

Applications

- Production Lines
- Injection Lines
- Disposal Line
- Transfer Lines
- Oil, Gas, Saltwater
- CO₂ and H₂S

Product Description

- **Sizes** - 1½ through 8 inches
- **Pressure** - Up to 2,500 psi (17.2 MPa)
- **Temperature** - up to 150°F (65.6°C) Max.
- **Resin System** - Anhydride Cured Epoxy
- **Reinforcement** - Premium Fiberglass
- **Joining Systems** - API 8rd Threaded
- **Joint Length** - 33 Feet (10 mts) Nominal Random Lengths of 20 to 33 Feet (6.1 to 10 mts)
- **Fittings** - A variety of filament wound API 5B threaded fittings are available. API 15HR design systems require higher rated fittings, refer to the STAR High Pressure Threaded Fittings Product Data sheet. Temperature interpolation is not recommended for fittings.

High Pressure Design

(≥ 500 psi)

- **Design Life** - 20 years at full rating
- **Design Temperature** - 150°F (65.6°C)
- **Wall Thickness** - Minimum
- **Hoop Stress** - Lower Confidence Limit (LCL) of Long Term Hydrostatic Strength according to ASTM D2992-B
- **100% Factory Hydro Test** - All sizes 1.5 times the Series pressure rating

Benefits

- Corrosion Control
- Reduced Installation Costs
- Improved Flow Efficiency
- Constant ID throughout Pressure Classes
- Reduced Paraffin & Scale Build-Up
- Reduced Maintenance Cost

Joining System

- **ACT** - Molded threads using a graphite, ceramic and epoxy composite for high performance applications.
- **PGT** - Typical ground threads produced with numerical controlled grinding equipment.
- All 1½" EUE 10rd and 2 ¾" - 4 ½" EUE 8rd API threads conform to API 5B Table 14, 14 Edition (L4 is minimum) and all 5 ½" - 9 ⅝" OD 8rd casing threads conform to API 5B Table 7, 14 Edition (L4 is minimum).

View of Joint Illustrations



ACT



PGT

Series 500⁽¹⁾

500 psi (3.4 MPa)

Pipe Size	Thread Size*	Product Code	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.**
			Inside Diameter		Outside Diameter		Minimum Wall Thickness		Pipe Weight								
			in	mm	in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	
3	3 ½ (A,P)	R0530	3.00	76.2	3.12	79.3	0.05	1.4	1.00	1.5	4.16	105.6	159	48.5	2400	1,089	B, Q, W
4	4 ½ (P)	R0537	3.75	95.3	3.90	99.1	0.07	1.7	1.32	2.0	5.16	130.9	196	59.7	3000	1,361	B
4	4 ½ (A,P)	R0539	3.91	99.3	4.07	103.3	0.07	1.8	1.29	1.9	5.15	130.7	204	62.2	3000	1,361	Q, W
5	5 ½ (A)	R0547	4.74	120.4	4.93	125.2	0.08	2.1	1.89	2.8	5.99	152.3	248	75.6	4800	2,177	W
6	6 ⅝ (P)	R0550	5.50	139.7	5.72	145.4	0.10	2.5	2.53	3.8	7.09	180.1	287	87.5	5900	2,676	B
6	6 ⅝ (A,P)	R0558	5.85	148.6	6.08	154.5	0.10	2.7	2.64	3.9	7.12	180.8	306	93.3	7400	3,357	Q, W
8	8 ⅝ (A,P)	R0575	7.50	190.5	7.80	198.1	0.13	3.4	4.40	6.5	9.20	233.7	392	119.5	11900	5,398	B, Q, W

Series 750⁽¹⁾

750 psi (5.2 MPa)

