



CHANGZHOU DLX ALLOY CO.,LTD.

江苏戴之信科技有限公司

Let global buyers rest assured
Help team partners achieve dreams
Win global respect for Chinese manufacturers



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GLOBAL LEADER IN ALLOY INDUSTRY



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COMPANY PROFILE

CHANGZHOU DLX ALLOY CO., LTD. was founded in 2002. It is located in Changzhou City, near Shanghai City, with more than 100 staff members and a workshop covering an area of over 20,000 square meters.

We specialize in researching and producing alloy materials, including heating resistance alloys (FeCrAl, NiCr, CuNi), welding wires, thermocouple wires, corrosion resistance alloys, super alloys and precision alloys. These products are available in the forms of wire, strip, ribbon, bar, tube and plate.

The company's principle is "Quality First, Customer First."



CERTIFICATE

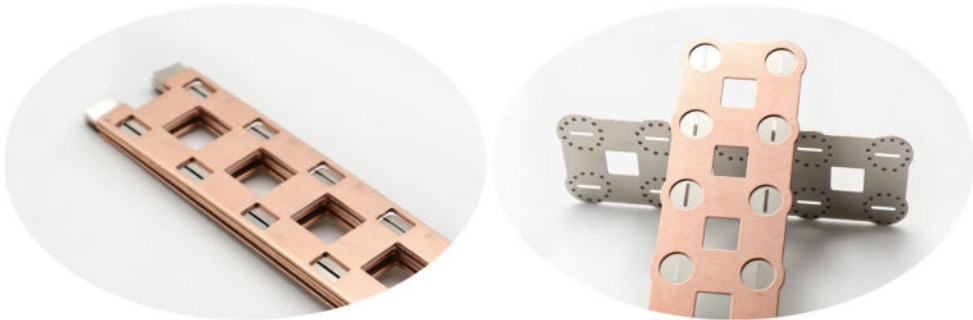


TESTING INSTRUMENT



Nickel-Plated Copper Composite Series

Double-sided Nickel-Plated Copper Strip



PRODUCT INTRODUCTION

Product Definition

Made of TU2 oxygen-free copper substrate with continuous, uniform pure nickel electroplating on both sides. Full coverage without copper exposure. Serves as the core material for standard main busbars in new energy battery PACKs, suitable for mass production of standardized battery modules.

Core Features

- Dual Material Advantages:** Copper core ensures ultra-high conductivity; nickel layer guarantees welding stability – complementary dual performance.
- Excellent Laser Welding Adaptability:** Effectively eliminates laser welding defects such as sparking, blackening, and cold soldering – delivers full and uniform solder joints.
- Full-Surface Oxidation & Corrosion Resistance:** Double-sided nickel layer isolates air, moisture, and electrolyte erosion – outstanding weather resistance.
- Stable High & Low Temperature Performance:** No deformation or oxidation peeling under long-term operation – adapts to complex working conditions of EV and energy storage systems.

Technical Parameter Table

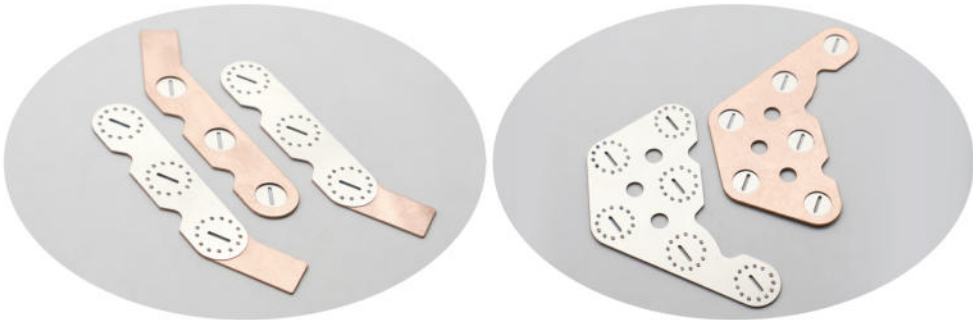
Parameter	Value / Standard
Substrate Material	TU2 oxygen-free copper, Cu+Ag≥99.99%, high density, no impurities or pores
Conductivity	≥101% IACS, resistivity 0.0172 Ω·mm²/m
Nickel Plating	Lead-free electroplating, thickness 5–12μm (standard 8 μm for main busbar), uniformity error ≤±0.5μm
Coating Adhesion	≥6N/mm, no peeling after 180° bend, no copper exposure after 500+ friction tests
Corrosion Resistance	ASTM B117 neutral salt spray ≥500h without corrosion/discoloration; electrolyte resistant
Contact Resistance	<50μΩ, stable under high current, no thermal drift
Temperature Resistance	Long-term -55℃ to 300℃, instantaneous 350℃ – no coating cracking or oxidation
Mechanical Properties (Soft)	Tensile strength 220–270MPa, elongation ≥40%, hardness HV55–70 – easy stamping & bending
Dimensional Tolerance	Thickness 0.5–20mm, width 10–200mm, tolerance ±0.02mm, flatness ≤0.1mm/m
Current Carrying Capacity	3mm×25mm: 280–320A; 5mm×30mm: 500–580A, temperature rise ≤40K
Standards	GB/T 2040-2017, GB/T 13915-2013; meets or exceeds IEC 61215 & ASTM B117 requirements

