PE Electrofusion Systems for Gas and Water Catalog

ELECTROFUSION SYSTEMS

FRIATEC

IPEX

PE ELECTROFUSION SYSTEMS

For Gas and Water Applications

Engineered Smarter™

PE Electrofusion Systems for Gas & Water

Friatec is engineered smarter than traditional fusion systems. Manufactured in the USA, Friatec couplings feature a unique, exposed coil design that provides a seal stronger than any other electrofusion system on the market. This is achieved for two reasons:

- the heat, created by the electrical current passing through the exposed coil of the Friatec coupling, is transferred directly to the PE pipe, and
- the coil protrudes from the interior surface of the coupling. When the pipe is heated, the coil sinks into it creating a much stronger bond.

Unlike competing embedded coil technology fittings which require heating the entire coupling, Friatec's unique "exposed coil" melts the fitting and pipe surfaces directly, sinking into the pipe to form a leak-proof bond. Friatec electrofusion fittings are designed with extra wide fusion zones that provide greater contact area, further increasing the integrity of the bond between coupling and pipe.

As a result of this process, every joint will be fused precisely to specification, automatically, every time, minimizing the risk of human error. This unparalleled fusion technology has earned Friatec couplings the highest pressure rating in the industry. What's more, because every joint is as strong as the pipe itself, the Friatec electrofusion system is ideal for directional drilling and other trenchless applications.

With the industry's most advanced barcode monitoring, recording and tracking technology, Friatec makes managing your infrastructure easier than ever before.

Imagine, no more hidden costs or surprises on future dig ups. Instead, you will know when, where and how every coupling in your system was installed, and by whom.

All these benefits add up to deliver substantial time and cost savings on every project.

IPEX

Table of Contents

FRIAMAT® II

Universal Electrofusion Processor

The FRIAMAT® II is the industry's leading electrofusion processor. With a simple scan the FRIAMAT® II instantly reads every type of fitting. The precision continues throughout the fusion process. All details of the fusion are recorded, including the operator, temperatures and duration. It stores all fusion information and the data can be easily transferred to a computer. You can even input the GPS location of the joint into the electrofusion processor.

FRIAMAT® II Fusion Units

The fusion units of the FRIAMAT® Family are constructed using state of the art technology and in accordance with recognized safety rules are fitted with the appropriate protective equipment.

The units have 6 function buttons:

Start This is used to start a fusion process

Stop Is used to cancel a fusion process

Info It is used to call up current information (voltage/frequency, date/time, ambient temperature, fusion operator and language)

Set To save settings

Menu This button is used to call up the main menu and to scroll through individual menus e.g. date/time, signal volume, language

Res For cancelling an input process

The electronics in your fusion unit are housed in a splash-proof casing. The carrying frame is used to hold the cables. The FRIAMAT® fusion units are designed for a maximum fusion voltage of 48 V. The supply and fusion voltage are isolated from each other by a safety transformer.

The computerized command system is:

- completely automatic in regulating and checking the metering of the electrical power
- Determines the fusion time depending on the ambient temperature. The temperature probe in the fusion cable continuously determines the ambient temperature.

Technical Data	
Input Voltage Range	AC 95 V - 135 V
Frequency Range	45 Hz. . . 66 Hz
Current Consumption	AC 30 A max
Power	3.5 kW
Generator rated output, ½" CTS - 2" IPS, 3" IPS - 28" IPS	AC 2.0 kW
Equipment Fuse	30 A slow acting
Casing	Enclosure class IP54 DIN 40 050, Protection class II DIN 57 700
Power Cable	16' with 30 AMP twist lock plug
Fusion Cable	13' with 4mm fittings plug
Bar Code	Made to ANSI HM 10.8M-1983, ISO CD 13950/08.94
Working Temperature Range	–4ºF. . .+ 122ºF*
Fusion Current Monitoring	Short circuit 110 A, Open circuit 0.25 x IN
Printer Interface	Parallel (D-Sub 25)
Fusion Voltage	Max AC 48 V
Dimensions W x D x H	14½" x 11" x 19"
Weight	47 lbs
Weight w Transport Box	60 lbs

* When fusing fittings from other manufacturers always take note of the details given on the working temperature range.

Couplings

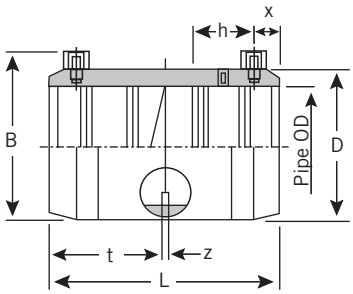
1/2" CTS through 28" IPS

Friatec Couplings and Fittings deliver flexibility and reliability. No one offers a wider range of coupling sizes and every Friatec fitting is ASTM approved.

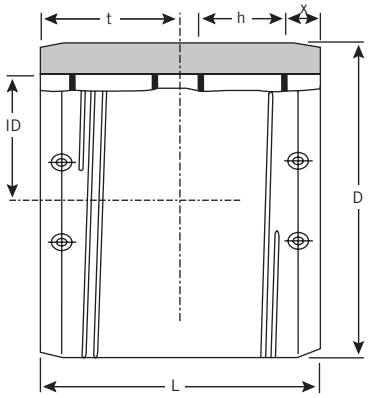
Short Designation	MBI/UBI. . . OD
Field of Application	Connections of PE Pipes 2406 and 3408
Range of Application	Gas up to 100 psi and water up to 160 psi

For higher pressure ranges, contact IPEX at 864-286-8800

1/2" CTS through 28" IPS con't



1/2" - 6"



8" - 28"

Nominal Pipe (in) OD	SDR	ID min	ID max	D	B	L	t	z	h	x	Fusion Time/Sec @ 73ºF	Cooling Time/Min */**/***
½" CTS	SDR 11	0.622	0.634	1.102	1.732	2.283	1.142	0.079	0.591	0.23	27	05/08/10
¾" IPS	SDR 11	1.047	1.059	1.575	2.165	2.598	1.260	0.079	0.728	0.27	28	05/08/10
1" CTS	SDR 11	1.122	1.134	1.654	2.244	3.071	1.535	0.079	0.787	0.31	28	05/08/10
1" IPS	SDR 11	1.311	1.323	1.850	2.460	3.071	1.496	0.079	0.787	0.31	28	05/08/10
1¼" IPS	SDR 11	1.654	1.679	2.244	2.835	3.346	1.634	0.079	0.945	0.39	34	10/15/25
1½" IPS	SDR 11	1.902	1.917	2.480	3.130	3.858	1.870	0.079	1.060	0.46	34	10/15/25
2" IPS	SDR 11	2.374	2.390	3.142	3.657	4.449	2.205	0.079	1.205	0.51	54	10/15/25
3" IPS	SDR 11	3.496	3.516	4.606	4.980	5.472	2.717	0.079	1.417	0.59	100	10/30/40
4" IPS	SDR 11	4.492	4.516	5.827	6.173	6.260	3.110	0.079	1.689	0.67	151	10/30/40
6" IPS	SDR 11	6.610	6.634	8.543	8.740	7.992	3.976	0.079	2.295	0.79	440	20/60/75

