1. Product Overview

1.1 Product Identifier

Product Name: Ballesta® 150C Concealed Strip Ceiling Panel
Product Code: SC-150C-0.7-[Length] (e.g., SC-150C-0.7-6000)
Description: The 150C concealed strip ceiling system features 150mm wide aluminum panels with a hidden clip (concealed) fixing mechanism, creating a seamless monolithic appearance without visible tees or joints. Manufactured from high-quality AA3003 or AA5005 series aluminum alloy, the panels offer excellent flatness, corrosion resistance, and structural integrity. The concealed clip design allows for easy individual panel removal for overhead access while maintaining a clean, uninterrupted ceiling plane. Suitable for airports, metro stations, commercial lobbies, shopping malls, and premium office interiors.

2. Technical Specifications

Item	Specification	Test Standard
Aluminum Substrate Material	AA 3003 (H24 Temper) / AA 5005 (H24 Temper) 3003 Mn: 1.0% - 1.5% 5005 Mg: 0.5% - 1.1%	YS/T429.1, GB/T3190-2020
Panel Width	150mm (Nominal) Tolerance: ±0.5mm Error: Length±2mm, Width±1mm	YS/T429.2, ISO 128
Panel Height (Web Depth)	15mm / 20mm / 30mm / 40mm (Customizable) Tolerance: ±0.5mm	YS/T429.2
Panel Length	Standard: 3000mm / 4000mm / 6000mm Custom: Up to 8000mm Tolerance: ±2mm	YS/T429.2

Panel Thickness	0.7mm (Substrate) Tolerance: ±0.04mm	YS/T429.2, ASTM D1186
Surface Finish	Standard: PVDF (Kynar 500®) or Polyester Powder Coating Custom: Wood grain, stone grain (UV transfer) Gloss: 15-30° (Matte) / 30-60° (Semi-gloss)	AAMA 2605 / AAMA 2604 / Qualicoat
Coating Thickness	PVDF: ≥25μm (Color coat) + ≥7μm (Primer) Powder Coating: 60-80μm UV Transfer: ≥35μm	ASTM D1186, AAMA 2605
Joint Type	Concealed clip-in (hidden clip system) Hook-on/interlock edge detail Individual panel removable without disturbing adjacent panels	YS/T429.2, AAMA 501.6
Color Performance	Multi-color optional (RAL / Pantone) Monochrome color difference: ≤1.5 NBS Color stability: ≥15 years (PVDF)	AAMA 2605
Adhesion Strength	Cross-cut test: Grade 0-1 (No peeling) Tape pull test: Pass	ASTM D3359
Fire Resistance	Grade A (Non-combustible) Melting point of aluminum: 660°C	GB/T 8624 / EN 13501-1 / ASTM E84

Flatness	≤1.5 mm/m (No wavy deformation or uneven defects)	YS/T429.1, YS/T429.2
Tensile Strength	AA 3003 H24: 145-180 MPa AA 5005 H24: 145-185 MPa	GB/T3880, ASTM E8
Yield Strength	AA 3003 H24: ≥115 MPa AA 5005 H24: ≥110 MPa	GB/T3880, ASTM E8
Elongation	AA 3003 H24: ≥5% AA 5005 H24: ≥5%	GB/T3880, ASTM E8
Density	2.70 g/cm³	ASTM D792
Acoustic Performance (Perforated Panel)	NRC ≥ 0.6 (with 25mm acoustic felt) Open area: 8% - 23% (Customizable)	ISO 11654 / ASTM C423
Light Reflectance	White/light colors: ≥ 85% (LRV) Custom colors: Variable	ASTM E1477
Corrosion Resistance	High temperature: ≤70°C Humidity: RH ≥ 95% Salt spray (PVDF): 5% NaCl, ≥1000h	ASTM B117 / ISO 9227
Weight	Approx. 2.2 kg/m² (0.7mm thickness) Varies with panel depth and length	Calculation

3. Manufacturing Process

3.1 Aluminum Substrate Preparation:

High-quality AA3003 or AA5005 aluminum coil is precision cut to specified width (150mm) using automated roll forming or press brake equipment. Dimensional tolerances: Length ±2mm, Width ±0.5mm, Thickness ±0.04mm.

