Thermanit 20/25 Cu / Marathon 104

SAW wire/flux combination, high-alloyed, stainless

Classifications

SAW solid wire		SAW flux
EN ISO 14343-A	**AWS A5.9**	**EN ISO 14174**
S 20 25 5 Cu L	ER385	SA FB 2 AC

Characteristics and typical fields of application

Thermanit 20/25 Cu – Marathon 104 is a wire/flux combination for submerged arc welding of corrosion resistant 4 – 5 % Mo-alloyed CrNi-steels like 1.4539 / 904L. The weld metal has a high pitting resistant equivalent ($PRE_N \geq 45$). Especially applicable in sulphur- and phosphorus production, pulp and paper industry, flue gas desulphurisation plants, further on for fertilizer production, petrochemical industry, fatty-, acetic- and formic acid production, sea water sludge fittings and pickling plants which are proceeded with sea or brackish water.

The fully austenitic weld metal possesses a marked resistance towards pitting and crevice corrosion in chloride containing media. Highly resistant against sulphur-, phosphorus-, acetic- and formic acid, as well as sea-and brackish water. Caused from the low C-content of the weld metal, the risk of intergranular corrosion can be avoided. The high Ni-content in comparison to standard CrNi-weld metals leads to high resistance against stress corrosion cracking.

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 information regarding this sub-arc welding flux see our detailed data sheet.

Base materials

Similar alloyed CrNiMo-steels like 1.4505 X4NiCrMoCuNb20-18-2, 1.4539 X1NiCrMoCu25-20-5, N 08904; 1.4439 X2CrNiMoN17-13-5, 1.4429 X2CrNiMoN17-13-3, S 31726, X4CrNiMoCuN17-16-6

UNS S31803, S32205

Typical analysis of the wire and of all-weld metal (wt.-%)

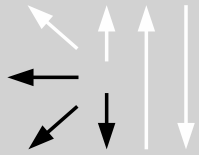
	C	Si	Mn	Cr	Ni	Mo	Cu
Wire %	0.010	0.10	2.3	21.0	25.0	4.9	1.5
Weld metal %	0.020	0.25	1.8	20.7	25.0	4.9	1.5

Structure: Austenite

Mechanical properties of all-weld metal

Heat-treatment	Yield Strength R_e	Tensile Strength R_m	Elongation A (L_0=5d_0)	Impact values ISO-V CVN J
	MPa	MPa	%	+20 °C
As welded	> 320	> 550	> 35	> 80

Operating data



The weld metal has a fully austenitic microstructure and therefore sensitive to hot cracking.

Single wire technique DC+; wire diameter max 3,2 mm, heat Input ≤ 1.5 kJ/mm; no preheating; max interpass temperature 150°C

Approvals

TÜV (07213)