



Select 810-B2

Description:

Select 810-B2 is a low alloy steel electrode for flux cored arc welding with external gas shielding. This electrode is intended for single and multiple pass welding, in all positions, of certain Cr-Mo steel plate and pipe, where 1¼% Cr and ½% Mo are required in the weld deposit. Carbon dioxide is the recommended shielding gas; mixtures of 75-80% argon-balance carbon dioxide may be employed, however, the use of this gas may increase tensile strength beyond AWS requirements. Gas flow rate should be maintained at 35-50 cfh, and the dew point must be -40°F or lower.

Classifications:

- E81T1-B2C, E81T1-B2M per AWS A5.29, SFA 5.29.

Characteristics:

Select 810-B2 is a premium low alloy steel, flux cored electrode, with superb welder appeal and excellent mechanical properties. The smooth arc transfer, low spatter, and fast freezing slag make this an excellent choice for welding boiler and pressure vessel components in all positions. **Select 810-B2** produces a weld deposit of 1¼% Cr- ½% Mo, which will harden in still air. This requires careful control of preheat and interpass temperatures, as well as proper post weld heat treatment. The weld metal is intended to resist creep and maintain strength at elevated temperatures. **Select-Arc** employs the latest manufacturing technology, ensuring the ultimate in quality, consistency, and weld performance, to maximize the capabilities of **Select 810-B2** and the weld metal it deposits.

Applications:

Select 810-B2 is intended to weld steels subject to high temperature service, such as A387 Gr. 11 plate and A335 P11 pipe. These materials are used in the fabrication of boilers, heat exchangers, and pressure vessels. The AWS classification requires no minimum toughness values for this electrode; therefore, any specific toughness requirements should be discussed prior to use of the electrode.

Typical Mechanical Properties:

| | SR 1 Hr. at 1275° F | |
|---------------------------------|---------------------|----------------------------|
| | CO ₂ | 75% Ar/25% CO ₂ |
| Ultimate Tensile Strength (psi) | 94,200 | 98,900 |
| Yield Strength (psi) | 84,200 | 85,200 |
| Percent Elongation | 20 | 22 |

Typical Deposit Composition:

| Wt% | C | Mn | Si | P | S | Cr | Mo |
|------------------------|-----|-----|-----|------|------|------|-----|
| CO ₂ | .07 | .81 | .60 | .010 | .010 | 1.31 | .45 |
| 75Ar/25CO ₂ | .09 | .87 | .60 | .010 | .010 | 1.32 | .49 |

Recommended Welding Parameter:

| Diameter | Position | Optimum | | | Range | |
|----------|-------------|----------|-----|---------|----------|---------|
| | | Amperage | WFS | Voltage | Amperage | Voltage |
| 1/16" | Flat | 350 | 350 | 29 | 150-400 | 22-34 |
| | Overhead | 225 | 170 | 26 | 150-310 | 22-28 |
| | Vertical up | 225 | 170 | 25 | 150-280 | 22-27 |
| .052" | Flat | 300 | 440 | 28 | 100-330 | 19-32 |
| | Overhead | 200 | 245 | 26 | 150-310 | 21-28 |
| | Vertical up | 200 | 245 | 25 | 150-280 | 21-27 |
| .045" | Flat | 250 | 450 | 28 | 100-300 | 21-32 |
| | Overhead | 200 | 300 | 26 | 150-280 | 21-29 |
| | Vertical up | 200 | 300 | 25 | 100-230 | 21-28 |
| .035" | Flat | 175 | 511 | 26 | 100-250 | 21-30 |
| | Overhead | 150 | 490 | 24 | 100-175 | 21-26 |
| | Vertical up | 150 | 490 | 24 | 100-175 | 21-26 |

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. Select-Arc disclaims any warranty of merchantability or fitness for any particular purpose with respect to its products.