DURAMAX®
Inspiring the future generations of welders

Product
Data Sheet

# DURAMAX STAINLESS ELECTRODE DM316-16

***Classification:*** **E316-16** **AWS A5.4 / ASME SFA 5.4**

## *Description, Characteristics & Applications:*

DURAMAX E316-16 electrodes are designed for the welding to type 316 chromium-nickel steel. This alloy contains 2% to 3% molybdenum is addition to sufficient chromium and nickel to render is austenitic. Molybdenum is added to increase the corrosion resistance of the alloy to a firm attack know as pitting, which is induced by such corrosive metals as sulfuric and sulfurous acids, sulfites, chloride and cellulose solutions. DM316-16 is often utilized for welding Type 316 and similar chemical composition alloys in wrought or cast form. The presence of molybdenum provides creep resistance at higher temperature levels.
DM316-16 is well suited for nuclear plants, power facilities, and the petrochemical industry. It welds furnace parts, turbine components, and superheater headers.

## *Typical Chemical Composition (%)*

| C | Cr | Ni | Mo | Mn | Si | P | S | Cu |
|---|---|---|---|---|---|---|---|---|
| 0.08 max | 17.0-20.0 | 11.0-14.0 | 2.0 - 3.0 | 0.5 - 2.5 | 1.00 max | 0.04 max | 0.03 max | 0.75 max |

## *Deposited Chemical Composition (%) (Typical)*

| C | Cr | Ni | Mo | Mn | Si | P | S | Cu |
|---|---|---|---|---|---|---|---|---|
| 0.05 | 18.0 | 12.0 | 2.12 | 1.20 | 0.65 | 0.03 | 0.01 | 0.14 |

## *Typical Mechanical Properties as Welded*

| Tensile Strength ($n/mm^2$) | Yield Strength (n/mm2) | Elongation (%) | Hardness | Ferrite WRC (FN) | CVN Impacts (J) @ +20 °C |
|---|---|---|---|---|---|
| 520 Min | 300 Min | 30% Min | ------- | 3-10 FN | 60-80 J |

## *Typical Welding Parameters DCEP or AC*

| Diameter | Type of Current | Amperage Range | | Voltage Range |
|---|---|---|---|---|
| | | Flat | Out of Position | |
| 3/32" | DCEP or AC | 70 - 80 | 65 - 80 | 20 - 23 |
| 1/8" | DCEP or AC | 80 - 110 | 75 - 95 | 21 - 24 |
| 5/32" | DCEP or AC | 120 - 160 | 100 - 120 | 22 - 25 |
| 3/16" | DCEP or AC | 170 - 190 | Not recommended | 23 - 25 |

NOTE: Maintaining a proper welding procedure, including pre-heat and interpass temperatures, may be critical depending on the type and thickness of material being welded.
POLARITY: DCEP or AC
DCEP = DC, Electrode Positive (reverse polarity) has the most weld penetration.
AC: medium weld penetration (can have more spatter)
WELDING POSITIONS: All Positions
USE LESS AMPS ON THIN METAL; MORE AMPS ON THICK METAL

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