

Polyurethane – Fre-Thane®

Our ether-based Fre-Thane® is our most versatile tubing. Highly flexible with excellent memory, it has the most variation possibilities of any of our tubing and is available in a rainbow of colors.

- Extremely flexible with excellent memory.
- Kink & abrasion resistant.
- Low gas permeability, extractables and compression set.
- Resistant to chemicals, water, fuel, oil and fungus.
- Transparent and opaque colors.

Polyurethane
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Specifications

Temperature Range

All Diameters: -40°F to +165°F

Vacuum Rating

85A-95A: To 28" Hg.
70: To 20" Hg.

Diameter Tolerances

1/8" - 9/16": ±.005"
3/4": ±.007"
Metric: ±.127 mm

Tube Markings:

None

Working Pressure:

3:1 Safety Factor

UV Stabilized:

95A & 85A

Base Resin Compliance

95A: NSF61,
Meets UL94HB
90A: NSF61, FDA
85A: NSF61,
Meets UL94HB,
USPVI
70A: Meets UL94HB

Recommended Fittings

95A: Barb, Push-In, FX
90A: Barb
85A: Barb
70A: Barb

Polyurethane was invented in 1937 by German chemist, Friedrich Bayer. His first fibers, named Perlon U, gained popularity during World War II as a replacement for rubber. Its first commercial application was as a thread to make lightweight, stretchable fabric, spandex.*

Polyurethane is comprised of two basic materials, isocyanate and polyol. Since Bayer's invention, polyurethane polymers have been improved with various additives to enhance its qualities and make it more resistant to heat and light.

There are two general classes of polyurethane and both are commonly found in the market: ether-base and ester-base. Chemically, these are made from two different polyol alcohols that cause similar, but different reactions in the isocyanate. From the user's standpoint, the ester-based polymer is less expensive however it degrades when exposed to moisture. Because of this, we manufacture our Fre-Thane® polyurethane tubing using the ether-based material.

Freelin-Wade's Fre-Thane has a high resistance to abrasion while being highly flexible and kink resistant. Its most notable quality though is its "memory." Fre-Thane will stretch and flex but always return to its original shape.

Freelin-Wade began manufacturing polyurethane tubing in 1980 and it remains our core product today. It is available in 28 in-stock colors and a virtually infinite number of color variations. Fre-Thane is Freelin-Wade's most versatile product, with more options and variations available than with any other tubing. * Source: www.madehow.com



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www.comoso.com

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Polyurethane – Fre-Thane®

Fre-Thane® 95A Polyurethane

| Part Number & Color Code | Packaging Unit Size | O.D. | I.D. | Wall | Standard Colors | Working Pressure | | lbs./100' | Bend Radius | Fitting |
|--------------------------|---------------------|--------|-------|-------|---|------------------|-------------|-----------|-------------|-----------|
| | | | | | | @75°F/25°C | @150°F/65°C | | | |
| 1J-157- ___ | 50' Bag | 1/8" | .066" | .030" | 01 04 05 06 07 08 09 10 11 12 14 25 26 27 28 37 | 255 PSI | 100 PSI | .44 | 1/4" | B, PI |
| 1L-157- ___ | 250' Box | | | | | | | | | |
| 1C-157- ___ | 500' Reel | | | | | | | | | |
| 1B-157- ___ | 1000' Reel | | | | | | | | | |
| 1A-157- ___ | 2500' Reel | 5/32" | 3/32" | .031" | 01 02 04 05 06 07 08 09 10 11 12 25 26 27 28 37 | 210 PSI | 85 PSI | .62 | 3/8" | B, PI |
| 1J-156- ___ | 100' Bag | | | | | | | | | |
| 1C-156- ___ | 500' Reel | | | | | | | | | |
| 1B-156- ___ | 1000' Reel | | | | | | | | | |
| 1A-156- ___ | 2500' Reel | | | | | | | | | |
| 1J-107- ___ | 100' Bag | 3/16" | .107" | .040" | 01 07 10 37 | 220 PSI | 90 PSI | .92 | 3/8" | B, PI |
| 1B-107- ___ | 1000' Reel | | | | | | | | | |
| 1A-107- ___ | 2000' Reel | | | | | | | | | |
| 1J-169- ___ | 100' Bag | 1/4" | 1/8" | .062" | 01 04 05 06 07 08 09 10 11 26 27 29 | 265 PSI | 105 PSI | 1.83 | 1/2" | B, PI |
| 1B-169- ___ | 500' Reel | | | | | | | | | |
| 1A-169- ___ | 1000' Reel | | | | | | | | | |
| 1J-151- ___ | 100' Bag | 1/4" | .160" | .045" | 01 02 04 05 06 07 08 09 10 11 12 25 26 27 28 37 46 | 175 PSI | 70 PSI | 1.44 | 1/2" | B, PI, FX |
| 1B-151- ___ | 500' Reel | | | | | | | | | |
| 1A-151- ___ | 1000' Reel | | | | | | | | | |
| 1J-152- ___ | 100' Bag | 3/8" | .245" | .065" | 01 04 05 06 07 08 09 10 11 25 27 28 37 45 46 | 170 PSI | 70 PSI | 3.15 | 7/8" | B, PI, FX |
| 1A-152- ___ | 500' Reel | | | | | | | | | |
| 1J-161- ___ | 50' Bag | 15/32" | 5/16" | .079" | 01 05 07 08 10 11 27 46 | 155 PSI | 60 PSI | 4.83 | 1-1/8" | B, PI |
| 1A-161- ___ | 250' Reel | | | | | | | | | |
| 1J-166- ___ | 50' Bag | 1/2" | .320" | .090" | 01 05 07 08 10 27 37 | 175 PSI | 70 PSI | 5.77 | 1-1/8" | B, PI |
| 1A-166- ___ | 250' Reel | | | | | | | | | |
| 1J-163- ___ | 50' Bag | 9/16" | 3/8" | .094" | 01 05 06 07 08 10 27 | 155 PSI | 60 PSI | 6.85 | 1-3/8" | B, FX |
| 1A-163- ___ | 250' Reel | | | | | | | | | |
| 1A-176- ___ | 150' Reel | 3/4" | .467" | .142" | 01 05 07 10 27 | 175 PSI | 70 PSI | 13.47 | 1-1/2" | B, FX |
| 1E-176- ___ | Cut Length | | | | | | | | | |

