MATERIAL OVERVIEW

- An age-hardenable nickel-based superalloy designed specifically for use as feedstock in powder bed fusion. ABD®-900AM is optimised for high creep and tensile strength, and corrosion/oxidation resistance, with a working temperature range up to 900°C in its age-hardened state.
- The new alloy has excellent creep strength – similar to alloy 939 and alloy 738 – while having superior resistance to cracking during manufacture and heat treatment.

ABD®-900AM is designed to be free of solidification, liquidation and strain-age cracks and showcases exceptional printability for such a high temperature γ’ strengthened alloy. It is suitable for complex components within the Aerospace, Power, Automotive and Space industries.

KEY PROPERTIES

<table>
<thead>
<tr>
<th>Mechanical (800°C)</th>
<th>Yield strength (MPa)</th>
<th>777 ±44</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ultimate tensile strength</td>
<td>848 ±22</td>
</tr>
</tbody>
</table>

| Thermophysical (25-1200°C) | Thermal conductivity (W/m°C) | 11.0–30.1 |

All measurements are for the fully heat treated alloy printed with a layer thickness of 30 μm.

PRINTABILITY

ABD®-900AM shows high part density and no cracking when printed with standard alloy 718 parameters.

POWDER CHARACTERISTICS

Particle size distributions:

- Laser Beam Melting (powder bed): 15-53 μm
- Electron Beam Melting (powder bed): 45-106 μm
- Directed energy deposition (LMD): 45-106 μm

Custom size distributions available on request

ABD®-900AM shows high part density and no cracking when printed with standard alloy 718 parameters.

Contact: powder@eramet.com
www.aubertduval.com

The above is for information only and does not create any binding contractual obligations. Pearl® is a registered trademark of Erasteel and is used under license by Aubert & Duval. ABD® is a registered trademark of OxMet Technologies.
Tensile properties of ABD®-900AM after sub-solvus heat treatment. Measured in accordance to ASTM E8/E8M-16a/E21 for a strain rate of 10⁻³ s⁻¹.

Stress rupture properties of ABD®-900AM after sub-solvus heat treatment. Measured in accordance to ASTM E139.

As-printed XY-plane microstructure after processing with 30 μm layer thickness and 2D energy density of 2.5 Jmm⁻².

Microstructure after final heat treatment.

Contact: powder@eramet.com
www.aubertduval.com

The above is for information only and does not create any binding contractual obligations. Pearl® is a registered trademark of Erasteel and is used under license by Aubert & Duval. ABD® is a registered trademark of OxMet Technologies.