

1. Product Overview

1.1 Product Identifier

Product Name: Ballesta® Dual-Color Aluminum Panel

Product Code: [Customizable, e.g., DCAP-PP-HT-600×600×1.0]

Description: This dual-color aluminum panel is manufactured with high-quality aluminum substrate, combined with powder coating primer and heat transfer printing technology. It features excellent corrosion resistance, color stability, and aesthetic performance, suitable for architectural decoration scenarios such as interior/exterior walls, ceilings, and facades.

2. Technical Specifications

Item	Specification	Test Standard
Aluminum Substrate Material	AA 3003/3004 (Al-Mn Alloy, H14 Temper)	ASTM B209
Panel Dimension	600mm × 600mm (Length × Width)	ISO 128
Panel Thickness	1.2mm (Substrate: 1.15mm, Coating Included: Total Thickness ≈ 1.2-1.25mm)	ASTM D1186
Surface Treatment	Primer: Powder Coating (Polyester Powder) Finishing: Heat Transfer Printing (Dual-Color Effect)	AAMA 2605 (Powder Coating) ASTM F2897 (Heat Transfer Printing)
Coating Thickness	Powder Coating Primer: 40-60μm Heat Transfer Coating: 10-15μm Total Coating Thickness: 50-75μm	ASTM D1186

Installation Method	Angle Bracket Installation (Aluminum Alloy Angle Bracket, 6063-T5)	AAMA 501.6
Color Fastness	UV Resistance: ≥ Grade 4 (1000h Xenon Arc Test) Color Retention: ≥ 90% (After 2000h Aging Test)	ASTM G154
Adhesion Strength	≥ Grade 0 (Cross-Cut Test, No Coating Peeling)	ASTM D3359
Hardness	≥ 2H (Pencil Hardness Test)	ASTM D3363
Corrosion Resistance	Salt Spray Test: ≥ 1000h (No Rust, No Coating Blistering)	ASTM B117
Tensile Strength	≥ 210 MPa	ASTM E8
Density	2.70 g/cm ³	ASTM D792

3. Manufacturing Process

3.1 Aluminum Substrate Cutting:

Precision cutting of AA 3003/3004 aluminum sheet into 600mm×600mm size with 1.0mm thickness, ensuring dimensional tolerance $\leq \pm 0.5\text{mm}$.

3.2 Surface Pretreatment:

Degreasing, pickling, and chromate conversion treatment to enhance coating adhesion and corrosion resistance.

3.3 Powder Coating Primer:

Electrostatic spraying of polyester powder primer, followed by curing at 180-200°C for 15-20 minutes to form a uniform and dense primer layer.

3.4 Heat Transfer Printing:

High-temperature heat transfer printing (160-180°C, 20-30 seconds) to transfer dual-color patterns onto the primer layer, ensuring clear color separation and firm bonding.

3.5 Post-Processing:

Edge trimming, deburring, and quality inspection to meet installation and aesthetic requirements.

3.6 Angle Bracket Assembly:

Matching 6063-T5 aluminum alloy angle brackets (customizable according to installation requirements) for direct on-site installation.

4. Application Scope

This dual-color aluminum panel is widely used in architectural decoration fields, including but not limited to:

- Interior walls, ceilings, and column cladding
- Exterior facades of commercial buildings, office buildings, and residential buildings
- Decoration of shopping malls, hotels, airports, and subway stations
- Customized decoration projects requiring dual-color and high-aesthetic performance

5. Compliance Standards

- **ASTM B209:** Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
- **AAMA 2605:** Specification for High Performance Organic Coatings on Aluminum Extrusions and Panels
- **ASTM F2897:** Standard Specification for Heat-Transfer Printing on Architectural Products
- **AAMA 501.6:** Standard Practice for Installation of Exterior Wall Cladding Panels
- **ASTM B117:** Standard Practice for Operating Salt Spray (Fog) Apparatus
- **ISO 128:** Technical Drawings - General Principles of Presentation

6. Packaging & Storage

Packaging: Each panel is covered with PE film to prevent scratches, then packed in wooden crates with foam padding to avoid collision during transportation.

Crate dimensions: Customizable according to order quantity.

Storage: Store in a dry, ventilated, and rainproof warehouse. Avoid direct sunlight and contact with sharp objects, chemicals, or corrosive substances. Stacking height shall not exceed 5 layers to prevent deformation.

7. Quality Assurance

All panels undergo strict quality inspection before delivery, including dimensional inspection, coating thickness test, adhesion test, color fastness test, and corrosion resistance test. We provide a 15-year quality warranty for the product (under normal use conditions and compliance with installation and storage requirements).
