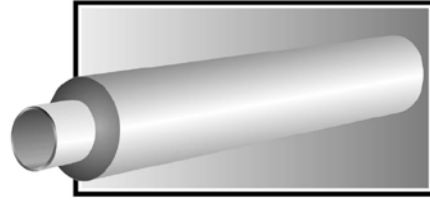


Submittal Data

Fiberglass Red Thread II Pipe



1) Product

Red Thread II pipe is an unlined, filament wound product using epoxy resin and fiberglass reinforcement. Its major advantages are longer service life, light weight and corrosion resistance.

Pipe and fittings are available in 50mm through 600mm (2" through 24") diameters with pressure ratings up to 21.09 kg/cm² (300 psig) cyclic and 31.6 kg/cm² (450 psig) static at a maximum operating temperature of 99°C (210°F). Red Thread II pipe is available in varying pressure ratings for 200mm–600mm (8"-24") diameters.

Red Thread II Performance Plus™ piping is available in 200mm through 400mm (8" through 16") sizes with a higher pressure rating 21.09kg/cm² cyclic / 31.6 kg/cm² static (300 psig cyclic 450 psig static.) Refer to Bulletin No. A1225.

2) Fittings

Compatible epoxy fittings are manufactured with the same chemical/temperature capabilities as the pipe. Depending on the particular part and size, fittings will be compression molded, contact molded, filament wound, or hand fabricated.

3) Joining Methods

T.A.B.™ (Threaded and Bonded) is the primary joining method for 50mm through 150mm (2" through 6") diameter pipe. Factory supplied ends have special profile, double-lead threads for quick, reliable assembly. Combined with specially-formulated epoxy adhesive, T.A.B. joints promote positive makeup and prevent backout during cure. For 200mm through 600mm (8" through 24") sizes, the bell and spigot joining method is used. Pipe is supplied with one end belled (integral bell or factory-bonded coupling) and one end tapered. Epoxy adhesive is used to secure the joint.

4) Field Tapering & Joining

Pipe can be cut and easily retapered for installation in the field using Smith Fibercast tapering tools. Power or manual tools are available for all diameters of pipe. Power-driven tools are recommended for larger pipe sizes and where many tapers are required. See Manual No. F6000, General Installation Instructions for Adhesive Bonded Fiberglass Piping Systems, for installation instructions and recommendations on the proper tools for your particular application.

General Specifications and Dimensional Data*

Nom. Pipe Size (in.)	Nominal I.D.		Nominal O.D.		Nominal Wall Thickness		Nominal Weight		Capacity				Max. Support Spacing ⁽²⁾ @ 75°F/24°C	
	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(lbs./Ft.)	(kg/m)	(ltrs./m)	(gal./ft.)	(cu.m/m)	(cu.ft.)	(ft.)	(m)
2	2.235	56.8	2.375	60.3	.070	1.78	0.4	0.60	2.48	0.20	-	.03	13.4	4.08
3	3.360	85.3	3.530	89.7	.100	2.54	0.6	1.19	5.71	0.46	-	.06	14.8	4.51
4	4.360	111	4.530	115	.085	2.16	1.0	1.49	9.68	0.78	0.01	.11	16.8	5.12
6	6.405	163	6.675	170	.135	3.43	2.4	3.57	20.47	1.67	0.02	.22	20.9	6.37
8	8.360	212	8.640	219	.140	3.56	3.2	4.76	35.39	2.85	0.03	.38	22.8	6.95
10	10.360	263	10.700	272	.170	4.32	4.8	7.14	54.39	4.38	0.05	.59	25.4	7.74
12	12.280	312	12.680	322	.200	5.08	6.7	10.0	76.38	6.15	0.07	.82	27.7	8.44
14	14.020	356	14.535	369	.258	6.55	11.0	16.4	99.60	8.02	0.09	1.07	30.2	9.20
16	16.020	407	16.605	422	.293	7.44	13.0	19.3	130.03	10.47	0.13	1.40	32.4	9.88
18	17.820	453	18.460	469	.318	8.08	15.7	23.4	160.96	12.96	0.16	1.73	33.6	10.24
20	19.830	504	20.480	520	.327	8.31	17.9	26.6	199.21	16.04	0.19	2.15	34.8	10.61
24	23.830	605	24.580	624	.375	9.53	24.7	36.8	287.77	23.17	0.28	3.10	37.7	11.49

- All values are nominal. Tolerances or maximum limits can be obtained from Smith Fibercast.

Pressure Ratings⁽²⁾

Size		Max. Internal Pressure (psig)		Maximum External Pressure (psig) ⁽³⁾		
		Cyclic	Static	@ 75°F	@ 150°F	@ Max. Rated Temp.
(in.)	(mm)	@ Max. Temp. 210°F	@ Max. Temp. 210°F			
2	50	300	450	85	80	75
3	80	300	450	36	34	32
4	100	300	450	34	30	27
6	150	300	450	22	20	19
8	200	150	225	17	13	11
10	250	150	225	17	13	11
12	300	150	225	17	13	11
14	350	150	225	17	13	11
16	400	150	225	17	13	11
18	450	150	225	9.8	7.5	6.5
20	500	150	225	7.8	6.0	5.2
24	600	150	225	6.9	5.3	3.5

- Based on a water-filled pipe and 1/2" mid-span deflection.
- Steady (static) pressure is created with use of a gear pump, turbine pump, centrifugal pump, or multiplex pump having 4 or more pistons.
- Vacuum Service: A full vacuum within the pipe is equivalent to 14.7 psig external pressure at sea level. Maximum external pressure ratings are based on test data obtained using ASTM D2924.