Nominal Pipe (in) OD IPS	SDR	ID min	ID max	D	L	t	h	x	Fusion Time/Sec @ 73ºF	Cooling Time/Min */**/***
8" monofilar	SDR 11	8.626	8.665	11.029	9.448	4.724	2.953	1.063	540	20/60/75
8" bifilar	SDR 11	8.626	8.665	11.022	9.448	4.724	2.953	1.063	554 ea side	20/60/75
10"	SDR 11	10.748	10.787	13.975	11.811	5.275	3.149	1.063	500 ea side	30/75/100
12"	SDR 11	12.748	12.787	15.746	11.219	5.610	2.679	1.142	550 ea side	30/75/100
14"	SDR 11	13.976	14.016	17.716	11.811	5.905	3.500	1.260	580 ea side	30/75/100
16"	SDR 11	15.969	16.008	19.685	12.598	6.299	3.748	1.260	870/730 ea side	45/95/120
18"	SDR 11	17.969	18.008	22.047	13.386	6.693	3.346	1.260	870/870 ea side	45/95/120
20"	SDR 11	19.961	20.016	24.803	14.173	7.086	3.622	1.260	870/720 ea side	45/95/120
22"	SDR 17	21.961	22.016	24.803	14.566	7.283	3.291	1.260	870/720 ea side	45/95/120
24"	SDR 13.5	24.000	24.039	27.952	15.748	7.874	4.095	1.420	870/850 ea side	45/95/120
28"	SDR 17	27.992	28.031	31.496	15.748	7.874	6.062	1.614	850/850 ea side	60/80/120

Friatec Safety Fittings can be fused to all PE pipes within melt index groups 003-050 and pipe SDR range 9.33 through 17.6.

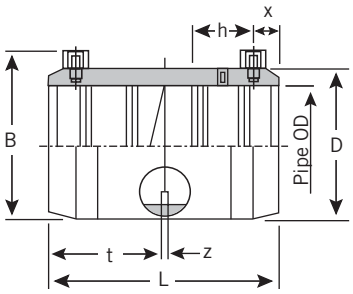
* Pipe can be moved after indicated cooling time (handling)
** Pipe can be pressurized after indicated cooling time (pressure <90 psi)
*** Pipe can be pressurized after indicated cooling time (pressure >90 psi)

FM 200 psi Safety Electrofusion Fittings

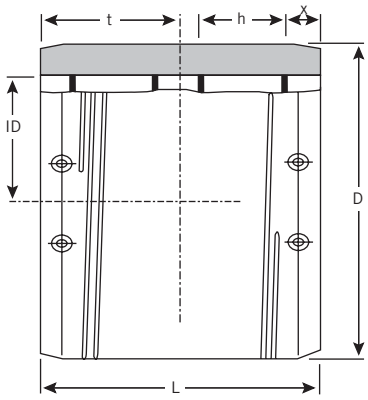
4" IPS through 20" IPS

Short Designation	MBI. . . OD
Field of Application	Connections of PE Pipes 2406 and 3408
Range of Application	Gas up to 100 psi and water up to 200 psi

For higher pressure ranges contact IPEX at 864-286-8800



4" - 6"



8" - 20"

Nominal Pipe (in) OD	SDR	ID min	ID max	D	B	L	t	z	h	x	Fusion Time/Sec @ 73ºF	Cooling Time/Min */**/***
4" IPS	SDR 11	4.492	4.516	5.827	6.173	6.260	3.110	0.079	1.689	0.67	151	10/30/40
6" IPS	SDR 11	6.610	6.634	8.543	8.740	7.992	3.976	0.079	2.295	0.79	440	20/60/75

Nominal Pipe (in) OD IPS	SDR	ID min	ID max	D	L	t	h	x	Fusion Time/Sec @ 73ºF	Cooling Time/Min */**/***
8" monofilar	SDR 11	8.626	8.665	11.029	9.448	4.724	2.953	1.063	540	20/60/75
8" bifilar	SDR 11	8.626	8.665	11.022	9.448	4.724	2.953	1.063	554 ea side	20/60/75
10"	SDR 11	10.748	10.787	13.975	11.811	5.275	3.149	1.063	500 ea side	30/75/100
12"	SDR 11	12.748	12.787	15.746	11.219	5.610	2.679	1.142	550 ea side	30/75/100
14"	SDR 11	13.976	14.016	17.716	11.811	5.905	3.500	1.260	580 ea side	30/75/100
16"	SDR 11	15.969	16.008	19.685	12.598	6.299	3.748	1.260	870/730 ea side	45/95/120
18"	SDR 11	17.969	18.008	22.047	13.386	6.693	3.346	1.260	870/870 ea side	45/95/120
20"	SDR 11	19.961	20.016	24.803	14.173	7.086	3.622	1.260	870/720 ea side	45/95/120

Friatec Safety Fittings can be fused to all PE pipes within melt index groups 003-050 and pipe SDR range 9.33 through 17.6.