Applications

Main busbars for energy storage battery packs, EV power battery positive/negative main busbars, high-voltage PDU distribution busbars, standard conductive connections for large-scale energy storage modules.

Nickel-Plated Copper Composite Series

Partially Nickel-Plated Copper Strip



PRODUCT INTRODUCTION

Product Definition

Made of T2/TU2 high-purity copper substrate with precision masking electroplating. Nickel is applied only on welding and assembly contact areas; other areas remain bare copper. Integrated stamping and bending for customized special-shaped busbars.

Core Features

- Zoned Performance Optimization:** Nickel-plated areas ensure solderability and oxidation resistance; bare copper areas maximize conductivity and heat dissipation.
- Cost Reduction & Efficiency:** Less nickel consumption compared to full plating – lowers procurement cost.
- High Custom Adaptability:** Supports bending, punching, slotting, and special cutting for compact battery structures.
- Excellent Vibration & Fatigue Resistance:** Withstands dynamic driving conditions of vehicles.

Technical Parameter Table

Parameter	Value / Standard
Substrate Material	T2/TU2 high-purity copper, Cu≥99.9%, conductivity ≥100% IACS, resistivity 0.0172 Ω·mm²/m
Partial Nickel Plating	Precision masking electroplating, welding area nickel thickness 5–8μm, dense coating without pinholes; non-welding areas 100% bare copper
Processing Precision	Outline/punch/bending tolerance ±0.1mm (meets GB/T1804-m), flatness ≤0.08mm/m
Current Carrying Capacity	Effective conductive section 40–150mm², continuous current 300–1000A, full-load temp rise ≤45K
Vibration Resistance	5–2000Hz broadband vibration, 10⁶ cycle tests – no crack, no coating peel, no deformation
Coating Performance	Plated area adhesion ≥4N/mm, salt spray resistance ≥24h; compatible with laser & ultrasonic welding
Heat Dissipation Coefficient	Bare copper area 401 W/(m·K) – better heat dissipation than full nickel-plated copper
Process	Integrated stamping forming, no secondary splicing, burr-free edges – supports automatic assembly
Working Conditions	Resists vibration, temperature cycling, and compact enclosed PACK environments

Applications

Blade batteries, CTP integrated modules, customized special-shaped PACKs, compact multi-layer battery modules, customized power battery current collection connections.

Pure Nickel Series

High-Purity Nickel Strip for Stock & Precision Spot Welding



PRODUCT INTRODUCTION

Product Definition

Rolled from N6/Ni200 and N4/Ni201 high-purity electrolytic nickel with ultra-low impurities. Specialized for battery spot welding and precision electronic connections. Regular stock available for project backup and emergency replacement.

Core Features

- Ultra-Stable Spot Welding Performance:** No sparking or cold soldering – highly consistent solder joints, ideal for high-speed spot welding.
- Superior Weather & Corrosion Resistance:** Rust-free, resistant to electrolyte and high-temperature & humid environments – perfect for extreme climates such as India and Southeast Asia.
- Excellent High-Temperature Stability:** No oxidation or embrittlement at high temperatures – far more stable than copper materials.
- Flexible Stock Support:** Regular specifications in stock for rapid maintenance replacement and urgent orders.

