High Purity 15 And 16 Micron Aluminum Foil For Battery Cathode Current Collector

Item Number: FZ16

Introduction

Engineered for high-performance battery electrode manufacturing, this high-purity 15 and 16 micron aluminum foil delivers superior tensile strength, zero pinholes, and optimized surface roughness to ensure exceptional slurry adhesion and consistent electrochemical conductivity in advanced lithium-ion energy storage systems.

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Application	Description	Key Benefit
Lithium-Ion Battery Cathodes	Primary current collector substrate for NCM, LFP, NCA, and LCO active cathode slurry coatings in laboratory and pilot battery development.	Low interfacial resistance and high chemical stability against oxidative cathode operating voltages.
Solid-State Battery Development	Substrate for dry-process or slurry-cast solid composite cathodes and inorganic solid-state electrolyte interfaces.	Pinhole-free continuous surface prevents dendrite penetration and localized current concentration.
Supercapacitor Electrodes	Conductive substrate for activated carbon and pseudocapacitive metal oxide electrode formulations.	High electrical conductivity and optimal surface roughness enhance high-rate charge-discharge efficiency.
Sodium-Ion Battery Research	Collector substrate for high-voltage sodium cathode materials requiring stable electrical contact under non-aqueous conditions.	Superior tensile properties support dense active material loadings without substrate deformation during rolling.
High-Precision Calendering Trials	Roll-to-roll electrode compression testing evaluating active layer porosity reduction under multi-ton hydraulic roll presses.	High tensile strength and elongation prevent foil tearing, edge wrinkles, and foil-slurry delamination.
Custom Ultrasonic Tab Welding	Integration with ultrasonic and laser welding systems for multi-layer foil tab interconnects in cell assembly.	Work-hardened H16 temper delivers clean weldability without micro-fractures around the heat-affected zone.

Parameter	Unit	Standard Specification	Typical Batch Value	Notes / Measurement Standard
Base Product Identifier	-	**FZ16-15** (15 µm)	**FZ16-16** (16 µm)	High-purity conductive battery substrate
Nominal Thickness	µm	15 / 16	15 / 16	Dual micro-gauge options
Thickness Tolerance	µm	0 – 1	1	Precision micro-caliper verification
Standard Sheet/Roll Dimensions	mm	Customizable	200 (W) × 300 (L)	Sheet format standard on FZ16-16; roll formats available
Aluminum Purity	%	≥ 99.0	≥ 99.9	Glow discharge optical emission spectroscopy
Pinhole Count	pcs	0 (No pinholes)	0 (No pinholes)	Light transmission visual inspection
Areal Mass Density	g/m²	38 – 42	40	Micro-balance gravimetric testing
Temper State	-	H16 / H18	H16	Strain-hardened condition for high tensile yield
Tensile Strength	kg/m²	≥ 15	24	Standard tensile strain testing at ambient conditions
Room-Temperature Elongation	%	≥ 3.5	4.2	Gauge length tensile ductility test
Shiny Side Roughness (R_a)	µm	≤ 0.40	0.24	Contact profilometer measurement
Matte Side Roughness (R_a)	µm	0.35 – 0.75	0.40	Contact profilometer measurement