* Pipe can be moved after indicated cooling time (handling)
** Pipe can be pressurized after indicated cooling time (pressure <90 psi)
*** Pipe can be pressurized after indicated cooling time (pressure >90 psi)

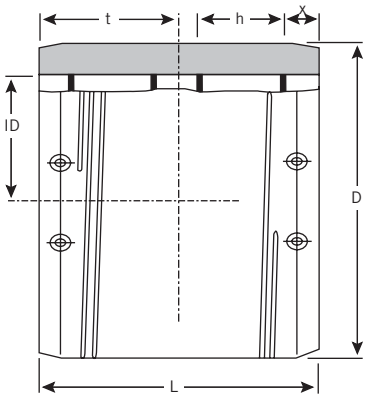
4" through 20" DIP

Short Designation UBI. . . OD

Field of Application Connections of PE Pipes 2406 and 3408

Range of Application Water up to 160 psi

For higher pressure ranges contact IPEX at 864-286-8800



6" - 20"

Nominal Pipe (in) OD IPS	SDR	ID min	ID max	D	L	t	h	x	Fusion Time/Sec @ 73ºF	Cooling Time/Min */**/***
4"	SDR 11	4.492	4.516	5.827	6.620	3.110	1.689	0.670	151	10/30/40
6"	SDR 11	6.610	6.634	8.543	7.992	3.976	2.295	0.790	440	20/60/75
8"	SDR 11	9.039	9.078	11.022	9.448	4.724	2.953	0.827	540	30/75/100
10"	SDR 11	11.082	11.122	13.976	11.023	5.511	3.291	0.827	550 ea side	30/75/100
12"	SDR 11	13.182	13.224	15.746	11.023	5.511	2.582	0.827	550 ea side	30/75/100
14"	SDR 11	15.272	15.311	18.000	11.417	5.708	3.500	0.827	730 ea side	40/95/120
16"	SDR 11	17.385	17.444	22.047	11.417	5.708	3.392	0.827	870/720 ea side	40/95/120
18"	SDR 13.5	19.472	19.531	22.047	11.417	5.708	3.392	0.827	870/720 ea side	40/95/120
20"	SDR 13.5	21.582	21.641	24.803	11.417	5.708	2.460	0.827	870/720 ea side	40/95/120

Friatec Safety Fittings can be fused to all PE pipes within melt index groups 003-050 and pipe SDR range 9.33 through 17.6.

* Pipe can be moved after indicated cooling time (handling)
** Pipe can be pressurized after indicated cooling time (pressure <90 psi)
*** Pipe can be pressurized after indicated cooling time (pressure >90 psi)

Please note 18" or 20" DIP are rated SDR 13.5 and can be pressurized up to 150 psi (water)

Couplings con't

Low Pressure Safety Electrofusion Coupling

(formally called Friafit)

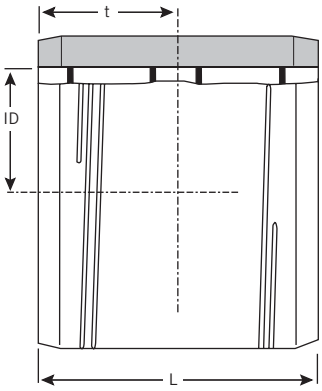
The low pressure coupling can be fused to pipes of SDR stages 11 - 32 in accordance with ASTM F1055

Pipes made of raw material types PE2406 and PE3408, PE63, PE80 and P100 in melt index groups 005 - 050 can be fused.

It is possible to work with these couplings at ambient temperatures of between –4ºF up to 122ºF. It is always necessary to use a Friafit adapter for the fusion.

The thinwall safety coupling (AM) is made of PE3408 and can be pressurized up to a maximum of 80 psi if the pipe is of suitable design.

With exposed heating coils for optimal heat transfer, large insertion depth, extra wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material for use without a holding device.



Size (in)	Order No.	VE	PE	ID (in)	L (in)	t (in)	Weight lb/ea
8" IPS	190008-A	48	PE - HD	8.626	7.874	3.937	9
10" IPS	190010-A	32	PE - HD	10.748	8.268	4.134	11
12" IPS	190012-A	32	PE - HD	12.748	8.661	4.330	8
15" IPS	190015-A	16	PE - HD	15.300	8.661	4.330	15
16" IPS	190016-A	16	PE - HD	16.008	8.661	4.330	16

Tapping Tees

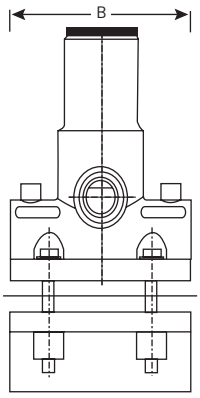
DAA High Pressure Tapping Tee

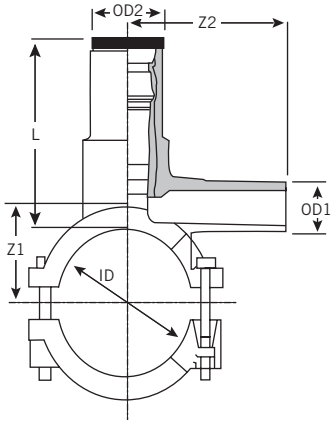
The industry-leading design of Friatec Tapping Tees makes for fast and safe installation of service and branch pipe.

Short Designation	DAA d1./d2...
Field of Application	Installation of service and branch pipes
Range of Application	Gas up to 100 psi and water up to 160 psi

For higher pressure ranges contact IPEX at 864-286-8800

- Hot tapping tee designed for leakproof installation under pressure up to 160 psi for water and 100 psi for gas
- Ease of assembly–no rounding clamps or special tools
- Cutter and sleeve made of brass
- Brass guide allows easy cutting of thick wall pipe
- Lower and upper “cutter stops” prevent overcutting as well as accidental removal of cutter
- Threaded plug with o-ring seal
- Corrosion-proof construction

