

## ALCUNNECT

### Joint material system of aluminum and copper

The composite material AlCunnect is produced by using cold roll bonding of the metals aluminum and copper. The subsequent heat treatment ensures an excellent metallurgical bond. An optional corrosive prevention film is offered to protect from influences of corrosion-promoting substances like water or salts.

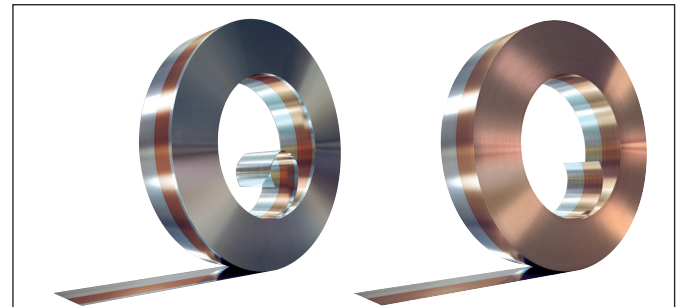
#### AlCunnect enables

- Realization of the joint material system of aluminum and copper
- Excellent mechanical adhesion of the aluminum and copper world
- Customizable dimensions at buyer's request
- The usage in automotive applications with the uniquely developed corrosion protection option

#### Benefits of the combination of aluminum and copper

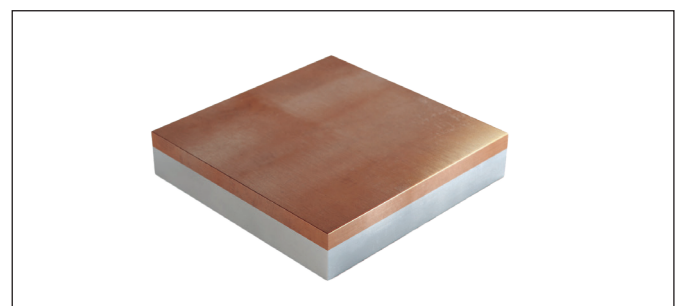
- **Cost reduction** potential by partially replacing expensive copper with aluminum (fig. 1+2)
- Achieving **weight reduction** through use of aluminum instead of copper (fig. 1+2)
- Attainment of a good **electrical conductivity**
- **Temperature stability** up to 200 °C

#### Product Variants



##### Inlay Composite / Overlap Composite

Total width	Up to approx. 4.72" (120mm)
Thickness	Up to approx. 0.08" (2mm)
Width of inlay zone	Approx. 0.2" (5mm)
Thickness of copper inlay	min. 20 µm max. approx. 25%



##### Overlay Composite

Width	Up to approx. 7.9" (200mm)
Thickness ratio Al/Cu	Different combinations possible
Total thickness	Up to approx. 0.4" (10mm)

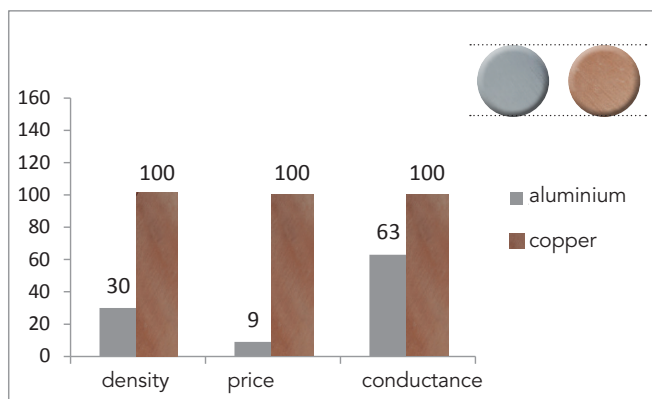


Fig. 1: Comparison for identical cross section (Cu=100%)