Pipe Size	Thread Size*	Product Code	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.**
			Inside Diameter		Outside Diameter		Minimum Wall Thickness		Pipe Weight								
			in	mm	in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	
2	2 ⅜ (A)	R0720	2.00	50.8	2.12	53.9	0.05	1.4	0.59	0.9	2.99	75.9	108	32.9	1600	726	Q
2 ½	2 ⅞ (A,P)	R0723	2.38	60.3	2.52	63.9	0.06	1.6	0.77	1.1	3.50	88.8	127	38.7	1900	862	W
2 ½	2 ⅞ (A)	R0724	2.43	61.7	2.58	65.5	0.07	1.7	0.70	1.0	3.48	88.5	130	39.6	1900	862	Q
3	3 ½ (A,P)	R0730	3.00	76.2	3.19	80.9	0.08	2.1	1.24	1.8	4.22	107.2	162	49.4	3300	1,497	B, Q, W
4	4 ½ (P)	R0737	3.75	95.3	3.98	101.0	0.10	2.6	1.63	2.4	5.22	132.5	199	60.7	4000	1,814	B, K
4	4 ½ (A,P)	R0739	3.91	99.3	4.14	105.3	0.11	2.7	1.88	2.8	5.26	133.7	210	64.0	5200	2,359	Q, W
5	5 ½ (A)	R0747	4.74	120.4	5.02	127.6	0.13	3.3	2.60	3.9	6.11	155.2	254	77.4	7400	3,357	W
6	6 ⅝ (P)	R0755	5.50	139.7	5.84	148.3	0.15	3.8	3.40	5.1	7.21	183.2	293	89.3	9000	4,082	B
6	6 ⅝ (A,P)	R0758	5.85	148.6	6.20	157.5	0.16	4.0	3.48	5.2	7.23	183.6	312	95.1	10500	4,763	Q, W
8	8 ⅝ (A,P)	R0775	7.50	190.5	7.96	202.3	0.20	5.1	5.80	8.6	9.39	238.5	400	121.9	17100	7,756	B, Q, W

Series 1000⁽¹⁾

1000 psi (6.9 MPa)

Pipe Size	Thread Size*	Product Code	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.**
			Inside Diameter		Outside Diameter		Min Reinforced Wall Thickness		Pipe Weight								
			in	mm	in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	
1 ½	1.90 (A)	R1015	1.50	38.1	1.62	41.3	0.05	1.4	0.44	0.7	2.49	63.3	83	25.3	1200	544	Q
2	2 ⅜ (A,P)	R1020	2.00	50.8	2.16	54.9	0.07	1.8	0.66	1.0	3.02	76.7	109	33.2	1700	771	B, Q, W
2 ½	2 ⅞ (A,P)	R1023	2.38	60.3	2.57	65.2	0.09	2.2	0.96	1.4	3.56	90.4	130	39.6	2600	1,179	W
2 ½	2 ⅞ (A)	R1024	2.43	61.7	2.63	66.9	0.09	2.2	0.89	1.3	3.54	89.9	133	40.5	2500	1,134	Q
3	3 ½ (A,P)	R1030	3.00	76.2	3.24	82.4	0.11	2.8	1.49	2.2	4.28	108.8	165	50.3	4200	1,905	B, Q, W
4	4 ½ (P)	R1037	3.75	95.3	4.05	102.9	0.14	3.5	2.24	3.3	5.34	135.6	205	62.5	6200	2,812	B, K
4	4 ½ (A,P)	R1039	3.91	99.3	4.23	107.3	0.14	3.6	2.19	3.3	5.32	135.2	213	64.9	6300	2,858	Q, W
5	5 ½ (A)	R1047	4.74	120.4	5.12	130.1	0.17	4.4	3.00	4.5	6.23	158.2	257	78.3	8800	3,992	W
6	6 ⅝ (P)	R1055	5.50	139.7	5.96	151.3	0.20	5.1	4.33	6.4	7.40	187.8	299	91.1	12300	5,579	B
6	6 ⅝ (A,P)	R1058	5.85	148.6	6.32	160.6	0.21	5.4	4.46	6.6	7.41	188.3	317	96.6	13500	6,123	Q, W
8	8 ⅝ (A,P)	R1075	7.50	190.5	8.11	205.9	0.27	6.9	7.51	11.2	9.66	245.4	408	124.4	23000	10,433	B, Q, W

