

Classifications

EN ISO 14343-A	AWS A5.9 / SFA-5.9	EN ISO 14174
S 21 10 N	-	S A AF 2 DC

Characteristics and typical fields of application

Thermanit 21/10 N - Marathon 805 is a wire/flux combination for submerged arc welding of matching/similar high temperature resistant steels/cast steel grades. Solid wire of S 21 10 N type designed for welding the high temperature steel 253 MA[®] (1.4835 / UNS S30815), used for example in furnaces, combustion chambers, burners, etc. Both the steel and the consumable provide excellent properties at temperatures 850 – 1100°C. The composition of the consumable is balanced to ensure crack resistant weld metal. The resulting microstructure is austenite with 2 – 8% ferrite. Scaling resistance up to 1150°C in air. Excellence resistance to high temperature corrosion. Not intended for applications exposed to wet corrosion. 253 MA[®] has a tendency to give a thick oxide layer during welding and hot rolling. Black plates and previous weld beads should be carefully brushed or ground prior to welding. The former product name of the SAW wire was "Avesta 253 MA".

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

1.4835 X9CrNiSiNc21-11-2, 1.4818 X6CrNiSiNc19-10
UNS S30815, S30415
253 MA[®], 153 MA[™]

Typical analysis


wt.-%	C	Si	Mn	Cr	Ni	N
wire	0.07	1.6	0.50	21.0	10.0	0.15
all-weld metal	0.07	1.7	0.30	21.5	9.5	0.15

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	470	690	39	90

u untreated, as-welded

Operating data

	Dimension mm	Current A	Voltage V
	2.4	300 – 400	29 – 33

SAW – single wire process with Ø 2.4 mm wire. Suggested heat input is max. 1.5 kJ/mm, interpass temperature max. 150°C. Preheating and heat treatment are generally not necessary. Polarity: DC+

Approvals

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