

Single And Double Sided Carbon Coated Copper Foil Lithium Battery Current Collector

Item Number: FZ21



Introduction

Engineered for high-rate lithium battery anodes, our single and double sided carbon coated copper foil current collector lowers contact resistance, enhances slurry adhesion, prevents delamination, and delivers exceptional electrochemical stability across demanding energy storage and research workflows.

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Application	Description	Key Benefit
High-Rate Lithium-Ion Battery Anodes	Substrate for graphite and hard carbon anode coatings operating at continuous high C-rates (3C to 10C+).	Lowers cell impedance, reduces internal Joule heating, and maintains stable capacity under rapid charge/discharge cycles.
Silicon-Graphite Composite Anodes	Current collector for next-generation high-capacity silicon-dominant negative electrodes subject to volume expansion.	Enhanced mechanical interlocking and high Dyne surface energy prevent active material detachment and capacity fade.
Solid-State and Semi-Solid Batteries	Current collecting platform for solid electrolyte interfaces and composite solid-state anode structures.	Ultra-pure, pinhole-free base foil minimizes interfacial voids and ensures consistent charge transfer across solid-solid boundaries.
Lithium-Sulfur & Advanced Chemistry Anodes	Anode substrate utilized in specialized lithium-sulfur and lithium metal secondary battery research workflows.	Conductive carbon layer provides dense electron transfer pathways while shielding copper from corrosive electrolyte species.
Supercapacitors and Hybrid Energy Storage	Current collector for electric double-layer capacitors (EDLC) and hybrid lithium-ion capacitor negative electrodes.	Extremely low mass resistivity (0.168 Ω·g/m²) enables ultra-fast power delivery and extended cycle life over hundreds of thousands of cycles.
Battery Material R&D & Pilot Line Prototyping	Standardized substrate for laboratory coin cell, pouch cell, and cylindrical cell testing of novel anode chemistries.	Unmatched batch-to-batch repeatability eliminates substrate variability from binder, active material, and electrolyte performance evaluations.

Item Code	Parameter / Inspection Item	Unit	Specification Value	Typical Value
FZ21	Copper Purity	%	≥ 99.8	≥ 99.95
FZ21	Pinholes / Pores	pcs	Zero (No Pinholes)	Zero (No Pinholes)
FZ21	Single-Sided Carbon Coating Areal Density	g/m²	Base Copper Areal Density + 0.65	Base Copper Areal Density + 0.65
FZ21	Double-Sided Carbon Coating Mass Density	g/m²	Base Copper Areal Density + 1.30	Base Copper Areal Density + 1.30
FZ21	Mass Resistivity	Ω·g/m²	≤ 0.17	0.168
FZ21	Thickness Tolerance	μm	± 1	± 1
FZ21	Tensile Strength	kg/m²	≥ 30	35
FZ21	Room Temperature Elongation (25°C)	%	≥ 3.5	4.2
FZ21	High Temperature Elongation	%	≥ 4.0	5.5
FZ21	Surface Roughness (Ra)	μm	≥ 0.4	0.7
FZ21	Left / Right Blank Edge Margin	mm	15	15
FZ21	Edge Misalignment / Offset	mm	≤ 1.0	0.1
FZ21	Surface Tension (Dyne Level)	Dyne	≥ 40	55

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FZ21	Coating Adhesion (3M Tape Peel Test)	-	OK (No Detachment)	OK (No Detachment)