

Classifications

EN ISO 14343-A	AWS A5.9 / SFA-5.9	EN ISO 14174
S 19 9 H	ER19-10H	S A FB 2 AC

Characteristics and typical fields of application

Thermanit 19/10 H - Marathon 104 is a wire/flux combination for submerged arc welding of matching/similar high temperature resistant steels and cast steel grades. Solid wire of S 19 9 H / ER19-10H type for joining and surfacing applications with controlled microstructure with approximately 5% ferrite. Creep resistant up to 700°C. Resistant to scaling up to 800°C. The former product name of the SAW wire was "Thermanit ATS 4".

Marathon 104 is an agglomerated fluoride-basic flux for submerged arc welding of stainless and heat resistant steel grades. The weld metal is characterized by high resistance to hot cracking and is recommended for the highest demanding applications. For more information regarding this sub-arc welding flux, see the separate datasheet.

Base materials

1.4550 X6CrNiNb18-10, 1.4878 X12CrNiTi18-9, 1.4948 X6CrNi18-1
AISI 304H, 321H, 347H

Typical analysis


wt.-%	C	Si	Mn	Cr	Ni
wire	0.05	0.40	1.6	18.8	9.3
all-weld metal	0.05	0.50	1.3	18.5	9.3

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	(≥ 320)	(≥ 550)	(≥ 35)	(≥ 80)

u untreated, as-welded

Operating data

	Dimension mm	Current A	Voltage V
	2.4	300 – 400	29 – 33
	3.0	320 – 470	29 – 33

Suggested heat input is max. 2.0 kJ/mm and interpass temperature max. 150°C. Creep rupture properties according to matching high temperature steels / alloys.

Polarity: DC+

Approvals

TÜV (11232), CE