

CLASSIFICATION

AWS A5.1	E7018 H4	A-Nr	1
ISO 2560-A	E 46 3 B 4 2 H5	F-Nr	4
		9606 FM	1

GENERAL DESCRIPTION

Basic very low hydrogen electrode (HDM< 5 ml/100g)

Most suitable universal basic electrode for shipbuilding and light general construction work

Welding characteristics come very close to the welders ideal electrode

Almost no spatter, nice wetting and full weld pool control

One current setting for all positions possible

Perfect welding and 120% recovery contributes to high productivity

Also available in Protech™ Vacuum Pack

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PF/3Gu



PH/5Gu



PE/4G

CURRENT TYPE

DC +

APPROVALS

ABS	BV	DNV	LR	GL	RMRS	RINA	TÜV
3H5, 3Y	3,3YH5	3YH5	3,3YH5	3YH5	3,3YH5	3,3YH5	+

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

C	Mn	Si	P	S	HDM
0.09	1.1	0.6	0.015	0.010	4 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)		
				-20°C	-30°C	-40°C
Required: AWS A5.1 ISO 2560-A	min. 400 min. 460	min. 483 530-680	min. 22 min. 20		min. 27 min. 47	27
Typical values	AW 480	560	28	140	120	80

PACKAGING AND AVAILABLE SIZES

	Diameter (mm) Length (mm)	2.5	3.2	3.2	4.0	4.0	5.0
		350	350	450	350	450	450
Carton + PE foil	Pieces / unit	91	131	115	100	93	66
	Net weight/unit (kg)	4.5	4.5	5.2	5.0	6.3	6.7
Protech™	Pieces / unit	41	64	-	44	-	33
	Net weight/unit (kg)	2.0	2.2	-	2.2	-	3.3

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EXAMPLES OF MATERIALS TO BE WELDED

Steel grades/Code	Type
General structural steels	
EN 10025	S185, S235, S275, S355
Ship plates	
ASTM A 131	Grade A, B, D, AH32 to EH40
Cast steels	
EN 10213-2	GP240R
Pipe material	
EN 10208-1	L210, L240, L290, L360
EN 10208-2	L240, L290, L360, L415
API 5LX	X42, X46, X52, X60, X65
EN 10216-1	P235T1, P235T2, P275T1
EN 10217-1	P275T2, P355N
Boiler & pressure vessel steels	
EN 10028-2	P235GH, P265GH, P295GH, P355GH
Fine grained steels	
EN 10025 part 3	S275, S355, S420, S460
EN 10025 part 4	S275, S355, S420, S460

CALCULATION DATA

Sizes		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
Diam. x length [mm]	Current range [A]							
2.5x350	70-80	DC+	58	120	0.85	23.1	73	1.7
3.2x350	110-130	DC+	68	194	1.3	36.8	41	1.5
4.0x450	140-180	DC+	98	429	1.8	69.5	20	1.4
5.0x450	160-240	DC+	117	619	2.3	107.3	13	1.4

*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	95A	95A	90A	90A	85A	85A
3.2	140A	130A	130A	120A	120A	110A
4.0	180A	180A	180A	160A	150A	160A
5.0	230A	230A	230A	180A		

REMARKS / APPLICATION ADVICE

Redry electrodes 2-4h 350 ±25°C after removal from cardboard boxes