

## Pipe, Fittings and Pipe Joints for Underground Fire Service Mains

Underground fire service mains are made from many different materials. Cast iron, ductile iron, stainless steel pipe, Polyvinyl Chloride (PVC), Polyethylene (PE), and Fiber Reinforced Composite (FRP of Fiberglass) pipe and fittings are acceptable when they are FM Approved.

Installation of these products should conform to FM Global Property Loss Prevention Data Sheets.

### Ductile Iron Pipe and Fittings

Ductile iron pipe and fittings should be installed and anchored according to the manufacturer's instructions and FM Global Property Loss Prevention Data Sheets. For underground use only.

#### Ductile Iron Pipe and Fittings

Mechanical joint restrainers used to join plain-end ductile iron pipe to mechanical joint ended devices in underground mains or at the base only of a sprinkler riser.

<b>Product</b>	<b>Fitting Description</b>	<b>Nominal Pipe Size, in.</b>	<b>Rated Working Pressure psi (kPa)</b>	<b>Remarks</b>
Series 3000 StarGrip	Mechanical Joint Restrainer Gland	3, 4, 6, 8, 10, 12	175 (1205)	a
Series 4300 PVC Stargrip	Mechanical Joint Restrainer Gland	3, 4, 6, 8, 10, 12	200 (1375)	a
StarFlange Model 3200	Restrained Adapter Flange	3, 4, 6, 8, 10, 12	175 (1205)	b
RAC	Restrained Flange Adapter Fitting	3, 4, 6, 8, 10, 12	175 (1205)	-

#### Remarks:

a. Used to join plain ended ductile iron pipe to mechanical joint ended devices in underground mains or at the base only of a sprinkler riser.

b. Used to join plain ended ductile iron pipe to flange ended devices in underground mains or at the base only of a sprinkler riser.

<b>Fitting Description</b>	<b>Nominal Pipe Size, in.</b>	<b>Rated Working Pressure, psi (kPa)</b>
Blind Flange	3, 4, 6, 8, 10, 12	300 (2070)
90° Elbow Flanged	2, 2 1/2, 3, 4, 5, 6, 8, 10, 12	300 (2070)
90° Base Elbow, Flanged	3, 4, 6, 8, 10, 12	300 (2070)
90° Long Radius Elbow, Flanged	3, 4, 6, 8, 10, 12	300 (2070)
90° Reducing Elbow, Flanged	3 x 2 1/2, 4 x 3, 6 x 3, 6 x 4, 8 x 4, 8 x 6, 10 x 4.	300 (2070)

	10 x 6, 10 x 8, 12 x 6, 12 x 8, 12 x 10	
45° Elbow, Flanged	2, 2 1/2, 3, 4, 6, 8, 10, 12	300 (2070)
22 1/2 ° Elbow, Flanged	3, 4, 6, 8, 10, 12	300 (2070)
11 1/4 ° Elbow, Flanged	3, 4, 6, 8, 10, 12	300 (2070)
Equal Tee, Flanged	2, 2 1/2, 3, 4, 5, 6, 8, 10, 12	300 (2070)
Base Equal Tee, Flanged	3, 4, 6, 8, 10, 12	300 (2070)
Reducing Branch Tee, Flanged	3 x 2, 4 x 2, 4 x 3, 6 x 2, 6 x 3, 6 x 4, 8 x 3, 8 x 4, 8 x 6 10 x 4, 10 x 6, 10 x 8, 12 x 4, 12 x 6, 12 x 8, 12 x 10	300 (2070)
Reducing Run Tee, Flanged	6 x 4 x 6, 8 x 6 x 8	300 (2070)
Bullhead Tee, Flanged	6 x 6 x 8, 8 x 8 x 10, 10 x 10 x 12	300 (2070)
Reducing Run, Reducing Branch Tee, Flanged	6 x 4 x 4, 12 x 10 x 10	300 (2070)
Equal Cross, Flanged	3, 4, 6, 8, 10, 12	300 (2070)

