

353 MA

For welding steels such as Outokumpu	EN	ASTM	BS	NF	SS
353 MA®	1.4854	S35315	–	–	–

Standard designations

–

Characteristics and welding directions

AVESTA 353 MA is designed for welding Outokumpu 353 MA, offering excellent properties at temperatures above 1000°C. 353 MA has a tendency to give a thick oxide layer during welding and hot rolling. Black plates and previous weld beads should be carefully brushed or ground prior to welding. The weld metal is, due to the fully austenitic structure, somewhat more sensitive to hot cracking than, for example, 253 MA.

Welding data

	Diameter mm	Current A	Voltage V
Spray arc	1.00	190 – 240	25 – 29
	1.20	210 – 250	26 – 30
Pulsed arc	1.20	$I_{\text{peak}} = 340 - 380 \text{ A}$ $I_{\text{bkg}} = 100 - 160 \text{ A}$ Freq = 100 – 120 Hz	

Shielding gas

Welding is best performed using pulsed arc with a pure argon or Ar + 30% He + 2% CO₂ shielding gas.

Gas flow rate 12 – 16 l/min.

Chemical composition, wire (typical values, %)

C	Si	Mn	Cr	Ni	N	Others
0.05	0.85	1.6	27.5	35.0	0.15	REM

Ferrite 0 FN

Mechanical properties

	Typical values (IIW)	Min. values EN ISO 14343
Yield strength $R_{p0.2}$	320 N/mm ²	–
Tensile strength R_m	590 N/mm ²	–
Elongation A_5	43 %	–
Impact strength KV +20°C	160 J	
Hardness	200 Brinell	

Interpass temperature: Max. 100°C.

Heat input: Max. 1.0 kJ/mm.

Heat treatment: Generally none.

Structure: Fully austenitic.

Scaling temperature: Approx. 1175°C (air).

Corrosion resistance: Superior properties for constructions running at service temperatures above 1000°C. Not intended for applications exposed to wet corrosion.

Approvals

–