



Unibrazed 70S-B2L

Classification: AWS A5.28 / ASME SFA5.28 Class ER70S-B2L UNS K20500

Description: Unibrazed 70S-B2L is a low alloy steel copper coated wire used to weld 1¼% Cr/½% Mo steels. It is identical to Unibrazed 80S-B2 except it has a carbon content of less than .05%. It exhibits greater resistance to cracking and is more suitable for welds to be left in the as-welded condition or when the accuracy of the postweld heat treatment operation is questionable. The classification was previously ER80S-B2L but the strength requirements and classification designator have been changed to reflect the true strength capabilities due to the lower carbon content in the chemical composition.

Applications: Unibrazed 70S-B2L is used to weld at elevated temperatures and corrosive service. It is also used for joining dissimilar combinations of Cr-Mo and carbon steels. A preheat and interpass temperature of not less than 275°F should be maintained during welding.

Chemical Composition

| | C | Mn | Si | P | S | Ni | Cr | Mo | Cu | Others |
|------------------------|------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|------------|------------|
| AWS/ASME Spec | .05 max | .40- .70 | .40- .70 | .025 max | .025 max | .20 max | 1.2- 1.5 | .40- .65 | .35 max | .50 max |
| Typical Results | .04 | .58 | .51 | .009 | .014 | .08 | 1.24 | .43 | .16 | .016 |

Mechanical Properties

| | AWS/ASME Spec | Typical Results* |
|-------------------------|--------------------------|----------------------|
| Tensile Strength | 75,000 psi min(515 MPa) | 82,680 psi (570 MPa) |
| Yield Strength | 58,000 psi min (400 MPa) | 55,720 psi (460 MPa) |
| Elongation | 19% | 23% |

* Welding Guidelines for typical results:

Preheat and interpass temperature 300°F (150°C). PWHT 1150°F (620°C) for 1 hr.

Recommended Welding Parameters

| Process | Dia. | Amperage | Voltage | Gas |
|-------------------------|-------|-----------|---------|--|
| GTAW (TIG) | 1/16" | 50 - 120 | 7 - 13 | Argon |
| | 3/32" | 120 - 200 | 10 - 16 | Argon |
| | 1/8" | 150 - 200 | 12 - 18 | Argon |
| GMAW (MIG) Short Arc | .035 | 90 - 160 | 14 - 20 | CO ₂ |
| | .045 | 120 - 200 | 16 - 20 | CO ₂ or 75% Argon / 25% CO ₂ |
| GMAW (MIG) Spray Arc | .035 | 180 - 230 | 25 - 28 | 98% Argon / 2% O ₂ |
| | .045 | 250 - 350 | 25 - 30 | 75% Argon / 25% CO ₂ |

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 products.