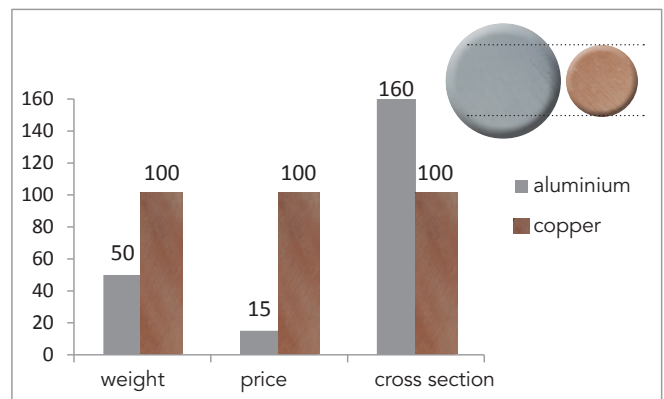
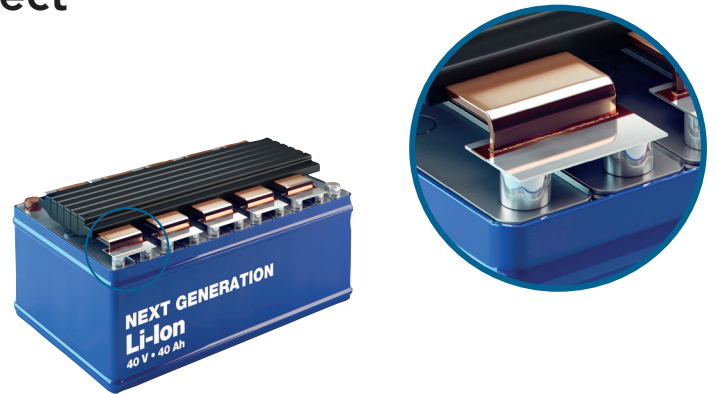


Fig. 2: Comparison for identical conductance (Cu=100%)

## Application examples of AlCunnect

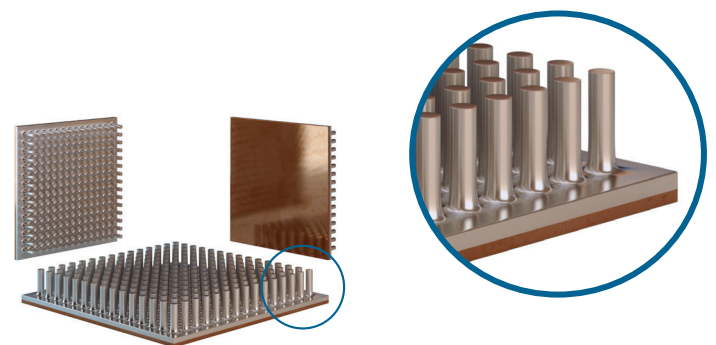
### Reliable connection of battery modules to battery management system (BMS)

- AlCunnect permits the usage of proven metallurgical connections (copper, copper/aluminum, aluminum). The technically challenging joining of copper and aluminum is transferred into the AlCunnect sheet material.



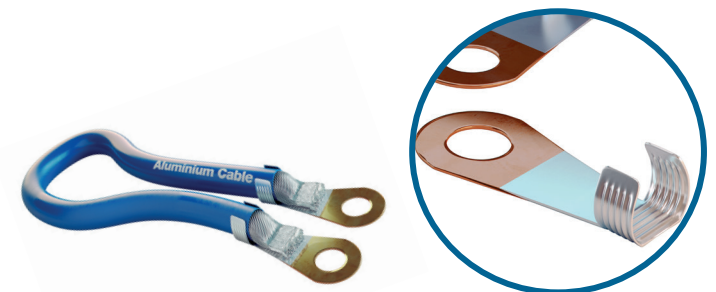
### Heat sinks for power electronic applications

- Heat sinks with increased thermal conductivity through copper and aluminum compound instead of conventional aluminum heat sinks
- Weight and cost reduction compared to copper heat sinks



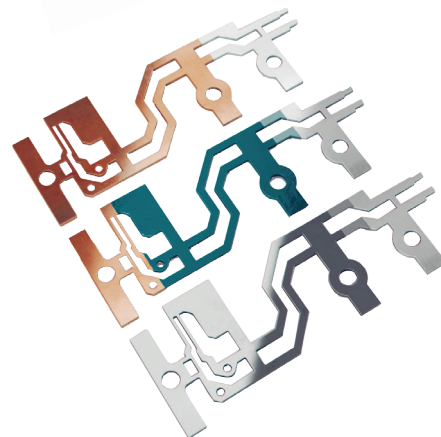
### Plug connectors/cable lugs for aluminum cables

- AlCunnect cable lugs enable the use of aluminum cables, which can be easily connected to copper terminals.
- Cost and weight reduction by saving copper
- Optional corrosion protection allows automotive usage



### Corrosion Protection

The combination of aluminum and copper naturally requires appropriate corrosion protection. For this purpose DODUCO offers customers specifically developed coating processes as innovative solutions to protect against the influence of corrosion-inducing agents such as humidity, water and salts. There are two different possibilities, the inorganic and organic coating processes. The special feature of the organic coating is that it is electrically isolating.



**We are happy to support you and check the technical feasibility of your specific requirements.**