Series 1250⁽¹⁾

1250 psi (8.6 MPa)

Pipe Size	Thread Size*	Product Code	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.**
			Inside Diameter		Outside Diameter		Min Reinforced Wall Thickness		Pipe Weight								
			in	mm	in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	
1 1/2	1.90 (A)	R1215	1.50	38.1	1.65	42.0	0.07	1.7	0.46	0.7	2.51	63.8	84	25.6	1200	544	Q, W
2	2 3/8 (A,P)	R1220	2.00	50.8	2.20	56.0	0.09	2.3	0.83	1.2	3.08	78.3	112	34.1	2300	1,043	B, Q, W
2 1/2	2 7/8 (A,P)	R1223	2.38	60.3	2.62	66.5	0.11	2.8	1.02	1.5	3.59	91.2	131	39.9	2800	1,270	W
2 1/2	2 7/8 (A)	R1224	2.43	61.7	2.68	68.2	0.11	2.8	1.07	1.6	3.59	91.2	135	41.1	3200	1,451	Q
3	3 1/2 (A,P)	R1230	3.00	76.2	3.31	84.0	0.14	3.5	1.75	2.6	4.35	110.4	168	51.2	5100	2,313	B, Q, W
4	4 1/2 (P)	R1237	3.75	95.3	4.13	105.0	0.17	4.4	2.58	3.8	5.46	138.7	208	63.4	7300	3,311	B, K
4	4 1/2 (A,P)	R1239	3.91	99.3	4.31	109.4	0.18	4.6	2.65	3.9	5.46	138.8	218	66.4	8100	3,674	Q, W
5	5 1/2 (A)	R1247	4.74	120.4	5.22	132.7	0.22	5.5	3.78	5.6	6.40	162.7	263	80.2	11500	5,216	W
6	6 3/8 (P)	R1255	5.50	139.7	6.08	154.4	0.25	6.4	5.33	7.9	7.64	194.1	305	93.0	15600	7,076	B
6	6 3/8 (A,P)	R1258	5.85	148.6	6.45	163.7	0.27	6.8	5.77	8.6	7.73	196.3	326	99.4	18200	8,255	Q, W
8	8 3/8 (A,P)	R1275	7.50	190.5	8.27	209.9	0.34	8.7	9.35	13.9	9.93	252.1	417	127.1	29300	13,290	B, Q, W

Series 1500⁽¹⁾

1500 psi (10.3 MPa)

Pipe Size	Thread Size*	Product Code	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.**
			Inside Diameter		Outside Diameter		Min Reinforced Wall Thickness		Pipe Weight								
			in	mm	in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	
1 1/2	1.90 (A)	R1515	1.50	38.1	1.69	42.8	0.08	2.1	0.59	0.9	2.57	65.4	87	26.5	1700	771	Q, W
2	2 3/8 (A,P)	R1520	2.00	50.8	2.25	57.1	0.11	2.8	1.01	1.5	3.15	80.0	115	35.1	3000	1,361	B, Q, W
2 1/2	2 7/8 (A,P)	R1523	2.38	60.3	2.67	67.8	0.13	3.4	1.18	1.8	3.68	93.5	133	40.5	3300	1,497	W
2 1/2	2 7/8 (A)	R1524	2.43	61.7	2.74	69.6	0.14	3.4	1.26	1.9	3.65	92.6	138	42.1	3800	1,724	Q
3	3 1/2 (A,P)	R1530	3.00	76.2	3.37	85.6	0.17	4.2	2.03	3.0	4.47	113.6	171	52.1	6000	2,722	B, Q, W
4	4 1/2 (P)	R1537	3.75	95.3	4.21	107.0	0.21	5.3	3.02	4.5	5.76	146.4	211	64.3	8500	3,856	B, K
4	4 1/2 (A,P)	R1539	3.91	99.3	4.39	111.6	0.22	5.5	3.26	4.9	5.63	142.9	223	68.0	10200	4,627	Q, W
5	5 1/2 (A)	R1547	4.74	120.4	5.33	135.3	0.26	6.7	4.59	6.8	6.58	167.2	269	82.0	14300	6,486	W
6	6 3/8 (A,P)	R1555	5.50	139.7	6.18	157.0	0.31	7.8	6.33	9.4	7.83	198.9	312	95.1	19100	8,664	B, Q, W
8	8 3/8 (A,P)	R1575	7.50	190.5	8.43	214.1	0.42	10.6	11.16	16.6	10.37	263.3	424	129.2	35000	15,876	B, Q, W

