



HazGuard® Fiberglass Conduit Systems for Physical Damage Locations



Atkore[™]
FRE Composites



Atkore's FRE Composites produces the highest quality epoxy and phenolic fiberglass conduit products for worldwide installations. Having manufactured fiberglass products since 1958, FRE Composites is focused exclusively on the design, engineering, and production of composite filament-wound fiberglass conduit products and accessories. We serve numerous markets including, electrical, telecom, water and wastewater, data centers, utilities, transportation, commercial, and industrial.

HazGuard® Class 1 Division 2 rigid nonmetallic fiberglass conduit systems protect all types of cable networks and distribution systems for D.O.T.s, airports, and telecommunication providers. Originally engineered to protect fiber optic cables, HazGuard provides the necessary protection and damage resistance for cables in above ground and bridge applications, as well as physical damage locations. The HazGuard system will not rust or corrode, and is resistant to small caliber, low velocity projectiles. The overall light weight and superior load bearing make the HazGuard series ideal for today's utilities, D.O.T.s, airports and telecommunication providers needing fast and easy cable protection with proven longevity.

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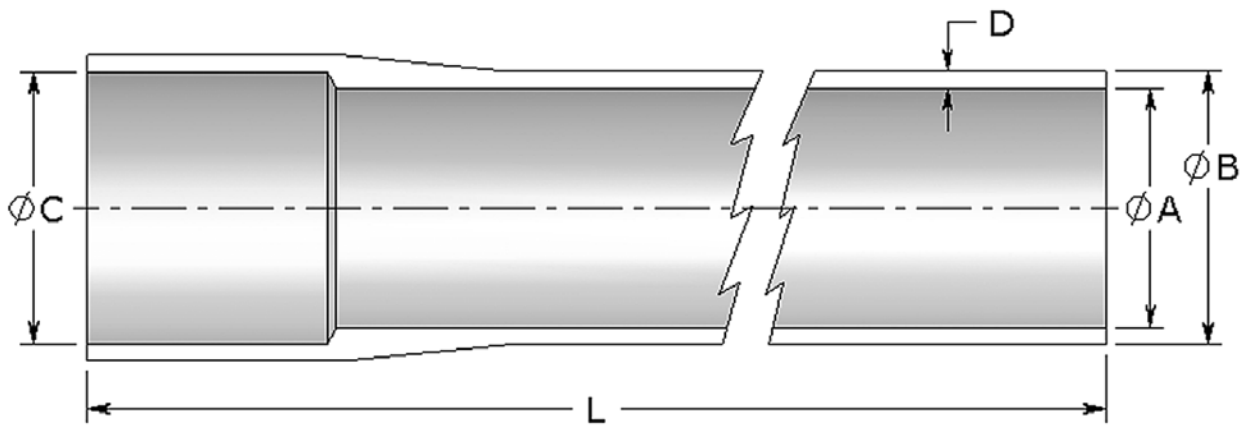


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IPS Extra Heavy Wall (XW) Conduit System



IPS XW Conduit

Size		Part Number	ØA	ØB	ØC	D	L	ØA	ØB	ØC	D	L
(in)	(mm)		(in)					(mm)				
¾	21	14-7500	0.918	1.418	1.458	0.250	118.25	23.3	36.0	37.0	6.4	3
1	27	14-1000	1.183	1.683	1.723	0.250	118.25	30.0	42.7	43.8	6.4	3
1¼	35	14-1200	1.528	2.028	2.068	0.250	118.25	38.8	51.5	52.5	6.4	3
1½	41	14-1500	1.768	2.268	2.308	0.250	118.25	44.9	57.6	58.6	6.4	3
1½	41	14-1500-20	1.768	2.268	2.308	0.250	236.25	44.9	57.6	58.6	6.4	6
8*	203	14-8000	8.393	8.893	8.933	0.250	236.25	213.2	225.9	226.9	6.4	6

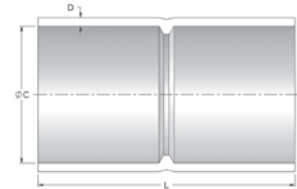
* 8" is not a recognized trade size per electrical code (NEC/CES), therefore cannot be UL listed and CSA certified.
Standard length is 9.84 ft (3m) for ¾" to 1½" conduit



IPS Extra Heavy Wall (XW) Conduit System

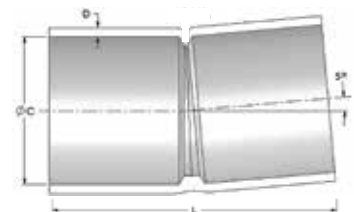
IPS XW Double Bell Coupling

Size		Part Number	ØC	D	L	ØC	D	L
(in)	(mm)		(in)			(mm)		
¾	21	14-7510	1.458	0.250	8.500	37.0	6.4	215.9
1	27	14-1010	1.723	0.250	8.500	43.8	6.4	215.9
1¼	35	14-1210	2.068	0.250	8.500	52.5	6.4	215.9
1½	41	14-1510	2.308	0.250	8.500	58.6	6.4	215.9
8*	203	14-8010	8.933	0.250	8.500	226.9	6.4	215.9



IPS XW 5° Double Bell Coupling

Size		Part Number	ØC	D	L	ØC	D	L
(in)	(mm)		(in)			(mm)		
¾	21	14-7511	1.458	0.250	8.500	37.0	6.4	215.9
1	27	14-1011	1.723	0.250	8.500	43.8	6.4	215.9
1¼	35	14-1211	2.068	0.250	8.500	52.5	6.4	215.9
1½	41	14-1511	2.308	0.250	8.625	58.6	6.4	219.0
8*	203	14-8011	8.933	0.250	8.750	226.9	6.4	222.3



IPS XW Sleeve (Repair Fitting)

Size		Part Number	ØC	D	L	ØC	D	L
(in)	(mm)		(in)			(mm)		
¾	21	14-7516	1.458	0.250	12	37.0	6.4	304.8
1	27	14-1016	1.723	0.250	12	43.8	6.4	304.8
1¼	35	14-1216	2.068	0.250	12	52.5	6.4	304.8
1½	41	14-1516	2.308	0.250	12	58.6	6.4	304.8
8*	203	14-8016	8.933	0.250	12	226.9	6.4	304.8



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IPS Extra Heavy Wall (XW) Conduit System



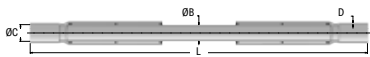
IPS XW Single Expansion Joint

Size		Part Number	ØB	ØC	D	L	X	ØB	ØC	D	L	X
(in)	(mm)		(in)					(mm)				
¾	21	14-7512	1.418	1.458	0.250	20.0	12.0	36.0	37.0	6.4	508.0	304.8
1	27	14-1012	1.683	1.723	0.250	20.0	12.0	42.7	43.8	6.4	508.0	304.8
1¼	35	14-1212	2.028	2.068	0.250	20.0	12.0	51.5	52.5	6.4	508.0	304.8
1½	41	14-1512	2.308	2.308	0.250	20.0	12.0	58.6	58.6	6.4	508.0	304.8
8*	203	14-8012	8.893	8.933	0.250	20.0	12.0	225.9	226.9	6.4	508.0	304.8



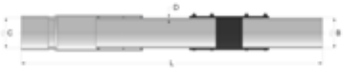
IPS XW O-Ring Expansion Joint

Size		Part Number	ØB	ØC	D	L MIN	L MAX	ØB	ØC	D	L MIN	L MAX
(in)	(mm)		(in)					(mm)				
¾	21	14-7517	1.418	1.458	0.250	23	35	36.0	37.0	6.4	584.2	889.0
1	27	14-1017	1.683	1.723	0.250	23	35	42.7	43.8	6.4	584.2	889.0
1¼	35	14-1217	2.028	2.068	0.250	23	35	51.5	52.5	6.4	584.2	889.0
1½	41	14-1517	2.268	2.308	0.250	23	35	57.6	58.6	6.4	584.2	889.0
8*	203	14-8017	8.893	8.933	0.250	23	35	225.9	225.9	6.4	584.2	889.0



IPS XW Double O-Ring Expansion Joint

Size		Part Number	ØB	ØC	D	L MIN	L MAX	ØB	ØC	D	L MIN	L MAX
(in)	(mm)		(in)					(mm)				
¾	21	14-7567	1.418	1.458	0.250	46.5	70.5	36.0	36.0	6.4	1181.1	1790.7
1	27	14-1067	1.683	1.723	0.250	46.5	70.5	42.7	43.8	6.4	1181.1	1790.7
1¼	35	14-1267	2.028	2.068	0.250	46.5	70.5	51.5	52.5	6.4	1181.1	1790.7
1½	41	14-1567	2.268	2.308	0.250	46.5	70.5	57.6	58.6	6.4	1181.1	1790.7
8*	203	14-8067	8.893	8.933	0.250	46.5	70.5	225.9	225.9	6.4	1181.1	1790.7



IPS XW O-Ring Expansion/Deflection Joint

Size		Part Number	ØB	ØC	D	L MIN	L MAX	ØB	ØC	D	L MIN	L MAX
(in)	(mm)		(in)					(mm)				
¾	21	14-7557	1.418	1.458	0.250	39.0	51.0	36.0	37.0	6.4	990.6	1295.4
1	27	14-1057	1.683	1.723	0.250	39.0	51.0	42.7	43.7	6.4	990.6	1295.4
1¼	35	14-1257	2.028	2.068	0.250	39.0	51.0	51.5	52.5	6.4	990.6	1295.4
1½	41	14-1557	2.268	2.308	0.250	39.0	51.0	57.6	58.6	6.4	990.6	1295.4
8*	203	14-8057	8.893	8.933	0.250	39.0	51.0	225.9	226.9	6.4	990.6	1295.4

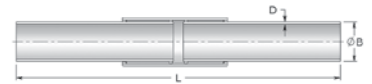
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IPS Extra Heavy Wall (XW) Conduit System

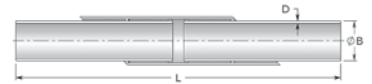
IPS XW Wobble (For Up To 3° Curvature)

Size		Part Number	ØB	D	L MIN	L MAX	ØB	D	L MIN	L MAX
(in)	(mm)									
¾	21	14-7513	1.418	0.250	36	46	36.1	6.4	914.4	1168.4
1	27	14-1013	1.683	0.250	36	46	42.7	6.4	914.4	1168.4
1¼	35	14-1213	2.028	0.250	36	46	51.6	6.4	914.4	1168.4
1½	41	14-1513	2.268	0.250	36	46	57.7	6.4	914.4	1168.4
8*	203	14-8013	8.893	0.250	36	46	225.9	6.4	914.4	1168.4



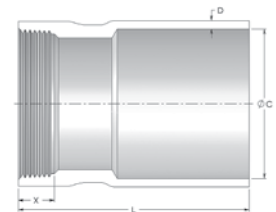
IPS XW Skew Wobble (For Up To 7.5° Curvature)

Size		Part Number	ØB	D	L MIN	L MAX	ØB	D	L MIN	L MAX
(in)	(mm)									
¾	21	14-7514	1.418	0.250	48	56	36.0	6.4	1219.2	1422.4
1	27	14-1014	1.683	0.250	48	56	42.7	6.4	1219.2	1422.4
1¼	35	14-1214	2.028	0.250	48	56	51.5	6.4	1219.2	1422.4
1½	41	14-1514	2.268	0.250	48	56	57.6	6.4	1219.2	1422.4
8*	203	14-8014	8.893	0.250	48	56	225.9	6.4	1219.2	1422.4



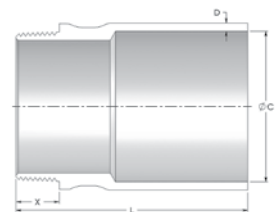
IPS XW NPT Female Threaded Adapter

Size		Part Number	ØC	D	L	X	ØC	D	L	X
(in)	(mm)									
¾	21	14-7544	1.458	0.250	7	0.553	37.0	6.4	177.8	14.0
1	27	14-1044	1.723	0.250	7	0.661	43.8	6.4	177.8	16.8
1¼	35	14-1044	2.068	0.250	7	0.681	52.5	6.4	177.8	17.3
1½	41	14-1544	2.308	0.250	7	0.681	58.6	6.4	177.8	17.3
8*	203	14-8044	8.933	0.250	7	1.313	226.9	6.4	177.8	33.4



IPS XW NPT Male Threaded Adapter

Size		Part Number	ØC	D	L	X	ØC	D	L	X
(in)	(mm)									
¾	21	14-7527	1.458	0.250	6	0.546	37.0	6.4	152.4	13.9
1	27	14-1027	1.723	0.250	6	0.683	43.8	6.4	152.4	17.3
1¼	35	14-1227	2.068	0.250	6	0.707	52.5	6.4	152.4	18.0
1½	41	14-1527	2.308	0.250	6	0.724	58.6	6.4	152.4	18.4
8*	203	14-8027	8.933	0.250	7	1.713	226.9	6.4	177.8	43.5

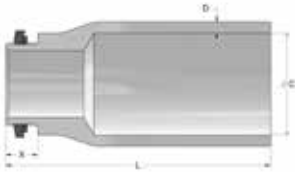


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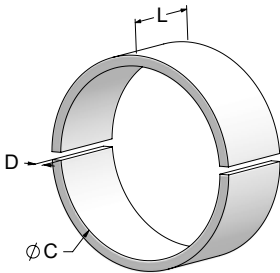
IPS Extra Heavy Wall (XW) Conduit System

IPS XW Box Connector



Size		Part Number	ØC	D	L	X	ØC	D	L	X
(in)	(mm)		(in)				(mm)			
¾	21	14-7547	1.458	0.250	6	0.546	37.0	6.4	152.4	13.9
1	27	14-1047	1.723	0.205	6	0.683	43.8	6.4	152.4	17.3
1¼	35	14-1247	2.068	0.250	6	0.707	52.5	6.4	152.4	18.0
1½	41	14-1547	2.308	0.250	6	0.724	58.6	6.4	152.4	18.4
8*	203	14-8047	8.933	0.250	7	1.713	226.9	6.4	177.8	43.5

