

Maraging Steel MS1

High strength, high hardness

Easily heat treatable

An ultra-high-strength alloy with excellent mechanical properties,
ideal for post-curing



Benefits

- Excellent mechanical properties
- Array of post-processing options
- High fatigue strength
- Corrosion-resistant

Applications

- Automotive & aerospace components
- Castings
- Moulds



Physical Properties

Colour	Grey
Type	Maraging Steel

Mechanical Properties

	Horizontal	Vertical
Tensile Strength ¹ , R _m	1200 ± 100MPa	1100 ± 150 MPa
Yield Strength R _{p0.2}	1100 ± 100MPa	930 ± 150 MPa
Elongation at break, A	12 ± 4 %	x
Modulus of elasticity	150 ± 25 GPa	140 ± 25 GPa
Density (g/cm ³)	8.0 – 8.1	

¹ Tensile testing according to ISO 6892-1:2009 (B) Annex D, proportional test pieces, diameter of the neck area 5mm (0.2 inch), original gauge length 25mm (1 inch).

Thermal Properties

	As Built	After heat treatment
Thermal conductivity (W/m°C)	Typ. 15 ± 0.8	Typ. 20 ± 1
Specific heat capacity (J/kg°C)	Typ. 450 ± 20	Typ. 450 ± 20

Hardness

	As Built	After heat treatment
Hardness	Typ. 33 – 37 HRC ²	N/A

² Rockwell C (HRC) hardness measurement according to EN ISO 6508-1 on polished surface. Note that measured hardness can vary significantly depending on how the specimen has been prepared.

Material composition

Element	Indicative Value (Weight in %)
Al	0,05 – 0.15
Cr, Cu	each ≤ 0.5
Ti	0.6 – 0.8
Ni	17 - 19
Co	8.5 – 9.5
Mo	4.5 – 5.2
C	≤ 0.03
Mn, Si	each ≤ 0.1
P, S	each ≤ 0.01
Fe	balance

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