

308H

For welding steels such as Outokumpu	EN	ASTM	BS	NF	SS
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 S 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 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. Above that a niobium stabilised consumable such as AVESTA 347/MVNB is required.

Welding data

Diameter, mm	Current, A	Voltage, V
2.40	300 – 400	29 – 33
3.20	350 – 500	29 – 33

Welding flux: AVESTA Flux 801, 805 or 807.

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

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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		

Chemical composition, all weld metal (typical values in combination with flux, %)

Flux	C	Si	Mn	Cr	Ni	FN ¹⁾
801	0.05	0.9	1.1	20.0	9.0	13
805	0.05	0.6	1.3	20.5	9.0	13
807	0.05	0.6	1.3	19.5	9.5	10

¹⁾ According to DeLong.

Mechanical properties

Typical values (IIW) in combination with flux

	801
Yield strength $R_{p0,2}$	420 N/mm ²
Tensile strength R_m	610 N/mm ²
Elongation A_5	36 %
Impact strength KV	
+20°C	60 J
–40°C	50 J

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 – 15% ferrite.

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