

STAR™ Super Seal - API 15HR Design

(Product Data)



Applications

- Production Lines or Injection Lines
- Oil, Gas, Saltwater
- Transfer Lines or Disposal Lines
- CO₂ and Sour Services
- Pipeline Rehabilitation

Product Description

- **Sizes** - 2 through 12 inches
- **Pressure** - Up to 3,000 psi (20.7 MPa)
- **Temperature** -
 - Anhydride = up to 150°F (65.6°C) Max.
 - Aliphatic Amine = up to 200°F (93.3°C) Max.
 - Aromatic Amine = up to 212°F (100°C) Max.
- **Resin System** - Anhydride, Aliphatic Amine and Aromatic Amine Cured Epoxy
- **Reinforcement** - Premium Fiberglass
- **Joining Systems** - O-ring
- **Joint Length** - 30-37 feet (9-11 mts) nominal
- **Fittings** - A variety of filament wound threaded fittings are available

High Pressure Design

(API 15HR Design)

- **Design Life** - 20 years at full rating
- **Design Temperature** - 150° F (65.6°C)
- **Wall Thickness** - Minimum
- **Hoop Stress** - 95% Lower Confidence Limit (LCL) of Long-Term Hydrostatic Strength (LTHS), ASTM D2992-B
- **100% Factory Hydro Test** - All sizes 1.5 times the Series pressure rating

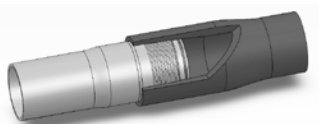
Benefits

- Corrosion Control
- Reduced Paraffin & Scale Build-Up
- Reduced Installation Costs
- Reduced Maintenance Cost
- Improved Flow Efficiency

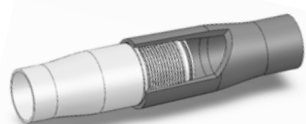
Joining System

- **CEN** - 4 thread-per-inch modified ACME thread with O-ring seal
- **SP** - 4 thread-per-inch round form thread with O-ring seal
- **SPH** - 4 thread-per-inch buttress thread with O-ring seal
- **SS** - 2 thread-per-inch mechanical joint with O-ring seal
- **SS HP** - 2 thread-per-inch mechanical joint with O-ring seal

View of Joint Illustrations



CEN



SP, SPH



SS, SS HP

Anhydride

Series 500

500 psi (3.4 MPa)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
2	50	CEN	2.22	56.4	0.06	1.5	0.07	1.8	0.66	1.0	3.09	78.5	120	36.6	1800	549	W
3	80	CEN	3.33	84.6	0.06	1.5	0.07	1.8	0.96	1.4	4.23	107.4	175	53.3	2500	762	W
6	150	SPH	6.10	154.9	0.11	2.8	0.12	3.0	3.22	4.8	7.61	193.3	319	97.2	8100	2469	W

Series 750

750 psi (5.2 MPa)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
3	80	SP	3.00	76.2	0.08	2.0	0.09	2.3	1.24	1.8	4.24	107.7	162	49.4	3200	975	W
4	100	SP	3.91	99.3	0.11	2.8	0.12	3.0	1.91	2.8	5.29	134.4	210	64.0	5200	1585	W
6	150	SPH	6.10	154.9	0.16	4.1	0.18	4.6	4.16	6.2	7.73	196.3	325	99.1	11500	3505	W

Series 1000

1000 psi (6.9 MPa)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
2	50	SP	1.95	49.5	0.07	1.8	0.08	2.0	0.66	1.0	3.02	76.7	106	32.3	1600	488	W
3	80	SP	3.00	76.2	0.11	2.8	0.12	3.0	1.48	2.2	4.30	109.2	165	50.3	4100	1250	W
4	100	SP	3.91	99.3	0.14	3.6	0.16	4.1	2.22	3.3	5.36	136.1	213	64.9	6300	1920	W
6	150	SPH	6.10	154.9	0.22	5.6	0.25	6.4	5.17	7.7	7.91	200.9	331	100.9	15000	4572	W
8	200	SS HP	7.49	190.2	0.28	7.2	0.31	8.0	7.60	11.3	9.57	243.1	406	123.8	21800	9888	W
10	250	SS HP	9.84	249.9	0.37	9.3	0.41	10.3	12.61	18.8	12.45	311.3	533	162.5	37100	16828	W
12	300	SS HP	11.81	300.0	0.44	11.2	0.49	12.4	17.62	26.2	14.59	370.6	639	194.8	53600	24313	W

