

Monofilament & Drawn Fiber

ECTFE, ETFE, FEP, Nylons, PEEK, PEEK Glide™, PFA, PTFE, and PVDF

Overview-

Available in both monofilament and drawn fiber form, Zeus filament products are engineered to deliver consistent performance across a wide range of demanding applications. From catheter manufacturing to wire harnessing and more, Zeus filaments are manufactured to the highest quality standards and tailored to meet your application requirements.

Monofilament

Monofilaments, also referred to as “beading,” “solid core,” or “miniature rod,” are solid extrusions with no central working channel. Their simple construction makes them essential building blocks in a number of applications where precision and consistency are critical. Zeus monofilaments are commonly used as cable fillers or structural components and offer excellent chemical resistance, wear resistance, and dielectric properties. Available resin options include FEP, PEEK, PEEK Glide™, PFA, and PTFE.

Drawn Fiber

Drawn fiber is produced by stretching, or “drawing,” monofilament during the manufacturing process to create a filament with improved mechanical properties. This drawing process enhances tensile strength and flexibility while maintaining excellent material consistency. Zeus drawn fiber excels in a diverse range of applications that require high strength and versatility, such as catheter reinforcement or braided sleeving for wire harnesses. Available resin options include ECTFE, ETFE, FEP, Nylons, PEEK, PFA, and PVDF.



Zeus filaments are available in a variety of resins, including ECTFE, ETFE, FEP, Nylons, PEEK, PEEK Glide™, PFA, PTFE, and PVDF.

APPLICATIONS

- Wire and cable management
- Cable fillers
- Catheter braiding
- Medical tether
- Woven chemical filter

CAPABILITIES AND SIZING

- Monofilament diameters from 0.004" – 0.170" (0.102 mm – 4.318 mm)
- Drawn fiber diameters from 0.001" – 0.040" (0.025 mm – 1.016 mm)
- Tolerances as low as $\pm 0.0005"$ (± 0.0127 mm)
- Smooth surface finish

KEY PROPERTIES

- Resin-dependent temperatures up to 500 °F (260 °C)
- Chemical resistance
- Lubricity and stiffness vary depending on resin



TENSILE STRENGTH



CHEMICAL RESISTANCE



ABRASION RESISTANCE



Monofilament

Typical monofilament capabilities are listed below. This table is meant to serve as a general guideline only. Users should evaluate the material to determine suitability for their own particular application. Supplied in natural color unless otherwise specified. Custom Pantone® colors or Zeus standard colors are available upon request. Lot-to-lot testing is also available upon request.

MONOFILAMENT - TYPICAL SIZE RANGES				
TYPE	OD RANGE	OD TOLERANCE	LUBRICITY	STIFFNESS
FEP	0.010" - 0.120" (0.254 mm - 3.048 mm)	± 0.001" - 0.003" (± 0.025 mm - 0.076 mm)	★★★★☆	★★★☆☆
PEEK	0.010" - 0.070" (0.254 mm - 1.778 mm)	± 0.001" - 0.002" (± 0.025 mm - 0.051 mm)	★★★☆☆	★★★★★
PEEK Glide™	0.010" - 0.070" (0.254 mm - 1.778 mm)	± 0.001" - 0.002" (± 0.025 mm - 0.051 mm)	★★★★☆	★★★★★
PFA	0.010" - 0.120" (0.254 mm - 3.048 mm)	± 0.001" - 0.003" (± 0.025 mm - 0.076 mm)	★★★★☆	★★★☆☆
PTFE	0.004" - 0.170" (0.102 mm - 4.318 mm)	± 0.0005" - 0.003" (± 0.0127 mm - 0.076 mm)	★★★★★	★★★☆☆
Glass-Filled PTFE	0.006" - 0.099" (0.152 mm - 2.515 mm)	± 0.0005" - 0.003" (± 0.0127 mm - 0.076 mm)	★★★★★	★★★★★



PTFE Monofilament

Standard catalog PTFE monofilament sizes are listed below. Supplied in natural color unless otherwise specified. Custom Pantone® colors or Zeus standard colors available upon request. Lot-to-lot testing is also available upon request.

