



PYROTEK ROLL-BONDED CLADS

ROLL-BONDED CLAD CONTACTS FOR USE IN ZINC SMELTING

Roll-bonding: The Superior Clad Option

Roll-bonding creates a material that is metallurgically bonded. Materials are permanently joined for 100 percent electrical continuity, and demonstrate the characteristics of contiguous metal at the bond interface. Bond is inter-crystalline rather than mechanical interleaving.

The uniformity of the bond produced via roll-bonding is unmatched. Explosion-bonding produces small voids in the bond line. These voids allow intermetallics to form and weaken the bond.

Pyrotek's bond is perfectly uniform with no room for intermetallics to form. No intermetallics means a reliable, long lasting clad. This reduces the need for costly maintenance and replacement.

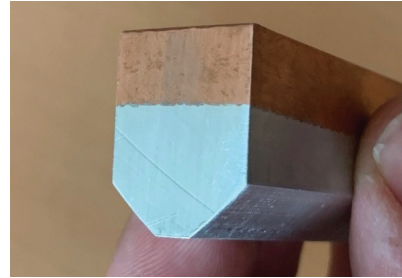
Pyrotek clads feature a performance enhancing interlayer. A thin and highly conductive chromium interlayer is used. The chromium interlayer allows the clad to withstand higher temperatures with minimal electrical and thermal resistance.

Electrical

The electrical resistance of a transition insert is nominally the series resistance of the components. There is no resistance increase or electrical conductivity loss associated solely with the bond or bonding process.

Temperature

Aluminium-copper inserts can operate safely at elevated temperatures. The clad inserts will maintain their integrity up to 500°C.



1050 AL - OFHC 101/102 Cu Contacts

Strength

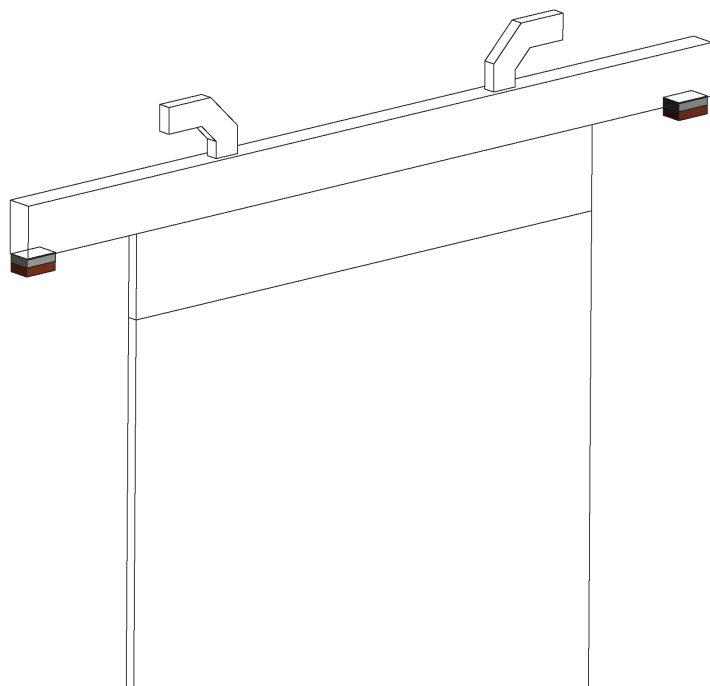
The technology is tensile tested at the bond to exceed the strength of the aluminium. High purity aluminium is typically 85-90 MPa in tensile strength, while the Pyrotek roll-bonded transition insert demonstrates a bond tensile strength of greater than 125 MPa as-rolled.

All parts have representative bend tests that depict the bond integrity and continuity. The bend testing consists of 3-4 mm slices of the insert cross section bent at 90 degrees at the bond interface. One hundred percent bonding will demonstrate no separations, pinholes, or tears at the interface.





PYROTEK ROLL-BONDED CLAD CONTACTS



Materials

The typical standard aluminium grade is 1050. OFHC 101/102 copper is the standard copper. Design flexibility allows for other material options that fit each individual application.

Fabrication

Clads are cut to customers' required dimensions, +/- 0.5 millimeter, unless otherwise requested. Thickness and dimensions can be customized based on application requirements.

Surface Finish

Standard RA as low as 1 μ m. Surface polishing and roughening equipment can be used to reach the desired finish.

Why Pyrotek Clads?

Chromium Interlayer

Achieve the highest weld temperature without sacrificing electrical conductivity or bond integrity.

Bond Uniformity

Unlike explosion bonding, roll bonding produces an extremely uniform bond. This increases durability which leads to reduced maintenance costs.

Global Engineering & Sales Support

Our expansive network includes more than 80 locations in 35+ countries. These locations allow for short leadtimes and local stocking.

