Thermanit A-318 - Marathon 805

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

(Avesta 318/SKNb - Avesta Flux 805)

Classifications

EN ISO 14343-A	AWS A5.9 / SFA-5.9	EN ISO 14174
S 19 12 3 Nb	ER318	S A AF 2 DC

Characteristics and typical fields of application

Thermanit A-318 – Marathon 805 is a wire-flux-combination for submerged arc welding of stainless steel grades such as 1.4571 / 316Ti. Solid SAW wire of S 19 12 3 Nb Si / ER318 (mod.) type for joining and surfacing application with matching and similar stabilized and unstabilized austenitic CrNi(N) and CrNiMo(N)-steels and cast steel grades. Corrosion resistance similar to matching stabilized CrNiMo-steels. Max. service temperature 400ºC. Applicable for service temperatures down to –120ºC. The former product name of the SAW wire was "Avesta 318/SKNb".

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

1.4401 X5CrNiMo17-12-2, 1.4404 X2CrNiMo17-12-2, 1.4409 GX2CrNiMo19-11-2, 1.4435 X2CrNiMo18-14-3, 1.4436 X3CrNiMo17-13-3, 1.4437 GX6CrNiMo18-12, 1.4571 X6CrNiMoTi17-12-2, 1.4580 X6CrNiMoNb17-12-2, 1.4581 GX5CrNiMoNb19-11-2, 1.4583 X10CrNiMoNb18-12
UNS S31600, S31603, S31635, S31640, S31653
AISI 316, 316L, 316Ti, 316Cb

Typical analysis

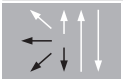
wt.-%	C	Si	Mn	Cr	Ni	Mo	Nb
wire	0.04	0.40	1.8	19.5	11.5	2.6	0.6
all-weld metal	0.04	0.50	1.3	20.0	11.5	2.6	0.5

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
u	490 (≥ 380)	660 (≥ 550)	30	50

u untreated, as-welded

Operating data



Dimension mm	Current A	Voltage V
2.4	300 – 400	29 – 33
3.2	350 – 500	29 – 33
4.0	425 – 575	30 – 34

Suggested heat input max. 1.5 kJ/mm and interpass temperature max. 100ºC. Polarity: DC+
Post-weld heat treatment generally not needed. In special cases, solution annealing can be performed at 1050ºC followed by water quenching.

Approvals

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