

Classifications

EN ISO 17633-A	EN ISO 17633-B	AWS A5.9	Mat. No.
T 18 8 Mn M M12 1	TS307-MG1 (mod.)	EC307 (mod.)	1.4370

Characteristics and typical fields of application

Thermanit 307 MC is a metal powder flux cored wire with austenitic CrNiMn weld metal. It is used for joint welding and cladding applications. This flux cored wire is characterized by easy handling, high deposition rate and simultaneously high productivity. In comparison to solid wire the wider and smoother arc decreases the risk of lack of fusion. It causes uniform secure penetration with good sidewall wetting, almost spatter free welding and fine bead appearance. The weld metal is corrosion resistant and scale resistant to 850 °C (1562 °F). (At temperatures above 500 °C (932 °F) there is not enough resistance to sulphurous combustion gases.) Designed for joints and cladding applications on heat resistant Cr steels/cast steels and heat resistant austenitic steels/cast steels. Well suited for austenite-ferrite joints (max. service temperature 300°C (572 °F)). For joint welding of unalloyed / low alloyed or Cr steels/cast steels with austenitic steels. Care must be taken to keep the heat input as low as possible to avoid martensitic transition zones.

Base materials

1.4583 – X10CrNiMoNb18-12 and all therewith included with ferritic steels to fine grained structural steels to P460NL2; High tensile, unalloyed and alloyed structural steels. Quenched and tempered and armor steels in unity or mixed structures. Unalloyed as well as alloyed boiler or structural steels with high alloyed Cr and CrNi steels. Heat resistant steels up to 850 °C (1562 °F). Austenitic high manganese steels among themselves and with other steels. Cryogenic sheets and pipe steels in joint with cryogenic austenitic materials.

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

	C	Si	Mn	Cr	Ni
wt-%	0.1	0.6	6.3	18.8	9.2

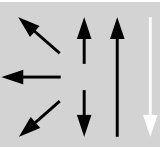
Structure: Austenite with part ferrite

Mechanical properties of all-weld metal

Heat-treatment	Yield strength R _{p0.2}	Yield strength R _{p1.0}	Tensile strength R _m	Elongation A (L ₀ =5d ₀)	Impact work ISO-V KV J
	MPa	MPa	MPa	%	+20 °C
aw	350	400	500	30	70

Hardness approx. 175-225 HB – after work hardening approx. 400 HB

Operating data

	Polarity: DC (+)	Shielding gas: (EN ISO 14175) M12	ø (mm) 1.2	Spool B300	Amps A 120 – 280	Voltage V 16 – 29
		Consumption: 15 – 18 l/min				

Approvals

TÜV (12283), CE