



# Product Data Sheet

# OK 76.18

ESAB AB Sweden

Signed by P-O Oskarsson	Approved by Tony Dray/Christos Skodras	Reg no EN004721	Cancelling EN004671	Reg date 2009-02-16	Page 1 (3)
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## REASON FOR ISSUE

Polarity amended

## GENERAL

Basic DC electrode for welding creep resisting steels of the type 1% Cr 0.5% Mo. Also suitable for root runs in joints welded with a filler material of the higher alloyed type 2.25% Cr 1% Mo.

**Polarity:** DC+(-)

**Alloy Type:** Creep resisting

**Coating Type:** Lime Basic

**Diff Hydrogen:** <5ml/100g

## WELDING POSITIONS



## CLASSIFICATIONS Electrode

SFA/AWS A5.5 E8018-B2  
EN ISO 3580-A E CrMo1 B 4 2 H5

## APPROVALS

ABS	For high temperature applications
BV	UP
CE	EN 13479
DNV	-H10 For NV 1Cr0.5Mo
Seproz	
VdTÜV	01387

## CHEMICAL COMPOSITION

### All Weld Metal (%)

	Min	Max
C	0.05	0.10
Si	0.20	0.50
Mn	0.40	0.80
P		0.015
S		0.020
Cr	1.10	1.40
Ni		0.1
Mo	0.50	0.65
V		0.03
Nb		0.009
Cu		0.1
Al		0.03
Sn		0.01
Ti		0.03
Pb		0.02
As		0.01
Sb		0.01



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## MECHANICAL PROPERTIES OF WELD METAL

Properties	All Weld Metal		
	ISO		AWS
	Min	Typ	Min
Rp0.2 (MPa)			460
ReL (MPa)	355	520	
Rm (MPa)	510	610	550
A4 (%)			19
A5 (%)	20	24	
Charpy V at 20°C (J)	47	120	
Charpy V at -20°C (J)		80	
Charpy V at -40°C (J)		50	

## ECONOMICS & CURRENT DATA

Dimension (mm)	Current (A)		W	$\eta$	N	B	H	T	U
	Min	Max							
$\emptyset$ x Length									
2.0 x 300	55	80	1.3	115	0.58	136.0	0.70	40	22
2.5 x 300	70	110	2.0	115	0.58	88.0	0.80	52	24
3.2 x 350	95	150	3.5	105	0.59	49.0	1.10	65	25
4.0 x 450	130	190	6.9	110	0.64	23.0	1.70	90	27
5.0 x 450	150	260	10.7	110	0.64	14.5	2.70	95	28
6.0 x 450	200	350	14.9	110	0.64	10.5	3.70	93	30

- W** = Weight (kg / 100 electrodes)  
 **$\eta$**  = 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)



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## OTHER DATA

Welding and heat treatment conditions:

All weld specimens, welded at 250 °C interpass temperature.

Annealed 2 h at 700 °C, furnace cooled.

(+100 °C):.....Rp 0.2= 480 N/mm<sup>2</sup>, Rm= 565 N/mm<sup>2</sup>, A5= 23%, Z= 73%

(+200 °C):.....Rp 0.2= 465 N/mm<sup>2</sup>, Rm= 550 N/mm<sup>2</sup>, A5= 21%, Z= 71%

(+300 °C):.....Rp 0.2= 450 N/mm<sup>2</sup>, Rm= 540 N/mm<sup>2</sup>, A5= 21%, Z= 70%

(+400 °C):.....Rp 0.2= 420 N/mm<sup>2</sup>, Rm= 520 N/mm<sup>2</sup>, A5= 22%, Z= 70%

Creep rupture properties (values within brackets are extra-polated)

All weld specimens, welded at 250 °C interpass temperature.

Annealed 0.5 h at 700 °C, furnace cooled.

Stress N/mm<sup>2</sup>, at a rupture time of:

500 h:.....(335) (at 500 °C), 183 (at 550 °C)

1000 h:.....295 (at 500 °C), 227 (at 525 °C), 154 (at 550 °C)

5000 h:.....210 (at 500 °C), 147 (at 525 °C), 105 (at 550 °C)

10000 h:.....183 (at 500 °C), (122) (at 525 °C), 88 (at 550 °C)

20000 h:.....75 (at 550 °C)