

Martensitic steels

Data sheet



Grade availability

ArcelorMittal’s MartINsite® cold roll family of fully martensitic steels is offered with tensile strength grades ranging from 900 to 1700 MPa. These grades are also available in tensile strength grades from 900 to 1500 MPa with an electrogalvanized coating (ArcelorMittal’s Electrosite® family of martensitic steels).

Tensile strength	Uncoated	EG
900 MPa	yes	yes
1100 MPa	yes	yes
1300 MPa	yes	yes
1500 MPa	yes	yes
1700 MPa	yes	in development

Product characteristics

ArcelorMittal’s MartINsite® family of martensitic ultra high strength steels consists of fully martensitic microstructures offering some of the highest strength levels available in the marketplace. These steels

offer much higher strength-to-weight ratios than conventional cold rolled steels and pound-for-pound are more cost effective than other metals or plastics. Unlike some competing materials, these grades have uniform mechanical properties in both longitudinal and transverse directions. This allows more flexibility in both design and manufacturing to maximize material utilization. Though limited in formability, alternative available manufacturing technologies such as roll forming are used to fully utilize these grades.

Electrosite® is a family of martensitic steels from ArcelorMittal having an electrogalvanized coating for superior corrosion protection.

Applications

The high strength-to-weight ratios open up many attractive weight reduction opportunities. They are designed especially for roll-formed and tubular applications where high strength is critically important. Typical applications for ArcelorMittal’s family of MartINsite® martensitic grades are: bumper reinforcement beams, door intrusion beams, rocker panel inners and reinforcements, side sill reinforcements, belt line reinforcements, springs and clips.

Chemistry

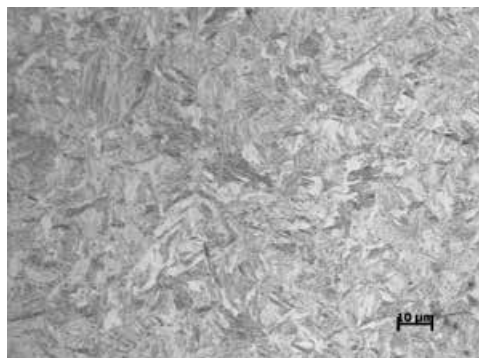
	C (wt. %)	Mn (wt. %)	P (wt. %)	S (wt. %)	Other	Form
M900	0.08	0.45	0.01	0.004	B, Ti	CR, EG
M1100	0.12	0.45	0.01	0.004	B, Ti	CR, EG
M1300	0.17	0.45	0.01	0.004	B, Ti	CR, EG
M1500	0.25	0.45	0.01	0.004	B, Ti	CR, EG
M1700	0.29	0.45	0.01	0.004	B, Ti	CR

Mechanical properties

	Test - direction	Yield strength (MPa)	Ultimate tensile strength (MPa)	Total elongation (%)	Recommended bend radius
M900	ASTM - L	960	1070	5	4T
M1100	ASTM - L	1070	1200	5	4T
M1300	ASTM - L	1230	1390	5	4T
M1500	ASTM - L	1420	1600	5	4T
M1700	ASTM - L	1560	1750	5	4T

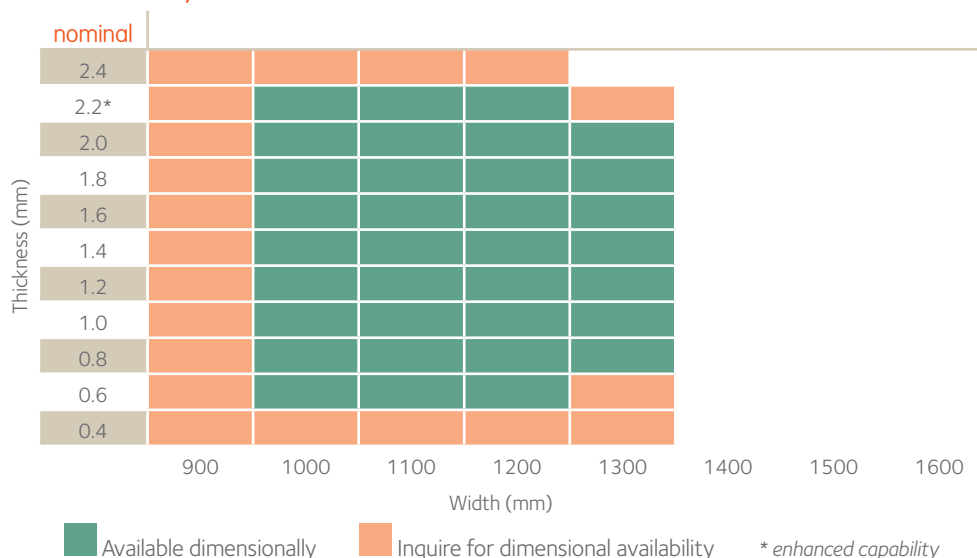
Metallography - 100 percent Martensite

Magnification 1000X
M1700



Contains 100% tempered MartInSite®.

Size availability



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