NiCro 70/19

Ni-base electrode

SMAW

Classification

AWS A5.11-97 : ENiCrFe-2*
ISO 14172-03 : E Ni 6082 (NiCr20Mn3Nb)

* Deviation: see remarks

General description

Fully basic NiCr alloyed all position electrode
For welding high Ni alloyed material such as Alloy 600 and Alloy 601
Also applicable for welding dissimilar joints and for CMn- and low alloyed clad steel
High resistance to oxidation at high temperature
High impact toughness at low temperature (-196°C)

Welding positions

ISO/ASME PA/1G PB/2F PC/2G PF/3G up PE/4G PF/5G up

Current type

DC electr. +

Approvals

TÜV
+

Chemical composition (w%), typical, all weld metal

C	Mn	Si	Ni	Cr	Mo	Nb	Fe
0.03	4.7	0.6	67.7	19.0	1.5	1.9	4.0

Mechanical properties, all weld metal

	Condition	0.2% Proof strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) +20°C	Impact ISO-V(J) -196°C
Required: AWS A5.11-97		not required	min. 550	min. 30	not required	
ISO 14172-02		min. 360	min. 600	min. 22	not required	
Typical values	AW	400	650	40	110	90

Packaging, available sizes and identification

	Diameter (mm)	2.5	3.2	4.0
	Length (mm)	300	300	350
Unit: PE tube	Pieces / unit	76	57	31
	Net weight/unit (kg)	1.5	1.7	1.8

Identification Imprint: NiCro70/19 Tip colour: blue

LINCOLN ELECTRIC

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Materials to be welded

Material type	BS3076	DIN 17744/17465 SEW 595	W.Nr.	ASTM/ACI B366	UNS
Ni base to	NA 14	NiCr15Fe	2.4816	B168-Alloy 600	N06600
CrNi alloyed steel		LC-NiCr15Fe	2.4817	Alloy 600L	N06600
for composition in		NiCr20Ti	2.4951	Alloy 75	
highly corrosive		NiCr20TiA1	2.4952	Alloy 80A	N07080
environments	NA 15	X10NiCrAlTi32 20	1.4876	Alloy 800/800H	N08800/10
		NiCr23Fe	2.4851	Alloy 601(H)	N06601
	NA 17	X12NiCrSi36 16	1.4864	330	N08330
		G-X40NiCrNb35 25	1.4852		
		G-X40NiCrSi35 25	1.4857	HP	

Suitable for welding dissimilar metals:
- Mild- and low-alloyed steel to stainless steel.
- Mild- and low-alloyed steel to Ni base alloys
- Stainless steel to low-alloyed creep resisting steel.

Not sensitive for embrittlement after heattreatment.

Calculation data

Sizes Diam. x length	Current range	Current type	Arc time - per electrode at max.current -	Energy	Dep.rate	Weight/ 1000 pcs.	Electrodes/ kg weldmetal	kg Electrodes/ kg weldmetal
(mm)	(A)		(s)*	E(kJ)	H(kg/h)	(kg)	B	1/N
2.5 x 300	45 - 65	DC+	41	61	0.95	19.3	92	1.79
3.2 x 300	70 - 95	DC+	59	127	1.2	32.7	51	1.64
4.0 x 350	100 - 140	DC+	75	314	1.7	59.3	29	1.72

* stub end 35 mm

Welding parameters, optimum fill passes

Welding position:	PA/1G	PB/2F	PC/2G	PF/3G up	PE/4G	PF/5G up
Diameter (mm)	Current (A)					
2.5	60	55	60	60	55	60
3.2	90	80	90	80	80	80
4.0	120	120				

Remarks

Deviations: chemical composition:

Mn = 2.0 - 6.0% AWS: Mn = 1.0 - 3.5%

Cr = 18.0 - 22.0% AWS: Mn = 13.0 - 17%

Application advice

Welding with heat input max. 1.5 kJ/mm

Interpass temperature max. 150°C

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