

Ni-base electrode

Classification

AWS A5.11M-97 : ENiCrFe-3
 ISO 14172-03 : E Ni 6182 (NiCr15Fe6Mn)

General description

Fully basic all position NiCr electrode

For welding Ni-base alloys (as Alloy 600), claddings and dissimilar metals

High creep resistance up to 815°C, high resistance to embrittlement

High toughness also at low temperature (-196°C)

Low sensibility to carburization

Extra alloyed with ~6% Mn to provide hot cracking resistance

Welding positions



Current type

DC electr. +

Approvals

CTL

+

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

C	Mn	Si	S	Ni	Cr	Nb
0.025	5.5	0.4	0.010	bal.	16	2.0

Mechanical properties, all weld metal

Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	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. 550	min. 27	not required
Typical values	AW 400	630	40	125

Packaging, available sizes and identification

	Diameter (mm)	2.5	3.2	4.0	5.0
Length (mm)		300	300	350	450
Unit: PE tube	Pieces / unit	91	57	39	45
	Net weight/unit (kg)	1.6	1.9	1.9	4.5

Identification

Imprint: NiCrFe-3 / NiCro70/15Mn

Tip colour: yellow

NiCro 70/15Mn: rev. EN 15

NiCro 70/15Mn

Materials to be welded

Material type	BS 3076	DIN 17742 SEW 470/595	W.Nr.	ASTM / ACI B366	UNS	
Ni base on		LC-NiCr15Fe	2.4817		N06600	
Cr alloyed steel, for high and low temperature service	NA14	NiCr15Fe	2.4816	Alloy600/B168	N06600	
		NiCr23Fe	2.4851	Alloy601(H)	N06601	
		NiCr60 15	2.4867			
		NiCr80 20	2.4869			
			NiCr20Ti	2.4951	Alloy75	N06075
			NiCr20TiAl	2.4952	Alloy80A	N07080
	NA17	X12NiCrSi36 16	1.4864	330	N08330	
		G-X10NiCrNb32 20	1.4859			
	NA15	X10NiCrAlTi32 20	1.4876	Alloy800/800H	N08800/N08810	

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 (mm)	Current range (A)	Current type	Arc time (s)*	Energy - per electrode at max.current - E(kJ)	Dep.rate H(kg/h)	Weight/ 1000 pcs. (kg)	Electrodes/ kg weldmetal B	kg Electrodes/ kg weldmetal 1/N
2.5 x 300	40 - 70	DC+	80	119	0.52	17.4	86	1.49
3.2 x 300	70 - 100	DC+	77	193	0.84	29.0	56	1.61
4.0 x 350	90 - 140	DC+	74	289	1.7	50.9	29	1.47
5.0 x 450	130 - 160							

* stub end 35 mm

Welding parameters, optimum fill passes

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

Application advice

Welding with heat input max. 1.5 kJ/mm
Interpass temperature max. 150°C