.034	0.029	0.028	0.028	0.030	0.031	0.034	0.036	0.039
	2½	0.053	0.046	0.044	0.045	0.047	0.049	0.054	0.058	0.062
	3	0.072	0.063	0.060	0.061	0.064	0.067	0.073	0.078	0.084
	3½	0.091	0.078	0.075	0.076	0.080	0.084	0.091	0.098	0.106
	4	0.108	0.094	0.089	0.091	0.095	0.101	0.109	0.117	0.126
	4½	0.114	0.099	0.094	0.096	0.100	0.106	0.115	0.124	0.133
	5	0.132	0.114	0.109	0.111	0.116	0.123	0.133	0.143	0.154
	6	0.166	0.144	0.137	0.139	0.146	0.154	0.167	0.180	0.193
E' = 1000	2	0.027	0.024	0.023	0.023	0.024	0.025	0.028	0.030	0.032
	2½	0.041	0.035	0.034	0.034	0.036	0.038	0.041	0.044	0.048
	3	0.054	0.047	0.045	0.045	0.047	0.050	0.054	0.058	0.063
	3½	0.066	0.057	0.055	0.056	0.058	0.062	0.067	0.072	0.077
	4	0.078	0.068	0.065	0.065	0.068	0.073	0.079	0.085	0.091
	4½	0.084	0.073	0.069	0.070	0.074	0.078	0.085	0.091	0.098
	5	0.096	0.083	0.079	0.080	0.084	0.089	0.097	0.104	0.112
	6	0.119	0.103	0.098	0.100	0.104	0.110	0.120	0.129	0.139
E' = 2000	2	0.017	0.015	0.014	0.014	0.015	0.016	0.017	0.018	0.020
	2½	0.023	0.020	0.019	0.019	0.020	0.022	0.023	0.025	0.027
	3	0.029	0.025	0.024	0.024	0.026	0.027	0.029	0.032	0.034
	3½	0.035	0.030	0.029	0.029	0.031	0.032	0.035	0.038	0.041
	4	0.041	0.035	0.033	0.034	0.036	0.038	0.041	0.044	0.047
	4½	0.045	0.039	0.037	0.037	0.039	0.041	0.045	0.048	0.052
	5	0.050	0.043	0.042	0.042	0.044	0.047	0.051	0.054	0.059
	6	0.061	0.053	0.051	0.051	0.054	0.057	0.062	0.066	0.071

CONDUIT DEFLECTION DATA

ID HEAVY WALL (for Direct Burial (DB))

Burial Depth (ft)		2	3	4	5	6	7	8	9	10
Soil Mod. (Psi)	Diameter (inches)	Deflection (inches)								
E' = 200	4	0.218	0.188	0.180	0.182	0.191	0.202	0.219	0.236	0.254
	4½	0.220	0.190	0.182	0.184	0.193	0.205	0.222	0.238	0.256
	5	0.284	0.246	0.235	0.238	0.249	0.264	0.286	0.308	0.331
	6	0.420	0.363	0.347	0.351	0.368	0.390	0.422	0.454	0.489
E' = 400	4	0.144	0.125	0.119	0.121	0.126	0.134	0.145	0.156	0.168
	4½	0.151	0.131	0.125	0.126	0.132	0.140	0.152	0.163	0.176
	5	0.185	0.160	0.153	0.155	0.162	0.172	0.186	0.201	0.216
	6	0.252	0.218	0.209	0.211	0.221	0.234	0.254	0.273	0.294
E' = 700	4	0.096	0.083	0.079	0.080	0.084	0.089	0.096	0.103	0.111
	4½	0.103	0.089	0.085	0.086	0.090	0.095	0.103	0.111	0.120
	5	0.122	0.105	0.101	0.102	0.107	0.113	0.122	0.132	0.142
	6	0.158	0.137	0.131	0.132	0.139	0.147	0.159	0.171	0.184
E' = 1000	4	0.072	0.062	0.059	0.060	0.063	0.066	0.072	0.077	0.083
	4½	0.078	0.067	0.064	0.065	0.068	0.072	0.078	0.084	0.091
	5	0.091	0.078	0.075	0.076	0.079	0.084	0.091	0.098	0.106
	6	0.115	0.099	0.095	0.096	0.101	0.107	0.116	0.124	0.134
E' = 2000	4	0.039	0.034	0.032	0.033	0.034	0.036	0.039	0.042	0.045
	4½	0.043	0.037	0.036	0.036	0.038	0.040	0.043	0.047	0.050
	5	0.049	0.042	0.040	0.041	0.043	0.045	0.049	0.053	0.057
	6	0.060	0.052	0.050	0.050	0.053	0.056	0.061	0.065	0.070