Pipe Lengths Available

Size		Random Length	
in.	mm	ft.	M
2-6	50-100	22-25	6.70-7.62
8-16	200-4--	19 or 39	5.79-11.89
18-24	450-600	39	11.89

* Thirty-foot pipe is available in truckload quantities on special order.

ASTM D2996 Designation Codes:

2" - 4"	RTRP - 11AF1-2111
6" - 8"	RTRP - 11AF1-2112
10"	RTRP - 11AF1-2114
12"	RTRP - 11AF1-2115
14" - 16"	RTRP - 11AF1-2116
18" - 24"	RTRP - 11AF1-2110

Thermal Expansion*

Change in Temp. (°F)	Pipe Change in Length (In./100 Ft.)
25	0.26
50	0.53
75	0.79
100	1.06
125	1.32
150	1.58
175	1.85

- Based on installation temperature of 75°F

Typical Physical Properties

Property	Value (psi)		Value (Mpa)			
	@ 75°F	@210°F	@24°C	@99°C		
Axial Tensile – ASTM D2105						
Ultimate Stress	10,300	7,700	71	53		
Design Stress	2,575	1,925	17.8	13.3		
Modules of Elasticity	1.82x10 ⁶	1.18x10 ⁶	12548	8136		
Poisson's Ratio	0.38		0.38			
Axial Compression – ASTM D695						
Ultimate Stress	33,300	19,400	230	134		
Design Stress	8,300	4,850	57.2	33.4		
Modules of Elasticity	1.26x10 ⁶	0.6x10 ⁶	8687	4137		
Beam Bending – ASTM D2925						
Ultimate Stress	23,300	16,000	158.6	110		
Design Stress ⁽³⁾	2,900	2,000	20.0	13.8		
Modules of Elasticity (long term)	2.18x10 ⁶	1.32x10 ⁶	15031	9101		
Hydrostatic Burst – ASTM D1599			234	300		
Ultimate Hoop Tensile Stress	34,000	43,500				
Hydrostatic Design – ASTM D2992	2"-3"	9,410	5,790	50-75mm	64.9	39.9
Procedure A – Hoop Tensile Stress Cyclic 150 x 10 ⁶ Cycles	4"-24"	13,040 ⁽⁴⁾	8,380	100-400mm	89.9 ⁽⁴⁾	57.8
Coefficient of Linear Thermal Expansion - ASTM D696	0.88x10 ⁻⁵ in./in./°F			1.58x10 ⁻⁵ mm/mm/°C		
Thermal Conductivity – ASTM D177	2.3 BTU/(ft. ²)(hr.)(°F)			0.14 W/(m)(°C)		
Specific Gravity – ASTM D792	1.8			1.8		
Flow Factor – SFP						
Hazen-Williams Coefficient	150			150		

* All values are nominal. Tolerances or maximum/minimum limits can be obtained from Urecon.

- (1) Steady (static) pressure is created with use of a gear pump, turbine pump, centrifugal pump, or multiplex pump having 4 or more pistons. For conditions involving unusual, intermittent, or erratic service (such as frequent daily shutdowns), consult Urecon.
- (2) Based on a water-filled pipe and 12mm (½") mid-span deflection.
- (3) Beam bending design stress is 1/8 of ultimate to account for combined stress (i.e. bending and pressure).
- (4) The hydrostatic design stress cyclic at 65°C (150°F) is 735 kg/cm² , (10,450 psi), per ASTM D2992, Procedure A. Based on complete data sets obtained at 65°C and 93°C (150°F and 200°F), the extrapolated value at 24°C and 99°C (75°F and 210°F) is 917 kg/cm² (13,040 psi) and 5.89kg./cm² (8,380 psi) respectively.

® Registered trademark of Varco International, Inc.

The information contained herein is general in nature and is not intended to express any warranty of any type whatsoever, nor shall any be implied.

CANADA

1800, av. Bédard
St-Lazare-de-Vaudreuil (Québec) J7T 2G4
Tél.: (450) 455-0961 Fax: (450) 455-0350
E-mail: sales.east@urecon.com

5010-43 Avenue
Calmar, Alberta T0C 0V0
Tel: (780) 985-3636 Fax: (780) 985-2466
E-mail: sales.west@urecon.com

WEB SITE: www.urecon.com

UNITED STATES

ISO 9001:
Registered 4185 South US1, Suite 102
Rockledge, Florida 32955
Tel.: (321) 638-2364 Fax: (321) 638-2371
E-mail: sales.usa@urecon.com

Local Representative

