



## Unibraze 7010-A1 (E7010-A1)

**DESCRIPTION:** UNIBRAZE 7010-A1 is a high cellulose coated electrode that produces weld deposits containing 0.5% Mo, allowing its use on high tensile, low alloy steels. It can be used in any position but it is best suited for vertical up or vertical down applications. The addition of Mo allows for its use on high tensile, low alloy steels. AC or DC reverse polarity.

**APPLICATIONS:** UNIBRAZE 7010-A1 electrodes are used on chrome-moly piping or casting where high tensile strength and creep resistance at high temperatures and high pressures are desired. Common applications include shaft build-up and repair, gear teeth, boilers, oil well casting, and forging dies.

**SPECIFICATIONS:** AWS A5.5 / ASME SFA 5.5 Class E7010-A1

### Typical Undiluted Weld Metal Analysis:

|                 |       |
|-----------------|-------|
| Carbon (C)      | 0.09  |
| Manganese (Mn)  | 0.35  |
| Phosphorus (P)  | 0.01  |
| Sulphur (S)     | 0.015 |
| Molybdenum (Mo) | 0.52  |

### TYPICAL MECHANICAL PROPERTIES\*(AW):

|                    |                       |
|--------------------|-----------------------|
| Tensile Strength   | 88,000 psi ( 605 MPa) |
| Yield Strength     | 71,000 psi (495 MPa)  |
| Elongation % in 2" | 30%                   |
| Reduction of Area  | 68%                   |

### TYPICAL CHARPY V-NOTCH IMPACT VALUES(AW):

|                       |                       |
|-----------------------|-----------------------|
| Avg. at 40°F (4°C)    | 56 ft•lbs (76 Joules) |
| Avg. at -40°F (-40°C) | 21 ft•lbs (38 Joules) |

### Deposition Table:

| Diameter        | Optimal Amperage | Range Amperage | Deposition Rate           | Efficiency |
|-----------------|------------------|----------------|---------------------------|------------|
| 3/32 in, 2.4 mm | 75 A             | 40 - 75        | 1.5 lbs./hr., 0.7 kg./hr. | 72 %       |
| 1/8 in, 3.2 mm  | 100 A            | 80 - 140       | 2.1 lbs./hr., 0.9 kg./hr. | 76.3 %     |
|                 | 130 A            | 80 - 140       | 2.3 lbs./hr., 1 kg./hr.   | 68.8 %     |
| 5/32 in, 4.0 mm | 140 A            | 130 - 175      | 2.8 lbs./hr., 1.3 kg./hr. | 73.6 %     |
|                 | 170 A            | 130 - 175      | 2.9 lbs./hr., 1.3 kg./hr. | 64.1 %     |
| 3/16 in, 4.8 mm | 160 A            | 150 - 210      | 3.3 lbs./hr., 1.5 kg./hr. | 74.9 %     |
|                 | 190 A            | 150 - 210      | 3.5 lbs./hr., 1.6 kg./hr. | 69.7 %     |

**Notice:** The results reported are based upon testing of the product under controlled laboratory conditions in accordance with American Welding Society Standards. Actual use of the product may produce different results due to varying conditions. An example of such conditions would be electrode size, plate chemistry, environment, weldment design, fabrication methods, welding procedure and service requirements. Thus the results are not guarantees for use in the field. The manufacturer disclaims any warranty of merchantability or fitness for any particular purpose with respect to its product.