

Classification

EN ISO 14343-A	AWS A5.9
G 18 8 Mn	-

Characteristics and typical fields of application

Avesta 307-Si is an over-alloyed, fully austenitic consumable for welding stainless steel to mild steel, low-alloy or Mn-steels. It is also suitable for the welding of some 14 % Mn-steels and other difficult-to-weld-steels. The high manganese content makes the weld metal, even though it is purely austenitic, very resistant to hot cracking with a good ductility.

Structure: Fully austenitic.

Scaling temperature: Approx. 850 °C (air).

Corrosion resistance:

Primarily intended for stainless to mild steel connections, however, the corrosion resistance corresponds to ASTM 304.

Base materials

Avesta 307-Si is primarily used in dissimilar welding between stainless and mild steel or low-alloy steels.

Typical analysis of the solid wire (wt.-%)

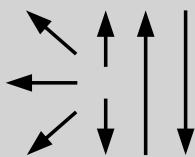
	C	Si	Mn	Cr	Ni	Ferrite
wt.-%	0.09	0.8	7.0	19.0	8.0	0 FN

Mechanical properties of all-weld-metal

Heat treatment	Yield strength R _{p0.2}	Tensile strength R _m	Elongation (L ₀ =5d ₀)	Impact work ISO-V KV J	Hardness
	MPa	MPa	%	+20 °C	-40 °C
u	470	710	42	120	110

u untreated, as welded – Shielding gas Ar + 2 – 3 % CO₂

Operating data

Polarity DC (+)	Shielding gas: Ar + 2 – 3 % CO ₂ Ar + 2 % O ₂ Gas flow rate: 12 - 16 l/min.	ø (mm) 0.8 1.0 1.2 1.6
		

Preheating and Heat treatment are generally not necessary. Interpass temperature: Max. 150 °C. Heat input: max. 2.0 kJ/mm. For constructions that include low-alloy steels in mixed-joints, stress-relieving may be advisable. Always consult the supplier of the parent metal or seek other expert advice to ensure that the correct heat treatment process is carried out.

Approvals

DB, TÜV