PULLING TENSION FOR CABLES

The cable manufacturer must be consulted for the maximum pull permitted on a selected cable. Other data such as lubrication restrictions should also be obtained from the cable manufacturer. The total pulling force required for a cable in a conduit depends upon the cable weight, length of conduit, number and location of the elbows and the coefficient of friction.

The following formula is published to aid in obtaining tension values: $T_i = T_{i-1}e^{(f\alpha\pi/180)} + wLf\cos ø + wL\sin ø$

T_i = Tension at the point towards end of run (lbs)
f = Coefficient of friction
L = Length of conduit subjected to cable weight (ft.)
e = Napirian Logarithm base = 2.718
T_{i-1} = Tension at point towards beginning of run (lbs)
w = Cable weight per foot (lbs/ft.)
a = Elbow angle (°)
ø = Angle (°) of run with regards to the horizontal
- positive if run moves upwards
- negative if run moves downwards
- equal zero (0) if run is horizontal

Example:
Parameters - f = .25 w = 10 lbs/ft. r = 36 inches = Elbow radius (used to calculate elbow length)

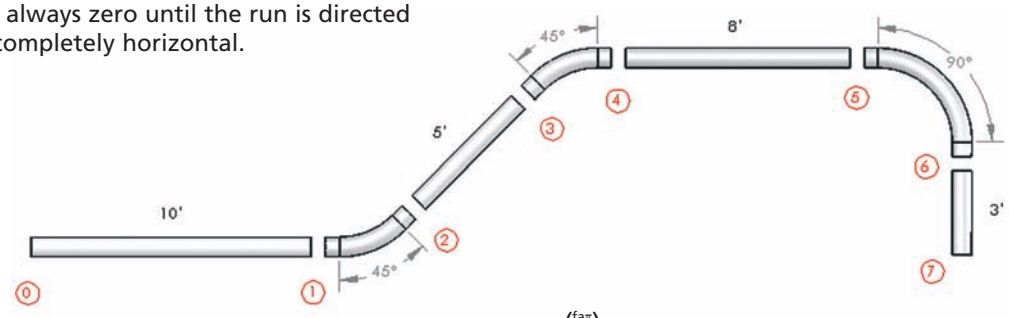
i) Pulling from point "0" to point "7"

Point i	ø (°)	a (°)	L (ft.)	$e^{(f\alpha\pi/180)}$	T_i (lbs)
0	–	–	–	–	0.0
1	0.0	0.0	10.0	1.00	25.00
2	0.0	45.0	3.4	1.22	38.81
3	0.0	0.0	5.0	1.00	51.31
4	0.0	45.0	3.4	1.22	70.84
5	0.0	0.0	8.0	1.00	90.84
6	0.0	90.0	5.7	1.48	148.81
7	0.0	0.0	3.0	1.00	156.31

ii) Pulling from point "7" to point "0"

Point i	ø (°)	a (°)	L (ft.)	$e^{(f\alpha\pi/180)}$	T_i (lbs)
7	–	–	–	–	0.0
6	0.0	0.0	3.0	1.00	7.50
5	0.0	90.0	5.7	1.48	25.39
4	0.0	0.0	8.0	1.00	45.39
3	0.0	45.0	3.4	1.22	63.63
2	0.0	0.0	5.0	1.00	76.13
1	0.0	45.0	3.4	1.22	101.03
0	0.0	0.0	10.0	1.00	126.03

ø: This value is always zero until the run is directed other than completely horizontal.