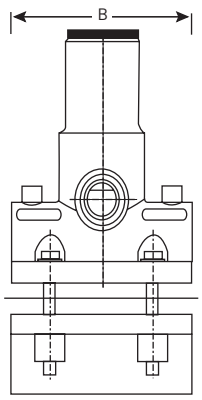


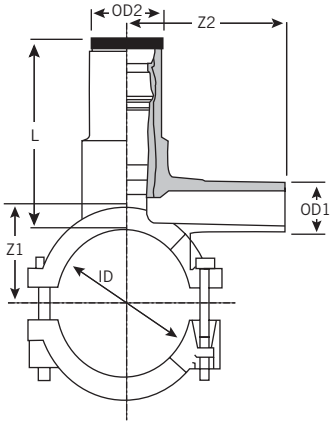


Nominal Pipe (in)	Main Size	Nominal Outlet (in)	ID	OD 1	OD 2	Cutter	L	Z1	Z2	B
1¼"	IPS	½ CTS	1.575	0.626	1.259	0.630	2.913	1.102	9.624	2.756
1¼"	IPS	¾ IPS	15.75	1.051	1.259	0.630	2.913	1.102	9.624	2.756
1¼"	IPS	1 CTS	1.575	1.126	1.259	0.630	2.913	1.102	9.624	2.756
1¼"	IPS	1 IPS	1.575	1.315	1.259	0.630	2.913	1.102	9.624	2.756
2"	IPS	½ CTS	2.378	0.626	1.575	0.846	3.878	1.780	3.937	4.094
2"	IPS	¾ IPS	2.378	1.051	1.575	0.846	3.878	1.780	3.701	4.094
2"	IPS	1 CTS	2.378	1.126	1.575	0.846	3.878	1.780	3.701	4.094
2"	IPS	1 IPS	2.378	1.315	1.575	0.846	3.878	1.780	3.701	4.094
3"	IPS	½ CTS	3.504	0.626	1.969	1.201	4.764	2.343	4.410	4.803
3"	IPS	¾ IPS	3.504	1.051	1.969	1.201	4.764	2.343	3.937	4.803
3"	IPS	1 CTS	3.504	1.126	1.969	1.201	4.764	2.343	4.255	4.803
3"	IPS	1 IPS	3.504	1.315	1.969	1.201	4.764	2.343	4.255	4.803
3"	IPS	2 IPS	3.504	2.378	1.969	1.201	4.780	2.350	6.890	5.905

Tapping Tees con't

DAA High Pressure Tapping Tee con't





Nominal Pipe (in)	Main Size	Nominal Outlet (in)	ID	OD 1	OD 2	Cutter	L	Z1	Z2	B
4"	IPS	½" CTS	4.512	0.626	1.969	1.201	4.764	2.905	4.016	4.785
4"	IPS	¾" IPS	4.512	1.051	1.969	1.201	4.764	2.846	4.409	4.764
4"	IPS	1" CTS	4.512	1.126	1.969	1.201	4.764	2.846	4.527	4.785
4"	IPS	1" IPS	4.512	1.315	1.969	1.201	4.764	2.913	4.527	4.785
4"	IPS	2" IPS	4.512	2.378	1.969	1.201	4.780	2.913	7.086	4.905
6"	IPS	½" CTS	6.638	0.626	1.969	1.201	6.575	4.500	4.586	7.677
6"	IPS	¾" IPS	6.638	1.051	1.969	1.201	6.575	4.528	4.331	7.677
6"	IPS	1" CTS	6.638	1.126	1.969	1.201	6.575	4.528	4.331	7.677
6"	IPS	1" IPS	6.638	1.315	1.969	1.201	6.575	4.528	4.331	7.677
6"	IPS	2" IPS	6.638	2.378	1.969	1.201	6.575	4.803	6.811	7.677

Nominal Pipe (in)	Main Size	Nominal Outlet (in)	ID	OD 1	OD 2	Cutter	L	Z1	Z2	B
8"	IPS	½" CTS	8.605	0.626	1.969	1.201	6.575	5.483	4.586	7.677
8"	IPS	¾" IPS	8.605	1.051	1.969	1.201	6.575	5.315	4.331	7.677
8"	IPS	1" CTS	8.605	1.126	1.969	1.201	6.575	5.315	4.331	7.677
8"	IPS	1" IPS	8.605	1.315	1.969	1.201	6.575	5.315	4.331	7.677
8"	IPS	2" IPS	8.605	2.378	1.969	1.201	6.575	5.827	6.811	7.677
10" - 16" *	IPS	2" IPS	10.75 - 16.00	--	1.969	1.201	6.575	--	7.087	7.677

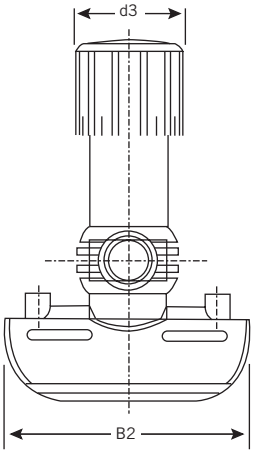
* Friatop pneumatic top-loading tool required

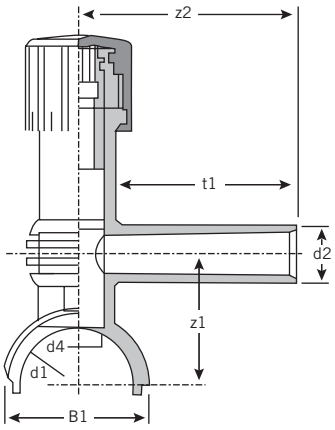
DAS II Top Loading Tapping Tee

Short Designation	DAS II d1./d2...
Field of Application	Installation of service and branch pipes
Range of Application	Gas up to 100 psi and water up to 160 psi

For higher pressure ranges contact IPEX at 864-286-8800

- Top loading
- High volume
- Self-tapping tee
- Internal cutter blade that is the largest on the market

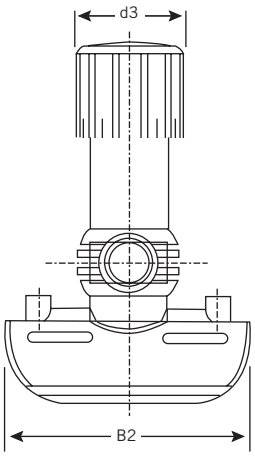


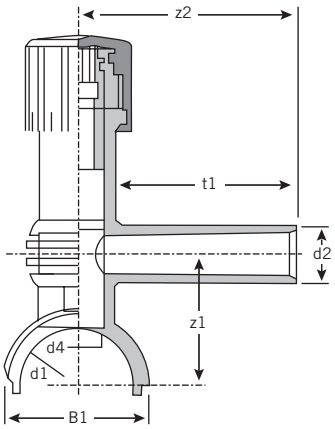


Nominal Pipe Main Outlet (in)	d3	L	z1	z2	t1	B1	B2	d4
2 IPS x ½" CTS	2.165	5.748	2.559	3.449	2.717	2.795	4.724	1.016
2 IPS x ¾" IPS	2.165	5.748	2.559	3.843	3.110	2.795	4.724	1.016
2 IPS x 1" CTS	2.165	5.748	2.559	4.236	3.504	2.795	4.724	1.016
4 IPS x ½" CTS	2.165	5.827	3.524	3.449	2.717	4.528	5.906	1.016
4 IPS x ¾" IPS	2.165	5.827	3.524	3.843	3.110	4.528	5.906	1.016
4 IPS x 1" CTS	2.165	5.827	3.524	4.236	3.504	4.528	5.906	1.016

