



Parflex[®] Thermoplastic Hose, Tubing, Fittings and Accessories

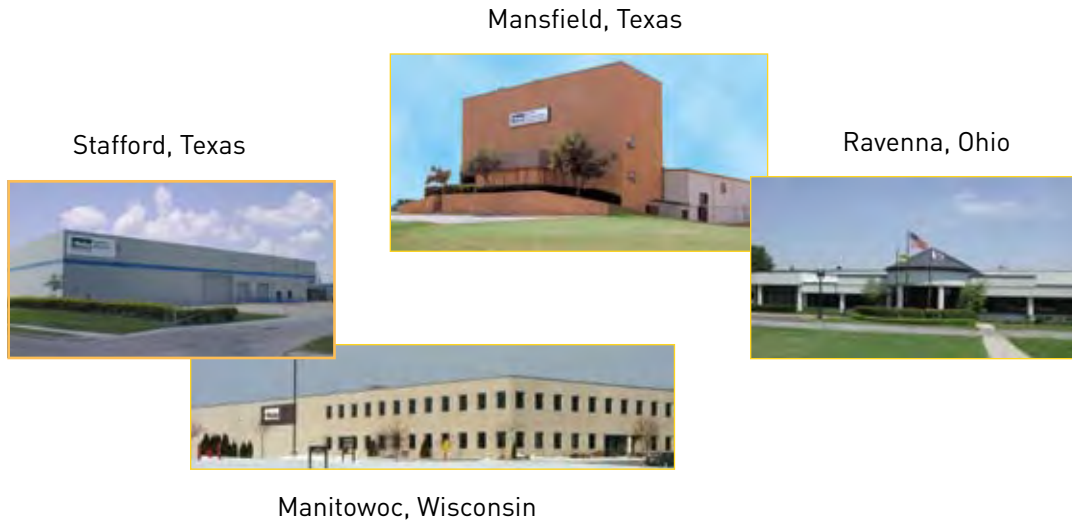
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August 2007



The World Standard

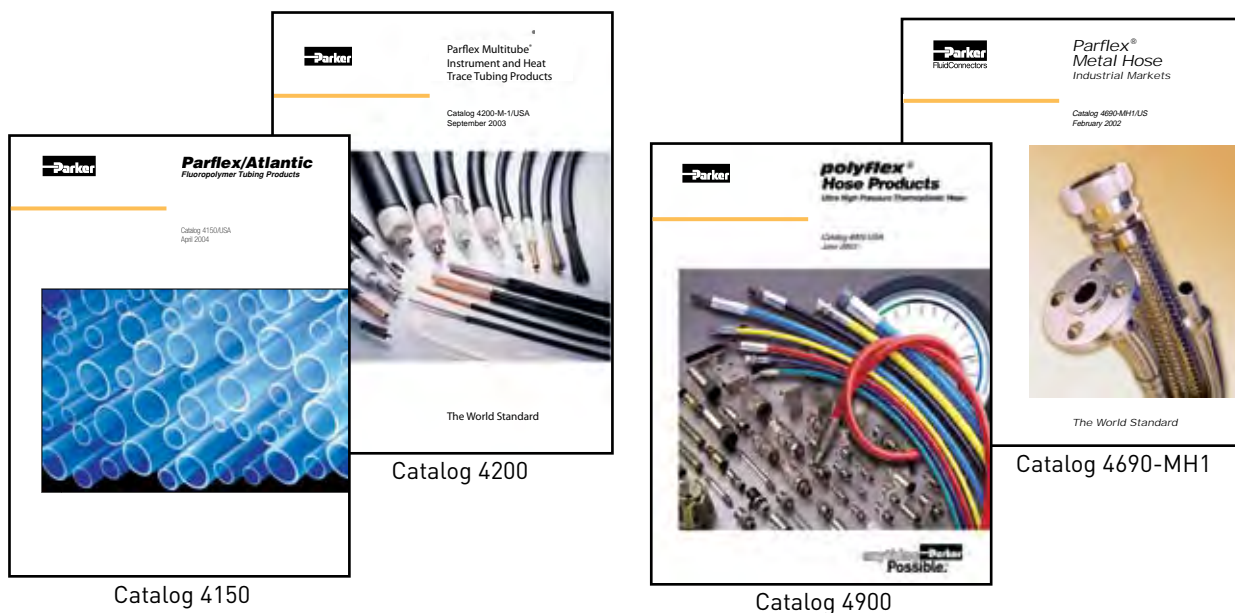
Welcome to ... The Parflex Division

The Parflex Division, part of the Fluid Connectors Group, includes the Ravenna facility in Ohio, a hose assembly facility in Stafford, Texas, a hose manufacturing plant in Manitowoc, Wisconsin, and a PTFE hose production plant in Mansfield, Texas. The Parflex Division is responsible for the manufacture of thermoplastic hose, tubing, hose bundles, harnesses, high pressure hose assemblies, fluoropolymer hose and tubing.



The Charter of the Parflex Division is:














"To be the global leader in engineered polymer-based products, and to provide system solutions for the conveyance and control of fluids."



For information on products not contained in this catalog please contact Catalog Services at 440.205.7799 for copies of these additional Parflex products.



Definition of Symbols Used in Tables

Symbol	Definition	Symbol	Definition
#	Part Number		Minimum Burst Pressure
	Hose Inner Diameter		Weight
	Hose Outer Diameter		Vacuum Rating
	Working Pressure		Thread Size
	Crimp Die		Hex Size
	Minimum Bend Radius		Diameter
	Crimp Fitting		Field Attachable Fitting
(+)	Non-Standard		

(+) Non-Standard

- Non-standards are not typically stocked.
- Minimum buys, runs, costs, lead times, and pricing will be quoted
- Overruns or excess inventories may exist – in-stock pricing will be quoted
- In-stock pricing levels are sensitive to products available and are subject to prior sale
- Delivery or lead times quoted begin A. R. O (after receipt of order)

The Part # column for hydraulic fittings indicates material type. Where applicable, “B” indicates Brass and “C” indicates Stainless Steel. See the “How To Order” section for more information.

For detailed ordering information, please consult price list or contact Parflex Division.

Thermoplastic Tubing

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Hydraulic &
Pneumatic
Hose & Fit.

PTFE
Hose &
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Thermoplastic
Tubing

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DIMENSIONS ARE FOR REFERENCE ONLY. SUBJECT TO CHANGE.

(+) Non Standard. See page ii for information on non-standard products.





Parflex Thermoplastic Tubing Tutorial

- Review the general attributes of our thermoplastic tubing that follows- this provides an excellent overview for all of thermoplastic tubing in our product line
- Review the symbols pages- this will help clear up any questions you may have on the product tables within this section
- The market/applications table identifies and provides a “good fit” summary
- Review the pressure bar graph provided- this shows relative pressure ratings for the entire line of thermoplastic tubing
- Review the **STAMPED guide** (Size, Temperature, Media, Application, Pressure, End Configuration, and Delivered Preferences) **on page 173** to help narrow your search for the desired product
- Specific nomenclature, features, advantages, and benefits can be found at the beginning page of each product line

- All Plastic tubing dimensions are laser monitored to ensure an overall quality product
- Most Tubing sizes are packaged in convenient 100 ft., 250 ft., 500 ft. and 1,000 ft lengths

Polyethylene Tubing

- Parflex polyethylene tubing meets FDA, NSF Standard 51 for all food contact applications and NSF-61 for potable water applications
- Our E-Series tubing is made of 100% virgin resin material
- Polyethylene tubing meets ASTM D-1693 for stress crack resistance
- We also offer special PE tubing: FRPE (flame retardant & plenum rated) as well as HDPE (high density)

Nylon Tubing

- Flexible Nylon tubing use high grade resins for strength and flexibility for routing in tight spaces
- Semirigid high strength Nylon use high grade resins without the addition of plasticizers for higher pressure tubing applications
- Pure Air Tubing (PAT) is the tubing choice for pure air systems (Semiconductor) due to its cleanliness in addition to excellent chemical and UV light resistance

Polypropylene

- Polypropylene tubing meets FDA, NSF Standard 51 for all food contact applications
- Polypropylene tubing exhibits excellent chemical resistance to chlorinated water applications
- Polypropylene tubing is commonly used in outdoor applications where UV light stabilization is required

Polyurethane


- Polyurethane tubing is a flexible, kink resistant and abrasion resistant material commonly used in Pneumatic applications
- Polyurethane is available in multiple transparent and opaque colors for system color coding
- Polyurethane is available in the following durometers (measurement of material hardness):
 - Medium Durometer (90-less flexible)
 - High Durometer (→95-least flexible, highest pressures)

Polyvinyl Chloride (PVC)

- PVC tubing is made from 100% virgin resin material and Meets all FDA specifications for materials in contact with food and drugs
- PVC tubing is very flexible (70 Durometer) tubing that is crystal clear and is Ideal for situations where visible fluid flow is necessary (i.e. sight gages for tank identification)

