



## HIGH PERFORMANCE SOLUTIONS FOR SURFACE SHIPS AND SUBMARINES



Ensuring safety of equipment and installations is essential to provide strong protection for people and territories in an ever-changing global environment. Our advanced sealing solutions are designed to meet these standards, ensuring optimal performance in the harshest conditions

### HIGH PERFORMANCE SEALING, INSULATION AND DETECTION SOLUTIONS

The naval industry, whether for military or civilian use, operates under some of the most challenging conditions, where equipment must withstand extreme pressures, temperatures, and corrosive environments. We recognize the critical importance of maintaining the integrity of vessels and offshore structures, ensuring safety and operational efficiency.

Our deep understanding of these unique challenges allows us to develop sealing solutions, acoustic and thermal insulation and detection systems that are reliable, durable and bring optimal performance for surface ships, submarines, and their related systems and equipment. Additionally, we offer customized product design, working closely with customers to tailor solutions that fit their specific needs, ensuring optimal performance and

Our manufacturing and testing capabilities ensure top-tier auglity, with EN14001, EN9001 or EN9100 certified plants.

As a trusted leader in the industry, Hutchinson adheres to the highest standards of confidentiality and traceability, ensuring the protection of sensitive data and technological innovations.

### MATERIAL EXPERTISE

For 170 years. Hutchinson has been the specialist of in-house rubber formulation. Today, we use our expertise to develop customized materials, including a wide range of rubber compounds, foams, composites, bi-material, and reinforced solutions:

- > Rubber families: HNBR, NBR, Silicone, EPDM, FKM, Neoprene, Butyl... with approvals (Nuclear Proof/PMUC, Aerospace/NFL, drinking water, fire resistance)
- > Specific materials (foams, composites, magnetized materials) and reinforced materials (polyester and glass fibers fabrics, carbon fiber, aramide)
- > Metal: stainless steel, mild steel, aluminum, bronze...
- > Surface treatments: anti-corrosion, assembly aid, visual distinction...



### CUSTOMIZED PRODUCT DESIGN









**QUALIFICATION** 



### **NEEDS ANALYSIS**

- From customer data
- Understand environment requirements
- Identify constraints and specifications

### **FEASIBILITY**

- Evaluate potential risks and technical solutions:
  - Finite Element Analysis
- (FEA) Simulation Dedicated R&D team

### **DESIGN** Recommendation and

product definition with our technical experts

### - Prototypes testing and qualification on test

henches according to customer requirements

### **SERVICES**

- Unit packaging
- Unit traceability Compliance certificates
- International deliveries



### **OUR SOLUTIONS**



### STATIC SEALING

- > O-Rings, X-Rings, Bonded Seals
- > Wide range of rubber compounds
- > O-Rings: ISO 3601-1 (tolerances), ISO 3601-3 (aspect)
- > Bonded Seals: BSP, Bolt, metric standards
- > From very low to high temperatures
- > New cure date on demand

**Applications:** engine, fuel, hydraulics, water, high pressure air systems...



### **PLATE SEALS**

- > Wide range of dimensions: 5 to 800 mm
- > Thickness: 0.3 to 2 mm
- > Metal: aluminum, inox, stainless steel
- > Wide range of technical rubber compounds
- Maintenance in operational condition (MCO)

**Applications**: engine, fuel systems, hydraulics, oil systems...



### DYNAMIC SEALING

- Low-torque rotary shaft seals, pack seals
- Adapted to heavy duty applications and severe environments
- Maintenance in operational condition (MCO)

**Applications:** motors, bearings, actuators...



# SEALING PROFILES & INFLATABLE SEALS

- > Sealing profiles and inflatable seals
- Wide range of technical rubber compounds
- > Various lengths up to 60 m and more

Applications: openings, hatch seals...





### **MADE-UP PARTS**

- Sealing solutions from rubber sheets or rubber-coated fabrics
- Available with metal, textile or plastic inserts

Applications: peripheral seals expansion bladder, rocket or missile launcher, bellows, submarine sealing...



### **MOLDED RUBBER PARTS**

- > Spacers, isolators, bumpers, wire grommets...
- Molded panels and casings
- Available with metal, textile or plastic inserts

Applications: detection of enemy ships, soundproofing, insulation and sealing of devices exposed to vibrations...



### **SENSING SOLUTIONS**

- Inductive sensors for absolute rotary measurement
- Magnetic targets for sensors: rubberto-metal bonding, ensuring good performance in extreme environments
- Maintenance in operational condition (MCO)

**Applications:** precision sensors, multiple actuator, applications and positioning systems (missile, trim, flaps, robotics...)



### **INSULATION & CONTAINMENT**

- > Zaltex® Cryogenic Spillage & Passive Fire Protection
- > Triplex® secondary barrier on GTT Mark III LNG tanks
- > Thermal insulation & acoustic protection
- > Cut parts, bonded with or without adhesive tape, sleeves, pads...

**Applications:** battery pack containment, acoustic insulation of noisy equipments, cryogenic protection, thermal insulation, spacing and wedging



# HUTCHINSON®

# HUTCHINSON PRECISION SEALING SYSTEMS AROUND THE WORLD

# North America South America 9 sites 1 site

### **ABOUT HUTCHINSON**



€4.8 bn turnover



25 countries



5% invested each year in Research & Innovation



100 sites around the world



> 40,000 employees



**French** company

### ABOUT HUTCHINSON PRECISION SEALING SYSTEMS

Hutchinson is a French leading manufacturer of sealing solutions. We design and manufacture static and dynamic sealing solutions, magnet rings, foams and composites to meet the most demanding requirements.

Our 170 years experience has earned us the trust of the major players in the automotive, aerospace, defense, energy, railway and industrial markets.

With 32 sites in 18 countries, Hutchinson Precision Sealing Systems employs nearly 6,650 people and has a turnover of over €700M.



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