

# 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 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 Inventoried Sizes

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.

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	D2240-02	82
Color	-	Transparent Natural
Tensile Strength psi (MPa)	D412-98	6,050 (41.7)
Ultimate Elongation, %	D412-98	500
Tear Resistance lb-f/inch (kN/m)	D1004-94 D624-98 Die C	475 (83.1) 400 (70)
Specific Gravity	D792-00	1.20
Water Absorption, % 24 hrs. @ 23°C	D570-98	1.12
Compression Set Constant Deflection, % @ 158°F (70°C) for 22 hrs.	D395-02 Method B	68
Brittleness By Impact Temp., °F (°C)	D746-98	-100 (-73)
Maximum Recommended Operating Temp., °F (°C)	-	200 (93) 175 (79)
Dielectric Strength v/mil (kV/mm)	D149-97	330 (12.9)
Tensile Modulus, @ 100% Elongation, psi (MPa) @ 300% Elongation, psi (MPa)	D412-98	800 (5.5) 1,500 (10.4)
Tensile Set, %	D412-98	98

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**

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

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**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.

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