

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 1562-2012°F (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.

Packaging data

| Diam. inch | Diam. mm | Length mm/inch | Weight/capsule, lbs | Electrodes/capsule, approx. | Weight/carton, kg |
|------------|----------|----------------|---------------------|-----------------------------|-------------------|
| 5/64 | 2.0 | 300 / 12 | 3.7 | 134 | 22 |
| 3/32 | 2.5 | 350 / 14 | 8.8 | 184 | 26 |
| 1/8 | 3.25 | 350 / 14 | 9.1 | 112 | 27 |
| 5/32 | 4.0 | 400 / 16 | 10.6 | 80 | 32 |
| 3/16 | 5.0 | 400 / 16 | 11.5 | 60 | 34 |

Standard designations

-

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)

| | | |
|-----------------------------------|-----------------------|----------|
| Yield strength, Rp _{0.2} | 535 N/mm ² | 78 ksi |
| Tensile strength, R _m | 725 N/mm ² | 105 ksi |
| Elongation, A ₅ | 37 % | - % |
| Impact strength, KV +20°C | 60 J | 44 ft-lb |
| Hardness approx. | 215 Brinell | |

Welding data

| DC+ or AC | Diam., inch | Current, A |
|-----------|-------------|------------|
| | 5/64 | 30- 50 |
| | 3/32 | 45- 70 |
| | 1/8 | 70-110 |
| | 5/32 | 100-140 |
| | 3/16 | 150-200 |

Interpass temperature: Max. 300°F (150°C).

Heat input: Max. 38.1 kJ/in (1.5 kJ/mm)

Heat treatment: Generally none.

Structure: Austenite with 3-10 % ferrite.

Scaling temperature: Approx. 2102°F (1150°C) (air)

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

Approvals: -

Welding positions

