BÖHLER 20 MVW-IG

TIG rod, high-alloyed, creep resistant

Classifications

EN ISO 21952-A

W CrMoWV12Si

Characteristics and typical fields of application

GTAW rod for creep resistant, quenched and tempered 12 % Cr steels in turbine and boiler fabrication and in the chemical industry. Preferably used for the base metal X20CrMoV12-1. Approved in long-term condition up to +650 °C service temperature. The deposit exhibits high creep rupture strength and good toughness properties under long term stresses.

Base materials

Similar alloyed creep resistant steels

1.4922 X20CrMoV11-1 (T550 Extra), 1.4935 X20CrMoWV12-1, 1.4923 X22CrMoV12-1, 1.4926 X21CrMoV12-1, 1.4913 X19CrMoNbVN 11-1 (T560 Extra), 1.4931 GX23CrMoV12-1

Typical analysis of the TIG rods (wt.-%)

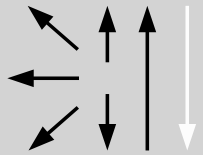
	C	Si	Mn	Cr	Mo	V	W
wt.-%	0.21	0.4	0.6	11.3	1.0	0.3	0.45

Mechanical properties of all-weld metal

Condition	Yield strength $R_{p0,2}$	Tensile strength R_m	Elongation A (L_0=5d_0)	Impact work ISO-V KV J
	MPa	MPa	%	+20 °C
a	**610** (≥ 550)	**780** (≥ 690)	**18** (≥ 15)	**60** (≥ 34)

a annealed, 760 °C/4h / furnance down to 300 °C / air – shielding gas Argon

Operating data



Polarity	**Shielding gas:**	**Rod marking:**	**ø (mm)**
DC (–)	100% Argon	front: W CrMoWV12 Si back: 1.4937	2.0 2.4

Preheating and interpass temperatures 400 – 450 °C (austenitic welding) or 250 – 300 °C (martensitic welding). Root passes should principally be welded in the martensitic range. Lower preheat and interpass temperatures are possible, yet must be approved by practical welding tests and process qualification tests.

After welding cooling down to 90 ±10 °C, followed by tempering at 720 – 760 °C for three minutes / mm wall thickness (at least for 2 hours). Tempering, if specified, at 1050 °C for ½ hour/oil and annealing at 760 °C for 2 hours.

Approvals

TÜV (01083.), KTA 1408.1 (8087.00), DB (42.014.24), CL (0437), SEPROZ, CE