IPS XW Split Stop Ring

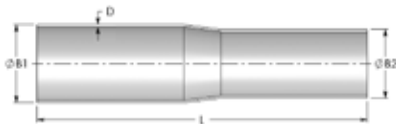


Size		Part Number	ØC	D	L	ØC	D	L
(in)	(mm)		(in)			(mm)		
¾	21	14-7564	1.458	0.250	2	37.0	6.4	50.8
1	27	14-1064	1.723	0.250	2	43.8	6.4	50.8
1¼	35	14-1264	2.068	0.250	2	52.5	6.4	50.8
1½	41	14-1564	2.308	0.250	2	58.6	6.4	50.8
8*	203	14-8064	8.933	0.250	2	226.9	6.4	50.8

IPS XW Reducer

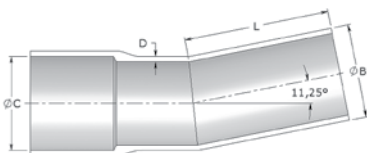
Size		Part Number	ØB1	ØB2	D	L	ØB1	ØB2	D	L
(in)	(mm)		(in)				(mm)			
1	27	14-1029	1.683	1.418	0.250	18	42.7	36.0	6.4	457.2
1¼	35	14-1229	2.028	1.683	0.250	18	51.5	42.7	6.4	457.2
1½	41	14-1529	2.268	2.028	0.250	18	57.6	51.5	6.4	457.2

All reducers are by one trade size dimension



IPS XW 11.25° Fitting

Size		Part Number	ØB	ØC	D	L	ØB	ØC	D	L
(in)	(mm)		(in)				(mm)			
¾	21	14-7535	1.418	1.458	0.250	7	36.0	37.0	6.4	177.8
1	27	14-1035	1.683	1.723	0.250	7	42.7	43.8	6.4	177.8
1¼	35	14-1235	2.028	2.068	0.250	7	51.5	52.5	6.4	177.8
1½	41	14-1535	2.268	2.308	0.250	7	57.6	58.6	6.4	177.8



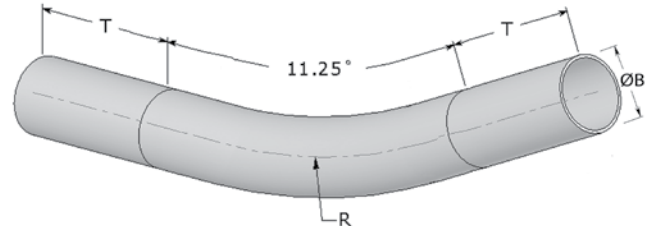
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IPS Extra Heavy Wall (XW) Conduit System

IPS XW 11.25° Elbow

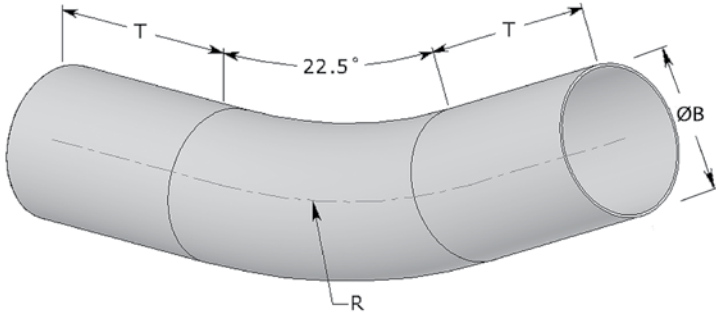
Size		Part Number	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)		
12" Radius								
¾	21	14-7535R12	1.418	12	6	36.0	304.8	152.4
1	27	14-1035R12	1.683	12	6	42.7	304.8	152.4
1¼	35	14-1235R12	2.028	12	6	51.5	304.8	152.4
1½	41	14-1535R12	2.268	12	6	57.6	304.8	152.4
18" Radius								
¾	21	14-7535R18	1.418	18	6	36.0	457.2	152.4
1	27	14-1035R18	1.683	18	6	42.7	457.2	152.4
1¼	35	14-1235R18	2.028	18	6	51.5	457.2	152.4
1½	41	14-1535R18	2.268	18	6	57.6	457.2	152.4
24" Radius								
¾	21	14-7535R24	1.418	24	6	36.0	609.6	152.4
1	27	14-1035R24	1.683	24	6	42.7	609.6	152.4
1¼	35	14-1235R24	2.028	24	6	51.5	609.6	152.4
1½	41	14-1535R24	2.268	24	6	57.6	609.6	152.4
36" Radius								
¾	21	14-7535R36	1.418	36	6	36.0	914.4	152.4
1	27	14-1035R36	1.683	36	6	42.7	914.4	152.4
1¼	35	14-1235R36	2.028	36	6	51.5	914.4	152.4
1½	41	14-1535R36	2.268	36	6	57.6	914.4	152.4
48" Radius								
¾	21	14-7535R48	1.418	48	6	36.0	1219.2	152.4
1	27	14-1035R48	1.683	48	6	42.7	1219.2	152.4
1¼	35	14-1235R48	2.028	48	6	51.5	1219.2	152.4
1½	41	14-1535R48	2.268	48	6	57.6	1219.2	152.4



Size		Part Number	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)		
60" Radius								
¾	21	14-7535R60	1.418	60	6	36.0	1524.0	152.4
1	27	14-1035R60	1.683	60	6	42.7	1524.0	152.4
1¼	35	14-1235R60	2.028	60	6	51.5	1524.0	152.4
1½	41	14-1535R60	2.268	60	6	57.6	1524.0	152.4
72" Radius								
¾	21	14-7535R72	1.418	72	6	36.0	1828.8	152.4
1	27	14-1035R72	1.683	72	6	42.7	1828.8	152.4
1¼	35	14-1235R72	2.028	72	6	51.5	1828.8	152.4
1½	41	14-1535R72	2.268	72	6	57.6	1828.8	152.4
8*	203	14-8035R72	8.893	72	6	225.9	1828.8	152.4
84" Radius								
8*	203	14-8035R84	8.893	84	6	225.9	2133.6	152.4
96" Radius								
8*	203	14-8035R96	8.893	96	6	225.9	2438.4	152.4
108" Radius								
8*	203	14-8035R108	8.893	108	6	225.9	2743.2	152.4

*8" is not a recognized trade size per electrical code (NEC/CES), therefore cannot be UL listed and CSA certified.

IPS Extra Heavy Wall (XW) Conduit System



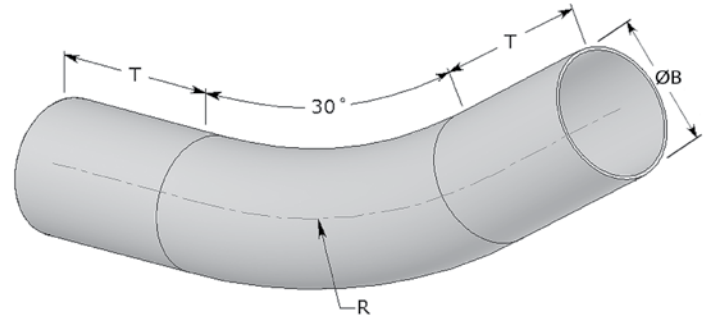
IPS XW 22.5° Elbow

Size		Part Number	ØB	R	T	ØB	R	T	Size	Part Number	ØB	R	T	ØB	R	T	
(in)	(mm)		(in)			(mm)			(in)		(mm)	(in)			(mm)		
12" Radius																	
¾	21	14-7534R12	1.418	12	6	36.0	304.8	152.4	¾	21	14-7534R48	1.418	48	6	36.0	1219.2	152.4
1	27	14-1034R12	1.683	12	6	42.7	304.8	152.4	1	27	14-1034R48	1.683	48	6	42.7	1219.2	152.4
1¼	35	14-1234R12	2.028	12	6	51.5	304.8	152.4	1¼	35	14-1234R48	2.028	48	6	51.5	1219.2	152.4
1½	41	14-1534R12	2.268	12	6	57.6	304.8	152.4	1½	41	14-1534R48	2.268	48	6	57.6	1219.2	152.4
18" Radius																	
¾	21	14-7534R18	1.418	18	6	36.0	457.2	152.4	¾	21	14-7534R60	1.418	60	6	36.0	1524.0	152.4
1	27	14-1034R18	1.683	18	6	42.7	457.2	152.4	1	27	14-1034R60	1.683	60	6	42.7	1524.0	152.4
1¼	35	14-1234R18	2.028	18	6	51.5	457.2	152.4	1¼	35	14-1234R60	2.028	60	6	51.5	1524.0	152.4
1½	41	14-1534R18	2.268	18	6	57.6	457.2	152.4	1½	41	14-1534R60	2.268	60	6	57.6	1524.0	152.4
24" Radius																	
¾	21	14-7534R24	1.418	24	6	36.0	609.6	152.4	¾	21	14-7534R72	1.418	72	6	36.0	1828.8	152.4
1	27	14-1034R24	1.683	24	6	42.7	609.6	152.4	1	27	14-1034R72	1.683	72	6	42.7	1828.8	152.4
1¼	35	14-1234R24	2.028	24	6	51.5	609.6	152.4	1¼	35	14-1234R72	2.028	72	6	51.5	1828.8	152.4
1½	41	14-1534R24	2.268	24	6	57.6	609.6	152.4	1½	41	14-1534R72	2.268	72	6	57.6	1828.8	152.4
36" Radius																	
¾	21	14-7534R36	1.418	36	6	36.0	914.4	152.4	8*	203	14-8034R72	8.893	72	6	225.9	1828.8	152.4
1	27	14-1034R36	1.683	36	6	42.7	914.4	152.4	84" Radius								
1¼	35	14-1234R36	2.028	36	6	51.5	914.4	152.4	8*	203	14-8034R84	8.893	84	6	225.9	2133.6	152.4
1½	41	14-1534R36	2.268	36	6	57.6	914.4	152.4	96" Radius								
108" Radius																	
8*	203	14-8034R96	8.893	96	6	225.9	2438.4	152.4	8*	203	14-8034R108	8.893	108	6	225.9	2743.2	152.4

* 8" is not a recognized trade size per electrical code (NEC/CES), therefore cannot be UL listed and CSA certified.



IPS Extra Heavy Wall (XW) Conduit System



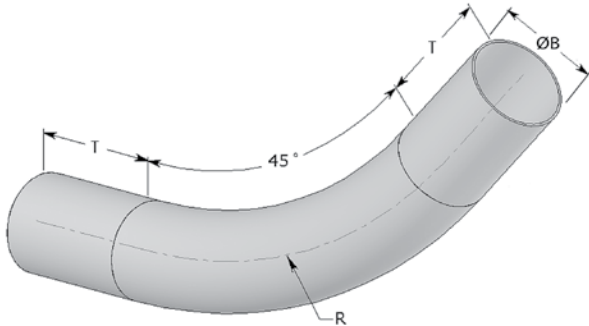
IPS XW 30° Elbow

Size		Part Number	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)		
12" Radius								
¾	21	14-7533R12	1.418	12	6	36.0	304.8	152.4
1	27	14-1033R12	1.683	12	6	42.7	304.8	152.4
1¼	35	14-1233R12	2.028	12	6	51.5	304.8	152.4
1½	41	14-1533R12	2.268	12	6	57.6	304.8	152.4
18" Radius								
¾	21	14-7533R18	1.418	18	6	36.0	457.2	152.4
1	27	14-1033R18	1.683	18	6	42.7	457.2	152.4
1¼	35	14-1233R18	2.028	18	6	51.5	457.2	152.4
1½	41	14-1533R18	2.268	18	6	57.6	457.2	152.4
24" Radius								
¾	21	14-7533R24	1.418	24	6	36.0	609.6	152.4
1	27	14-1033R24	1.683	24	6	42.7	609.6	152.4
1¼	35	14-1233R24	2.028	24	6	51.5	609.6	152.4
1½	41	14-1533R24	2.268	24	6	57.6	609.6	152.4
36" Radius								
¾	21	14-7533R36	1.418	36	6	36.0	914.4	152.4
1	27	14-1033R36	1.683	36	6	42.7	914.4	152.4
1¼	35	14-1233R36	2.028	36	6	51.5	914.4	152.4
1½	41	14-1533R36	2.268	36	6	57.6	914.4	152.4

Size		Part Number	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)		
48" Radius								
¾	21	14-7533R48	1.418	48	6	36.0	1219.2	152.4
1	27	14-1033R48	1.683	48	6	42.7	1219.2	152.4
1¼	35	14-1233R48	2.028	48	6	51.5	1219.2	152.4
1½	41	14-1533R48	2.268	48	6	57.6	1219.2	152.4
60" Radius								
¾	21	14-7533R60	1.418	60	6	36.0	1524.0	152.4
1	27	14-1033R60	1.683	60	6	42.7	1524.0	152.4
1¼	35	14-1233R60	2.028	60	6	51.5	1524.0	152.4
1½	41	14-1533R60	2.268	60	6	57.6	1524.0	152.4
72" Radius								
¾	21	14-7533R72	1.418	72	6	36.0	1828.8	152.4
1	27	14-1033R72	1.683	72	6	42.7	1828.8	152.4
1¼	35	14-1233R72	2.028	72	6	51.5	1828.8	152.4
1½	41	14-1533R72	2.268	72	6	57.6	1828.8	152.4
8*	203	14-8033R72	8.893	72	6	225.9	1828.8	152.4
84" Radius								
8*	203	14-8033R84	8.893	84	6	225.9	2133.6	152.4
96" Radius								
8*	203	14-8033R96	8.893	96	6	225.9	2438.4	152.4
108" Radius								
8*	203	14-8033R108	8.893	108	6	225.9	2743.2	152.4

* 8" is not a recognized trade size per electrical code (NEC/CES), therefore cannot be UL listed and CSA certified.

