

For welding steel such as:

Outokumpu	EN	ASTM	SS*	BS*	NF*
253 MA®	1.4835	S30815	2368	-	-
153 MA™	1.4818	S30415	2372	-	-

* Obsolete national standards, replaced by EN 10088.

Characteristics

AVESTA 253 MA AC/DC has a rutile-acid coating that provides excellent welding properties when using either DC (+pole) or AC.

AVESTA 253 MA is designed for welding the high temperature steel AvestaPolarit 253 MA. The steel, as well as the consumable, provides excellent properties at temperatures 850- 1100°C. The resistance to carbon and nitrogen pick-up at elevated temperatures is good. This is achieved, among other things, by alloying with Si and rare earth metals (REM).

AVESTA 253 MA can also be used for welding the somewhat lower alloyed steel AvestaPolarit 153 MA.

The composition of the consumable is balanced to ensure a crack resistant weld metal with a ferrite content of 3-10%.

Welding directions

AVESTA 253 MA should be welded using a short arc. To avoid the production of large weld pools, the appropriate amperage and welding speed should be chosen. Excessive weaving should be avoided.

253 MA has a tendency of getting a thick oxide layer during hot rolling and welding. Black plates as well as previous weld beads should be carefully brushed or ground prior to welding.

The joint should be prepared with a sufficient root gap to ensure full penetration.

Weld deposit data at maximum welding current

Diam. mm	Length mm	N	B	H	T	Metal recovery, approx. %
2.5	350	0.58	78	0.80	58	109
3.25	350	0.58	46	1.18	66	108
4.0	400	0.62	27	1.63	82	105

Packaging data

Diam. mm	Length mm	Weight/ capsule, kg	Approx. No. of electrodes/ capsule	Weight/ carton, kg
2.0	300	1.70	134	10.20
2.5	350	4.00	184	12.00
3.25	350	4.10	112	12.30
4.0	400	4.80	80	14.40
5.0	400	5.20	60	15.60

Standard designations

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Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni	N
0.08	1.5	0.7	22.0	10.5	0.18

Ferrite 10 FN DeLong

Mechanical properties

	Typical values (IIW)	Min. values EN 1600
Yield strength, R _{p0.2}	535 N/mm ²	- N/mm ²
Tensile strength, R _m	725 N/mm ²	- N/mm ²
Elongation, A ₅	37 %	- %
Impact strength, KV +20°C	60 J	
Hardness approx.	215 Brinell	

Welding data

DC+ or AC	Diam., mm	Current, A
	2.0	30- 50
	2.5	45- 70
	3.25	70-110
	4.0	100-140
	5.0	150-200

Interpass temperature: Max. 150°C.

Heat input: Max. 1.5 kJ/mm.

Heat treatment: Generally none.

Structure: Austenite with 3-10 % ferrite.

Scaling temperature: Approx. 1150°C (air)

Corrosion resistance: Excellent resistance to high temperature corrosion. Not intended for applications exposed to wet corrosion.

Approvals: -

Welding positions

