

Application Bulletin

Additive Manufacturing Seal Segment — Gas Turbine Engine

Seal segments depend on materials with high creep and fatigue strength at elevated temperatures. A 3D structured seal land in combination with a ceramic thermal barrier coating (TBC), provides for a high temperature abradable seal.

The Oerlikon Metco Solution

MetcoAdd 718C is used to print the body of the seal segment. A 3D diamond grid is applied using micro laser cladding and forms an abradable seal land. An HVOF-applied bond coat increases the bond strength of the TBC. Processing via Additive Manufacturing provides a quick and effective turnaround for prototype components and opens up opportunities for effective internal cooling and weight reduction.

Thermal Barrier Coating (TBC)
applied using **plasma spray**
Material: Metco 204NS



HVOF intermediate bond coat for increased bonding strength of TBC
Material: **Metco 4199**

Base of segment seal made by **PBF** process, embedding seal slots normally requiring additional EDM processing:
MetcoAdd 718C

3D diamond grid provides for an abradable seal land.
Material: **Metco 4199**

Recommended Oerlikon Metco Products

MetcoAdd 718C High creep and fatigue strength at elevated temperatures

More Information

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