

Conley Product Data

OUTSTANDING BENEFITS AND COST SAVINGS

Description



- Heavy duty filament wound piping for service up to 150 psi
- 60 mil double Nexus® reinforced corrosion barrier (inner liner)
- Premium aromatic amine cured product for operating temperatures up to 275°F
- Sizes available from 2" through 30"
- Complete line of filament wound fittings available
- In house fabrication facilities "From your blueprints to pipe assemblies"
- Color coding available
- Patented interlocking union for thermal expansion (US Patent #5449204 & 5368338)
- See Sch 30/30 Specification
- See Sch 30 Product Data

Typical Applications



- Waste water treatment
- Steel pickling
- Automotive
- Petrochemical
- Pharmaceutical
- Chemical processing
- Brine and brackish water
- Jet fuel
- Gasoline – Diesel – Fuel Oil
- Cooling water
- Odor control
- Industrial waste
- Food and beverages
- Bridge, roof and floor drains

Performance

- Excellent chemical resistance inside and outside to a variety of caustics and acids ~ See the chemical resistance chart for fluid services
- External UV/Corrosion barrier minimum 10 mil on all pipe and fittings
- 25 year guarantee against '*fiber blooming*' on all pipe and fittings
- Straight socket joining system (No expensive tapering tools required)

Specifications

- ASTM D2996 Filament-Wound "Fiberglass" Pipe
- ASTM D2310 Classification for Machine-Made "Fiberglass" Pipe
- ASTM D3567 Determining Dimensions of "Fiberglass" Pipe and Fittings
- ASTM D4024 Machine Made "Fiberglass" Flanges
- ASTM D5685 "Fiberglass" Pressure Pipe Fittings

Codes & Standards

- AWWA C950 Fiberglass Pressure Pipe Standards
- ASME B31.1 Power Piping Code
- ASME B31.3 Process Piping Code

Listings

- U.S. Federal Regulations FDA 21 CFR 175.300

Application Legislation

- 40 CFR 280. RCRA, Subtitle 1
- 40 CFR 264/5
- CERCLA "Superfund Act"



**Schedule 30/30
Pipe Dimensional Data*
and Pressure Ratings⁽¹⁾
from -50° to 275°F**

⁽¹⁾Static pressure rating; steady (stationary) pressure is created when using a gear pump, turbine pump, centrifugal pump, etc.
⁽²⁾Vacuum Service: A full vacuum within the pipe is equivalent to 14.7 psi external pressure at sea level. Contact Conley for higher external pressure ratings.



NOM SIZE	ANNULUS CLEAR (IN)	SPIDER MIN OPENING (IN)	ANNULUS VOLUME (GAL/FT)	COMBINED WEIGHT (LB/FT)	ANNULUS PRESS (PSI)	ANNULUS VAC PRESS (PSI) ⁽²⁾
2"/4"	0.92	0.7	0.51	2.50	150	24.1
2"/6"	1.92	1.7	1.33	3.68	150	13.8
3"/6"	1.33	1.1	1.10	4.33	150	13.8
3"/8"	2.33	2.0	2.24	5.29	150	6.1
4"/6"	0.83	0.6	0.82	4.76	150	13.8
4"/8"	1.83	1.6	1.96	5.72	150	6.1
6"/8"	0.81	0.6	1.14	6.90	150	6.1
6"/10"	1.81	1.6	2.61	9.31	150	10.2
8"/10"	0.81	0.6	1.47	10.27	150	10.2
8"/12"	1.94	1.7	3.51	11.66	100	5.7
10"/12"	0.88	0.6	2.04	14.07	100	5.7
10"/14"	1.88	1.6	4.21	16.06	100	3.6
12"/14"	0.76	0.5	2.16	17.45	100	3.6
12"/16"	1.76	1.5	4.65	18.79	100	2.5
14"/16"	0.74	0.5	2.49	20.77	100	2.5
14"/18"	1.74	1.5	5.30	23.77	100	4.2
16"/18"	0.73	0.5	2.82	25.11	100	4.2
16"/20"	1.74	1.5	5.96	26.63	100	3.1
18"/20"	0.70	0.4	3.14	29.63	100	3.1
18"/24"	2.70	2.0	10.40	36.12	100	3.5
20"/24"	1.70	1.5	7.26	37.63	100	3.5
20"/30"	4.83	2.0	21.22	47.58	100	3.1
24"/30"	2.77	2.0	13.96	54.07	100	3.1

*All values are nominal. Minimum wall thickness shall not be less than 87.5% of nominal wall thickness in accordance with ASTM D2996.

