



Copper-Based Filler Metal for Welding
Aluminum Bronzes and for Dissimilar
Metal Joining of Copper Alloys to
Steels and Cast Irons

TigTectic®

1851



- Ideal for hard-to-weld dissimilar metal combinations
- Good for corrosion resistant cladding on bearing surfaces
- Excellent comparative mechanical properties

TigTectic® 1851

TigTectic 1851 is particularly resistant to cracking when used for dissimilar metal joining. Weld deposits contain elements that inhibit inter-granular stress corrosion cracking when used to join and resurface aluminum bronze castings.

TECHNICAL DATA

Typical Values

Tensile Strength:	90,000 psi (620 N/mm ²)
Yield Strength:	38,000 psi (262 N/mm ²)
Hardness:	150 BNH
Worked Hardened Hardness:	200 BNH
Current & Polarity:	DCEN (-)
Shielding Gas:	Welding Grade Argon

SUGGESTED WELDING PARAMETERS:

Diameter	Amperage	Cup Size	Shielding Gas	Flow Rate
1/16" (1.6mm)	70 - 120	1/2"	100% Argon	35 - 40 scfh
3/32" (2.4mm)	120 - 160	3/4"	100% Argon	40 - 55 scfh

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" is recommended. If necessary, preheat to remove moisture.

TECHNIQUE: Use a properly ground thoriated or lanthanated tungsten with the appropriate gas cup size for sufficient puddle coverage. Deposit 1851 with stringer beads only. Maintain shielding gas flow until solidification is complete.

Note: High frequency AC recommended for applications 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
- Ships Propellers
- Turbine Runners
- Press Rams
- Joining Cast Iron to Steel
- Tin Plate Mill Rolls
- Hydraulic Pistons



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