BÖHLER DCMS-IG

TIG rod / wire, creep resistant

Classifications

EN ISO 21952-A	AWS A5.28 / SFA-5.28
W CrMo1Si	ER80S-B2Si

Characteristics and typical fields of application

TIG rod and wire of type W CrMo1Si / ER80S-G for manual and mechanised gas tungsten arc welding. Compared to straight AWS B2 type filler metal, it offers an increased Manganese content supporting desoxidation behavior, reducing porosity and improving strength after PWHT. 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 at design temperatures up to 570 ºC. Due to the low content of residual and tramp elements the weld metal offers a Bruscato factor < 12 ppm. Thus, being resistant to temper embrittlement and complies with the requirements on step-cooling testing.

Base materials

Creep resistant steels and similar alloyed cast steels 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

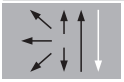
	C	Si	Mn	Cr	Mo	P	Sb	Sn	As
wt.-%	0.1	0.6	1.0	1.2	0.5	≤ 0.015	≤ 0.005	≤ 0.006	≤ 0.010

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	- 30 °C
T	520 (≥ 355)	620 (≥ 550)	25 (≥ 20)	240 (≥ 54)	180 (≥ 54
SR	580 (≥ 470)	690 (≥ 550)	24 (≥ 19)	200 (≥ 54)	170 (≥ 54)

T: tempered (680 °C / 1 h)
SR: stress reliefed (620 °C / 1 h)

Operating data



Polarity	DC -
Shielding gas (EN ISO 14175)	I1
Rod marking	+ W CrMo1 Si / ER80S-B2Si

Dimension mm
1.0
1.2
1.6 x 1000
2.0 x 1000
2.4 x 1000
3.0 x 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 200 to 300 ºC depending on the wall thickness. Common post weld heat treatments are carried out between 600 and 700ºC.
Previous rod marking: + W CrMo1 Si / 1.7339

Approvals

TÜV(00727), CE