

Aerospace Sealing Capabilities



Serving the Aerospace Industry Globally

Trelleborg Sealing Solutions is one of the world's leading developers, manufacturers and suppliers of seals to the aerospace industry, ranking number one in Europe and within the top three globally. We are uniquely placed to offer a dedicated seal design and development service to the aerospace market locally through our global network of engineering and manufacturing facilities.

Our elastomer, PTFE based and airframe seals feature in virtually every major aircraft program. As an approved supplier to leading aerospace manufacturers, our solutions are commonly specified on critical applications, such as airframes, engines, flight controls, actuation, landing gear, wheels and brakes.

Material and Applied Material Expertise

The aim of Trelleborg Sealing Solutions is to facilitate customers in the achievement of cost effective, durable solutions that match their specific business requirements and needs.

Not only does Trelleborg Sealing Solutions develop and formulate its aerospace materials in-house, it has also acquired significant skills in the field of applied materials technology. Seals can be individually hand-fabricated, automatically molded, fabric-reinforced or bonded to metallic components.

Advanced Elastomers

Specialist in the design, development and manufacture of reinforced elastomer components, Trelleborg Sealing Solutions are experts in high performance gaskets and custom-designed sealing solutions, as well as fabric reinforced elastomeric diaphragms for environmental control in valves and pumps.

A full range of aerospace grade Turel® elastomers is available, specifically engineered to withstand the extremes of temperature and aggressive chemicals encountered in today's aircraft.

Pioneering PTFE and Thermo-plastic Offerings

The first company to realize the huge potential of polytetrafluoroethylene (PTFE) in aerospace sealing applications, Trelleborg Sealing Solutions remains at the forefront of this technology with its unique Turcon® material range.

Complementing these materials are a variety of proprietary high-performance, high-modulus Zurcon® thermoplastics, providing a one-stop-shop of engineered solutions for aerospace sealing challenges.

Efficient Airframe Technology

With a focus on aerodynamic efficiency, Trelleborg Sealing Solutions offers a range of standard and customized airframe designs, developed for reliability in service and efficiency in assembly, operation and maintenance.

Product Portfolio

Trelleborg Sealing Solutions offers its customers a wide product portfolio including:

- Specialty O-Rings
- High speed rotary seals
- Hydraulic, pneumatic, fuelhydraulic and gas sealing systems
- Rubber-to-metal and rubber-to-PTFE bonded seals
- Fire seal technology
- High temperature engine seals and gaskets
- Elastomeric diaphragms, boot and bellows
- Custom-molded products
- Aerodynamic sealing components
- Inflatable canopy seals
- Window and door seals
- Routing and clipping
- Metallic seals

Local Presence Global Reach

Due to the increasingly stringent requirements of the aerospace market, Trelleborg Sealing Solutions places strong emphasis on its ability to globally service, support and supply its customers through their international network of manufacturing facilities and support teams. Our network includes:

- Over 80 facilities worldwide
- More than 20 manufacturing sites
- Seven strategically positioned material and development laboratories
- Internationally linked design and application centers

Outstanding Service

With years of experience in sealing all areas of aircraft systems, our engineering personnel are able to contribute their knowledge of this specialized technology directly to customers; from the efficient handling of enquiries to complete project management of design, prototyping, production, test and installation of sealing systems.

Trelleborg Sealing Solutions employs state-of-the-art design tools, fully customer-compatible CAD systems and leading edge Finite Element Analysis (FEA). Communications can be face-to-face or online, even on the move, through the various sector-leading tools and apps that Trelleborg has developed to make our customers' working lives easier. With these, in the virtual world, design processes can be accelerated across global teams, 24/7.

Quality and Manufacturing Capability

Trelleborg Sealing Solutions manufacturing sites are strategically located to provide global coverage and have succeeded in delivering cost effective sealing solutions,

whilst maintaining the highest standards of international airworthiness, quality control and meeting the latest environmental legislation.

The FAA, EASA, JAA and leading aerospace manufacturers are regular visitors to Trelleborg Sealing Solutions facilities worldwide and they continue to work with them to enhance their reputation for quality and to maintain their key position in the aerospace supply chain.

Benefits of Working with Trelleborg Sealing Solutions

- A complete polymer sealing range for the aerospace industry
- Proven-engineering excellence – servicing all major aerospace programs
- Industry-leading design and materials expertise
- Best practice manufacturing
- Customized distribution capabilities – direct line feed, subassembly and kitting
- Aftermarket expertise
- 24-hour worldwide support
- Full service provision – design concept to aftermarket support

Trelleborg's Aerospace Legacy

Trelleborg Sealing Solutions boasts a world leading reputation as a leading supplier to the aerospace industry with nearly 60-years experience in the development, application and manufacturing of engineered dynamic sealing systems. We bring together the best of foremost global aerospace sealing brands, including: Shamban, Dowty Seals, Dowty, Specialized Elastomers, Woodville Polymer, Chase Walton, Impervia and Palmer-Chenard.



Complete Aerospace Sealing Capabilities

Engine Systems

Engine and engine management applications include fan blade annulus fillers, fan cowl and thrust reverser doors, heat exchangers, variable by-pass valve door seals, drive shafts, air intakes, fairings and coupling systems. Materials provide high temperature performance with silicones that operate up to +270°C / +518°F and Isolast® perfluoroelastomer, which operates up to +320°C / +608°F as well as fire seals tested at temperatures of +1100°C / +2012°F.



Actuation

High integrity piston and gland seals are specified to meet the high usage, long-life demands of aircraft actuators. These can be designed for a variety of configurations up to 55 MPa / 8000 psi. With its vast experience in this field, Trelleborg Sealing Solutions can also assist with actuator design by recommending component tolerances, surface finishes and coatings and seal groove geometries.



Landing Gear

A complete sealing system for all landing gear applications, ranging from light aircraft to long-range commercial airliners. TSS is the only company that offers the unique combination of seal friendly lightweight composite Orkot bearings and the back pumping Turcon VL seal, ensuring the ultimate reliability in high sideload and high pressure applications.



Airframes

The Trelleborg Sealing Solutions range includes reinforced seals for wing and moving surfaces such as complex aerodynamic shrouds for hydraulic jacks, flaps, rudders and fairings; extruded and molded seals for doors and hatches, interior couplings; inflatable seals for cockpit canopy and noise filtration sealings.



Flight Controls

A wide range of both elastomer and spring-energized PTFE based solutions, offer zero leakage and long life performance, in an environment characterized by high frequency oscillation. For rotary shaft seal applications, Trelleborg Sealing Solutions provides conventional radial oil seals through to high performance PTFE based lip seals.



Wheels and Brakes

Designed for superior performance in harsh environments, the Trelleborg Sealing Solutions portfolio provides a complete range of static and dynamic sealing systems including steel-reinforced bearing grease retainers, large O-Ring wheel hub seals and high temperature brake seals.





Trelleborg is a world leader in engineered polymer solutions that seal, damp and protect critical applications in demanding environments. Its innovative engineered solutions accelerate performance for customers in a sustainable way. The Trelleborg Group has local presence in over 40 countries around the world.

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