Product Family	Series	Suggested Markets and Applications
Polyethylene	E and EB	Potable water, chemical transfer, and low cost, low pressure pneumatics, NSF-51 & NSF- 61
	FRPE	Pneumatic controls in HVAC/plenum space (UL 1820), Dubl-Barb fitting from Parker Brass
High Density Polyethylene	HDPE	Chemical transfer and low cost pneumatics
Nylon	N	Pneumatic and petroleum-based chemical transfer
	PAT	Pure air and gas distribution systems, Semiconductor
	NR	High pressure pneumatic, lubrication, and Marine control systems
Polypropylene	PP and PPB	Food contact and chemical transfer applications, chlorinated water, NSF-51
Urethane	U and UM	Pneumatic controls requiring high flexibility, kink resistance and movement
	HU and HUM	High pressure pneumatics requiring flexibility and kink resistance. Robotics
Vinyl	PV	Low pressure chemical and medical applications requiring high clarity and flexibility, FDA

Add caveat for ordering Series EB and Series PPB NSF tubing with “-NSF” suffix



How To Select Thermoplastic Tubing (STAMPED)

- Size** Choose appropriate outside diameters - tubing is always measured on the OD
- Temperature** The maximum temperature of the material being conveyed
- Application** External conditions including abrasion, climate, heat, flexing, crushing, kinking, and degrees of bending
- Media** The composition of the substance being conveyed and chemical compatibility with the tubing
- Pressure** The maximum pressure of the system, including pressure spikes
- Ends** The appropriate end connection (barb, push to connect, compression)
- Delivery** Testing, quality, packaging, and delivery requirements

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PTFE Hose & Fittings

Thermoplastic Tubing

Coiled Air Hose, Fittings & Accessories

Truck (Fleet) Products

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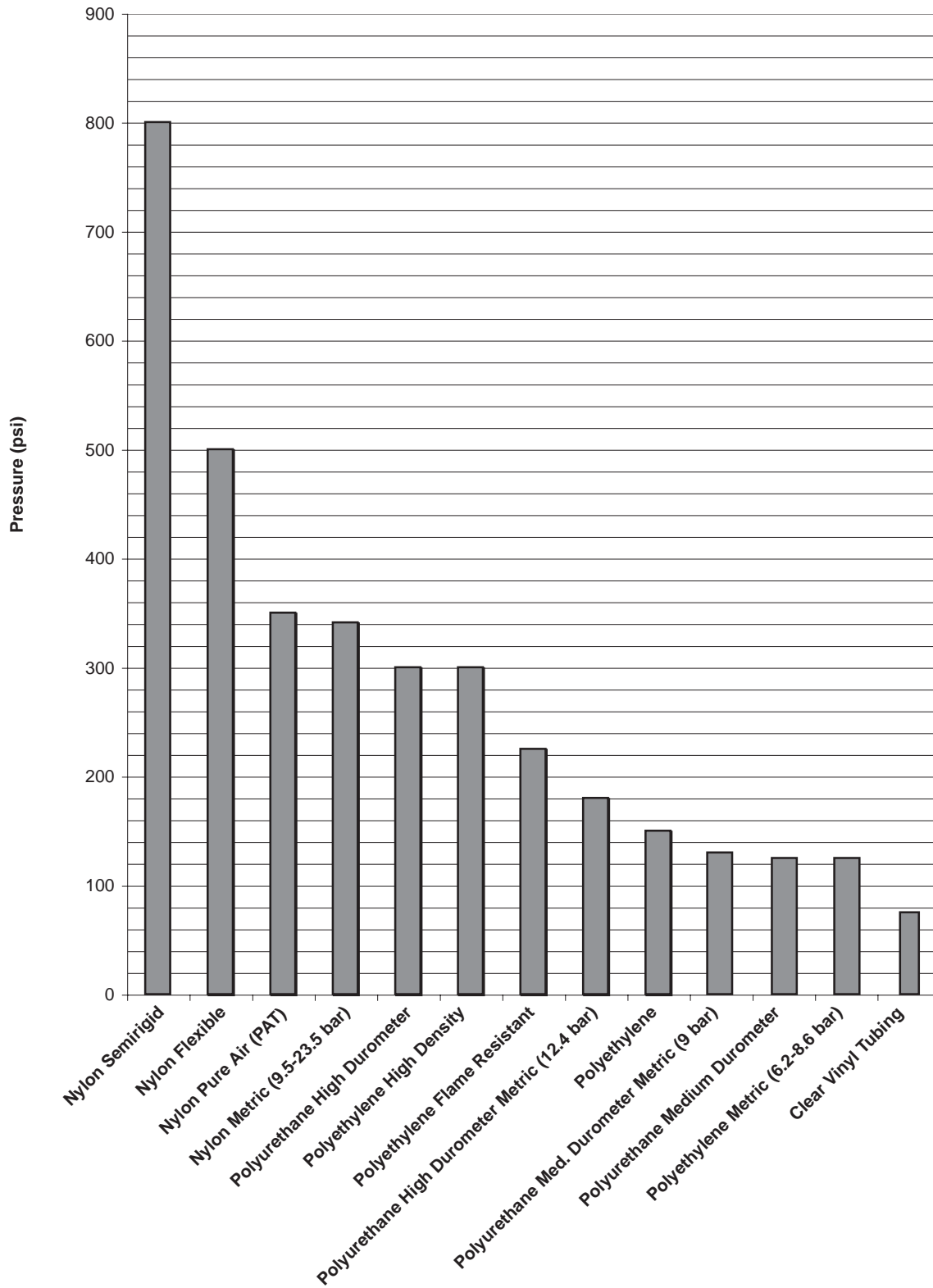
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Tubing Pressure Ranges



Note: Working pressures are at 73°F (23°C). Pressure ratings are also effected by diameter of tubing and wall thickness. Actual performance may vary with different media and working conditions. **Use this information for comparison only.**



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Tubeing Compatibility Chart

Courtesy of Brass Products Division



Fitting Line	Copper	Aluminum	Steel	Polyethylene E	Polyethylene FRPE	Nylon N	Nylon PAT	Nylon NR	Polypropylene PP	Polyurethane U	Vinyl	Nylon PFT J844	Diesel Fuel FL	SAE J1402 (HPD)	TFE	FEA	PFA
SAE 45° Flare	×	×	×														
Inverted Flare	×	×	×														
Compression	×	×		×†	×†	×†	×†	×†							×†	×†	×†
Compress-Align	×	×		×*	×	×*	×	×*							×	×	×
Metru-Lok	×	×		×*		×	×	×									
Poly-Tite®	×			×			×			×							
Dubl-Barb®				×	×												
Prestolok				×		×			×	×							
Prestolok II				×		×			×	×							
Microlok				×		×			×	×							
Flow Controls				×		×											
Prestomatic				×		×						×	×				
Prestolok				×		×						×	×				
Cartridges				×		×						×	×				
Air Brake-AB	×																
Air Brake-NTA®						×	×					×	×				
Transmission						×						×					
Ari Brake Hose Ends														×			
Vibra-Lok	×	×	×														
DAT						×	×					×	×				
Hose Barb														×	**		

Ratings are based on static pressure conditions
 * Tube support is recommended
 ** Clamp required
 † Plastic sleeve and brass tube support is recommended

Tube Line Fabrication Guide for Leak Free Systems

Every hydraulic, pneumatic and lubrication system requires some form of tube line fabrication and fitting installation for completion. Proper fabrication and installation are essential for the overall efficiency, leak free performance, and general appearance of any system.

Start by planning ahead. After sizing the tube lines and selecting the appropriate style of fitting, consider the following in the design of your system:

1. Accessibility of joints
2. Proper routing of lines
3. Adequate tube line supports
4. Available fabricating tools

Routing of Lines

Routing of lines is probably the most difficult yet most significant of these system design considerations. Proper routing involves getting a connecting line from one point to another through the most logical path.

Always try to leave fitting joints as accessible as possible. Hard to reach joints are hard to assemble and tighten properly. Inaccessible joints are also more difficult and time consuming to service.

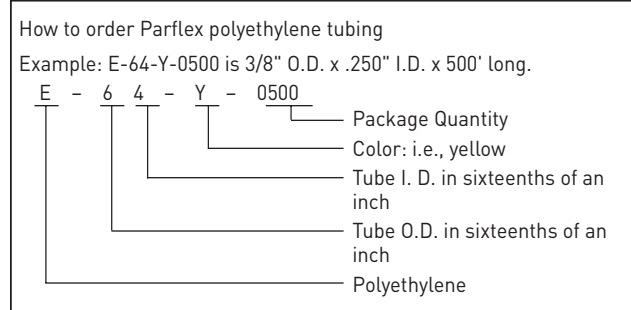


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Polyethylene Tubing

Series E: Instrument Grade—FDA, NSF Listed
 Series EB: Ultraviolet Light Resistant

- FDA, NSF-51 and NSF-61 compliant black polyethylene tubing is also available and is denoted with the letters "NSF" in the part number.
- E series natural and colored tubing listed below meet FDA, NSF-51 and NSF-61 requirements for food contact applications.
- Economical.
- Resistant to environmental stress cracking. It greatly exceeds that of ordinary polyethylene tubing as measured by ASTM D-1693 (10% IGEPAL).
- Black (EB) tubing contains an ultraviolet inhibitor which is recommended for use in sunlit areas and in close proximity to high ultraviolet light sources.
- Available in black as well as nine other colors, as recommended by the Instrument Society of America.
- Chemically resistant and flexible.
- Extruded from high molecular weight resin for increased dimensional stability, uniformity and long-term strength.
- All tubing conforms to ASTM D-1248, Type I, Class A, Category 4, Grade E5.
- The recommended operating temperature range for service at rated pressures with compatible fluids is -80°F (-62°C) to +150°F (+66°C).



