

RED THREAD® II FM Piping

Fire Protection Systems



NOV Fiber Glass Systems offers **RED THREAD II FM** Factory Mutual Approved pipe and fittings for use in underground fire protection systems.

These specially labeled systems are available on request and have the physical and mechanical properties as described in this bulletin.

Significant features that make **RED THREAD II FM** Fire Protection piping systems ideal:

- Internal and external corrosion resistance.
- Improved flow characteristics compared to traditional materials.
- Light weight and ease of installation.
- Pressure ratings up to 200 psig.



Nominal Dimensional Data

Pipe Size (In.)	Part Number	O.D. (In.)	I.D. (In.)	Wall Thickness (In.)	Weight (Lbs./Ft.)
4	011040-073-3	4.562	4.364	.099	1.2
6	011060-120-3	6.678	6.408	.135	2.4
8	011080-126-3	8.642	8.356	.143	3.3
10	011100-156-3	10.731	10.357	.187	5.3
12	011120-185-3	12.710	12.278	.216	7.2
14	011140-220-3	14.567	14.029	.269	10.1
16	011160-250-3	16.637	16.031	.303	13.2

General Specifications

Nominal Pipe Size (In.)	Rated Working Pressure (psig)	Mill Test Pressure (psig)	Min. Bending Radius ⁽¹⁾ @ 75°F (Ft.)	Stiffness Factor @ 5% Deflection (In. ³ • Lbs.)/In. ²	Pipe Stiffness @ 5% Deflection (psi)
4	200	400	97	150	90
6	200	400	141	890	170
8	200	400	183	760	60
10	200	400	227	1,620	75
12	200	400	269	1,940	50
14	200	400	308	4,400	80
16	200	400	352	6,520	80

(1) Sharper bends should be eliminated and avoid stress concentration which could result in premature pipe failure under pressure conditions.

www.fgsipipe.com

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Little Rock, Arkansas 72209
Phone: 1 (501) 568-4010

25 S. Main Street
Sand Springs, Oklahoma 74063
1 (918) 245-6651

NOV Fiber Glass Systems

RED THREAD II FM piping systems should be installed according to instructions in Installation Handbook, **Manual No.F6000**.

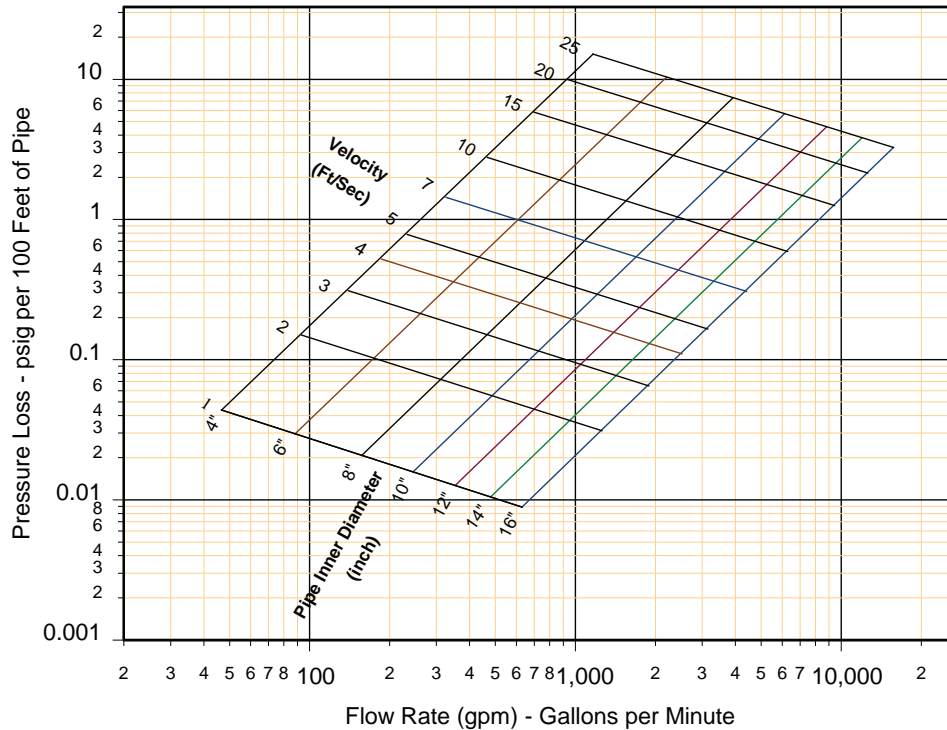
RED THREAD II FM piping for Factory Mutual Approved systems must be joined using **8000 series** adhesives. For installations that are installed in compliance with Factory Mutual procedures, anchoring (thrust blocking) must be in accordance with Factory Mutual installation standards.

