

CUPONAL

Composite bi-metal CuAl busbar



Alternative to the solid copper bar

www.FlexiCuBars.eu

2011

Braitech UAB, address: Mituvos str. 5, LT-50132 Kaunas, Lithuania
Tel: +37069 807816; Fax: +37037435942, e-mail: info@flexicubars.eu



CUPONAL - is light as aluminum, conductive as copper.

CUPONAL is a bi-metal composite material for use as electrical connection in switch cabinets, switchboards and distribution boards.

A core of aluminum is pressed with a coat of copper, so that both form an inseparable unit. This will allow the positive characteristics of electrically highly conductive copper with the light weight of aluminum combined optimally.

CUPONAL busbars has number of advantages over conventional solid copper busbars:

- Weight savings
- Processing, such as copper bars (drilling, bending, cutting ...)
- Improved heat dissipation over a larger surface
- Cost savings through lower material costs
- Advantages of copper and aluminum are combined
- Copper surface (low contact resistance)
- Thermal short circuit similar to that of copper, since the current flows during transient conditions on the outer surface of the conductor (skin effect)
- Lower cost for transport - Smaller price fluctuations due to lower copper content easy handling

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.



Standards

CUPONAL complies with BS 159:1957, and conforms to DIN 43670 Part2. The aluminum core is of electrical grade and the copper cladding is to BS 2871/C101

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Let us know your demands. We will contact you immediately.

CUPONAL SOLID BUSBAR technical data
Available sizes and technical specifications

Dimensions [mm]	Cross section [mm ²]	Weight [kg/m]	Continuous current rating [A] (track temperature 65°C, ambient temperature 35°C)	
			AC (50 Hz / 60 Hz)	DC
20 x 5	100	0,36	235	235
30 x 5	150	0,54	328	329
20 x 10	200	0,73	363	365
40 x 5	200	0,73	418	420
30 x 10	300	1,09	493	497
50 x 5	250	0,98	508	511
60 x 5	300	1,17	594	599
40 x 10	400	1,45	617	625
40 x 12	480	1,71	681	727
50 x 10	500	1,81	736	751
80 x 5	400	1,57	762	773
50 x 12	600	2,15	809	831
60 x 10	600	2,18	853	875
60 x 12	720	2,58	934	967
80 x 10	800	2,90	1074	1119
100 x 10	1000	3,63	1287	1358
100 x 12	1200	4,38	1399	1496
120 x 10	1200	4,38	1488	1589
120 x 12	1440	5,20	1617	1755

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CUPONAL SOLID BUSBAR technical data
Comparison of solid copper and Cuponal busbars

Dimensions Cu bars [mm]	Dimensions of Cuponal bars with equal or higher continuous current carrying capacity [mm]	Weight savings by Cuponal bar compared to Cu- bar
12 x 5	20 x 5	32 %
12 x 10	30 x 5	49 %
20 x 5	30 x 5	39 %
20 x 10	30 x 10	39 %
30 x 5	40 x 5	46 %
30 x 10	60 x 5	56 %
40 x 5	30 x 10	39 %
40 x 10	50 x 10	49 %
50 x 5	60 x 5	47 %
50 x 10	60 x 10	51 %
60 x 5	50 x 10	32 %
60 x 10	80 x 10	46 %
80 x 5	60 x 12	27 %
80 x 10	100 x 10	49 %
100 x 5	100 x 10	18 %
100 x 10	120 x 10	42 %

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CUPONAL SOLID BUSBAR technical data
Available dimensions

Dimensions		Cross-section	Weight [kg/m]
20	5	100	0,36
20	10	200	0,73
30	5	150	0,54
30	10	300	1,09
40	5	200	0,73
40	10	400	1,45
40	12	480	1,74
50	5	250	0,91
50	10	500	1,82
50	12	600	2,18
60	5	300	1,09
60	10	600	2,18
60	12	720	2,61
80	5	400	1,45
80	10	800	2,90
100	10	1000	3,63
100	12	1200	4,36
120	10	1200	4,36
120	12	1440	5,23

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CuAl (CUPONAL) frequently asked questions:

What are the main advantages of Cuponal compared to solid copper busbars?

At the same current carrying capacity Cuponal busbars have a cheaper price and lower weight. This is noticeable especially with larger cross sections.

How can I process Cuponal busbars mechanically (drilling, bending and punching)?

Process Cuponal busbars just as you would process conventional copper or aluminum rails. Also bends of more than 90 degrees are no problem. Neither copper layer nor aluminum core will be damaged.

Does corrosion of Cuponal busbars increase under normal conditions (e.g. indoors) and should it be applied an additional corrosion protection?

No. Under normal conditions, such as, for example, in the Interior, no increased corrosion occurs.

Can I use Cuponal busbars in environments with increased risk of corrosion?

You may experience increased corrosion at the edges and in the area of drilling with increased humidity and the presence of an electrolyte (e.g. sea air). Therefore in case of doubt, we recommend an additional protection against corrosion (e.g. paint, grease, acid-free Vaseline)

Can galvanized screws or screws from stainless steel be used for Cuponal busbars?

Galvanized screws or stainless steel screws can be used under normal conditions.

What quality of copper and aluminum is used for the manufacture of Cuponal busbars?

Cuponal busbars are made of aluminum and copper for conduction purposes (Al 99.5 and Cu F20 99.9).

What holder distance must I choose to install Cuponal busbars?

In most cases, the same distance of the holder can be used as for Copper busbars.

Are there special holders for Cuponal busbars?

The most commercially available holders can be used for fixation of Cuponal bus bars. If you should choose holders for Cuponal, note however, that about 20% larger cross sections must be used compared to massive copper rails at the same rated current.

How can thermal and dynamic behavior of Cuponal busbars be described in the short-circuit case?

Thermal behavior of Cuponal busbar is similar to copper rail. The dynamic properties range lie between copper and aluminum rails.

Can I find more information on Cuponal busbars in the DIN standard?

For busbars from Cuponal Applies standard DIN 43 670, part 2 (copper-coated rail made of aluminum).