IPS Extra Heavy Wall (XW) Conduit System



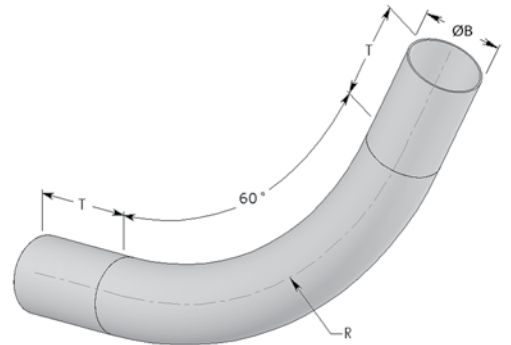
IPS XW 45° Elbow

Size		Part Number	ØB	R	T	ØB	R	T	Size	Part Number	ØB	R	T	ØB	R	T	
(in)	(mm)		(in)			(mm)			(in)		(mm)	(in)			(mm)		
12" Radius									48" Radius								
¾	21	14-7532R12	1.418	12	6	36.0	304.8	152.4	¾	21	14-7532R48	1.418	48	6	36.0	1219.2	152.4
1	27	14-1032R12	1.683	12	6	42.7	304.8	152.4	1	27	14-1032R48	1.683	48	6	42.7	1219.2	152.4
1¼	35	14-1232R12	2.028	12	6	51.5	304.8	152.4	1¼	35	14-1232R48	2.028	48	6	51.5	1219.2	152.4
1½	41	14-1532R12	2.268	12	6	57.6	304.8	152.4	1½	41	14-1532R48	2.268	48	6	57.6	1219.2	152.4
18" Radius									60" Radius								
¾	21	14-7532R18	1.418	18	6	36.0	457.2	152.4	¾	21	14-7532R60	1.418	60	6	36.0	1524.0	152.4
1	27	14-1032R18	1.683	18	6	42.7	457.2	152.4	1	27	14-1032R60	1.683	60	6	42.7	1524.0	152.4
1¼	35	14-1232R18	2.028	18	6	51.5	457.2	152.4	1¼	35	14-1232R60	2.028	60	6	51.5	1524.0	152.4
1½	41	14-1532R18	2.268	18	6	57.6	457.2	152.4	1½	41	14-1532R60	2.268	60	6	57.6	1524.0	152.4
24" Radius									72" Radius								
¾	21	14-7532R24	1.418	24	6	36.0	609.6	152.4	¾	21	14-7532R72	1.418	72	6	36.0	1828.8	152.4
1	27	14-1032R24	1.683	24	6	42.7	609.6	152.4	1	27	14-1032R72	1.683	72	6	42.7	1828.8	152.4
1¼	35	14-1232R24	2.028	24	6	51.5	609.6	152.4	1¼	35	14-1232R72	2.028	72	6	51.5	1828.8	152.4
1½	41	14-1532R24	2.268	24	6	57.6	609.6	152.4	1½	41	14-1532R72	2.268	72	6	57.6	1828.8	152.4
36" Radius									8*	203	14-8032R72	8.893	72	6	225.9	1828.8	152.4
¾	21	14-7532R36	1.418	36	6	36.0	914.4	152.4	84" Radius								
1	27	14-1032R36	1.683	36	6	42.7	914.4	152.4	8*	203	14-8032R84	8.893	84	6	225.9	2133.6	152.4
1¼	35	14-1232R36	2.028	36	6	51.5	914.4	152.4	96" Radius								
1½	41	14-1532R36	2.268	36	6	57.6	914.4	152.4	8*	203	14-8032R96	8.893	96	6	225.9	2438.4	152.4
108" Radius									108" Radius								
									8*	203	14-8032R108	8.893	108	6	225.9	2743.2	152.4

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IPS Extra Heavy Wall (XW) Conduit System

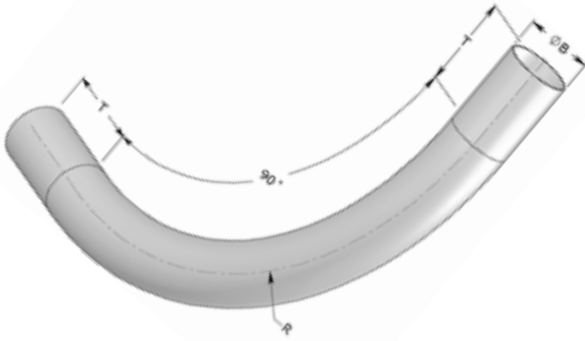


IPS XW 60° Elbow

Size		Part Number	ØB	R	T	ØB	R	T	Size	Part Number	ØB	R	T	ØB	R	T	
(in)	(mm)		(in)			(mm)			(in)		(mm)	(in)			(mm)		
12" Radius									48" Radius								
¾	21	14-7531R12	1.418	12	6	36.0	304.8	152.4	¾	21	14-7531R48	1.418	48	6	36.0	1219.2	152.4
1	27	14-1031R12	1.683	12	6	42.7	304.8	152.4	1	27	14-1031R48	1.683	48	6	42.7	1219.2	152.4
1¼	35	14-1231R12	2.028	12	6	51.5	304.8	152.4	1¼	35	14-1231R48	2.028	48	6	51.5	1219.2	152.4
1½	41	14-1531R12	2.268	12	6	57.6	304.8	152.4	1½	41	14-1531R48	2.268	48	6	57.6	1219.2	152.4
18" Radius									60" Radius								
¾	21	14-7531R18	1.418	18	6	36.0	457.2	152.4	¾	21	14-7531R60	1.418	60	6	36.0	1524.0	152.4
1	27	14-1031R18	1.683	18	6	42.7	457.2	152.4	1	27	14-1031R60	1.683	60	6	42.7	1524.0	152.4
1¼	35	14-1231R18	2.028	18	6	51.5	457.2	152.4	1¼	35	14-1231R60	2.028	60	6	51.5	1524.0	152.4
1½	41	14-1531R18	2.268	18	6	57.6	457.2	152.4	1½	41	14-1531R60	2.268	60	6	57.6	1524.0	152.4
24" Radius									72" Radius								
¾	21	14-7531R24	1.418	24	6	36.0	609.6	152.4	¾	21	14-7531R72	1.418	72	6	36.0	1828.8	152.4
1	27	14-1031R24	1.683	24	6	42.7	609.6	152.4	1	27	14-1031R72	1.683	72	6	42.7	1828.8	152.4
1¼	35	14-1231R24	2.028	24	6	51.5	609.6	152.4	1¼	35	14-1231R72	2.028	72	6	51.5	1828.8	152.4
1½	41	14-1531R24	2.268	24	6	57.6	609.6	152.4	1½	41	14-1531R72	2.268	72	6	57.6	1828.8	152.4
36" Radius									8*	203	14-8031R72	8.893	72	6	225.9	1828.8	
¾	21	14-7531R36	1.418	36	6	36.0	914.4	152.4	84" Radius								
1	27	14-1031R36	1.683	36	6	42.7	914.4	152.4	8*	203	14-8031R84	8.893	84	6	225.9	2133.6	152.4
1¼	35	14-1231R36	2.028	36	6	51.5	914.4	152.4	96" Radius								
1½	41	14-1531R36	2.268	36	6	57.6	914.4	152.4	8*	203	14-8031R96	8.893	96	6	225.9	2438.4	152.4
									108" Radius								
									8*	203	14-8031R108	8.893	108	6	225.9	2743.2	152.4

* 8" is not a recognized trade size per electrical code (NEC/CES), therefore cannot be UL listed and CSA certified.

IPS Extra Heavy Wall (XW) Conduit System



IPS XW 90° Elbow

Size		Part Number	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)		
12" Radius								
¾	21	14-7530R12	1.418	12	6	36.0	304.8	152.4
1	27	14-1030R12	1.683	12	6	42.7	304.8	152.4
1¼	35	14-1230R12	2.028	12	6	51.5	304.8	152.4
1½	41	14-1530R12	2.268	12	6	57.6	304.8	152.4
18" Radius								
¾	21	14-7530R18	1.418	18	6	36.0	457.2	152.4
1	27	14-1030R18	1.683	18	6	42.7	457.2	152.4
1¼	35	14-1230R18	2.028	18	6	51.5	457.2	152.4
1½	41	14-1530R18	2.268	18	6	57.6	457.2	152.4
24" Radius								
¾	21	14-7530R24	1.418	24	6	36.0	609.6	152.4
1	27	14-1030R24	1.683	24	6	42.7	609.6	152.4
1¼	35	14-1230R24	2.028	24	6	51.5	609.6	152.4
1½	41	14-1530R24	2.268	24	6	57.6	609.6	152.4
36" Radius								
¾	21	14-7530R36	1.418	36	6	36.0	914.4	152.4
1	27	14-1030R36	1.683	36	6	42.7	914.4	152.4
1¼	35	14-1230R36	2.028	36	6	51.5	914.4	152.4
1½	41	14-1530R36	2.268	36	6	57.6	914.4	152.4

Size		Part Number	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)		
48" Radius								
¾	21	14-7530R48	1.418	48	6	36.0	1219.2	152.4
1	27	14-1030R48	1.683	48	6	42.7	1219.2	152.4
1¼	35	14-1230R48	2.028	48	6	51.5	1219.2	152.4
1½	41	14-1530R48	2.268	48	6	57.6	1219.2	152.4
60" Radius								
¾	21	14-7530R60	1.418	60	6	36.0	1524.0	152.4
1	27	14-1030R60	1.683	60	6	42.7	1524.0	152.4
1¼	35	14-1230R60	2.028	60	6	51.5	1524.0	152.4
1½	41	14-1530R60	2.268	60	6	57.6	1524.0	152.4
72" Radius								
8*	203	14-8030R72	8.893	72	6	225.9	1828.8	152.4
84" Radius								
8*	203	14-8030R84	8.893	84	6	225.9	2133.6	152.4
96" Radius								
8*	203	14-8030R96	8.893	96	6	225.9	2438.4	152.4
108" Radius								
8*	203	14-8030R108	8.893	108	6	225.9	2743.2	152.4

* 8" is not a recognized trade size per electrical code (NEC/CES), therefore cannot be UL listed and CSA certified.



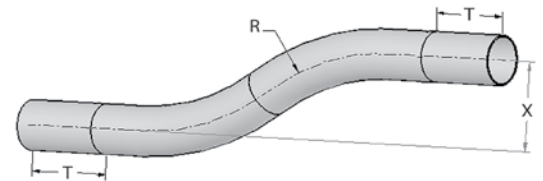
IPS Extra Heavy Wall (XW) Conduit System



IPS XW Offset Elbow

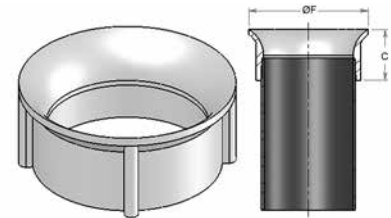
Size	Part Number
All	Special

Please contact your local agent for quotes and feasibility.



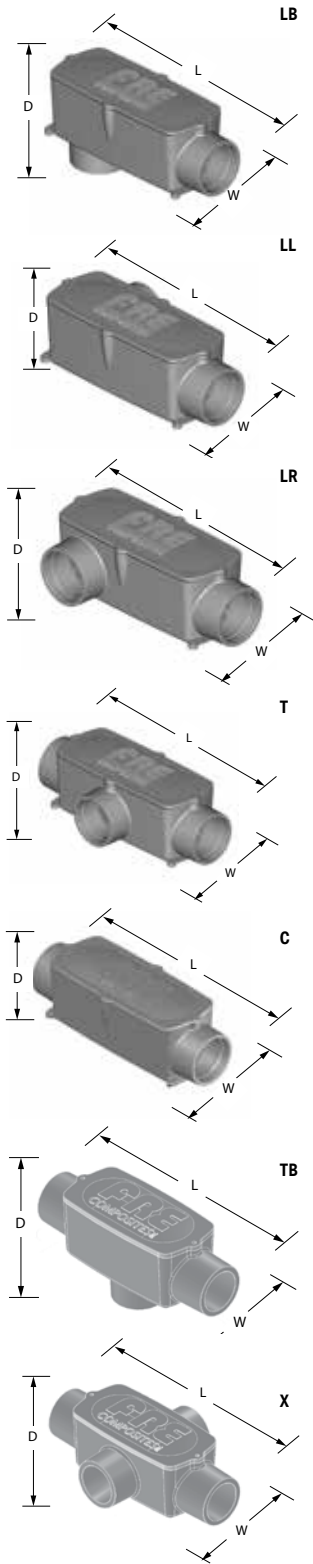
IPS XW Radius Bell End

Size		Part Number	C	ØF	C	ØF
(in)	(mm)		(in)		(mm)	
¾	21	14-7518	1.7	1.918	43.18	48.72
1	27	14-1018	1.7	2.183	43.18	55.45
1¼	35	14-1218	1.7	2.528	43.18	64.21
1½	41	14-1518	1.7	2.768	43.18	70.31
8*	203	14-8018	2.4	9.393	60.96	238.58



* 8" is not a recognized trade size per electrical code (NEC/CES), therefore cannot be UL listed and CSA certified.

