

Application Bulletin

Aviation

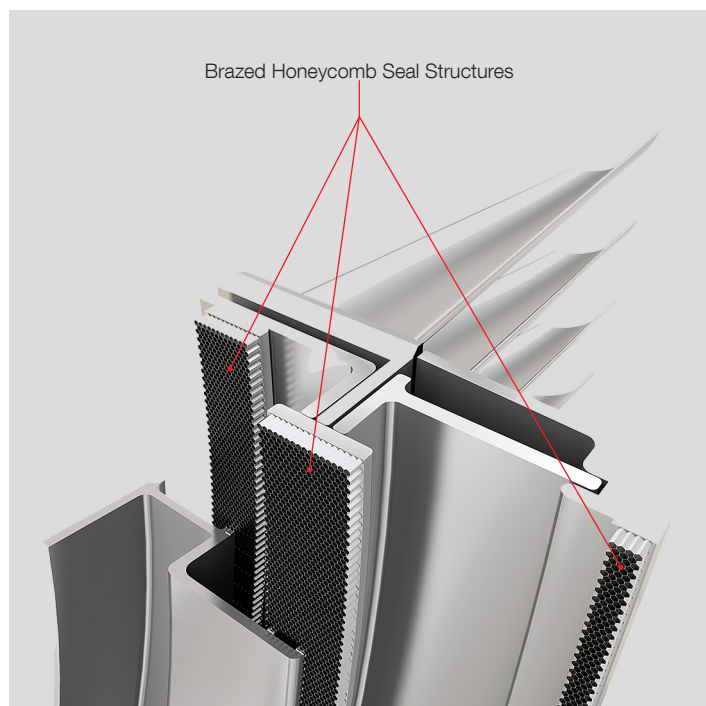
Power Plant – Honeycomb Labyrinth Seals

The reduction of air flow leakage in gas turbine engines improves efficiency, thereby reducing fuel consumption and CO₂ emissions. Metallic honeycomb structures are used to create abradable paths against knife-edge (labyrinth) seals that reduce the clearance and minimize air leaks between static and dynamic turbine components and mitigate potential engine damage should rotational eccentricities occur during operation. The honeycomb must be brazed in place using high temperature brazing filler metals that can withstand the operating temperature of the engine.

The Oerlikon Metco Solution

Oerlikon Metco offers high temperature brazing materials that are compatible with engine service conditions and can be used to conveniently braze honeycomb structures to the substrate of the seal support.

- Select nickel- or cobalt-based filler metal compositions based on substrate compatibility, operating conditions and braze gap size
- Ensure stable operation up to 950 °C (1740 °F)
- Braze filler metal tape ensures a consistent, evenly distributed amount of braze alloy throughout the honeycomb



Recommended Oerlikon Metco Products

Amdry 770 (AMS 4777)	Mid-range melting temperature; chromium aids corrosion and oxidation resistance in service	DSMB-0013
Amdry 780 (AMS 4778)	Chromium free, freely flowing filler metal recommended for deep honeycomb structures	DSMB-0015
Amdry 790 (AMS 4779)	Chromium free, viscous filler metal for bridging wider gaps between the honeycomb and substrate	DSMB-0017
Amdry 100 (AMS 4782)	High chromium, with excellent oxidation and corrosion resistance for higher service temperatures	DSM-0241
Amdry 103	Wide-gap capability used when the honeycomb-to-substrate fit is poor, such as MRO repairs	DSMB-0008

More Information

Information is subject to change without prior notice.