Tapping Tees con't

DAS II Top Loading Tapping Tee con't

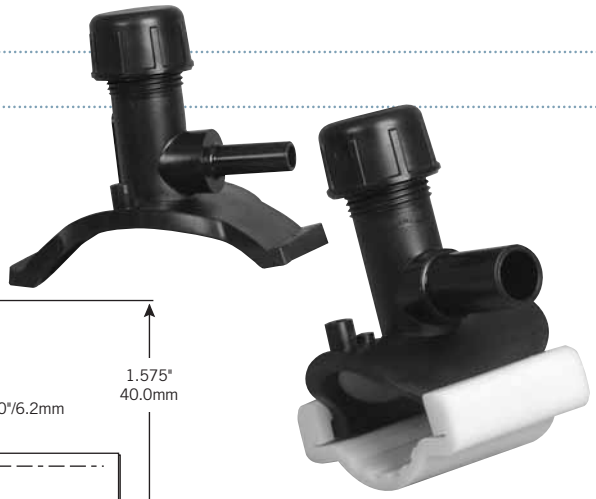


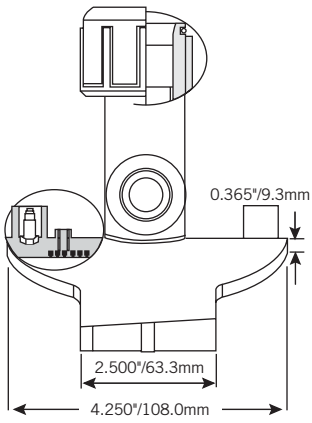


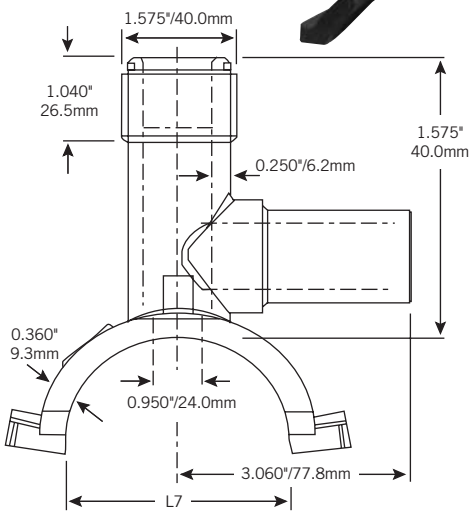
Nominal Pipe Main Outlet (in)	d3	L	z1	z2	t1	B1	B2	d4
2" IPS x 1¼" IPS	2.402	5.000	2.157	4.677	3.740	2.795	4.724	1.214
2" IPS x 2" IPS	2.402	5.000	2.319	6.496	5.559	2.795	4.724	1.214
4" IPS x 1¼" IPS	3.268	8.386	4.114	5.512	4.114	4.528	5.906	1.798
4" IPS x 2" IPS	3.268	8.386	4.114	6.299	4.902	4.528	5.906	1.798
6" IPS x 1¼" IPS	3.268	8.386	4.449	5.512	4.114	5.039	5.906	1.798
6" IPS x 2" IPS	3.268	8.386	4.449	6.299	4.902	5.039	5.906	1.798
8" IPS x 1¼" IPS	3.268	8.976	4.921	5.512	4.114	5.827	5.906	1.798
8" IPS x 2" IPS	3.268	8.976	4.921	6.299	4.902	5.827	5.906	1.798

Nominal Pipe Main Outlet (in)	d3	L	z1	z2	t1	B1	B2	d4
6" IPS x ½" CTS	2.165	5.827	4.449	3.449	2.717	5.039	5.906	1.016
6" IPS x 2" IPS	2.165	5.827	4.449	3.843	3.110	5.039	5.906	1.016
6" IPS x 2" CTS	2.165	5.827	4.449	4.236	3.110	5.039	5.906	1.016
8" IPS x ½" CTS	2.165	6.457	4.921	3.449	2.717	5.827	5.906	1.016
8" IPS x ¾" IPS	2.165	6.457	4.921	3.843	3.110	5.827	5.906	1.016
8" IPS x 1" CTS	2.165	6.457	4.921	4.236	3.504	5.827	5.906	1.016

