

## The Engineered Alternative to Copper Busbar

### ● CUPONAL™

Cuponal is a copper-clad aluminium (CCA) bi-metal conductor developed to provide an economic alternative to solid copper. Produced by the hydrostatic extrusion process, Cuponal consists of a solid core of electrical grade aluminium with a pressure bonded seamless outer layer of high conductivity copper.

Cuponal delivers economic and weight saving advantages over solid copper, yet retains the surface properties of a copper busbar. It is often possible to substitute a copper bar with a Cuponal bar of equal dimensions, which yields the maximum cost saving.

A wide range of standard sections are available. All rectangular and round sections are produced using a nominal copper cladding of 15% by volume (37% by weight) with the exception of certain sizes of high aspect ratio which are produced with nominally 20% copper by volume (45% by weight).

Special profiles, for example 'L' or 'T' shapes can be made to order, and are produced with a 20% copper cladding by volume.

### Weigh Up The Benefits

- **Reduce costs by up to 40%**  
A Cuponal bar can save as much as 40% compared with a copper bar of equal dimensions.
- **Reduce weight by up to 60%**  
The relative density of Cuponal vs copper results in the mass of Cuponal busbars being only 41% of that of a copper bar of equal dimensions.
- **Smooth out cost fluctuations**  
Cuponal prices are more stable over time when compared with copper prices.
- **Reduce the cost of your inventory**  
1 metre of Cuponal costs less than 1 metre of copper, therefore the same stock length provides lower inventory values, meaning lower financing costs.
- **Lighten the load**  
Cuponal's lower weight makes it much easier to handle. Combined with ease of punching, drilling and bending, your work force will be glad you made the switch
- **Reduce freight costs**  
Lower weight means lower freight costs to your customer



## Hydrostatic Extrusions Limited A Bruker Corporation Company

Hydrostatic Extrusions Limited is part of the Bruker Energy & Supercon Technology (EST) division of Bruker Corporation. As well as a long history of collaboration with Bruker on the extrusion of superconducting materials, Hydrostatic has nearly four decades of experience in the hydrostatic extrusion of copper-clad aluminium (CCA) electrical conductors, aluminium-based high-performance alloys and a wide range of specialist metal composites.

Materials extruded by our hydrostatic extrusion process have performance parameters that are not achievable by any other extrusion method, opening up a performance-enhancing/cost-saving route for equipment as well as product designers and specifiers.

■ **Cuponal** Co-extruded copper-clad aluminium (CCA) busbar, rod and wire for high- and low-voltage electrical distribution, telecoms and wireless applications.

■ **High-performance alloys** Extruded with high dimensional accuracy and uniform fine grain structure; characteristics and performance unattainable by conventional extrusion methods.

Aluminium extruded by the hydrostatic process benefits from a uniform fine grain structure coupled with great dimensional accuracy, thus providing a high quality feedstock material for onward processing such as impact extrusion and forging.

Customer supplied material is made extrusion-ready in house, extruded to the requested dimensions and profile and shipped to customer instructions.

■ **Composite materials** Extruded with exact replication of cross-sectional parameters; unique to the hydrostatic extrusion process.

Cuponal is a registered trademark of Hydrostatic Extrusions Limited

### Applications

Cuponal has been successfully evaluated and used by many of the world's leading electrical equipment manufacturers. Applications include the following:

LV, MV, HV distribution; switchboards; motor control centres; panel boards; busbar chambers; busbar trunking systems; rectifiers; motor windings; fuse gear; crane rail supply systems; vacuum switchgear; generator sets; transformer substations; railway traction equipment; bi-metal connectors for use in aluminium foil wound transformers and railway applications.

### Short Circuit Testing

Cuponal has been successfully tested for short circuit performance in many applications by authorities such as: ASTA (The Association of Short Circuit Testing Authorities); KEMA (NV tot van Elektrotechnische Materialen); Elektrisches Prüfamt, München

### Metal Forming Characteristics

Cuponal is easy to bend, having less spring-back than copper. The relevant data sheet should be consulted for recommended bending radii. Cuponal is also easy to drill, cut and punch.

### Approvals

Cuponal has been approved for use in equipment by many authorities, including the following:

Germanischer Lloyd; Det Norske Veritas; ABS; Bureau Veritas; Lloyds Register of Shipping; SABS; ULA; National Power Supply Company; National Grid Company; electrical and water utilities.

Cuponal complies with BS 159:1957, and conforms to DIN 43670 Part2.

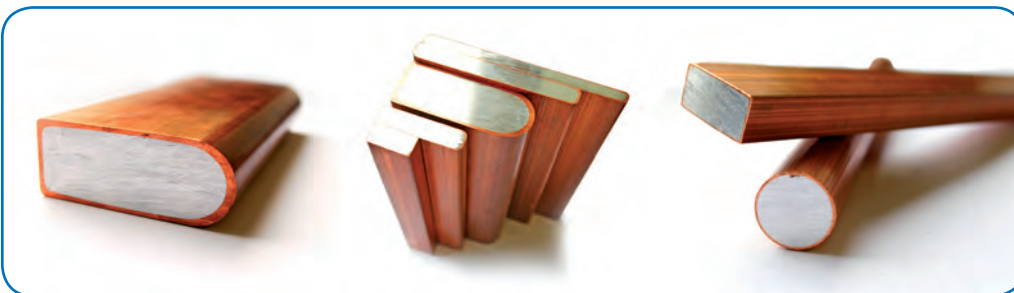
The aluminium core is of electrical grade and the copper cladding is to BS 2871/C101.

### Standard Supply

Standard length: 4000 mm  
Maximum length: 6000 mm  
Width range: 10-120 mm  
Thickness range: 3-15 mm  
Diameter: Up to 40 mm  
Area range: 20-1260 mm<sup>2</sup>  
Square and round edge bar is available

### Special Profiles

Enquiries for profiles should be made at the earliest opportunity during switchgear design, to investigate the feasibility of producing the desired profile in Cuponal.



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