

## DURAMAX COBALT #12 -- COBALT STICK ELECTRODE

**Classification:** ECoCr-B

**Specification:** AWS A5.13 / ASME SFA5.13

### Product Description:

DURAMAX Cobalt #12 SMAW electrodes provide excellent hot hardness and abrasion resistance and good corrosion resistance. These properties make DMCobalt#12 well suited for wood cutting saws and bars and for industrial cutting applications for carpet, plastics, paper and chemical industries. This electrode is recommended for metal-to-metal abrasion involving high temperature and/or corrosive media with moderate impact. The weld deposits are smooth and it acquires a high polish in use. This alloy is nonmagnetic and is not forgeable. It can be machined with difficulty using carbide tools. It bonds well to all steels, including stainless.

### Typical Applications:

- Chain Saws Blades      - Chain Saw Bars      - Saw Teeth      - Extrusion Dies

### Typical Chemical Composition (%)

| C       | Mn      | Si      | Cr        | Ni      | Mo      | Fe      | W       | Co   |
|---------|---------|---------|-----------|---------|---------|---------|---------|------|
| 1.0-1.7 | 2.0 max | 2.0 max | 25.0-32.0 | 3.0 max | 1.0 max | 5.0 max | 7.0-9.5 | Bal. |

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

| C    | Mn   | Si   | Cr    | Ni   | Mo   | Fe   | W    | Co   |
|------|------|------|-------|------|------|------|------|------|
| 1.50 | 0.90 | 1.10 | 28.70 | 2.60 | 0.10 | 3.10 | 8.50 | Bal. |

### Typical Deposit Characteristics:

|                        |                             |                        |                  |
|------------------------|-----------------------------|------------------------|------------------|
| - Abrasion Resistance  | Excellent                   | - Hardness             | HRC 34 - 47      |
| - Impact Resistance    | Good                        | - Hot Weld Hardness    | Excellent        |
| - Corrosion Resistance | Good                        | - Deposit Layers       | 2 Layers Maximum |
| - Magnetic             | No                          | - Metal-to Metal Wear  | Excellent        |
| - Machineability       | Difficult Use Carbide Tools | - Surface Cross Checks | No               |

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

| Polarity       | DC + (DCEP) | DC + (DCEP) | DC + (DCEP) |
|----------------|-------------|-------------|-------------|
| Size           | 1/8         | 5/32        | 3/16        |
| Amperage Range | 115-135     | 145-165     | 175-195     |

Note: Minimum preheat recommended is 400°F (204°C). Required preheat will depend on base material composition and component dimensions.