

RED THREAD® II Performance Plus™ Piping

RED THREAD II Performance Plus pipe is an epoxy product that performs up to 450 psi steady pressure, at 210°F.

Nominal Dimensional Data

Pipe Size (In)	I.D.		O.D.		Wall Thickness		Weight		Capacity	
	(In)	(mm)	(In)	(mm)	(In)	(mm)	(Lbs/Ft)	(kg/m)	(Gal/Ft)	(Ft ³ /Ft)
8	8.36	212	8.75	222	0.195	5.0	4.5	6.7	2.85	0.38
10	10.36	263	10.83	275	0.235	6.0	6.6	9.8	4.38	0.59
12	12.28	312	12.82	326	0.270	6.9	9.1	13.5	6.15	0.82
14	14.03	356	14.68	373	0.325	8.3	12.5	18.6	8.03	1.07
16	16.03	407	16.77	426	0.370	9.4	16.1	24.0	10.48	1.40
18	17.82	453	18.64	473	0.410	10.4	20.0	29.8	12.96	1.73
20	19.83	504	20.70	526	0.435	11.0	23.5	35.0	16.04	2.15
24	23.83	605	24.86	631	0.515	13.1	33.5	49.9	23.17	3.10

Tolerances or maximum/minimum limits can be obtained from NOV Fiber Glass Systems.

Properties of Pipe Sections Based on Minimum Reinforced Walls

Pipe Size (In)	Minimum Reinforced End Area (In ²)	Minimum Reinforced Moment of Inertia (In ⁴)
8	4.6	41.6
10	6.8	94.8
12	9.4	183
14	12.8	329
16	16.5	552
18	20.5	846
20	24.1	1,230
24	34.3	2,530

Designation Codes per ASTM D2996

8"	RTRP-11AH1-2112
10"	RTRP-11AH1-2114
12"	RTRP-11AH1-2115
14" - 16"	RTRP-11AH1-2116
18" - 24"	RTRP-11AH1-2110

General Specifications

Pipe Size (In)	Min. Bending Radius ⁽¹⁾		External Pressure Maximum Ratings			
	Feet	Meter	psig		MPa	
			75°F	210°F	24°C	99°C
8	184	56	30	19	0.207	0.131
10	229	70	21	18	0.145	0.124
12	271	83	20	16	0.138	0.110
14	310	95	23	19	0.159	0.131
16	354	108	23	19	0.159	0.131
18	395	120	22	14	0.152	0.097
20	439	134	20	13	0.138	0.090
24	527	161	19	12	0.131	0.083

⁽¹⁾ Applicable for ambient temperatures greater than 60F (15.6C).

Maximum Support Spacing

Pipe Size (In)	Continuous Pipe Spans (Ft.) ^{(1) (2)}			
	Gas			75°F
	75°F	150°F	210°F	
8	22.1	21.0	19.9	35.0
10	24.4	23.2	22.0	39.0
12	26.5	25.1	23.9	42.5
14	28.6	27.2	25.8	45.4
16	30.5	28.9	27.5	48.5
18	32.2	30.5	29.0	51.1
20	33.6	31.8	30.2	53.9
24	36.7	34.8	33.0	49.1

⁽¹⁾ Consult factory for insulated support spacing

⁽²⁾ Maximum mid-span deflection 1/8" with a specific gravity of 1.0

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NOV Fiber Glass Systems

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Average Physical Properties				
Property	75°F	24°C	210°F	99°C
	psi	MPa	psi	MPa
Axial Tensile - ASTM D2105				
Ultimate Stress	10,300	71	7,700	53
Design Stress	2,575	17.8	1,925	13.3
Modulus of Elasticity	1.82 x 10 ⁶	12,548	1.18 x 10 ⁶	8,136
Poisson's Ratio $V_{a/h}$ ($V_{h/a}$)	0.35 (0.64)			
Axial Compression - ASTM D695				
Ultimate Stress	33,000	230	19,400	134
Design Stress	8,325	57.4	4,850	33.4
Modulus of Elasticity	1.26 x 10 ⁶	8,687	0.6 x 10 ⁶	4,137
Beam Bending - ASTM D2925				
Ultimate Stress	23,000	158.6	16,000	110
Design Stress ⁽¹⁾	2,875	19.8	2,000	13.8
Modulus of Elasticity (Long Term)	1.46 x 10 ⁶	10,000	0.96 x 10 ⁶	6,630
Hydrostatic Burst - ASTM D1599				
Ultimate Hoop Tensile Stress	34,000	234	43,500	300
Hydrostatic Hoop Design Stress ASTM D2992 - Procedure B				
20 year design life, LCL, (*) 200°F	14,140	97.5	13,315(*)	91.3(*)
Thermal Expansion Coefficient-ASTM D696				
	0.88 x 10 ⁻⁵ in/in/°F		1.58 x 10 ⁻⁵ mm/mm/°C	
Thermal Conductivity - ASTM D177				
	0.23 BTU/hr-ft-°F		0.4 W/m-°C	
Specific Gravity - ASTM D792				
			1.8	
Absolute Surface Roughness				
	0.00021 Inch		0.00053 mm	
Manning's "n"				
			0.009	


(1) Beam bending design stress is 1/8 of ultimate to allow for additional stresses (i.e. bending and pressure).

Note: 8"-16" product is rated to 300 psig cyclic per API Spec 15LR at 200°F.



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