Reducing Cross, Flanged	4 x 3, 6 x 3, 6 x 4, 8 x 3, 8 x 4, 8 x 6, 10 x 4, 10 x 6, 10 x 8, 12 x 4, 12 x 6, 12 x 8, 12 x 10	300 (2070)
Concentric Reducer, Flanged	4 x 3, 6 x 3, 6 x 4, 8 x 4, 8 x 6, 10 x 4, 10 x 6, 10 x 8, 12 x 4, 12 x 6, 12 x 8, 12 x 10	300 (2070)
Eccentric Reducer, Flanged	4 x 3, 6 x 3, 6 x 4, 8 x 4, 8 x 6, 10 x 4, 10 x 6, 10 x 8, 12 x 6, 12 x 8, 12 x 10	300 (2070)
90° Elbow, Compact, Flanged	3, 4, 6, 8, 10, 12	300 (2070)
45° Elbow, Compact, Flanged	4, 6, 8, 10, 12	300 (2070)
Equal Tee, Compact, Flanged	4, 6, 8, 10, 12	300 (2070)
Reducing Tee, Compact, Flanged	4 x 3, 6 x 4, 8 x 4, 8 x 6, 10 x 6, 10 x 8, 12 x 6, 12 x 8,	300 (2070)
Equal Cross, Compact, Flanged	8	300 (2070)

Concentric Reducer, Compact, Flanged	6 x 4, 8 x 6,	300 (2070)
AC9 Coupling	3, 4, 6, 8	350 (2415)
AC9 Coupling	10, 12	250 (1750)
AF4 Flange Adapters	3, 4	250 (1750)
AF4 Flange Adapters	6, 8, 10, 12	175 (1205)
AE1C 90° Elbow	3, 4, 6, 8	250 (1750)
AE1C 90° Elbow	10, 12	175 (1205)
AE2C 45° Elbow	3, 4, 6, 8	250 (1750)
AE2C 45° Elbow	10, 12	175 (1205)
AK1C End Cap	3, 4, 6, 8	250 (1750)
AK1C End Cap	10, 12	175 (1205)
AT1C Equal Tee	3, 4, 6, 8	250 (1750)
AT1C Equal Tee	10, 12	175 (1205)
AT2C Reducing Branch Tee	6 x 6 x 4, 8 x 8 x 6	250 (1750)
AT2C Reducing Branch Tee	10 x 10 x 8, 12 x 12 x 10	175 (1205)
AR1C Concentric Reducer	4 x 3, 6 x 4, 8 x 6	250 (1750)
AR1C Concentric Reducer	10 x 8, 12 x 10	175 (1205)
AR2C Eccentric Reducer	4 x 3, 6 x 4, 8 x 6	250 (1750)
AR2C Eccentric Reducer	10 x 8, 12 x 10	175 (1205)
AL1C Lateral	3, 4, 6, 8	250 (1725)

AL1C Lateral	10, 12	175 (1205)
AL2C Reducing Lateral	6 x 4, 8 x 6	250 (1725)
AL2C Reducing Lateral	10 x 6, 10 x 8, 12 x 8	175 (1205)
AE3C 22-1/2° Elbow	4, 6, 8	250 (1725)
AE3C 22-1/2° Elbow	10, 12	175 (1205)
AE5C Reducing 90° Elbow	4 x 3, 6 x 4, 8 x 6	250 (1725)
AE5C Reducing 90° Elbow	10 x 6, 10 x 8, 12 x 6, 12 x 8, 12 x 10	175 (1205)
AE6C Long Radius 90° Elbow	4, 6, 8	250 (1725)
AE6C Long Radius 90° Elbow	10, 12	175 (1205)
AX1C Cross	4, 6, 8	250 (1725)
AX1C Cross	10, 12	175 (1205)
AR1C Concentric Reducer	6 x 3, 8 x 4	250 (1725)
AR1C Concentric Reducer	10 x 4, 10 x 6, 12 x 6, 12 x 8	175 (1205)
AR2C Eccentric Reducer	8 x 4	250 (1725)
AR2C Eccentric Reducer	10 x 4, 10 x 6, 12 x 6, 12 x 8	175 (1205)
AT2C Reducing Tee	4 x 3, 8 x 4	250 (1725)
AT2C Reducing Tee	10 x 6, 12 x 6, 12 x 8	175 (1205)