Series 1250

1250 psi (8.6 MPa)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
2	50	SP	1.95	49.5	0.09	2.3	0.10	2.5	0.82	1.2	3.08	78.2	109	33.2	2200	671	W
3	80	SP	3.00	76.2	0.14	3.6	0.15	3.8	1.73	2.6	4.36	110.7	168	51.2	5000	1524	W
4	100	SP	3.91	99.3	0.18	4.6	0.20	5.1	2.61	3.9	5.49	139.4	216	65.8	7600	2316	W
6	150	SPH	6.10	154.9	0.28	7.1	0.31	7.9	6.33	9.4	8.27	210.1	338	103.0	18600	5669	W
8	200	SS HP	7.49	190.2	0.36	9.2	0.40	10.2	9.48	14.1	9.86	246.4	414	126.2	28200	12791	W
10	250	SS HP	9.84	249.9	0.47	12.0	0.53	13.4	15.87	23.6	12.75	318.8	545	166.1	48600	22045	W
12	300	SS HP	11.81	300.0	0.55	13.9	0.61	15.5	21.57	32.1	14.95	379.7	651	198.4	67200	30482	W

Anhydride - Cont'd

Series 1500

1500 psi (10.3 MPa)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
2	50	SP	1.95	49.5	0.11	2.8	0.12	3.0	0.88	1.3	3.12	79.2	110	33.5	2400	732	W
3	80	SP	3.00	76.2	0.17	4.3	0.19	4.8	2.01	3.0	4.48	113.8	171	52.1	5900	1798	W
4	100	SP	3.91	99.3	0.22	5.6	0.24	6.1	3.24	4.8	5.65	143.5	222	67.7	9700	2957	W
6	150	SPH	6.10	154.9	0.34	8.6	0.38	9.7	7.50	11.2	8.58	217.9	344	104.9	22300	6797	W
8	200	SS HP	7.49	190.2	0.42	10.6	0.46	11.8	10.83	16.1	10.1	252.4	421	128.3	32700	14832	W
10	250	SS HP	9.84	249.9	0.56	14.1	0.62	15.7	18.55	27.6	13.1	327.9	554	168.9	57600	26127	W
12	300	SS HP	11.81	300.0	0.66	16.7	0.73	18.5	26.87	40.0	15.3	388.9	666	203.0	84800	38465	W

Series 1750

1750 psi (12.1 MPa)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
2	50	SP	1.95	49.5	0.13	3.3	0.14	3.6	1.03	1.5	3.17	80.5	113	34.4	2900	884	W
3	80	SP	3.00	76.2	0.20	5.1	0.22	5.6	2.30	3.4	4.61	117.1	174	53.0	6800	2073	W
4	100	SPH	3.91	99.3	0.26	6.6	0.29	7.4	3.68	5.5	5.89	149.6	225	68.6	11000	3353	W
6	150	SPH	6.10	154.9	0.40	10.2	0.44	11.2	8.67	12.9	8.83	224.3	350	106.7	26200	7986	W
8	200	SS HP	7.49	190.2	0.50	12.7	0.55	13.9	12.79	19.0	10.3	258.5	430	131.1	39600	17962	W
10	250	SS HP	9.84	249.9	0.67	16.9	0.74	18.8	22.04	32.8	13.4	335.6	566	172.5	69800	31661	W
12	300	SS HP	11.81	300.0	0.78	19.8	0.86	21.8	30.88	45.9	15.7	398.5	679	207.0	99500	45132	W

