

# Solutions for Water & Sanitary Applications



# Meeting Water & Sanitary Market Needs

In an increasingly global market with a complex regulatory environment, working with a supplier who dynamically adapts to changing requirements internationally is essential. That's why Trelleborg Sealing Solutions actively partners with major food and beverage equipment manufacturers, ensuring that products embrace all challenges to accelerate our customers' performance.

Trelleborg Sealing Solutions has been involved in sealing potable water and sanitary applications since the 1960s. Based on unrivalled experience, we have developed an outstanding range of sealing materials and products. Most of these are proprietary and specifically engineered to meet compatibility and cleanliness concerns, or carry global and regional certifications, including FDA, NSF, KTW, WRAS and ACS.

Backed by the polymer expertise of Trelleborg Group, material research is focused on meeting the requirements of potable water and sanitary equipment manufacturers, increasing reliability and service life for a range of regulation compliant and approved materials. Our innovative product engineering, complemented by industry-leading manufacturing and support services leads to designs and custom solutions that optimize application performance for supply through our global logistics and advanced delivery programs.



# Our Global Resources

## OUTSTANDING SERVICE

**Trelleborg is committed to optimizing customer partnerships through value-added services.**

### LOCAL PRESENCE, GLOBAL REACH

- Manufacturing and engineering resources in over 40 countries
- Unrivalled global footprint

**Benefit: Consistent product and support worldwide**

### ADVANCED DELIVERY

- Global stock holding for rapid delivery
- Special kitting and packaging programs

**Benefit: Helps avoid downtime**

### ENGINEERING EXPERTISE

- Shoulder-to-shoulder engineering; enhancing products with Trelleborg's design expertise
- Present at all stages, from prototype development to bringing equipment to market

**Benefit: Partnerships for the optimum sealing solution**

### PROVING APPLICATIONS

- Standard performance and pressure testing, as well as chemical resistance testing (chloramine, chlorine, etc.)
- Utilize customers' test equipment

**Benefit: Proves solutions before installation**

### FINITE ELEMENT ANALYSIS (FEA)

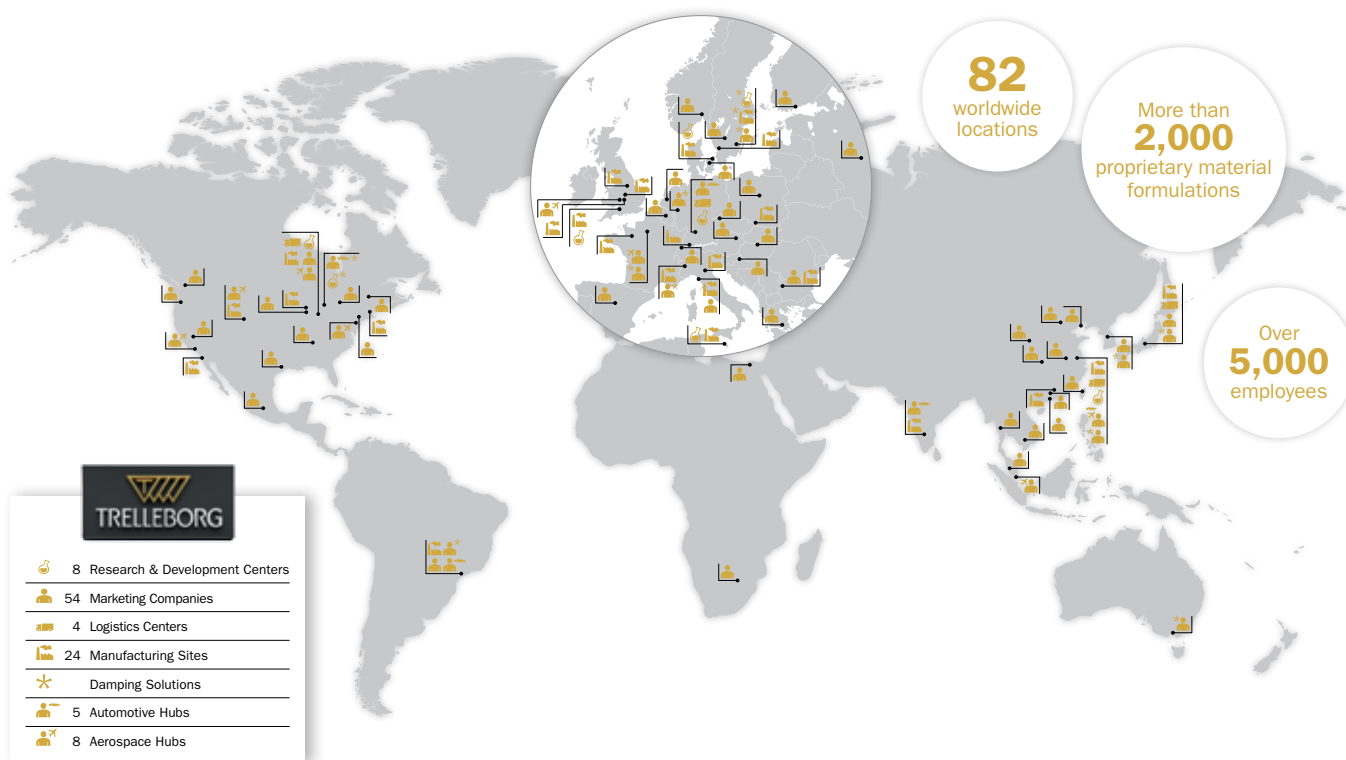
- Market leading non-linear analysis
- Qualifies prototype candidates without testing

**Benefit: Accelerates time to market**

### MANUFACTURING CAPABILITIES

- Seals in elastomers and plastics meeting global regulations
- Custom solution development, including Liquid Silicone Rubber (LSR) capabilities

**Benefit: One-stop-shop for all sealing and fluid handling requirements**



# Materials to Meet Requirements

**Trelleborg Sealing Solutions offers a broad range of industry leading materials to meet the requirements of the water and sanitary market.**

Our materials meet a wide variety of industry regulations, while providing tried and tested performance under manufacturing conditions and stringent cleaning regimes. Working at the forefront of standard development within a number of regulatory committees enable us to quickly adapt to new developments and provide our customers with a competitive edge.