Series 1750⁽¹⁾

1750 psi (12.1 MPa)

Pipe Size	Thread Size*	Product Code	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.**
			Inside Diameter		Outside Diameter		Min Reinforced Wall Thickness		Pipe Weight								
			in	mm	in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	
1 1/2	1.90 (A)	R1715	1.50	38.1	1.72	43.8	0.10	2.5	0.68	1.0	2.60	66.1	89	27.1	2000	907	Q
2	2 3/8 (A,P)	R1720	2.00	50.8	2.29	58.2	0.13	3.3	1.05	1.6	3.15	80.0	117	35.7	3200	1,451	B, Q, W
2 1/2	2 7/8 (A,P)	R1723	2.38	60.3	2.72	69.1	0.16	4.0	1.40	2.1	3.80	96.6	137	41.8	4000	1,814	W
2 1/2	2 7/8 (A)	R1724	2.43	61.7	2.79	71.0	0.16	4.0	1.46	2.2	3.75	95.4	141	43.0	4500	2,041	Q
3	3 1/2 (A,P)	R1730	3.00	76.2	3.44	87.3	0.20	5.0	2.33	3.5	4.60	116.8	175	53.3	7200	3,266	B, Q, W
4	4 1/2 (P)	R1737	3.75	95.3	4.30	109.1	0.25	6.2	3.69	5.5	5.89	149.6	218	66.4	10800	4,899	B, K
4	4 1/2 (A,P)	R1739	3.91	99.3	4.48	113.8	0.26	6.5	3.61	5.4	5.80	147.4	226	68.9	11300	5,126	Q, W
5	5 1/2 (A)	R1747	4.74	120.4	5.43	137.9	0.31	7.9	5.37	8.0	6.99	177.5	273	83.2	16400	7,439	W
6	6 3/8 (A,P)	R1755	5.50	139.7	6.30	160.1	0.36	9.2	7.37	11.0	8.26	209.8	319	97.2	23100	10,478	B, Q, W

Series 2000⁽¹⁾

2000 psi (13.8 MPa)

Pipe Size	Thread Size*	Product Code	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.**
			Inside Diameter		Outside Diameter		Minimum Wall Thickness		Pipe Weight								
			in	mm	in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	
1 ½	1.90 (A)	R2015	1.50	38.1	1.75	44.5	0.11	2.9	0.73	1.1	2.65	67.4	90	27.4	2200	998	Q, W
2	2 ¾ (A,P)	R2020	2.00	50.8	2.34	59.4	0.15	3.8	1.23	1.8	3.28	83.4	119	36.3	3800	1,724	B, Q, W
2 ½	2 ⅞ (A,P)	R2023	2.38	60.3	2.77	70.5	0.18	4.6	1.62	2.4	3.87	98.3	140	42.7	4800	2,177	W
2 ½	2 ⅞ (A)	R2024	2.43	61.7	2.85	72.4	0.18	4.7	1.66	2.5	3.86	98.1	143	43.6	5200	2,359	Q
3	3 ½ (A,P)	R2030	3.00	76.2	3.51	89.0	0.23	5.8	2.63	3.9	4.73	120.1	178	54.3	8000	3,629	B, Q, W
4	4 ½ (P)	R2037	3.75	95.3	4.38	111.3	0.28	7.2	4.14	6.2	6.14	156.0	221	67.4	12100	5,488	B, K
4	4 ½ (A,P)	R2039	3.91	99.3	4.57	116.0	0.30	7.5	4.31	6.4	5.95	151.1	231	70.4	13500	6,123	Q, W
6	6 ⅞ (A)	R2055	5.50	139.7	6.43	163.2	0.42	10.6	8.47	12.6	8.52	216.5	324	98.8	26100	11,839	Q, W

