

## Classifications

EN ISO 3580-A

E CrMoWV12 B 4 2 H5

## 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 matching/similar high temperature 12 % Cr steels/cast steel grades, suitable for quenching and tempering.

## Base materials

Base materials acc. TÜV approval

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

## Typical analysis of all-weld metal (wt.-%)

	C	Si	Mn	Cr	Mo	Ni	W	V
wt-%	0.18	0.3	0.6	11.0	1.0	0.6	0.5	0.3

**Structure:** Martensite, suitable for quenching and tempering

## Mechanical properties of all-weld metal

Heat-treatment	Yield strength R <sub>p0.2</sub>	Tensile strength R <sub>m</sub>	Elongation A (L <sub>0</sub> =5d <sub>0</sub> )	Impact work ISO-V KV J
	MPa	MPa	%	+20 °C
760 °C / 4 h	590	700	15	35

## Operating data

	Polarity: DC ( + )	ø (mm)	L mm	Amps A
		2.5	250	60 – 80
		3.2	350	90 – 120
		4.0	350	110 – 140
		5.0	450	150 – 180

## Welding instruction

Materials	Preheating	Postweld heat treatment
High temperature martensitic steels / cast steel grades	According to wall thickness: 250 – 450 °C (482 - 842 °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 + 4h 700 – 760 °C (1292 – 1400 °F) / air.  For larger welding jobs: intermediate stress-relieving 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

## Approvals

TÜV (01898), CE