Fitting Recommendation:

- Parker TrueSeal™ fittings.
- Parker Fast & Tite® fittings.
- A tube support can be used with this tubing for maximum holding power where tensiling, vibration or pressure spikes may occur
- Parker Brass Fittings available from Brass Products Division
 Otsego, MI
 (269) 694-2550
 (269) 692-6634 FAX

Part Number	Color*	O. D. in.	I. D. in.	Avg. Wall Thick	Working Pressure at 73°F PSI	Min. Burst Pressure at 73°F PSI	Reel Length ft.	Min. Bend Radius in.	Weight lbs. Per 100 ft.
#									
E-43-XXXX E-43-X-XXXX EB-43-XXXX EB-43-XXXX-NSF	Natural R, B, O, Y, P, G, WHT, GRA Black Black NSF	1/4	.170	.040	120	480	0100, 0500, 1000 0100, 0500 0100, 0500, 1000 0500, 1000	1	1.1
E-53-XXXX EB-53-XXXX	Natural Black	5/16	.187	.062	145	580	0100, 0500	1-1/8	2.1
E-64-XXXX E-64-X-XXXX EB-64-XXXX EB-64-XXXX-NSF	Natural R, B, O, Y, P, G, WHT, GRA Black Black NSF	3/8	.250	.062	125	500	0100, 0500	1-1/4	2.5
E-86-XXXX E-86-X-XXXX EB-86-XXXX EB-86-XXXX-NSF	Natural WHT, GRA Black Black NSF	1/2	.375	.062	90	360	0100, 0500	2-1/2	3.6
E-108-XXXX EB-108-XXXX	Natural Black	5/8	.500	.062	70	280	0100	4	4.6

*Color Code: R = red, B = blue, O = orange, Y = yellow, P = purple, G = green, WHT = white, GRA = gray.
 Standard black is not NSF approved.

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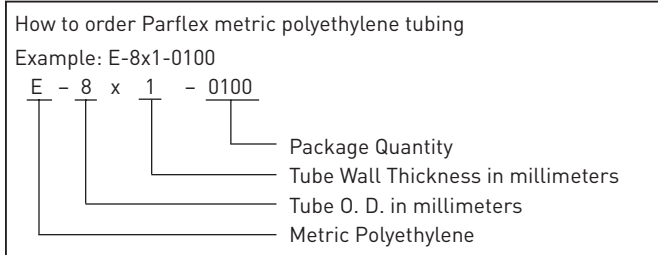
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Metric Polyethylene Tubing

Series E: Instrument Grade—FDA, NSF Listed
 Series EB: Ultraviolet Light Resistant

Fitting Recommendation:

- Parker TrueSeal™ fittings.
- Parker Fast & Tite® fittings.
- A tube support can be used with this tubing for maximum holding power where tensiling, vibration or pressure spikes may occur
- Parker Metric Brass Fittings available from Brass Products Division
 Otsego, MI
 (269) 694-2550
 (269) 692-6634 FAX



Part Number	Color	O. D. in.	I. D. in.	Wall Thick mm.	Working Pressure at 23°C bar	Min. Burst Pressure at 23°C bar	Reel Length ft.	Min. Bend Radius mm.	Weight lbs. Per 100 ft. (kg.)
#									
E-6X1-0100 EB-6X1-0100	Natural Black	6	4	1	8.6	34.5	100 100	25	1.3 (.59)
E-8X1-0100 EB-8X1-0100	Natural Black	8	6	1	6.9	27.6	100 100	38	1.4 (.64)
E-10X1.5-0100 EB-10X1.5-0100	Natural Black	10	7	1.5	8.6	34.5	100 100	38	2.6 (1.18)
E-12X1.5-0100 EB-12X1.5-0100	Natural Black	12	9	1.5	6.2	24.8	100 100	63	3.2 (1.45)

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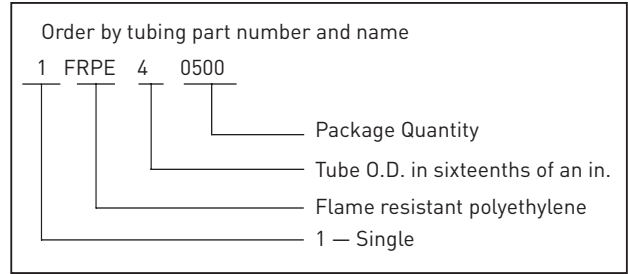
Alphanumeric Index

Polyethylene Tubing

Series FRPE: Flame Resistant

Using the same base linear low density polyethylene (LLDPE) as the E-Series tubing, Parker Hannifin, Parflex Division's FRPE tubing has the following advantages:

- Excellent stress crack resistance. Meets requirements set forth in ASTM D-1693.
- UL 1820 approved as well as UL 94 V-2.
- Can be installed in accordance with NFPA Standard 90A.
- Self-extinguishing properties coupled with low smoke density characteristics.
- Numbering system allows the installer to identify up to 30 distinct circuits.
- The recommended operating temperature range for service at rated pressures with compatible fluids is -85°F (-65°C) to +150°F (+66°C).



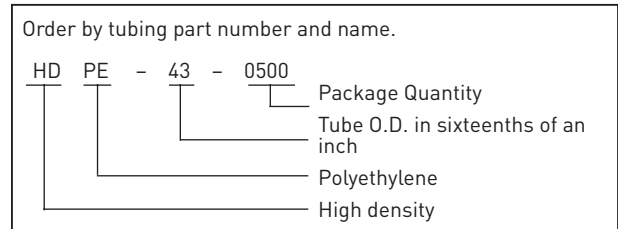
Part Number	Color	O. D. in.	I. D. in.	Avg. Wall Thick	Working Pressure at 73°F PSI	Min. Burst Pressure at 73°F PSI	Reel Length ft.	Min. Bend Radius in.	Weight lbs. Per 100
#									
1FRPE2.5-0500	Black	5/32	.096	.030	225	900	500	1/2	.053
1FRPE4-0250 1FRPE4-0500 1FRPE4-1000	Black Black Black	1/4	.170	.040	160	640	250 500 1000	3/4	1.17
1FRPE6-0250 1FRPE6-0500	Black Black	3/8	.250	.062	195	780	250 500	1-1/2	2.71
1FRPE8-0250	Black	1/2	.375	.062	135	540	250	1-3/4	3.80

Fitting Recommendation:

- Parker Brass Compression Double Barb
- Parker Brass Fittings available from Brass Products Division
Otsego, MI
(269) 694-2550
(269) 692-6634 FAX

Series HDPE: High Density

- Manufactured from high strength, high density polyethylene.
- Semirigid tubing that is inherently resistant to most chemicals, less easily cut or damaged and has a higher burst pressure rating than series E tubing.
- The recommended operating temperature range for service at rated pressures with compatible fluids is -80°F (-62°C) to +175°F (+80°C).

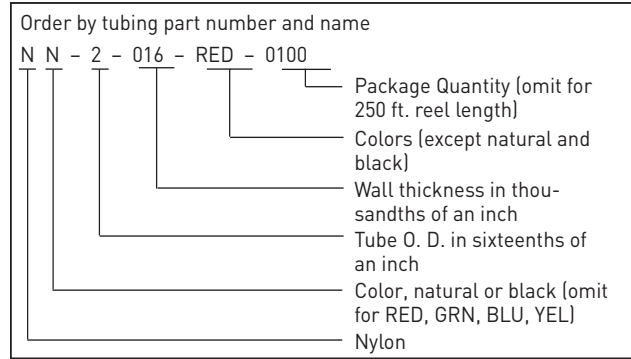


Part Number	Color	O. D. in.	I. D. in.	Avg. Wall Thick	Working Pressure at 73°F PSI	Min. Burst Pressure at 73°F PSI	Reel Length ft.	Min. Bend Radius in.	Weight lbs. Per 100 ft.
#									
HDPE-43-0250 HDPE-43-0500	Black Black	1/4	.170	.040	300	1200	250 500	1-1/2	1.1
HDPE-64-0250 HDPE-64-0500	Black Black	3/8	.250	.062	300	1200	250 500	2-1/2	2.5

Nylon Tubing

Series N: Flexible

- Made from high-grade, abrasion resistant, heat and light stabilized nylon.
- Resistance to stress cracking greatly exceeds that of ordinary nylon tubing.
- Exhibits extremely low level water absorption.
- Chemically resistant.
- Better flexibility, lighter weight and better resistance to flexural fatigue.
- The recommended operating temperature range for service at rated pressures with compatible fluids, depending upon conditions, is -65°F (-54°C) to +200°F (+93°C) continuous.
- Available in natural (NN), red (RED), green (GRN), blue (BLU), yellow (YEL), and black (NB).
- Black tubing is recommended for use outdoors and in sunlit areas.



