Thermanit 308 Mo - Marathon 805

SAW wire/flux combination, high-alloyed, special applications

Classifications

EN ISO 14174	EN ISO 14343-A	AWS A5.9 / SFA-5.9
S A AF 2 DC	S 20 10 3	ER308Mo (mod.)

Characteristics and typical fields of application

Thermanit 308 Mo - Marathon 805 is a wire/flux combination for submerged arc welding of stainless Cr and similar austenitic CrNiMo-steels and cast steel grades. Solid wire of S 20 10 3 / ER308Mo (mod.) type for joining of dissimilar materials. For tough joints on high manganese steel (steel castings), CrNiMn-steels and cast steel grades and armor steels. For surfacing and repair welding on wear-exposed parts such as rotors and rails. Especially suited for dissimilar austenitic-ferritic joints at maximum application temperature of 300ºC. Particularly for tough joints of unalloyed / low-alloyed steels and cast steel grades or stainless heat resistant Cr-steels and cast steel grades with austenitic steels and cast steel grades. Application temperature max. 300ºC. The former product name of the SAW wire was "Thermanit 20/10".

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.

Base materials

Welding and dissimilar joining of high-strength, mild steels and low-alloyed constructional steels; quench tempered steels, armour plates and austenitic manganese steels. Welding of non-alloyed as well as alloyed boiler or constructional steels to high-alloyed stainless Cr and CrNi-steels.

Typical analysis

wt.-%	C	Si	Mn	Cr	Ni	Mo
wire	0.05	0.50	1.3	20.5	10.5	3.3
all-weld metal	0.04	0.70	1.0	21.0	10.5	3.3

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	≥ 400	≥ 620	≥ 30	80

u untreated, as-welded

Operating data

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

Suggested heat input is max.1.5 kJ/mm, interpass temperature max. 200ºC. High manganese steels become brittle at 400 – 600ºC so these should be welded as cold as possible.
Preheating only if required by the parent material.
Post-weld heat treatment generally not needed. In special cases, solution annealing can be performed at 1050ºC. Stress relieving only if allowed by the parent material.
Polarity: DC+.

Approvals

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