Thermanit 18/17 E Mn - Marathon 104

SAW wire/flux combination, high-alloyed, austenitic stainless

Classifications

EN ISO 14174	EN ISO 14343-A	AWS A5.9 / SFA-5.9
S A FB 2 AC	S Z 18 16 5 N L	ER317L (mod.)

Characteristics and typical fields of application

Thermanit 18/17 E Mn - Marathon 104 is a wire/flux combination for submerged arc welding of CrNiMo-steels containing 3 – 4% Mo e.g. 1.4438 / 317L. Solid SAW wire of S Z 18 16 5 N L / ER317L (mod.) type for joining and surfacing of matching and similar austenitic un-stabilized and stabilized stainless and non-magnetic CrNiMo(N)-steels and cast steel grades. Excellent CVN toughness behavior down to –196ºC. Well-suited for depositing intermediate layers when welding products clad with a matching or similar overlay. The weld metal shows a stable austenitic microstructure and the high Mo content provides high resistance to pitting and crevice corrosion in chloride-bearing aqueous media. Resistant to intergranular corrosion. Application temperature max. 400ºC.
Marathon 104 is an agglomerated fluoride-basic welding flux without Cr support and neutral metallurgical behaviour. For information regarding this sub-arc welding flux see our detailed data sheet.

Base materials

1.4436 X3CrNiMo17-13-3, 1.4439 X2CrNiMoN17-13-5, 1.4429 X2CrNiMoN17-13-3, 1.4438 X2CrNiMo18-15-4, 1.4583 X10CrNiMoNb18-12
AISI 316Cb, 316LN, 317LN, 317L
UNS S31726

Typical analysis

wt.-%	C	Si	Mn	Cr	Ni	Mo	N	PRE_N
wire	0.01	0.40	5.2	19.0	17.0	4.1	0.17	34.6
all-weld metal	0.01	0.50	4.5	18.5	16.8	4.1	0.15	34

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	
	MPa	MPa	%	20°C	–196°C
u	420 (≥ 360)	630 (≥ 550)	30 (≥ 25)	100 (≥ 70)	60 (≥ 34)

u untreated, as-welded

Operating data

Dimension mm

2.4

Suggested heat input is max. 1.5 kJ/mm and interpass temperature max. 150ºC. Polarity: DC+
Post-weld heat treatment generally not needed. In special cases, solution annealing can be performed at 1080 – 1130ºC followed by water quenching.

Approvals

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