<b><i>Product Designation</i></b>	<b><i>Fitting Description</i></b>	<b><i>Nominal Pipe Size, inch</i></b>	<b><i>Max Working Pressure, psi (kPa)</i></b>
MJB90	90° MJ Bend	3, 4, 6, 8, 10	350 (2415)
MJB90	90° MJ Bend	12	300 (2070)
MJB90	90° MJ Bend	14, 16	250 (1725)
MJB45	45° MJ Bend	3, 4, 6, 8, 10	350 (2415)
MJB45	45° MJ Bend	12	300 (2070)
MJB45	45° MJ Bend	14, 16	250 (1725)
MJB22	22.5° MJ Bend	3, 4, 6, 8, 10	350 (2415)
MJB22	22.5° MJ Bend	12	300 (2070)
MJB22	22.5° MJ Bend	14, 16	250 (1725)
MJB11	11.25° MJ Bend	3, 4, 6, 8, 10	350 (2415)
MJB11	11.25° MJ Bend	12	300 (2070)
MJB11	11.25° MJ Bend	14, 16	250 (1725)
MJBP90	90° MJxPE Bend	3, 4, 6, 8, 10	350 (2415)
MJBP90	90° MJxPE Bend	12	300 (2070)
MJBP90	90° MJxPE Bend	16	250 (1725)
MJBP45	45° MJxPE Bend	3, 4, 6, 8, 10	350 (2415)
MJBP45	45° MJxPE Bend	12	300 (2070)
MJBP45	45° MJxPE Bend	16	250 (1725)
MJBP22	22.5° MJxPE Bend	4, 6, 8	350 (2415)
MJBP22	22.5° MJxPE Bend	12	300 (2070)
MJBP11	11.25° MJxPE Bend	3, 4, 6, 8	350 (2415)

MJBP11	11.25° MJxPE Bend	12	300 (2070)
MJFB90	90° MJxFE Bend	3, 4, 6, 8, 10	350 (2415)
MJFB90	90° MJxFE Bend	12	300 (2070)
MJFB45	45° MJxFE Bend	3, 4, 6, 8, 10	350 (2415)
MJFB45	45° MJxFE Bend	12	300 (2070)
MJFB22	22.5° MJxFE Bend	4, 6, 8, 10	350 (2415)
MJFB22	22.5° MJxFE Bend	12	300 (2070)
MJFB11	11.25° MJxFE Bend	4, 6, 8, 10	350 (2415)
MJFB11	11.25° MJxFE Bend	12	300 (2070)
MJL	MJ Lateral	3 x 3 4 x 3, 4 6 x 4, 6 8 x 4, 6, 8 10 x 4, 6, 8, 10	350 (2415)
MJL	MJ Lateral	12 x 4, 6, 8, 10, 12	300 (2070)
MJL	MJ Lateral	14 x 14 16 x 6, 8, 16	250 (1725)
MJFA	MJxFE Adapter	3, 4, 6, 8, 10	350 (2415)
MJFA	MJxFE Adapter	12	300 (2070)
MJT	MJ Tee	3 x 3 4 x 3, 4 6 x 3, 4, 6 6 x 4 x 6 8 x 3, 4, 6, 8 8 x 6 x 6, 8 10 x 3, 4, 6, 8, 10	350 (2415)
MJT	MJ Tee	12 x 4, 6, 8, 10, 12	300
MJT	MJ Tee	14 x 6, 8, 10, 12, 14 16 x 6, 8, 10, 12, 16	250 (1725)
MJPT	MJ x PE x MJ Tee	8 x 8	350 (2415)
MJFT	MJ x FE Tee	3 x 3 4 x 3, 4 6 x 3, 4, 6 8 x 4, 6, 8 10 x 4, 6, 8, 10	350 (2415)

MJFT	MJ x FE Tee	12 x 4, 6, 8, 10, 12	300 (2070)
MJFT	MJ x FE Tee	14 x 6 16 x 6, 8, 12	250 (1725)
MJTH	MJ x Swivel Hydrant Tee (w/ Swivel Gland)	6 x 6 8 x 6, 8 10 x 6, 8	350 (2415)
MJTH	MJ x Swivel Hydrant Tee (w/ Swivel Gland)	12 x 6, 8	300 (2070)
MJTH	MJ x Swivel Hydrant Tee (w/ Swivel Gland)	14 x 6 16 x 6	250 (1725)
MJP	MJ Plug - Solid	3, 4, 6, 8, 10	350 (2415)
MJP	MJ Plug - Solid	12	300 (2070)
MJP	MJ Plug - Solid	14, 16	250 (1725)
MJSS	MJ Solid Sleeve Short	3, 4, 6, 8, 10	350 (2415)
MJSS	MJ Solid Sleeve Short	12	300 (2070)
MJSS	MJ Solid Sleeve Short	14, 16	250 (1725)
MJSL	MJ Solid Sleeve Long	3, 4, 6, 8, 10	350 (2415)
MJSL	MJ Solid Sleeve Long	12	300 (2070)
MJSL	MJ Solid Sleeve Long	14, 16	250 (1725)
MJSDP	MJ Dual Purpose Sleeve	4, 6, 8, 10	350 (2415)
MJSDP	MJ Dual Purpose Sleeve	12	300 (2070)
MJSDP	MJ Dual Purpose Sleeve	16	250 (1725)
MJC	MJ Cap - Solid	3, 4, 6, 8, 10	350 (2415)
MJC	MJ Cap - Solid	12	300 (2070)
MJC	MJ Cap - Solid	14, 16	250 (1725)
MJR	MJ Reducer	4 x 3 6 x 3, 4 8 x 4, 6 10 x 4, 6, 8	350 (2415)
MJR	MJ Reducer	12 x 4, 6, 8, 10	300 (2070)