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Variations Available:

Coiling • Colors • Cutting • Bonding • Printing • Packaging • Sizes

Metric sized Fre-Thane 95A Polyurethane is on page 8

If you are ordering two or more colors of tubing, consider ordering it as a Multi-Color Ribbon. It's available as a stock item or we can customize it to meet your specs.



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Polyurethane – Fre-Thane®

Fre-Thane® 95A Metric Sized Polyurethane

| Part Number & Color Code | Packaging Unit Size | O.D. mm | I.D. mm | Wall mm | Standard Colors | Working Pressure @75°F/25°C @150°F/65°C | lbs./100' | Bend Radius | Fitting |
|--|---|---------|---------|---------|--|---|-----------|-------------|---------|
| 1J-171- ___ 1C-171- ___ 1B-171- ___ 1A-171- ___ | 100' Bag 500' Reel 1000' Reel 2500' Reel | 3 | 1.8 | .6 | 01 10 37 | 230 PSI 90 PSI | .35 | 6.4 mm | B, PI |
| 1J-156- ___ 1C-156- ___ 1B-156- ___ 1A-156- ___ | 100' Bag 500' Reel 1000' Reel 2500' Reel | 4 | 2.4 | .8 | 01 02 04 05 06 07 08 09 10 11 12 25 26 27 28 37 | 210 PSI 85 PSI | .62 | 9.5 mm | B, PI |
| 1J-158- ___ 1B-158- ___ 1A-158- ___ | 100' Bag 500' Reel 1000' Reel | 6 | 4 | 1 | 01 04 05 06 07 08 09 10 11 25 26 27 37 | 160 PSI 65 PSI | 1.21 | 12.7 mm | B, PI |
| 1J-159- ___ 1A-159- ___ | 100' Bag 500' Reel | 8 | 5 | 1.5 | 01 05 06 07 08 10 11 25 27 37 46 | 190 PSI 75 PSI | 2.36 | 19 mm | B, PI |
| 1J-160- ___ 1A-160- ___ | 50' Bag 500' Reel | 10 | 6.5 | 1.75 | 01 05 06 07 08 10 27 | 170 PSI 70 PSI | 3.51 | 22.2 mm | B, PI |
| 1J-161- ___ 1A-161- ___ | 50' Bag 250' Reel | 12 | 8 | 2 | 01 05 07 08 10 11 27 46 | 155 PSI 60 PSI | 4.83 | 28.6 mm | B, PI |

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Variations Available:

Coiling • Colors • Cutting • Bonding • Printing • Packaging • Sizes

We can coil any polyurethane tube. It's a great way to keep your workplace organized and clutter free.

Fre-Thane® 90A Polyurethane

| Part Number & Color Code | Packaging Unit Size | O.D. | I.D. | Wall | Standard Colors | Working Pressure @75°F/25°C @150°F/65°C | lbs./100' | Bend Radius | Fitting |
|---|-------------------------------------|------|-------|-------|--|---|-----------|-------------|------------------------|
| 1J-132- ___ 1B-132- ___ 1A-132- ___ | 100' Bag 500' Reel 1000' Reel | 1/4" | .159" | .046" | 01 04 05 06 07 08 09 10 11 14 25 27 | 135 PSI 55 PSI | 1.43 | 5/8" | B |
| 1J-045- ___ 1B-045- ___ 1A-045- ___ | 100' Bag 500' Reel 1000' Reel | 1/4" | .170" | .040" | 01 05 07 08 10 27 | 115 PSI 45 PSI | 1.29 | 3/4" | B Low Pressure Only |
| 1J-153- ___ 1A-153- ___ | 100' Bag 1000' Reel | 1/4" | 3/16" | .031" | 10 | 90 PSI 35 PSI | 1.06 | 1-1/8" | B Low Pressure Only |
| 1J-005- ___ 1B-005- ___ 1A-005- ___ | 100' Bag 250' Reel 500' Reel | 3/8" | .245" | .065" | 01 04 05 06 07 08 09 10 11 14 25 26 27 28 48 49 | 125 PSI 50 PSI | 3.1 | 3/4" | B |
| 1J-111- ___ 1A-111- ___ | 50' Bag 250' Reel | 1/2" | 3/8" | .062" | 01 05 07 08 10 | 90 PSI 35 PSI | 4.2 | 2" | B Low Pressure Only |

