



Welding Aluminum Bronzes and
Dissimilar Metal Joining of Copper
Alloys to Steels and Cast Irons

Xuper® 1851 XHD



- Good crack and corrosion resistance
- Excellent comparative mechanical properties
- High deposition rates

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Xuper 1851 XHD is a copper-based filler rod for the joining and cladding of aluminum bronzes or dissimilar combinations of Aluminum-bronze to some steels and cast irons. Its special formulation inhibits inter-granular stress corrosion known to cause cracking in copper alloys and steels. As cladding it exhibits all the benefits of Al-bronze itself and a high deposition rate saves time and money in any application where it is used.

TECHNICAL DATA

Typical Values

Tensile Strength:	80,000 psi (550 N/mm ²)
Yield Strength:	37,000 psi (255 N/mm ²)
Hardness:	150 BHN
Work Hardened Hardness:	200 BHN
Current and Polarity:	DCEP (+)

SUGGESTED WELDING PARAMETERS:

Diameter	Amperage
1/8" (3.2mm)	90 - 160

Note: For optimum results use the lowest amperage practical.

PROCEDURE FOR USE

PREPARATION: Remove all contaminants, particularly oil and grease. Lightly grind surfaces to remove superficial oxides. Prepare cracks to have a 60-75° V-groove. A root opening of 1/8-in. is recommended. If necessary, preheat to remove moisture.

TECHNIQUE: Use either stringer or weave beads with the latter being preferred to minimize slag entrapment. Make sure to thoroughly de-slag between passes.

Note: High frequency AC recommended for application thinner than 0.040 or where additional weld puddle cleaning is needed.

Note: Make sure that the inter-pass temperature does not exceed 300°F (148°C)

POST-WELDING: Slow cool out of the way of drafts.

TYPICAL APPLICATIONS

- Aluminum Bronze Pump Housings
- Manganese Bronze Impellers
- Ship Propellers
- Turbine Runners
- Press Rams
- Joining Cast Iron to Steel
- Tin Plate Mill Rolls
- Hydraulic Pistons

Observe normal welding practices, respiratory protection and proper air flow pattern advised. For general welding practices, see AWS publications Z49.1 "Safety in Welding and Cutting and Allied Process". Welding is a completely safe process when performed in accordance with proper safety measures. Become familiar with local safety regulations before beginning welding operations. DO NOT operate welding equipment or use welding materials before you have thoroughly read the proper instruction manual(s). Please refer to the Eutectic internet site for Material Safety Data Sheet (MSDS) information. DISREGARDING THESE INSTRUCTIONS, AND/OR THE INSTRUCTIONS OF WELDING EQUIPMENT OR MATERIAL MANUALS, MAY BE HAZARDOUS TO YOUR HEALTH.



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