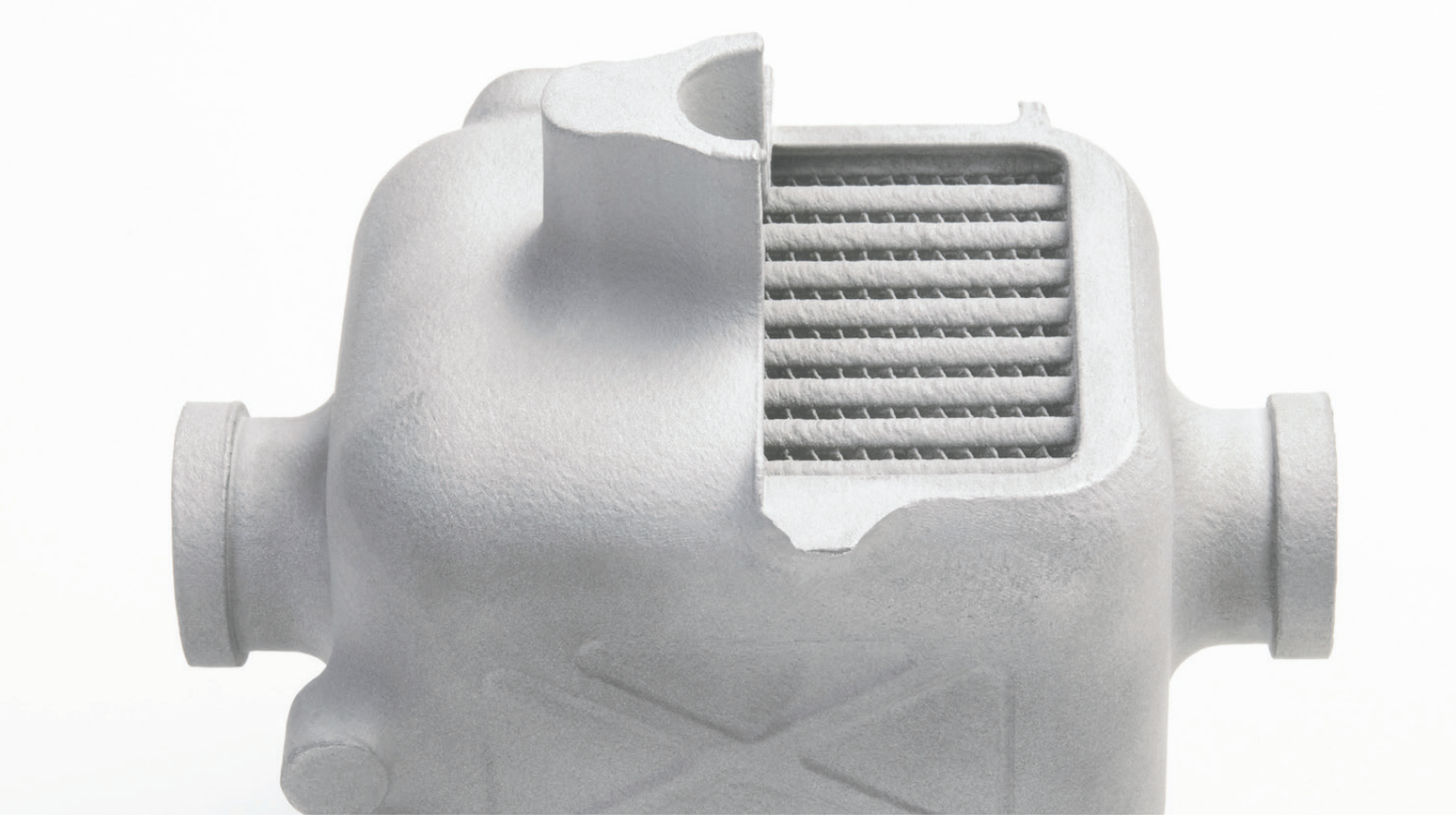

MATERIALS FOR 3D PRINTING

CP1

DANISH TECHNOLOGICAL INSTITUTE

Aheadd® CP1

Aluminium alloy

CP1 is a high-performance aluminum alloy with low density, high strength, and excellent thermal and electrical conductivity. Additionally, the material has high corrosion resistance, thermal stability, cryogenic toughness, and can be anodized. This makes CP1 ideal for demanding applications such as heat exchangers, lightweight components, and parts for motorsport, drones, the defense industry, and aerospace.

We print CP1 using Laser Powder Bed Fusion technology, which works with powder and uses a laser to weld the powder layers together. This technology requires a support structure to attach the part to the build platform. The support is mechanically removed after printing.

The technology can produce parts that comply with ISO 2768-m 1; however, the tolerances depend significantly on the geometry of the part. At the Danish Technological Institute, our 3D printing production is also ISO 9001 certified.

MATERIAL PROPERTIES	
TENSILE STRENGTH [Rm]	300 ±10 MPa
YIELD STRENGTH [Rp0,2]	275 ±10 MPa
ELONGATION AT BREAK [A]	14 ±7 %
VICKERS HARDNESS [HV10]	98 ±5
PART DENSITY	>99,0 %
MATERIAL MASS DENSITY	2,67 g/cm^3

SURFACE TEXTURE	Media blasted	Deburred	Processed
Average roughness [Ra]	8 ±2	3 ±1	0,8

Technology:
- Laser Powder Bed Fusion

Printer:
- SLM Solutions - SLM280

Build volume:
- 280 x 280 x 365 mm

Application:
- Industrial use

Possible post-processing:
- De-stressing
- Heat treatment
- Deburring
- Media blasting
- Conventional processing

Customization:
Contact us if you have specific requests for surface roughness and material properties.

Design features:
- Minimum feature size 0,6 mm
- Minimum channel size Ø2 mm
- Minimum wall thickness 1 mm
- Support for overhangs less than 45°
- Hole for emptying powder Ø5 mm

Examples of use
- Lightweight structural components with high strength for drones, defense, aviation, aerospace, and motorsport
- Heat exchangers and coolers for electronics as well as other thermal solutions
- Marine components

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Visit our website to see our AM services

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