Product Data Sheet

E 'Manual metal-arc welding'

OK 61.81

Prepared by	Qualified by	Approved by	Reg no	Cancelling	Reg date	Page
A-C Thorsson	Tero Borg	Tapio Huhtala	EN007234	EN007132	2016-05-12	1 (2)

REASON FOR ISSUE

Approvals revised. DNV amended to DNV-GL.

GENERAL

Nb-stabilized MMA-electrode for welding Nb- or Ti-stabilized stainless steel of the 19Cr10Ni-type. OK 61.81 has a better hot cracking resistance compared with OK 61.80.

Owing to the quite high ferrite content level, the working temperature should be limited to maximum 400°C.

Min AC OCV: 60

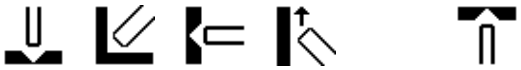
Polarity: DC+, AC

Alloy Type: Austenitic CrNi

Coating Type: Rutile

Ferrite Content: FN 6-12

WELDING POSITIONS



1 2 3 4 6

CLASSIFICATIONS Electrode

EN ISO 3581-A	E 19 9 Nb R 3 2
SFA/AWS A5.4	E347-16
Werkstoffnummer	1.4551

APPROVALS

CE	EN 13479
DNV-GL	VL 347
NAKS/HAKC	3.2 mm

CHEMICAL COMPOSITION

All Weld Metal (%)

	Min	Max	Nom
C	0.04	0.08	
Si	0.60	1.00	
Mn	1.2	1.9	
P		0.025	
S		0.020	
Cr	19.0	21.0	
Ni	9.0	11.0	
Mo		0.3	
Nb		1.00	
Cu		0.3	
N		0.15	
Nb+Ta		1.00	
Ferrite FN			7

Comments:
% (Nb + Ta) > 8 x %C

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MECHANICAL PROPERTIES OF WELD METAL

	ISO		AWS		AWS	AWS	AWS
	As welded		As welded		Creep resistance++ 500°C 10000h	Creep resistance+ 500°C 20000h	Creep resistance 600°C 10000h
Properties	**Min**	**Typ**	**Min**	**Typ**	**Typ**	**Typ**	**Typ**
Rp0.2 (MPa)	350	550	410	560			
Rm (MPa)	550	700	550	700	330	310	135
A4 (%)			30	31			
A5 (%)	25						
Z (%)		50		50			
Charpy V at 20°C (J)			40	60			
Charpy V at -10°C (J)	32	71					

Comments:

Interpass temperature max. 150 °C.

Typical creep resistance values:

500 °C/ 10000h: measured value

500 °C/ 20000h: extrapolated value

600 °C/ 10000h: extrapolated value

ECONOMICS & CURRENT DATA

Dimension (mm)	Current (A)		W	η	N	B	H	T	U	Welding
Ø x Length	Min	Max								Positions
2.0 x 300	40	60	1.1	106	0.60	147	0.6	39	26	1,2,3,4,6
2.5 x 300	50	80	2.1	104	0.59	82	1.2	36	29	1,2,3,4,6
3.2 x 350	75	115	3.4	105	0.60	44	1.2	66	23	1,2,3,4,6
4.0 x 350	80	160	5.2	105	0.60	32	1.7	66	24	1,2,3,4,6
5.0 x 350	140	210	8.0	105	0.60	20	2.3	78	25	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:

All weld metal, butt weld according to AWS, buttering, as welded condition, transverse cross section, 1 sample measured (10 indents): 187 - 195 HB, average 190 HB

Redrying 350 °C, 2h.