

Classifications

EN ISO 14343-A	AWS A5.9 / SFA-5.9	EN ISO 14174
S 19 13 4 L	ER317L	S AAF 2 DC

Characteristics and typical fields of application

Thermanit 317L - Marathon 805 is a wire/flux combination for submerged arc welding of 18Cr-14Ni-3Mo / 317L austenitic stainless steels and similar. Solid SAW wire of S 19 13 4 L / ER317L type resulting in an austenitic microstructure with 5 – 10% ferrite. The enhanced content of chromium, nickel and molybdenum compared to 316L gives improved corrosion properties in acid chloride containing environments. Better resistance to general, pitting and intercrystalline corrosion in chloride containing environments than the base material 1.4404 / 316L. Intended for severe service conditions, i.e. in dilute hot acids. Scaling temperature approximately 850°C in air. The former product name of the SAW wire was "Avesta 317L/SNR".

Marathon 805 is an agglomerated basic flux that ensures good welding properties with nice bead appearance and good slag detachability. The flux avoids excessive Cr-burn-out (Cr-support). For more information regarding this sub-arc welding flux, see the separate datasheet. The former product name of the SAW flux was "Avesta Flux 805".

Base materials

1.4429 X2CrNiMoN17-13-3, 1.4434 X2CrNiMoN18-12-4, 1.4435 X2CrNiMo18-14-3, 1.4438 X2CrNiMo19-14-4,
1.4439 X2CrNiMoN17-13-5
AISI 316L, 316LN, 317L, 317LN, 317LMN
UNS S31600, S31653, S31703, S31726, S31753

Typical analysis


wt.-%	C	Si	Mn	Cr	Ni	Mo
wire	0.01	0.45	1.4	19.0	13.5	3.6
all-weld metal	0.01	0.60	1.2	19.5	13.4	3.6

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	-40°C
u	410 (≥ 350)	580 (≥ 550)	36 (≥ 25)	70	60

u untreated, as-welded

Operating data

	Dimension mm	Current A	Voltage V
	3.2	350 – 500	29 – 33

Suggested heat input max. 1.5 kJ/mm and interpass temperature max. 100°C. Polarity: DC+

Post-weld heat treatment generally not needed. In special cases, solution annealing can be performed at 1050°C followed by water quenching.

Approvals

-