Thermanit 309 L-PW

Flux cored wire, high-alloyed, rutile

Classifications

EN ISO 17633-A	EN ISO 17633-B	AWS A5.22	Mat. No.
T 23 12 L P M21 1 T 23 12 L P C1 1	TS309L-FB1	E309LT1-4 E309LT1-1	1.4332

Characteristics and typical fields of application

Thermanit 309 L-PW is an austenitic CrNi flux cored wire with rutile, fast freezing slag. It is suited for all position GMAW welding with mixed gas M21 and C1 acc. to EN ISO 14175. It is appropriate for joint welding of high alloyed CrNi(Mo) steels/cast steel grades with unalloyed/low alloyed steels (austenite ferrite joints) with a maximum application temperature of 300 °C (572 °F). For joint welding of high alloyed CrNi(Mo, N) steels/cast steel grades with stainless and heat resistant Cr steels / cast steel grades.

For intermediate layers when welding the clad side of plates and cast materials clad with non stabilized and stabilized CrNi(Mo, N) austenitic metals. The weld metal is stainless (wet corrosion up to 300 °C / 572 °F).

Thermanit 309 L-PW provides very fine and smooth bead appearance and almost spatter free welding behaviour. Very good slag detachability and notch free, clean seams with low annealing colouring, easy to clean and pickle. Root welding is proven on ceramic backing strips.

Base materials

Joints and mixed joints between austenitic steels like:

1.4301 – X5CrNi18-10
1.4306 – X2CrNi19-11
1.4308 – GX5CrNi19-10
1.4401 – X5CrNiMo17-12-2
1.4404 – X2CrNiMo17-12-2
1.4408 – GX5CrNiMo19-11-2
1.4435 – X2CrNiMo18-14-3
1.4436 – X3CrNiMo17-13-3
1.4541 – X6CrNiTi18-10
1.4550 – X6CrNiNb18-10
1.4552 – GX5CrNiNb19-11
1.4571 – X6CrNiMoTi17-12-2
1.4580 – X6CrNiMoNb17-12-2
1.4581 – GX5CrNiMoNb19-11-2
1.4583 – X10CrNiMoNb18-12
1.4948 – X6CrNi18-10

or mixed joints between austenitic and heat resistant steels

1.4713 – X10CrAlSi7
1.4724 – X10CrAlSi13
1.4742 – X10CrAlSi18
1.4826 – GX40CrNiSi22-10
1.4828 – X15CrNiSi20-12
1.4832 – GX25CrNiSi20-14
1.4837 – GX40CrNiSi25-12

with ferritic steels to pressure boiler steels P295GH and also fine grained structural steels to P355N, shipbuilding steels

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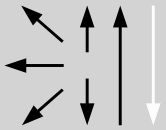
Typical analysis of all-weld metal (wt.-%)						
	C	Si	Mn	Cr	Ni	Gas
wt-%	0.03	0.7	1.4	23.0	12.5	M21

Structure: Austenite with part ferrite

Mechanical properties of all-weld metal							
Heat-treat-ment	Shielding gas	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	–60 °C
aw	M21	350	380	520	35	47	32

Operating data



Polarity:	Shielding gas:	ø (mm)	Spool	Amps A	Voltage V
DC (+)	(EN ISO 14175) M21, C1 Consumption: 15 – 18 l/min	1.2	B300	125 – 230	22 – 28

Approvals

TÜV (09772), DB (43.132.22), GL, CE