



SIGMAclad & SIGMAclad lite

Batteries & Fuel Cells

SIGMAclad

SIGMAclad is a 5-layer clad material made of Nickel-Stainless Steel-Copper-Stainless Steel-Nickel, which was specially developed for the electrical connection of Li-Ion round cells and battery packs. It has superior properties compared to other materials used in these applications, such as Nickel or Nickel-plated steel. The Copper layer offers optimal electrical and thermal conductivity for heat dissipation. The Stainless Steel layers serve as a thermal barrier during joining and an alloy barrier between Copper and Nickel. They significantly reduce the energy input during joining, e.g. laser or resistance welding. Furthermore, they increase the welding strength. The outer layers of Nickel allow easy soldering and offer improved corrosion resistance.

SIGMAclad is ideally suited for mass production (punching and bending) and for prototyping (processing by etching, wire EDM, laser cutting or water-jet cutting). The assembly / joining process can be resistance welding, laser welding, ultrasonic welding and wire bonding. A cell protection can be laid out and attached to the material through structural design.

SIGMAclad lite

If laser welding is used in your process and if there are no special requirements for corrosion protection, SIGMAclad lite is suitable. It is a 3-layer clad material, consisting of Stainless Steel-Copper-Stainless Steel. This clad composite has high strength properties and is superior to pure Stainless Steel in terms of its specific electrical and thermal conductivity.

SIGMAclad + SIGMAclad lite are already used for round cell connectors as well as in fuel cells and smartphones.

Our cladding solutions

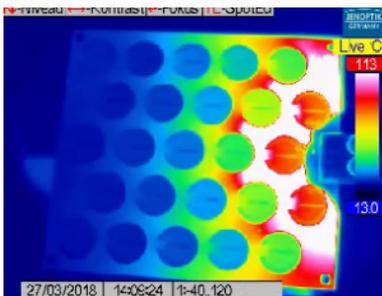


SIGMAclad
Nickel
Stainless Steel
Copper
Stainless Steel
Nickel

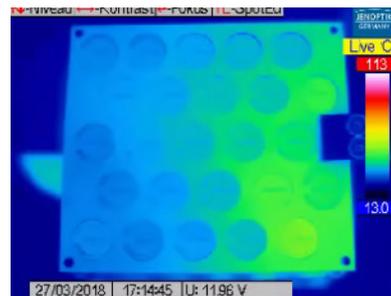


SIGMAclad lite
Stainless Steel
Copper
Stainless Steel

Nickel-plated Steel



SIGMAclad



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Advantages:

- > Significantly higher electrical and thermal conductivity than Nickel or Stainless Steel
- > Good punching and bending properties
- > Very good corrosion resistance
- > Resistance welding, laser welding, ultrasonic welding and wire bonding
- > Solderable surface (no plating required)
- > Scalable Copper proportion to meet application-specific requirements