PTFE MONOFILAMENT - STANDARD CATALOG SIZES	
ORDERED BY DIAMETER	TOLERANCES
0.028" (0.711 mm)	± 0.002" (± 0.051 mm)
0.031" (0.787 mm)	± 0.002" (± 0.051 mm)
0.035" (0.889 mm)	± 0.002" (± 0.051 mm)
0.039" (0.991 mm)	± 0.002" (± 0.051 mm)
0.047" (1.194 mm)	± 0.002" (± 0.051 mm)
0.050" (1.270 mm)	± 0.002" (± 0.051 mm)
0.055" (1.397 mm)	± 0.002" (± 0.051 mm)
0.062" (1.575 mm)	± 0.002" (± 0.051 mm)
0.070" (1.778 mm)	± 0.002" (± 0.051 mm)
0.078" (1.981 mm)	± 0.003" (± 0.076 mm)
0.094" (2.388 mm)	± 0.003" (± 0.076 mm)
0.100" (2.540 mm)	± 0.003" (± 0.076 mm)
0.109" (2.769 mm)	± 0.003" (± 0.076 mm)
0.125" (3.175 mm)	± 0.003" (± 0.076 mm)
0.150" (3.810 mm)	± 0.003" (± 0.076 mm)



Drawn Fiber

Typical drawn fiber capabilities are listed below. This table is meant to serve as a general guideline only. Users should evaluate the material to determine suitability for their own particular application. Supplied in natural color unless otherwise specified. Custom Pantone® colors or Zeus standard colors are available upon request. Lot-to-lot testing is also available upon request.

DRAWN FIBER - TYPICAL SIZE RANGES			
TYPE	OD RANGE	OD TOLERANCE	STRENGTH
ECTFE	0.008" - 0.035" (0.203 mm - 0.889 mm)	± 0.0015" - 0.0035" (± 0.0381 mm - 0.0889 mm)	★★★★☆☆
ETFE	0.008" - 0.040" (0.203 mm - 1.016 mm)	± 0.0015" - 0.0035" (± 0.0381 mm - 0.0889 mm)	★★★★☆☆
FEP	0.004" - 0.040" (0.102 mm - 1.016 mm)	± 0.001" - 0.0035" (± 0.025 mm - 0.0889 mm)	★★★☆☆☆
Nylons	0.002" - 0.040" (0.051 mm - 1.016 mm)	± 0.0005" - 0.0035" (± 0.0127 mm - 0.0889 mm)	★★★★☆☆
PEEK	0.001" - 0.040" (0.025 mm - 1.016 mm)	± 0.0005" - 0.0035" (± 0.0127 mm - 0.0889 mm)	★★★★★
PFA	0.002" - 0.040" (0.051 mm - 1.016 mm)	± 0.0005" - 0.0035" (± 0.0127 mm - 0.0889 mm)	★★★★☆☆
PVDF	0.002" - 0.040" (0.051 mm - 1.016 mm)	± 0.0005" - 0.0035" (± 0.0127 mm - 0.0889 mm)	★★★★★

PEEK FIBER SPECIFICATIONS			
DIAMETER	0.010" (0.254 mm)	0.011" (0.279 mm)	0.016" (0.406 mm)
OD TOLERANCE	± 0.0015" (± 0.0381 mm)	± 0.0015" (± 0.0381 mm)	± 0.0015" (± 0.0381 mm)
MIN. TENSILE STRENGTH	4 lbs	5.5 lbs	11 lbs
MIN. ELONGATION @ BREAK	18%	18%	20%
MAX. ELONGATION @ BREAK	30%	30%	35%
MIN. SHRINKAGE	3%	3%	2%
MAX. SHRINKAGE	5%	5%	6%