Series 2000

2000 psi (13.8 MPa)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
2	50	SP	1.95	49.5	0.15	3.8	0.15	3.8	1.19	1.8	3.27	83.1	116	35.4	3500	1067	W
3	80	SP	3.00	76.2	0.23	5.8	0.23	5.8	2.59	3.9	4.73	120.1	177	53.9	7800	2377	W
4	100	SPH	3.91	99.3	0.30	7.6	0.30	7.6	4.40	6.5	6.07	154.2	231	70.4	13500	4115	W
6	150	SPH	6.10	154.9	0.46	11.7	0.46	11.7	9.88	14.7	9.08	230.6	356	108.5	30200	9205	W
8	200	SS HP	7.49	190.2	0.58	14.8	0.65	16.4	14.87	22.1	10.7	266.1	439	133.8	46700	21183	W
10	250	SS HP	9.84	249.9	0.75	19.1	0.84	21.2	24.92	37.1	13.8	345.0	576	175.6	79400	36015	W
12	300	SS HP	11.81	300.0	0.90	22.9	0.99	25.1	35.19	52.4	16.17	409.2	691	210.7	114700	52027	W

Anhydride - Cont'd

Series 2250

2250 psi (15.5 MPa)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
3	80	SP	3.00	76.2	0.26	6.6	0.26	6.6	2.90	4.3	4.86	123.4	180	54.9	8800	2682	W
4	100	SPH	3.91	99.3	0.34	8.6	0.34	8.6	4.91	7.3	6.44	163.6	234	71.3	14800	4511	W
6	150	SS HP	5.85	148.6	0.50	12.8	0.56	14.2	10.56	15.7	8.79	223.1	350	106.7	32700	9967	W
8	200	SS HP	7.49	190.2	0.67	16.9	0.74	18.8	16.99	25.3	10.9	272.4	448	136.6	54100	24539	W
10	250	SS HP	9.84	249.9	0.85	21.6	0.94	23.9	28.71	42.7	14.12	358.6	588	179.2	92500	41957	W

Series 2500

2500 psi (17.2 MPa)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
2	50	SP	1.95	49.5	0.19	4.8	0.19	4.8	1.49	2.2	3.56	90.4	120	36.6	4300	1311	W
3	80	SP	3.00	76.2	0.29	7.4	0.29	7.4	3.28	4.9	5.17	131.3	183	55.8	9900	3018	W
6	150	SS HP	5.85	148.6	0.57	14.4	0.63	16.0	11.78	17.5	9.04	229.6	356	108.5	36700	11186	W
8	200	SS HP	7.49	190.2	0.73	18.5	0.81	20.6	19.23	28.6	11.17	283.7	458	139.6	61700	27987	W

Series 2750

2750 psi (19.0 MPa)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
6	150	SS HP	5.85	148.6	0.63	16.0	0.70	17.8	13.04	19.4	9.30	236.2	363	110.6	40900	12466	W
8	200	SS HP	Consult Fiber Glass Systems Applications Engineer for availability														

Series 3000

3000 psi (20.7 MPa)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
6	150	SS HP	5.85	148.6	0.70	17.7	0.77	19.6	14.88	22.1	9.56	242.9	372	113.4	47300	14417	W

Aliphatic Amine

Series 500

500 psi (3.4 MPa) 150°F (65.6°C), 421 psi (2.9 MPa) @ 200°F (93.3°C)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
In	mm		In	mm	In	mm	In	mm	Lbs/ft	kg/m	In	mm	Ft	m	Lbs	kgs	
8	200	SS	7.74	196.6	0.16	4.1	0.18	4.6	5.04	7.5	9.71	246.6	407	124.1	14200	4328	S
10	250	SS	9.84	249.9	0.21	5.3	0.23	5.8	8.19	12.2	12.01	305.1	516	157.3	21600	6584	S
12	300	SS	11.81	300.0	0.25	6.4	0.28	7.1	11.67	17.4	14.25	362.0	620	189.0	31800	9693	S

Series 750

750 psi (5.2 MPa) @ 150°F (65.6°C), 632 psi (4.4 MPa) @ 200°F (93.3°C)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
In	mm		In	mm	In	mm	In	mm	Lbs/ft	kg/m	In	mm	Ft	m	Lbs	kgs	
8	200	SS	7.74	196.6	0.25	6.4	0.28	7.1	6.72	10.0	9.87	250.7	415	126.5	20000	6096	S
10	250	SS	9.84	249.9	0.32	8.1	0.35	8.9	11.37	16.9	12.25	311.2	528	160.9	32700	9967	S
12	300	SS	11.81	300.0	0.38	9.7	0.42	10.7	16.08	23.9	14.55	369.6	634	193.2	47000	14326	S

