

OPTIMIZED TUBING SOLUTIONS

Zeus is Saving Lives and Solving Problems with Production Services for Advanced Applications



Zeus is Able to Optimize Any Tubing Component Imaginable, On Any Scale

When the client of a major medical device manufacturer required a custom-made flange for the delivery of an aortic stent, the manufacturer turned to Zeus. We were able to quickly produce a flanged tube that transferred the friction and force created by the guided stent to the Zeus tube, reducing time, cost and patient trauma.

For almost 50 years, our polymer scientists have worked with physicians and device manufacturers to perfect delivery tubing. No one knows as much about polymer tubing as Zeus. Your flanged tube can't fail. Zeus won't let it.

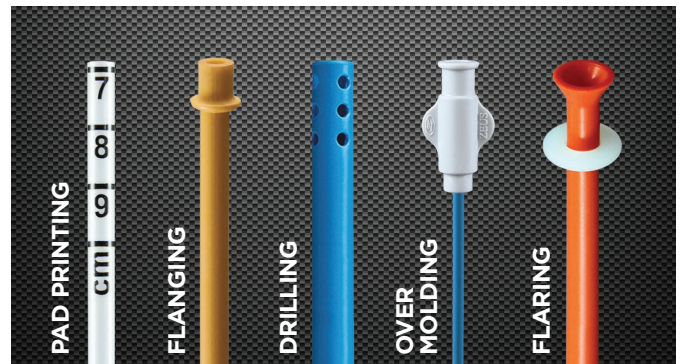
Whether you require special drilling to deliver saline, pad printing for marker bands or tapering to enhance tube performance, Zeus delivers your custom designs as promised, on time, every time.

We're the best in our field so that you can be the best in yours.

It starts with questions around function and engineering and ends with solutions.

Not only does Zeus meet FDA requirements, our Optimized Tubing Solutions help companies around the globe:

- Improve Yields
- Simplify the Logistics Chain
- Increase Manufacturing Efficiencies



Examples of Zeus Optimized Tubing Solutions

About Zeus

Zeus is the world's leading polymer tubing and material science innovator. Almost 50 years of experience in medicine, aerospace, energy exploration, automotive, fiber optics and more allows us to leap past **can't** and into **how**. Headquartered in Orangeburg, South Carolina, Zeus employs approximately 1,200 people worldwide and operates multiple facilities in North America and internationally.

Contact our **Technical Z-Team** for a customized consultation.
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Our value-added services can transform ordinary tubing into customized tubing with enhanced properties and capabilities

Solutions Descriptions

<p>Convoluted:</p> <ul style="list-style-type: none"> Flexible tubing consisting of continuous, spiraling rings Available resins - PEEK, PTFE, PFA, FEP and ETFE 	<p>Pad Printing:</p> <ul style="list-style-type: none"> Alphanumeric text, symbols, circumferential marker bands Available resins - PEEK, Pebax, Nylon and FEP
<p>Cuffing:</p> <ul style="list-style-type: none"> Removing convolutes to create a smooth ID and OD bore for fittings Available resins - PTFE 	<p>Perforating:</p> <ul style="list-style-type: none"> Specific pattern cut or punched along the length of thin wall material Available resins - PEEK, PTFE, PFA, FEP, ETFE, Nylons, Pebax, THV and PE
<p>Draw Down:</p> <ul style="list-style-type: none"> Material is reduced to a smaller ID and OD with a short transition length between the two sizes Available resins - PEEK, PTFE, PFA, FEP, ETFE, Nylons, Pebax, THV and PE 	<p>Retractable Coil:</p> <ul style="list-style-type: none"> Heat set helical coils that allow for a high degree of flexibility and retractability Available resins - PFA, FEP and PTFE
<p>Drilling/Punching:</p> <ul style="list-style-type: none"> Done through one or both walls, holes can be in line or spiraled Available resins - PEEK, PTFE, PFA, FEP, ETFE, Nylons, Pebax, THV and PE 	<p>Scoring:</p> <ul style="list-style-type: none"> Material is partially slit through the wall either along the length or circumference. Typically used for tear-away purposes Available resins - PTFE
<p>Engineered Surface:</p> <ul style="list-style-type: none"> Provides improved lubricity, without fillers or additives Available on inner, outer or both surfaces. Available resins - PEEK, FEP, PFA, PVDF, ETFE and Nylon. 	<p>Slitting:</p> <ul style="list-style-type: none"> Material is cut down the length of the tube Available resins - PTFE, PFA, FEP, ETFE, Pebax, THV and PE
<p>Flanging:</p> <ul style="list-style-type: none"> Material is heat formed to be 90° from the OD of the tube. Ideal for over-molding or use as a hard stop. Available resins - PEEK, PTFE, PFA, FEP, ETFE, Nylons, Pebax, THV and PE 	<p>Spiral Cutting:</p> <ul style="list-style-type: none"> Expandable abrasion resistant wrap for wire harnessing and insulation Available resins - PEEK (wall>0.020) PTFE, PFA, FEP, ETFE, Nylons, Pebax, THV and PE
<p>Flaring:</p> <ul style="list-style-type: none"> Material is pushed outward to make the ID more accessible Flare types include - trumpet, goblet, or bell shaped Available resins - PEEK, PTFE, PFA, FEP, ETFE, Nylons, Pebax, THV and PE 	<p>Tube Bonding:</p> <ul style="list-style-type: none"> Two or more components are heat fused together Available resins - PEEK, PFA, FEP, ETFE, Nylons, Pebax, THV and PE
<p>Grooving:</p> <ul style="list-style-type: none"> Material is removed around the OD at one or more intervals to create a smaller OD in that area. Used for marker band placement Available resins - PEEK, PTFE, PFA, FEP, ETFE, Nylons, Pebax, THV and PE 	<p>Tapering:</p> <ul style="list-style-type: none"> OD only - outer tube wall is thinned with the ID remaining the same size Available resins - LDPE, HDPE, PEEK, FEP, and Nylons ID and OD - reduces the ID and OD while thinning the wall over the length of the taper Available resins - PEEK, PFA, FEP, ETFE, Nylons, Pebax, THV and PE
<p>Heat Sealing:</p> <ul style="list-style-type: none"> Reflowing of material to seal off the tip of a tube Available resins - PEEK, PFA, FEP, ETFE, Nylons, Pebax, THV and PE 	<p>Custom Etching:</p> <ul style="list-style-type: none"> Surface properties are physically altered to allow bonding with conventional adhesives Available resins - PTFE
<p>Laser Marking:</p> <ul style="list-style-type: none"> Alphanumeric text, light graphics, or other imprints Available resins - PTFE, PFA, FEP, ETFE, Nylons, Pebax and PE 	<p>Tiping:</p> <ul style="list-style-type: none"> The outer tube wall is rounded off. Provides a traumatic tip Available resins - PEEK, PFA, FEP, ETFE, Nylons, Pebax, THV and PE
<p>Light Product Assembly:</p> <ul style="list-style-type: none"> Compilation of our tubing and/or customer supplied components Available resins - PEEK, PTFE, PFA, FEP, ETFE, Nylons, Pebax, THV and PE 	

