Avesta 904L

Covered electrode, high-alloyed, austenitic stainless

Classifications

EN ISO 3581-A	AWS A5.4 / SFA-5.4
E 20 25 5 Cu N L R 3 2	E385-17

Characteristics and typical fields of application

Rutile coated fully austenitic electrode of E 20 25 5 Cu N L R / E385-17 type designed for welding 1.4539 / 904L type steels. It can also be used for welding 1.4404 / 316L components where a ferrite free weld is required, e.g. in cryogenic or non-magnetic applications. The weld metal has very good impact toughness at low temperatures. To minimize the risk of hot cracking when welding fully austenitic steels, heat input and interpass temperature must be low and there must be as little dilution as possible from the parent metal. Very good resistance to general corrosion in non-oxidizing environments such as sulfuric acid and phosphoric acid and to pitting and crevice corrosion in chloride containing solutions. Meets the corrosion test requirements as per ASTM G48 Methods A, B and E (40ºC). Scaling temperature approximately 1000ºC in air.

Base materials

1.4505 X4NiCrMoCuNb20-18-2, 1.4506 X5NiCrMoCuTi20-18, 1.4537 X1CrNiMoCuN25-25-5, 1.4538 X2NiCrMoCuN20-18, 1.4539 X1NiCrMoCu25-20-5, 1.4586 X5NiCrMoCuNb22-18
UNS S31726, N08904
AISI 904L

Typical analysis

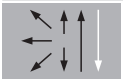
	C	Si	Mn	Cr	Ni	Mo	Cu
wt.-%	0.02	0.7	1.2	20.5	25.0	4.5	1.5

Mechanical properties of all-weld metal - typical values (min. values)

Condition	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation A (L_0=5d_0)	Impact energy ISO-V KV J			Hardness	Lateral expansion mm
	MPa	MPa	%	20°C	–60°C	–196°C	HB	–196°C
u	430 (≥ 320)	620 (≥ 510)	35 (≥ 25)	70	60	45 (≥ 32)	200	0.55

u untreated, as-welded

Operating data



Polarity	DC+ / AC
Electrode identification	Avesta 904L

Dimension mm	Current A
2.5 × 350	50 – 80
3.2 × 350	80 – 110
4.0 × 400	100 – 135
5.0 × 400	140 – 180

To minimize the risk of hot cracking when welding fully austenitic steels, heat input and interpass temperature must be low and there must be as little dilution as possible from the parent metal. Suggested heat input is max. 1.5 kJ/mm, interpass temperature max. 100ºC. Metal recovery approximately 110%.

Approvals

TÜV (03496), DB (30.014.23), CE