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], Rm	**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/cm3)	**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**

[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).

Hardness

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

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

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