

# 307-Si

For welding steels such as Outokumpu	EN	ASTM	BS	NF	SS
AVESTA 307-Si is primarily used in dissimilar welding between stainless and mild steel or low-alloy steels.					

## Standard designations

EN ISO 14343 G 18 8 Mn

## Characteristics and welding directions

AVESTA 307-Si is an over-alloyed, fully austenitic consumable for welding stainless steel to mild steel, high strength steels such as Hardox® and Armox®, 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.

## Welding data

	Diameter mm	Current A	Voltage V
Short arc	0.80	90 – 120	18 – 22
	1.00	110 – 140	19 – 22
Spray arc	1.00	160 – 220	25 – 29
	1.20	200 – 270	26 – 30
	1.60	250 – 330	29 – 32
Pulsed arc	1.20	$I_{peak} = 350 - 450$ A $I_{bkg} = 50 - 150$ A Freq = 80 – 120 Hz	

## Shielding gas

Ar + 2% O<sub>2</sub> or 2 – 3% CO<sub>2</sub>.  
Gas flow rate 12 – 16 l/min.

## Chemical composition, wire (typical values, %)

C	Si	Mn	Cr	Ni
0.09	0.80	7.0	19.0	8.0
Ferrite		0 FN		

## Mechanical properties

	Typical values (IIW)	Min. values EN ISO 14343
Yield strength R <sub>p0,2</sub>	470 N/mm <sup>2</sup>	350 N/mm <sup>2</sup>
Tensile strength R <sub>m</sub>	710 N/mm <sup>2</sup>	500 N/mm <sup>2</sup>
Elongation A <sub>5</sub>	42 %	25 %
Impact strength KV		
+20°C	120 J	
-40°C	110 J	
Hardness	220 Brinell	

**Interpass temperature:** Max. 150°C.

**Heat input:** Max. 2.0 kJ/mm.

**Heat treatment:** Generally none.

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.

**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.

## Approvals

- CE
- DB
- DNV
- TÜV