Fitting Recommendations:

- Parker TrueSeal™ fittings.**
- Parker Fast & Tite® fittings.**
- Parker Brass Fittings available from Brass Products Division
Otsego, MI
(269) 694-2550
(269) 692-6634 FAX

**Verify fitting working pressure meets application requirements.

Part Number	Color	Nom. Tube O. D. in.	Nom. Tube I. D. in.	Avg. Wall Thick	Working Pressure at 73°F PSI	Min. Burst Pressure at 73°F PSI	Std. Reel Length ft.	Min. Bend Radius in.	Weight lbs. Per 100 ft.
#									
NN-2-016 NB-2-016	Natural Black	1/8	.093	.016	250	1000	100, 250	1/4	0.25
NN-2-031 NB-2-031	Natural Black	1/8	.064	.031	500	2000	100, 250	1/4	0.42
NN-2.5-025 NB-2.5-025	Natural Black	5/32	.106	.025	300	1200	100, 250	1/2	0.47
NN-3-025 NB-3-025	Natural Black	3/16	.138	.025	250	1000	100, 250	5/8	0.58
NN-3-046 NB-3-046	Natural Black	3/16	.096	.046	500	2000	100, 250	7/16	0.93
NN-4-035 NB-4-035	Natural Black	1/4	.180	.035	250	1000	100, 250	7/8	1.10
NN-4-040 NB-4-040	Natural Black	1/4	.170	.040	310	1250	100, 250	7/8	1.20
NN-4-062 NB-4-062	Natural Black	1/4	.127	.062	500	2000	100, 250	1/2	1.70
NN-5-040 NB-5-040	Natural Black	5/16	.233	.040	250	1000	100, 250	1-1/8	1.56
NN-6-050 NB-6-050	Natural Black	3/8	.275	.050	250	1000	100, 250	1-1/8	2.34
NN-6-093 NB-6-093	Natural Black	3/8	.190	.093	500	2000	100, 250	3/4	3.80
NN-8-062 NB-8-062	Natural Black	1/2	.375	.062	250	1000	100, 250	1-1/4	3.94
NN-8-124 NB-8-124	Natural Black	1/2	.253	.124	500	2000	100, 250	1	6.70

*Suggested working pressure is 1/4 of burst pressure.
Metric part numbers on the following page.

Metric Nylon Tubing

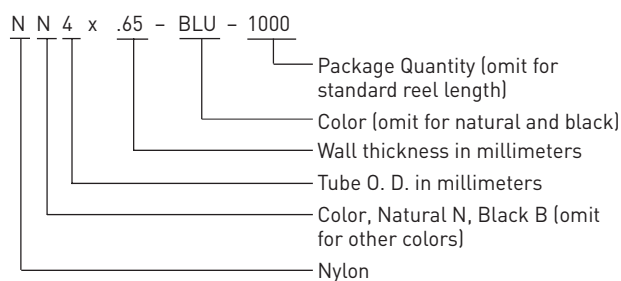
Series N: Flexible

- Manufactured from our high standard, high-grade, abrasion resistant, heat and light stabilized flexible nylon.
- Metric nylon tubing has the same high chemical resistance and benefits of flexibility, light weight and resistance to flexural fatigue as our standard nylon tubing.
- The recommended operating temperature range for service at rated pressures with compatible fluids is -54°C (-65°F) to 93°C (200°F) continuous.
- Available in natural and black. Others colors available upon request: green (GRN), red (RED), yellow (YEL), and blue (BLU).

Fitting Recommendations:

- Parker metric fittings available from:
Tube Fittings Division
Columbus, Ohio
Phone (614) 279-7070
- Parker Metric Brass Fittings available from
Brass Products Division
Otsego, MI
(269) 694-2550
(269) 692-6634 FAX

Order by tubing part number and name



Part Number	Color	Nom. Tube O. D. mm.	Nom. Tube I. D. mm.	Avg. Wall Thick mm.	Working Pressure at 23°C bar	Min. Burst Pressure at 23°C bar	Std. Reel Length ft. (m)	Min. Bend Radius mm.	Weight lbs. Per 100ft. (k.g.)
#									
NN4X.65 NB4X.65	Natural Black	4	2.7	0.65	26	104	100 (30.5)	14	.49 (.22)
NN6X1 NB6X1	Natural Black	6	4.0	1.00	23.5	94	100 (30.5)	22	1.1 (.50)
NN8X1 NB8X1	Natural Black	8	6.0	1.00	17	68	100 (30.5)	29	1.6 (.73)
NN10X1 NB10X1	Natural Black	10	8.0	1.00	12.5	50	100 (30.5)	34	2.0 (.91)
NN12X1 NB12X1	Natural Black	12	10.0	1.00	11	44	100 (30.5)	45	2.4 (1.1)
NN14X1.5 NB14X1.5	Natural Black	14	11.0	1.50	15	60	100 (30.5)	57	4.2 (1.9)
NN16X1.5 NB16X1.5	Natural Black	16	13.0	1.50	12.5	50	100 (30.5)	74	4.9 (2.2)
NN18X1.5 NB18X1.5	Natural Black	18	15.0	1.50	10.5	42	100 (30.5)	92	5.5 (2.5)
NN20X1.5 NB20X1.5	Natural Black	20	17.0	1.50	9.5	38	100 (30.5)	112	6.2 (2.8)

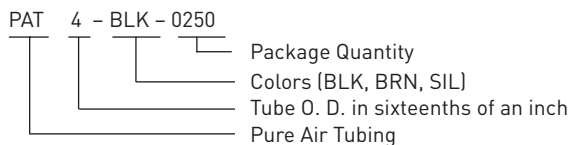
To convert bar to PSI, multiply by 14.5.

Nylon Pure Air Tubing

Series PAT: Ultra Pure, UV Resistant

- Manufactured from a specially formulated nylon for use in pure air and gas distribution systems.
- Packaged on corrugated plastic reel with ends capped. Shipped in a plastic-lined container.
- Offers excellent chemical resistance and ultraviolet light resistance.
- Maintains good resistance to high ambient temperatures with low moisture absorption.
- Provides high tensile strength with excellent coupling retention in high-pressure, temperature and vibration environments.
- Sizes 1/4" and smaller are single wall tubing having superior heat and light resistance.
- Tubing sizes 3/8" O.D. and above are reinforced constructions intended for gas distribution system connections where there is no substantial movement between end couplings.
- The recommended operating temperature range for service at rated pressures with compatible fluids is -40°F (-40°C) to +200°F (+93°C).
- PAT tubing is rated for full vacuum service at 28 inch Hg.
- Available in black (BLK), brown (BRN), and silver (SIL).

Order by tubing part number and name



Fitting Recommendations:

- Parker Brass Fittings available from Brass Products Division
Otsego, MI
(269) 694-2550
(269) 692-6634 FAX

Nylon Part Number	Nom. Tube O. D. in.	Nom. Tube I. D. in.	Avg. Wall Thick in.	Working Pressure at 73°F PSI	Min. Burst Pressure at 73°F PSI	Std.** Reel Length ft.	Min. Bend Radius in.	Weight lbs. Per 100ft.
#								
PAT2	1/8	.079	.023	250	1000	1000	3/8	3.50
PAT4	1/4	.170	.040	300	1200	1000	1.0	12.41
PAT6	3/8	.251	.062	350	1400	500	1-1/0	28.22
PAT8	1/2	.376	.062	235	950	500	2.0	39.54
PAT10	5/8	.441	.092	225	900	250	2-1/2	70.21
PAT12	3/4	.566	.092	200	800	250	3.0	87.23

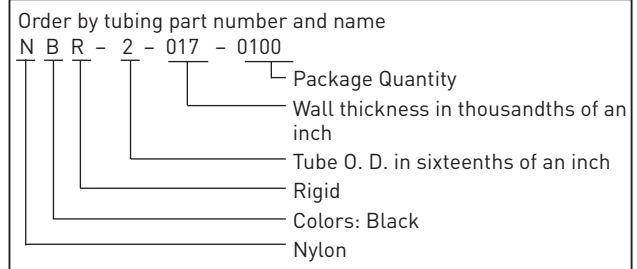
*Suggested working pressure is 1/4 of burst pressure.

