

Ymagine® H500

Maximum strength and precision for automotive excellence

Ymagine is Tata Steel's range of high-quality, direct-rolled steel products engineered for reliable performance and efficient processing. Supplied pickled and oiled, Ymagine offers excellent dimensional control, consistent mechanical properties and tight tolerances – making it a smart alternative to cold-rolled or hot-rolled steel. All grades are delivered in weld-free coils and available in various thicknesses,

widths and coil weights to optimise productivity and reduce waste. Ymagine H500 is the highest-strength grade in the Ymagine range, designed for demanding applications such as automotive reinforcements, seat tracks, and safety-critical parts. It offers exceptional strength-to-weight ratio and is benchmarked for excellent formability.

Mechanical properties (measured parallel to the rolling direction)

Grade		Min.-Max. yield strength	Min.-Max. tensile strength	% elongation at fracture		Bending at 180° min. mandrel diameter* t < 5 mm
				t < 3 mm	t ≥ 3 mm	
		R _p in MPa	R _m in MPa	L ₀ = 80 mm (%)	L ₀ = 5.65√S ₀ mm (%)	(t)
Ymagine H500	Typical	540	610	20	25	0.5
Ymagine H500	Guaranteed	500-600	560-700	≥ 14	≥ 18	0.5
Ymagine S460MC	Guaranteed	≥ 460	520-670	≥ 14	≥ 17	1

* values apply to test bars transverse to the rolling direction

Chemical composition (% by weight)

Grade		C	Mn	P	S	Si ¹	Nb	V
Ymagine H500	Typical	0.045	0.800	0.009	0.006	0.02	0.013	0.130
Ymagine H500	Guaranteed	≤ 0.065	≤ 1.000	≤ 0.025	≤ 0.015	≤ 0.035	≤ 0.020	≤ 0.150
Ymagine S460MC	Guaranteed	≤ 0.120	≤ 1.600	≤ 0.025	≤ 0.015	≤ 0.500	≤ 0.090	≤ 0.200

¹ For the purpose of batch galvanising, Ymagine high-strength steels can be ordered on consultation with a maximum Si content of 0.030%.

Tolerances

Thickness	Tolerances
1.15 ≤ t ≤ 2.0	± 0.05
2.0 < t ≤ 2.5	± 0.06
2.5 < t ≤ 3.0	± 0.07
3.0 < t ≤ 4.0	± 0.09
	± 0.07 on request

Weldability

Ymagine can be welded using all conventional welding processes. Thanks to the low content of residual elements, the material offers good weldability, comparable to that of hot-rolled or cold-rolled steel with a similar chemical composition.

Surface quality

The surface quality of Ymagine is more than sufficient for hot-rolled and cold-rolled applications that are not surface critical. The surface roughness is comparable to that of hot-rolled pickled and oiled material, i.e. 1-3 μm Ra (cut-off length = 2.5 mm).

Coatability

Ymagine has been tested for both wet paint and powder coatings. Adhesion test results were positive on flat sample material, indicating good coatability.

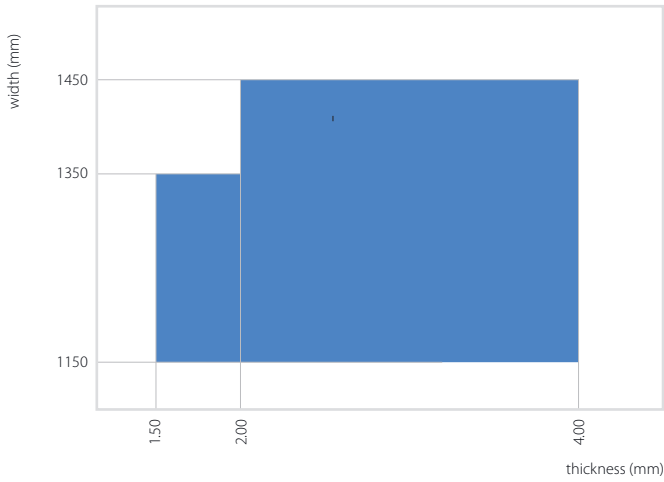
Galvanising

Ymagine can be hot-dip galvanised without any restrictions.

Product support

Our proactive Customer Technical Services team is available to help you optimise your processes and maximise performance with tailored advice and hands-on support. Backed by deep steel expertise and in-depth application knowledge, we'll work with you to boost efficiency, reduce waste, and get the best out of Ymagine H500

Available dimensions of Ymagine® H500



Ymagine® range

Steel grades: Ymagine D1 - drawing steel
Ymagine S1 - structural steel
High-strength low-alloy steels:
H240, H320, H360, H420, H500

Thickness range: 1.15 – 4 mm

Width range: 1000 – 1530 mm

Surface treatment: pickled and oiled

Further information

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