

Classifications

EN ISO 14343-A	AWS A5.9 / SFA-5.9
G 22 12 H	ER309 (mod.)

Characteristics and typical fields of application

Solid wire of G 22 12 H / ER309 (mod.) type for similar, heat resisting rolled, forged and cast steels as well as for heat resisting, ferritic CrSiAl-steels, e.g. in annealing shops, hardening shops, steam boiler construction, the crude oil industry and the ceramics industry. Results in an austenitic microstructure deposited with a ferrite content of approximately 8%. Preferably used for applications involving the attack of oxidizing gases. The final layer of joint welds in CrSiAl-steels exposed to sulfurous gases must be deposited using a 25/4 grade welding consumable.

Air and oxidizing combustion gas:	Atmosphere	max. Service Temperature
	Sulfur free	950°C
Reducing combustion gas:	Max. 2g S/Nm ³	850°C
	Sulfur free	900°C

Base materials

Heat resistant ferritics: 1.4826 GX40CrNiSi22-10, 1.4828 X15CrNiSi20-12, 1.4833 X12CrNi23-13

Heat resistant austenitics: 1.4710 GX30CrSi7, 1.4713 X10CrAlSi7, 1.4724 X10CrAlSi13, 1.4740 GX40CrSi17, 1.4742 X10CrAlSi18
AISI 305, ASTM A 297 HF

Typical analysis

	C	Si	Mn	Cr	Ni
wt.-%	0.1	1.1	1.6	22.5	11.5

Mechanical properties of all-weld metal - typical values (min. values)

Condition	Yield strength R _{p0.2}	Tensile strength R _m	Elongation A (L ₀ =5d ₀)	Impact energy ISO-V KV J
	MPa	MPa	%	20°C
u	480 (≥ 350)	620 (≥ 550)	34 (≥ 25)	110 (≥ 60)

u untreated, as-welded – shielding gas Ar + 2.5% CO₂

Operating data

	Polarity	DC+	Dimension mm
	Shielding gas (EN ISO 14175)	M12	0.8
		M13	1.0
			1.2

Suggested heat input is max. 2.0 kJ/mm, interpass temperature max. 150°C.

Annealing according to heat resistant Cr-steels and cast steel grades not necessary if the service temperature is the same or higher.

Shielding gas: Ar + 1 – 2% O₂, Ar + 2 – 3% CO₂

Approvals

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