Series 1000

1000 psi (6.9 MPa) @ 150°F (65.6°C), 843psi (5.8 MPa) @ 200°F (93.3°C)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
In	mm		In	mm	In	mm	In	mm	Lbs/ft	kg/m	In	mm	Ft	m	Lbs	kgs	
8	200	SS	7.74	196.6	0.34	8.6	0.37	9.4	8.85	13.2	10.07	255.8	425	129.5	27300	8321	S
10	250	SS	9.84	249.9	0.43	10.9	0.48	12.2	14.91	22.2	12.80	325.1	540	164.6	43900	13381	S
12	300	SS	11.81	300.0	0.51	13.0	0.57	14.5	21.43	31.9	15.09	383.3	649	197.8	64600	19690	S

Aromatic Amine

Series 500

500 psi (3.4 MPa) @ 150°F (65.6°C), 421 psi (2.9 MPa) @ 200°F (93.3°C), 405 psi (2.8 MPa) @ 212°F (100°C)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
In	mm		In	mm	In	mm	In	mm	Lbs/ft	kg/m	In	mm	Ft	m	Lbs	kgs	
2	50	CEN	2.22	56.4	0.06	1.5	0.07	1.8	0.62	0.9	3.05	77.5	119	36.3	1600	488	W
3	80	CEN	3.33	84.6	0.07	1.8	0.08	2.0	1.14	1.7	4.24	107.7	176	53.6	3000	914	W
6	150	SPH	6.10	154.9	0.13	3.3	0.14	3.6	3.52	5.2	7.61	193.3	321	97.8	8700	2652	W

Series 750

750 psi (5.2 MPa) @ 150°F (65.6°C), 632 psi (4.4 MPa) @ 200°F (93.3°C), 608 psi (4.2 MPa) @ 212°F (100°C)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
In	mm		In	mm	In	mm	In	mm	Lbs/ft	kg/m	In	mm	Ft	m	Lbs	kgs	
3	80	SP	3.00	76.2	0.10	2.5	0.11	2.8	1.39	2.1	4.24	107.7	163	49.7	3600	1097	W
4	100	SP	3.91	99.3	0.13	3.3	0.14	3.6	2.08	3.1	5.29	134.4	211	64.3	5500	1676	W
6	150	SPH	6.10	154.9	0.20	5.1	0.22	5.6	4.79	7.1	7.76	197.1	328	100.0	13100	3993	W

Aromatic Amine - Cont'd

Series 1000

1000 psi (6.9 MPa) @ 150°F (65.6°C), 843 psi (5.8 MPa) @ 200°F (93.3°C), 810 psi (5.6 MPa) @ 212°F (100°C)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
2	50	SP	1.95	49.5	0.08	2.0	0.09	2.3	0.76	1.1	3.02	76.7	108	32.9	1900	579	W
3	80	SP	3.00	76.2	0.13	3.3	0.15	3.8	1.60	2.4	4.29	109.0	165	50.3	4300	1311	W
4	100	SP	3.91	99.3	0.17	4.3	0.19	4.8	2.63	3.9	5.38	136.7	216	65.8	7400	2256	W
6	150	SPH	6.10	154.9	0.27	6.9	0.30	7.6	6.17	9.2	8.02	203.7	336	102.4	17600	5364	W
8	200	SS HP	7.49	190.2	0.33	8.3	0.36	9.2	9.00	13.4	9.59	243.7	411	125.3	25700	11657	W
10	250	SS HP	9.84	249.9	0.43	10.9	0.48	12.1	15.07	22.4	12.42	315.5	541	164.9	44600	20230	W
12	300	SS HP	11.81	300.0	0.51	13.1	0.57	14.5	21.25	31.6	14.58	370.3	649	197.8	64100	29076	W

