

Fre-Thane® Polyurethane

Specifications

Temperature Range
-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

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

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



Any Other Tubing Would Kink

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.

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. It remains our flagship product today. It is available in 28 standard 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

MFG: Eastern Industrial Automation
(second source: IEWC)
MFG PN: See detail
NAI PN: See detail
Rev: N1
Eng: Bruce

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Fre-Thane Polyurethane Colors

Any of our polyurethane tubing products listed on pages 9 and 10 are available in the colors shown below. If not shown as a stock item, please allow seven business days to fulfill your order.



Fre-Thane® 95A Polyurethane

| Part Number & Color Code | Packaging Unit Size | OD | ID | Wall | Standard In-Stock Colors | Working Pressure | | lbs./100' | Bend Radius | Fitting |
|--------------------------|---------------------|--------|-------|-------|---|------------------|------------|-----------|-------------|-----------|
| | | | | | | 75°F/25°C | 150°F/65°C | | | |
| 1J-157- ___ | 50' Bag | | | | | | | | | |
| 1E-157- ___ | 250' Box | | | | | | | | | |
| 1C-157- ___ | 500' Reel | 1/8" | .066" | .030" | 01 04 05 06 07 08 10 11 12 14 25 26 27 28 | 255 PSI | 100 PSI | .44 | 1/4" | B, PI |
| 1B-157- ___ | 1000' Reel | | | | | | | | | |
| 1A-157- ___ | 2500' Reel | | | | | | | | | |
| 1J-156- ___ | 100' Bag | | | | | | | | | |
| 1C-156- ___ | 500' Reel | 5/32" | 3/32" | .031" | 01 04 05 06 07 08 09 10 11 12 25 26 27 28 37 | 210 PSI | 85 PSI | .62 | 3/8" | B, PI |
| 1B-156- ___ | 1000' Reel | | | | | | | | | |
| 1A-156- ___ | 2500' Reel | | | | | | | | | |
| 1J-107- ___ | 100' Bag | | | | | | | | | |
| 1B-107- ___ | 1000' Reel | 3/16" | .107" | .040" | 01 07 08 10 37 | 220 PSI | 90 PSI | .92 | 3/8" | B, PI |
| 1A-107- ___ | 2000' Reel | | | | | | | | | |
| 1J-169- ___ | 100' Bag | | | | | | | | | |
| 1B-169- ___ | 500' Reel | 1/4" | 1/8" | .062" | 01 05 06 07 08 10 11 25 26 27 29 | 265 PSI | 105 PSI | 1.83 | 1/2" | B, PI |
| 1A-169- ___ | 1000' Reel | | | | | | | | | |
| 1J-151- ___ | 100' Bag | | | | | | | | | |
| 1B-151- ___ | 500' Reel | 1/4" | .160" | .045" | 01 04 05 06 07 08 09 10 11 25 26 27 28 | 175 PSI | 70 PSI | 1.44 | 1/2" | B, PI, FX |
| 1A-151- ___ | 1000' Reel | | | | | | | | | |
| 1J-152- ___ | 100' Bag | | | | | | | | | |
| 1A-152- ___ | 500' Reel | 3/8" | .245" | .065" | 01 05 06 07 08 10 11 25 27 28 46 | 170 PSI | 70 PSI | 3.15 | 7/8" | B, PI, FX |
| 1J-161- ___ | 50' Bag | | | | | | | | | |
| 1A-161- ___ | 250' Reel | 15/32" | 5/16" | .079" | 01 05 07 08 10 27 | 155 PSI | 60 PSI | 4.83 | 1-1/8" | B, PI |
| 1J-166- ___ | 50' Bag | | | | | | | | | |
| 1A-166- ___ | 250' Reel | 1/2" | .320" | .090" | 01 05 07 10 27 | 175 PSI | 70 PSI | 5.77 | 1-1/8" | B, PI |
| 1J-163- ___ | 50' Bag | | | | | | | | | |
| 1A-163- ___ | 200' Reel | 9/16" | 3/8" | .094" | 01 07 08 10 27 | 155 PSI | 60 PSI | 6.85 | 1-3/8" | B, FX |
| 1A-176- ___ | 150' Reel | | | | | | | | | |
| 1E-176- ___ | Cut Length | 3/4" | .467" | .142" | 01 07 10 27 | 175 PSI | 70 PSI | 13.47 | 1-1/2" | B, FX |

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.

