

# Thermanit MTS 3 LNi

TIG rod, medium-alloyed, creep resistant

## Classifications

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, particularly for matching high temperature resistant parent metal T91 / P91 according to ASTM. High temperature 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

wt.-%	C	Si	Mn	Cr	Ni	Mo	V	Nb
	0.1	0.3	0.7	9.0	< 0.3	1.0	0.2	0.06

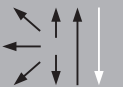
Structure: tempered martensite

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

Condition	Yield strength R <sub>p0.2</sub> MPa	Tensile strength R <sub>m</sub> MPa	Elongation A (L <sub>0</sub> =5d <sub>0</sub> ) %	Impact values ISO-V KV J 20°C
760 °C / 2 h	540	620	17	50

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

## Operating data

	Redrying	300 – 350 °C / 2 h (572 – 662 °F)	Dimension mm	Current A
	Shielding gas (EN ISO 14175)	I1	2.0 × 1000	
			2.4 × 1000	
			3.2 × 1000	90 – 120

Tempering at 760°C min. 2 h, max 10 h / cooling down to 300°C in oven; 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

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