**Other reel lengths may be available. Contact the Parflex Division for details.

Nylon Tubing

Series NR: Semirigid High Strength

- Manufactured from a semirigid nylon material. The tubing does not contain plasticizers.
- Offers better chemical resistance than series N, good resistance to high ambient temperature and low moisture absorption.
- Has a high tensile strength which will give excellent coupling retention in high-pressure, temperature and vibration environments.
- Specified for machine tool lubricating systems, marine control systems, process lines for chemicals and oils, and other applications requiring a high quality nylon tube.
- NR and NBR tubing meets UL94HB flame resistance ratings in wall thicknesses of .033" and greater.
- The recommended operating temperature range for service at rated pressures with compatible fluids is -60°F (-51°C) to +200°F (+93°C).



Fitting Recommendations:

- Parker TrueSeal™ fittings.
- Parker Fast & Tite® fittings.
- Parker Brass Fittings available from Brass Products Division
Otsego, MI
(269) 694-2550
(269) 692-6634 FAX

Part Number	Color	Nom. Tube O. D. in.	Nom. Tube I. D. in.	Avg. Wall Thick	Working Pressure at 73°F PSI	Min. Burst Pressure at 73°F PSI	Std. Reel Length ft.	Min. Bend Radius in.	Weight lbs. Per 100ft.
#									
NNR-2-017 NBR-2-017	Natural Black	1/8	.091	.017	425	1700	500	1/2	0.26
NNR-2-026 NBR-2-026	Natural Black	1/8	.073	.026	625	2500	500	3/8	0.36
NNR-3-024 NBR-3-024	Natural Black	3/16	.140	.024	425	1700	500	3/4	0.56
NNR-3-039 NBR-3-039	Natural Black	3/16	.110	.039	625	2500	500	5/8	0.82
NNR-4-035 NBR-4-035	Natural Black	1/4	.180	.035	425	1700	250	1	1.10
NNR-4-050 NBR-4-050	Natural Black	1/4	.150	.050	625	2500	250	7/8	1.40
NNR-5-040 NBR-5-040	Natural Black	5/16	.233	.040	425	1700	250	1-1/2	1.50
NNR-6-048 NBR-6-048	Natural Black	3/8	.279	.048	425	1700	250	1-3/4	2.20
NNR-6-075 NBR-6-075	Natural Black	3/8	.225	.075	625	2500	250	1-1/2	3.20
NNR-8-062 NBR-8-062	Natural Black	1/2	.375	.062	375	1500	250	2-3/8	3.80
NNR-8-075 NBR-8-075	Natural Black	1/2	.350	.075	625	2500	250	2-1/2	4.5

* Suggested working pressure is 1/4 of burst pressure.

NEW—Series NR nylon tubing is now available in 100 ft. bunch coil package lengths. To order, add suffix 0100 to part number. Example: NNR-4-035-0100

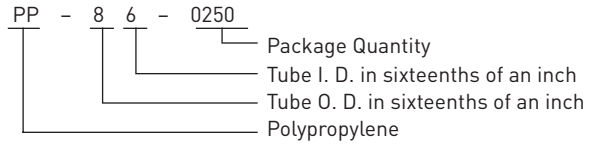
Polypropylene Tubing

Series PP: Laboratory Grade—FDA, NSF Listed
 Series PPB: Ultraviolet Light Resistant

- Acid and chemically resistant.
- Flexible.
- Dimensionally stable.
- May be used at higher temperatures and working pressures than polyethylene tubing.
- Resistance to hot water and hot corrosive acids is excellent. Polypropylene tubing will last many times longer than nylon tubing in hot water service.
- Has water absorption of less than .01%.
- Has good resistance to vegetable oils.
- Has excellent resistance to environmental stress cracking.
- Available in white, UV-resistant black and special NSF black.
- PPB series tubing has superior ultraviolet resistance.
- White and NSF black polypropylene meet FDA and NSF-51 requirements for food contact and potable water.
- NSF black polypropylene tubing is available upon special request. Add -NSF suffix to PPB part number.
- The recommended operating temperature range for service at rated pressures with compatible fluids is 0°F (-18°C) to +200°F (+93°C).

How to order Parflex polypropylene tubing

Example: PP-86-0250 is 1/2" O. D. x 3/8" I. D.



Fitting Recommendations:

- Parker TrueSeal™ fittings.
- Parker Fast & Tite® fittings.
- A tube support can be used with this tubing for maximum holding power where tensiling, vibration or pressure spikes may occur
- Parker Brass Fittings available from Brass Products Division
 Otsego, MI
 (269) 694-2550
 (269) 692-6634 FAX

Part Number	Color	Nom. Tube O. D. in.	Nom. Tube I. D. in.	Avg. Wall Thick in.	Working Pressure at 73°F PSI	Min. Burst Pressure at 73°F PSI	Reel Length ft.	Min. Bend Radius in.	Weight lbs. Per 100ft.
#									
PP-21-1000 PPB-21-1000	White Black	1/8	.080	.023	350	1400	1000	1/2	0.28
PP-32-0500 PPB-32-0500	White Black	3/16	.120	.034	350	1400	500	3/4	0.62
PP-43-0500 PPB-43-0500	White Black	1/4	.170	.040	300	1200	500	1	1.01
PP-53-0500 PPB-53-0500	White Black	5/16	.187	.062	350	1400	500	1-1/4	1.87
PP-64-0500 PPB-64-0500	White Black	3/8	.250	.062	300	1200	500	1-1/4	2.35
PP-86-0250 PPB-86-0250	White Black	1/2	.375	.062	225	900	250	2-1/2	3.28
PP-108-0100 PPB-108-0100	White Black	5/8	.500	.062	175	700	100	4	4.22

* Suggested working pressure is 1/4 of burst pressure.

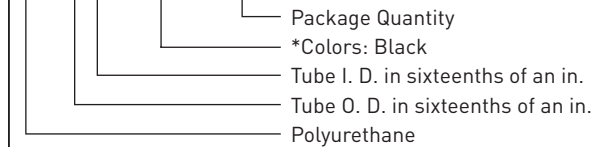
Polyurethane Tubing

Series U: Polyether Base

- Medium durometer (90 to 95 Shore A).
- The tubing is tough, strong, kink resistant and abrasion resistant.
- Excellent hydrolytic stability.
- Flexible and easy to assemble onto designated fittings.
- Broad temperature range.
- Available in eight colors.
- High quality, precision made tubing used in a wide range of demanding and critical applications.
- Polyurethane occupies a unique position among polymers, sharing the best properties of both rubber and plastic. Parflex Series U tubing exhibits the elongation and recovery characteristics of rubber and the chemical resistance associated with plastics.
- Used for a wide variety of applications. Typical usage includes air tools, robotics, pneumatic logic and actuation systems, analytical instrumentation, vacuum equipment, pressure measurement apparatus, semiconductor equipment manufacturers and a variety of medical and laboratory applications.
- The recommended operating temperature range for service at rated pressures with compatible fluids is -40°F (-40°C) to +180°F (+82°C).

Order by tubing part number and name

U - 2 1 - BLK - 0500



Fitting Recommendations:

- Parker TrueSeal™ fittings:
A tube support should be used with this tubing, sizes -64 and -86, for maximum fitting holding power.
- Parker Fast & Tite® fittings:
Requires use of a tube support
- Parker polyurethane Fast-Stor® fittings.
- Parker Par-Barb fittings.
- Parker Brass Fittings including MicroLok fittings available from:
Brass Products Division
Otsego, Michigan
(269) 694-2550
(269) 692-6634 FAX

Also available in coils

Part Number	Nom. Tube O. D. in.	Nom. Tube I. D. in.	Wall Thick in.	Working Pressure at 73°F PSI	Min. Burst Pressure at 73°F PSI	Coil Length ft.	Weight lbs. Per 100ft.
#							
U-21-0050 U-21-0250 U-21-0500 U-21-1000	1/8	1/16	1/32	125	375	50 250 500 1000	0.46
U-32-0050 U-32-0250 U-32-0500	3/16	1/8	1/32	125	375	50 250 500	0.76
U-42-0050 U-42-0250 U-42-0500 U-42-1000	1/4	1/8	1/16	125	375	50 250 500 1000	1.80
U-64-0050 U-64-0100 U-64-0250 U-64-0500	3/8	1/4	1/16	125	375	50 100 250 500	3.00
U-85-0050 U-85-0100 U-85-0250	1/2	21/64	.086	125	375	50 100 250	4.40
U-86-0050 U-86-0250 U-86-0500	1/2	3/8	1/16	85	255	50 100 250	4.20
U-96-0050 U-96-0100	9/16	3/8	3/32	125	375	50 100	6.80
U-128-0050 U-128-0100	3/4	1/2	1/8	125	375	50 100	12.00

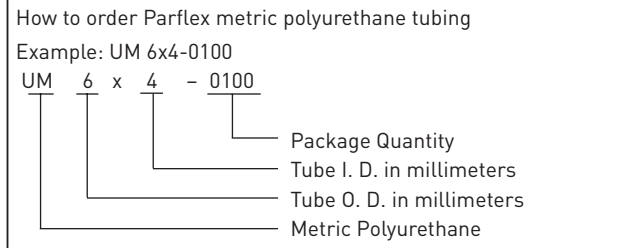
** Suggested working pressure is 1/3 of burst pressure.

