Intherma® 310

EMR SAHARA®

CLASSIFICATION

AWS A5.4	E310-16	**A-Nr**	9	**Mat-Nr**	1.4842
ISO 3581-A	E 25 20 R 1 2	**F-Nr**	5		
		9606 FM	5		

TEMPERATURE RANGE

Pressurized parts : -20...+400°C
Oxidation resistance : to 1200°C

GENERAL DESCRIPTION

Rutile basic electrode for all position welding except vertical down
Fully austenitic weld metal with high Cr and Ni content for very high service temperature
High resistance against oxidation and scaling up to 1200°C
Weldable on AC and DC

WELDING POSITIONS (ISO/ASME)

PA/1G **PB/2F** **PC/2G** **PF/3Gu** **PE/4G** **PH/5Gu**

CURRENT TYPE

AC/DC +

CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	FN (acc.WRC 1992)
0.12	2.5	0.5	26.0	20.5	0

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition	0.2% Proof strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) +20°C
Required: AWS A5.4		not required	min. 550	min. 30	not required
ISO 3581-A		min. 350	min. 550	min. 20	not required
Typical values	AW	440	600	30	80

PACKAGING AND AVAILABLE SIZES

	Diameter (mm)	2.5	3.2	4.0
	Length (mm)	350	350	350
Carton + PE foil	**Pieces / unit**	145	150	100
	Net weight/unit (kg)	3.0	5.1	5.1

Identification Imprint: 310-16 / INTHERMA 310 Tip Color: dark green

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EXAMPLES OF MATERIALS TO BE WELDED

Steel grades	EN 10088-1/-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A351	UNS
Heat resisting steels					
	X10CrAl24		1.4762		
		GX25CrNiSi18-9	1.4825		
		GX40CrNiSi22-9	1.4826		
	X15CrNiSi20-12		1.4828		
		GX25CrNiSi20-14	1.4832		
	X15CrNiSi25-20		1.4841	310S	S31008
				CK20	J94202
	X12CrNi25-21		1.4845		
		GX40CrNiSi25-20	1.4848	HK40	

CALCULATION DATA

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time - per electrode at max. current - (S)*	Energy E(kJ)	Dep. rate H(kg/h)	Weight/ 1000 pcs (kg)	Electrodes/ kg weldmetal B	kg electrodes/ kg weldmetal 1/N
2.5 x 350	80-110	DC+	50	84	0.74	18.9	97	1.83
3.2 x 350	90-140	DC+	56	155	1.31	31.8	49	1.56
4.0 x 350	130-175	DC+	72	233	1.55	50.7	32	1.64

*Stub end 35mm

WELDING PARAMETERS, OPTIMUM FILL PASSES

Diameter (mm)	Welding positions PA/1G	PB/2F	PC/2G	PF/3Gup	PE/4G	PH/5Gup
2.5	100A	100A	100A	90A	90A	90A
3.2	130A	120A	130A	110A	110A	110A
4.0	160A	160A	160A	140A		

REMARKS / APPLICATION ADVICE

Welding with Heat-Input max. 1.5 kJ/mm
Interpass temperature max. 100°C