3.2 Surface Pretreatment:

Panels undergo alkaline degreasing, acidic etching, and chromate (or chromium-free) conversion coating to ensure optimal coating adhesion and corrosion resistance.

3.3 Coating Application:

Standard: PVDF (Kynar 500®) applied via coil coating line with precise control of primer and topcoat thickness. For custom finishes: powder coating or UV transfer printing.

Coating thickness, color consistency, and gloss are monitored in real-time.

3.4 Roll Forming:

Aluminum strips are roll-formed into the 150C concealed profile with precision roller dies. The profile includes hook-on/interlock edges for the concealed clip system, with fold angles controlled at 90°±1° for consistent panel interlocking and seamless appearance.

3.5 End Cutting & Deburring:

Panels cut to specified length with deburring of cut edges. Optional end-matching per project requirements. Each panel visually inspected for dimensional accuracy, coating uniformity, and edge quality.

3.6 Acoustic Option (Perforated Panels):

For acoustic applications, panels are CNC perforated (round, square, or micro-perforation) to specified pattern. Acoustic backing (non-woven felt or fiberglass tissue) applied to reverse side to achieve required NRC rating.

4. Application Scope

This product is suitable for architectural applications including but not limited to:
- Airport terminals and railway stations (large-span seamless ceilings)
- Metro and underground transit stations
- Commercial office lobbies and atriums
- Shopping malls and retail spaces
- Hotel lobbies, corridors, and function rooms
- Conference centers and exhibition halls

- **YS/T429.1: Aluminum Curtain Wall Panels - Part 1**
- **YS/T429.2: Aluminum Curtain Wall Panels - Part 2**
- **GB/T3190-2020: Chemical Composition of Wrought Aluminum and Aluminum Alloys**
- **GB/T3880: Aluminium and Aluminium Alloy Plates and Sheets for General Industrial Use**
- **National Fire Resistance Standard for Building Materials (Grade A combustion performance)**
- **EN 13501-1: Fire Classification of Construction Products (Class A1)**
- **ASTM E84: Standard Test Method for Surface Burning Characteristics**
- **ASTM B117: Standard Practice for Operating Salt Spray (Fog) Apparatus**
- **ASTM D3359: Standard Test Methods for Measuring Adhesion by Tape Test**

Packaging: Each panel is covered with PE film to prevent scratches, then packed in wooden crates with foam padding to avoid collision and deformation during transportation. The concealed clip edges are protected by special anti-collision accessories.
Storage: Store in a dry, ventilated and rainproof warehouse. Avoid direct sunlight, high temperature (>70°C) and high humidity (RH>95%) environment. Avoid contact with sharp objects, chemicals and corrosive substances. Stacking height shall not exceed 3 layers. The storage site shall be far away from fire sources to meet the fire safety requirements of Grade A fire-resistant materials.

AAMA 501.6: Standard Practice for Installation of Exterior Wall Cladding Panels
ISO 11654 / ASTM C423: Sound Absorption Rating (for perforated panels)

· The storage site shall be far away from fire sources to meet the fire safety requirements of Grade A fire-resistant materials.

7. Quality Assurance

All panels undergo strict multi-item quality inspection before delivery, including dimensional tolerance, thickness error, surface gloss, color difference, flatness, coating adhesion, wear resistance and fire resistance test.

We provide a warranty period of not less than 15 years for the product (under normal use conditions and compliance with installation and storage requirements). Within the warranty period, the coating shall have no obvious fading, peeling, cracking and color loss; the aluminum substrate shall have no corrosion, deformation and other defects, and the concealed clip system shall remain stable and firm.