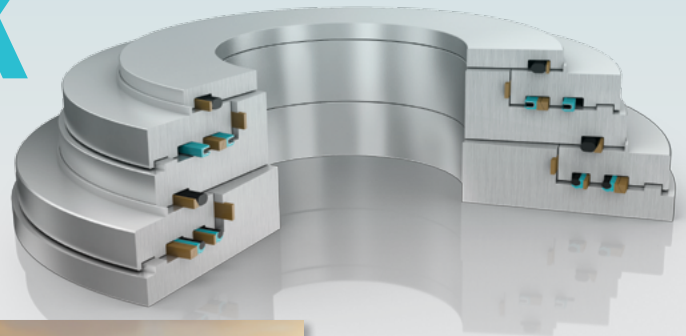




Welded PEEK Products

COST-EFFECTIVE LARGE DIAMETER SEALS, BEARINGS AND BACK-UP RINGS



Removing the need for expensive compression molding, a proprietary PEEK-welding technique provides robust and effective performance at high pressures and temperatures.

Trelleborg is applying welding techniques to engineer robust, large diameter seals that meet market needs for high pressure, temperature and radial clearances. The welding process has been methodically developed to maximize quality and strength, while reducing overall cost.

Typically, these types of PEEK product are formed through compression molding, which can be a slow and costly process requiring large equipment. It also demands that new molds are manufactured for any new diameter. In terms of PEEK products, tooling must be built accurately and to tight tolerances. Using welding, this process is eliminated, leading to a reduction in manufacturing costs.

PEEK materials high melting point creates a challenge to maintain seal integrity when welding. Tensile and 3-point bending testing have verified the process to produce robust products and aided in determining the correct parameters to achieve an ideal weld.

After welding, the product is strong enough to be machined, enabling creation of angled e.g. Back-up Rings. Combining these with large dimension Turcon® seals provides the same performance as compression molded Back-up Rings, however at a lower cost.

Zurcon® Z431, has been specially selected for these products. It can withstand temperatures, pressures and loads exerted upon it during e.g. FPSO operation. The material does not degrade with time, is unaffected by most chemicals encountered in application and can operate in dirty environments without damage.

With NORSOK M-710 approval, Zurcon® Z431 fits the bill for use in the Oil & Gas industry, especially where Zurcon® Z62 or other engineering plastics cannot be used due to temperature, pressure or legislation requirements.

Applications

- FPSO swivels
- Piling barges
- Split barges
- Jack-up systems
- Presses – main cylinders
- Roll gap controls in steel mills
- Hydropower dams
- Flood barriers

Features and Benefits

- Reduced costs due to new manufacturing technique
- Large diameter range from 600 to 5,000 mm (24 to 200 inches) or greater
- Covers high extrusion gaps
- Suitable for very high pressures
- Dry running capabilities
- Resistant to media commonly encountered in oil & gas applications
- NORSOK M-710 compliant
- Simple machining possible

WELDED PEEK PRODUCTS

| Property | Description |
|--|---|
| Pressure Range | Up to 100 MPa at +150 °C and up to 30 MPa at +200 °C |
| Temperature Range | -54°C to up to +260°C |
| Velocity, Lubricated / Dry | 5 m/s / 2 m/s |
| Zurcon® Z431 Friction Coefficient, Lubricated / Dry | 0.15 / 0.35 |
| Mating Surface | Generally recommended for steel, steel hardened, steel chrome plated, HVOF and other coatings, cast iron, titanium and ceramics |
| Media, Fluid | Well fluids, mineral oil-based hydraulic fluids, flame retardant hydraulic fluids (HFC), environmentally friendly hydraulic fluids (bio-oils), phosphate ester, water, air and others |
| Media, Gas | Dry running capabilities |
| Chemical Resistance | Very high – contact your local Trelleborg Sealing Solutions marketing company for more information |
| Compliance | NORSOK M-710 |
| UV / Sunlight Resistance | High |
| Ozone Resistance | High |
| Radiation Resistance | 10 ⁹ Rad |

