

► A7050-RAM2 (High-Strength and Corrosion Resistant)

Product Information

Elementum 3D's A7050-RAM2 is an aerospace and specialty AM aluminum alloy that features a combination of high toughness, high strength, and good stress corrosion cracking resistance.

Physical and Chemical Properties

Material composition: Proprietary A7050 w/2% ceramic (HIP and T74 condition)

Theoretical maximum density: 2.86 g/cm³

Printed relative density: > 99.2% (HIP condition > 99.9%)

Ultimate tensile strength^[1]: 73 ± 0.5 ksi (504 MPa)

Yield strength^[1]: 68 ± 0.5 ksi (469 MPa)

Elongation^[1]: 6 ± 1.5%

Hardness^[2]: 88 HRB

Modulus of elasticity^[3]: Approx. 11.0 Msi (76 GPa)

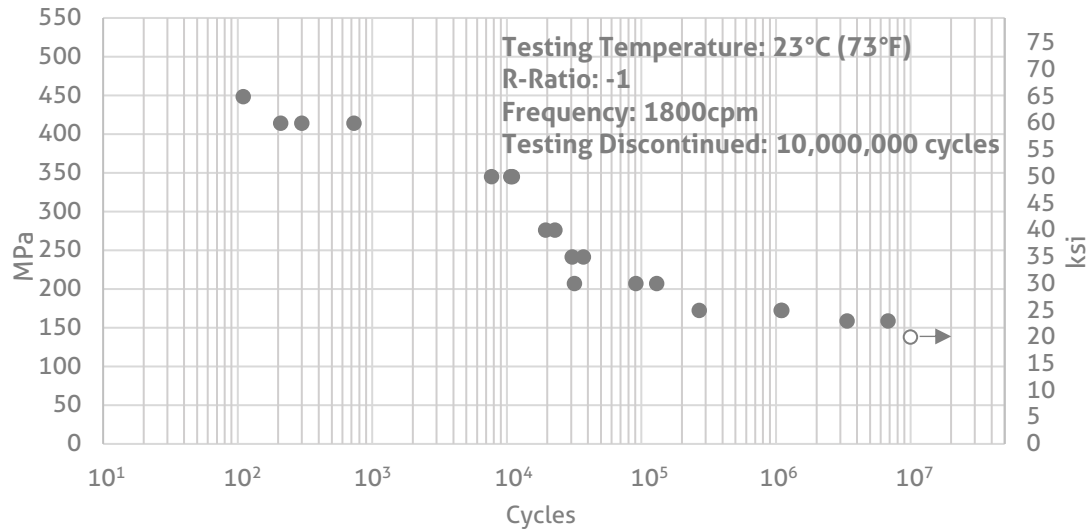
Deposition rate^[4]: 1.54 in³/hr (7.02 mm³/s)

Surface roughness as built^[5]:

Angle	Upskin		Downskin	
Deg. °	Ra μm	Ra μin	Ra μm	Ra μin
0 (top)	2.27±0.31	89±12		
40	7.35±1.72	289±68	18.91±1.00	744±39
45	6.32±1.73	249±68	18.14±2.29	714±90
50	6.74±1.13	265±44	16.97±3.86	668±152
90 (vertical)	7.28±0.31	287±12		



Fatigue^[6]:



Properties stated on this data sheet are in the Elementum 3D prescribed HIP and T74 condition.

^[1]ASTM E8, ^[2]ASTM E18, ^[3]ASTM E494-20 (ultrasonic velocity), ^[4]Deposition rate calculation is for comparison purposes on an EOS M290 and does not include recoating time, laser migration time, contour exposures, etc., ^[5] Surface roughness determined by stylus profilometry, ^[6]ASTM E466.

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 sales@elementum3d.com for additional information.