Thermanit MTS 4 Si

TIG rod, high-alloyed, creep resistant

Classifications

EN ISO 21952-A	AWS A5.28	Mat. No.
W CrMoWV12Si	ER90S-G	1.4937

Characteristics and typical fields of application

High temperature resistant up to 550 °C (1022 °F), resistant to scaling up to 600 °C (1112 °F).

For surfacing and joining applications on 12 % Cr steels / cast steel grades suitable for quenching and tempering.

Base materials

TÜV certified parent metals

1.4922 – X20CrMoV12-1; 1.4937 – X23CrMoWV12-1

matching high temperature resistant steels:

1.4922 – X20CrMoV12-1; 1.4935 – X20CrMoWV12-1; 1.4923 – X22CrMoV12-1;
1.4913 – X19CrMoVNb11-1; 1.4931 – GX22CrMoV12-1; (Turbotherm, 20MVNb)

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

	C	Si	Mn	Cr	Mo	Ni	W	V
Gew-%	0.20	0.3	0.6	11.0	1.0	0.4	0.5	0.3

Structure: Martensite, suitable for quenching and tempering

Mechanical properties of all-weld metal

Heat-treatment	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
760 °C / 4 h	590	700	15	35

Creep rupture properties: According to matching high temperature resistant parent metal

Operating data

Polarity:	Shielding gas:	Marks:	ø mm	L mm
DC (–)	(EN ISO 14175) I1	W CrMoWV12Si / 1.4937	2.4	1000

Welding instruction

Materials	Preheating	Postweld treatment
High-temperature resistant martensitic steels / cast steel grades	According to wall thickness: 250 – 300 °C (482 – 572 °F)	For smaller welding jobs, cool slowly to 120 °C (248 °F) (i.e. furnace). Tempering for approx. 4 h 720 – 760°C (1328 – 1400 °F) / air or quench and temper 1050 °C (1922 °F) / air or oil + 4 h 700 – 760 °C (1292 – 1400 °F) / air. For larger welding jobs: intermediate stressrelieving at first from welding temperature 2h 550 °C (1022 °F) max. 580 °C (1076 °F) cool slowly to 120 °C (248 °F), tempering or quenching and tempering as above

Approvals

TÜV (02624), CE