

# NICKEL CLAD COPPER

## Next-Generation Conductor Solutions

Technical Whitepaper

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## EXECUTIVE SUMMARY

Nickel clad copper (NCC) represents a breakthrough in bimetallic conductor technology, strategically combining copper's exceptional electrical conductivity with nickel's superior corrosion resistance, high-temperature stability, and weldability.

Key findings demonstrate that NCC offers 40-60% IACS conductivity while providing outstanding corrosion resistance in harsh environments, with cost savings of 30-50% compared to pure nickel alternatives.

This whitepaper provides comprehensive technical analysis of nickel clad copper materials for alkaline electrolysis, aerospace, electronics, and industrial applications.

## KEY TECHNICAL SPECIFICATIONS

<b>Core Material</b>	Oxygen-Free Copper (C10100/C10200)
<b>Cladding Material</b>	Pure Nickel (Ni 200/201)
<b>Overall Conductivity</b>	40-60% IACS
<b>Operating Temperature</b>	-55°C to 260°C (continuous)
<b>Maximum Service Temperature</b>	800-900°C (short-term)
<b>Corrosion Resistance</b>	Excellent in harsh environments
<b>Cost Savings</b>	30-50% vs. pure nickel

## APPLICATIONS

### 1. Alkaline Electrolysis (Hydrogen Production)

- Current collectors and busbars
- Cell interconnections
- Terminal connections

### 2. Aerospace and Aviation

- Aircraft electrical systems
- Avionics wiring
- Ground support equipment

### 3. Electronics and Semiconductors

- Lead frames for semiconductor packages
- Connector terminals and contacts
- Power electronics components

### 4. Industrial and Manufacturing

- Resistance welding electrodes
- Heating elements
- Motor windings

## 5. Battery and Energy Storage

- Battery tabs and terminals
- Busbar connections
- Energy storage interconnects

### PERFORMANCE ADVANTAGES

- ' Combines copper's conductivity with nickel's corrosion resistance
- ' Excellent weldability for resistance welding applications
- ' Superior high-temperature performance
- ' Metallurgical bond ensures no delamination
- ' Outstanding chemical and corrosion resistance
- ' Good mechanical strength and durability
- ' Ideal for harsh environmental conditions

### QUALITY STANDARDS

- ASTM B432: Copper and Copper Alloy Clad Steel Rod
- ISO 3677: Filler metal for brazing
- AS9100: Aerospace Quality Management System
- IEC standards for electrical components

### CONTACT INFORMATION

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