Metric Sizes

| Part Number & Color Code | Packaging Unit Size | OD mm | ID mm | Wall mm | Standard In-Stock Colors | Working Pressure | | lbs./100' | Bend Radius | Fitting |
|--------------------------|---------------------|-------|-------|---------|---|------------------|------------|-----------|-------------|---------|
| | | | | | | 75°F/25°C | 150°F/65°C | | | |
| 1J-171- ___ | 100' Bag | | | | | | | | | |
| 1C-171- ___ | 500' Reel | 3 | 1.8 | .6 | 01 10 | 230 PSI | 90 PSI | .35 | 6.4 mm | B, PI |
| 1B-171- ___ | 1000' Reel | | | | | | | | | |
| 1A-171- ___ | 2500' Reel | | | | | | | | | |
| 1J-156- ___ | 100' Bag | | | | | | | | | |
| 1C-156- ___ | 500' Reel | 4 | 2.4 | .8 | 01 04 05 06 07 08 09 10 11 12 25 26 27 28 37 | 210 PSI | 85 PSI | .62 | 9.5 mm | B, PI |
| 1B-156- ___ | 1000' Reel | | | | | | | | | |
| 1A-156- ___ | 2500' Reel | | | | | | | | | |
| 1J-158- ___ | 100' Bag | | | | | | | | | |
| 1B-158- ___ | 500' Reel | 6 | 4 | 1 | 01 05 06 07 08 09 10 11 25 27 37 | 160 PSI | 65 PSI | 1.21 | 12.7 mm | B, PI |
| 1A-158- ___ | 1000' Reel | | | | | | | | | |
| 1J-159- ___ | 100' Bag | | | | | | | | | |
| 1A-159- ___ | 500' Reel | 8 | 5 | 1.5 | 01 05 07 08 10 11 25 27 37 | 190 PSI | 75 PSI | 2.36 | 19 mm | B, PI |
| 1J-160- ___ | 50' Bag | | | | | | | | | |
| 1A-160- ___ | 500' Reel | 10 | 6.5 | 1.75 | 01 05 07 08 10 | 170 PSI | 70 PSI | 3.51 | 22.2 mm | B, PI |
| 1J-161- ___ | 50' Bag | | | | | | | | | |
| 1A-161- ___ | 250' Reel | 12 | 8 | 2 | 01 05 07 08 10 27 | 155 PSI | 60 PSI | 4.83 | 28.6 mm | B, PI |
| 1J-162- ___ | 50' Bag | | | | | | | | | |
| 1A-162- ___ | 200' Reel | 16 | 11 | 2.5 | 01 | 150 PSI | 60 PSI | 4.85 | 76.2 mm | B, PI |

Variations Available:

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

USA & International: 503-434-5561

US Toll Free: 888-373-9233



Fre-Thane® 90A Polyurethane

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

Variations Available: Coiling • Colors • Cutting • Bonding • Printing • Packaging • Sizes

Fre-Thane® 85A Polyurethane

| Part Number & Color Code | Packaging Unit Size | OD | ID | Wall | Standard In-Stock Colors | Working Pressure | | lbs./100' | Bend Radius | Fitting |
|--------------------------|---------------------|-------|-------|-------|--|------------------|------------|-----------|-------------|------------------------|
| | | | | | | 75°F/25°C | 150°F/65°C | | | |
| 1J-013- ___ | 50' Bag | | | | | | | | | |
| 1L-013- ___ | 250' Box | | | | | | | | | |
| 1C-013- ___ | 500' Reel | 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 |
| 1B-013- ___ | 1000' Reel | | | | | | | | | |
| 1A-013- ___ | 2500' Reel | | | | | | | | | |
| 1J-134- ___ | 100' Bag | | | | | | | | | |
| 1C-134- ___ | 500' Reel | 5/32" | 3/32" | .031" | 01 10 | 115 PSI | 45 PSI | .60 | 3/8" | B |
| 1A-134- ___ | 2500' Reel | | | | | | | | | |
| 1J-030- ___ | 100' Bag | | | | | | | | | |
| 1C-030- ___ | 500' Reel | 5/32" | 5/64" | .039" | 01 05 06 07 10 27 | 155 PSI | 60 PSI | .70 | 3/8" | B |
| 1B-030- ___ | 1000' Reel | | | | | | | | | |
| 1A-030- ___ | 2500' Reel | | | | | | | | | |
| 1J-194- ___ | 100' Bag | | | | | | | | | |
| 1B-194- ___ | 500' Reel | 3/16" | 1/8" | .031" | 01 10 | 85 PSI | 35 PSI | .74 | 1/2" | B Low Pressure Only |
| 1A-194- ___ | 2000' Reel | | | | | | | | | |
| 1J-025- ___ | 50' Bag | | | | | | | | | |
| 1D-025- ___ | 100' Box | | | | | | | | | |
| 1B-025- ___ | 500' Reel | 1/4" | 1/8" | .062" | 01 04 05 06 07 08 09 10 11 25 26 27 28 | 145 PSI | 60 PSI | 1.8 | 1/2" | B |
| 1A-025- ___ | 1000' Reel | | | | | | | | | |
| 1J-149- ___ | 100' Bag | 5/16" | 3/16" | .062" | 01 10 | 110 PSI | 45 PSI | 2.4 | 5/8" | B Low Pressure Only |
| 1A-149- ___ | 500' Reel | | | | | | | | | |
| 1J-015- ___ | 100' Bag | 3/8" | 1/4" | .062" | 10 25 26 27 | 90 PSI | 35 PSI | 3.0 | 3/4" | B |
| 1A-015- ___ | 500' Reel | | | | | | | | | |

