COPPER ALLOYS

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Xuper 1851 XHD

Welding Aluminum Bronzes And Dissimilar Metal Joining Of Copper Alloys To Steels And Cast Irons

DESCRIPTION

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.

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

APPLICATION :

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

PROCEDURE FOR USE

Preparation: Remove all contaminants, particularly oil and grease. Lightly grind surfaces to remove superficial oxides. Prepare cracks to have a °75-60 V-groove. A root opening of -8/1 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 deslag 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 °300F (°148C)

TECHNICAL DATA

Tensile strength : 550 N/mm2 (80,000 psi)
Yield strength : 255 N/mm2 (37,000 psi)

Typical Hardness **: 200 HB**

Current Polarity: AC/DC (+)

DIAMETER	AMPERAGE
3.2mm	90-160

Note: For optimum results use the lowest amperage practical.

EutecTrode 1855XHD

Manual Metal Arc Electrode For Coatings And Joining Of Copper Alloys

DESCRIPTION

Very good resistance to cavitation, excellent resistance to marine corrosion, very high tensile strength, high elongation, low friction coefficient, very easily machinable. Aluminium bronze alloys are used to resist corrosion by sea water.EutecTrode1855 XHD allows joining and repairing cast or wrought manganese-nickel-aluminium bronze materials with Maximum Safety Margin. When the precise chemical composition of the base metal is unknown, 1855 XHDcan be used as it provides an elongation up to twice that of traditional aluminium bronzes with comparable tensile strength. Greater elongation meansless stress in the areas along the weld bead, less distortion of the part with subsequent less risk of cracking, both for joined assemblies and for very thick overlays.Crack resistance.

APPLICATIONS

Multi-applications

XHD-1855 is ideal for corrosion resistance of coating large surfaces used in the chemical industry. It may be used for assembling complex aluminium bronze alloys, for rebuilding and modifying aluminium bronze parts or for coating parts subject to intense metal to metal friction.Ship propellers, propeller shaft sleeves, rudder components, turbine and pump housings, mixer blades, gear wheels, screw-shaft carrier rings, side plates, valve housings, roller extension segments, valve gates, turbine injector needles, forming matrices, pump turbines, winch components, rotary seals, shaping tools, bearings, heat exchanger plates, rotary valves, gearings.

PROCEDURE FORUSE

Preparation: Ensure that all areas to be welded are free from contaminants, oxides etc. For joining applications use suitable preparation.

Preheating: Preheating is not generally necessary. However when welding large heavy sections, preheating up to 150.C may be required with approximately 200.C maximum interpasstemperature.
For overlaying steel components, preheating depends upon type, size and mass of base material.

Welding: XHD-1855 has been developed with ease of welding as an important prerequisite. It provides good weldability even with low preheat temperatures. Striking and re-striking the electrode is easy, and thedeposit is almost perfectly smooth and regular.

Employ minimum amperage for each diameter to minimise dilution. Maintain electrode angle near 90.and a short arc. Ensure that all slag traces and defects are removed, followed by thorough wire brushing after each weld pass.

TECHNICAL DATA

Tensile strength : 680 N/mm2 (98,000 psi)
Yield strength : 430 N/mm2 (62,000 psi)
Elongation : 30%
Typical Hardness : 175 HB

Current Polarity: AC/DC (+)

DIAMETER	AMPERAGE
3.2mm	60-100

Note: For optimum result use the lowest amperage practical

Xuper 2800 XHD

Manual Metal Arc Electrode For Bronze Welding With Ac

DESCRIPTION

A unique bronze alloy electrode for joining and overlaying parts in bronze, and also for use on a wide variety of ferrous alloys.

This electrode is specially designed for welding with alternating current. Stable arc even using power sources with low open-circuit voltage. Regular metal transfer with a homogeneous deposit. Very good resistance to corrosion by salt wateror steam. Thanks to its low friction coefficient, it is ideal for the overlay of surfaces subject to friction, e.g. plain journal bearings. The deposit is very smooth and is easily machinable.

- Excellent weldability and exceptional arc stability with AC
- Very good corrosion resistance to salt water or steam
- Very homogeneous deposit
- Good colour match to bronze
- Deposit easily machinable
- Low friction coefficient

APPLICATIONS

Pump casings, impellers, plain bearings, marine applications, joining of bronze to steel or cast iron.

PROCEDURE FOR USE

Preparation Clean the surface to be welded. For joining applications, leave sufficient clearance for full penetration welds. For thicknesses greater than 5 mm, make an 80.»U» chamfer. For thicknesses greater than 10 mm make an «X» preparation.

Preheating: Not normally necessary for thin sections. A preheat of 200-250.C is recommended for copper-base alloys in general, and particularly for thick, heavy sections.

When overlaying steels, the preheat temperature depends upon the nature of the steel and the dimensions of the part to be welded. Maintain medium to short arc and keep electrode almost vertical. Deposit stringer beads or weave moderately.

Select the minimum current possible in order to avoid dilution, particularly when welding ferrous metals.

TECHNICAL DATA

Tensile strength: 300 N/mm2(43,000 psi)
Typical Hardness : 140 HB

Current Polarity: AC/DC (-)

DIAMETER	AMPERAGE
3.2mm	80-120
4.0mm	110-150

Note: For optimum result use the lowest amperage practical