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Fre-Thane® 85A Polyurethane

| Part Number & Color Code | Packaging Unit Size | O.D. | I.D. | Wall | Standard Colors | Working Pressure | | lbs./100' | Bend Radius | Fitting |
|--------------------------|---------------------|-------|-------|-------|--|------------------|-------------|-----------|-------------|---------|
| | | | | | | @75°F/25°C | @150°F/65°C | | | |
| 1J-013- ___ | 50' Bag | 1/8" | .066" | .030" | 01 02 04 05 06 07 08 09 10 11 12 14 25 26 27 28 29 32 45 46 | 135 PSI | 55 PSI | .43 | 3/16" | B |
| 1L-013- ___ | 250' Box | | | | | | | | | |
| 1C-013- ___ | 500' Reel | | | | | | | | | |
| 1B-013- ___ | 1000' Reel | | | | | | | | | |
| 1A-013- ___ | 2500' Reel | | | | | | | | | |
| 1J-134- ___ | 100' Bag | 5/32" | 3/32" | .031" | 10 | 115 PSI | 45 PSI | .60 | 3/8" | B |
| 1C-134- ___ | 500' Reel | | | | | | | | | |
| 1A-134- ___ | 2500' Reel | | | | | | | | | |
| 1J-030- ___ | 100' Bag | 5/32" | 5/64" | .039" | 01 02 04 05 06 07 08 09 10 11 12 25 26 27 28 29 32 45 | 155 PSI | 60 PSI | .70 | 3/8" | B |
| 1C-030- ___ | 500' Reel | | | | | | | | | |
| 1B-030- ___ | 1000' Reel | | | | | | | | | |
| 1A-030- ___ | 2500' Reel | | | | | | | | | |
| 1J-194- ___ | 100' Bag | | | | | | | | | |
| 1B-194- ___ | 500' Reel | | | | | | | | | |
| 1A-194- ___ | 2000' Reel | | | | | | | | | |
| 1J-025- ___ | 50' Bag | 1/4" | 1/8" | .062" | 01 02 04 05 06 07 08 09 10 11 12 25 26 27 28 29 32 45 46 49 | 145 PSI | 60 PSI | 1.8 | 1/2" | B |
| 1D-025- ___ | 100' Box | | | | | | | | | |
| 1B-025- ___ | 500' Reel | | | | | | | | | |
| 1A-025- ___ | 1000' Reel | | | | | | | | | |
| 1J-149- ___ | 100' Bag | | | | | | | | | |
| 1A-149- ___ | 500' Reel | | | | | | | | | |
| 1J-015- ___ | 100' Bag | 3/8" | 1/4" | .062" | 10 | 100 PSI | 40 PSI | 3.0 | 3/4" | B |
| 1A-015- ___ | 500' Reel | | | | | | | | | |

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Variations Available:

Coiling • Colors • Cutting • Bonding • Printing • Packaging • Sizes

Fre-Thane® 70A Polyurethane

| Part Number & Color Code | Packaging Unit Size | O.D. | I.D. | Wall | Standard Colors | Working Pressure | | lbs./100' | Bend Radius | Fitting |
|--------------------------|---------------------|------|------|-------|-----------------|------------------|-------------|-----------|-------------|---------|
| | | | | | | @75°F/25°C | @150°F/65°C | | | |
| 1J-133- ___ | 100' Bag | 1/4" | 1/8" | .062" | 01 10 14 25 26 | 60 PSI | 30 PSI | 1.69 | 1/2" | B |
| 1B-133- ___ | 500' Reel | | | | | | | | | |
| 1A-133- ___ | 1000' Reel | | | | | | | | | |
| 1J-170- ___ | 100' Bag | 3/8" | 1/4" | .062" | 05 07 | 50 PSI | 25 PSI | 2.82 | 3/4" | B |
| 1A-170- ___ | 500' Reel | | | | | | | | | |

Variations Available:

Coiling • Colors • Cutting • Bonding • Printing • Packaging • Sizes

If you don't see exactly what you need, just ask us. Variations to our stock tubing is our specialty. Like our stock tubing, variations are easy to order plus we're happy to work up a prototype. Just give us a call.



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