NOTES:

For carrier pipe dimensions, see Schedule 30 Pipe Dimensional Data Table
For containment pipe dimensions, see Schedule 30 Pipe Dimensional Data Table



Support Spans (FT)



NOM SIZE	CARRIER PIPE TEMPERATURE							
	75	100	125	150	175	200	225	250
2"/4"	15.5	15.5	15.5	15.5	15.4	15.4	15.4	15.4
2"/6"	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
3"/6"	18.4	18.4	18.4	18.4	18.4	18.3	18.3	18.3
3"/8"	21.7	21.7	21.7	21.7	21.7	21.6	21.6	21.6
4"/6"	17.5	17.5	17.5	17.5	17.4	17.4	17.3	17.3
4"/8"	20.4	20.4	20.4	20.4	20.4	20.4	20.3	20.3
6"/8"	19.0	19.0	19.0	19.0	19.0	18.8	18.7	18.7
6"/10"	22.9	22.9	22.9	22.9	22.8	22.8	22.7	22.7
8"/10"	21.5	21.5	21.5	21.5	21.5	21.3	21.2	21.2
8"/12"	24.0	24.0	24.0	24.0	23.9	23.8	23.7	23.7
10"/12"	23.4	23.4	23.4	23.4	23.3	23.1	22.9	22.8
10"/14"	25.0	25.0	25.0	25.0	24.9	24.8	24.6	24.6
12"/14"	24.3	24.3	24.3	24.3	24.1	23.9	23.7	23.6
12"/16"	25.7	25.7	25.7	25.7	25.6	25.4	25.3	25.2
14"/16"	25.1	25.1	25.1	25.1	25.0	24.7	24.5	24.4
14"/18"	27.7	27.7	27.7	27.7	27.6	27.4	27.3	27.2
16"/18"	27.1	27.1	27.1	27.1	26.9	26.7	26.5	26.4
16"/20"	28.4	28.4	28.4	28.4	28.3	28.1	28.0	27.9
18"/20"	28.6	28.6	28.6	28.6	28.4	28.1	27.8	27.7
18"/24"	32.1	32.1	32.1	32.1	32.0	31.8	31.6	31.5
20"/24"	31.4	31.4	31.4	31.4	31.3	31.0	30.8	30.7
20"/30"	36.6	36.6	36.6	36.6	36.5	36.3	36.2	36.2
24"/30"	35.3	35.3	35.3	35.3	35.2	35.0	34.7	34.6

NOTE: These spans are valid for the containment pipe operating at ambient temperatures.

Span multipliers for fluids of different specific gravities

FLUID SPECIFIC GRAVITY							
AIR	0.75	0.9	1.0	1.1	1.25	1.5	2.0
1.40	1.07	1.02	1.0	0.98	0.95	0.90	0.84
(MULTIPLIER FOR CORRECTED SPAN LENGTHS)							

Span multipliers for fluids at different temperatures

FLUID TEMPERATURE						
75°F	100°F	150°F	200°F	225°F	250°F	275°F
1.0	0.98	0.93	0.88	0.84	0.80	0.75
(MULTIPLIER FOR CORRECTED SPAN LENGTHS)						



