



# Thermanit MTS 3

TIG rod, medium-alloyed, creep resistant

## Classifications

EN ISO 21952-A  
W CrMo 9 1

AWS A5.28 / SFA-5.28  
ER90S-B9

## Characteristics and typical fields of application

TIG rod / wire for joining and surfacing applications with quenched and tempered 9% Cr steels in turbine and boiler fabrication and in the chemical industry, particularly for matching high temperature resistant parent metal T91 / P91 according to ASTM. Creep resistant up to 650°C.

## Base materials

1.4903 – X10CrMoVNb9-1;

ASTM A 199 Gr. T91; A 355 Gr. P91 (T91); A 213/213M Gr. T91

## Typical analysis of the wire rod

	C	Si	Mn	Cr	Ni	Mo	V	Nb
wt.-%	0.1	0.3	0.5	9.0	0.5	1.0	0.2	0.06

Structure: Martensite, suitable for quenching and tempering

## Mechanical properties of all-weld metal - typical values (min. values)

Condition	Yield strength $R_{p0.2}$ MPa	Tensile strength $R_m$ MPa	Elongation A ( $L_0=5d_0$ ) %	Impact values ISO-V KV J 20°C
760 °C / 2 h	530	620	17	50

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

## Operating data

Shielding gas  
(EN ISO 14175)

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Dimension mm

1.6 × 1000  
2.0 × 1000  
2.4 × 1000  
3.2 × 1000  
4.0 × 1000

Tempering at 760°C min. 2 h, max 10 h / cooling down to 300°C; air heating / cooling rate below 550°C max. 150°C/h, above 550°C max. 80°C/h. When tempering below 2 h the requirements need to be verified by a WPQR.

Preheat and interpass temperature 200 – 300°C. Cool down to 100°C before post-weld heat treatment.

Shielding gas: 100% Ar. Gas flow: 8 – 12 l/min.

Polarity: DC-

## Approvals

TÜV (06166), CE