

Stick electrode for Hardox® wear plate

Manual metal-arc welding

GENERAL PRODUCT DESCRIPTION

A reliable, general purpose electrode for manual metal arc welding of carbon steels, carbon manganese steels and fine-grained carbon manganese steels with elevated yield strength. The product deposits a tough, crack-resistant weld metal. The coating is of the low moisture absorption type.

High welding speed in the vertical-up position. The product is insensitive to the composition of the base material within fairly wide limits.

The electrode can be used for welding structures where difficult stress conditions cannot be avoided.

KEY BENEFITS

- Developed especially for avoiding hydrogen cracks
- Excellent performance in Hardox® wear plate
- Stable arc with very low amount of spatter
- Possible to weld directly on primed surface

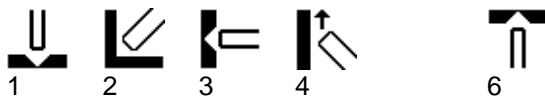
Polarity: DC+(-)

Alloy Type: Carbon Manganese

Coating Type: Basic covering

Diff Hydrogen: < 4.0 ml/100g

WELDING POSITIONS



CLASSIFICATIONS Electrode

SFA/AWS A5.1

E7018 H4 R

EN ISO 2560-A

E 42 4 B 42 H5

APPROVALS

ABS

3Y H5

BV

3Y H5

CE

EN 13479

DB

10.039.12

DNV-GL

3 YH5

LR

3Ym H5

PRS

3Y H5

RINA

3Y H5

RS

3Y H5

VdTÜV

00690

APPROVAL (SPECIFIC)

*NAKS/HAKC 2.0-5.0 mm

APPROVAL COMMENT

Approvals Specific: Valid for lot numbers starting with SF

CHEMICAL COMPOSITION

All Weld Metal (%)

	Min	Max
C	0.02	0.10
Si	0.30	0.70
Mn	0.90	1.40
P		0.02
S		0.015
Cr		0.10
Ni		0.10
Mo		0.06
V		0.04
Nb		0.02
Cu		0.10
Al		0.03
Sn		0.02
Ti		0.03
Pb		0.02
As		0.03
Mn+Ni+Cr+Mo+V		1.75

MECHANICAL PROPERTIES OF WELD METAL

Properties	ISO			AWS	
	As welded			As welded	
	Min	Max	Typ	Min	Typ
Rp0.2 (MPa)				400	
ReL (MPa)	420		475		
Rm (MPa)	530	640	565	490	
A4 (%)				22	
A5 (%)	22		29		
Charpy V at -30°C (J)			130	27	130
Charpy V at -40°C (J)	47		115		

Comments:

EN standard requires Rm min 500 Mpa and A5 Min 20%.

ECONOMICS & CURRENT DATA

Dimension (mm)	Current (A)		W	η	N	B	H	T	U	Welding Positions
	Min	Max								
\varnothing x Length										
1.6 x 300	30	55	0.9	127	0.59	192	0.38	50	24	1,2,3,4,6
2.0 x 300	55	80	1.4	128	0.65	125	0.63	45	22	1,2,3,4,6
2.5 x 350	70	110	2.5	129	0.67	65	0.96	57	24	1,2,3,4,6
3.2 x 350	90	140	3.7	123	0.70	42	1.24	68	23	1,2,3,4,6
3.2 x 450	90	140	4.7	124	0.73	31	1.33	85	23	1,2,3,4,6
4.0 x 350	120	190	5.5	118	0.70	29	1.63	75	24	1,2,3,4,6
4.0 x 450	120	190	7.0	118	0.71	22	1.76	92	24	1,2,3,4,6
5.0 x 450	190	260	10.6	119	0.75	13	2.61	99	24	1,2,3,4
6.0 x 450	220	340	14.6	120	0.80	9	3.88	97	26	1,2,3
7.0 x 450	280	410	19.6	118	0.79	7.0	4.83	104	27	1,2,3

- W** = Weight (kg / 100 electrodes)
- η = Efficiency (g weld metal x 100 / g core wire)
- N** = Effective value (kg weld metal / kg electrodes)
- B** = Changes (number of electrodes / kg weld metal)
- H** = Deposit rate at 90% of max current (kg weld metal / hour arc time)
- T** = Fusion time at 90% of max current (s / electrode)
- U** = Arc voltage (V)

For fast and easy calculations of heat input and mechanical properties please use the Weldcalc downloadable app available for Iphone/Android or run it from the web on <https://extern.ssab.com>

For more information also see Welding of Hardox® available from www.ssab.com/download-center