Typical Physical Properties

Property	Value (psi) @ 75°F
Axial Tensile Strength, ASTM D-2105	10,300
Modulus of Elasticity in Tension, ASTM, D-2105	1.82 X 10 ⁶
Thermal Expansion-Axial, ASTM D696	0.88 x 10 ⁻⁵ in./in./°F
Absolute Surface Roughness	.00021 in.

FM Pipe Pressure Loss Curves for Water

Basis: Specific Gravity of 1.0 and Viscosity of 1.0 cps



Equivalent pipe footage to be added for fittings when calculating pressure loss for RED THREAD II FM Piping Systems[†]

Fitting	4"	6"	8"	10"	12"	14"	16"
90° Elbow	10	15	21	27	32	38	44
45° Elbow	5	7	10	13	16	18	22
Tee-Flow-thru Run	6	9	13	16	60	70	81
Tee-Flow-thru Branch	18	28	38	49	20	23	27
One Step Concentric Reducers ⁽²⁾	-	2	3	3	3	3	4
Two Step Concentric Reducers ⁽²⁾	-		3	4	4	5	8

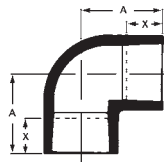
⁽²⁾ Note: The equivalent footages to be added for concentric reducers are expressed in terms of the smaller pipe size, i.e. a 6" x 4" concentric reducer is equivalent to 3.5 feet of 4" pipe.

[†] Based on fluid velocity of 10ft./sec.

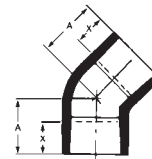
Fittings Dimensions

Available fittings are either molded (Type M) or filament wound (Type FW) as indicated in the tables below. The rated working pressure of all fittings is 200 psig.

90° Elbow
Bell x Bell



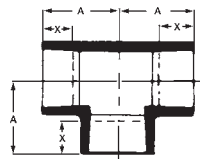
45° Elbow
Bell x Bell



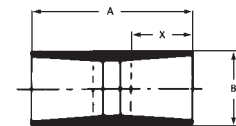
Nom. Pipe Size (In.)	Part Number	A (In.)	X ⁽³⁾ (In.)	Type
4	022040-360-3	5.125	1.500	M
6	022060-360-3	12.750	3.750	FW
8	022080-360-3	11.625	4.375	FW
10	022100-360-3	13.125	4.125	FW
12	022120-360-0	14.000	4.250	FW
14	022140-360-3	19.000	7.000	FW
16	022160-360-3	20.250	7.250	FW

Nom. Pipe Size (In.)	Part Number	A (In.)	X ⁽³⁾ (In.)	Type
4	022040-310-3	3.875	1.500	M
6	022060-310-3	7.500	3.750	FW
8	022080-310-3	8.125	4.375	FW
10	022100-310-3	8.625	4.125	FW
12	022120-310-3	9.500	4.250	FW
14	022140-310-3	12.500	7.000	FW
16	022160-310-3	13.250	7.250	FW

Tees
Belled



Sleeve Couplings
Bell x Bell



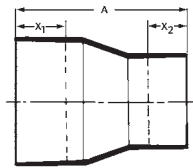
Nom. Pipe Size (In.)	Part Number	A (In.)	X ⁽³⁾ (In.)	Type
4	022040-410-3	5.125	1.500	M
6	022060-410-3	9.500	2.875	FW
8	022080-410-3	11.625	4.375	FW
10	022100-410-3	13.125	4.125	FW
12	022120-410-0	14.000	4.250	FW
14	022140-410-3	19.000	7.000	FW
16	022160-410-3	20.250	7.250	FW

Nom. Pipe Size (In.)	Part Number	A (In.)	B (In.)	X ⁽³⁾ (In.)	Type
4	012040-101-5	7.000	4.875	2.875	FW
6	012060-101-3	8.375	7.125	3.375	FW
8	012080-101-3	10.000	9.000	3.875	FW
10	012100-101-3	10.500	11.125	3.500	FW
12	012120-101-0	11.000	13.500	5.750	FW
14	012140-101-3	15.000	15.500	6.000	FW
16	012160-101-3	17.000	17.625	6.250	FW

⁽³⁾ X dimension is a nominal make-up dimension for drawing layout work only. Do not use for assembly dimensions.