Technical Parameter Table

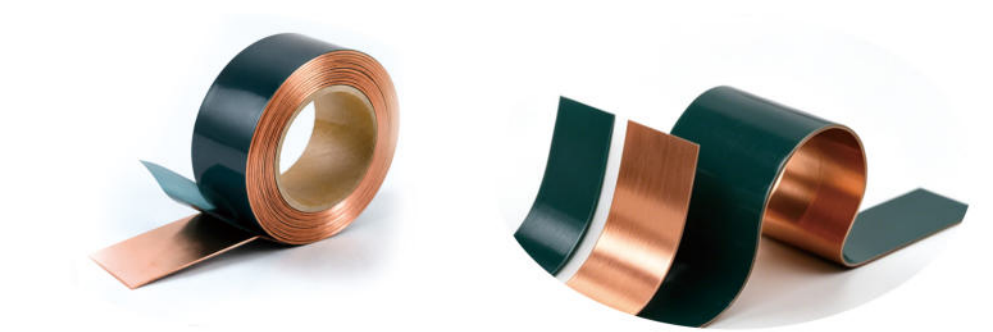
Parameter	Value / Standard
Material Grade	N6 (Ni200) standard, N4 (Ni201) high-purity low-carbon – compliant with GB/T 2072-2017
Nickel Purity	N6 ≥99.5%; N4 ≥99.9%; custom ultra-high purity up to 99.99%
Impurity Control	C≤0.01%, S≤0.003%, Fe≤0.02%, Cu≤0.01% – low oxygen & sulfur, no welding pores
Electrical Properties	Resistivity 0.069 Ω·mm ² /m – uniform conductivity without internal resistance deviation
Physical & Thermal	Melting point 1453°C, thermal conductivity 90.9 W/(m·K) – excellent high-temperature creep resistance
Mechanical Properties (Soft)	Tensile strength 350–390MPa, yield ≥120MPa, elongation ≥35% – resistant to repeated bending
Stock Specifications	Thickness 0.1/0.15/0.2/0.3/0.5mm, width 5–30mm – regular spot supply
Spot Welding Performance	Compatible with resistance & pulse spot welding – solder joint tensile strength ≥80N, no sparking or cold soldering
Weather & Corrosion Resistance	Alkali & electrolyte resistant, salt spray ≥480h (ASTM B117) – suitable for 85°C/95%RH long-term humid conditions
Dimensional Flatness	Thickness tolerance ±0.005mm, scratch & oxidation-free surface – high batch consistency

Applications

18650/21700 cylindrical battery modules, battery tab spot welding, supercapacitor connections, high-end precision electronic leads, project backup stock, high-temperature & humid overseas projects (India, Southeast Asia).

Functional Insulation Series

Film-Coated Insulated Copper Strip for Multi-Layer Modules – Anti-Short Circuit



PRODUCT INTRODUCTION

Product Definition

T2 high-purity copper conductive substrate with single/double-sided high-temperature hot-pressed PET or Kapton insulating film. Forms a composite structure of conductive metal layer and polymer insulating layer – a core safety component for high-voltage & high-current multi-layer battery modules.

Core Features

- Complete Short Circuit Prevention:** Eliminates short circuit risks caused by vibration, extrusion, and creepage in stacked multi-layer modules – greatly improves PACK safety level.
- Superior Insulation & Voltage Withstand:** High dielectric strength, breakdown resistance, and leakage resistance – adapted to high-voltage battery systems.
- Excellent Mechanical Performance:** Supports bending, die-cutting, and stamping – film bonds tightly without cracking or peeling.
- Flame Retardant & Safe:** Complies with UL94 V0 – no combustion or flame spread at high temperature.

Technical Parameter Table

Parameter	Value / Standard
Substrate	T2 copper, Cu≥99.9%, conductivity ≥98% IACS, resistivity 0.0175 Ω·mm²/m – no residual stress
Insulation Film	Standard PET film; high-end Kapton polyimide high-temperature film – single/double-sided optional
Flame Retardant Grade	Full series UL94 V0 – self-extinguishing, no flame spread, no toxic smoke
Dielectric Breakdown Strength	PET ≥25kV/mm, Kapton ≥30kV/mm – excellent insulation performance
Voltage Withstand	Standard: AC3000V/1min no breakdown; high-voltage custom: AC5000V/1min no leakage/breakdown
Insulation Resistance	≥20MΩ @ 1000VDC – no insulation attenuation under long-term high voltage
Temperature Range	PET: -40℃ to 125℃; Kapton: -40℃ to 200℃ – suitable for high-temperature energy storage modules
Film Bonding Strength	Peel strength ≥5N/mm – no peeling/cracking/edge lifting after 10,000 micro-bending cycles
Dimensions	Copper thickness 0.2–5.0mm, width 5–150mm; film thickness 25/50/100μm optional, tolerance ±2μm
Creepage Resistance	CTI tracking index ≥600V – eliminates high-voltage creepage and micro-short circuit risks
Process Advantage	High-temperature hot-press lamination – no glue residue, aging & yellowing resistant – service life synchronized with full PACK cycle
Processing Adaptability	Supports die-cutting, bending, punching, cutting – no insulation damage after processing

Applications

Multi-layer stacked energy storage modules, high-voltage power battery PACKs, BMS layered bus-bars, anti-short circuit for dense modules, vehicle energy storage safety conductive structures.

