



Product Data Sheet

E 'Manual metal-arc welding'

OK 67.70

Prepared by A-C Thorsson	Qualified by Tero Borg	Approved by Tapio Huhtala	Reg no EN007244	Cancelling EN007121	Reg date 2016-05-13	Page 1 (2)
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REASON FOR ISSUE

Approvals revised. DNV amended to DNV-GL.

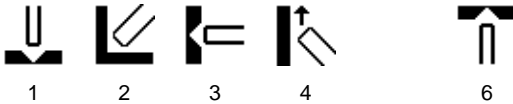
GENERAL

Acid rutile MMA-electrode giving an over alloyed weld metal. Suitable for welding acid resistant stainless steels to mild and low alloyed steels. Also suitable for welding buffer layers when surfacing mild steel with acid resistant stainless steel weld metal.

Min AC OCV: 55
Polarity: DC+, AC

Alloy Type: Austenitic CrNi
Coating Type: Acid Rutile
Ferrite Content: FN 12-22

WELDING POSITIONS



CLASSIFICATIONS Electrode

EN ISO 3581-A E 23 12 2 L R 3 2
SFA/AWS A5.4 E309LMo-17
CSA W48 E309LMo-17
Werkstoffnummer 1.4459

APPROVALS

ABS SS to C&C/Mn steels
BV 309Mo
CE EN 13479
CWB CSA W48:
 E309LMo-17
DB 30.039.05
DNV-GL VL 309 Mo
LR SS/CMn
RINA 309Mo
Seproz UNA 272580
VdTÜV 02424

CHEMICAL COMPOSITION

All Weld Metal (%)

	Min	Max	Nom
C		0.030	
Si	0.50	1.00	
Mn	0.50	1.20	
P		0.025	
S		0.020	
Cr	22.0	24.0	
Ni	12.0	14.0	
Mo	2.5	3.0	
Cu		0.3	
N		0.15	
Ferrite FN			18



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MECHANICAL PROPERTIES OF WELD METAL

Properties	ISO		AWS
	As welded Min	Typ	As welded Min
Rp0.2 (MPa)	410	510	410
Rm (MPa)	560	610	560
A4 (%)			30
A5 (%)	27	32	
Charpy V at 20°C (J)	40	50	
Charpy V at -20°C (J)	32	35	

Comments:

Mechanical properties vary with welding conditions.

In a dissimilar V-joint, welded in PF (3G-up) position, Charpy-V impact tests gave min. 27J at -20°C and min. 32J at +20°C.

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	40	60	1.2	107	0.58	147	0.6	48	26	1,2,3,4,6
2.5 x 300	50	90	1.8	107	0.57	94	0.9	45	29	1,2,3,4,6
3.2 x 350	60	120	3.6	110	0.59	47	1.4	61	27	1,2,3,4,6
4.0 x 350	85	180	5.4	106	0.61	32	2.0	56	31	1,2,3,4,6
5.0 x 350	110	250	8.6	108	0.59	20	2.7	64	30	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)

OTHER DATA

Hardness data:

weld metal, dissimilar V-joint between the base materials 1.4571 and StE 355, welded in PF position, transverse cross section, measurement done along a vertical line (6 indents): 209 - 232 HV10, average 224 HV10

Redrying: 350 °C, 2h.