MITSUBISHI CHEMICAL ADVANCED MATERIALS

Aerospace

Duratron® CU60 PBI

Nacelles Wear Pad

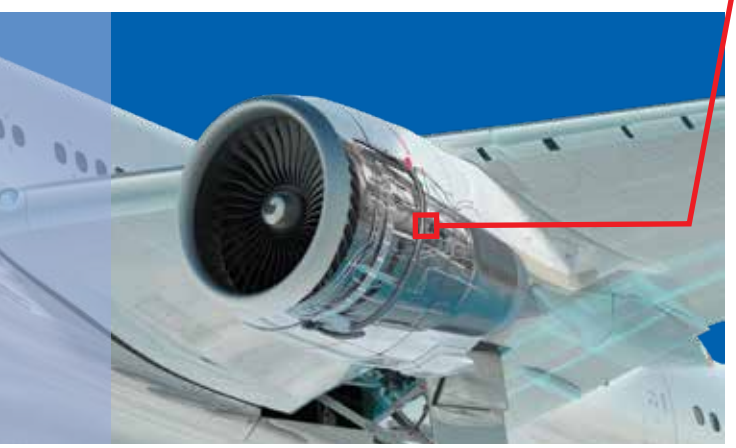
Challenge

Avoid abrasion of the metal engine housing caused by opposing expansion and contraction requirements due to extreme temperature differences between engine and nacelle housing.

The nacelle houses the propulsion unit and engine. Within this structure there is a requirement to compensate the differential expansion rate of the engine as it heats up and the nacelle as it is cooled by airflow.

This is achieved by the use of static wear pads that are fixed at certain locations within the nacelle structure. The propulsion unit is then fixed in one area but allowed to expand against these wear pads in other areas.

The wear pad material needs to be extremely hard wearing, non-abrasive to contact surfaces, withstand vibrations and excursions to high temperatures, for short periods, during reverse thruster operations.



Nacelle Wear Pad

Key Requirements

- Avoid abrasion of the contact surface
- Excellent wear and frictional behavior
- Effective operation from –40 to +300 °C (-22 to 572 °F)
- Retention of mechanical properties for service life
- Low coefficient of linear thermal expansion

Customer Benefits

- Duratron® CU60 PBI polymer wear pads protect expensive metallic or composite components from wear, even at high temperatures of more than 350 °C (625 °F) the material maintains its excellent wear properties
- Good shock and vibration absorbing properties of Duratron® CU60 PBI help reduce noise
- Duratron® CU60 PBI noticeably extends service life between replacements compared to softer materials
- Standard fasteners can be used for retention
- Our wear pads optimize the clearance between engine and housing and considerably improve the effectiveness of the engine

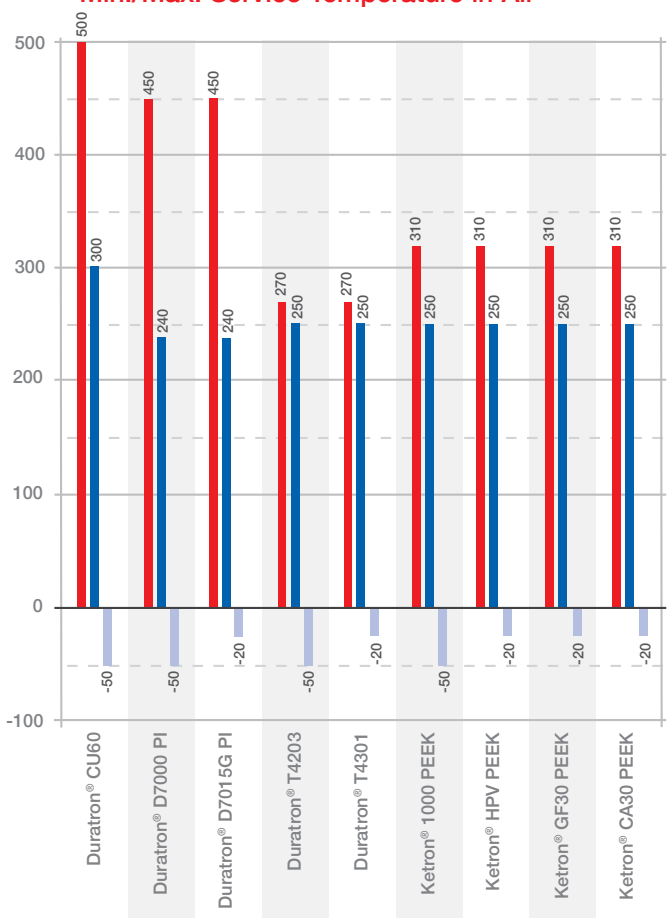
Why Duratron® CU60 PBI?

- Excellent retention of mechanical strength, stiffness and creep resistance
- Working temperature range: -50 to +310 °C (-58 to 590 °F) continuously, up to 500 °C (932 °F) for short periods of time
- Highest Heat Deflection Temperature 425 °C (797 °F)
- Method A ISO 75-1/-2
- Extremely low wear rates for unfilled material
- Low thermal expansion >150 °C (CLTE) = m/(m.K) @ 35 x 10-6

Mitsubishi Chemical Advanced Materials Added Value

- Our broad product portfolio and unique expertise in manufacturing engineering polymer shapes ensures the highest consistency of properties
- The material processing and machining facilities in our dedicated Technology Centres are accredited to AS9100revD quality management system and offer finished parts supporting 'Buy to Fly' programs
- Our global MRP system controls the process from resin to finished part, thus simplifying material certification and lot traceability

Min./Max. Service Temperature in Air



Max. allowable temperature for short periods [a few hours]

Max. continuously allowable temperature [20.000 h]

Min. service temperature

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