

## Classifications

<b>EN ISO 14343-A</b>	<b>AWS A5.9 / SFA-5.9</b>	<b>EN ISO 14174</b>
S Z 22 17 8 4 N L	-	S A FB 2 AC

## Characteristics and typical fields of application

**Thermanit 20/16 SM - Marathon 104** is a wire/flux combination for submerged arc welding of high-alloyed for welding and cladding of non-magnetic CrNiMo(Mn,N)-steels and castings. Solid SAW wire of S Z 22 17 8 4 N L type. Resistant to saltwater and ductile at low temperatures. Max. service temperature 350°C.

**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

1.3948 X4CrNiMnMoN19-13-8, 1.3951 X2CrNiMoN22-15, 1.3952 X2CrNiMoN18-14-3, 1.3957 X2CrNiMoNbN21-15, 1.3964 X2CrNiMnMoNNb21-16-5-3, 1.4569 GX2CrNiMoNbN21-15-4-3, 1.5662 X8X9  
UNS S20910

## Typical analysis

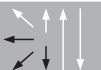
wt.-%	C	Si	Mn	Cr	Ni	Mo	N
wire	0.03	0.70	7.3	22.3	18.0	3.7	0.24
all-weld metal	0.02	0.70	7.0	21.8	18.0	3.7	0.2

## 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	450 (≥ 400)	680 (≥ 620)	37 (≥ 30)	90 (≥ 50)

u untreated, as-welded

## Operating data

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

Suggested heat input is max. 1.5 kJ/mm and interpass temperature max. 100°C. Polarity: DC+  
Preheating and post-weld heat treatment generally not needed.

## Approvals

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