IPS Extra Heavy Wall (XW) Conduit System



IPS XW Conduit Bodies

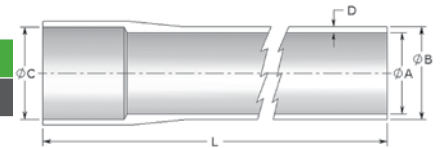
Size		Part Number	Length	Width	Depth	Length	Width	Depth
(in)	(mm)		(in)			(mm)		
LB								
¾	21	14-7591	7.60	2.75	3.88	193	70	98
1	27	14-1091	7.60	2.75	3.88	193	70	98
1 ¼	35	14-1291	9.55	3.84	4.63	242	98	117
1 ½	41	14-1591	9.55	3.84	4.63	242	98	117
LL								
¾	21	14-7592	7.60	4.19	2.38	193	106	60
1	27	14-1092	7.60	4.19	2.38	193	106	60
1 ¼	35	14-1292	9.55	5.31	3.13	242	135	79
1 ½	41	14-1592	9.55	5.31	3.13	242	135	79
LR								
¾	21	14-7593	7.60	4.19	2.38	193	106	60
1	27	14-1093	7.60	4.19	2.38	193	106	60
1 ¼	35	14-1293	9.55	5.31	3.13	242	135	79
1 ½	41	14-1593	9.55	5.31	3.13	242	135	79
T								
¾	21	14-7594	9.00	4.19	2.38	229	106	60
1	27	14-1094	9.00	4.19	2.38	229	106	60
1 ¼	35	14-1294	11.00	5.31	3.13	279	135	79
1 ½	41	14-1594	11.00	5.31	3.13	279	135	79
C								
¾	21	14-7595	9.00	2.75	2.38	229	70	60
1	27	14-1095	9.00	2.75	2.38	229	70	60
1 ¼	35	14-1295	11.00	3.84	3.13	279	98	79
1 ½	41	14-1595	11.00	3.84	3.13	279	98	79
TB								
¾	21	14-7596	9.00	2.75	3.88	229	70	98
1	27	14-1096	9.00	2.75	3.88	229	70	98
1 ¼	35	14-1296	11.00	3.84	4.63	279	98	117
1 ½	41	14-1596	11.00	3.84	4.63	279	98	117
X								
¾	21	14-7597	9.00	5.63	2.38	229	143	60
1	27	14-1097	9.00	5.63	2.38	229	143	60
1 ¼	35	14-1297	11.00	3.13	6.78	279	79	172
1 ½	41	14-1597	11.00	3.13	6.78	279	79	172



ID Extra Heavy Wall (XW) Conduit System

ID XW Conduit

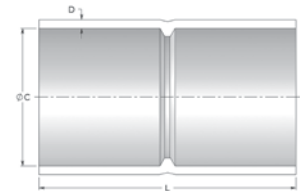
Size		Part Number	ØA	ØB	ØC	D	L	ØA	ØB	ØC	D	L
(in)	(mm)		(in)					(mm)				
2	53	24-2000	2.000	2.500	2.540	0.250	236.25	50.8	63.5	64.5	6.4	6
2½	63	24-2500	2.500	3.000	3.040	0.250	236.25	63.5	76.2	77.2	6.4	6
3	78	24-3000	3.000	3.500	3.540	0.250	236.25	76.2	88.9	89.9	6.4	6
3½	91	24-3500	3.500	4.000	4.040	0.250	236.25	88.9	101.6	102.6	6.4	6
4	103	24-4000	4.000	4.500	4.540	0.250	236.25	101.6	114.3	115.3	6.4	6
5	129	24-5000	5.000	5.500	5.540	0.250	236.25	127.0	139.7	140.7	6.4	6
6	155	24-6000	6.000	6.500	6.540	0.250	236.25	152.4	165.1	166.1	6.4	6



Standard length is 19.68 ft (6m) for 2" to 6" conduit

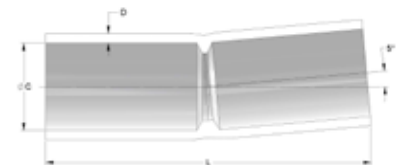
ID XW Double Bell Coupling

Size		Part Number	ØC	D	L	ØC	D	L
(in)	(mm)		(in)			(mm)		
2	53	24-2010	2.540	0.250	8.500	64.5	6.4	215.9
2½	63	24-2510	3.040	0.250	8.500	77.2	6.4	215.9
3	78	24-3010	3.540	0.250	8.500	89.9	6.4	215.9
3½	91	24-3510	4.040	0.250	8.500	102.6	6.4	215.9
4	103	24-4010	4.540	0.250	8.500	115.3	6.4	215.9
5	129	24-5010	5.540	0.250	8.500	140.7	6.4	215.9
6	155	24-6010	6.540	0.250	8.500	166.1	6.4	215.9



ID XW 5° Double Bell Coupling

Size		Part Number	ØC	D	L	ØC	D	L
(in)	(mm)		(in)			(mm)		
2	53	24-2011	2.540	0.250	8.625	64.5	6.4	219.0
2½	63	24-2511	3.040	0.250	8.625	77.2	6.4	219.0
3	78	24-3011	3.540	0.250	8.750	89.9	6.4	222.3
3½	91	24-3511	4.040	0.250	8.750	102.6	6.4	222.3
4	103	24-4011	4.540	0.250	8.875	115.3	6.4	225.4
5	129	24-5011	5.540	0.250	9.000	140.7	6.4	228.6
6	155	24-6011	6.540	0.250	9.000	166.1	6.4	228.6



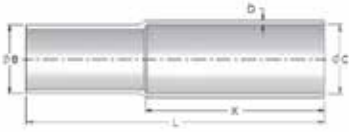
ID XW Sleeve (Repair Fitting)

Size		Part Number	ØC	D	L	ØC	D	L
(in)	(mm)		(in)			(mm)		
2	53	24-2016	2.540	0.250	12	64.5	6.4	304.8
2½	63	24-2516	3.040	0.250	12	77.2	6.4	304.8
3	78	24-3016	3.540	0.250	12	89.9	6.4	304.8
3½	91	24-3516	4.040	0.250	12	102.6	6.4	304.8
4	103	24-4016	4.540	0.250	12	115.3	6.4	304.8
5	129	24-5016	5.540	0.250	12	140.7	6.4	304.8
6	155	24-6016	6.540	0.250	12	166.1	6.4	304.8



ID Extra Heavy Wall (XW) Conduit System

ID XW Single Expansion Joint



Size		Part Number	ØB	ØC	D	L	X	ØB	ØC	D	L	X
(in)	(mm)											
2	53	24-2012	2.500	2.540	0.250	20.0	12.0	63.5	64.5	6.4	508.0	304.8
2½	63	24-2512	3.000	3.040	0.250	20.0	12.0	76.2	77.2	6.4	508.0	304.8
3	78	24-3012	3.500	3.540	0.250	20.0	12.0	88.9	89.9	6.4	508.0	304.8
3½	91	24-3512	4.000	4.040	0.250	20.0	12.0	101.6	102.6	6.4	508.0	304.8
4	103	24-4012	4.500	4.540	0.250	20.0	12.0	114.3	115.3	6.4	508.0	304.8
5	129	24-5012	5.500	5.540	0.250	20.0	12.0	139.7	140.7	6.4	508.0	304.8
6	155	24-6012	6.500	6.540	0.250	20.0	12.0	165.1	166.1	6.4	508.0	304.8

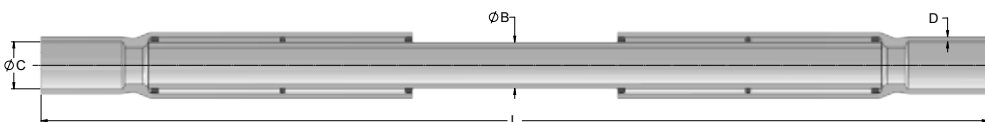


ID XW O-Ring Expansion Joint

Size		Part Number	ØB	ØC	D	L MIN	L MAX	ØB	ØC	D	L MIN	L MAX
(in)	(mm)											
2	53	24-2017	2.500	2.540	0.250	23	35	63.5	64.7	6.4	584.2	889.0
2½	63	24-2517	3.000	3.040	0.250	23	35	76.2	77.2	6.4	584.2	889.0
3	78	24-3017	3.500	3.540	0.250	23	35	88.9	89.9	6.4	584.2	889.0
3½	91	24-3517	4.000	4.040	0.250	23	35	101.6	102.6	6.4	584.2	889.0
4	103	24-4017	4.500	4.540	0.250	23	35	114.3	115.3	6.4	584.2	889.0
5	129	24-5017	5.500	5.540	0.250	23	35	139.7	140.7	6.4	584.2	889.0
6	155	24-6017	6.500	6.540	0.250	23	35	165.1	166.1	6.4	584.2	889.0

ID XW Double O-Ring Expansion Joint

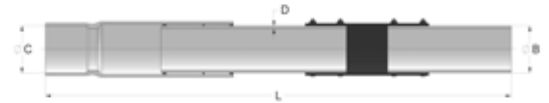
Size		Part Number	ØB	ØC	D	L MIN	L MAX	ØB	ØC	D	L MIN	L MAX
(in)	(mm)											
2	53	24-2067	2.500	2.540	0.250	46.5	70.5	63.5	64.7	6.4	1181.1	1790.7
2½	63	24-2567	3.000	3.040	0.250	46.5	70.5	76.2	77.2	6.4	1181.1	1790.7
3	78	24-3067	3.500	3.540	0.250	46.5	70.5	88.9	89.9	6.4	1181.1	1790.7
3½	91	24-3567	4.000	4.040	0.250	46.5	70.5	102.6	102.6	6.4	1181.1	1790.7
4	103	24-4067	4.500	4.540	0.250	46.5	70.5	115.3	115.3	6.4	1181.1	1790.7
5	129	24-5067	5.500	5.540	0.250	46.5	70.5	140.7	140.7	6.4	1181.1	1790.7
6	155	24-6067	6.500	6.540	0.250	46.5	70.5	166.1	166.1	6.4	1181.1	1790.7



ID Extra Heavy Wall (XW) Conduit System

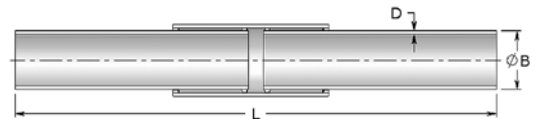
ID XW O-Ring Expansion/Deflection Joint

Size		Part Number	ØB	ØC	D	L MIN	L MAX	ØB	ØC	D	L MIN	L MAX
(in)	(mm)											
2	53	24-2057	2.500	2.540	0.250	39.0	51.0	63.5	64.5	6.4	990.6	1295.4
2½	63	24-2557	3.000	3.040	0.250	39.0	51.0	76.2	77.2	6.4	990.6	1295.4
3	78	24-3057	3.500	3.540	0.250	39.0	51.0	88.9	89.9	6.4	990.6	1295.4
3½	91	24-3557	4.000	4.040	0.250	39.0	51.0	101.6	102.6	6.4	990.6	1295.4
4	103	24-4057	4.500	4.540	0.250	39.0	51.0	114.3	115.3	6.4	990.6	1295.4
5	129	24-5057	5.500	5.540	0.250	39.0	51.0	139.7	140.7	6.4	990.6	1295.4
6	155	24-6057	6.500	6.540	0.250	39.0	51.0	165.1	166.1	6.4	990.6	1295.4



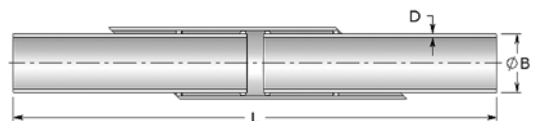
ID XW Wobble (For Up To 3° Curvature)

Size		Part Number	ØB	D	L MIN	L MAX	ØB	D	L MIN	L MAX
(in)	(mm)									
2	53	24-2013	2.500	0.250	36	46	63.5	6.4	914.4	1168.4
2½	63	24-2513	3.000	0.250	36	46	76.2	6.4	914.4	1168.4
3	78	24-3013	3.500	0.250	36	46	88.9	6.4	914.4	1168.4
3½	91	24-3513	4.000	0.250	36	46	101.6	6.4	914.4	1168.4
4	103	24-4013	4.500	0.250	36	46	114.3	6.4	914.4	1168.4
5	129	24-5013	5.500	0.250	36	46	139.7	6.4	914.4	1168.4
6	155	24-6013	6.500	0.250	36	46	165.1	6.4	914.4	1168.4



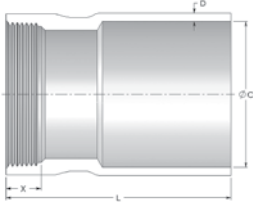
ID XW Skew Wobble (For Up To 7.5° Curvature)

Size		Part Number	ØB	D	L MIN	L MAX	ØB	D	L MIN	L MAX
(in)	(mm)									
2	53	24-2014	2.500	0.250	48	56	63.5	6.4	1219.2	1422.4
2½	63	24-2514	3.000	0.250	48	56	76.2	6.4	1219.2	1422.4
3	78	24-3014	3.500	0.250	48	56	88.9	6.4	1219.2	1422.4
3½	91	24-3514	4.000	0.250	48	56	101.6	6.4	1219.2	1422.4
4	103	24-4014	4.500	0.250	48	56	114.3	6.4	1219.2	1422.4
5	129	24-5014	5.500	0.250	48	56	139.7	6.4	1219.2	1422.4
6	155	24-6014	6.500	0.250	48	56	165.1	6.4	1219.2	1422.4



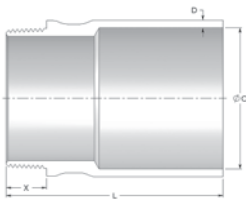
ID Extra Heavy Wall (XW) Conduit System

ID XW NPT Female Threaded Adapter



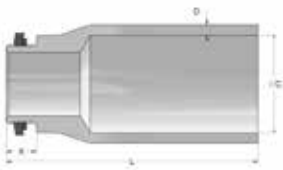
Size		Part Number	ØC	D	L	X	ØC	D	L	X
(in)	(mm)		(in)				(mm)			
2	53	24-2044	2.540	0.250	7	0.697	64.5	6.4	177.8	17.7
2½	63	24-2544	3.040	0.250	7	0.932	77.2	6.4	177.8	23.7
3	78	24-3044	3.540	0.250	7	1.016	89.9	6.4	177.8	25.8
3½	91	24-3544	4.040	0.250	7	1.071	102.6	6.4	177.8	27.2
4	103	24-4044	4.540	0.250	7	1.094	115.3	6.4	177.8	27.8
5	129	24-5044	5.540	0.250	7	1.187	140.7	6.4	177.8	30.1
6	155	24-6044	6.540	0.250	7	1.208	166.1	6.4	177.8	30.7

