

254 SFER

For welding steels such as Outokumpu	EN	ASTM	BS	NF	SS
4466	1.4466	S31050	–	Z2 CND 25-22 Az	–

Standard designations

EN ISO 14343 W 25 22 2 N L

Characteristics and welding directions
 AVESTA 254 SFER produces a high-alloy weld metal with good austenite stability. The weld metal has excellent corrosion resistance in ammonium carbamate at high temperatures, but naturally, it also offers good corrosion resistance in other environments.

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

AVESTA 254 SFER has a relatively good resistance to hot or solidification cracking, provided that welding has been carried out carefully, i.e. by minimising the dilution and by keeping the heat input at max 1.5 kJ/mm. The material should also be allowed to cool down to 100°C before the next run is welded.

Welding data

Diameter, mm	Current, A	Voltage, V
2.40	130 – 160	16 – 18

Shielding gas

Ar (99.95%) or Ar with an addition of 20 – 30% He or 1 – 5% hydrogen (H₂).
 Gas flow rate 4 – 8 l/min.

Chemical composition, wire (typical values, %)

C	Si	Mn	Cr	Ni	Mo	N
0.02	0.1	4.5	25.0	22.0	2.2	0.13

Ferrite 0 FN

Mechanical properties	Typical values (IIW)	Min. values EN 14343
Yield strength R _{p0,2}	440 N/mm ²	320 N/mm ²
Tensile strength R _m	650 N/mm ²	510 N/mm ²
Elongation A ₅	35 %	25 %
Impact strength KV		
+20°C	180 J	
–196°C	130 J	
Hardness	200 Brinell	

Interpass temperature: Max. 100°C.

Heat input: Max. 1.5 kJ/mm.

Heat treatment: Generally none (in special cases quench annealing at 1070 – 1100°C).

Structure: Fully austenitic with extra low content of impurities.

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

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