Thermanit 686

Stick electrode, high-alloyed, stainless, basisch

Classifications

EN ISO 14172	AWS A5.11
E Ni 6686 (NiCr21Mo14W4)	ENiCrMo-14

Characteristics and typical fields of application

High corrosion resistance in reducing and oxidizing environments.

For joining and surfacing on matching and similar wrought and cast alloys. For welding the cladded side of plates of matching and similar alloys e.g. FGD[1] scrubber.

Specifically optimised for cladding application in high temperature corrosion environments in WTE[2] plants superior to FM 625.

[1]FGD = Flue gas desulphurization / [2]WTE = Waste to energy

Base materials

2.4602 – NiCr21Mo14W / Alloy 22 – UNS N06022
2.4605 – NiCr23Mo16Al / Alloy 59 – UNS N06059
2.4606 – NiCr21Mo16W / Alloy 686 – UNS N06686
2.4819 – NiMo16Cr15W / Alloy C-276 – UNS N10276
16Mo3, ASTM A 312 Gr. T11/T12
S 355J2G3, ASTM A 517

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

	C	Si	Mn	Cr	Mo	Ni	W	Fe
wt-%	< 0.02	< 0.2	< 0.5	21.0	16.0	Bal.	3.5	< 1.0

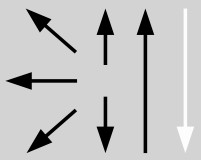
Structure: Austenite

Mechanical properties of all-weld metal

Heat-treatment	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation A (L_0=5d_0)	Impact work ISO-V KV J
	MPa	MPa	%	+20 °C
aw	450	760	30	50

Creep rupture properties: As per matching high temperature materials

Operating data



Polarity:	ø (mm)	L mm	Amps A
DC (+)	2.5	250	50 – 70
	3.2	300	70 – 105
	4.0	350	90 – 120

Welding instruction

Materials	Preheating	Postweld heat treatment
Matching / similar metals	None	None; if necessary, solution annealing at 1180 °C (2156 °F) / water