

TUBING Technical Specifications

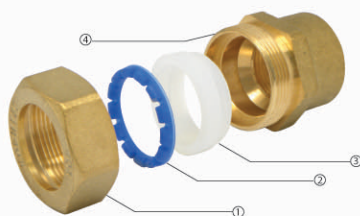
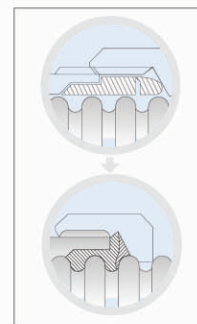
CSST Material:	Stainless Steel 304 (ASTM A 240)		
Insulation:	High Density EPDM		
Coating:	UVA/UVB		
Sizes (Inner Diameter):	1/2" (0.55 in) 3/4" (0.83 in) 1" (1.03 in)		
CSST Thickness:	0.012"		
Insulation Thickness:	1/2" 3/4" 1"		
Lengths:	50 ft.		
Operating Temperature:	300°F @ 147 psi		
Intermittent Hi-Temp Exposure Limit:	350°F		
Insulation Exteneral Exposure Limit:	-74°F ~ 300°F		
Maximum Working Pressure:	1/2": 220 psi 3/4": 176 1": 147 psi		

Minimum Bend Radius	
Size	Recommended Min.
1/2"	3 inches
3/4"	3 inches
1"	5 inches

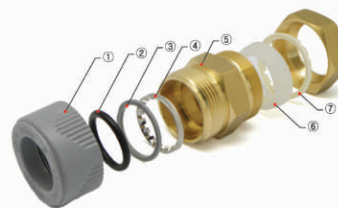
Maximum Surface Temperature
300°F
Minimum Surface Temperature
-74°F

FITTINGS Technical Specifications

Fitting Nut & Body:	Brass UNS C37700 (ASTM DS-561)
Sealing Ring:	Silicone
Isolation Ring:	Nylon 66 / Fiberglass High-Temperature Gasket
Push-Fit Fitting Body:	Brass UNS C37700 (ASTM DS-561)
Push-Fit Sealing Ring:	EPDM
Push-Fit Isolation Ring:	Nylon 66 / Fiberglass High-Temperature Gasket
Push-Fit Nut:	Nylon 66
Push-Fit Grab Ring:	Stainless Steel 304
Burst Pressure:	1420 psi
Intermittent Hi-Temp Exposure Limit:	428°F



1. Fitting Nut
2. Isolation Ring
3. Sealing Ring
4. Fitting Body



1. Push-Fit Nut
2. Push-Fit Sealing Ring
3. Push-Fit Isolation Ring
4. Push-Fit Grab Ring
5. Fitting Body
6. Sealing Ring
7. Isolation Ring

FRICION LOSS DATA

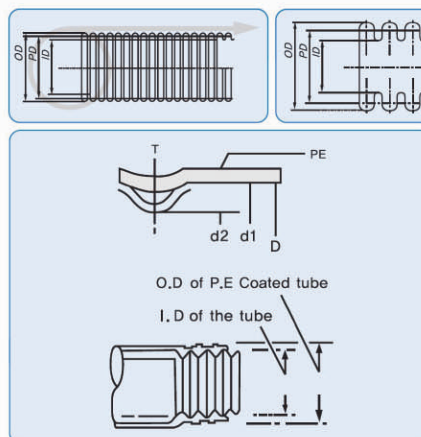
Friction loss of tubing calculated in pounds per square inch (PSI) of pressure lost per foot of tubing with a friction constant = 70 and no bends. Sharp bends are calculated the same as for fittings and gradual bends calculated the same as straight pipe.

GPM	Nominal Size (ID)			
	1/2"	3/4"	1"	1-1/4"
1	0.032	0.004	0.002	0.001
2	0.114	0.015	0.005	0.002
3	0.241	0.032	0.012	0.004
4	0.41	0.055	0.02	0.008
5	0.619	0.083	0.03	0.011
6	0.867	0.117	0.042	0.016
7	1.153	0.153	0.055	0.021
8	1.476	0.199	0.071	0.027
9	1.836	0.248	0.088	0.034
10	2.231	0.301	0.107	0.041

1. Table is based on the *Hazen-Williams formula.
2. Fluid velocities in excess of 5-8 ft/sec are not recommended.
3. Friction loss values shown are for the flow rates that do not exceed a velocity of 8 ft/sec.

$$*P = 4.52Q^{1.85} / C^{1.85} D^{4.87}$$

Where: P = friction loss, psi per linear foot
 Q = flow, gpm
 D = average I.D., in inches
 C = 70, friction constant



PRODUCT STANDARDS AND LISTINGS

NSF / ANSI 61	Drinking Water System Components - Health Effects. Tested and certified by IAPMO.
ASTM A 312 / 312 M	Specification for seamless, welded, and heavily cold worked austenitic stainless steel pipes.
ASME B1.20.1	NPT pipe threads, general purpose.
IAPMO IGC-233	<ol style="list-style-type: none"> 1. Materials 2. Performance 3. Marking and Identification

TESTING (of CSST)

Hydrostatic Test	Filled with water and internal pressure incured to 220 ± 7 psi, at a temperature of $68^{\circ}\text{F} \pm 5^{\circ}\text{F}$ for a period of 5 minutes.
Hydrostatic Burst Test	At 68°F filled with water and the internal pressure increased to 588 ± 7 psi, at a temperature of $68^{\circ}\text{F} \pm 5^{\circ}\text{F}$ for a period of 5 minutes.
Bending Test	Bending motion being applied uniformly at the rate of 5-6 cycles per minute.
Hydraulic Shock Test	Subjected to a hydraulic shock for 2,000 cycles at $68^{\circ}\text{F} \pm 5^{\circ}\text{F}$.
Vibration Test	Filled with water. The amplitude of vibration was 0.2 inches and the frequency was 25 Hz for 3 hours.
Flattening Test	Pressed to 2/3 D height of the outer diameter until the tube was flat.
Impact Test	An impact force was applied of 9.76 to 15.19 lb/ft to varied sizes of fittings using a hammer.
Pressure Test	Pressure rating at 212°F of 147 psi.
Toxicity Test	Water outflow was tested in hot and cold conditions with a PH range of 5-10.



1371 Santa Fe Dr.
Tustin, CA 92780

(888) 577-8999
info@easyflexusa.com



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Job Name:	Job Location:
Submitted By:	Date:
Approved By:	Date: