

Aerospace

Case Study: Refrigerator-freezer door seal



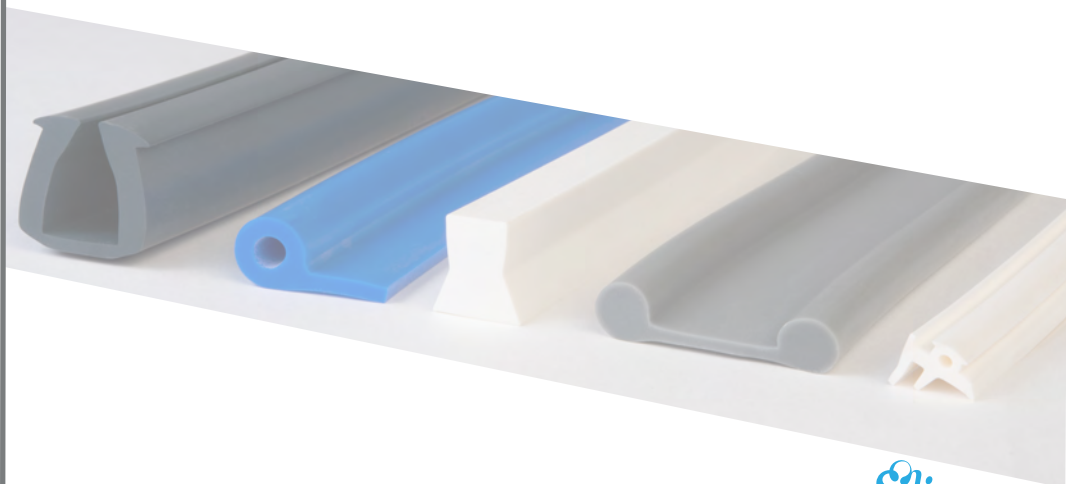
Designing equipment that meets the stringent safety and performance requirements is crucial in the aerospace industry. The design engineer plays a vital role in ensuring that every aircraft component is built to the highest standards.

The Opportunity & Challenge

An international aircraft catering equipment manufacturer contacted Silicone Engineering to support creating a profile seal for a refrigerator-freezer door seal. Aircraft refrigeration units store food and beverages at the required temperature, ensuring they remain fresh and safe for consumption.

The self-contained unit stores chilled and pre-frozen food and beverage between 2 -10°C. The seal design was required to be rectangular and fitted to the flange. However, the unit door required the correct sealing profile to perform its intended function to seal and prevent temperature variations adequately.

Subsequently, the engineer must also consider factors such as flame retardancy, temperature, pressure, and the harsh environment of an aircraft when selecting the suitable material for the solid silicone profile. For example, the chosen material must withstand extreme temperatures and pressure changes during take-off, flight, and landing.





The Solution: **suraSil™** FR 60

Silicone Engineering expertise was required in selecting a material suitable for sub-zero temperatures and could achieve stringent aerospace requirements.

Our material engineers selected suraSil™ FR60 for the material grade to manufacture the fridge-freezer sealing profile.

Formulated for extreme sides of the temperature spectrum and would provide a flexible, flame-resistant solution. The material would also offer extended service and an effective seal on the unit.

The team passed the enquiry over to start the manufacturing process over to the milling room to kit and mix the compound and then pass it on to the solid extrusion team to make the profile. Next, the jointing department assembled the rectangular seal for the refrigerator-freezer seals sent directly to the customer.