Metric part numbers on the following page.

*Colors: Clear-Blank, Black-BLK, Green-GRN, Red-RED, Yellow-YEL, Blue-BLU, Orange-ORG, Gray-GRA

Metric Polyurethane Tubing

Series U: Polyether Base



Part Number	Nom. Tube O. D. mm.	Nom. Tube I. D. mm.	Wall Thick mm.	Working Pressure at 23°C bar	Min. Burst Pressure at 34°C bar	Coil Length ft. (m)	Weight lbs. Per 100ft.
#							
UM4x2.5-0100 UM4x2.5-0250 UM4x2.5-0500	4	2.5	0.75	9	26	100 (30.5m) 250 (76.2m) 500 (152.4m)	0.06 (.027)
UM6x4-0100 UM6x4-0250 UM6x4-0500	6	4.0	1.00	9	26	100 (30.5m) 250 (76.2m) 500 (152.4m)	1.23 (.558)
UM8x5-0100 UM8x5-0250 UM8x5-0500	8	5.0	1.50	9	26	100 (30.5m) 250 (76.2m) 500 (152.4m)	2.40 (1.09)
UM10x6.5-0100 UM10x6.5-0250	10	6.5	1.75	9	26	100 (30.5m) 250 (76.2m)	3.55 (1.61)
UM12x8-0100 UM12x8-0250	12	8.0	2.00	9	26	100 (30.5m) 250 (76.2m)	4.92 (2.23)

HUFR MicroWeld™ Tubing

Part Number	Nom. Tube O. D. in.	Nom. Tube I. D. in.	Nom. Wall Thick in.	Max. Working Pressure at 73° F PSI	Min. Burst Pressure at 73° F PSI	Min. Bend Radius	Weight lbs. Per 100ft.
#							
HUFR-4-045-XX-0500	1/4	.160	.045	175	525	1/2	1.58
HUFR-6-062-XX-0500	3/8	.251	.062	150	450	3/4	3.33
HUFR-8-090-XX-0250	1/2	.320	.090	160	475	1	6.33

"XX" denotes color code

Metric sizes available upon request. Contact Parflex

Tube: Flame retardant, abrasion resistant, high durometer specially formulated ether based polyurethane

Colors: Black (BK), Blue (BL), Green (GN), White (WH). Other colors available upon request

Temperature Range: -40° F to +180° F (-40° C to +82° C)

Packaging: Cartons; 250ft or 500ft

Industry Standards: UL94 V-2 flame rating

Fittings: Push-to-Connect; (contact the Parker Brass Products Division for availability)

Note: Working pressure and burst pressure are at 73° F (23° C). Burst data was obtained in carefully controlled test conditions. Use this information for comparison only. Actual performance may vary with different media and working conditions. Pressure ratings lower at elevated temperatures.



Hydraulic & Pneumatic Hose & Fit.
 PTFE Hose & Fittings
 Thermoplastic Tubing
 Coiled Air Hose, Fittings & Accessories
 Truck (Fleet) Products
 Tooling & Equipment
 Hose Accessories
 Technical & Design Information
 Approvals & Guides
 Alphanumeric Index

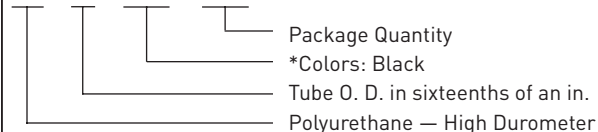
Polyurethane Tubing

Series HU: High Durometer

- Polyether base.
- Tough, strong, kink resistant and abrasion resistant.
- Excellent hydrolytic stability.
- Broad temperature range.
- Five colors.
- Has a Shore A hardness greater than 95 durometer. This high durometer enables the use of compression/push-to-connect fittings and significantly increases the working pressure versus standard polyurethane tubing.
- High quality, precision made tubing used in a wide range of demanding and critical applications.
- Polyurethane tubing occupies a unique position among polymers, sharing the best properties of both rubber and plastic. Urethane exhibits the elongation and recovery characteristics of rubber and the chemical resistance associated with plastics.
- Used for a wide variety of applications. Typical usage includes air tools, robotics, pneumatic logic and actuation systems, analytical instrumentation, vacuum equipment, pressure measurement apparatus, semiconductor equipment manufacturers and a variety of laboratory applications.
- The recommended operating temperature range for service at rated pressures with compatible fluids is -40°F (-40°C) to +180°F (+82°C).

Order by tubing part number and name

HU - 2 - BLK - 0500



Fitting Recommendations:

- Parker TrueSeal™ fittings.
- Parker Brass Fittings and MicroLok fittings available from:
Brass Products Division
Otsego, Michigan
(269) 694-2550
(269) 692-6634 FAX

Also available in coils

Part Number	Nom. Tube O. D. in.	Nom. Tube I. D. in.	Wall Thick in.	Working Pressure at 73°F PSI	Min. Burst Pressure at 73°F PSI	Coil Length ft.	Weight lbs. Per 100ft.
#							
HU-2-0100 HU-2-0500	1/8	.063	.031	300	900	100 250 500	0.48
HU-2.5-0100 HU-2.5-0500	5/32	.094	.031	210	630	100 500	0.64
HU-4-0100 HU-4-0500	1/4	.160	.045	180	540	100 500	1.55
HU-6-0100 HU-6-0500	3/8	.250	.062	180	540	100 500	3.27
HU-8-0100 HU-8-0250	1/2	.320	.090	180	540	100 250	6.18
HU-12-0100 HU-12-0250	3/4	.467	.142	Contact Parflex Division for additional information.		100 250	

** Suggested working pressure is 1/3 of burst pressure.

Metric part numbers on the following page.

* Colors: Black-BLK, Red-RED, Navy Blue-DBL, Silver-SIL, Blue-BLU.

Consult Division concerning the following new color offerings: brown, gray, green, yellow, orange, clear, white, purple, light gray, neon pink, neon green, neon orange, and the following transparent colors: red, green, blue, yellow, orange, purple.

Metric Polyurethane Tubing

Series HUM: High Durometer (Metric)

- Polyether base.

How to order Parflex metric polyurethane tubing
 Example: HUM-6-BLK-0100

HUM - 6 - BLK - 0100

- Package Quantity
- *Colors: Black
- Tube O. D. in millimeters
- Metric polyurethane - High Durometer

Part Number	Nom. Tube O. D. mm.	Nom. Tube I. D. mm.	Wall Thick mm.	** Working Pressure at 23°C bar	Min. Burst Pressure at 23°C bar	Coil Length ft.	Weight lbs. Per 100ft. (k.g.)
#							
HUM-4-0100 HUM-4-0500	4	2.4	0.80	12.4	37.2	100 500	.68 (0.31)
HUM-6-0100 HUM-6-0500	6	4.0	1.00	12.4	37.2	100 500	1.30 (.558)
HUM-8-0100 HUM-8-0250	8	5.0	1.50	12.4	37.2	100 500	2.59 (1.17)
HUM-10-0100 HUM-10-0250	10	6.5	1.75	12.4	37.2	100 250	3.84 (1.74)
HUM-12-0100 HUM-12-0250	12	8.0	2.00	12.4	37.2	100 250	4.92 (2.23)

**Suggested working pressure is 1/3 of burst pressure.

Note:

Metric urethane tubing is packaged in the following lengths:
 100 ft. (30.5 meters), 250 ft. (76.2 meters), 500 ft. (152.4 meters).

* Colors: Black-BLK, Red-RED, Navy Blue-DBL, Silver-SIL, Blue-BLU. Consult Division for availability of other color options.

Clear Vinyl Tubing

Parflex Clear Vinyl Tubing Formula Number V-1, Instrument and Laboratory Grade
 FDA Compliance

- Made from a virgin clear PVC (polyvinyl chloride) resin, specially formulated for exceptional purity, clarity and flexibility.
- Superior or equivalent to clear vinyl tubing available from any other source.
- Formula V-1 tubing fully meets all specifications called out by the United States Food and Drug Administration (FDA) for materials in contact with food and drugs for human consumption.
- 70 durometer for soft, easy handling and bending without tubing collapse.
- Crystal clear for fully visible fluid flow and excellent appearance.
- The recommended operating temperature range for service at rated pressures with compatible fluids is -40°F (-40°C) to +150°F (+65°C).

