

# NiCrMo 59/23

## Ni-base electrode

### Classification

AWS A5.11M-97 : ENiCrMo-13  
ISO 14172-03 : E Ni 6059 (NiCr23Mo16)

### General description

Basic coated 22%Cr and 16% Mo alloyed Ni-base electrode for all positions without vertical down  
Excellent resistance against pitting-, crevice and stress corrosion in sulphur and phosphorus environments also at higher temperature

Suitable for welding Alloy 59 (UNS N06059), Alloy C 276 (UNS N10276), C4 (UNS N06455) and C 22 (UNS N06022) in the chemical industry

Suitable for dissimilar joints such as mentioned above to low alloyed steel grades

Wear resistant overlays for high temperature applications

Also for superaustenitic steel alloyed with 6% Mo (UNS S 31254)

### Welding positions



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

### Current type

DC electr. +

### Approvals

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

C	Mn	Si	Ni	Cr	Mo
0.015	0.4	0.15	59.0	22.5	15.5

### Mechanical properties, all weld metal

Condition	0.2% Proof strength (N/mm <sup>2</sup> )	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)	Impact ISO-V(J) +20°C
Required: AWS A5.11-97	not required	min. 690	min. 25	not required
ISO 14172-02	min. 350	min. 690	min. 22	not required
Typical values	AW 450	720	30	75

### Packaging, available sizes and identification

Diameter (mm)	2.5	3.2
Length (mm)	300	350
Unit: PE tube	Pieces / unit	85 52
	Net weight/unit (kg)	1.7 1.8

Identification Imprint: NiCrMo-13 / NiCrMo 59/23 Tip colour: light green

NiCrMo 59/23: rev. EN 15

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SMAW

## Materials to be welded

Material type	Code	Type	W.Nr.	ASTM/ACI	UNS
Ni base alloys with high CrMo content	DIN 17744	NiCr23Mo16	2.4605		N06059
		NiMo16Cr16Ti	2.4610	C-4	N06455
		NiMo16Cr15Ti	2.4819	C-276	N10276
		NiCr21Mo14W	2.4602	C-22	N06022
		NiCr22 Mo 9Nb	2.4856	625	N06625
High Mo-containing stainless steel with high corrosion resistance	EN 10088-1/-2	X1 NiCrMoCuN25-20-7	1.4529	904hMo	N08925
		X1 CrNiMoCuN20-18-7	1.4547		S31254

## 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	50 - 70	DC+	48	56	0.8	21.7	94	1.61
3.2 x 350	70 - 100	DC+	60	149	1.3	36.8	46	

\* stub end 35 mm

## Welding parameters, optimum fill passes

Welding position: Diameter (mm)	PA/1G Current (A)	PB/2F	PC/2G
2.5	65	65	60
3.2	90	90	80

## Application advice

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