

Classification

EN ISO 14343-A	EN ISO 14343-B	AWS A5.9
G 22 9 3 N L	SS2209	ER2209

Characteristics and typical fields of application

Avesta 2205 is primarily designed for welding the duplex grade Outokumpu 2205 and similar but it can also be used for SAF 2304 type of steels. Avesta 2205 provides a ferritic-austenitic weldment that combines many of the good properties of both ferritic and austenitic stainless steels. The welding can be performed using short, spray or pulsed arc. Welding using pulsed arc provides good results in both horizontal and vertical-up positions.

Structure: Austenite with 45 – 55 % ferrite.

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

Corrosion resistance:

Very good resistance to pitting and stress corrosion cracking in chloride containing environments.

Base materials

Similar duplex stainless steels, also combinations of duplex, ferritic and austenitic steels

1.4462 X2CrNiMoN22-5-3, 1.4362 X2CrNiN23-4,
1.4462 X2CrNiMoN22-5-3 with 1.4583 X10CrNiMoNb18-12,
1.4462 X2CrNiMoN22-5-3 with P235GH/ P265GH, S255N, P295GH, S355N, 16Mo3
UNS S31803, S 32205

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

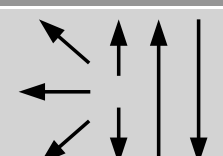
	C	Si	Mn	Cr	Ni	Mo	N		PRE _N
wt.-%	≤ 0.015	0.4	1.7	22.5	8.8	3.2	0.15		≥ 35

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	
	MPa	MPa	%	+20 °C	-40 °C
u	660 (≥ 450)	830 (≥ 550)	28 (≥ 20)	85	≥ 32

u untreated, as welded – Shielding gas Ar + 20 % He + 2 % CO₂

Operating data

	Polarity DC (+)	Shielding gas:	ø (mm)
		Ar + 20 – 30 % He + max. 2 % CO ₂ Ar + 20 – 30 % He + max. 1 % O ₂ Gas flow rate: 12 – 16 l/min	

Heat treatment: Generally none (in special cases quench annealing at 1100 – 1150 °C).

Interpass temperature: max. 150 °C.

Heat input: 0.5 – 2.5 kJ/mm.

Approvals

TÜV, DB, GL, DNV, CE