ID XW NPT Male Threaded Adapter



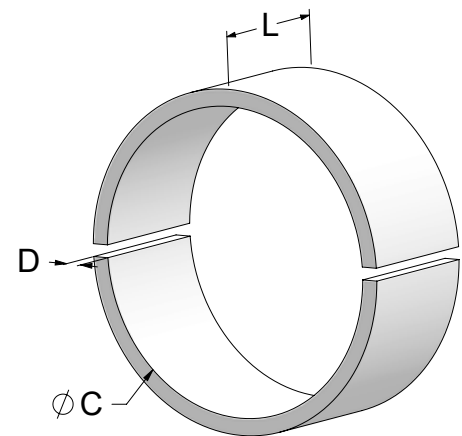
Size		Part Number	ØC	D	L	X	ØC	D	L	X
(in)	(mm)		(in)				(mm)			
2	53	24-2027	2.540	0.250	7	0.757	64.5	6.4	177.8	19.20
2½	63	24-2527	3.040	0.250	7	1.138	77.2	6.4	177.8	28.90
3	78	24-3027	3.540	0.250	7	1.200	89.9	6.4	177.8	30.50
3½	91	24-3527	4.040	0.250	7	1.250	102.6	6.4	177.8	31.75
4	103	24-4027	4.540	0.250	7	1.300	115.3	6.4	177.8	33.0
5	129	24-5027	5.540	0.250	7	1.406	140.7	6.4	177.8	35.70
6	155	24-6027	6.540	0.250	7	1.513	166.1	6.4	177.8	38.40

ID XW Box Connector



Size		Part Number	ØC	D	L	X	ØC	D	L	X
(in)	(mm)		(in)				(mm)			
2	53	24-2047	2.540	0.250	7	0.757	64.5	6.4	177.8	19.20
2½	63	24-2547	3.040	0.250	7	1.138	77.2	6.4	177.8	28.90
3	78	24-3047	3.540	0.250	7	1.200	89.9	6.4	177.8	30.50
3½	91	24-3547	4.040	0.250	7	1.250	102.6	6.4	177.8	31.75
4	103	24-4047	4.540	0.250	7	1.300	115.3	6.4	177.8	33.00
5	129	24-5047	5.540	0.250	7	1.406	140.7	6.4	177.8	35.70
6	155	24-6047	6.540	0.250	7	1.513	166.1	6.4	177.8	38.40

ID Extra Heavy Wall (XW) Conduit System

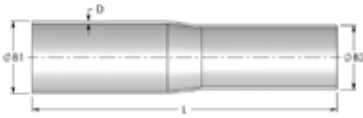


ID XW Split Stop Ring

Size		Part Number	ØC	D	L	ØC	D	L
(in)	(mm)		(in)			(mm)		
2	53	24-2064	2.540	0.250	2	64.5	6.4	50.8
2½	63	24-2564	3.040	0.250	2	77.2	6.4	50.8
3	78	24-3064	3.540	0.250	2	89.9	6.4	50.8
3½	91	24-3564	4.040	0.250	2	102.6	6.4	50.8
4	103	24-4064	4.540	0.250	2	115.3	6.4	50.8
5	129	24-5064	5.540	0.250	2	140.7	6.4	50.8
6	155	24-6064	6.540	0.250	2	166.1	6.4	50.8

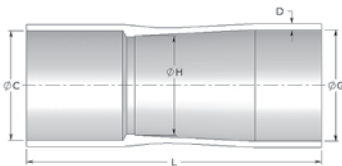
ID Extra Heavy Wall (XW) Conduit System

ID XW Reducer



Size		Part Number	ØB1	ØB2	D	L	ØB1	ØB2	D	L
(in)	(mm)		(in)				(mm)			
2	53	24-2029	2.500	2.268	0.250	18	63.5	57.6	6.4	457.2
2½	63	24-2529	3.000	2.500	0.250	18	76.2	63.5	6.4	457.2
3	78	24-3029	3.500	3.000	0.250	18	88.9	76.2	6.4	457.2
3½	91	24-3529	4.000	3.500	0.250	18	101.6	88.9	6.4	457.2
4	103	24-4029	4.500	4.000	0.250	18	114.3	88.9	6.4	457.2
5	129	24-5029	5.500	4.500	0.250	18	139.7	114.3	6.4	457.2
6	155	24-6029	6.500	5.500	0.250	18	165.1	139.7	6.4	457.2

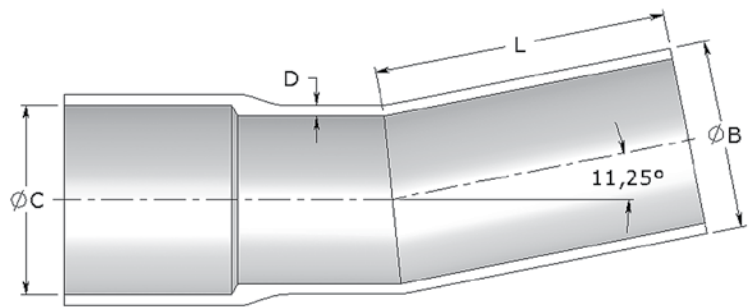
ID XW Multifit Adapter



Size		Part Number	ØC	D	ØG	ØH	L	ØC	D	ØG	ØH	L
(in)	(mm)		(in)					(mm)				
2	53	24-2037	2.540	0.250	2.424	2.239	12.25	64.5	6.4	61.6	56.9	311.2
2½	63	24-2537	3.040	0.250	2.924	2.739	12.25	77.2	6.4	74.3	69.6	311.2
3	78	24-3037	3.540	0.250	3.549	3.239	12.25	89.9	6.4	90.1	82.3	311.2
3½	91	24-3537	4.040	0.250	4.061	3.709	12.25	102.6	6.4	103.1	94.2	311.2
4	103	24-4037	4.540	0.250	4.620	4.109	12.25	115.3	6.4	117.3	104.4	311.2
5	129	24-5037	5.540	0.250	5.650	5.289	12.25	140.7	6.4	143.5	134.3	311.2
6	155	24-6037	6.540	0.250	6.686	6.259	12.25	166.1	6.4	169.8	159.0	311.2



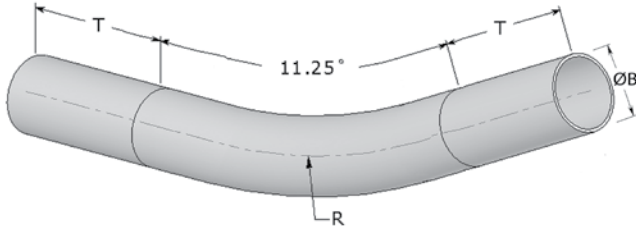
ID Extra Heavy Wall (XW) Conduit System



ID XW 11.25° Fitting

Size		Part Number	ØB	ØC	D	L	ØB	ØC	D	L
(in)	(mm)		(in)				(mm)			
2	53	24-2035	2.500	2.540	0.250	7	63.5	64.5	6.4	177.8
2½	63	24-2535	3.000	3.040	0.250	7	76.2	77.2	6.4	177.8
3	78	24-3035	3.500	3.540	0.250	7	88.9	89.9	6.4	177.8
3½	91	24-3535	4.000	4.040	0.250	7	101.6	102.6	6.4	177.8
4	103	24-4035	4.500	4.540	0.250	7	114.3	115.3	6.4	177.8
5	129	24-5035	5.500	5.540	0.250	7	139.7	140.7	6.4	177.8
6	155	24-6035	6.500	6.540	0.250	7	165.1	166.1	6.4	177.8

ID Extra Heavy Wall (XW) Conduit System



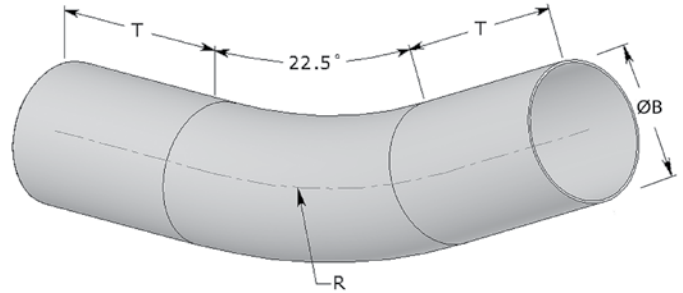
ID XW 11.25° Elbow

Size		Part Number	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)		
12" Radius								
2	53	24-2035R12	2.500	12	6	63.5	304.8	152.4
2½	63	24-2535R12	3.000	12	6	76.2	304.8	152.4
18" Radius								
2	53	24-2035R18	2.500	18	6	63.5	457.2	152.4
2½	63	24-2535R18	3.000	18	6	76.2	457.2	152.4
3	78	24-3035R18	3.500	18	6	88.9	457.2	152.4
24" Radius								
2	53	24-2035R24	2.500	24	6	63.5	609.6	152.4
2½	63	24-2535R24	3.000	24	6	76.2	609.6	152.4
3	78	24-3035R24	3.500	24	6	88.9	609.6	152.4
3½	91	24-3535R24	4.000	24	6	101.6	609.6	152.4
4	103	24-4035R24	4.500	24	6	114.3	609.6	152.4
36" Radius								
2	53	24-2035R36	2.500	36	6	63.5	914.4	152.4
2½	63	24-2535R36	3.000	36	6	76.2	914.4	152.4
3	78	24-3035R36	3.500	36	6	88.9	914.4	152.4
3½	91	24-3535R36	4.000	36	6	101.6	914.4	152.4
4	103	24-4035R36	4.500	36	6	114.3	914.4	152.4
5	129	24-5035R36	5.500	36	6	139.7	914.4	152.4
6	155	24-6035R36	6.500	36	6	165.1	914.4	152.4

Size		Part Number	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)		
48" Radius								
2	53	24-2035R48	2.500	48	6	63.5	1219.2	152.4
2½	63	24-2535R48	3.000	48	6	76.2	1219.2	152.4
3	78	24-3035R48	3.500	48	6	88.9	1219.2	152.4
3½	91	24-3535R48	4.000	48	6	101.6	1219.2	152.4
4	103	24-4035R48	4.500	48	6	114.3	1219.2	152.4
5	129	24-5035R48	5.500	48	6	139.7	1219.2	152.4
6	155	24-6035R48	6.500	48	6	165.1	1219.2	152.4
60" Radius								
2	53	24-2035R60	2.500	60	6	63.5	1524.0	152.4
2½	63	24-2535R60	3.000	60	6	76.2	1524.0	152.4
3	78	24-3035R60	3.500	60	6	88.9	1524.0	152.4
3½	91	24-3535R60	4.000	60	6	101.6	1524.0	152.4
4	103	24-4035R60	4.500	60	6	114.3	1524.0	152.4
5	129	24-5035R60	5.500	60	6	139.7	1524.0	152.4
6	155	24-6035R60	6.500	60	6	165.1	1524.0	152.4
72" Radius								
2	53	24-2035R72	2.500	72	6	63.5	1828.8	152.4
2½	63	24-2535R72	3.000	72	6	76.2	1828.8	152.4
3	78	24-3035R72	3.500	72	6	88.9	1828.8	152.4
3½	91	24-3535R72	4.000	72	6	101.6	1828.8	152.4
4	103	24-4035R72	4.500	72	6	114.3	1828.8	152.4
5	129	24-5035R72	5.500	72	6	139.7	1828.8	152.4
6	155	24-6035R72	6.500	72	6	165.1	1828.8	152.4



ID Extra Heavy Wall (XW) Conduit System

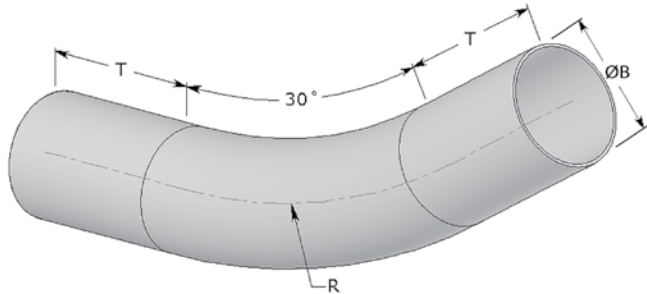


ID XW 22.5° Elbow

Size		Part Number	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)		
12" Radius								
2	53	24-2034R12	2.500	12	6	63.5	304.8	152.4
2½	63	24-2534R12	3.000	12	6	76.2	304.8	152.4
18" Radius								
2	53	24-2034R18	2.500	18	6	63.5	457.2	152.4
2½	63	24-2534R18	3.000	18	6	76.2	457.2	152.4
3	78	24-3034R18	3.500	18	6	88.9	457.2	152.4
24" Radius								
2	53	24-2034R24	2.500	24	6	63.5	609.6	152.4
2½	63	24-2534R24	3.000	24	6	76.2	609.6	152.4
3	78	24-3034R24	3.500	24	6	88.9	609.6	152.4
3½	91	24-3534R24	4.000	24	6	101.6	609.6	152.4
4	103	24-4034R24	4.500	24	6	114.3	609.6	152.4
36" Radius								
2	53	24-2034R36	2.500	36	6	63.5	914.4	152.4
2½	63	24-2534R36	3.000	36	6	76.2	914.4	152.4
3	78	24-3034R36	3.500	36	6	88.9	914.4	152.4
3½	91	24-3534R36	4.000	36	6	101.6	914.4	152.4
4	103	24-4034R36	4.500	36	6	114.3	914.4	152.4
5	129	24-5034R36	5.500	36	6	139.7	914.4	152.4
6	155	24-6034R36	6.500	36	6	165.1	914.4	152.4