Nickel-plated Steel Strip

Product Introduction

Nickel-plated steel strip is a composite metal material produced by uniformly electroplating a nickel coating onto the surface of high-quality cold-rolled steel strip. It combines the strength of steel with the corrosion resistance, conductivity, and aesthetic appeal of nickel. This material is widely used in electronics, electrical appliances, battery connections, hardware components, and the precision engineering industry. Depending on the subsequent processing method, it is primarily classified into nickel-plated steel strip for stamping and nickel-plated steel strip for non-stamping applications, with significant differences in their performance focus.

Stamping

Specially designed for subsequent forming processes such as stamping, drawing, and bending.

Key Characteristics:

It offers excellent ductility and formability, with strong adhesion of the nickel plating that resists flaking or cracking even under severe plastic deformation. The base steel typically undergoes softening heat treatment, with precisely controlled hardness to ensure a smooth stamping process and reduced die wear.

Coating Requirements:

The coating must be uniform and dense, providing both reliable corrosion protection and good lubricity to facilitate material flow within the dies.

Non-stamping

Designed for direct use in applications requiring no secondary forming operations, emphasizing surface performance and dimensional stability.

Key Characteristics:

Focus is on coating uniformity, corrosion resistance, and visual consistency. The steel strip generally maintains higher hardness and tensile strength, with tight dimensional accuracy (minimal thickness and width tolerances). The surface is bright or can be adjusted to a matte finish as required.

Coating Requirements:

Coating thickness and composition are strictly controlled to ensure long-term oxidation resistance and environmental corrosion protection, while meeting specific conductivity or solderability requirements.



Parameter

Substrate Item	SPCC	SPCD	SK5	SUS304
C	0.03~0.10	0.02~0.08	0.80~0.90	≤0.08
Mn	0.30~0.60	0.25~0.50	0.10~0.35	≤2.00
Si	≤ 0.03	≤0.03	≤0.35	≤1.00
P	≤ 0.035	≤0.030	≤0.030	≤0.045
S	≤ 0.035	≤0.030	≤0.030	≤0.030
Cr	--	--	--	18.00~20.00
Ni	--	--	--	8.00~10.50
Fe	Balance	Balance	Balance	Balance

Appendix: Nickel Coating Technical Specifications

Coating Composition: Ni (Nickel) content ≥ 99.5 wt%, Total impurities ≤ 0.5 wt%

Coating Mass (Total, both sides): 8 ~ 20 g/m²

Nickel-plated Copper Strip

Product Introduction

Nickel-plated copper strip is a composite metal material produced by uniformly electroplating a nickel coating onto the surface of high-quality copper strip. It combines the excellent conductivity of copper with the corrosion resistance and solderability of nickel. This material is widely used in new energy batteries, power distribution, electronic components, and the precision engineering industry. Depending on the subsequent processing method, it is primarily classified into nickel-plated copper strip for stamping and nickel-plated copper strip for non-stamping applications.

<Stamping

Specially designed for subsequent forming processes such as stamping, drawing and bending.

Key Characteristics:

Soft annealed copper substrate (M temper, HV ≤ 70, elongation ≥30% per GB/T 2059), with excellent ductility and formability. The nickel coating has strong adhesion, resisting flaking or cracking even under severe plastic deformation. It ensures a smooth stamping process and reduced die wear. The material withstands 180° bending for at least 7 cycles without coating detachment.

Coating Requirements:

The coating must be uniform and dense. Coating adhesion shall comply with GB/T 5270-2024 (bend test and other methods).

<Non-stamping

Designed for direct use in applications requiring no secondary forming operations, emphasizing surface performance and dimensional stability.

Key Characteristics:

Focus is on coating uniformity, corrosion resistance and visual consistency. The copper strip generally maintains higher tensile strength (200-260 MPa), with tight dimensional accuracy (thickness tolerance ±0.01 mm, width tolerance ±0.1 mm). The surface is bright with good color consistency and excellent solderability.

Surface & Dimensional Standard:

Coating thickness and composition are strictly controlled to ensure long-term oxidation resistance and environmental corrosion protection. Salt spray test (GB/T 10125-2021, NSS) is recommended for corrosion resistance verification.



