

STEVENS URETHANE TUBING, CORD & PROFILES

*High-performance
tubing for today's
“can't fail” applications.*



Innovative Technology
since
1863

Stevens Urethane has been proven time and time again in the most demanding, "can't fail" applications.



When extruded in the form of tubing, Stevens Urethane provides excellent performance characteristics and is available in various compounds, diameters, wall thicknesses, lengths and colors. Stevens Urethane is also available as *Pluro-tubing*,™ which consists of two or more tubes bonded into a single, multiple tube unit. Any combination of diameter, wall thickness, and color may be selected.

Stevens Urethane tubing: tough, long-lasting, specially made for demanding uses

Stevens Urethane tubing is high quality, precision-made polyurethane used in a wide range of demanding and critical applications.



Stevens Urethane tubing offers exceptional resistance to most chemicals, oxygen and ozone.

It is strong, kink and abrasion resistant, yet flexible and easily processed in assembly operations. In addition, Stevens Urethane tubing retains its properties through a wide temperature range, making it particularly suitable for low-temperature uses.

Because Stevens tubing is highly resistant to most chemicals and to atmospheric influences such as oxygen and ozone, it is extremely long-lasting and durable. And unlike vinyl tubing, which relies on externally introduced plasticizers for its physical properties, Stevens Urethane tubing is plasticizer free, providing properties that are inherent in the polymer molecule itself, and cannot be lost through migration.

All Stevens polyurethane tubing can be heat-sealed, fabricated and bonded by all conventional methods for processing polyurethane. It can also be spliced and connected using standard techniques.

Choice of Design Professionals

Stevens Urethane tubing is the design engineer's choice for many diverse applications such as consumer products and electronics, instrumentation, transportation, as well as medical, industrial and food-processing equipment. Currently, for example, Stevens tubing is being used as a



One of the major benefits of Stevens Urethane tubing is its "gripability" which often eliminates the need for clamps.

component in U.S. spacecraft, as a fuel line in popular brands of chain saws, and as a pneumatic line in computer equipment.

Manufactured to very high standards, Stevens tubing is closely monitored for raw material purity, precise wall thickness, as well as for inside and outside diameters.

Stevens tubing is available in a full range of standard inside diameters from $\frac{1}{16}$ -in. to $1\frac{1}{4}$ -in., in four wall thicknesses from $\frac{1}{32}$ -in. to $\frac{1}{8}$ -in., and in virtually any color desired. It can also be tailored to meet customer specifications.

Stevens Urethane engineering and design personnel are available to help you select and specify the best material grade for the specific application requirements.



Stevens Urethane tubing is consistently extruded to precise dimensional tolerances.

Combines Many Exceptional Properties

As a class of materials, urethanes occupy a unique position among polymers, sharing the best properties of both rubbers and plastics. They exhibit the elongation and recovery characteristics of rubbers and the chemical resistance properties associated with plastic. Stevens Urethane tubing also offers the following:

Toughness. Stevens offers tubing with tensile strengths of up to 8000 psi, more than twice that of vinyls and outstanding tear strength.

Burst Strength. Exceptional burst strength is particularly important for pneumatic applications. The suggested working pressures for Stevens tubing are roughly twice that of vinyl.

Flex Life. Flexible and kink-resistant materials from Stevens withstand millions of flexes without significant loss of properties, and are available in durometers from 80 to 95 Shore A.

Representative Sizes and Properties of Stevens SS-1485 and ST-1880 Urethane Tubing

Sizes			SS-1485			ST-1880		
ID	OD	Wall	Working Pressure (psig)	Burst Pressure (psig)	Kink Angle	Working Pressure (psig)	Burst Pressure (psig)	Kink Angle
1/16	1/8	1/32	120	550	no kink	120	330	40
1/8	1/4	1/16	95	300	66	100	330	65
3/16	1/4	1/32	40	135	98	50	140	80
3/16	5/16	1/16	70	240	76	80	220	65
1/4	5/16	1/32	30	100	95	35	90	90
1/4	3/8	1/16	50	140	85	65	180	85
1/4	1/2	1/8	87	285	60	100	300	70
3/8	1/2	1/16	36	100	89	45	130	85
3/8	5/8	1/8	58	180	76	70	190	75
1/2	11/16	3/32	38	105	88	40	90	90
5/8	7/8	1/8	42	145	76	50	100	80

Elastic Recovery. High elastic “memory,” together with superb tensile strength, permit Stevens tubing to be joined to barbed fittings in low-pressure applications without the need for external clamps.