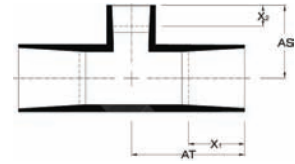
Concentric Reducers

Bell x Bell



Reducing Tees

Belled

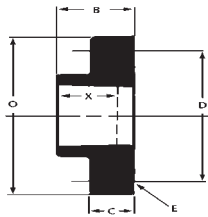


Nom. Pipe Size (In.)	Part Number	A (In.)	X ₁ (In.)	X ₂ ⁽³⁾ (In.)	Type
6 x 4	022060-236-3	9.000	2.375	1.500	M
8 x 4	022080-237-3	18.750	5.625	3.750	FW
8 x 6	022080-235-3	14.314	4.375	2.875	FW
10 x 6	022100-237-3	20.000	5.625	3.750	FW
10 x 8	022100-235-3	16.500	4.125	4.375	FW
12 x 8	022120-237-3	23.125	6.000	5.625	FW
12 x 10	022120-235-3	17.750	4.250	4.125	FW
14 x 10	022140-237-3	28.625	7.000		FW
14 x 12	022140-235-3	22.750	7.000		FW
16 x 12	022160-237-3	33.75	7.250		FW
16 x 14	022160-235-3	28.125	7.250		FW

Nom. Pipe Size (In.)	Part Number	AT (In.)	AS (In.)	X ₁ (In.)	X ₂ ⁽³⁾ (In.)	Type
8 x 6	022080-460-3	11.625	10.25	5.625	3.750	FW
10 x 6	022100-460-3	13.125	11.75	5.625	3.750	FW
10 x 8	022100-480-3	13.250	13.625	5.625	5.625	FW
12 x 6	022120-460-3	13.875	13.25	5.875	3.750	FW
12 x 8	022120-480-3	13.125	15.125	5.875	5.625	FW
12 x 10	022120-490-3	13.875	15.125	5.875	5.625	FW
14 x 6	022140-460-3	19.125	13.75	8.500	3.750	FW
14 x 8	022140-480-3	19.125	15.625	8.500	5.625	FW
14 x 10	022140-490-3	19.125	15.625	8.500	5.625	FW
14 x 12	022140-492-3	19.125	15.875	8.500	5.875	FW
16 x 6	022160-460-3	20.250	14.75	9.000	3.750	FW
16 x 8	022160-480-3	20.250	16.625	9.000	5.625	FW
16 x 10	022160-490-3	20.250	16.625	9.000	5.625	FW
16 x 12	022160-492-3	20.250	16.875	9.000	5.875	FW
16 x 14	022160-494-3	20.250	19.5	9.000	8.500	FW

Flanges

Bell End



Nom. Pipe Size (In.)	Part Number	B (In.)	C (In.)	D (In.)	E (In.)	O (In.)	X ⁽³⁾ (In.)	Req'd Torquing of Flanges ⁽⁴⁾		Type
								To Seal	Max.	
4	022040-172-3	2.625	1.375	7.500	.75 D-8 Holes	9.000	1.875	25	30	M
6	022060-172-3	3.000	1.500	9.500	.875 D-8 Holes	11.000	2.000	25	30	M
8	022080-172-3	4.000	1.750	11.750	.875 D-8 Holes	13.500	3.500	80	100	M
10	022100-172-3	4.750	2.000	14.000	1 D-12 Holes	16.000	3.500	80	100	FW
12	022120-172-0	5.000	2.250	17.000	1 D-12 Holes	19.000	3.875	80	100	FW
14	022140-172-3	3.125	2.500	18.750	1.125 D-12 Holes	20.750	3.000	80	100	FW
16	022160-172-3	5.000	4.375	21.250	1.125 D-12 Holes	23.375	3.000	80	100	FW

⁽³⁾ X dimension is a nominal make-up dimension for drawing layout work only. Do not use for assembly dimensions.

⁽⁴⁾ Use only with full-face 60-70 Durometer gaskets and flat-faced flanges.



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