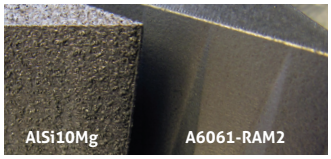
ELEMENTUM

A6061-RAM2
Material Data Sheet

AS BUILT SURFACE FINISH COMPARISON



A6061-RAM2 (highly ductile and cost effective)

Product Information

Elementum 3D's A6061-RAM2 is a general purpose AM aluminum alloy that features a good combination of excellent ductility, high strength and good thermal conductivity. An additive printed AL6061 is of particular interest for many applications due to its unique balance of properties and efficient build speed. A6061-RAM2 prints nearly twice as fast as AlSi10Mg on an EOS M290 and has a better "as built" surface finish.

Physical and Chemical Properties

Material composition: Proprietary A6061 w/2% ceramic

Density: 2.73g/cc

Relative density: > 99.4%

Ultimate tensile strength: *Approx. 46 ksi (315 MPa)

Yield strength: *Approx. 41 ksi (285MPa)

Elongation: ~13%

Hardness: 52 HRB

Modulus of elasticity: ** Approx. 76 GPa

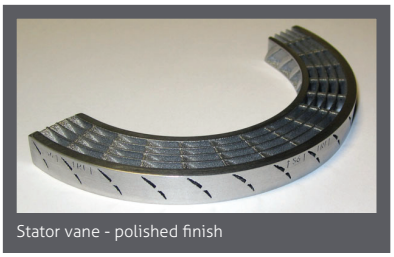
Thermal conductivity: 119 W/(m·K) (measured in z)

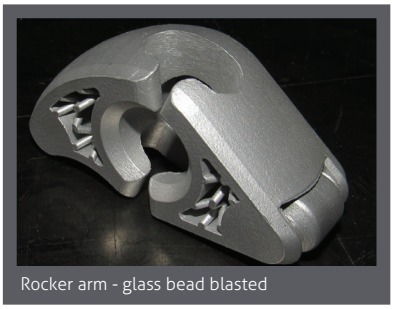
Deposition rate: 10.4 mm^3/s

Surface roughness as built:

Upskin - R_a 4.3 µm, R_a 0.17 x 10^{-3} inch

Downskin - R_a 5.8 µm, R_a 0.23 x 10^{-3} inch


Stator vane - polished finish


Rocker arm - glass bead blasted

All stated values are approximate values. All details given above are our current knowledge and experience, and are dependent on the equipment, parameters and operating conditions. The data provided in this document is subject to change and only intended as general information on a material set that is continually improving and developing. The data does not provide a sufficient basis for engineering parts. All samples were produced on an EOS M290. All tensile tests were performed at third party certified test labs such as Westmoreland Mechanical Testing & Research.

Please contact us at jacob@elementum3d.com for additional information.

All stated values are from heat treated samples.
*ASTM E8, **ASTM E494-15

Rev 2019-05-01