

Classifications

EN ISO 21952-A
AWS A5.28 / SFA-5.28

W CrMo2Si

ER90S-G (ER90S-B3(mod.))

Characteristics and typical fields of application

TIG rod and wire of type W CrMo2Si / ER90S-G for manual and mechanized gas tungsten arc welding. Compared to straight AWS B3 type filler metal, BÖHLER CM 2-IG offers an increased Manganese content supporting desoxidation behavior, reducing porosity and improving strength after PWHT. The weld metal exhibits a bainitic microstructure with favorable mechanical properties in tempered and quenched and tempered condition. The range of application covers joint welding of similar alloyed creep resistant steel and steel casting in thermal power and chemical industry.

It is approved for application under creep condition at design temperatures up to 600°C.

Due to the low content of residual and tramp elements the weld metal offers a Bruscato factor < 15 ppm.

Base materials

Creep resistant steels and similar alloyed cast steels

Similar alloyed QT-steels up to 980 MPa tensile strength

Similar alloyed case hardening steels, nitriding steels

1.7380 – 10CrMo9-10, 1.7276 – 10CrMo11, 1.7281 – 16CrMo9-3, 1.7383 – 11CrMo9-10,

1.7379 – G17CrMo9-10, 1.7382 – G19CrMo9-10

ASTM A 182 Gr. F22; A 213 Gr. T22; A 234 Gr. WP22; A 335 Gr. P22; A 336 Gr. F22; A 426 Gr. CP22

Typical analysis

	C	Si	Mn	Cr	Mo
wt.-%	0.07	0.6	1.0	2.55	1.0

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
a	470 (≥ 400)	600 (≥ 550)	23 (≥ 18)	190 (≥ 47)

a annealed, 720 °C/2 h / furnace down to 300 °C / air – shielding gas Argon

Operating data

	Polarity	DC –	Dimension mm
	Shielding gas (EN ISO 14175)	I1	1.0
	Rod marking	+ W CrMo2 Si / 1.7384	1.2
			1.6 × 1000
			2.0 × 1000
			2.4 × 1000
			3.0 × 1000

Preheating, interpass temperature, and post-weld heat treatment as required by the base metal. Preheating can normally be recommended being in a range of 150 to 350°C depending on the wall thickness. Common post weld heat treatments are carried out between 650 and 750°C.

Approvals

TÜV (01564), CE, NAKS (Ø 2,4 mm; Ø 3,0 mm)