The following table is published to aid in solving the values for $e^{(f\alpha\pi/180)}$

Elbow Angle(°)	For f = 0.25	For f = 0.35	For f = 0.45	For f = 0.55
11.25°	1.050	1.071	1.092	1.114
22.5°	1.103	1.147	1.193	1.241
30°	1.140	1.201	1.266	1.334
45°	1.217	1.316	1.424	1.540
60°	1.299	1.443	1.602	1.779
90°	1.481	1.733	2.028	2.372

MAXIMUM TENSION ALLOWED AT ELBOWS:
The maximum pulling tension at a elbow must not exceed the calculated value of 300 x r (radius of the conduit elbow in feet). The above equations are used to determine what tension will occur at a elbow. This is to avoid cable damage.* In general, it is preferred to pull in the direction which results in the lowest tension. To do this, the pay-off reel should be placed at the end nearest the elbow.

*For safe pulling tension, to avoid cable damage, consult cable manufacturers for tension per cable type.

WIRE FILL

Maximum allowable percentage wire fill from 2008 National Electrical Code (NEC) and 2012 Canadian Electrical Code (CEC).

IPS SIZES

IMPERIAL

Trade size IPS	Inside Diameter (in)	Total Area 100% (in²)	NUMBER OF CONDUCTORS & Percent of cross section of conduit for conductors		
			1 53% fill (in²)	**2** 31% fill (in²)	**Over 2** 40% fill (in²)
¾	0.918	0.662	0.351	0.205	0.265
1	1.183	1.099	0.583	0.341	0.440
1¼	1.528	1.834	0.972	0.568	0.733
1½	1.768	2.455	1.301	0.761	0.982
2	2.235	3.923	2.079	1.216	1.569
3	3.360	8.867	4.699	2.749	3.547
4	4.360	14.930	7.913	4.628	5.972
5	5.373	22.674	12.017	7.029	9.070
6	6.405	32.220	17.077	9.988	12.888
8	8.395	55.352	29.336	17.159	22.141

METRIC

Trade size IPS	Inside Diameter (mm)	Total Area 100% (mm²)	NUMBER OF CONDUCTORS & Percent of cross section of conduit for conductors		
			1 53% fill (mm²)	**2** 31% fill (mm²)	**Over 2** 40% fill (mm²)
21	23	427	226	132	171
27	30	709	376	220	284
35	39	1 183	627	367	473
41	45	1 584	839	491	634
53	57	2 531	1 341	785	1 012
78	85	5 721	3 032	1 773	2 288
103	111	9 632	5 105	2 986	3 853
129	136	14 628	7 753	4 535	5 851
155	163	20 787	11 017	6 444	8 315
203	213	35 711	18 927	11 070	14 284

ID SIZES

IMPERIAL

Trade size ID	Inside Diameter (in)	Total Area 100% (in²)	NUMBER OF CONDUCTORS & Percent of cross section of conduit for conductors		
			1 53% fill (in²)	**2** 31% fill (in²)	**Over 2** 40% fill (in²)
2	2.000	3.142	1.665	0.974	1.257
2½	2.500	4.909	2.602	1.522	1.964
3	3.000	7.069	3.746	2.191	2.827
3½	3.500	9.621	5.099	2.983	3.848
4	4.000	12.566	6.660	3.896	5.027
4½	4.500	15.904	8.429	4.930	6.362
5	5.000	19.635	10.407	6.087	7.854
6	6.000	28.274	14.985	8.765	11.310

Trade size ID	Inside Diameter (mm)	Total Area 100% (mm²)	NUMBER OF CONDUCTORS & Percent of cross section of conduit for conductors		
			1 53% fill (mm²)	**2** 31% fill (mm²)	**Over 2** 40% fill (mm²)
53	53	2 027	1 074	628	811
63	63	3 167	1 678	982	1 267
78	78	4 560	2 417	1 414	1 824
91	91	6 207	3 290	1 924	2 483
103	103	8 107	4 297	2 513	3 243
116	116	10 261	5 438	3 181	4 104
129	129	12 668	6 714	3 927	5 067
155	155	18 242	9 668	5 655	7 297

GLOSSARY

FRE® Conduit

Fiberglass **R**einforced **E**poxy conduit manufactured by FRE Composites. **FRE**® is a registered trademark in Canada, United States and elsewhere in the world, and is a recognized name worldwide since 1970's for superior quality advanced composite products.