Fitting Recommendations:

- Tubing sizes 42, 43, 53, 64, 86 and 108 are made for use with Parker Fast & Tite® tube fittings. A tube support should be used with this tubing for maximum fitting holding power.
- Par-Barb insert barbed type fittings may be used with all sizes of Parflex clear vinyl tubing.
- Parker Brass Fittings are available from:
 Brass Products Division
 Otsego, Michigan
 Phone (616) 694-9411

How to order tubing:

PV 10 8 -1

- Formula V-1 FDA Approved Formulation
- Tube I. D. in sixteenths of an inch
- Tube O. D. in sixteenths of an inch
- Parflex Clear Vinyl Tubing

Crystal Clear Part Number	O. D. in.	I. D. in.	Avg. Wall Thick in.	Made from Virgin PVC Resins		Weight lbs. Per 100 ft.
				Working Pressure at	Standard Coil Length	
#						
PV21-1 PV32-1 PV42-1 PV43-1	1/8 .170 1/4 1/4	1/16 1/8 1/8 .170	1/32 .025 1/16 .040	35 35 65 55	100 100 100 100	0.48 0.58 2.52 1.35
PV403-1 PV53-1 PV63-1 PV73-1	1/4 5/16 3/8 7/16	3/16 3/16 3/16 3/16	1/32 1/16 3/32 1/8	22 55 65 75	100 100 100 100	1.11 2.51 4.26 6.28
PV54-1 PV64-1 PV74-1 PV84-1	5/16 3/8 7/16 1/2	1/4 1/4 1/4 1/4	1/32 1/16 3/32 1/8	20 55 60 70	100 100 100 100	1.42 3.15 5.18 7.55
PV75-1 PV85-1 PV95-1	7/16 1/2 9/16	5/16 5/16 5/16	1/16 3/32 1/8	50 60 70	100 100 100	3.7 6.15 8.80
PV86-1 PV96-1 PV106-1	1/2 9/16 5/8	3/8 3/8 3/8	1/16 3/32 1/8	45 50 60	100 100 100	4.41 7.06 10.07
PV97-1 PV107-1 PV117-1	9/16 5/8 11/16	7/16 7/16 7/16	1/16 3/32 1/8	40 45 50	100 100 100	5.03 8.04 11.49
PV108-1 PV118-1 PV128-1 PV138-1	5/8 11/16 3/4 13/16	1/2 1/2 1/2 1/2	1/16 3/32 1/8 5/32	30 40 45 60	100 100 100 100	5.66 8.94 12.59 16.70
PV129-1 PV139-1	3/4 13/16	9/16 9/16	3/32 1/8	40 45	100 100	9.94 13.84
PV1310-1 PV1410-1 PV1510-1	13/16 7/8 15/16	5/8 5/8 5/8	3/32 1/8 5/32	35 40 50	100 100 100	10.82 15.11 19.63
PV1411-1 PV1611-1	7/8 1	11/16 11/16	3/32 5/32	30 45	100 100	11.83 21.27
PV1612-1 PV1712-1 PV1812-1 PV2012-1	1 1-1/16 1-1/8 1-1/4	3/4 3/4 3/4 3/4	1/8 5/32 3/16 1/4	35 35 50 55	100 100 100 50	17.62 22.77 28.32 40.28
PV1814-1 PV1914-1 PV2014-1	1-1/8 1-3/16 1-1/4	7/8 7/8 7/8	1/8 5/32 3/16	30 35 45	50 100 50	20.14 25.91 32.10
PV2016-1 PV2116-1 PV2216-1 PV2416-1	1-1/4 1-5/16 1/3/8 1-1/2	1 1 1 1	1/8 5/32 3/16 1/4	25 30 40 45	50 50 50 50	22.66 29.03 35.87 50.35
PV2218-1	1-3/8	1-1/8	1/8	25	50	25.18
PV2420-1 PV2620-1 PV2820-1	1-1/2 1-5/8 1-3/4	1-1/4 1-1/4 1-1/4	1/8 3/16 1/4	20 35 45	50 50 50	27.69 43.43 60.42
PV3024-1 PV3224-1 PV3628-1	1-7/8 2 2-1/4	1-1/2 1-1/2 1-3/4	3/16 1/4 1/4	30 40 30	50 50 50	50.98 70.49 80.56
PV4032-1	2-1/2	2	1/4	35	50	90.63

Hydraulic & Pneumatic Hose & Fit.

PTFE Hose & Fittings

Thermoplastic Tubing

Coiled Air Hose, Fittings & Accessories

Truck (Fleet) Products

Tooling & Equipment

Hose Accessories

Technical & Design Information

Approvals & Guides

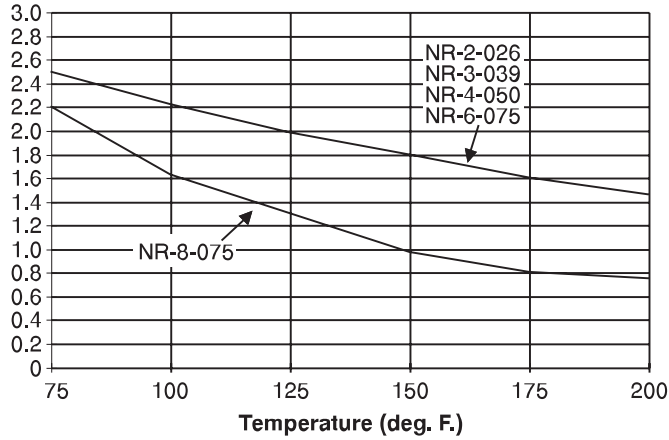
Alphanumeric Index

Burst Pressure/Temperature Charts

Nylon Semi-Rigid Tubing

NR Series (NNR, NBR)
1/8 through 1/2 inch O. D.

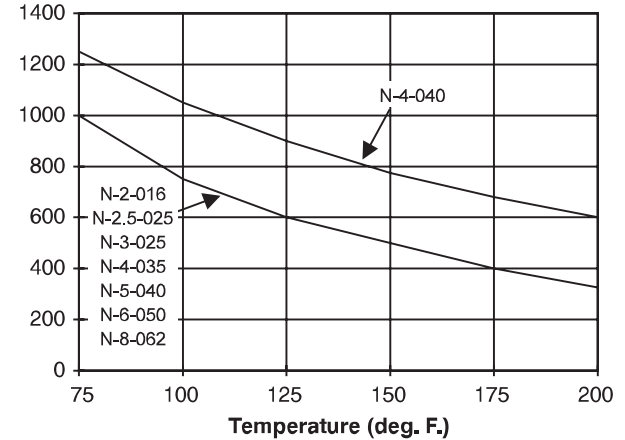
Minimum Burst Pressure (PSig) (Thousands)



Nylon Flexible Tubing

N Series (NN, NB)
1/8 through 1/2 inch O. D.

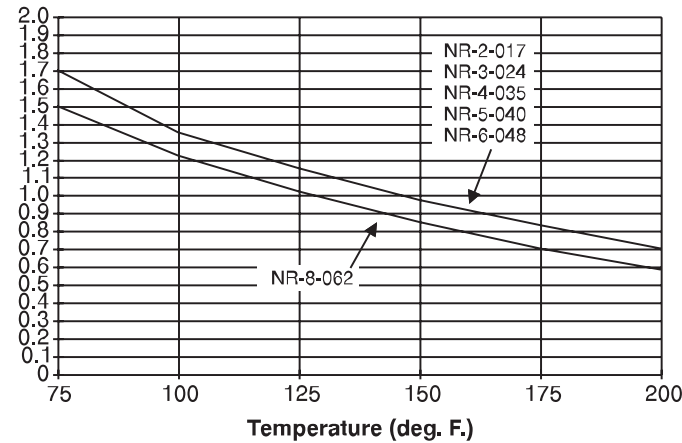
Minimum Burst Pressure (PSig)



Nylon Semi-Rigid Tubing

NR Series (NNR, NBR)
1/8 through 1/2 inch O. D.

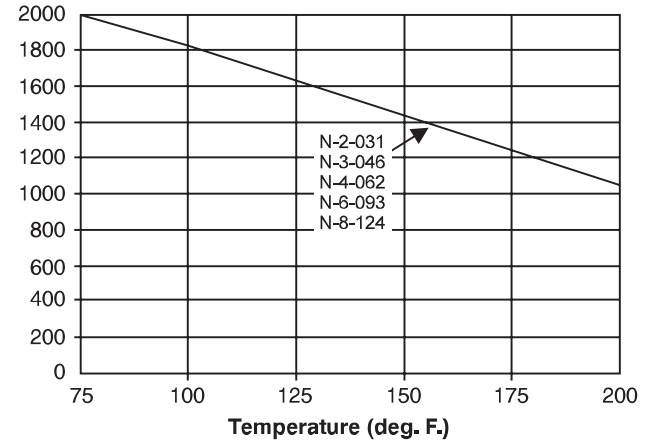
Minimum Burst Pressure (PSig) (Thousands)



Nylon Flexible Tubing

N Series (NN, NB)
1/8 through 1/2 inch O. D.

Minimum Burst Pressure (PSig)

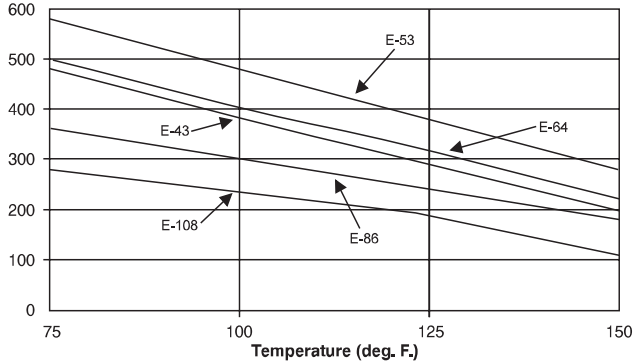


Suggested working pressure is 1/4 of burst pressure at system operating temperature.