DAI Tapping Tee





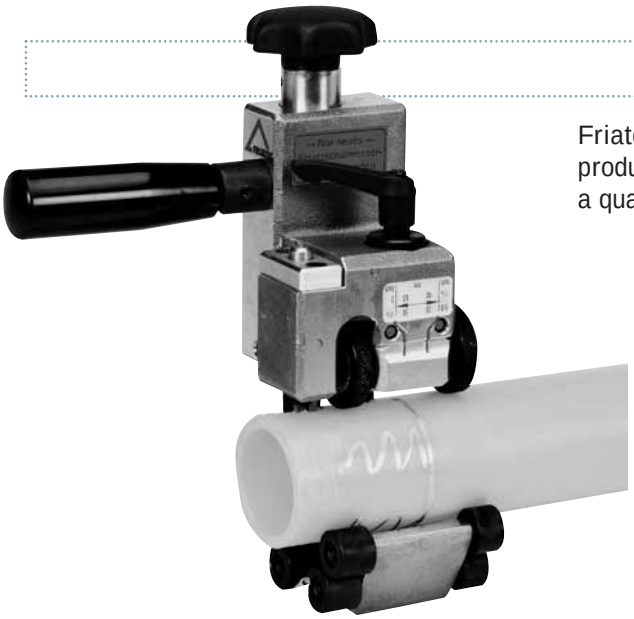


Code	Size / Description	L7 (in) Min	L7 (in) Max	Heating element Code	Cap Code	Barcode Code	Cutter code	U-Clamp / Strap Code
128000	1.25 IPS x 0.5 CTS	1.614	1.693	291000	291002	291135	291012	291010
128001	1.25 IPS x 0.5 IPS	1.614	1.693	291000	291002	291135	291012	291010
128002	1.25 IPS x 0.75 IPS	1.614	1.693	291000	291002	291135	291012	291010
128003	1.25 IPS x 1.0 CTS	1.614	1.693	291000	291002	291135	291012	291010
128004	1.25 IPS x 1.0 IPS	1.614	1.693	291000	291002	291135	291012	291010
128005	2.00 IPS x 0.5 CTS	2.480	2.559	291001	291002	291136	291012	291011
128006	2.00 IPS x 0.5 IPS	2.480	2.559	291001	291002	291136	291012	291011
128007	2.00 IPS x 0.75 IPS	2.480	2.559	291001	291002	291136	291012	291011
128008	2.00 IPS x 1.0 CTS	2.480	2.559	291001	291002	291136	291012	291011
128009	2.00 IPS x 1.0 IPS	2.480	2.559	291001	291002	291136	291012	291011
128010	4.00 IPS x 0.5 CTS	4.252	4.331	291001	291002	291137	291012	291140
128011	4.00 IPS x 0.5 IPS	4.252	4.331	291001	291002	291137	291012	291140
128012	4.00 IPS x 0.75 IPS	4.252	4.331	291001	291002	291137	291012	291140
128013	4.00 IPS x 1.0 CTS	4.252	4.331	291001	291002	291137	291012	291140
128014	4.00 IPS x 1.0 IPS	4.252	4.331	291001	291002	291137	291012	291140
128015	6.00 IPS x 0.5 CTS	5.118	5.197	291001	291002	291138	291013	291141
128016	6.00 IPS x 0.5 IPS	5.118	5.197	291001	291002	291138	291013	291141
128017	6.00 IPS x 0.75 IPS	5.118	5.197	291001	291002	291138	291013	291141
128018	6.00 IPS x 1.0 CTS	5.118	5.197	291001	291002	291138	291013	291141
128019	6.00 IPS x 1.0 IPS	5.118	5.197	291001	291002	291138	291013	291141

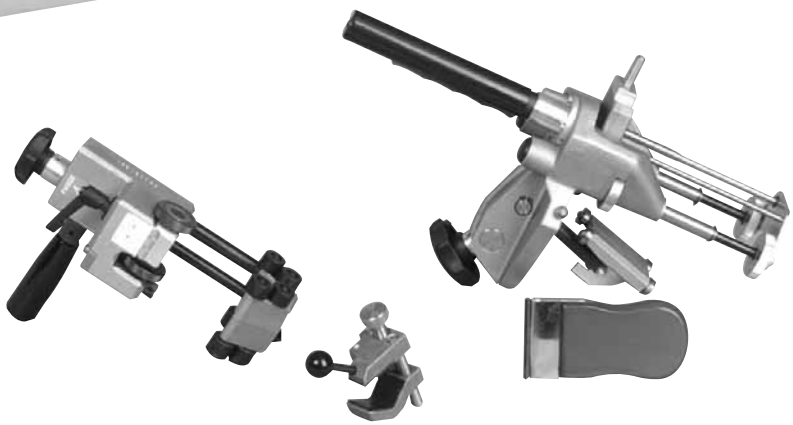
All assemblies come with Upper Stop (code 291008) and O-ring (291007)

Scraper Tools

Scraper Tools with Accessories



Friatec® scraper tools are designed to assist the installer in producing a quality electofusion joint. With Frialen® Scraper Tools a quality electrofusion joint can be achieved every time.



Part Number	Scraper Tools	Pipe Size Compatibility (in)	Accessories
328018	FWE hand scraper	all	328017 - spare blades (set of 5 blades)
128020	GBZ pocket scraper	½" CTS - 1¼" CTS	3 green blades, 2 screws, 1 driver
128034	FWSG 63	½" IPS - 2" IPS	" " " " " "
128036	FWSG 315	3" IPS - 8" IPS	3 red blades, 2 screws, 1 driver
128190	FWSG 710	6" IPS - 28" IPS 6" DIP - 20" DIP	3 blue blades, 2 screws, 1 driver

Ball Valves

AKHP Hot Tapping Ball Valve

Friatec Polyethylene Ball Valves have superior characteristics. As a result, Friatec is a leading supplier for ball valves in North America.

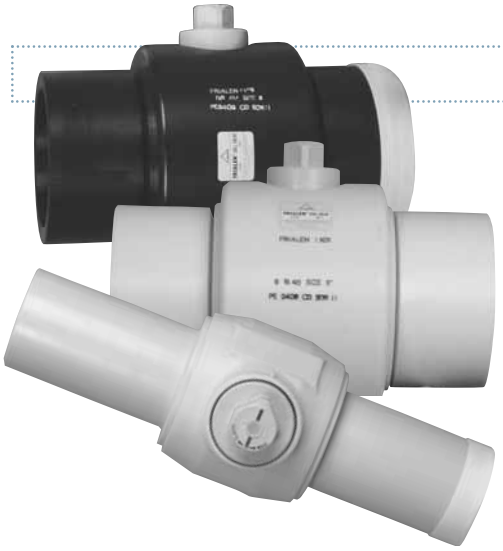
- Allows you to tap into a pressurized water or gas pipe without having to shut down the system

For SDR 21 and up, please contact IPEX at 864-286-8800

Part Number	Main size x Valve size (in)	
228202	4" IPS x 2" IPS	
228203	4" IPS x 3" IPS	
228204	6" IPS x 2" IPS	
228205	6" IPS x 3" IPS	
228206	8" IPS x 3" IPS	* requires Friatop pneumatic top loading tool
228207	10" IPS - 18" IPS x 2" IPS	* requires Friatop pneumatic top loading tool
228210	10" IPS - 18" IPS x 3" IPS	* requires Friatop pneumatic top loading tool
228150	FWAB driller kit complete	
228198	Valve extension 12" prefab (black)	
228199	Valve extension tube 39" (grey)	
228200	Valve extension tube 78" (grey)	
228201	Aluminum operator nut adapter	
228053 *	Friatop pneumatic top loading tool	

Safety fittings can be fused to all PE pipes within melt index groups 003-050 and SDR range 9-17.6.
Maximum hot tap pressure is 60 psi.

Ball Valves con't



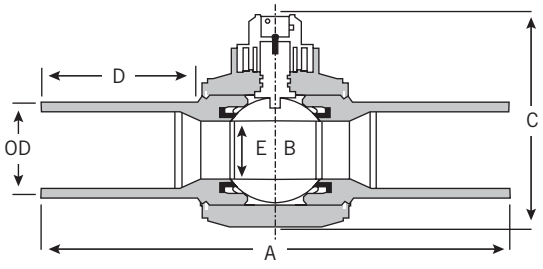
Polyethylene Ball Valve

Friatec polyethylene ball valves are available in 2406 medium or 3408 high density resins for gas and water distribution. As a material, polyethylene is completely inert – chemically and electrically. Therefore, it is not subject to corrosion, whatever the environment. It is plasto-elastic, so it will not crack, leak or break due to the normal compression, expansion, vibration or volume changes caused by terrain, traffic or temperature.