IPS (Iron Pipe Size)
Dimensional standard widely utilized in North America for both metallic (such as RMC, EMT, IMC) and Rigid Non metallic (RTRC, PVC and HDPE) electrical conduit. This trade size has established its Outside Diameter as the constant value.

ID (Inside Diameter)
Dimensional standard widely utilized in North America for electrical and telecommunication raceways. This trade size has established its Inside Diameter as the constant value.

Thin Wall (TW) conduit for Below Ground (BG) Encased Burial (EB) applications
Conduit built with a reduced nominal wall thickness that varies based on the conduit diameter.

Standard Wall (SW) conduit for Below Ground (BG) typical Direct Burial (DB) or Encased Burial (EB) installations or for typical Above Ground (AG) exposed applications
Conduit built with a standard nominal wall thickness that varies based on the conduit diameter.

Heavy Wall (HW) conduit for Below Ground (BG) heavy loads Direct Burial (DB) or for Above Ground (AG) enhanced mechanical properties
Conduit built with a heavier nominal wall thickness that varies based on the conduit diameter.

Extra Heavy Wall (XHW) conduit
Conduit built with a constant nominal wall thickness of 0.250" (6,4 mm) not withstanding variation on conduit diameter.

RTRC (Reinforced Thermosetting Resin Conduit)
An industry acronym for conduits that are manufactured using a mineral reinforcement such as fiberglass in a fully cured thermoset resin.

Specification Grade
IPS or ID conduit system products manufactured to FRE Composites' own specification.

Conduit
Straight section available in 9.84 ft (3m) or 19.68 ft (6m) length, and in standard diameters from ¾" to 8" (21 to 203 mm).

TriSeal™ gasket
Injection moulded elastomeric TriSeal™ is designed to simultaneously offer a 500 pounds (227 kg) pullout strength once properly assembled and ensure adequate joint water tightness between FRE® conduit sections. It consists of a one-piece flexible gasket with a triple indentation.

Key Products

Split conduit (Patented design)
Section of FRE® conduit cut completely on its longitudinal axis while being hinged at 180° to the longitudinal cut. It can be opened and closed, allowing its installation over existing cables to protect them without having to remove them. The original Split conduit invention was issued to General Electric of Canada (CGE), our former parent company, under U.S. Patent No. 4175593 and Canadian Patent No. 1043277

H strip
Thermoplastic strip utilized to seal the split side of a split conduit.

T strip
Thermoplastic strip utilized to seal the hinged side of a split conduit.

Sleeve
Oversized section (12" or 305 mm in length) of straight conduit used to repair a damage section of a conduit.

Wobble coupling
Non-watertight fitting allowing for vertical and horizontal movements (±3°) of the raceway.

Skew Wobble coupling
Non-watertight fitting allowing for vertical and horizontal movements (±7.5°) of the raceway.

O-Ring Expansion Joint
Section of conduit including a deep socket unthreaded female section and a gasketed male section of conduit. It is designed to accommodate the thermal expansion and contraction of long sections of straight conduit resulting from ambient temperature variation. This guarantees the water tightness of the joint and no dislocation of the fitting.

O-Ring Expansion/Deflection Joint
Similar to O-Ring expansion joint described above, but designed to accommodate slight vertical changes in the direction of the incoming conduit by means of a flexible neoprene sleeve located at the exit of the expansion joint.

Conduit body
Moulded fitting designed to contain cable splices or permit directional changes, having several outlets designed to fit onto straight conduit sections and a sealed, removable cover allowing access to the cables inside the box. Such fittings are available in different types and different diameter trade sizes.

Riserway
Straight section of increased wall thickness (0.235") conduit to protect the cable along a distribution pole.

Hangers (Intermediate or Anchored)
Corrosion protected metallic supports utilized to hang conduit raceways in above ground installations.

Key Technical Descriptions

Glass content
Weight percent of glass fiber present in the conduit, as % of total weight.

Span distance
Distance between conduit supports which varies based on the selected cable weight and conduit trade size.

Deflection
Deformation of conduit due to the weight of the cable installed inside it. Deflection is a function of the diameter and weight of the cables, and of the distance between conduit supports. Measured in inches.

