Avesta FCW 308H-PW

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	S347S31	Z6 CNNb 18-10	2338

Standard designations

EN ISO 17633 T 19 9 H P M/C 1
AWS A5.22 E308HT1-4/-1

Characteristics

Avesta FCW 308H-PW is designed for welding 1.4948/ASTM 304H type stainless steels. The higher carbon content, compared to 308L, provides improved creep resistance properties, which is advantageous at temperatures above 400°C. It is also suitable for welding steels that are stabilised with titanium or niobium, such as 1.4541/ASTM 321 and 1.4550/ASTM 347 for service temperatures not exceeding 600°C. For higher temperatures a stabilised material, e.g. 347/MVNb, should be used.

Avesta FCW 308H-PW has a stronger arc and a faster freezing slag compared to the 2D type. It is designed for all-round welding and can be used in all positions without changing the parameter settings. Weldability is excellent in the vertical-up and overhead welding positions.

Avesta FCW 308H-PW should be welded using direct current positive polarity (DC+) with a recommended wire stick-out of 15 – 20 mm.

Welding data

Diam. mm	Weld. pos.	Wire feed m/min	Current A	Voltage V
1.2	PA	6.2 – 11.7	150 – 240	24 – 32
	PF	5.3 – 6.6	130 – 160	23 – 28
	PE	6.2 – 9.1	150 – 200	24 – 29
	PG	4.6 – 7.7	120 – 180	22 – 27

Typical analysis % (All weld metal)

C	Si	Mn	Cr	Ni
0.05	0.6	1.4	19.3	10.4

Ferrite 5 FN WRC-92

Mechanical properties	Typical values (IIW)	Min. values EN ISO 17633
Yield strength $R_{p0.2}$	390 N/mm²	–
Tensile strength R_m	580 N/mm²	550 N/mm²
Elongation A_5	41 %	35 %
Impact toughness KV		
+20°C	90	
–70°C	50 J	
Hardness approx.	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 3 – 8% ferrite.

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

Corrosion resistance: Corresponding to 1.4301/ASTM 304, i.e. good resistance to general corrosion. The enhanced carbon content, compared to 308L, makes it slightly more sensitive to intergranular corrosion.

Shielding gas

Ar + 15 – 25% CO_2 offers the best weldability, but 100% CO_2 can also be used (voltage should be increased by 2V).
Gas flow rate 20 – 25 l/min.