Temperature Resistance. Stevens tubing can withstand continuous exposure to temperatures ranging from -65°F to 220°F (-54°C – 104°C) without deterioration.

Abrasion Resistance. Stevens tubing is far more abrasion-resistant than other tubing materials and excellent for carrying slurries and pastes.

Chemical Resistance. Exceptional resistance to gasoline, oil and grease, make Stevens tubing ideal for fuel and oil lines. It is also highly resistant to most other chemicals, and to oxygen and ozone.

Selecting The Proper Grade

Two grades of Stevens Urethane tubing fulfill most uses:

Stevens SS-1485. A polyester urethane tubing with excellent physical properties and resistance to fuels, chemicals and high temperatures.

Stevens ST-1880. A UV stabilized polyether urethane with superb low-temperature characteristics and excellent hydrolytic stability.

Stevens Urethane tubing is also available in FDA, NSF and USP VI candidate grades, as well as fire-retardant grades.

When To Specify

Stevens Urethane tubing can be specified during original equipment design, during production, or when performance indicates the need to upgrade. It may be specified because its properties will be vital to a “can’t fail” application, or simply to provide an added margin of safety or assurance. Sometimes urethane’s superior characteristics permit a reduction in wall thickness, resulting in a cost savings over other types of tubing.

Variety Of Applications

Stevens tubing is widely used for pneumatic functions in products such as air tools, robotics, control instrumentation, vacuum equipment, pressure measuring apparatus and computer equipment.

In addition, it is used as fuel lines in off-road motor vehicles, string weed trimmers, chain saws and other engine-driven equipment. Stevens Urethane tubing conveys oxygen and other gases in medical systems, and transports many types of fluids, including solvents, water, grease, dilute acids and dialysis fluids. Urethane tubing is

also used to carry slurries, granular substances and powders.

Stevens Urethane can also be used as a semi-finished material for a variety of tasks, including cable jacketing sleeves, gas-kets, washers and bumpers.



Stevens Pluro-tubing™ consists of different sizes and colors of polyurethane tubing bonded together.

Stevens Pluro-tubing™

Popular Pluro-tubing is Stevens Urethanes’ specialty. It consists of two or more tubes bonded

into a single, multiple tube unit. Any combination of diameter, wall thickness, and color may be selected. Colors may be varied for coding purposes.

Typical Pluro-tubing applications include process controllers incorporating a three-tube pneumatic harness, and dental equipment used to carry compressed air and water. In addition, Pluro-tubing can reduce assembly time by eliminating the need to bundle and tie individual tubes together.

Stevens Cord and Profiles

Stevens Urethane also extrudes polyurethane cord and custom profiles. Standard cord is polyester urethane,

natural in color, and comes in diameters from 1/16-in. to 1/2-in. Other colors, sizes or compounds are available upon request.



Stevens extruded urethane profile fills and buffers the V-groove on a cast iron elevator sheave.

One common application for cord is fabricated O-ring drive belts. Stevens Urethane also works with customers in developing various shaped profiles for specific applications.

Cut Length Capabilities

Besides offering tubing, cord and profiles in bulk spools and 100 ft. coils, Stevens Urethane can provide these items in cut pieces for easy handling in some applications.

At Your Service

Stevens Urethane and our representatives are dedicated to working with you in a cooperative partnership to help achieve optimum results from the tubing being planned or used. Stevens Urethane tubing can be custom-formulated to meet specific design criteria. A large body of technical information is available to aid in problem solving, product selection and use.

Stevens is ready to work with you to help design tomorrow's "can't fail" applications

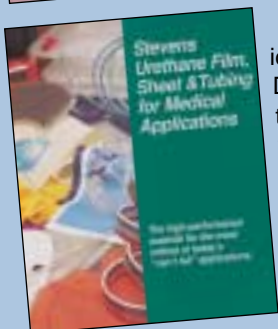


Stevens application specialists welcome you to contact them to help develop your demanding new applications, or improve an existing design, with urethane. Take the first step and write or call for your free Polyurethane Film Sample Kit. It contains samples of several types of Stevens Urethane Film & Sheet.



Urethane Film & Sheet

Stevens Urethane Film & Sheet Design Guide features our complete line of polyester and polyether urethane film and sheet products, available in thicknesses from .001-in. to .125-in. and in widths from 5-in. to 80-in. in a variety of custom colors. It also illustrates several examples where Stevens polyurethane film and sheet were the key to a successful application.



If you're designing specifically for medical applications, call for the Medical Design Guide. It's packed with useful technical information for using urethane for critical, "can't fail" medical design applications.

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