Variations Available: Coiling • Colors • Cutting • Bonding • Printing • Packaging • Sizes

Fre-Thane® 70A Polyurethane

| Part Number & Color Code | Packaging Unit Size | OD | ID | Wall | Standard In-Stock Colors | Working Pressure | | lbs./100' | Bend Radius | Fitting |
|--------------------------|---------------------|------|------|-------|--------------------------|------------------|------------|-----------|-------------|---------|
| | | | | | | 75°F/25°C | 150°F/65°C | | | |
| 1J-133- ___ | 100' Bag | | | | | | | | | |
| 1B-133- ___ | 500' Reel | 1/4" | 1/8" | .062" | 01 10 14 25 26 27 29 | 60 PSI | 30 PSI | 1.69 | 1/2" | B |
| 1A-133- ___ | 1000' Reel | | | | | | | | | |
| 1J-170- ___ | 100' Bag | 3/8" | 1/4" | .062" | 07 10 | 50 PSI | 25 PSI | 2.82 | 3/4" | B |
| 1A-170- ___ | 500' Reel | | | | | | | | | |

Variations Available: Coiling • Colors • Cutting • Bonding • Printing • Packaging • Sizes

| S/N | Customer P/N | MFG P/N | MFG | NAI NEW P/N | Description | U/M | Print Content | Original mfg# | Original mfg |
|------|--------------------------------------|---------|--|-------------|--|-----|---------------------------|---------------|--------------|
| 1-1 | 3860-01160-MFC 6 SHUTOFF VLV EV-01 | N030538 | Eastern Industrial Automation(second source: IEWC) | N030538 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | MFC 6 SHUTOFF VLV EV-01 | 1C-157-27 | FREELIN WADE |
| 1-2 | 3860-01160-MFC 6 BYPASS VLV EV-02 | N030539 | Eastern Industrial Automation(second source: IEWC) | N030539 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | MFC 6 BYPASS VLV EV-02 | 1C-157-27 | FREELIN WADE |
| 1-3 | 3860-01160-MFC 6 UPSTREAM VLV EV-03 | N030540 | Eastern Industrial Automation(second source: IEWC) | N030540 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | MFC 6 UPSTREAM VLV EV-03 | 1C-157-27 | FREELIN WADE |
| 1-4 | 3860-01160-MFC 6 DOWNSTREAM EV-04 | N030541 | Eastern Industrial Automation(second source: IEWC) | N030541 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | MFC 6 DOWNSTREAM EV-04 | 1C-157-27 | FREELIN WADE |
| 1-5 | 3860-01160-MFC 6 GAS BOX FINAL EV-05 | N030542 | Eastern Industrial Automation(second source: IEWC) | N030542 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | MFC 6 GAS BOX FINAL EV-05 | 1C-157-27 | FREELIN WADE |
| 1-6 | 3860-01160-TURBO GATE OPEN EV-06 | N030543 | Eastern Industrial Automation(second source: IEWC) | N030543 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | TURBO GATE OPEN EV-06 | 1C-157-27 | FREELIN WADE |
| 1-7 | 3860-01160-TURBO GATE CLOSED EV-07 | N030544 | Eastern Industrial Automation(second source: IEWC) | N030544 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | TURBO GATE CLOSED EV-07 | 1C-157-27 | FREELIN WADE |
| 1-8 | 3860-01160-MFC 6 PURGE VLV EV-08 | N030545 | Eastern Industrial Automation(second source: IEWC) | N030545 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | MFC 6 PURGE VLV EV-08 | 1C-157-27 | FREELIN WADE |
| 1-9 | 3860-01160-MFC 5 SHUTOFF VLV EV-09 | N030546 | Eastern Industrial Automation(second source: IEWC) | N030546 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | MFC 5 SHUTOFF VLV EV-09 | 1C-157-27 | FREELIN WADE |
