

Classifications

EN ISO 21952-A	AWS A5.28	Mat. No.
G 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

1.4922 – X20CrMoV12-1; 1.4935 – X20CrMoWV12-1; 1.4937 – X23CrMoWV12-1;
1.4923 – X22CrMoV12-1; 1.4926 – X21CrMoV12-1; 1.4913 – X19CrMoNbVN 11-1;
1.4931 – GX23CrMoV12-1;

Typical analysis of solid wire (wt.-%)

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

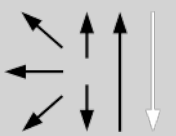
Structure: Martensite, suitable for quenching and tempering, ferrite-free

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	MPa	J
760 °C / 4 h	590	700	15	35

Creep rupture properties: In the range of matching high temperature resistant parent materials.

Operating data

	Polarity: DC (+)	Shielding gas: (EN ISO 14175) M12, (M13)	ø mm 1.2	Spool: B300
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Welding instruction

Materials	Preheating	Postweld heat 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 at 1050 °C (1922 °F) / air or oil and 4 h 700 – 760 °C (1292 – 1400 °F) / air. For larger welding jobs, intermediate stressrelieving at first from welding temperature 2 h 550 °C (1022 °F) – max. 580 °C (1076 °F), cool slowly to 120 °C (248 °F) tempering or quenching and tempering as above