

Aluminum Profile Coating Cases

2024 Edition

MUSI Technology - Spray Coating Specialist

Document Reference: MUSI-CS-ALU-2024

Issue Date: 2026

Manufacturer	Changzhou MUSI Environmental Technology Co., Ltd.
Phone	+86 181 5173 1332
Email	lin@coating-spray.com
WhatsApp	+86 181 5173 1332
Address	Wujin Industrial Park, Changzhou City, Jiangsu, China
Website	https://coating-spray.com

Industry Overview

Aluminum profile coating covers window frames, fence panels, curtain walls, heat sinks, and architectural extrusions. Vertical powder coating lines for long profiles (up to 7-8 m) are the industry standard, with PVDF fluorocarbon coatings for premium curtain wall projects. MUSI delivered 21 aluminum projects in 2024.

Sector Snapshot

Market Drivers

Construction industry, architectural design trends, energy-efficient windows and curtain walls.

Coating Challenges

Long workpieces (up to 8 m), 15+ colors per facade design, PVDF for premium projects, 20-year warranty.

Production Pattern

Aluminum extruders run high-volume vertical lines, 15-30 tons of profile per day.

Common Coating Challenges

Long Workpiece Handling

Window/curtain wall profiles up to 8 m - vertical lines are industry standard.

High Color Count

Architectural projects demand 15+ colors.

PVDF Fluorocarbon for Premium

Curtain wall and high-rise facades use PVDF - 20-year UV warranty.

Polyester for Standard

Window and fence panels use polyester powder.

Anti-UV and Anti-Salt-Spray

Coastal and tropical installations need certified anti-UV and anti-corrosion.

Selected Case Studies - 2024

Vertical Coating Line for 7m Profiles

Field	Detail
Client Type	Major aluminum extruder
Region	UAE
Scale	30 tons profile per day
Equipment Delivered	Vertical conveyor, 5-stage pretreat, 24-gun vertical reciprocator booth, 200 deg C vertical oven
Key Results	30 tons/day verified, 99% recovery, 28% energy reduction, USD 85K/year saving
Status	Operating since 2024

Window Frame Polyester Powder 15-Color

Field	Detail
Client Type	Window system manufacturer
Region	Russia
Scale	20 tons/day, 15 colors
Equipment Delivered	Vertical line, quick color change PTFE booth
Key Results	15 colors with 20-min changeover, 10-year warranty
Status	Operating since 2024

Curtain Wall PVDF Fluorocarbon Coating

Field	Detail
Client Type	High-rise facade contractor
Region	China
Scale	15 tons/day premium grade
Equipment Delivered	Vertical line, 2-coat PVDF + clearcoat, 220 deg C cure
Key Results	20-year UV warranty, Florida exposure 5-year >=95% color retention
Status	Operating since 2024

Fence Panel Anti-UV + 20-Year Warranty

Field	Detail
Client Type	Fence panel manufacturer
Region	Mexico
Scale	10 tons/day
Equipment Delivered	Horizontal conveyor + epoxy primer + polyester topcoat
Key Results	20-year warranty offered, salt spray 1,500h
Status	Operating since 2023

Heat Sink Bright Dipping + Electrophoresis

Field	Detail
Client Type	LED heat sink manufacturer
Region	China
Scale	5 tons/day
Equipment Delivered	Chemical bright dip tanks + electrophoresis bath + cure oven
Key Results	Mirror finish, electrical insulation rating verified
Status	Operating since 2024

Solar Panel Mounting Frame Coating

Field	Detail
Client Type	Solar mounting structure maker
Region	India
Scale	12 tons/day
Equipment Delivered	Vertical line for solar mounting profiles, anti-corrosion powder
Key Results	25-year warranty for solar applications, salt spray 2000h
Status	Operating since 2024

Benefits Delivered to Clients

Tons-per-Day Throughput

Vertical lines from 10 to 30+ tons of profile per day.

15+ Color Capability

Quick-change PTFE booth for high-mix architectural production.

Premium PVDF Option

For curtain wall, high-rise, and 20-year warranty projects.

Energy Efficiency

Heat recovery on vertical oven, VFD on conveyor.

After-sales for Extruders

Specialized service for high-throughput aluminum extruders.

Long-Term Warranty

10-25 year warranty depending on coating system.

Industry Key Metrics

Metric	2024 Performance Average
Projects delivered	21 aluminum projects
Average daily throughput	15-30 tons profile
Color count	10-15 colors typical
Polyester warranty	10-15 years
PVDF warranty	20-25 years (premium)
Recovery rate	98%+
Energy reduction vs old line	25-30%
Customer satisfaction	4.7 / 5.0
Geographic coverage	11 countries

Contact MUSI Technology

For inquiries, technical questions, or to request a custom quotation, please contact our sales engineering team:

Channel	Details
Sales Email	lin@coating-spray.com
Phone (Sales)	+86 181 5173 1332
WhatsApp	+86 181 5173 1332
Website	https://coating-spray.com
Headquarters	Wujin Industrial Park, Changzhou City, Jiangsu Province, China
Business Hours	Monday-Saturday 08:30-18:00 (GMT+8)
Response Time	Sales inquiries within 24 hours, technical proposals within 5-7 business days

How We Engage

Step 1 - Discovery

Share workpiece specifications, target throughput, color count, facility layout, and budget. Engineers respond with technical questions within 24 hours.

Step 2 - Process Simulation

We model your line in 3D, simulate cycle time and energy consumption, and provide a baseline ROI analysis.

Step 3 - Proposal and Quotation

Detailed technical proposal with layout drawings, equipment list, payment terms, and delivery schedule.

Step 4 - Manufacturing

Custom fabrication in our 28,000 sqm facility under ISO 9001 QMS. Progress photos shared via customer portal.

Step 5 - Factory Acceptance Test

You witness or remotely observe pre-shipment testing.

Step 6 - Site Installation

MUSI engineers travel to your site for installation, commissioning, and operator training.

Step 7 - Aftersales Support

Warranty support, remote diagnostics, preventive maintenance, and spare parts supply via our global network.