

TYGOTHANE® Precision Polyurethane Tubing



With close dimensional tolerances and outstanding elasticity, Tygothane® Precision Polyurethane Tubing provides worry-free attachment to fittings.

Exceptional Properties

Our rigidly controlled manufacturing process makes Tygothane® Precision Polyurethane Tubing the flexible polyurethane tubing that has consistently tight tolerances from lot to lot. Made of tough ester-based polyurethane, Tygothane® Precision Polyurethane Tubing's clarity, high tear strength and excellent abrasion resistance make it ideal for many applications, including fuel and lubricant lines, pneumatic lines, abrasive product transfer and cable jacketing. It also offers exceptional resistance to oils, greases, fuels and many chemicals.

Able to withstand rugged daily use, Tygothane® Precision Polyurethane Tubing resists weathering and can be safely used in temperatures ranging from -100°F (-73°C) to 200°F (93°C). It meets FDA 21 CFR, 177.1680 and 177.2600 criteria for food and beverage use and is also available in ether-based and medical-grade formulations.

Excellent Stability Even When Exposed to Oils, Greases and Fuels

While many rubber and plastic materials exhibit resistance to certain solvents, oils and chemicals, Tygothane® tubing will resist a much wider range of substances.

Plasticizer extraction leading to embrittlement is one of the most frequent causes of failure when flexible tubings are exposed to harsh chemicals. Tygothane® Precision Polyurethane Tubing is plasticizer-free and remains flexible even when cycled through temperature extremes.

Easy and Secure Attachment to Fittings

Tygothane® Precision Polyurethane Tubing's precision tolerances and high elasticity provide the user with an easy, worry-free attachment to fittings.

FORMULATION C-210-A

For polyurethane applications requiring tight dimensional tolerances

Features/Benefits

- Consistently tight dimensional tolerances
- Excellent abrasion and tear resistance
- Excellent resistance to oils, greases and fuels
- Retains flexibility in sub-zero environments
- High tear resistance
- Meets FDA criteria

Typical Applications

- Food and cosmetic processing
- Abrasive and viscous slurry transfer
- Lubrication and degreaser dispensing
- Pellet and powder transfer
- Pneumatic sensory devices
- Instrumentation control lines
- Coolant recovery systems

Tygothane® C-210-A Manufactured Sizes and Pressures

Saint-Gobain Part Number	I.D. (inches)	O.D. (inches)	Wall Thickness (inches)	Length (feet)	Minimum Bend Radius (inches)	Max. Working Pressure		Vacuum Rating, In. of Mercury	
						at 73°F (psi)*	at 175°F (psi)*	at 73°F	at 175°F
AEM02002	1/16	1/8	1/32	100	3/16	70	40	29.9	29.9
AEM02006	1/8	3/16	1/32	100	1/2	45	25	29.9	29.9
AEM02007	1/8	1/4	1/16	100	5/16	74	45	29.9	29.9
AEM02011	3/16	1/4	1/32	100	1	34	19	29.9	20.0
AEM02012	3/16	5/16	1/16	100	5/8	56	33	29.9	29.9
AEM02013	3/16	3/8	3/32	100	7/16	70	44	29.9	29.9
AEM02016	1/4	5/16	1/32	100	1-9/16	28	12	20.0	5.0
AEM02017	1/4	3/8	1/16	100	15/16	42	25	29.9	29.9
AEM02018	1/4	7/16	3/32	100	11/16	58	28	29.9	29.9
AEM02019	1/4	1/2	1/8	100	9/16	70	45	29.9	29.9
AEM02022	5/16	7/16	1/16	100	1-15/16	36	22	29.9	29.9
AEM02027	3/8	1/2	1/16	100	1-3/4	34	19	29.9	25.0
AEM02028	3/8	9/16	3/32	100	1-5/16	45	27	29.9	29.9
AEM02029	3/8	5/8	1/8	100	1-1/16	54	33	29.9	29.9
AEM02033	7/16	5/8	3/32	100	1-11/16	40	21	29.9	29.9
AEM02034	7/16	11/16	1/8	100	1-3/8	49	29	29.9	29.9
AEM02036	1/2	5/8	1/16	100	2-7/8	26	14	20.0	5.0
AEM02037	1/2	11/16	3/32	100	2-1/8	36	18	29.9	29.9
AEM02038	1/2	3/4	1/8	100	1-3/4	46	27	29.9	29.9
AEM02044	5/8	3/4	1/16	100	4-1/8	24	11	10.0	5.0
AEM02045	5/8	13/16	3/32	100	3	32	16	29.9	15.0
AEM02046	5/8	7/8	1/8	100	2-3/8	38	21	29.9	29.9
AEM02052	3/4	15/16	3/32	100	4	26	13	15.0	5.0
AEM02053	3/4	1	1/8	100	3-1/4	33	20	29.9	25.0
AEM02059**	7/8	1-1/8	1/8	100	4-1/8	30	18	29.9	20.0
AEM02062	1	1-1/4	1/8	100	5-1/8	28	14	15.0	10.0

