

For welding steel such as:

Outokumpu	EN	ASTM	SS*	BS*	NF*
4466	1.4466	S31050	-	-	Z2 CND 25-22 Az

* Obsolete national standards, replaced by EN 10088.

Characteristics

AVESTA 254 SFER is a rutile type electrode that produces a high alloyed weld metal with good austenite stability. The weld metal has excellent corrosion resistance in ammonium carbamate at high temperatures, as found in the synthesis part of urea manufacture, but naturally also offers good corrosion resistance in other environments.

The weld metal is manganese-nitrogen-alloyed, which minimises the risk of hot cracking in macro and micro scale.

AVESTA 254 SFER rutile is recommended for welding stainless steels of type 25 Cr 22 Ni Mo N, i.e. AvestaPolarit 725LN, Sandvik 25.22.2L Mn, ASTM S31050, EN 1.4466, which are used in the production of synthetic fertilisers by urea synthesis, for the production of nitrophosphate, synthetic fertilisers, ammonium nitrate and nitric acid.

Welding directions

When welding fully austenitic steels, care should be taken to avoid hot cracking.

The heat input should therefore be kept at a low level and the material should be allowed to cool to below 100°C before the next run is welded. Avoid igniting the electrode beside the weld and finish every bead with a circular movement to avoid pipes.

Weld deposit data

Metal recovery approx. 103%

Packaging data

Diam. mm	Length mm	Weight/capsule, kg	Approx. No. of electrodes/capsule	Weight/carton, kg
2.5	300	3.63	182	10.89
3.25	350	4.10	107	12.30
4.0	350	4.10	74	12.30

Standard designations

EN 1600 E 25 22 2 N L R

Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni	Mo	N
0.03	0.8	4.5	25.5	22.5	2.4	0.16
Ferrite 0 FN						

Mechanical properties

	Typical values (IIW)	Min. values EN 1600
Yield strength, R _{p0.2}	440 N/mm ²	320 N/mm ²
Tensile strength, R _m	660 N/mm ²	510 N/mm ²
Elongation, A ₅	37 %	25 %
Impact strength, KV		
+20°C	60 J	
-196°C	20 J	
Hardness approx.	200 Brinell	

Welding data

DC+ or AC	Diam., mm	Current, A
	2.5	50–75
	3.25	70–110
	4.0	100–150

Interpass temperature: Max. 100°C.

Heat input: Max. 1.5 kJ/mm.

Heat treatment: Generally none. In special cases quench annealing at 1050°C.

Structure: Fully austenitic.

Scaling temperature: Approx. 1000°C (air)

Corrosion resistance: Excellent resistance in strongly oxidising and slightly reducing environments. High resistance to intergranular, selective, pitting and stress corrosion.

Approvals: –

Welding positions