Size		Part Number	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)		
48" Radius								
2	53	24-2034R48	2.500	48	6	63.5	1219.2	152.4
2½	63	24-2534R48	3.000	48	6	76.2	1219.2	152.4
3	78	24-3034R48	3.500	48	6	88.9	1219.2	152.4
3½	91	24-3534R48	4.000	48	6	101.6	1219.2	152.4
4	103	24-4034R48	4.500	48	6	114.3	1219.2	152.4
5	129	24-5034R48	5.500	48	6	139.7	1219.2	152.4
6	155	24-6034R48	6.500	48	6	165.1	1219.2	152.4
60" Radius								
2	53	24-2034R60	2.500	60	6	63.5	1524.0	152.4
2½	63	24-2534R60	3.000	60	6	76.2	1524.0	152.4
3	78	24-3034R60	3.500	60	6	88.9	1524.0	152.4
3½	91	24-3534R60	4.000	60	6	101.6	1524.0	152.4
4	103	24-4034R60	4.500	60	6	114.3	1524.0	152.4
5	129	24-5034R60	5.500	60	6	139.7	1524.0	152.4
6	155	24-6034R60	6.500	60	6	165.1	1524.0	152.4
72" Radius								
2	53	24-2034R72	2.500	72	6	63.5	1828.8	152.4
2½	63	24-2534R72	3.000	72	6	76.2	1828.8	152.4
3	78	24-3034R72	3.500	72	6	88.9	1828.8	152.4
3½	91	24-3534R72	4.000	72	6	101.6	1828.8	152.4
4	103	24-4034R72	4.500	72	6	114.3	1828.8	152.4
5	129	24-5034R72	5.500	72	6	139.7	1828.8	152.4
6	155	24-6034R72	6.500	72	6	165.1	1828.8	152.4

ID Extra Heavy Wall (XW) Conduit System



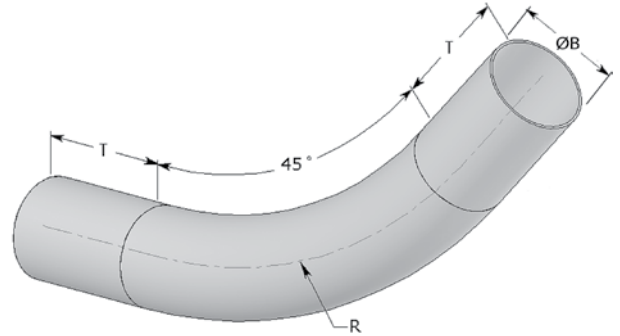
ID XW 30° Elbow

Size		Part Number	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)		
12" Radius								
2	53	24-2033R12	2.500	12	6	63.5	304.8	152.4
2½	63	24-2533R12	3.000	12	6	76.2	304.8	152.4
18" Radius								
2	53	24-2033R18	2.500	18	6	63.5	457.2	152.4
2½	63	24-2533R18	3.000	18	6	76.2	457.2	152.4
3	78	24-3033R18	3.500	18	6	88.9	457.2	152.4
24" Radius								
2	53	24-2033R24	2.500	24	6	63.5	609.6	152.4
2½	63	24-2533R24	3.000	24	6	76.2	609.6	152.4
3	78	24-3033R24	3.500	24	6	88.9	609.6	152.4
3½	91	24-3533R24	4.000	24	6	101.6	609.6	152.4
4	103	24-4033R24	4.500	24	6	114.3	609.6	152.4
36" Radius								
2	53	24-2033R36	2.500	36	6	63.5	914.4	152.4
2½	63	24-2533R36	3.000	36	6	76.2	914.4	152.4
3	78	24-3033R36	3.500	36	6	88.9	914.4	152.4
3½	91	24-3533R36	4.000	36	6	101.6	914.4	152.4
4	103	24-4033R36	4.500	36	6	114.3	914.4	152.4
5	129	24-5033R36	5.500	36	6	139.7	914.4	152.4
6	155	24-6033R36	6.500	36	6	165.1	914.4	152.4

Size		Part Number	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)		
48" Radius								
2	53	24-2033R48	2.500	48	6	63.5	1219.2	152.4
2½	63	24-2533R48	3.000	48	6	76.2	1219.2	152.4
3	78	24-3033R48	3.500	48	6	88.9	1219.2	152.4
3½	91	24-3533R48	4.000	48	6	101.6	1219.2	152.4
4	103	24-4033R48	4.500	48	6	114.3	1219.2	152.4
5	129	24-5033R48	5.500	48	6	139.7	1219.2	152.4
6	155	24-6033R48	6.500	48	6	165.1	1219.2	152.4
60" Radius								
2	53	24-2033R60	2.500	60	6	63.5	1524.0	152.4
2½	63	24-2533R60	3.000	60	6	76.2	1524.0	152.4
3	78	24-3033R60	3.500	60	6	88.9	1524.0	152.4
3½	91	24-3533R60	4.000	60	6	101.6	1524.0	152.4
4	103	24-4033R60	4.500	60	6	114.3	1524.0	152.4
5	129	24-5033R60	5.500	60	6	139.7	1524.0	152.4
6	155	24-6033R60	6.500	60	6	165.1	1524.0	152.4
72" Radius								
2	53	24-2033R72	2.500	72	6	63.5	1828.8	152.4
2½	63	24-2533R72	3.000	72	6	76.2	1828.8	152.4
3	78	24-3033R72	3.500	72	6	88.9	1828.8	152.4
3½	91	24-3533R72	4.000	72	6	101.6	1828.8	152.4
4	103	24-4033R72	4.500	72	6	114.3	1828.8	152.4
5	129	24-5033R72	5.500	72	6	139.7	1828.8	152.4
6	155	24-6033R72	6.500	72	6	165.1	1828.8	152.4



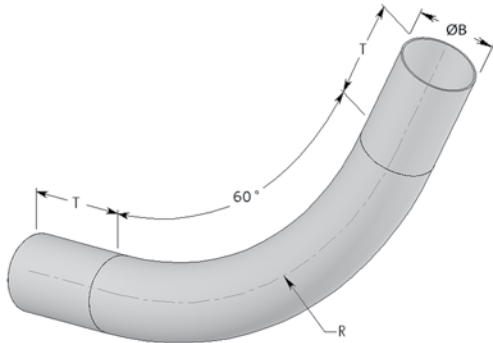
ID Extra Heavy Wall (XW) Conduit System



ID XW 45° Elbow

Size		Part Number	ØB	R	T	ØB	R	T	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)			(in)			(mm)		
12" Radius														
2	53	24-2032R12	2.500	12	6	63.5	304.8	152.4						
2½	63	24-2532R12	3.000	12	6	76.2	304.8	152.4						
18" Radius														
2	53	24-2032R18	2.500	18	6	63.5	457.2	152.4						
2½	63	24-2532R18	3.000	18	6	76.2	457.2	152.4						
3	78	24-3032R18	3.500	18	6	88.9	457.2	152.4						
24" Radius														
2	53	24-2032R24	2.500	24	6	63.5	609.6	152.4						
2½	63	24-2532R24	3.000	24	6	76.2	609.6	152.4						
3	78	24-3032R24	3.500	24	6	88.9	609.6	152.4						
3½	91	24-3532R24	4.000	24	6	101.6	609.6	152.4						
4	103	24-4032R24	4.500	24	6	114.3	609.6	152.4						
36" Radius														
2	53	24-2032R36	2.500	36	6	63.5	914.4	152.4						
2½	63	24-2532R36	3.000	36	6	76.2	914.4	152.4						
3	78	24-3032R36	3.500	36	6	88.9	914.4	152.4						
3½	91	24-3532R36	4.000	36	6	101.6	914.4	152.4						
4	103	24-4032R36	4.500	36	6	114.3	914.4	152.4						
5	129	24-5032R36	5.500	36	6	139.7	914.4	152.4						
6	155	24-6032R36	6.500	36	6	165.1	914.4	152.4						
48" Radius														
2	53	24-2032R48	2.500	48	6	63.5	1219.2	152.4						
2½	63	24-2532R48	3.000	48	6	76.2	1219.2	152.4						
3	78	24-3032R48	3.500	48	6	88.9	1219.2	152.4						
3½	91	24-3532R48	4.000	48	6	101.6	1219.2	152.4						
4	103	24-4032R48	4.500	48	6	114.3	1219.2	152.4						
5	129	24-5032R48	5.500	48	6	139.7	1219.2	152.4						
6	155	24-6032R48	6.500	48	6	165.1	1219.2	152.4						
60" Radius														
2	53	24-2032R60	2.500	60	6	63.5	1524.0	152.4						
2½	63	24-2532R60	3.000	60	6	76.2	1524.0	152.4						
3	78	24-3032R60	3.500	60	6	88.9	1524.0	152.4						
3½	91	24-3532R60	4.000	60	6	101.6	1524.0	152.4						
4	103	24-4032R60	4.500	60	6	114.3	1524.0	152.4						
5	129	24-5032R60	5.500	60	6	139.7	1524.0	152.4						
6	155	24-6032R60	6.500	60	6	165.1	1524.0	152.4						
72" Radius														
2	53	24-2032R72	2.500	72	6	63.5	1828.8	152.4						
2½	63	24-2532R72	3.000	72	6	76.2	1828.8	152.4						
3	78	24-3032R72	3.500	72	6	88.9	1828.8	152.4						
3½	91	24-3532R72	4.000	72	6	101.6	1828.8	152.4						
4	103	24-4032R72	4.500	72	6	114.3	1828.8	152.4						
5	129	24-5032R72	5.500	72	6	139.7	1828.8	152.4						
6	155	24-6032R72	6.500	72	6	165.1	1828.8	152.4						

ID Extra Heavy Wall (XW) Conduit System



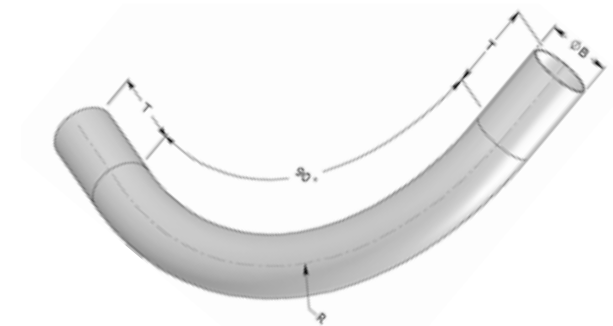
ID XW 60° Elbow

Size		Part Number	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)		
12" Radius								
2	53	24-2031R12	2.500	12	6	63.5	304.8	152.4
2½	63	24-2531R12	3.000	12	6	76.2	304.8	152.4
18" Radius								
2	53	24-2031R18	2.500	18	6	63.5	457.2	152.4
2½	63	24-2531R18	3.000	18	6	76.2	457.2	152.4
3	78	24-3031R18	3.500	18	6	88.9	457.2	152.4
24" Radius								
2	53	24-2031R24	2.500	24	6	63.5	609.6	152.4
2½	63	24-2531R24	3.000	24	6	76.2	609.6	152.4
3	78	24-3031R24	3.500	24	6	88.9	609.6	152.4
3½	91	24-3531R24	4.000	24	6	101.6	609.6	152.4
4	103	24-4031R24	4.500	24	6	114.3	609.6	152.4
36" Radius								
2	53	24-2031R36	2.500	36	6	63.5	914.4	152.4
2½	63	24-2531R36	3.000	36	6	76.2	914.4	152.4
3	78	24-3031R36	3.500	36	6	88.9	914.4	152.4
3½	91	24-3531R36	4.000	36	6	101.6	914.4	152.4
4	103	24-4031R36	4.500	36	6	114.3	914.4	152.4
5	129	24-5031R36	5.500	36	6	139.7	914.4	152.4
6	155	24-6031R36	6.500	36	6	165.1	914.4	152.4

Size		Part Number	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)		
48" Radius								
2	53	24-2031R48	2.500	48	6	63.5	1219.2	152.4
2½	63	24-2531R48	3.000	48	6	76.2	1219.2	152.4
3	78	24-3031R48	3.500	48	6	88.9	1219.2	152.4
3½	91	24-3531R48	4.000	48	6	101.6	1219.2	152.4
4	103	24-4031R48	4.500	48	6	114.6	1219.2	152.4
5	129	24-5031R48	5.500	48	6	139.7	1219.2	152.4
6	155	24-6031R48	6.500	48	6	165.1	1219.2	152.4
60" Radius								
2	53	24-2031R60	2.500	60	6	63.4	1524.0	152.4
2½	63	24-2531R60	3.000	60	6	76.2	1524.0	152.4
3	78	24-3031R60	3.500	60	6	88.9	1524.0	152.4
3½	91	24-3531R60	4.000	60	6	101.6	1524.0	152.4
4	103	24-4031R60	4.500	60	6	114.6	1524.0	152.4
5	129	24-5031R60	5.500	60	6	139.7	1524.0	152.4
6	155	24-6031R60	6.500	60	6	165.1	1524.0	152.4
72" Radius								
2	53	24-2031R72	2.500	72	6	63.5	1828.8	152.4
2½	63	24-2531R72	3.000	72	6	76.2	1828.8	152.4
3	78	24-3031R72	3.500	72	6	88.9	1828.8	152.4
3½	91	24-3531R72	4.000	72	6	101.6	1828.8	152.4
4	103	24-4031R72	4.500	72	6	114.3	1828.8	152.4
5	129	24-5031R72	5.500	72	6	139.7	1828.8	152.4
6	155	24-6031R72	6.500	72	6	165.1	1828.8	152.4



ID Extra Heavy Wall (XW) Conduit System



ID XW 90° Elbow

Size		Part Number	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)		
12" Radius								
2	53	24-2030R12	2.500	12	6	63.5	304.8	152.4
2½	63	24-2530R18	2.500	12	6	76.2	304.8	152.4
18" Radius								
2	53	24-2030R18	2.500	18	6	63.5	457.2	152.4
2½	63	24-2530R18	3.000	12	6	76.2	304.8	152.4
3	78	24-3030R18	3.500	18	6	88.9	457.2	152.4
24" Radius								
2	53	24-2030R24	2.500	24	6	63.5	609.6	152.4
2½	63	24-2530R24	3.000	24	6	76.2	609.6	152.4
3	78	24-3030R24	3.500	24	6	88.9	609.6	152.4
3½	91	24-3530R24	4.000	24	6	101.6	609.6	152.4
4	103	24-4030R24	4.500	24	6	114.3	609.6	152.4
36" Radius								
2	53	24-2030R36	2.500	36	6	63.5	914.4	152.4
2½	63	24-2530R36	3.000	36	6	76.2	914.4	152.4
3	78	24-3030R36	3.500	36	6	88.9	914.4	152.4
3½	91	24-3530R36	4.000	36	6	101.6	914.4	152.4
4	103	24-4030R36	4.500	36	6	114.3	914.4	152.4
5	129	24-5030R36	5.500	36	6	139.7	914.4	152.4
6	155	24-6030R36	6.500	36	6	165.1	914.4	152.4

