

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.

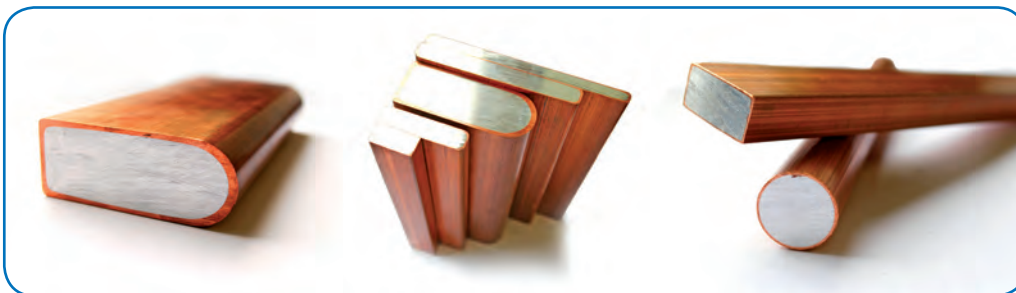
The aluminium core is of electrical grade and the copper cladding is to BS 2871/C101.

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 mm²
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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