

DURAMAX STAINLESS ELECTRODE DM410-16

Classification: E410-16 AWS A5.4 / ASME SFA 5.4

Description, Characteristics & Applications:

DURAMAX E410-16 has a nominal composition (wt.-%) of 12 Cr that is an air-hardening steel. Preheat and postheat treatments are required to achieve welds of adequate ductility for many engineering purposes.

DM410-16 welds alloys of similar compositions and is also used for the surfacing of carbon steels to resist abrasion, erosion, and corrosion.

Note: Heat to 730°C to 760°C for 1 hour; furnace cool at a rate not exceeding 110°C per hour to 315°C and air cool to ambient.

Typical Chemical Composition (%)

| C | Cr | Ni | Mo | Mn | Si | P | S | Cu |
|----------|-----------|----------|----------|---------|----------|----------|----------|----------|
| 0.12 max | 11.0-13.5 | 0.70 max | 0.75 max | 1.0 max | 0.90 max | 0.04 max | 0.03 max | 0.75 max |

Deposited Chemical Composition (%) (Typical)

| C | Cr | Ni | Mo | Mn | Si | P | S | Cu |
|-------|-------|------|-------|------|------|-------|------|-------|
| 0.038 | 12.20 | 0.65 | 0.012 | 0.68 | 0.52 | 0.021 | 0.01 | 0.035 |

Typical Mechanical Properties as Welded

| Tensile Strength (n/mm ²) | Yield Strength (n/mm ²) | Elongation (%) | Hardness | Preheat / Interpass | PWHT |
|---------------------------------------|-------------------------------------|----------------|----------|---------------------|-----------------------|
| 450 Min | 300 Min | 20% Min | ----- | 200 ~ 315°C | 730°C ~ 760°C for 1hr |

Note: furnace cool at a rate not exceeding 110°C per hour to 315°C and air cool to ambient.

Typical Welding Parameters DCEP or AC

| Diameter | 3/32" | 1/8" | 5/32" | 3/16" | 7/32" |
|----------|---------|----------|-----------|-----------|-----------|
| Amps | 65 - 90 | 90 - 120 | 120 - 150 | 160 - 200 | 200 - 260 |

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