<Parameter

Parameter	Value
Substrate Grade	T2 Copper (Cu+Ag ≥ 99.90% per GB/T 5231)
Substrate Thickness	0.08 – 0.4 mm (±0.01 mm)
Substrate Width	1.5 – 200 mm (±0.1 mm)
Substrate Temper (Stamping)	M (soft annealed, HV ≤ 70, elongation ≥30%)
Tensile Strength (Non-stamping)	200 – 260 MPa
Conductivity	≥100% IACS
180° Bending Test	≥7 cycles (no coating detachment)
Nickel Coating Composition	Purity ≥99.99% (Typical high-purity industrial quality)
Nickel Coating Thickness (per side)	1.5 / 2 / 3 μm

Pure Copper Strip



Product Introduction

Pure copper strip is widely used in new energy batteries, power distribution and electronic components. It features excellent electrical conductivity, thermal conductivity and ductility. According to different application needs, we provide soft temper (M) for stamping and half-hard/hard temper (Y2/Y) for direct assembly.

Stamping

Key Characteristics:

Soft annealed condition with low hardness and good ductility (elongation ≥30%). It withstands stamping, bending and deep drawing without cracking or burrs, delivering high forming yield.

Processing Requirements:

Stable toughness and fatigue resistance, adapting to progressive stamping production, reducing die wear, suitable for automated mass processing.

Non-stamping

Key Characteristics:

High dimensional accuracy, flat and flawless surface, stable hardness. No secondary forming required for direct assembly and use.

Surface & Dimensional Standard:

Strict surface and dimensional control ensures stable contact performance and assembly precision for battery and electronic component applications.

Parameter

Grade	Purity Requirement	Core Advantages	Primary Application Scenarios
T2 Copper (Mainstream)	≥99.9%	Balanced conductivity and mechanical properties, cost-effective, conductivity ≥ 98% IACS	Conventional power batteries, energy storage connecting sheets, copper busbars, general electrical connections
T1 Copper (High-Purity)	≥99.95%	Lower resistivity, more stable transmission, suitable for high current	High-reliability battery systems, low-loss high-current equipment
Oxygen-Free Copper TU0 (Premium)	≥99.99% Oxygen ≤0.0003%	Ultra-high conductivity (≥101% IACS), excellent high-temperature and fatigue resistance	High-end EVs, high-power energy storage, precision electronic instruments, high-voltage precision connectors

Selection Guidance

Select grades according to actual performance and cost requirements:

T2 Copper: Cost-effective mainstream material, suitable for most conventional battery and electronic applications.

Oxygen-Free Copper TU0: Premium material with superior conductivity and stability, applied to high-precision and high-reliability equipment.

Additional Note

Pure copper strip is easy to oxidize. Surface nickel or tin plating (in accordance with QC/T 625 or GB/T 12599) can enhance oxidation resistance, corrosion resistance and solderability, ensuring stable electrical performance.

Custom Process & Supply Chain

Core Customization Capability

Material Customization: Pure nickel, full nickel-plated, partial nickel-plated, insulated film-coated, copper-nickel alloys – free matching.

Structure Customization: Coils, sheets, strips, special bending, punching, chamfering, slotting – integrated forming.

Process Customization: Precision masking partial nickel plating, uniform double-sided nickel plating, single/double-sided insulation coating, precision leveling & cutting.

Parameter Customization: Coating thickness, film thickness, dimensional tolerance, current-carrying specs – customized per drawing.



Production Equipment & QC Advantages

Fully automatic precision electroplating line, high-speed film lamination equipment, CNC stamping & bending equipment.

Full batch inspection: salt spray test (ASTM B117), resistance test, adhesion test, insulation & voltage withstand test.

Strict control of flatness, coating uniformity, and film bonding – high product consistency.



Supply Chain & Delivery Advantages

Ready Stock: Regular nickel-plated copper strips, pure nickel strips, and insulated copper strips in stock – urgent orders delivered quickly.

Fast Sampling: Sample output within 24 hours after drawing confirmation – seamless transition from small-batch trial to mass production.

Proven Export to India & Southeast Asia: Experienced in serving Indian energy storage and EV battery manufacturers – stable supply under high-temperature & humid conditions.

One-Stop Service: Full-process independent control – from raw materials, precision processing, surface treatment to finished products and delivery.

Core Advantages Summary

Focusing on precision surface treatment technology, supported by a mature supply chain and automated production capacity, we provide high-safety, high-stability, and cost-effective copper & nickel conductive connection solutions for the new energy power and energy storage industries. We support full-category, full-specification customized production – ready stock for regular sizes, 24h sampling, and proven delivery to Indian and Southeast Asian markets.