| 1-10 | 3860-01160-HEATER GAS EV-13 | N030547 | Eastern Industrial Automation(second source: IEWC) | N030547 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | HEATER GAS EV-13 | 1C-157-27 | FREELIN WADE |
| 1-11 | 3860-01160-UPSTREAM GAS 1 EV-14 | N030548 | Eastern Industrial Automation(second source: IEWC) | N030548 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | UPSTREAM GAS 1 EV-14 | 1C-157-27 | FREELIN WADE |
| 1-12 | 3860-01160-MFC 5 BYPASS VLV EV-15 | N030549 | Eastern Industrial Automation(second source: IEWC) | N030549 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | MFC 5 BYPASS VLV EV-15 | 1C-157-27 | FREELIN WADE |
| 1-13 | 3860-01160-UPSTREAM GAS 2 EV-16 | N030550 | Eastern Industrial Automation(second source: IEWC) | N030550 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | UPSTREAM GAS 2 EV-16 | 1C-157-27 | FREELIN WADE |
| 1-14 | 3860-01160-MFC 5 UPSTREAM EV-17 | N030551 | Eastern Industrial Automation(second source: IEWC) | N030551 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | MFC 5 UPSTREAM EV-17 | 1C-157-27 | FREELIN WADE |
| 1-15 | 3860-01160-UPSTREAM GAS 3 EV-18 | N030552 | Eastern Industrial Automation(second source: IEWC) | N030552 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | UPSTREAM GAS 3 EV-18 | 1C-157-27 | FREELIN WADE |
| 1-16 | 3860-01160-MFC 5 DOWNSTREAM EV-19 | N030553 | Eastern Industrial Automation(second source: IEWC) | N030553 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | MFC 5 DOWNSTREAM EV-19 | 1C-157-27 | FREELIN WADE |
| 1-17 | 3860-01160-UPSTREAM GAS 4 EV-20 | N030554 | Eastern Industrial Automation(second source: IEWC) | N030554 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | UPSTREAM GAS 4 EV-20 | 1C-157-27 | FREELIN WADE |
| 1-18 | 3860-01160-MFC 5 GAS BOX FINAL EV-21 | N030555 | Eastern Industrial Automation(second source: IEWC) | N030555 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | MFC 5 GAS BOX FINAL EV-21 | 1C-157-27 | FREELIN WADE |
| 1-19 | 3860-01160-CHAMBER ROUGH EV-23 | N030556 | Eastern Industrial Automation(second source: IEWC) | N030556 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | CHAMBER ROUGH EV-23 | 1C-157-27 | FREELIN WADE |
| 1-20 | 3860-01160-TURBO PURGE EV-25 | N030557 | Eastern Industrial Automation(second source: IEWC) | N030557 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | TURBO PURGE EV-25 | 1C-157-27 | FREELIN WADE |
| 1-21 | 3860-01160-TURBO ROUGH EV-27 | N030558 | Eastern Industrial Automation(second source: IEWC) | N030558 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | TURBO ROUGH EV-27 | 1C-157-27 | FREELIN WADE |
| 1-22 | 3860-01160-MFC 5 PURGE VLV EV-28 | N030559 | Eastern Industrial Automation(second source: IEWC) | N030559 | TBG PLSTC 1/8OD 1/16ID 95 DURO URETHANE BLUE WITH PRINT CO | FT | MFC 5 PURGE VLV EV-28 | 1C-157-27 | FREELIN WADE |
| 4 | 3860-01307-PENDULUM VLV CDA SUPPLY | N030537 | Eastern Industrial Automation(second source: IEWC) | N030537 | TBG1/4OD X 1/8ID POLYURETHANE BLUE WITH PRINT CONTENT | FT | PENDULUM VLV CDA SUPPLY | 1A-025-27 | FREELIN WADE |

Notes:

1. All individual tubing shall be printed with bold fonts at 6.00 inch intervals along the length of tubing per the drawing.
2. Please use our NAI PN as MFG PN.