

308H

For welding steels such as Outokumpu	EN	ASTM	BS	NF	SS
4948	1.4948	304H	304S51	Z6 CN 18-09	2333
4301	1.4301	304	304S31	Z7 CN 18-09	2333
4541	1.4541	321	321S31	Z6 CNT 18-10	2337
–	1.4550	347	347S31	Z6 CNNb 18-10	2338

Standard designations

EN ISO 14343 G 19 9 H

AWS A5.9 ER308H

Characteristics and welding directions

AVESTA 308H is designed for welding austenitic stainless steel type 18 Cr 10 Ni or similar. The consumable has an enhanced carbon content when compared to 308L. This provides improved creep resistance properties, which is advantageous at temperatures above 400°C. 308H type consumables are normally used at temperatures up to 600°C. For higher temperatures a niobium stabilised consumable such as AVESTA 347/MVNB is required.

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
Pulsed arc	1.20	I_{peak} = 350 – 450 A I_{bkg} = 50 – 150 A Freq = 80 – 120 Hz	

Shielding gas

Ar + 2% O₂ or 2 – 3% CO₂.

Gas flow rate 12 – 16 l/min.

Chemical composition, wire (typical values, %)

C	Si	Mn	Cr	Ni
0.05	0.40	1.8	20.0	9.0
Ferrite	10 FN	DeLong		
	10 FN	WRC-92		

Mechanical properties

	Typical values (IIW)	Min. values EN ISO 14343
Yield strength $R_{p0,2}$	400 N/mm ²	350 N/mm ²
Tensile strength R_m	610 N/mm ²	550 N/mm ²
Elongation A_5	37 %	30 %
Impact strength KV +20°C	95 J	
Hardness	210 Brinell	

Interpass temperature: Max. 150°C.

Heat input: Max. 2.0 kJ/mm.

Heat treatment: Generally none (in special cases quench annealing at 1050°C).

Structure: Austenite with 5 – 10% ferrite.

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

Corrosion resistance: Corresponding to ASTM 304, i.e. good resistance to general corrosion. The enhanced carbon content, compared to 308L, makes it slightly more sensitive to intercrystalline corrosion.

Approvals

- CE
- TÜV