Thermanit 309 H - Marathon 104

SAW wire/flux combination, high-alloyed, austenitic stainless, creep and heat resistant
(Thermanit D - Marathon 104)

Classifications

EN ISO 14343-A	AWS A5.9 / SFA-5.9	EN ISO 14174
S 22 12 H	ER309 (mod.)	S A FB 2 AC

Characteristics and typical fields of application

Thermanit 309 H - Marathon 104 is a wire/flux combination for submerged arc welding for joining and surfacing applications with matching/similar heat resistant steels and cast steel grades. Solid wire of S 22 12 H / ER309 (mod.) type.

Max. application temperature	Sulfur-free	Max. 2 g S/Nm³	> 2 g S/Nm³
Air and oxidizing combustion gases	950ºC	930ºC	850ºC
Reducing combustion gases	900ºC	850ºC	

The former product name of the SAW wire was "Thermanit D".

Marathon 104 is an agglomerated fluoride-basic welding flux without Cr-support and neutral metallurgical behavior. For more information regarding this sub-arc welding flux, see the separate datasheet.

Base materials

1.4826 GX40CrNiSi22-10, 1.4828 X15CrNiSi20-12, 1.4833 X12CrNi23-13
AISI 305, ASTM A 297 HF

Typical analysis

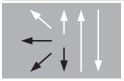
wt.-%	C	Si	Mn	Cr	Ni
wire	0.10	0.90	1.5	22.5	11.5
all-weld metal	0.10	1.0	1.2	22.2	11.5

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	(≥ 350)	(≥ 550)	(≥ 30)	(≥ 70)

u untreated, as-welded

Operating data



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

No preheating. Suggested heat input is max. 2.0 kJ/mm, interpass temperature max. 150ºC. Polarity: DC+
Annealing of heat resistant Cr-steels and cast steel grades not necessary if the service temperature is the same or higher.

Approvals

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