These polyethylene valves have proven their superior characteristics, particularly for endurance and the reliability of the valve seals.
The unique "ball-to-seat" seal design uses line pressure and an extra "angle of protection" to assure leak-proof operation. When the ball is in the closed position, the pressure helps maximize seating by forcing the ball against the downstream seal for a tight, leak-proof seal. The design provides "13 degrees" of seal area for dependable, leak-proof closure. This the largest sealing area available on any polyethylene ball valve.

Friatec valves operate smoothly with just a quarter turn for gas, water and industrial applications. Valve pipe ends are extra long for socket, butt and electrofusion installations.

- Unique valve stem design and heavy-duty construction provide easy operation and tight sealing
- Axial and Radial "O" Ring Seals provide double protection against leakage



- Operating nut with easy-to-read position indicator as well as a top-mounted deflector shield
- Floating PE Ball is prelubricated at the factory, so it will operate easily at low torque and provide long service life
- Extra-long pipe ends for easy fusion joining, to accommodate mechanical connectors, or to permit additional fusion procedures
- Flat bottom surface for easy alignment of the valve, thus assuring that the valve operating nut is centered properly
- Seal locked into body by a retainer ring for trouble-free performance

Nominal Valve Size (in)	Actual OD (in/m/m)	CV Value	Weight (lbs/kg)	Dimensions A (end to end)	B (c/l to top)	C (overall ht)	D (end length)	E (bore)	End Config-uration	Resin Designations SDR	Med Density (PE2406)	High Density (PE-3408)
1¼" IPS	1.66 42.16	23.9	1.65 .75	11.18 284	5.08 129	4.72 120	3.75 95	0.94 24	IPS	11.0	F1252411	F125341
2"	2⅜ 60.33	198	43.0 1.95	15.16 385	472 120	7.09 180	4.92 125	1.69 43	IPS	11.0	F22411	F2341
3"	3½ 88.90	406	6.18 4.70	14.4 365	5.80 148	93.50 240	3.54 90	2.60 67	IPS	11.0	F32411	F3341
4"	4½ 114.30	398	11.02 5.00	15.55 395	5.83 148	9.45 240	4.72 120	2.64 67	IPS	11.0	F42411	F43411
6"	6⅝ 168.30	660	29.73 13.50	18.11 460	7.24 184	12.60 320	5.12 130	3.86 98	IPS	11.0	F62411	F6341
8"	8⅝ 215.10	435	36.00 16.33	28.03 712	10.31 262	18.78 477	5.90 150	3.86 98	IPS	11.0	F82411	F8341

Friatec polyethylene shutoff valves meet or exceed all ANSI B16.40, ASTM D2513 and all DOY (part 192) requirements and are manufactured in accordance with ISO 9002, a total quality management system.

FRIATEC

Re-Round Clamps

Hydraulic Re-Round Clamp

If the end of a PE pipe is not perfectly round, the coupling will not fit over the end of the pipe. Friatec Re-Round Clamps solve this problem.

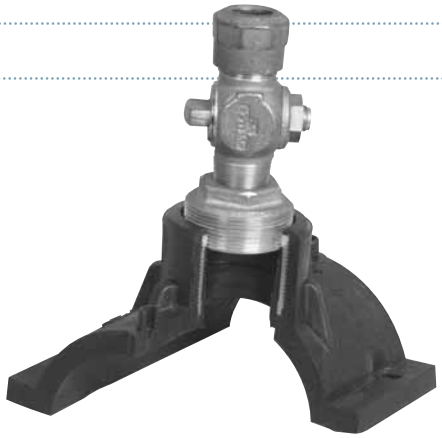
The clamping unit has four parts:

1 – Hydraulic clamping unit
2 – Component inserts

Part Number	Description - IPS (in)
228151	10" IPS master re-round clamp
228152	14" IPS master re-round clamp
228157	12" IPS re-round insert
228154	18" IPS master re-round clamp
228155	16" IPS re-round insert
228161	20" IPS master re-round clamp
228156	d630mm large master re-round clamp 22" - 24"
228160	22" IPS re-round insert
228159	24" IPS re-round insert
228217	28" IPS master re-round clamp

Part Number	Description - DIP (in)
228162	8" DIP re-round insert
228151	10" DIP master re-round insert
228153	12" DIP master re-round clamp
228163	12" DIP re-round insert
228155	16" DIP master re-round clamp
228164	16" DIP re-round insert
228161	18" DIP master re-round clamp (20" IPS master)
228165	20" DIP re-round insert (requires 228156 d630mm master re-round clamp)

Saddles



VA Electrofusion Service Saddle

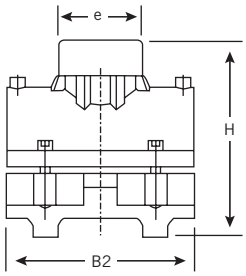
Short Designation	VA, VA-TL d1./d2...
Field of Application	Installation of service and branch pipes
Range of Application	Gas up to 100 psi and water up to 160 psi

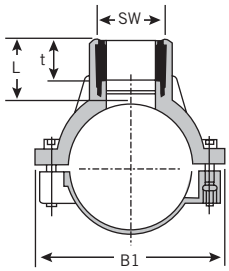
For higher pressure ranges contact IPEX at 864-286-8800

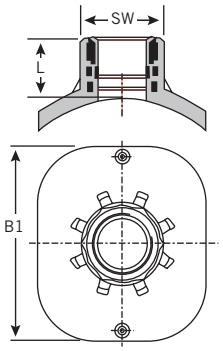
Friatec Molded Saddle Fittings may be clamped onto pipes up to SDR 9 and sealed using electrofusion. In addition to house connection fittings, Friatec Molded Saddle Fittings can also be used as branch saddles for polyethylene relining pipes (U-liners, C-liners, Roll-down)

Benefits include:

- universal compatibility with various diameters of polyethylene pipe from 3" up to 28"
- quick, easy and safe assembly