**Anchor Loads Due to
Restrained Thermal
Expansion (LBS)**

NOM SIZE	TEMPERATURE CHANGE IN CONTAINMENT PIPE			
	1°F	25°F	50°F	75°F
2"/4"	296	1,311	2,369	3,427
2"/6"	323	2,008	3,763	5,518
3"/6"	553	2,238	3,993	5,748
3"/8"	575	2,805	5,127	7,449
4"/6"	705	2,390	4,145	5,900
4"/8"	728	2,957	5,279	7,601
6"/8"	1,146	3,375	5,697	8,019
6"/10"	1,203	4,799	8,544	12,290
8"/10"	1,543	5,139	8,884	12,630
8"/12"	1,576	5,961	10,530	15,098
10"/12"	2,430	6,816	11,384	15,952
10"/14"	2,477	7,987	13,727	19,467
12"/14"	2,971	8,481	14,221	19,961
12"/16"	3,002	9,272	15,803	22,333
14"/16"	3,705	9,975	16,506	23,036
14"/18"	3,776	11,748	20,053	28,357
16"/18"	4,251	12,223	20,527	28,832
16"/20"	4,286	13,118	22,318	31,518
18"/20"	5,351	14,182	23,382	32,582
18"/24"	5,504	18,017	31,052	44,086
20"/24"	6,041	18,554	31,589	44,623
20"/30"	6,276	24,431	43,343	62,254
24"/30"	8,577	26,732	45,644	64,555

NOTE: Thermal end loads on anchors are independent of the carrier pipe temperature. The loads are based on the change in temperature of the containment pipe plus 10% or the maximum load from the carrier pipe at 150°F with uninsulated containment pipe.

Typical Properties

TEMPERATURE	75°F	250°F	
PROPERTY	VALUE	VALUE	METHOD
AXIAL TENSILE STRENGTH	14,200 psi	10,650 psi	ASTM D2105
AXIAL TENSILE DESIGN STRENGTH	3,550 psi	2,660 psi	ASTM D2105
AXIAL MODULUS OF ELASTICITY	1.75 x 10 ⁶ psi	1.30 x 10 ⁶ psi	ASTM D2105
COMPRESSIVE STRENGTH	22,750 psi	17,000 psi	ASTM D695
COMPRESSIVE DESIGN STRENGTH	5,685 psi	4,250 psi	ASTM D695
COMPRESSION MODULUS	2.80 x 10 ⁶ psi	2.10 x 10 ⁶ psi	ASTM D695
POISSON'S RATIO $V_{a/h}$ ($V_{h/a}$)	0.33 (0.23)		*CONLEY METHOD #20
BEAM BENDING, ULTIMATE STRESS	30,000 psi	22,500 psi	CONLEY METHOD 8
BEAM BENDING, DESIGN STRESS ⁽¹⁾	3,750 psi	2,810 psi	CONLEY METHOD 8
SHEAR MODULUS	1.30 x 10 ⁶ psi	1.00 x 10 ⁶ psi	*CONLEY METHOD #9
HYDROSTATIC DESIGN BASIS	16,000 psi	8,000 psi	ASTM D2992 PROCEDURE B
HYDROSTATIC BURST (WALL STRESS @ 72°F)	32,000 psi	24,000 psi	ASTM D1599
CIRCUMFERENTIAL MODULUS OF ELASTICITY	2.50 x 10 ⁶ psi	1.87 x 10 ⁶ psi	ASTM D1599
FLEXURAL MODULUS OF ELASTICITY	1.75 x 10 ⁶ psi	1.30 x 10 ⁶ psi	ASTM 2790
COEFFICIENT OF LINEAR THERMAL EXPANSION	9.5 x 10 ⁻⁶ IN/IN-°F		CONLEY METHOD 3
COEFFICIENT OF THERMAL CONDUCTIVITY	2.9 BTU/HR-IN/FT ² -°F		CONLEY METHOD 16
SPECIFIC GRAVITY	1.85		
DENSITY	0.067 LB/CU IN		
DIELECTRIC STRENGTH	535 VOLTS/MIL		ASTM D149
DEGREE OF CURE	175°C (347°F) Tg		DMA
HEAT DEFLECTION TEMPERATURE	150°C (302°F)		ISO 75-3
FLOW FACTOR (HAZEN-WILLIAMS)	150		
SURFACE ROUGHNESS	1.7 X 10 ⁻⁵ FEET		
MANNING'S "n"	0.009 INCH		

⁽¹⁾Beam bending design stress is 1/8 of ultimate to allow for combined stress (bending and pressure)



ISO 9001:2008
CERTIFIED
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