

# 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 <sup>1</sup> , $R_m$	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 <sup>3</sup> )	8.0 – 8.1	

## 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

<sup>1</sup> 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).

## Hardness

	As Built	After heat treatment
Hardness	Typ. 33 – 37 HRC	n.a.

<sup>2</sup> 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

Component	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

Please be advised that all information provided in this document is representative of typical properties and as advised by the material manufacturer. Performance characteristics of these products may vary according to product application, operating conditions or with end use.

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