

► IN625-RAM2 (High Temperature Strength and Corrosion Resistant)

Product Information

Elementum 3D's IN625-RAM2 nickel superalloy offers excellent mechanical strength and creep resistance at high temperatures, good surface stability, and corrosion and oxidation resistance, while maintaining high strength, hardness, and wear. IN625-RAM2 is targeted towards aerospace and power industry applications such as turbine blades and jet/rocket engines, industrial gas turbines, heat exchangers and nuclear components.

Physical and Chemical Properties

Material composition: Proprietary IN625 with 2% ceramic

Theoretical maximum density: 8.19 g/cc

Printed relative density: > 99.5%

Ultimate tensile strength^[1]: 189 ksi (1303 MPa)

Yield strength^[1]: 144 ksi (993 MPa)

Elongation^[1]: 23 %

Hardness^[2]: 34 HRC

Modulus of elasticity^[1]: 29.0 Msi (200 GPa)

Deposition rate: 0.934 in³/hr (4.24 mm³/s)

Surface roughness as built:

Upskin - Ra 8.2 μm (3.22 x 10⁻⁴ in.)

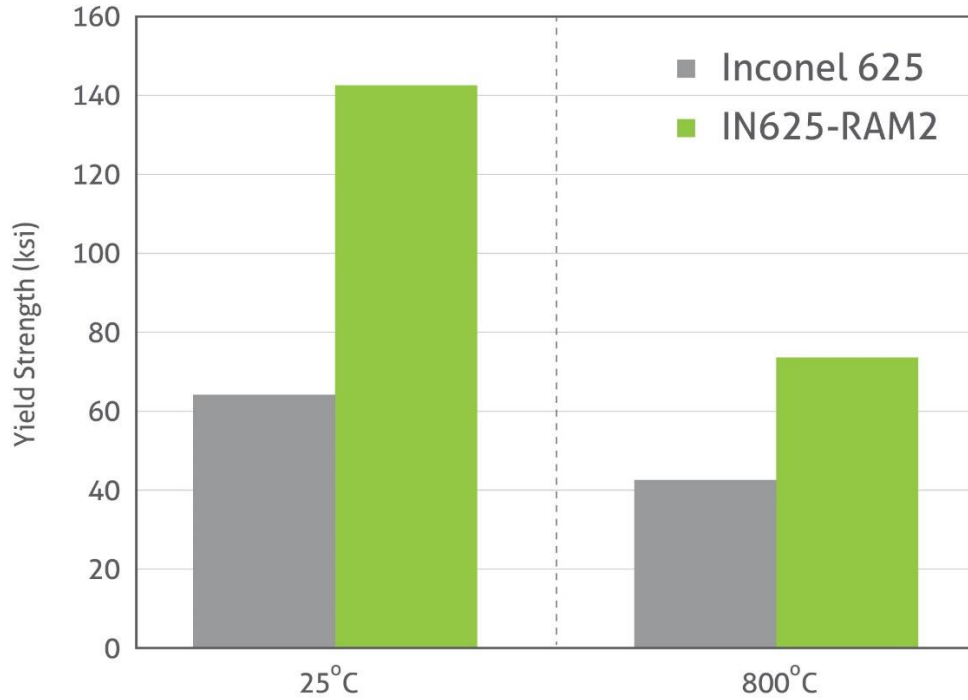
Downskin - Ra 9.7 μm (3.81 x 10⁻⁴ in.)

Elevated Temperature Testing:

Testing temperature		Ultimate tensile Strength		Yield strength		Modulus of elasticity		Elongation
°C	°F	MPa	ksi	MPa	ksi	GPa	Msi	%
25	77	^[1] 1303	189	^[1] 993	144	^[1] 200	29.0	23
800	1472	^[2] 538	78	^[2] 503	73	^[2] 149	21.7	91
980	1796	^[2] 276	40	^[2] 124	18	^[2] 90	13.0	75



Yield Strength at Temperature



^[1]ASTM E8, ^[2]AMS ??

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 PES, a third-party certified test lab.

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