

Ni-base electrode

Classification

AWS A5.11/A5.11M :ENiCrMo-3
ISO 14172 :E Ni 6625 (NiCr22Mo9Nb)

Temperature Range

Pressure parts
Oxidation resistance

General description

Fully basic Ni-base high CrMoNb alloyed austenitic all position electrode

Extreme high resistance to:

- general and intergranular corrosion
- pitting and crevice corrosion
- stress corrosion cracking

Suitable for welding dissimilar joints; high resistance to hot cracking

High resistance to high temperature oxidation (max. 1200°C) and carburization

Good impact toughness at low temperatures (down to -196°C), suitable for 9% Ni steel

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	Mo	Nb	Fe
0.03	0.5	0.35	22	62	9	3.4	2

Mechanical properties, all weld metal

		Condition	0.2% Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Impact (ISO), J -196°C
Required	AWS A5.4		not required	min 760	min 30	not required
	EN 1600		min 420	min 760	min 27	not required
Typical values after welding		AW	510	770	44	92

Packaging, available sizes and identification

	Diameter (mm)	2.5	3.2	4.0
	Length (mm)	300	300	350
Unit:	Pieces / unit (nominal)	94	61	45
PE tube	Net weight/unit (kg)	1.6	1.7	2.1

Identification Imprint: Elecor® B 60/20 Tip colour: green

Elecor® B 60/20: rev.EN 20

Materials to be welded

Type	DIN/EN	W.Nr	ASTM/ACI	UNS
NiCrMo-steel type 625 and welding dissimilar high NiCrMo-steels for corrosion and heat resistant applications	X1NiCrMoCuN 25 20 6	1.4529	Alloy 925	N08925
	X1NiCrMoCu 25 20 5	1.4539	Alloy 904L	N08904
	X1CrNiMoCuN 20 18 7	1.4547	Alloy 254	S31254
	X2NiCrAlTi 32 30	1.4558	Alloy 800L	N08800
	G-X10NiCrNb 32 20	1.4859		
	X10NiCrAlTi 32 30	1.4876	Alloy 800/800H	N08800/-10
	NiCr22Mo6Cu	2.4618	Alloy G	N06007
	NiCr22Mo7Cu	2.4619	Alloy G-3	N06985
	NiCr21Mo6Cu	2.4641	Alloy 825hMo	N08821
	NiCr20CuMo	2.4660	Alloy 20	N08020
	NiCr15Fe	2.4816	B168-Alloy 600	N06600
	NiCr22Mo9Nb	2.4856	B443-Alloy 625	N06625
	NiCr21Mo	2.4858	B424-Alloy 825	N08825
	NiCr20Ti	2.4951	Alloy 75	N06075
	NiCr20TiAl	2.4952	Alloy 80A	N07080
Low alloyed steel	10Ni14 (3.5% Ni)	1.5637	ASTM A333 Grade 3	-
	12Ni19, X12Ni5	1.5680	-	K41583
9% Ni steel for tanks with CNG	X8Ni9 (9% Ni)	1.5662	A353/A353M	-
	X8Ni9 (9% Ni) (8% Ni)	1.5662	A353/A353M Type I A353/A353M Type I	- K71340

Calculation data

Size Diam.x length (mm)	Current range type (A)	Current t	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	45-70	DC+	44	80	0.95	17.2	87	1.51
3.2x300	70-100	DC+	44	101	1.5	26.8	55	1.48
4.0x350	100-130	DC+	53	215	2.2	46.4	30	1.41

* 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	85	80	80	80
4.0	120	120				

Application advice

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