

## Classifications

EN ISO 17633-A	EN ISO 17633-B	AWS A5.22	Mat. No.
T 22 9 3 N L R M21 3 T 22 9 3 N L R C1 3	TS2209-FB0	E2209T0-4 E2209T0-1	1.4462

## Characteristics and typical fields of application

Thermanit TG 22/09 is an austenitic-ferritic CrNiMo flux cored wire with rutile slag characteristic. It is suited for GMAW welding of duplex steels with mixed gas M21 and C1 according to EN ISO 14175.

It is appropriate for joining and surfacing (cladding) applications on matching and similar austenitic/ferritic steels / cast steel grades. The weld metal is resistant to intercrystalline corrosion (wet corrosion up to 250 °C (482 °F)) and provides a good resistance to pitting corrosion and stress corrosion cracking in chloride bearing environment. Suitable for use in chemical apparatus and plant construction, in chemical tank and general construction and on/offshore industry.

The flux cored wire is also suited for mixed structures of different steels ("black"/"white") with high resistance to hot cracking. Thermanit TG 22/09 provides almost spatter free welding behaviour and due to the slow freezing rutile slag, the weld metal shows very fine and smooth bead appearance. Very good slag detachability and notch free seams with low annealing colouring, easy to clean and pickle.

Root welding is proven on ceramic backing strips.

## Base materials

1.4462 – X2CrNiMoN22-5-3, 1.4463 – GX6CrNiMo24-8-2, 1.4417 – X2CrNiMoSi19-5, and similar alloyed ferritic-austenitic materials with higher strength and combinations between mentioned steels and ferritic steels such as P235GH - P295GH, S255N - S355N, 16Mo3, shipbuilding steels grade A - E, AH32 - EH36, A40 - F40 and steels corresponding to 1.4583 – X10CrNiMoTi18-12, UNS S31803, S32205.

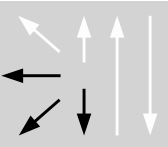
## Typical analysis of all-weld metal (wt.-%)

	C	Si	Mn	Cr	Mo	Ni	N	Gas
wt-%	0.03	0.8	0.9	22.7	3.2	9.0	0.13	M21

**Structure:** Austenite + Ferrite (FN 35 – 50)

## Mechanical properties of all-weld metal

Heat-treatment	Shielding gas	Yield strength	Yield strength	Tensile strength	Elongation	Impact work	
		R <sub>p0.2</sub>	R <sub>p1.0</sub>	R <sub>m</sub>	A (L <sub>0</sub> =5d <sub>0</sub> )	ISO-V KV J	
		MPa	MPa	MPa	%	+20 °C	-40 °C
aw	M21	510	550	700	25	47	32

Operating data						
	<b>Polarity:</b> DC ( + )	<b>Shielding gas:</b> (EN ISO 14175) M21, C1	<b>∅ (mm)</b> 1.2	<b>Spool</b> B300	<b>Amps A</b> 120 – 250	<b>Voltage V</b> 22 – 30
		Consumption: 15 – 18 l/min				
Approvals						
TÜV (07656), ABS, DNV, GL, LR, CE						