16 Micron Carbon Coated Aluminum Foil For Lithium Ion Battery Current Collector

Item Number: FZ17

Introduction

Optimize battery electrode performance with premium 16 micron carbon coated aluminum foil engineered to lower dynamic internal resistance increase active material adhesion and improve pack voltage consistency across demanding commercial lithium ion cell production and high rate energy storage systems

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Application	Description	Key Benefit
High-Rate EV & HEV Battery Cells	Integrated into high-capacity prismatic and cylindrical traction battery cells (e.g., NMC, LFP) subjected to severe charge/discharge duty cycles.	Drastically reduces dynamic DCR increase and cell heat generation during 3C+ fast charging, enhancing thermal safety and pack life.
Grid-Scale Energy Storage Systems (ESS)	Deployed as the cathode substrate in stationary energy storage modules requiring thousands of continuous deep-discharge cycles.	Maximizes capacity retention and cell-to-cell voltage consistency, reducing maintenance costs and pack degradation over multi-year deployments.
Commercial 3C Consumer Electronics	Applied in compact pouch cell configurations for smartphones, laptops, and ultra-thin portable electronic devices.	Improves volumetric energy density and adhesion strength, preventing electrode peeling during repeated thin-form flexing and fast-charging cycles.
Industrial High-Power Tool Battery Packs	Utilized in power tool packs delivering sustained high-current burst outputs under severe mechanical vibration.	Provides high mechanical tensile integrity and robust coating adhesion that prevents active mass shedding under cyclic vibrational stress.
Hybrid Supercapacitors & Ultracapacitors	Used as an electrode current collector substrate in asymmetric supercapacitors and hybrid pseudocapacitor devices.	Bridges interfacial contact resistance between high-surface-area carbons and metal substrates, optimizing frequency response and power density.
Advanced Solid-State & Semi-Solid Batteries	Serves as a stable interfacial substrate in developmental solid-electrolyte battery architectures.	Enhances solid-solid interface contact and prevents void formation at the cathode-collector boundary under high stack pressures.

Parameter Category	Specification Standard	Measured Quality Value	Test Method / Equipment
Product Identifier	FZ17	FZ17	Standard Tracking
Product Structure	Double-Sided Silver-Gray Carbon Coated Aluminum Foil	Conforming	Visual & Microscopic Inspection
Coating Type	Continuous Double-Sided Carbon Deposition	Conforming	Process Control Audit
Layer Thickness Configuration	(1.0 + 16.0 + 1.0) µm	Total: 18.0 µm	High-Precision Digital Micrometer
Areal Density	42 ± 2 g/m²	42.7 g/m²	Analytical Balance (0.1 mg Precision)
Total Foil Width	343 ± 1 mm	343 mm	Precision Steel Ruler
Coating Width	287 ± 1 mm	287 mm	Precision Steel Ruler
Left Uncoated Margin	28 ± 1 mm	28 mm	Precision Steel Ruler

Parameter Category	Specification Standard	Measured Quality Value	Test Method / Equipment
Right Uncoated Margin	28 ± 1 mm	28 mm	Precision Steel Ruler
Coating Misalignment	≤ 1.0 mm	0.1 mm	Optical Alignment / Precision Gauge
Surface Energy (Dyne Value)	≥ 40 Dyne	55 Dyne	Dyne Test Pen
Elongation at Break	> 1.5 %	2.83 %	Electronic Tensile Testing Machine
Tensile Strength	≥ 180 N/mm²	199.94 N/mm²	Electronic Tensile Testing Machine
Coating Iron (Fe) Contamination	≤ 50 ppm	12 ppm	Trace Metal Detection Spectrometer
Coating Adhesion Durability	≥ 200 Wipes	Passed (No Loss / Shedding)	Solvent Friction & Wipe Adhesion Tester
Surface Appearance	Uniform silver-gray, free of streaks, bare spots, pinholes, or severe oxidation	Pass	High-Definition Optical Inspection
Packaging Standard	Vacuum-sealed, moisture-barrier wrapping with reinforced shock protection	Intact, no mechanical or moisture damage	Pre-Shipment Integrity Verification
Storage Recommendations	Sealed environment at ≤50°C, dry and well-ventilated, protected from sunlight, open flame, and thermal sources	Applicable	Warehouse Protocol