



Market Brochure

Solutions for Automotive Applications

Performance extruded components supporting next-generation automotive technologies.



zeusinc.com

Critical Applications

Products for performance systems.

Accelerate Performance

Weight Reduction: We extrude high-performance polymers such as PEEK to aid in weight reduction by replacing heavier metals and simplifying design. PEEK has one of the highest strength-to-weight ratios of any thermoplastic. PEEK Drawn Fiber is an excellent lightweight option compared to stainless steel braiding. PEEK tubing is increasingly being used to replace metal cooling lines.

Thermal Endurance: Our products are routinely used in applications where temperatures reach or exceed 260 °C (500 °F).

Heat Shrink Release Aids: FEP heat shrink is used as release aids in composite manufacturing. We make Sub-Lite-Wall® (-0.002" / 0.051 mm) heat shrinks that offer seamless coverings for forming mandrels or bladders for composite manufacturing.



Manufacturing Aids

These heat shrinks replace films and tapes to save time and improve surface finish on the composite part.

Wire Harness

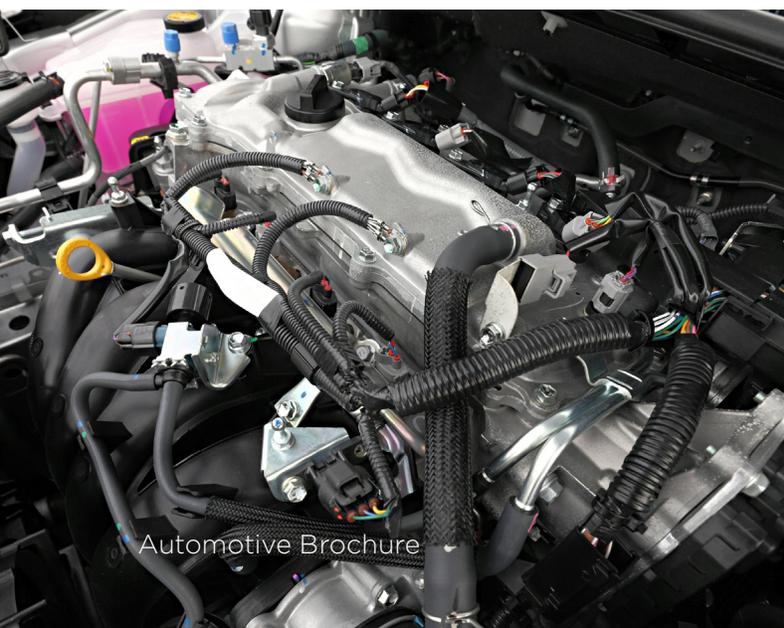
Spiral Wrap: An expandable, highly flexible wrap for harnessing and insulating wires, cables, hoses, and other bundles. ASTM D3295 certification is available.

Convolutd: Commonly referred to as flexible conduit, can be used to house multiple wires to prevent chafing. This product can be drilled with holes, marked with part numbers, or slit to easily wrap and protect wires. Cuffing of PTFE convolutd is also available.

Heat Shrink: A tight, protective covering to items subjected to extreme heat, corrosion, shock, moisture, and other severe conditions. We manufacture heat shrink tubing from a variety of resins. We use PTFE, FEP, PFA, PEEK, ETFE, as well as dual-wall heat shrink with shrink ratios up to 4:1. Custom sizes, and certifications to the AS23053/11 & 12 Mil Spec are available.

Drawn Fiber: An excellent product for braiding wire harnesses; it increases chafe resistance while minimizing weight. Tensile, elongation, and shrinkage can be customized to meet customer specifications.

Custom Extrusions: Spline shapes commonly center wiring, reduce vibration impact, and allow for air or moisture passage in cable assemblies. Other specialized shapes can provide individual isolation of wires in multiple lumens.





Sensors/Fiber Optics

Specialized Extrusions: Zeus holds machine grade tolerances ($\pm 0.001'' / 0.025 \text{ mm}$) on plastic tubing used in fiber optics. FEP, PTFE, THV, PEEK, and ETFE are typical performance resins extruded for fiber optic jacketing. Fillers, such as glass, can be introduced to increase abrasion resistance and bondability. Annealing options are available to increase dimensional stability at high temperatures. Our bi-layer Dual-Shrink™ is often used to protect sensors from moisture or harsh chemicals.

Fluid Management

Tubing: We offer high-performance tubing products that are chemically inert to typical automotive fluids such as fuels, automatic transmission, power steering, and brake fluids. Dual-layered, or co-extruded tubing, is also available for custom applications.

Our team can customize the dimensions and tolerances of tubing upon request to make unique, application specific products. Lengths can be continuous or cut to specification.

Drawn Fiber: This high performing monofilament can be used as an over-braid and offers added abrasion resistance. The tenacity of the fiber can be customized to meet the requirements of an application.

Motor/Magnet Winding

PEEK Insulated Wire: PEEK offers excellent dielectric strength of up to 3000 V/mil, thermal endurance up to 260 °C (500 °F), and extreme abrasion resistance. PEEK Insulated Wire is utilized in electric motors as a superior winding that drives motor performance. We can coat many different wire types including copper, silver-plated, and nickel-plated in round, stranded, square, and rectangle profiles with PEEK. Additional wire coatings in PTFE, PFA, ETFE, FEP & more are also available.

PEEKshrink™: This Zeus innovation is a high temperature 260 °C (500 °F), chemical, and abrasion resistant heat shrink used to splice wires.

Continuous Improvement

As automotive regulatory requirements become more demanding, the use of performance polymers in designs will continue to increase. Zeus is prepared to support automotive innovation by partnering with our customers to determine optimal materials and develop custom parts for their applications.

We are committed to continuous improvement and are ISO/TS 16949 certified to ensure consistent quality and alignment our products with demands of the automotive industry.



Get to know Zeus.



1,700+
EMPLOYEES



ZOS
OPERATIONAL
EXCELLENCE



180
COUNTRIES
SERVED



100+
SCIENTISTS, ENGINEERS,
AND R&D PERSONNEL



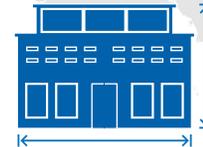
25+
DEVOTED
CLEAN ROOMS



CERTIFIED
ISO 9001 | AS 9100
ISO 13485 | IATF 16949



100+
CLASS VI APPROVED
RESINS & PIGMENTS



11
WORLD-CLASS
FACILITIES

— OUR MISSION —

PROVIDE SOLUTIONS · ENABLE INNOVATION · ENHANCE LIVES

For over 50 years, Zeus has been working to achieve excellence as a global supplier of quality extrusions by: putting customers at the heart of everything we do, inspiring compassion toward one another, and relentlessly pursuing perfection. We've dedicated ourselves to building partnerships, products, and services for the benefit of our customers.

Headquartered in Orangeburg, South Carolina, Zeus employs 1,700+ team members and operates 11 facilities around the world.



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