Series 1250

1250 psi (8.6 MPa) @ 150°F (65.6°C), 1054 psi (7.3 MPa) @ 200°F (93.3°C), 1013 psi (7.0 MPa) @ 212°F (100°C)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
2	50	SP	1.95	49.5	0.11	2.8	0.12	3.0	0.91	1.4	3.07	78.0	110	33.5	2400	732	W
3	80	SP	3.00	76.2	0.17	4.3	0.18	4.6	2.04	3.0	4.39	111.5	170	51.8	5800	1768	W
4	100	SP	3.91	99.3	0.22	5.6	0.24	6.1	3.21	4.8	5.53	140.5	221	67.4	9300	2835	W
6	150	SPH	6.10	154.9	0.34	8.6	0.37	9.4	7.56	11.2	8.27	210.1	343	104.5	22200	6767	W
8	200	SS HP	7.49	190.2	0.41	10.5	0.46	11.6	11.35	16.9	9.81	249.2	422	128.6	33800	15332	W
10	250	SS HP	9.84	249.9	0.54	13.8	0.60	15.3	19.00	28.3	12.74	323.5	555	169.2	58200	26399	W
12	300	SS HP	11.81	300.0	0.65	16.5	0.72	18.4	26.92	40.1	14.96	380.0	665	202.7	83300	37785	W

Series 1500

1500 psi (10.3 MPa) @ 150°F (65.6°C), 1264 psi (8.7 MPa) @ 200°F (93.3°C), 1215 psi (8.4 MPa) @ 212°F (100°C)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
2	50	SP	1.95	49.5	0.13	3.3	0.14	3.6	1.05	1.6	3.12	79.2	113	34.4	2900	884	W
3	80	SP	3.00	76.2	0.20	5.1	0.22	5.6	2.27	3.4	4.48	113.8	173	52.7	6500	1981	W
4	100	SPH	3.91	99.3	0.26	6.6	0.29	7.4	3.84	5.7	5.73	145.5	225	68.6	11200	3414	W
6	150	SPH	6.10	154.9	0.41	10.4	0.45	11.4	9.01	13.4	8.57	217.7	351	107.0	26800	8169	W
8	200	SS HP	7.49	190.2	0.50	12.7	0.56	14.2	13.29	19.8	10.09	256.3	430	131.1	40200	18235	W
10	250	SS HP	9.84	249.9	0.66	16.7	0.73	18.6	22.40	33.3	13.07	332.1	566	172.5	69700	31616	W
12	300	SS HP	Consult Fiber Glass Systems Applications Engineer for availability														

Aromatic Amine - Cont'd

Series 1750

1750 psi (12.1 MPa) @ 150°F (65.6°C), 1475 psi (10.2 MPa) @ 200°F (93.3°C), 1418 psi (9.8 MPa) @ 212°F (100°C)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
2	50	SP	1.95	49.5	0.15	3.8	0.17	4.3	1.20	1.8	3.17	80.5	115	35.1	3400	1036	W
3	80	SP	3.00	76.2	0.24	6.1	0.26	6.6	2.74	4.1	4.63	117.6	178	54.3	8100	2469	W
4	100	SPH	3.91	99.3	0.31	7.9	0.34	8.6	4.51	6.7	6.03	153.2	230	70.1	13200	4023	W
6	150	SPH	6.10	154.9	0.48	12.2	0.54	13.7	10.88	16.2	8.82	224.0	361	110.0	33100	10089	W
8	200	SS HP	7.49	190.2	0.59	15.0	0.66	16.7	15.87	23.6	10.37	263.4	442	134.7	48900	22181	W
10	250	SS HP	Consult Fiber Glass Systems Applications Engineer for availability														
12	300	SS HP	Consult Fiber Glass Systems Applications Engineer for availability														

Series 2000

2000 psi (13.8 MPa) @ 150° F (65.6°C), 1686 psi (11.6 MPa) @ 200°F (93.3°C), 1620 psi (11.2 MPa) @ 212°F (100°C)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
2	50	SP	1.95	49.5	0.18	4.6	0.20	5.1	1.36	2.0	3.26	82.8	118	36.0	3900	1189	W
3	80	SP	3.00	76.2	0.27	6.9	0.31	7.9	3.26	4.9	4.88	124.0	183	55.8	9700	2957	W
6	150	SS HP	5.85	148.6	0.54	13.6	0.60	15.1	11.39	16.9	8.58	218.0	353	107.6	34500	10516	W
8	200	SS HP	7.49	190.2	0.69	17.4	0.76	19.3	18.52	27.6	10.6	269.3	450	137.2	55900	25356	W
10	250	SS HP	Consult Fiber Glass Systems Applications Engineer for availability														