Nominal Pipe d1 (in)	Main Size d2	Nominal Outlet (in)	B1	B2	H	L	t	e
3"	IPS	2" SSPT	6.102	5.906	7.835	3.740	1.063	3.189
4"	IPS/DIP	2" SSPT	6.890	7.087	8.228	3.740	1.063	3.189
6"	IPS/DIP	2" SSPT	8.858	7.677	10.197	3.740	1.063	3.189
8" - TL*	IPS	2" SSPT	9.843	7.677	11.693	3.740	1.063	3.189
8" - TL*	DIP	2" SSPT	10.039	7.677	12.283	3.740	1.063	3.189
10" - 28" TL*	IPS	2" SSPT	7.874	--	--	3.543	--	--
10" - 20" TL*	DIP	2" SSPT	7.874	--	--	3.543	--	--

Safety fittings can be fused to all PE pipes within melt index groups 003-050 and SDR range 9.33 through 17.6.
* Friatop Pneumatic Top-loading tool required
Assemble nipple, bushing or corporation stop into saddle using red LOCTITE #262
(SSPT) = Straight Standard Pipe Thread. The use of tapered fittings for the outlet is not permitted

SA Branch Saddle

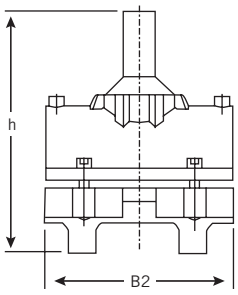
Short Designation SA, SA-TL d1./d2...

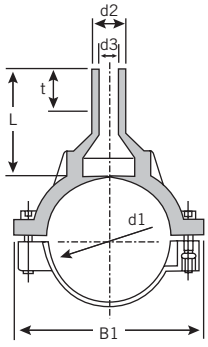
Field of Application Installation of service and branch pipes

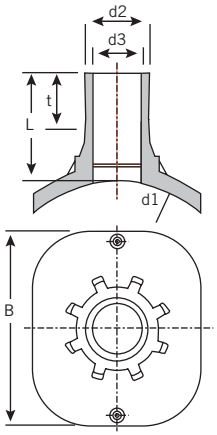
Range of Application Gas up to 100 psi and water up to 160 psi

For higher pressure ranges contact IPEX at 864-286-8800

SA Branch Saddles are available with either a 2" or 3" outlet







Nominal Pipe d1 (in)	Main Size d2	Nominal Outlet (in)	d3	L	h	t	B1	B2
3"	IPS	2 IPS	1.969	4.055	8.150	2.756	6.102	5.906
4"	IPS/DIP	2 IPS	1.929	4.291	9.173	2.205	6.890	7.087
4"	IPS/DIP	3 IPS	2.756	4.528	8.976	3.543	6.496	7.480
6"	IPS/DIP	2 IPS	1.850	4.291	11.142	2.205	8.858	7.677
6"	IPS/DIP	3 IPS	2.717	5.079	11.496	3.937	8.543	9.646
8" - TL *	IPS	2 IPS	1.850	4.291	12.244	2.205	9.843	7.677
8" - TL *	DIP	2 IPS	1.850	4.291	13.228	2.205	10.039	7.677
8" - TL *	DIP	3 IPS	2.402	4.567	13.780	3.150	10.039	7.677
10" - 24" - TL *	IPS	2 IPS	1.850	4.291	--	2.205	--	7.874
10" - 20" - TL *	DIP	2 IPS	1.850	4.291	--	2.205	--	7.874
10" - 24" - TL *	IPS	3 IPS	2.402	4.567	--	3.150	--	7.874
10" - 20" - TL *	DIP	3 IPS	2.402	4.567	--	3.150	--	7.874

* FriatopPneumatic Top-loading tool required

Repair Patches and Clamps

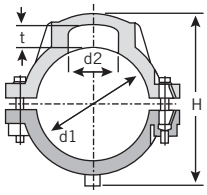
For Pipe Repairs up to 28"

Short Designation	VVS / VSC-TL d...
Field of Application	Repair of small damage leakage Reinforcement of "squeeze off" areas and areas with surface damage
Range of Application	Gas up to 100 psi and water up to 160 psi

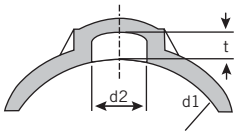
For higher pressure ranges contact IPEX at 864-286-8800

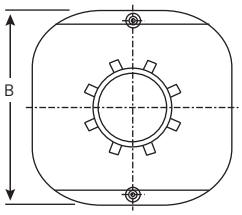
If a pipe is damaged, Friatec Repair Patches and Clamps are the quick reliable way to make the repair.

Friatec pipe repair systems are both simple to use and effective for pipe repair up to 28". Our repair systems make use of existing Friatec technology to seal a pipe puncture.



Nominal Pipe (in)	Main Size	d1	d2	H	t	Cold Zone Width (Center)
3"	IPS	3.500	1.969	5.827	0.827	2.953"/75mm
4"	IPS	4.500	1.969	6.614	0.827	3.071"/78mm
6"	IPS	6.625	1.969	8.583	0.827	3.346"/85mm
8"	IPS	8.625	1.969	10.157	0.827	3.268"/85mm
8"	DIP	9.050	1.969	11.142	0.827	3.268"/85mm





Nominal Pipe (in)	Main Size	d1	d2	t	B	Cold Zone Width (Center)
10" - 28"	IPS *	10.750 - 28.000	1.969	0.787	7.874	3.307"/83mm
10" - 20"	DIP *	11.100 - 21.600	1.969	0.787	7.874	3.307"/83mm

* Friatop Pneumatic Top-loading tool required

Reference materials from IPEX

PE Electrofusion Water Brochure and Gas Brochure

Ads for PE Electrofusion Water and Gas

PE Electrofusion Price List

PE Electrofusion CDR - Multimedia Presentation

Contact your IPEX representative for more information or visit www.ipexinc.com.

IPEX

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About IPEX

IPEX is a leading supplier of thermoplastic piping systems. We provide our customers with one of the world's largest and most comprehensive product lines. All IPEX products are backed by over 50 years of experience. With state-of-the-art manufacturing facilities and distribution centers across North America, the IPEX name is synonymous with quality and performance.

Our products and systems have been designed for a broad range of customers and markets. Contact us for information on:

- PE Electrofusion Systems for gas and water
- Municipal pressure and gravity piping systems
- Plumbing and mechanical piping systems
- Industrial process piping systems
- Electrical systems
- Telecommunications and utility piping systems
- Irrigation systems
- Radiant heating systems
- Industrial, plumbing and electrical cements
- PVC, CPVC, PP, FR-PVDF, ABS, PEX and PE pipe and fittings (1/4" to 48")

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