

STRUCTURAL COMPONENTS/SEALING

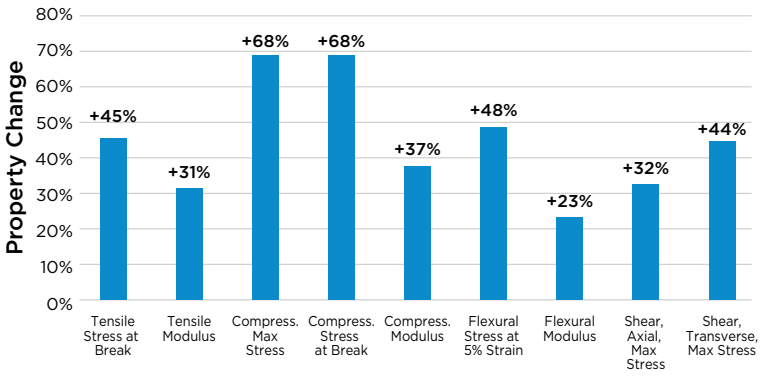
Arlon® 3160XT Glass-filled cross-linked PEEK

High performance material for extreme temperatures

When thermoplastics operate far from their glass transition temperature, rapid degradation of performance could happen depending on the degree of crystallinity. Arlon® 3160XT is a new PEEK polymer specifically developed to retain its performance at very high temperatures, beyond what traditional filled PEEK grades could achieve. This has been accomplished using a unique patented method that Greene Tweed developed to cross-link PEEK materials.

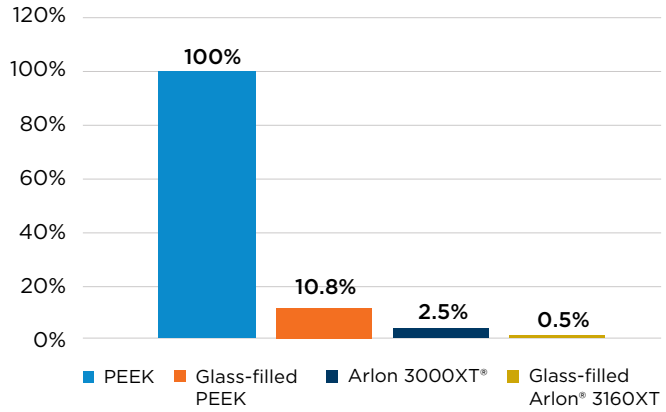
Cross-linking a glass-filled PEEK not only enabled Greene Tweed to significantly improve the mechanical properties of the material at high temperatures, but it also enhanced its chemical resistance, and electrical insulation properties.

High Temperature (260°C/500°F)
Mechanical Property Improvement



Improvement vs Standard Glass-filled PEEK
(Higher is Better)

Compressive Creep, 3 Hours @ 500°F, 35,000 psi
(260°C, 241 MPa) (Lower Is Better)



Features and benefits

- Higher glass transition allowing higher effective use temperature (above 260°C based on operating conditions)
- Very good flame resistance
- Higher mechanical properties above Tg
- Exceptional creep resistance (20x better vs. glass-filled PEEK)
- Improved chemical resistance vs. standard PEEK
- Excellent electrical insulation, especially at higher temperatures

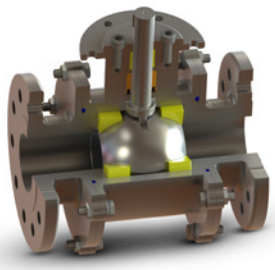
Applications

- **Backup rings**
  Can be used as backup rings to prevent extrusion of soft sealing elements, enhancing seal reliability under demanding operating conditions.

  Enhanced pressure, temperature, and chemical resistance capabilities compared to standard PEEK contribute to longer seal life and reduce maintenance requirements.
- **Valve seats**
  Directly applicable to valve seats, where the small size of hydrogen molecules require very high actuation force. Standard glass-filled PEEK may deform under these conditions



Backup Rings and Valve Seats



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