

Classification

EN ISO 14343-A	AWS A5.9
-	-

Characteristics and typical fields of application

Avesta 2304 is primarily designed for welding the duplex steel SAF 2304 and similar grades. Avesta 2304 provides a ferritic-austenitic weldment that combines many of the good properties of both ferritic and austenitic stainless steels. Avesta 2304 has a low content of molybdenum, which makes it well suited for nitric acid environments. Welding without filler metal (i.e. TIG-dressing) is not allowed since the ferrite content will increase drastically and both mechanical and corrosion properties will be negatively affected.

Structure: Austenite with 35 – 55 % ferrite.

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

Corrosion resistance:

Very good resistance to pitting and stress corrosion cracking in nitric acid environments

Base materials

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

Outokumpu 2304

1.4362 - UNS S32304

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

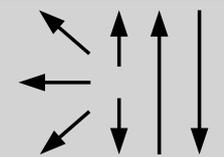
	C	Si	Mn	Cr	Ni	Mo	N	Ferrite
wt.-%	0.02	0.4	0.5	23.5	7.0	< 0.5	0.14	40 FN (WRC-92)

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	550	730	30	180	180

u untreated, as welded – Shielding gas Ar (99.95 %)

Operating data

	Polarity	Shielding gas:	ø (mm)
	DC (+)	Ar (99.95 %)	1.6
		Ar + 2 % N ₂	2,4
		Gas flow rate: 4 – 8 l/min	3,2

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, CE