Coefficient of thermal expansion
Ratio representing the change in linear dimension of a section of conduit resulting from changes in temperature (delta T°).

Coefficient of friction
Ratio of the force tending to maintain contact between two surfaces and the force which opposes the sliding of the surfaces one along the other.

STANDARD CONDUIT PACKAGING

IPS THIN WALL (TW)

Size		Length		Weight per Stick		Weight per Crate		Sticks per Crate	Footage per Crate		Crate per Truck	Footage per Truck		Weight per Truck		Width per Crate		Height per Crate	
in	mm	ft	meter	lb	kg	lb	kg		ft	meter		ft	meter	lb	kg	in	mm	in	mm
4	103	19.68	6	13.00	5.90	574	260	43	846	258	16	13 540	4 127	9 184	4 166	45	1 143	24	610
5	129	19.68	6	22.00	9.98	675	306	30	590	180	16	9 446	2 879	10 800	4 899	45	1 143	24	610
6	155	19.68	6	24.00	10.89	495	225	20	394	120	16	6 298	1 920	7 920	3 592	45	1 143	24	610
8	203	19.68	6	44.00	19.96	455	206	10	197	60	16	3 149	960	7 280	3 302	45	1 143	24	610

IPS STANDARD WALL (SW)

Size		Length		Weight per Stick		Weight per Crate		Sticks per Crate	Footage per Crate		Crate per Truck	Footage per Truck		Weight per Truck		Width per Crate		Height per Crate	
in	mm	ft	meter	lb	kg	lb	kg		ft	meter		ft	meter	lb	kg	in	mm	in	mm
¾	21	9.84	3	1.5	0.68	307	139	200	1 968	600	80	157 440	47 988	24 560	11 140	45	1 143	8	203
1	27	9.84	3	2.20	1.00	337	153	150	1 476	450	80	118 080	35 991	26 960	12 229	45	1 143	10	254
1 ¼	35	9.84	3	2.60	1.18	397	180	150	1 476	450	80	118 080	35 991	31 760	14 406	45	1 143	10	254
1 ½	41	9.84	3	3.10	1.41	472	214	150	1 476	450	80	118 080	35 991	37 760	17 128	45	1 143	10	254
2	53	19.68	6	8.80	3.99	596	270	66	1 299	396	40	51 955	15 836	23 832	10 810	45	1 143	10	254
3	78	19.68	6	13.10	5.94	1 076	488	81	1 594	486	16	25 505	7 774	17 218	7 810	45	1 143	24	610
4	103	19.68	6	16.90	7.67	742	336	43	846	258	16	13 540	4 127	11 867	5 383	45	1 143	24	610
5	129	19.68	6	28.30	12.84	864	392	30	590	180	16	9 446	2 879	13 824	6 271	45	1 143	24	610
6	155	19.68	6	39.00	17.69	795	361	20	394	120	16	6 298	1 920	12 720	5 770	45	1 143	24	610
8	203	19.68	6	53.30	24.18	548	249	10	197	60	16	3 149	960	8 768	3 977	45	1 143	24	610

IPS HEAVY WALL (HW)

Size		Length		Weight per Stick		Weight per Crate		Sticks per Crate	Footage per Crate		Crate per Truck	Footage per Truck		Weight per Truck		Width per Crate		Height per Crate	
in	mm	ft	meter	lb	kg	lb	kg		ft	meter		ft	meter	lb	kg	in	mm	in	mm
4	103	19.68	6	23.00	10.43	1 004	455	43	846	258	16	13 540	4 127	16 064	7 287	45	1 143	24	610
5	129	19.68	6	34.30	15.56	1 044	474	30	590	180	16	9 446	2 879	16 704	7 577	45	1 143	24	610
6	155	19.68	6	40.80	18.51	831	377	20	394	120	16	6 298	1 920	13 296	6 031	45	1 143	24	610

ID THIN WALL (TW)

