



# High Performance **Elastomer Seals**



Precision Polymer Engineering Ltd



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For more than 30 years PPE has provided a diverse customer base with successful elastomer (rubber) sealing solutions, combining innovative design and uncompromising performance. Taking advantage of specialist in-house material formulation, tool-making and moulding facilities, PPE delivers high performance components quickly and effectively.

## Your **high pe**

As a vibrant engineering partner, PPE solves sealing challenges to produce effective components in high specification materials, which can withstand chemically aggressive environments and extreme temperatures and pressures.





### O-rings

- Standard imperial and metric sizes
- Non-standard sizes
- Sizes from 0.25mm up to 2 metre diameter as fully moulded components
- Any combination of internal diameter and cross section
- Jointed O-rings available in any ring diameter
- Extensive range of elastomer compounds

### Custom rubber parts

- Moulded to customer designs or PPE-recommended solutions
- Composite parts, including metal and PTFE bonding
- Fabric reinforced parts
- Unique problem-solving opportunities

# Performance partner

As part of the PPE Group, **PERLAST®**, operating from the USA and Europe, specialises in delivering the latest generation of perfluoroelastomer materials. **PERLAST®** perfluoroelastomer parts provide excellent chemical and thermal resistance, combined with superior mechanical properties.

**PERLAST®** perfluoroelastomer parts are produced in a wide range of grades, many of which carry the respective approvals for food, pharmaceutical and semiconductor applications. For more information on **PERLAST®**, visit [www.perlast.com](http://www.perlast.com).



▲ PPE manufacturing facility in Blackburn, England.

◀ Assorted **PERLAST®** Perfluoroelastomer parts.



The aim at Precision Polymer Engineering Ltd (PPE) is to become the partner of choice for global original equipment manufacturers, end-users and distributors who seek a highly responsive manufacturer of rubber seal components.



Expertise across a diverse span of industries encourages cross-fertilisation of design ideas. Solutions developed for one industry sector are transferred to others, triggering shorter development times and reduced cost of ownership.

## An elastomer

Extensive investment in employees and facilities promotes continuous efficiency improvements at PPE. The combination of modern cellular manufacturing techniques in a purpose-built factory with state-of-the-art technology streamlines production and reduces lead times. In addition, rapid prototypes are finished promptly. Stringent quality control, consistent with ISO9001:2000 ensures that products meet or exceed customers' expectations.





PPE offers an unrivalled range of over 350 high performance compounds from 17 types of rubber including Silicone, FKM, HNBR, Nitrile, EPDM and Perfluoroelastomer. Many of these materials meet various international approvals and conformance requirements (e.g. food/pharma and aerospace/defence), enabling PPE to provide superior sealing solutions which meet the requirements of every application.

Key factors for consideration when selecting optimal elastomer materials for particular applications include temperature, chemical compatibility and physical properties. PPE technical and material technologists are readily available to provide specialist support to customers. Additionally, new compounds and designs are regularly developed to meet the challenges of today's engineering applications.

# for **every** application

## Key industries in which PPE is successful:

- Aerospace
- Bio-analytical
- Chemical Processing
- Defence
- Food and Dairy
- Large Diesel Engines (Marine, Power Generation)
- Nuclear
- Oil and Gas
- Pharmaceutical
- Semiconductor
- Water



PPE seals are designed to operate in chemically aggressive environments (such as semiconductor wafer processing) and extreme temperatures and pressures.

Elastomer seals are widely used in a range of varied industries in both static and dynamic applications to contain gases, liquids or powders – the scope of applications is diverse.





# Working tog

PPE employees operate in an environment of continuous improvement, supported by extensive investment in facilities which promotes continuous efficiency improvements.

Regardless of the scale of the project, a team dedicated to customer requirements focuses on the customer-specific application topics.

CAD drawings are accepted from customers in almost any software format. This, combined with in-house analytical behavioural-predictive tools such as FEA (finite element analysis), allows PPE to explore a broad range of “what-if” scenarios, ensuring the seal functionality is right first time, every time.





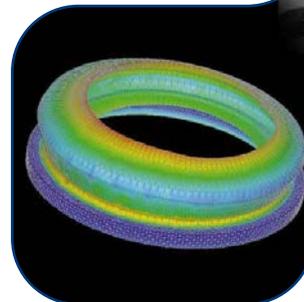
# ether to deliver solutions

PPE's all-round capability and expertise embrace every facet of elastomer sealing technology. Partnership with PPE offers:

- A **materials range**, unmatched in the sealing industry, of **350+ high-performance** elastomer compounds from 17 families of rubber, from NBR, EPDMs, fluorocarbons and silicones, to perfluoroelastomers. With industry-specific approvals and conformities (FDA, USP, 3-A, DTD etc.) for materials within each family, PPE is a market leader offering superior performance elastomer materials.
- More than **12,000 O-ring mould tools** in both **standard and non-standard sizes** (materials x moulds = over 4 million potential sealing combinations).
- **Customer-led designs and sealing materials**. If the ideal sealing material or design has not yet been created, the PPE technical & materials teams will develop it for you.
- Responsive **rapid manufacturing** service and express delivery. Parts are manufactured to order with some of the **shortest lead times** in the industry.
- **Technical expertise**. The PPE technical and materials teams are easily accessible to assist customers with component design and material development, supported by **extensive laboratory** and **materials testing** capabilities.



▲ **Visual inspection to aerospace standards.**



◀ **Finite element analysis of an elastomer seal.**



Each year, PPE develops many new compounds and seal designs, and produces composites by bonding intricate components to a wide range of substrates to satisfy the most demanding requirements.

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