

Ni-base electrode

Classification

AWS A5.11/A5.11M :ENiCrFe-2*
 ISO 14172 :E Ni 6182 (NiCr15Fe6Mn)*
 * Deviation:see remarks

Temperature Range

Pressure parts
 Oxidation resistance

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



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	Cr	Ni	Nb	Fe
0.02	4.4	0.45	18	66.4	1.9	6

Mechanical properties, all weld metal

Condition	0.2% Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Impact (ISO), J	
				+20°C	-196°C
Required AWS A5.11	not required	min 550	min 30	not required	
ISO 14172	min 360	min 550	min 27	not required	
Typical values after welding	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:	Pieces / unit (nominal)	90	57	43
PE tube	Net weight/unit (kg)	1.6	1.9	2.1

Identification Imprint: Eleni® B 70/15 Tip colour: silver

Eleni® B 70/15 rev.EN 20

Materials to be welded

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)	N066601
		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 heat treatment

Calculation data

Size Diam.x length (mm)	Current range type (A)	Current	Arc time - per electrode at max.current - (s)*	Energy E (kJ)	Dep.rate H (kg/h)	Weight/ 1000 pcs. (kg)	Electrodes/ kg weldmetal (pcs)	kg Electrodes/ kg weldmetal (1/N)
2.5x300	45-60	DC+	44	63	0.9	17.5	91	1.59
3.2x300	70-100	DC+	52	107	1.3	29.2	52	1.54
4.0x350	90-160	DC+	61	214	2.0	51.0	29	1.47

* stub end = 35 mm

Welding parameters, optimum fill passes

Welding positions 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%

Cr = max 18.0%

AWS: Mn = 1.0 – 3.5 %

AWS: Cr = max 17.0%

ISO: Mn = 5.0 – 10%

ISO: Cr = max 17%

Application advice

Welding with heat input max.1.5 kJ/mm

Interpass temperature max.150°C

