

Classifications

high-alloyed

EN ISO 14343-A:

AWS A5.9:

W 22 9 3 N L

ER2209

Characteristics and field of use

Avesta 2205 is primarily designed for welding the duplex grade Outokumpu 2205 and similar grades but can also be used for welding 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. Welding without filler metal (TIG dressing) is not allowed since the ferrite content will increase drastically which will have a negative effect on both mechanical and corrosion properties. The weldability of duplex steels is excellent but the welding should be adapted to the base material, considering fluidity, joint design, heat input etc.

Corrosion resistance:

Very good resistance to pitting and stress corrosion cracking in chloride containing environments. PREN>35. Meets the corrosion test requirements per ASTM G48 Methods A, B and E (22°C), ASTM G36 and NACE TM 0177 Method A.

Base materials

For welding steels such as

Outokumpu	EN	ASTM	BS	NF	SS
2205	1.4462	S32205	318S13	Z3 CND 22-05 Az	2377

Typical composition of welding rod (Wt-%)


C	Si	Mn	Cr	Ni	Mo	N
0.02	0.5	1.6	22.8	8.5	3.1	0.17

Ferrite 50 FN; WRC-92

Mechanical properties of all-weld metal

Heat Treatment	Yield strength 0.2%	Tensile strength	Elongation ($L_0=5d_0$)	Impact values in J CVN	
	MPa	MPa	%	+20°C:	-40°C:
untreated	560	720	26	200	170

Operating data

	Polarity = -	Shielding gas: Ar (99.95%). An addition of up to 2% nitrogen (N2) and 20 – 30% helium (He) is advantageous and will have a positive effect on both mechanical and corrosion properties. The addition of helium (He) will increase the energy of the arc. Gas flow rate 4 – 8 l/min.
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Dimensions (mm)

1.2	1.6	2.0	2.4	3.2
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