Size		Length		Weight per Stick		Weight per Crate		Sticks per Crate	Footage per Crate		Crate per Truck	Footage per Truck		Weight per Truck		Width per Crate		Height per Crate	
in	mm	ft	meter	lb	kg	lb	kg		ft	meter		ft	meter	lb	kg	in	mm	in	mm
4	102	19.68	6	12.00	5.44	699	317	57	1 122	342	16	17 948	5 471	11 184	5 073	45	1 143	24	610
4½	114	19.68	6	18.00	8.16	789	358	43	846	258	16	13 540	4 127	12 624	5 726	45	1 143	24	610
5	127	19.68	6	20.00	9.07	775	352	38	748	228	16	11 965	3 647	12 400	5 625	45	1 143	24	610
6	152	19.68	6	24.00	10.89	639	290	26	512	156	16	8 187	2 495	10 224	4 638	45	1 143	24	610

ID STANDARD WALL (SW)

Size		Length		Weight per Stick		Weight per Crate		Sticks per Crate	Footage per Crate		Crate per Truck	Footage per Truck		Weight per Truck		Width per Crate		Height per Crate	
in	mm	ft	meter	lb	kg	lb	kg		ft	meter		ft	meter	lb	kg	in	mm	in	mm
2	53	19.68	6	6.81	3.09	519	235	74	1 456	444	40	58 253	17 756	20 758	9 416	45	1 143	10	254
2½	63	19.68	6	8.40	3.81	1 317	597	155	3 050	930	16	48 806	14 876	21 072	9 558	45	1 143	24	610
3	78	19.68	6	11.24	5.10	1 139	517	100	1 968	600	16	31 488	9 598	18 224	8 266	45	1 143	24	610
3½	91	19.68	6	12.80	5.81	962	436	74	1 456	444	16	23 301	7 102	15 395	6 983	45	1 143	24	610
4	103	19.68	6	15.18	6.89	880	399	57	1 122	342	16	17 948	5 471	14 084	6 389	45	1 143	24	610
4½	116	19.68	6	20.70	9.39	905	411	43	846	258	16	13 540	4 127	14 482	6 569	45	1 143	24	610
5	129	19.68	6	25.22	11.44	973	442	38	748	228	16	11 965	3 647	15 574	7 064	45	1 143	24	610
6	155	19.68	6	31.30	14.20	829	376	26	512	156	16	8 187	2 495	13 261	6 015	45	1 143	24	610

ID HEAVY WALL (HW)

Size		Length		Weight per Stick		Weight per Crate		Sticks per Crate	Footage per Crate		Crate per Truck	Footage per Truck		Weight per Truck		Width per Crate		Height per Crate	
in	mm	ft	meter	lb	kg	lb	kg		ft	meter		ft	meter	lb	kg	in	mm	in	mm
4	103	19.68	6	22.00	9.98	1 269	576	57	1 122	342	16	17 948	5 471	20 304	9 210	45	1 143	24	610
4½	116	19.68	6	28.00	12.70	1 219	553	43	846	258	16	13 540	4 127	19 504	8 847	45	1 143	24	610
5	129	19.68	6	32.00	14.52	1 231	558	38	748	228	16	11 965	3 647	19 696	8 934	45	1 143	24	610
6	155	19.68	6	39.00	17.69	1 029	467	26	512	156	16	8 187	2 495	16 464	7 468	45	1 143	24	610

Standard Accessories Packaging

Ordering in multiple of standard packaging is highly recommended.

Product	Size in	Size *mm*	Amount	Package	Product	Size in	Size *mm*	Amount	Package	Product	Size in	Size *mm*	Amount	Package
Coupling	2	*53*	20	Bag	O-Ring	2	*53*	10	Bag	Adapters	2	*53*	20	Bag
Coupling	3-5	*78-129*	10	Bag	O-Ring	3-5	*78-129*	5	Bag	Adapters	3 - 6	*78-155*	10	Bag
Coupling	6	*155*	8	Bag	Reducers			10	Bag	Elbows	1-2	*27-53*	10	Bundle
Wobble	2	*53*	10	Bag	Expansion JT	2-6	*53-129*	5	Bundle	Bends	3 - 6	*78-155*	5	Bundle
Wobble	3-6	*78-129*	5	Bundle	Adapters	1-1½	*27-41*	50	Bag	Bell Ends			A/R	Carton

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