

Classifications

EN ISO 21952-A	AWS A5.28 / SFA-5.28
G CrMo1Si	ER80S-G (ER80S-B2(mod.))

Characteristics and typical fields of application

Solid wire of type G CrMo1Si / ER80S-G for gas metal arc welding using Ar-CO₂ or 100 % CO₂ shielding gas. The 1.25Cr-0.5Mo type weld metal exhibits a bainitic microstructure with favorable mechanical properties in tempered and quenched and tempered condition. Under certain conditions applications in the as welded condition is possible. The range of application covers joint welding of similar alloyed creep resistant steel and steel casting. Approved for application under creep condition up to design temperatures of 570 °C.

Base materials

Similar alloyed creep resistant steels and castings like

1.7335 13CrMo4-5, 1.7262 15CrMo5, 1.7728 16CrMoV4, 1.7218 25CrMo4, 1.7225 42CrMo4, 1.7258 24CrMo5, 1.7354 G22CrMo5-4, 1.7357 G17CrMo5-5

ASTM A 182 Gr. F12; A 193 Gr. B7; A 213 Gr. T12; A 217 Gr. WC6; A 234 Gr. WP11; A335 Gr. P11, P12; A 336 Gr. F11, F12; A 426 Gr. CP12

Typical analysis

	C	Si	Mn	Cr	Mo
wt.-%	0.11	0.6	1.0	1.2	0.5

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	-10 °C
s1	440 (≥ 355)	570 (≥ 550)	23 (≥ 20)	150 (≥ 47)	100 (≥ 47)
s2	420 (≥ 355)	550 (≥ 510)	24 (≥ 20)	110 (≥ 47)	55 (≥ 47)

s1 heat treated, tempered (680 °C / 2 h / Ar + 18 % CO₂)

s2 heat treated, tempered (680 °C / 5 h / 100 % CO₂)

Operating data

	Polarity	DC +	Dimension mm
	Shielding gas	C1	0.8
	(EN ISO 14175)	M21	1.0
			1.2
			1.6

Preheating, interpass temperature, and post-weld heat treatment as required by the base metal. Preheating can normally be recommended being in a range of 200 to 300 °C depending on the wall thickness. Common post weld heat treatments are carried out between 600 and 700 °C.

Approvals

TÜV (01091), DB (42.132.79), CE