# NiCroMo 60/16

## CLASSIFICATION

AWS A5.11/A5.11M : ENiCrMo-4
ISO 14172 : E Ni 6276 (NiCr15Mo15Fe6W4)

## GENERAL DESCRIPTION

**A basic all position Ni-base CrMoW-alloyed electrode**
**For welding Alloy C276 and comparable compositions**
**Depending on the corrosion requirements also applicable for welding C-22 and C-4**
**Applicable for surfacing in high temperature applications (up to 1200°C)**
**Suitable for welding low temperature steel such as 5% and 9% Ni steel**

## WELDING POSITIONS

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

## CURRENT TYPE

DC +

## CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL

| C | Mn | Si | Cr | Ni | Mo | W | Fe |
|---|---|---|---|---|---|---|---|
| 0.015 | 0.5 | 0.05 | 15.5 | bal. | 16.0 | 4 | 6.5 |

## MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Condition | 0.2% Proof strength (N/mm²) | Tensile strength (N/mm²) | Elongation (%) | Impact ISO-V(J) +20°C | Impact ISO-V(J) -196°C |
|---|---|---|---|---|---|---|
| Required: AWS A5.11 | | not required | min. 690 | min. 25 | not required | |
| ISO 14172 | | min. 400 | min. 690 | min. 22 | not required | |
| Typical values | AW | 550 | 800 | 40 | 60 | 50 |

## PACKAGING AND AVAILABLE SIZES

| | | | | |
|---|---|---|---|---|
| | Diameter (mm) | 2.5 | 3.2 | 4.0 |
| | Length (mm) | 300 | 350 | 350 |
| Unit: PE tube | Pieces / unit | 100 | 63 | 37 |
| | Net weight/unit (kg) | 1.7 | 1.8 | 1.9 |

**Identification** Imprint: NiCrMo-4 / NICROMO 60/16 Tip Color: grey

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## MATERIALS TO BE WELDED

| Steel grades | DIN/EN | Mat. Nr. | ASTM/ACI | UNS |
|---|---|---|---|---|
| **Ni Base high CrMo steel for high corrosion environments** | | | | |
| | NiMo16Cr15W | 2.4819 | C-276 | N10276 |
| | NiCr21Mo14W | 2.4602 | C-22 | N06022 |
| | NiMo16Cr16Ti | 2.4610 | C-4 | N06455 |
| **9% Ni steel** | | | | |
| | X8Ni9 | 1.5662 | A353/A353M<br>A553/553M Type I<br>A553/553M Type II | |
| **5% Ni steel** | | | | |
| | X12Ni5 (12Ni19) | 1.5680 | | |

NiCroMo 60/16 is developed for welding C-276 material
Can also be applied for welding C-22 and C-4, depending on the corrosion requirements

## CALCULATION DATA

| Sizes<br>Diam. x length<br>(mm) | Current range<br>(A) | Current type | Arc time<br>- per electrode at max. current -<br>(S)* | Energy<br>E(kJ) | Dep. rate<br>H(kg/h) | Weight/<br>1000 pcs<br>(kg) | Electrodes/<br>kg weldmetal<br>B | kg electrodes/<br>kg weldmetal<br>1/N |
|---|---|---|---|---|---|---|---|---|
| 2.5 x 300 | 40-70 | DC+ | | | | | | |
| 3.2 x 350 | 70-100 | DC+ | 61 | 137 | 1.34 | 32.5 | 44 | 1.43 |
| 4.0 x 350 | 90-140 | DC+ | 65 | 219 | 1.92 | 50.9 | 29 | 1.47 |

*Stub end 35mm

## WELDING PARAMETERS, OPTIMUM FILL PASSES

| Diameter<br>(mm) | Welding positions<br>PA/1G | PB/2F | PC/2G | PF/3Gup | PE/4G | PF/5Gup |
|---|---|---|---|---|---|---|
| 2.5 | 60A | 55A | 60A | 60A | 60A | 60A |
| 3.2 | 90A | 80A | 85A | 80A | 80A | 80A |
| 4.0 | 130A | 120A | 120A | 120A | 120A | 120A |

## REMARKS / APPLICATION ADVICE

Welding with Heat-Input max. 1.5 kJ/mm
Interpass temperature max. 150°C