

# Materials Capability

Martec continue to develop new material compilations to deliver outstanding performance and functionality. Contact us if your preferences are not mentioned.

## At a glance

Martec chooses materials according to the functionality and performance required in the final installation.

- Shells and housings in stainless steel, Duplex steels, nickel alloy (Inconel), titanium or carbon steel
- Shells assembled from high strength Duplex steel with glass-sealed inserts
- Pins (or conductors) made from special glass-sealing alloys such as Kovar or Alloy 52, high strength nickel alloys, stainless steel or special high-conductivity alloys (eg BeCu)
- Insulating material options including pin-to-shell glass and glass ceramic



## Selecting the right material every time

Martec designs and utilizes shells, pins and insulators in materials that have been specifically selected to ensure the optimum functionality in the final installation.

### Right for shells and housings

Our choice of material will always be dictated by the operating environment. We will consider any specific requirements relating to pressure performance, fluid contact, corrosion and environmental temperature then make the appropriate choice from a range of material options including stainless steel, Duplex steels, nickel alloy (Inconel), titanium and carbon steel. We are also able to assemble shells using high strength Duplex steel with glass-sealed inserts.

### Right for pins or conductors

We can machine pins or conductors from special glass-sealing alloys (such as Kovar or Alloy 52), high strength nickel alloys, stainless steel or special high-conductivity alloys (eg BeCu) to suit the required functionality of the part. The pins themselves may be determined by the type of glass-to-metal seal required, the pressure performance needed or any specific electrical requirements, such as the data rate, insertion loss or conductivity (and/or the current carrying capability).

### Right for insulation

Our insulation material options include glass and glass ceramic. In some cases secondary insulators from ceramic or an engineered plastic may be included in the design.

The type of glass used will depend on the functionality of the part and the chosen housing material. The external seal materials will be chosen from a range of elastomers to suit the ultimate application, with particular consideration for the potential fluid exposure (down hole or process gas, for example).

**Performance-  
engineered  
solutions that build  
on our extensive  
systems and  
materials expertise**



## Tailored to your needs

We are also able to tailor the combination of materials chosen to meet your performance objectives. These could include simplifying the integration of a part with an enclosure, reducing the overall weight of the part, creating an 'implantable grade' medical device or a high-pressure barrier, or ensuring low out-gassing in a vacuum.



## About Martec

Martec is an independently owned and managed precision engineering company that was founded in 1987 and operates from a purpose built, world-class design and manufacturing site in the UK. We design and manufacture high-reliability interconnection devices for mission-critical applications used in industries that operate in harsh or hostile environments. These include aerospace, defence, subsea, oil and gas, process control, medical and motorsport applications.

Today, our world-class, performance-engineered solutions are at the forefront of technology and developed using an application-focused approach that builds on our extensive systems and materials expertise.

Whether you require a high volume production or a one-off project, we are able to design and develop a custom solution in partnership with you and your team.

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