



Product Data Sheet

OK 76.18

E 'Manual metal-arc welding'
ESAB Perstorp AB Sweden

| | | | | | | |
|------------------------------|---------------------------|----------------------------|--------------------|------------------------|------------------------|---------------|
| Prepared by P-O Oskarsson | Qualified by Tero Borg | Approved by J-P Ernoult | Reg no EN007264 | Cancelling EN007098 | Reg date 2016-05-20 | Page 1 (3) |
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REASON FOR ISSUE

DNV-GL approval.

GENERAL

Basic DC electrode for welding creep resisting steels of the type 1% Cr 0.5% Mo. Welds with a stable arc and minimum spatter. Deposits weld metal resistant to both cracking and porosity.

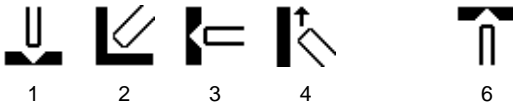
Polarity: DC+(-)

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 SR H5
BV Welding of low alloy
 steels type 1%Cr
 0.5%Mo, H5
CE EN 13479
DNV-GL -H5
NAKS/HAKC 2.5-4.0 mm
VdTÜV 01387

APPROVAL COMMENT

NAKS/HAKC: Valid for lot numbers starting with SB

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 | ISO | | AWS |
|----------------------|--|-----|---------------|
| | Min | Typ | Min |
| | PWHT 690°C 1h | | PWHT 690°C 1h |
| Rp0.2 (MPa) | 355 | 580 | 460 |
| Rm (MPa) | 510 | 670 | 550 |
| A4 (%) | | | 19 |
| A5 (%) | 20 | 24 | |
| Charpy V at 20°C (J) | 47 | 100 | |
| | Comments: EN standard requires 47 J at +20°C. | | Comments: |

ECONOMICS & CURRENT DATA

| Dimension (mm) Ø x Length | Current (A) | | W | η | N | B | H | T | U | Welding Positions |
|------------------------------|-------------|-----|------|-----|------|-------|------|----|----|----------------------|
| | Min | Max | | | | | | | | |
| 2.0 x 300 | 55 | 80 | 1.3 | 115 | 0.58 | 136.0 | 0.70 | 40 | 22 | 1,2,3,4,6 |
| 2.5 x 300 | 70 | 110 | 2.0 | 115 | 0.58 | 88.0 | 0.80 | 52 | 24 | 1,2,3,4,6 |
| 3.2 x 350 | 95 | 150 | 3.5 | 105 | 0.59 | 49.0 | 1.10 | 65 | 25 | 1,2,3,4,6 |
| 4.0 x 450 | 130 | 190 | 6.9 | 110 | 0.64 | 23.0 | 1.70 | 90 | 27 | 1,2,3,4,6 |
| 5.0 x 450 | 150 | 260 | 10.7 | 110 | 0.64 | 14.5 | 2.70 | 95 | 28 | 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)



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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/mm², Rm= 565 N/mm², A5= 23%, Z= 73%

(+200 °C):.....Rp 0.2= 465 N/mm², Rm= 550 N/mm², A5= 21%, Z= 71%

(+300 °C):.....Rp 0.2= 450 N/mm², Rm= 540 N/mm², A5= 21%, Z= 70%

(+400 °C):.....Rp 0.2= 420 N/mm², Rm= 520 N/mm², 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/mm², 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)