Series 2250⁽¹⁾

2250 psi (15.5 MPa)

Pipe Size	Thread Size*	Product Code	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.**
			Inside Diameter		Outside Diameter		Min Reinforced Wall Thickness		Pipe Weight								
			in	mm	in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	
1 ½	1.90 (A)	R2215	1.50	38.1	1.80	45.6	0.13	3.3	0.81	1.2	2.71	68.8	92	28.0	2500	1,134	Q
2	2 ¾ (A)	R2220	2.00	50.8	2.39	60.8	0.17	4.4	1.40	2.1	3.37	85.5	122	37.2	4400	1,996	Q
2 ½	2 ⅞ (A,P)	R2223	2.38	60.3	2.83	71.9	0.20	5.2	1.86	2.8	3.99	101.5	143	43.6	5600	2,540	W
2 ½	2 ⅞ (A)	R2224	2.43	61.7	2.91	73.9	0.21	5.3	1.87	2.8	3.97	100.8	146	44.5	5900	2,676	Q
3	3 ½ (A,P)	R2230	3.00	76.2	3.57	90.8	0.26	6.6	2.95	4.4	4.86	123.4	181	55.2	9100	4,128	B, Q, W
4	4 ½ (P)	R2237	3.75	95.3	4.47	113.5	0.32	8.2	4.58	6.8	6.33	160.9	224	68.3	13400	6,078	K
4	4 ½ (A)	R2239	3.91	99.3	4.66	118.3	0.34	8.6	4.97	7.4	6.32	160.6	236	71.9	15700	7,121	Q

Series 2500⁽¹⁾

2500 psi (17.2 MPa)

Pipe Size	Thread Size*	Product Code	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.**
			Inside Diameter		Outside Diameter		Min Reinforced Wall Thickness		Pipe Weight								
			in	mm	in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	
1 ½	1.90 (A)	R2515	1.50	38.1	1.82	46.3	0.15	3.7	0.96	1.4	2.93	74.3	94	28.7	2900	1,315	Q, W
2	2 ¾ (A,P)	R2520	2.00	50.8	2.43	61.7	0.19	4.9	1.60	2.4	3.58	91.0	125	38.1	5000	2,268	B, Q, W
2 ½	2 ⅞ (A,P)	R2523	2.38	60.3	2.89	73.3	0.23	5.8	2.05	3.0	4.26	108.1	145	44.2	6100	2,767	W
2 ½	2 ⅞ (A)	R2524	2.43	61.7	2.97	75.4	0.24	6.0	2.12	3.2	4.24	107.7	149	45.4	6600	2,994	Q
3	3 ½ (A,P)	R2530	3.00	76.2	3.65	92.6	0.29	7.4	3.40	5.1	5.18	131.5	186	56.7	10600	4,808	B, Q, W
4	4 ½ (A,P)	R2537	3.75	95.3	4.56	115.8	0.36	9.2	5.35	8.0	6.53	165.9	231	70.4	16400	7,439	B, K, Q, W