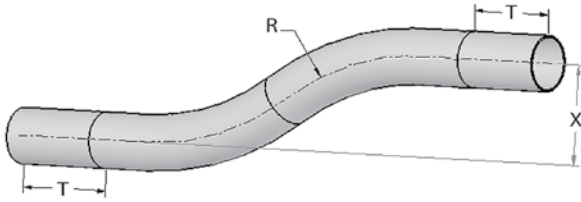
Size		Part Number	ØB	R	T	ØB	R	T
(in)	(mm)		(in)			(mm)		
48" Radius								
2	53	24-2030R48	2.500	48	6	63.5	1219.2	152.4
2½	63	24-2530R48	3.000	48	6	76.2	1219.2	152.4
3	78	24-3030R48	3.500	48	6	88.9	1219.2	152.4
3½	91	24-3530R48	4.000	48	6	101.6	1219.2	152.4
4	103	24-4030R48	4.500	48	6	114.3	1219.2	152.4
5	129	24-5030R48	5.500	48	6	139.7	1219.2	152.4
6	155	24-6030R48	6.500	48	6	165.1	1219.2	152.4
60" Radius								
2	53	24-2030R60	2.500	60	6	63.5	1524.0	152.4
2½	63	24-2530R60	3.000	60	6	76.2	1524.0	152.4
3	78	24-3030R60	3.500	60	6	88.9	1524.0	152.4
3½	91	24-3530R60	4.000	60	6	101.6	1524.0	152.4
4	103	24-4030R60	4.500	60	6	114.3	1524.0	152.4
5	129	24-5030R60	5.500	60	6	139.7	1524.0	152.4
6	155	24-6030R60	6.500	60	6	165.1	1524.0	152.4
72" Radius								
2	53	24-2030R72	2.500	72	6	63.5	1828.8	152.4
2½	63	24-2530R72	3.000	72	6	76.2	1828.8	152.4
3	78	24-3030R72	3.500	72	6	88.9	1828.8	152.4
3½	91	24-3530R72	4.000	72	6	101.6	1828.8	152.4
4	103	24-4030R72	4.500	72	6	114.3	1828.8	152.4
5	129	24-5030R72	5.500	72	6	139.7	1828.8	152.4
6	155	24-6030R72	6.500	72	6	165.1	1828.8	152.4

ID Extra Heavy Wall (XW) Conduit System

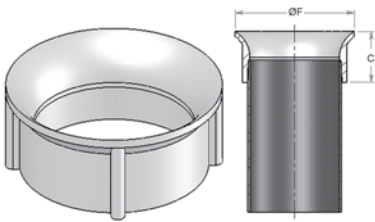
ID XW Offset Elbow

Size	Part Number
All	Special

Please contact your local agent for quotes and feasibility.



ID XW Radius Bell End

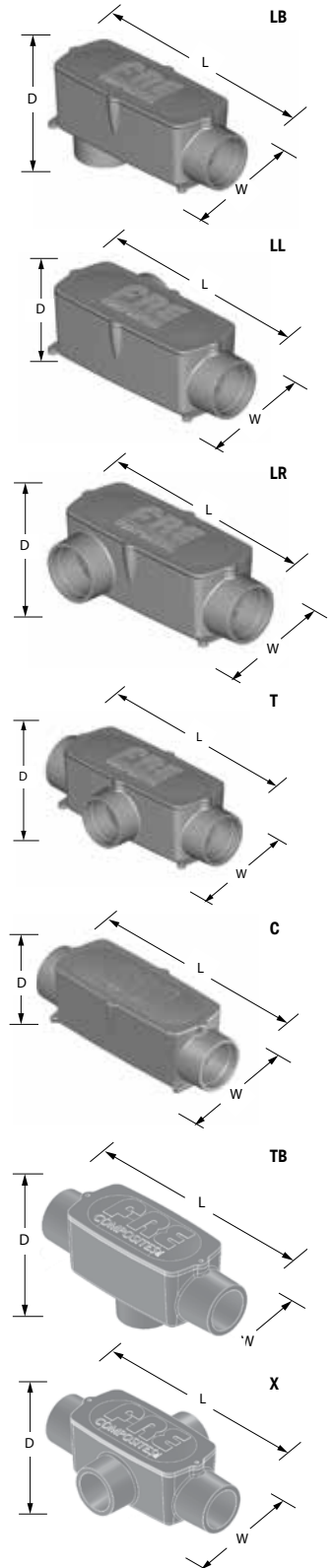


Size		Part Number	C	ØF	C	ØF
(in)	(mm)		(in)		(mm)	
2	53	24-2018	1.7	3	43.18	76.2
2½	63	24-2518	1.7	3.5	43.18	88.9
3	78	24-3018	1.7	4	43.18	101.6
3½	91	24-3518	1.7	4.5	43.18	114.3
4	103	24-4018	2.162	5	54.91	127.0
5	129	24-5018	2.162	6	54.91	152.4
6	155	24-6018	2.416	7	61.37	177.8

ID Extra Heavy Wall (XW) Conduit System

ID XW Conduit Bodies

Size		Part Number	Length	Width	Depth	Length	Width	Depth
(in)	(mm)							
LB								
2	53	24-2091	11.63	4.38	5.47	295	111	139
LL								
2	53	24-2092	11.63	6.09	3.59	295	155	91
LR								
2	53	24-2093	11.63	6.09	3.59	295	155	91
T								
2	53	24-2094	13.40	6.09	3.59	340	155	91
C								
2	53	24-2095	13.40	4.38	3.59	340	111	91
TB								
2	53	24-2096	13.40	4.38	5.47	340	111	139
X								
2	53	24-2097	13.40	7.81	3.59	340	198	91





Splice & Repair Kit

Size	Part Number	Conduit Size		Length of Cut Mat		Splices Per Kit
		(in)	(mm)	(in)	(cm)	(kg)
All	40-0174	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

20-0165



Size	Part Number	
All	40-0161	Epoxy Kit
All	20-0163	Dual Cartridge (Fast Cure)
All	20-0164	Dual Cartridge (Ambient Conditions)
All	20-0165	Dual Cartridge Applicator

20-0163 / 20-0164



Note: Mixing tip included

Mechanical Properties (40-0161)		Mechanical Properties (20-0163)		Mechanical Properties (20-0164)	
Shore D Hardness	81	Shore D Hardness	72	Shore D Hardness	90
Tensile strength	3 060 Psi	Tensile strength	8,000 Psi	Tensile strength	9,900 Psi
Lap shear strength	252 Psi	Lap shear strength	3,500 Psi	Viscosity	40,000 cP
Viscosity	3 700 cP	Viscosity	13,500 cP	Mix ratio	2 : 1
Mix ratio	2 : 1	Mix ratio	1 : 1	Color	Opaque
Color	Opaque	Color	Yellow	Solid content	100%
Solid content	100%	Solid content	100%		

Mixer Tip (Fast Cure Orange)

Size	Part Number
All	20-0162



Note: (Orange) use with 20-0163

(Ambient Conditions Green)

Size	Part Number
All	20-0166



Note: (Green) use with 20-0164

Joint Calculation Table (Adhesive Kit)

IPS Based					ID Based				
Size		Joints Made	Pull-Out Strength		Size		Joints Made	Pull-Out Strength	
(in)	(mm)	per kit	(lbs)	(kg)	(in)	(mm)	per kit	(lbs)	(kg)
¾	21	28	1 700	771	2	53	18	2,000	907
1	27	26	2,000	907	2½	63	16	2,500	1,134
1¼	35	24	2,000	907	3	78	13	3,000	1,360
1½	41	20	2,000	907	3½	91	11	3,500	1,587
8*	203	3	8,000	3,628	4	103	10	4,000	1,814
					5	129	7	5,000	2,268
					6	155	6	6,000	2,722

* 8" is not a recognized trade size per electrical code (NEC/CES), therefore cannot be UL listed and CSA certified.





Representative Performance Specs

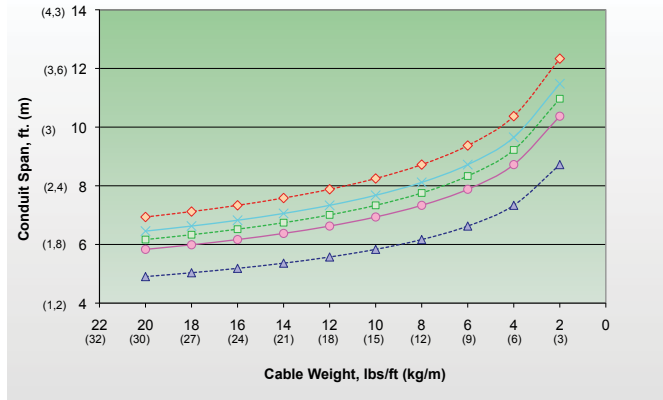
Size		Wall		Weight		Failure Load (ASTM D2412)		Impact (ASTM D2444)		Moment of inertia	
(in)	(mm)	(in)	(mm)	(lbs/ft)	(Kg/m)	(lbs/ft)	(Kg/m)	(lbs/ft)	(Kg/m)	(in ⁴)	(cm ⁴)
IPS EXTRA HEAVY WALL (XHW)											
1	27	.250	6.4	0.95	1.33	14 000	20 872	120	13.86	0.298	12.40
8	203	.250	6.4	5.73	8.67	6 000	8 945	300	41.57	63.439	2640.50
ID EXTRA HEAVY WALL (XHW)											
2	53	.250	6.4	1.49	2.33	12 000	17 890	120	16.63	1.132	47.12
3	78	.250	6.4	2.16	3.33	11 000	16 400	160	22.17	3.390	140.10
4	103	.250	6.4	2.82	4.33	10 000	14 909	200	27.72	7.562	314.75
5	129	.250	6.4	3.48	5.33	8 000	11 927	240	33.26	14.238	592.63
6	155	.250	6.4	4.14	6.33	7 000	10 436	280	38.80	24.007	999.25

Flexural Data		
Maximum Flexural Modulus:	1.4E6 Psi	9 653 Mpa
Allowable working stress at 0,2% strain:	2 800 Psi	19.31 Mpa
Maximum Long term flexural modulus at 0,2% strain:	1E6 Psi	6 895 Mpa
Long term allowable design stress:	2 000 Psi	13.79 Mpa

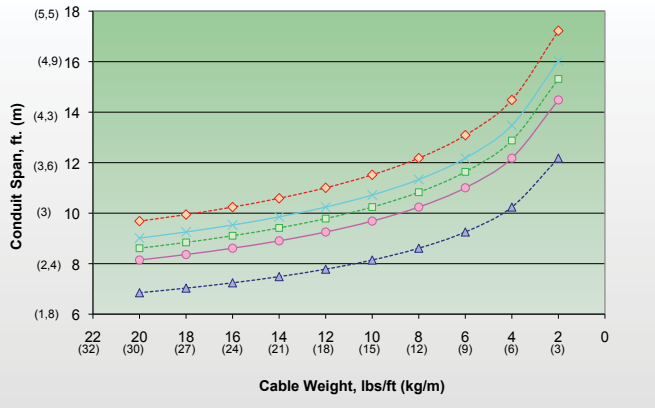
The graphs on the following pages reflect the span-deflection characteristics of FRE® Conduit. First, select the appropriate deflection graph. Continue by selecting the appropriate cable weight from the X-axis and move in a vertical direction, intercepting various deflection lines. At the appropriate deflection line for your application, look left the chart to find the recommended span between supports.

In order to take long-term creep into account, the charts have been tabulated using the long-term modulus in the calculations. Because of this, conduit sections will actually deflect much less than the charted value when first installed. If this long-term safety margin is not required, FRE Composites will prepare appropriate span charts for your application on request.