MJR	MJ Reducer	14 x 6, 8, 10, 12 16 x 6, 8, 10, 12, 14	250 (1725)
MJRS	MJ Small End Bell Reducer	4 x 3 6 x 3, 4 8 x 4, 6 10 x 4, 6, 8	350 (2415)
MJRS	MJ Small End Bell Reducer	12 x 4, 6, 8, 10	300 (2070)
MJRS	MJ Small End Bell Reducer	14 x 6, 10, 12 16 x 6, 8, 10, 12, 14	250 (1725)
MJRL	MJ Large End Bell Reducer	4 x 3 6 x 3, 4 8 x 4, 6 10 x 4, 6, 8	350 (2415)
MJRL	MJ Large End Bell Reducer	12 x 4, 6, 8, 10	300 (2070)
MJRL	MJ Large End Bell Reducer	16 x 6, 8, 10, 12	250 (1725)
MJFR	MJ x FE Reducer	4 x 3 6 x 4 8 x 6	350 (2415)
MJFR	MJ x FE Reducer	12 x 8	300 (2070)
MJX	MJ Cross	3 x 3 4 x 3, 4 6 x 4, 6 8 x 4, 6, 8 10 x 4, 6, 8, 10	350 (2415)
MJX	MJ Cross	12 x 4, 6, 8, 10, 12	300 (2070)
MJX	MJ Cross	14, 6, 8, 14 16 x 6, 8, 10, 12, 16	250 (1725)
MJHA	MJ Swivel x Solid Hydrant Adapter (w/ Swivel Gland)	4 x 13 6 x 13, 18, 24, 36, 48 8 x 13	350 (2415)
MJHA	MJ Swivel x Solid Hydrant Adapter (w/ Swivel Gland)	12 x 13	300 (2070)
MJHB	Swivel x Swivel Hydrant Ell (w/ 2 Swivel Glands)	6	350 (2415)
MJSC	MJ x PE Cutting in Sleeve	4, 6, 8, 10	350 (2415)
MJSC	MJ x PE Cutting in Sleeve	12	300 (2070)
HBEX	Hydrant Bury Extension	6	350 (2415)
HBEX	Hydrant Bury Extension	12	300 (2070)

HBMJ	Hydrant Bury	42 x 6 48 x 6	350 (2415)
MJO	MJ x MJ Offset	4 x 6, 12, 18, 24 6 x 6, 12, 18, 24 8 x 6, 12, 18, 24 10 x 12, 18, 24	350 (2415)
MJO	MJ x MJ Offset	12 x 6, 12, 18, 24	300 (2070)
MJO	MJ x MJ Offset	16 x 12, 18	250 (1725)
MJOP	MJ x PE Offset	4 x 6, 12, 18, 24 6 x 6, 12, 18, 24 8 x 6, 12, 18, 24 10 x 6, 12, 18, 24	350 (2415)
MJOP	MJ x PE Offset	12 x 6, 12, 18, 24	300 (2070)
MJG	MJ Gland	3, 4, 6, 8, 10	350 (2415)
MJG	MJ Gland	12	300 (2070)
MJG	MJ Gland	14, 16	250 (1725)
MJGS	MJ Swivel Gland	4, 6, 8	350 (2415)
MJGS	MJ Swivel Gland	12	300 (2070)

<b>Product Designation</b>	<b>Fitting Description</b>	<b>Nominal Pipe Size, inch</b>	<b>Max Working Pressure, psi (kPa)</b>	<b>Remarks</b>
POB	90° Push-On Bend	4, 6, 8, 10, 12	350 (2415)	
POB	45° Push-On Bend	4, 6, 8, 10, 12	350 (2415)	
POB	22-1/2° Push-On Bend	4, 6, 8, 10, 12	350 (2415)	
POB	11-1/4° Push-On Bend	4, 6, 8, 10, 12	350 (2415)	
POT	Push-On Tee	4x4 6x4, 6x6 8x4, 8x6, 8x8 10x4, 10x6, 10x8, 10x10 12x4, 12x6, 12x8, 12x10, 12x12	350 (2415)	
POFB	90° Push-On x Flange Bend	4, 6, 8, 10, 12	350 (2415)	