## Material Specifications

Materials	Application Recommendations	Available Shore A Hardness	Compliances
Ethylene Propylene Diene Monomer (EPDM)	O-Rings Static Seals Molded Parts	50 - 80	
Fluoroelastomer (FKM)	O-Rings Static Seals	50 - 90	
Nitrile Butadiene Rubber (NBR)	Molded Parts	40 - 90	
Hydrogenated Nitrile Butadiene Rubber (HNBR)	O-Rings	50 - 90	
Isolast® Perfluoroelastomer (FFKM)	O-Rings Static Seals Molded Parts	70 - 80	
Silicone	Static Seals Molded Parts Tubing/Hose	30 - 80	
Turcon® Polytetrafluoroethylene (PTFE)	Dynamic Seals		
Zurcon® Polyurethane (PUR)	Dynamic Seals	93 - 97	
HiMod® High Modulus Plastic	Dynamic Seals Static Seals		
Orkot® Composite Bearings	Bearings		

### Compliances

FDA
 KTW
 WRAS
 ACS
 NSF 61
 W270
 DIN EN 14241-1
 DIN EN 549



# Applications and Solutions

The broad range of Trelleborg Sealing Solutions products feature in numerous demanding and critical applications.

Trelleborg Sealing Solutions offers one of the broadest material portfolios on the market, offering a variety of regional and country-specific approvals. Our engineers have decades of experience in designing products that meet potable water and sanitary manufacturers' needs, with FEA services and custom molded solutions.

Our testing, research and development teams undertake both product and material testing in our own laboratories and can analyze media delivered by customers to provide customized recommendations with proven results.

When the solutions have been created, then our global logistics and advanced delivery services take over to ensure products are where they are needed, when they are needed, with customer support, training and workshops all along the journey.

## Irrigation Valves

**Products:** Homogeneous and Fabric Reinforced Diaphragms

**Requirements:** The seals provided are for low-flow valves with low water use to conserve water, and due to reclaimed water, needed excellent chlorine resistance. The products also needed high burst pressure capabilities and long life performance.

**Benefits:** Materials met environmental condition and durability requirements. In-house design and FEA services, combined with a proven material portfolio, led to solutions with extended life in the application.



## Pump/Valve

**Products:** Rotary Seals and Flat Gaskets

**Requirements:** Seals are required to withstand a variety of environments and pass rigorous life cycle testing.

**Benefits:** Custom design and testing work ensured that the seals provided exceeded the expectations, minimizing down time and improving maintenance cycles.





## Fixtures

**Products:** LSR Custom Molded Parts, Customer Specific Solutions

**Requirements:** The customer required customized fluid management solutions, with food and potable water safe materials and robust designs with high reliability and precision.

**Benefits:** LSR technology offered Trelleborg engineers a great deal of design latitude and integrated a number of components into a single solution. This resulted in economical and robust solutions to technically complex challenges.



## Filtration

**Products:** Custom O-Rings

**Requirements:** Materials were required to meet NSF61, KTW, DVGW, W270 and WRAS standards and regulations.

**Benefits:** The solutions provided demonstrated excellent chloramine resistance and offered very cost-effective performance.



## Water Heater

**Products:** O-Rings and Custom Molded Parts

**Requirements:** The seals provided needed to have tight fit, low force and give long service life. The solution also had to cover a wide tolerance range, with only one material used throughout.

**Benefits:** Trelleborg Sealing Solutions carried out in-house testing and engineering to develop a solution that met the requirements, with the aid of FEA, and relevant standards.



# Design and Development

Trelleborg Sealing Solutions provides a wide variety of standard products in materials to meet your requirements. Our dedicated research and development centers work continuously to increase our portfolio with new and updated designs that optimize application performance and follow the industry's evolving needs.

## Working Together

When standard solutions don't meet your needs, Trelleborg Sealing Solutions has the engineering resources to develop a customized component that does. We encourage shoulder-to-shoulder engineering, collaborating closely with customers to enable solutions that meet the latest industry demands.

- Close working relationships
- Customized solutions using the latest in non-linear Finite Element Analysis (FEA) techniques
- Cutting edge manufacturing techniques to optimize performance, including LSR
- Material development to meet upcoming requirements and standards



## MATERIAL DEVELOPMENT AND TESTING

The development of polymer materials blends the science of understanding material chemistry with the art of balancing a wide range of performance characteristics to produce the optimal materials for each unique customer need. The potable water and sanitary segments are no exception, and our material development is tailored to emerging trends within the industry.

Our material development experts are located in our manufacturing facilities and R&D centers globally. Constantly keeping ahead of new developments, and backed by the polymer expertise of the Trelleborg Group, they ensure we can offer the most appropriate materials for any application, however demanding.

Trelleborg Sealing Solutions R&D centers are equipped with world class material testing and analytical laboratories to guarantee our materials are capable of performing in a wide range of environments and achieve relevant industry material certifications. Our testing facilities are designed with the needs of water and sanitary customers in mind, offering a suite of application-critical tests such as chloramine and chlorine resistance.



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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