

Ni-base electrode

Classification

AWS A5.11M-97 : ENiCrFe-2*
 ISO 14172-03 : E Ni 6182 (NiCr15Fe6Mn)*

* Deviation: see remarks

General description

Fully basic all position NiCr electrode
 High creep resistance up to 815°C
 High resistance to embrittlement
 High toughness at low temperature (-196°C)
 For welding, Ni base alloys (as Alloy 600) and dissimilar joints
 High resistance to carburization

Welding positions



Current type

DC electr. +

Approvals

CTL	TÜV
+	+

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

C	Mn	Si	Ni	Cr	Nb	Fe
0.02	4.4	0.45	bal.	18	1.9	6

Mechanical properties, all weld metal

	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
					+20°C	-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	430	680	40	145	130

Packaging, available sizes and identification

	Diameter (mm)	2.5	3.2	4.0
	Length (mm)	300	300	350
Unit: PE tube	Pieces / unit	90	57	43
	Net weight/unit (kg)	1.6	1.9	2.1

Identification

Imprint: NiCro70/15

Tip colour: silver

NiCro 70/15: rev. EN 15

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
	NA17	NiCr20TiAl	2.4952	Alloy80A	N07080
		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 - per electrode at max.current - (s)*	Energy 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	45 - 60	DC+	44	63	0.9	17.5	91	1.59
3.2 x 300	70 - 100	DC+	52	107	1.3	29.2	52	1.54
4.0 x 350	90 - 160	DC+	61	214	2.0	51.0	29	1.47

* 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				

Remarks

Deviations: chemical composition:

Mn = 3.0 - 6.0%

AWS: Mn = 1.0 - 3.5%

ISO: Mn = 5.0 - 10%

Cr = max. 18.0%

AWS: Cr = max. 17.0%

ISO: Cr = max. 17%

Application advice

Welding with heat input max. 1.5 kJ/mm

Interpass temperature max. 150°C