POFT	Push-On x Flange Tee	4x4 6x4 8x4, 8x6 10x6, 10x8 12x8	350 (2415)	
POL	Push-On Lateral	6x4, 6x6	350 (2415)	
POL	Push-On Lateral	8x6, 8x8	250 (1725)	
POR	Push-On Reducer	6x4 8x4, 8x6 10x6, 10x8 12x6, 12x8	350 (2415)	
POC	Push-On Cap	4, 6, 8, 10, 12	350 (2415)	
POP	Push-On Plug	4, 6, 8, 10, 12	350 (2415)	
POX	Push-On Cross	6x6 8x6, 8x8 12x8	350 (2415)	
POPT	Push-On x Plain Tee	6x6 8x6 12x6	350 (2415)	
POBP	90° Push-On x Plain Bend	6	350 (2415)	
POB	90° Push-On Bend	4, 6, 8, 10, 12	350 (2415)	a
POBE4	90° Push-On Bend	4, 6, 8, 10, 12	350 (2415)	a
POB	45° Push-On Bend	4, 6, 8, 10, 12	350 (2415)	a
POBE4	45° Push-On Bend	4, 6, 8, 10, 12	350 (2415)	a
POB	22-1/2° Push-On Bend	4, 6, 8, 10, 12	350 (2415)	a
POB	11-1/4° Push-On Bend	4, 6, 8, 10, 12	350 (2415)	a
POBP	90° Push-On x Plain Bend	6	350 (2415)	a
POC	Push-On Cap	4, 6, 8, 10, 12	350 (2415)	a
POCTR	Push-On Cap	4, 6, 8, 10, 12	350 (2415)	a
POFA	Push-On Flange Adapter	4, 6, 8, 10, 12	350 (2415)	a
POFB	90° Push-On x Flange Bend	4, 6, 8, 10, 12	350 (2415)	a

POFB	45° Push-On x Flange Bend	4, 6, 8, 10, 12	350 (2415)	a
POFB	22-1/2° Push-On x Flange Bend	4, 6, 8, 10, 12	350 (2415)	a
POFB	11-1/4° Push-On x Flange Bend	4, 6, 8, 10, 12	350 (2415)	a
POFR	Push-On x Flange Reducer	6x4 8x4, 8x6 10x6, 10x8 12x6, 12x8	350 (2415)	a
POFT	Push-On x Flange Tee	4x4 6x4, 6x6 8x4, 8x6, 8x8 10x4, 10x6, 10x8, 10x10 12x4, 12x6, 12x8, 12x10, 12x12	350 (2415)	a
POL	Push-On Lateral	4x4 6x4, 6x6	350 (2415)	a
POL	Push-On Lateral	8x4, 8x6, 8x8	250 (1725)	a
POP	Push-On Plug	4, 6, 8, 10, 12	350 (2415)	a
POPT	Push-On x Plain Tee	6x6 8x6 12x6	350 (2415)	a
POR	Push-On Reducer	6x4 8x4, 8x6 10x6, 10x8 12x4, 12x6, 12x8, 12x10	350 (2415)	a
PORS	Push-On x Small End Bell Tee	6x4 8x4, 8x6 12x6, 12x8	350 (2415)	a
POTH	Push-On x Swivel Hydrant Tee	6x6 8x6 12x6	350 (2415)	a
POT	Push-On Tee	4x4 6x4, 6x6 8x4, 8x6, 8x8 10x4, 10x6, 10x8, 10x10 12x4, 12x6, 12x8, 12x10, 12x12	350 (2415)	a
POX	Push-On Cross	4x4 6x6 8x6, 8x8 10x8, 10x10 12x8, 12x10, 12x12	350 (2415)	a
POFFT	Push-On x Flange x Flange Tee	6x6 8x6, 8x8	350 (2415)	a

**Remarks:**

a. Tyton style bell.

<b>Company Name:</b>	Star Pipe Products Inc
<b>Company Address:</b>	4018 Westhollow Pkwy, Houston, Texas 77082, USA
<b>Company Website:</b>	<a href="http://starpipelineproducts.com">http://starpipelineproducts.com</a>
<b>New/Updated Product Listing:</b>	No
<b>Listing Country:</b>	United States of America
<b>Certification Type:</b>	FM Approved
<b>Primary Class of Work:</b>	1610-Pipe, Ftngs&Coupl, Undg, DI