

## Classifications

AWS A5.28 / SFA-5.28

EN ISO 21952-B

ER90S-B9

W 9C1MV

## Characteristics and typical fields of application

Thermanit MTS 3 LNi is a solid filler rod designed for manual gas tungsten arc welding. The 9Cr-1Mo-V-Nb type weld metal exhibits a fully tempered martensitic microstructure with favorable mechanical properties in post weld heat treated condition. The range of application covers joint welding of similar alloyed creep strength enhanced ferritic steels like ASTM grade 91 tube, pipe, plate, forgings and castings, used in the thermal power and petrochemical industry.

The chemical composition is optimized in order to provide a high creep resistant and ductile weld metal after post weld heat treatment along with low level of trace elements. Thanks to the restricted Mn+Ni content of less than 1.0 wt. % the  $A_{c1}$  temperature is certainly above 1455°F.

## Base materials

Similar alloyed creep resistant steels and castings like

1.4903 X10CrMoVNb9-1, 1.4955 GX12CrMoVNbN9-1

ASTM Grade 91, T91, P91, F91, FP91, WP91, C12A

10Cr9Mo1VNbN

STPA28, STBA28

## Typical analysis

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

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

Condition	Yield strength $R_{p0.2}$	Tensile strength $R_m$	Elongation A ( $L_0=5d_0$ )	Impact energy ISO-V KV J
	ksi	ksi	%	68°F
T	96 (≥ 78)	113 (≥ 90)	20 (≥ 17)	125 (≥ 35)

T: tempered (1400°F / 2 h)

## Operating data

	<b>Polarity</b>	DC -	<b>Dimension</b>
	<b>Shielding gas</b>	I1	5/64" × 39"
	<b>(EN ISO 14175)</b>		3/32" × 39"
			1/8" × 39"

Shielding gas: 100%Ar

## Approvals

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