NOTE: Additional pressure classes are available on request.**(1) Series Rating (API)** - Based on minimum wall thickness dimensions and API 15HR Edition 3, for a 20 year life expectancy. API Monogrammed pipe available on request.*** (A) ACT** - Advanced Composite Thread; **(P) PGT** - Precision Ground Thread. Consult FGS Sales Representative for thread type availability from manufacturing location.***Manufacturing Location**

B = Brazil K = Kingdom of Saudi Arabia (Dammam) Q = Qingdao W = Wichita

Typical SLT* Properties

Axial Modulus	psi	1.87 x 10 ⁶
	GPa	12.9
Hoop Modulus	psi	3.58 x 10 ⁶
	GPa	24.7
Shear Modulus	psi	1.6 x 10 ⁶
	GPa	11
Poisson's Ratio		
V _{ah}		0.36
V _{ha}		0.69
Coefficient of Thermal Expansion		
Axial	in/in/°F	11.0 x 10 ⁻⁶
	mm/mm/°C	19.8 x 10 ⁻⁶
Hoop	in/in/°F	6.2 x 10 ⁻⁶
	mm/mm/°C	11.2 x 10 ⁻⁶
Thermal Conductivity	BTU/ft·hr·°F	0.23
	W/m·°C	0.4
Specific Gravity		2
Absolute Roughness	in	0.00021
	mm	0.00533
Hazen-Williams Coefficient		150

* Ambient standard laboratory testing

Performance Ratings vs. Temperature

ASTM D 2992-B		Anhydride
150°F (65.6°C) 20 Year Life, LTHS (Long Term Hydrostatic Stress)	psi	23,768
	MPa	163.9
150°F (65.6°C) 20 Year Life, LCL (Lower Confidence Limit)	psi	21,400
	MPa	147.5

Joining System Information

Pipe Size	Thread Type	Pin Upset O.D.		Thread Length		Make Up Length Loss	
		in	mm	in	mm	in	mm
1 ½	1.90" EUE 10rd	2.15	54.6	2.36	59.9	2.06	52.4
2	2 ¾" EUE 8rd	2.60	66.0	2.94	74.7	2.56	65.1
2 ½	2 7/8" EUE 8rd	3.10	78.7	3.25	82.6	2.86	73.0
3	3 ½" EUE 8rd	3.75	95.3	3.50	88.9	3.13	79.4
4	4 ½" EUE 8rd	4.75	120.7	3.88	98.6	3.50	88.9
5	5 ½" OD 8rd	5.55	141.0	4.75	120.7	4.38	111.1
6	6 5/8" OD 8rd	6.65	168.9	4.25	108.0	3.88	98.4
8	8 5/8" OD 8rd	8.65	219.7	4.85	123.2	4.50	114.3
8	9 5/8" OD 8rd	9.65	245.1	5.13	130.3	4.75	120.7

API CONNECTIONS - All products are produced integral joint unless indicated (TC) Threaded and Coupled. Any order may include up to 15% threaded and coupled pipe. All 1 ½" EUE 10rd and 2 ¾" - 4 ½" EUE 8rd API threads conform to API 5B Table 14, 14 Edition (L4 is minimum) and all 5 ½" - 9 5/8" OD 8rd casing threads conform to API 5B Table 7, 14 Edition (L4 is minimum).

Pipe Capacity

Pipe Size	Inside Diameter		Capacity	
	in	mm	bbls/1,000 ft	(m3/km)
1 ½	1.50	38.1	2.20	1.1
2	2.00	50.8	3.90	2.0
2 ½	2.38	60.5	5.50	2.9
2 ½	2.43	61.7	5.70	3.0
3	3.00	76.2	8.70	4.5
4	3.75	95.3	13.70	7.1
4	3.91	99.3	14.80	7.7
5	4.74	120.4	21.80	11.4
6	5.50	139.7	29.40	15.3
6	5.85	148.6	33.20	17.3
8	7.50	190.5	54.60	28.5

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OG8010ENG October 2020

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15HR-0112 / 15HR-0115 / 15HR-0106 / 15HR-0004
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