* Working pressures are calculated at a 1:5 ratio relative to burst pressure using ASTM D1599.

** Made to order, minimums will apply.

The values listed for working and burst pressures are derived from tests conducted under controlled laboratory conditions. Many factors will reduce the tubing's ability to withstand pressures including temperature, chemical attack, stress, pulsation and the attachment to fittings. It is imperative that the user conduct tests simulating the conditions of the application prior to specifying the tubing for use.

Tygothane® C-210-A Typical Physical Properties

Property	ASTM Method	Value or Rating
Durometer Hardness Shore A, 1 Sec	D2240	82
Color	-	Transparent Natural
Tensile Strength psi (MPa)	D412	6,050 (41.7)
Ultimate Elongation, %	D412	500
Tear Resistance lb-f/inch (kN/m)	D1004 D624 Die C	475 (83.1) 400 (70)
Specific Gravity	D792	1.20
Water Absorption, % 24 hrs. @ 23°C	D570	1.12
Compression Set Constant Deflection, % @ 158°F (70°C) for 22 hrs.	D395 Method B	68
Brittleness By Impact Temp., °F (°C)	D746	-100 (-73)
Maximum Recommended Operating Temp., °F (°C)	-	200 (93) 175 (79)
Dielectric Strength v/mil (kV/mm)	D149	330 (12.9)
Tensile Modulus, @ 100% Elongation, psi (MPa) @ 300% Elongation, psi (MPa)	D412	800 (5.5) 1,500 (10.4)
Tensile Set, %	D412	98

TYGOTHANE® is a Saint-Gobain Performance Plastics registered trademark.

Saint-Gobain Performance Plastics

2664 Gilchrist Road
Akron, OH 44305
Tel: 800-798-1554
Tel: (330) 798-9240
Fax: (330) 798-6968



Unless otherwise noted, all tests were conducted at room temperature (73°F). Values shown were determined on 0.075" thick extruded strip or 0.075" thick molded ASTM plaques or molded ASTM durometer buttons.

TYGOTHANE® TUBING IS NOT INTENDED FOR USE AS AN IMPLANT MATERIAL

IMPORTANT: It is the user's responsibility to ensure the suitability and safety of Saint-Gobain Performance Plastics tubing for all intended uses. Laboratory and clinical tests must be conducted in accordance with applicable regulatory requirements in order to determine the safety and effectiveness for use of tubing in any particular application.

For a period of 6 months from the date of first sale, Saint-Gobain Performance Plastics Corporation warrants this product to be free from defects in materials and workmanship. Our only obligation will be to replace any portion proving defective or at our option to refund the purchase price thereof. User assumes all other risk, if any, including the risk of injury, loss or damage, direct or consequential, arising out of the use, misuse or inability to use this product. THIS WARRANTY IS IN LIEU OF THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. No deviation is authorized.

Saint-Gobain Performance Plastics Corporation assumes no obligations or liability for any advice furnished by it, or for results obtained with respect to those products. All such advice is given and accepted at the buyer's risk.