Series 2250

2250 psi (15.5 MPa) @ 150° F (65.6°C), 1897 psi (13.1 MPa) @ 200°F (93.3°C), 1823 psi (12.6 MPa) @ 212°F (100°C)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
6	150	SS HP	5.85	148.6	0.61	15.5	0.68	17.2	13.19	19.6	8.78	222.9	362	110.3	40700	12405	W
8	200	SS HP	Consult Fiber Glass Systems Applications Engineer for availability														

Series 2500

2500 psi (17.2 MPa) @ 150°F (65.6°C), 2107 (14.5 MPa) @ 200°F (93.3°C), 2025 (14.0 MPa) @ 212°F (100°C)

Pipe Size		Thread Type	Pipe Dimensions								Connection Diameter		Minimum Bending Radius		Short-Term Tensile Rating		Mfg. Loc.*
			Inside Diameter		Minimum Wall Thickness		Nominal Wall Thickness		Pipe Weight								
in	mm		in	mm	in	mm	in	mm	lbs/ft	kg/m	in	mm	ft	m	lbs	kgs	
6	150	SS HP	5.85	148.6	0.69	17.5	0.76	19.4	14.62	21.8	9.02	229.0	369	112.5	45300	13807	W

The standard pressure ratings are for non-cyclic, water, and hydrocarbon service. A service factor of 0.67 is required for gas service. If customer elects to use other safety factors, consult NOV Fiber Glass Systems. For other applications, consult NOV Fiber Glass Systems engineering.

All pipe products are factory hydrotested to 1.5 times maximum recommended operating pressure. Material selection is based on the desired operating temperature and chemical compatibility of NOV Fiber Glass Systems constituents with fluids.

*Manufacturing Location

W = Wichita S = San Antonio

Anhydride = up to 150°F (65.6°C)

Aliphatic Amine = up to 200°F (93.3°C)

Aromatic Amine = up to 212°F (100°C)

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	Aliphatic Amine	Aromatic Amine
150°F (65.6°C) 20 Year Life, LCL (Lower Confidence Limit)	psi	21,400	18,008	18,008
	MPa	147.5	124.0	124.0

Joining System Information

Pipe Size	Thread Type	Pin Upset O.D.		Thread Length		Make Up Length Loss		O-Ring Dash Number
		in	mm	in	mm	in	mm	
2	CEN	2.75	69.9	4.9	125.0	4.9	125.0	141
2	SP	2.73	69.3	4.5	114.3	4.5	114.3	226
3	CEN	3.94	100.1	4.9	125.0	4.9	125.0	152
3	SP	3.91	99.3	4.5	114.3	4.5	114.3	236
4	SP	4.91	124.7	4.5	114.3	4.5	114.3	244
4	SPH	5.02	127.5	6.0	152.4	6.0	152.4	346
6	SS HP	7.69	195.3	9.00	228.0	8.75	222.3	439
6	SPH	7.34	186.4	6.0	152.4	6.0	152.4	438
8	SS HP	9.38	238.3	9.0	228.6	8.8	222.3	445
8	SS	8.86	225.0	5.0	127.0	4.8	120.7	369
10	SS HP	11.95	303.5	9.0	228.6	8.8	222.3	450
10	SS	11.25	285.8	6.2	156.5	5.4	137.9	449
12	SS HP	13.88	352.6	9.0	228.6	8.8	222.3	454
12	SS	13.27	337.1	6.9	174.0	6.1	155.2	453

Pipe Capacity

Pipe Size	Inside Diameter		Capacity	
	in	mm	bbbls/1,000 ft	(m³/km)
2	1.95	49.5	3.7	1.9
2	2.22	56.4	4.8	2.5
3	3.33	84.6	10.8	5.6
3	3.00	76.2	8.7	4.6
4	3.91	99.3	14.9	7.7
6	5.85	148.6	33.2	17.3
6	6.10	154.9	36.1	18.9
8	7.49	190.2	54.5	28.4
8	7.74	196.6	58.2	30.4
10	9.84	249.9	94.1	49.1
12	11.81	300.0	135.5	70.7

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