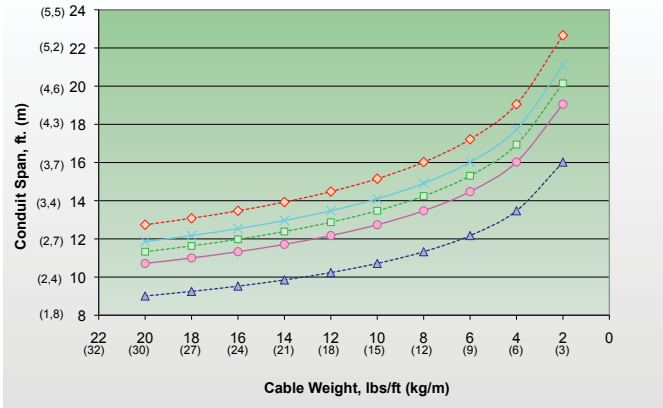
1" (27 mm) XHW Conduit (IPS only)



2" (53 mm) XHW Conduit (ID only)



3" (78 mm) XHW Conduit (ID only)

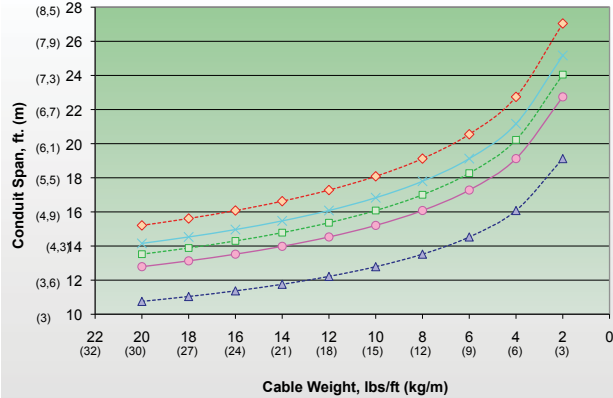


--▲-- 1/4" (6mm) Deflection ● 1/2" (13mm) Deflection ■ 5/8" (16mm) Deflection × 3/4" (19mm) Deflection ◆ 1" (25mm) Deflection

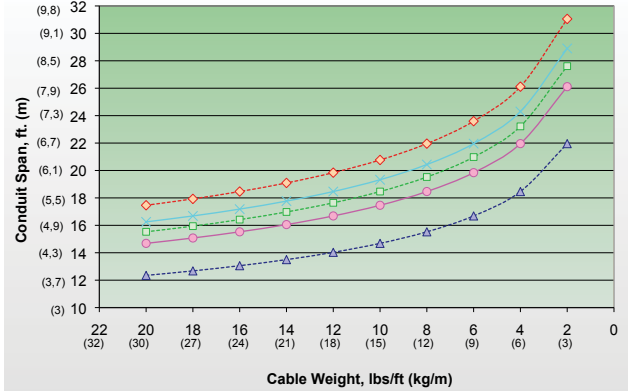


Conduit Deflection Tables

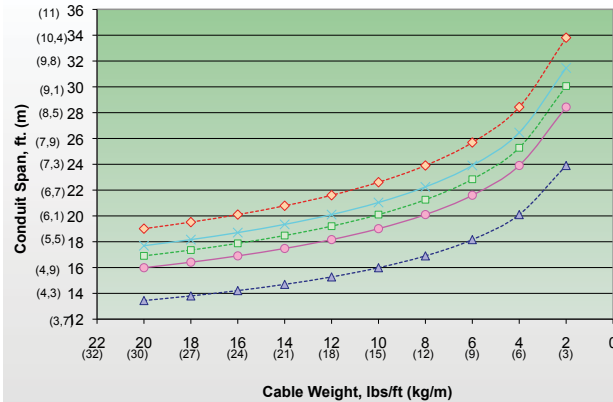
4" (103 mm) XHW Conduit (ID only)



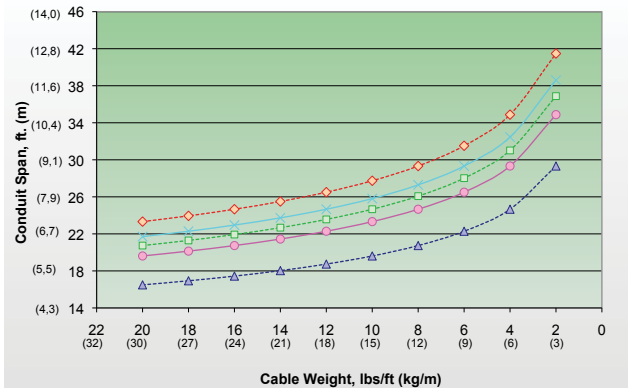
5" (129 mm) XHW Conduit (ID only)



6" (203 mm) XHW Conduit (ID only)



8" (203 mm) XHW Conduit (IPS only)



--▲-- 1/4" (6mm) Deflection ● 1/2" (13mm) Deflection ■ 5/8" (16mm) Deflection × 3/4" (19mm) Deflection ◆ 1" (25mm) Deflection



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: $T_i = T_{i-1}e^{(wL/r)} + wL f \cos \phi + wL \sin \phi$

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 (°)

ϕ = Angle (°) of run with regards to

- 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”

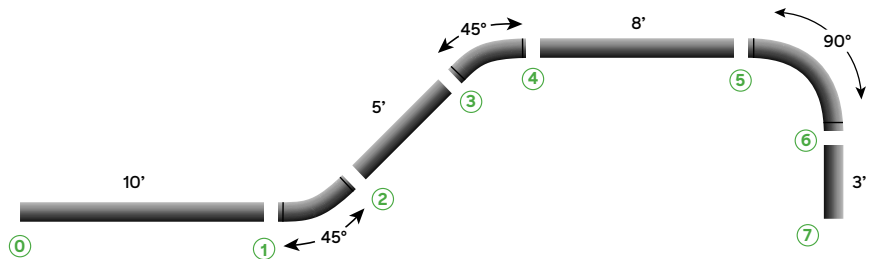
Point	ϕ	a	L	e	T_i
(i)	(°)	(°)	(ft)		(lb)
0	-	-	-	-	0.0
1	0.0	0.0	10.0	1.00	25.00
2	0.0	45.0	3.4	1.22	38.81
3	0.0	0.0	5.0	1.00	51.31
4	0.0	45.0	3.4	1.22	70.84
5	0.0	0.0	8.0	1.00	90.84
6	0.0	90.0	5.7	1.48	148.81
7	0.0	0.0	3.0	1.00	156.31

ii) Pulling from point “7” to point “0”

Point	ϕ	a	L	e	T_i
(i)	(°)	(°)	(ft)		(lb)
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

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

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



The following table is published to aid in solving the values for $e^{(wL/r)}$

Maximum Tension Allowed At Elbows:

The maximum pulling tension at an elbow must not exceed the calculated value of $300 \times r$ (Radius of the conduit elbow in feet). The above equations are used to determine what tension will occur at an 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.



Maximum allowable percentage wire fill from 2020 National Electrical Code (NEC) and 2021 Canadian Electrical Code (CEC).

IPS Size: Imperial

NUMBER OF CONDUCTORS					
Percent of cross section of conduit for conductors					
Trade Size	Inside Diameter	Total Area	1	2	3
IPS	(in)	100% in ²	53% Fill in ²	31% Fill in ²	40% Fill in ²
¾	0.918	0.662	0.351	0.205	0.265
1	1.183	1.099	0.583	0.341	0.440
1 ¼	1.528	1.834	0.972	0.568	0.733
1 ½	1.768	2.455	1.301	0.761	0.982
8*	8.393	55.325	29.323	17.151	22.130

IPS Size: Metric

NUMBER OF CONDUCTORS					
Percent of cross section of conduit for conductors					
Trade Size	Inside Diameter	Total Area	1	2	3
IPS	(mm)	100% in ²	53% Fill in ²	31% Fill in ²	40% Fill in ²
21	23	415	220	129	166
27	30	707	375	219	283
35	39	1195	633	370	478
41	45	1590	843	493	636
203	213	35633	1885	11046	14253

* 8" is not a recognized trade size per electrical code (NEC/CEC), therefore cannot be UL listed and CSA certified.



ID Sizes: Imperial

NUMBER OF CONDUCTORS					
Percent of cross section of conduit for conductors					
Trade Size	Inside Diameter	Total Area	1	2	3
ID	(in)	100% in ²	53% Fill in ²	31% Fill in ²	40% Fill in ²
2	2.000	3.142	1.665	0.974	1.257
2 ½	2.500	4.909	2.602	1.522	1.964
3	3.000	7.069	3.746	2.191	2.827
3 ½	3.500	9.621	5.099	2.983	3.848
4	4.000	12.566	6.660	3.896	5.027
4 ½	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

ID Sizes: Metric

NUMBER OF CONDUCTORS					
Percent of cross section of conduit for conductors					
Trade Size	Inside Diameter	Total Area	1	2	3
ID	(mm)	100% in ²	53% Fill in ²	31% Fill in ²	40% Fill in ²
53	50.8	2027	1074	628	811
63	63.5	3167	1678	982	1267
78	76.2	4560	2417	1414	1824
91	88.9	6207	3290	1924	2483
103	101.6	8107	4297	2513	3243
116	114.3	10261	5438	3181	4104
129	127	12668	6714	3927	5067
155	152.4	18242	9668	5655	7297



Product Test Data

MATERIAL	TEST RESULTS	TEST PROTOCOL
Resin Glass Toxicity	Epoxy (no fillers) E-Glass (E- or E-CR-Glass) (Toxic Gas Emission) < 0.2% halogens by weight	CSA C22.2 No. 2515 UL 2515
PHYSICAL PROPERTIES	TEST RESULTS	TEST PROTOCOL
Glass Content Specific Gravity Barcol Hardness U.V. Resistance Water Absorption	71% +/- 3% 1.94 g/cm ³ 54 ± 2 > 3 500 Hrs (Xenon Arc) ≤ 1%	API 15LR ASTM D792 ASTM D2583 CSA C22.2 No. 2515 ASTM D570
MECHANICAL DATA	TEST RESULTS	TEST PROTOCOL
Tensile Strength (axial) Elasticity Modulus (4") (103 mm) TriSeal® Joint Pull-Out Load Adhesive Joint Pull-Out Load	≥ 7 000 Psi (48.26 Mpa) 1.3 E6 Psi (8 963 Mpa) 500 lbs (227 kg) 1 000 lbs per inch trade size	ASTM D638 ASTM D2105 ASTM D2105 ASTM D2105
SURFACE FINISH	TEST RESULTS	TEST PROTOCOL
Exterior (average) Interior (average) Color	< 2 000 microinches (50.8 micrometers) < 125 microinches (3.2 micrometers) Black (standard)	
THERMAL PROPERTIES	TEST RESULTS	TEST PROTOCOL
Coefficient of Thermal Expansion Thermal Conductivity Thermal Resistivity Flammability Heat Deflection Temperature (HDT)	1.37 E-5 in./in./°F (2.47 E-5 m./m./°C) 2 Btu.in/ft ² .h. °F (0.288W/ m.K) 0.5°F. ft ² .h/Btu.in (3.47 mK/W) Article 5.10 > 312°F (> 156°C)	ASTM D696 ASTM D335 ASTM D335 UL 2515 ASTM D648
COEFFICIENT OF FRICTION	TEST RESULTS	TEST PROTOCOL
Cross Linked Polyethylene Cable PVC Jacketed Cable Concentric Neutral Cable Teck (Armoured) Cable	0.233 ± .02 0.385 ± .06 0.160 ± .03 0.161 ± .03	CSA B196.1 CSA B196.1 CSA B196.1 CSA B196.1
ELECTRICAL DATA	TEST RESULTS	TEST PROTOCOL
Dielectric Strength Dielectric Breakdown Voltage Dissipation Factor	500 volts/mil 29.7 kV 0.5%	ASTM D149 ASTM D149 ASTM D150



IPS Sizes

IPS Extra Heavy Wall (XW)										
Size		Length		Weight per Stick		Weight per Crate		Sticks per Crate	Footage per Crate	
(in)	(mm)	(ft)	(m)	(lb)	(kg)	(lb)	(kg)		(ft)	(m)
¾	21	9.84	3	7.70	3	1,155	524	150	1,476	450
1	27	9.84	3	9.50	4	1,425	646	150	1,476	450
1¼	35	9.84	3	11.00	5	1,650	748	150	1,476	450
1½	41	9.84	3	13.50	6	2,025	919	150	1,476	450
8*	203	19.68	6	114.63	52	1,032	468	9	177	54

*8" is not a recognized trade size per electrical code (NEC/CES), therefore cannot be UL listed and CSA certified.

ID Sizes

ID Extra Heavy Wall (XW)										
Size		Length		Weight per Stick		Weight per Crate		Sticks per Crate	Footage per Crate	
(in)	(mm)	(ft)	(m)	(lb)	(kg)	(lb)	(kg)		(ft)	(m)
2	53	19.68	6	29.84	14	1,969	893	66	1,299	396
2½	63	19.68	6	35.28	16	2,858	1,296	81	1,594	486
3	78	19.68	6	43.10	20	3,491	1,583	81	1,594	486
3½	91	19.68	6	50.72	23	2,688	1,219	53	1,043	318
4	103	19.68	6	56.37	26	2,424	1,100	43	846	258
5	129	19.68	6	69.63	32	2,089	948	30	590	180
6	155	19.68	6	82.89	38	1,658	752	20	394	120

Standard Accessories Packaging

Standard Accessories Packaging											Ordering in multiple of standard packaging is highly recommended.			
Product	Size		Amount	Package	Product	Size		Amount	Package	Product	Size		Amount	Package
	(in)	(mm)				(in)	(mm)				(in)	(mm)		
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			A/R	Bag	Elbows	1-2	27-53	10	Bundle
-	-	-	-	-	Expansion Joint	2-6	53-129	5	Bundle	Bends	3-6	78-155	5	Bundle
-	-	-	-	-	Adapters	1-1½	27-41	50	Bag	Bell Ends			A/R	Carton



Standard Conduit Packaging

IPS Extra Heavy Wall (XW) (Continued)								
Crate per Truck	Footage per Truck		Weight per Truck		Width per Crate		Height per Crate	
	(ft)	(m)	(lb)	(kg)	(in)	(mm)	(in)	(mm)
80	118,080	36,000	92,400	42,000	45	1,143	12	305
80	188,080	36,000	114,000	51,000	45	1,143	12	305
80	118,080	36,000	132,000	60,000	45	1,143	12	305
40	59,040	18,000	81,000	36,600	45	1,143	12	305
16	1,574	480	18,341	8,319	45	1,143	24	610

ID Extra Heavy Wall (XW) (Continued)								
Crate per Truck	Footage per Truck		Weight per Truck		Width per Crate		Height per Crate	
	(ft)	(m)	(lb)	(kg)	(in)	(mm)	(in)	(mm)
40	51,960	15,837	78,778	35,733	45	1,143	12	305
16	25,504	7,774	45,728	20,742	45	1,143	24	610
16	25,504	7,774	55,858	25,337	45	1,143	24	610
16	16,688	5,087	43,008	19,508	45	1,143	24	610
16	13,540	4,127	38,783	17,592	45	1,143	24	610
16	9,446	2,879	33,422	15,160	45	1,143	24	610
16	6,298	1,920	2,525	1,145	45	1,143	24	610





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.





Allied Tube & Conduit ^ AFC Cable Systems ^ Heritage Plastics ^ Cii ^ Unistrut ^ US Tray
Unistrut Construction ^ Marco ^ Calpipe Security ^ Calbrite ^ Calbond ^ Flexicon ^ Kaf-Tech
Power-Strut ^ Calconduit ^ FRE Composites ^ United Poly Systems ^ Sasco Strut ^ Columbia-MBF
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