Polyethylene Tubing

Laboratory Grade E Series
1/4 through 5/8 inch O. D.

Minimum
Burst
Pressure
(PSig)

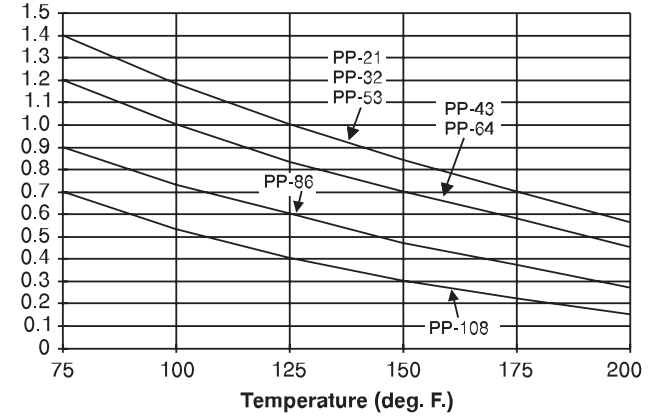


Similar curves for Poly-Flo® sizes
Consult Factory

Polypropylene Tubing

PP Series
1/8 through 5/8 inch O. D.

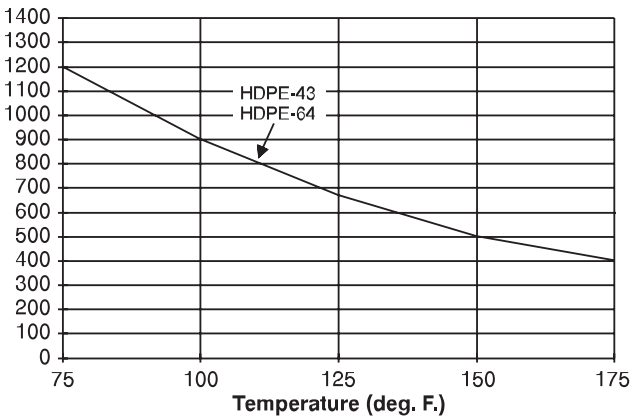
Minimum
Burst
Pressure
(PSig)
(Thousands)



Polyethylene Tubing

High Density HDPE Series
1/4 through 5/8 inch O. D.

Minimum
Burst
Pressure
(PSig)

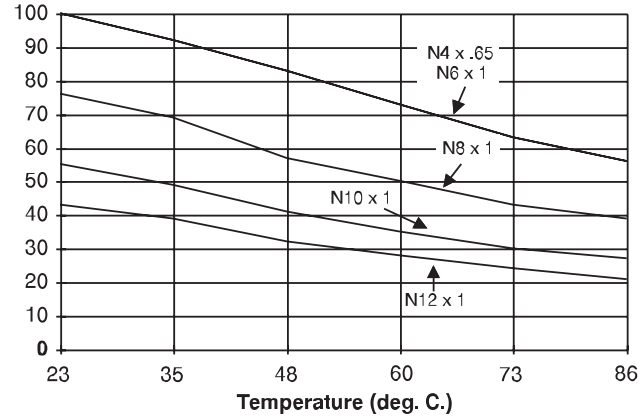


Suggested working pressures of nylon, polypropylene and polyethylene are 1/4 of burst pressure at system operating temperature.
Suggested working pressure of polyurethane is 1/3 of burst pressure at system operating temperature.

Metric Nylon Tubing

N Series
4 millimeters through 12 millimeters O. D.

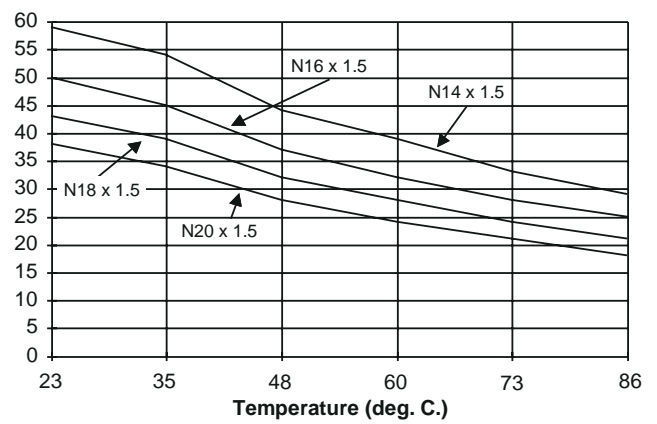
Minimum
Burst
Pressure (bar)



Metric Nylon Tubing

N Series
14 millimeters through 20 millimeters O. D.

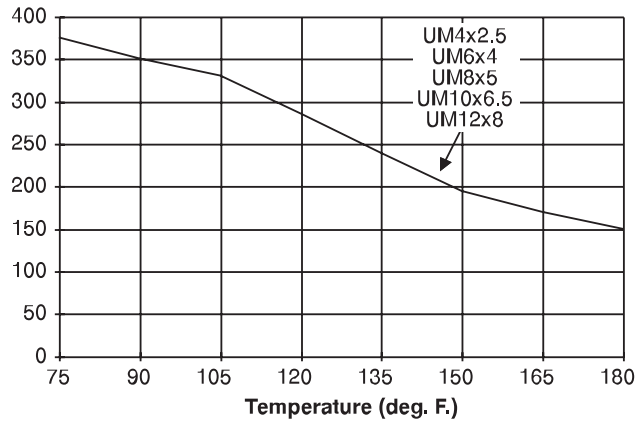
Minimum
Burst
Pressure (bar)



Metric Polyurethane Tubing

UM Series Polyether Base
4 through 12 millimeters O. D.

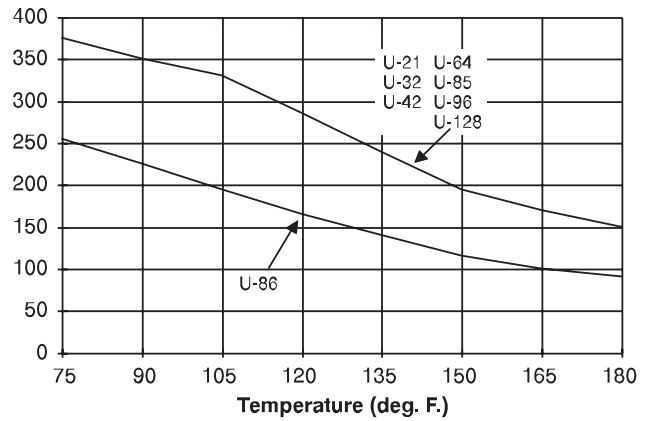
Minimum
Burst
Pressure (PSIg)



Polyurethane Tubing

U Series Polyether Base
1/8 through 3/4 inch O. D.

Minimum
Burst
Pressure (PSIg)



Hydraulic & Pneumatic Hose & Fit.

PTFE Hose & Fittings

Thermoplastic Tubing

Coiled Air Hose, Fittings & Accessories

Truck (Fleet) Products

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The Hope Group Branch Locations

Your complete source for quality tube fittings, hose & hose fittings, brass & composite fittings, quick-disconnect couplings, valves and assembly tools, locally available from a worldwide network of authorized distributors.

Fittings:

Available in inch and metric sizes covering SAE, BSP, DIN, GAZ, JIS and ISO thread configurations, manufactured from steel, stainless steel, brass, aluminum, nylon and thermoplastic.

Hose, Tubing and Bundles:

Available in a wide variety of sizes and materials including rubber, wire-reinforced, thermoplastic, hybrid and custom compounds.

Worldwide Availability:

Parker operates Fluid Connectors manufacturing locations and sales offices throughout North America, South America, Europe and Asia-Pacific.

For information, call

508-393-7660

Massachusetts

Fitchburg

Parker Store
58 Crawford Street
Tel: 978-342-6817
Fax: 978-345-7604

Northborough

Corporate Headquarters
70 Bearfoot Road
Tel: 508-393-7660
Fax: 508-393-8203

Weymouth

Parker Store
50 Finnell Drive, Unit 12-14
Tel: 781-803-2572
Fax: 781-812-2641

Rhode Island

Cranston

Parker Store
215 Niantic Avenue
Tel: 401-943-1577
Fax: 401-943-8808

Connecticut

North Haven

The Hope Group - No. Haven
350 Sackett Point Road
Tel: 203-269-1299
Fax: 203-891-7649

Maine

Bangor

Parker Store
257 Perry Road
Tel: 207-942-7475
Fax: 207-941-9875

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Tel: 207-783-9108
Fax: 207-782-8634

South Portland

Parker Store
5 Wallace Avenue
Tel: 207-774-6266
Fax: 207-774-4735

New Hampshire

Manchester

Parker Store
880 Candia Road
Tel: 603-622-4998
Fax: 603-622-4667



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