

1. Product Overview

1.1 Product Identifier

Open Cell Ceiling System

OC-1000

Ballesta open cell aluminum grille ceiling system consists of precision-formed interlocking strip panels that create seamless 3D cellular grid patterns. Available in bar widths of 10mm and 15mm with heights up to 100mm. Grid cell sizes range from 50×50mm to 200×200mm providing open areas of 60–80%. The system is formed from AA1100 or AA3003 aluminum alloy in H14 temper, offering excellent flatness and structural integrity. Typical applications include airports, atrium ceilings, metro stations, retail malls, and premium commercial interiors where a striking visual ceiling is desired with integrated lighting and services above the grid plane.

2. Technical Specifications

Product Name	Open Cell Ceiling System	Ballesta® OC Series
Material	Aluminum Alloy AA1100 / AA3003	H14 temper
Bar Width	10mm, 15mm	Standard profiles
Bar Height	38–100mm (10mm bar) / 60–100mm (15mm bar)	Variable by profile
Bar Thickness	0.4mm (10mm bar) / 0.5mm (15mm bar)	Standard thickness
Grid Cell Sizes	50×50, 75×75, 100×100, 125×125, 150×150, 180×180, 200×200mm	Square cell pattern
Open Area Ratio	60–80%	Dependent on grid size
Max Panel Length	3000mm standard	Custom lengths available

Surface Finish	Polyester powder coating / PVDF fluorocarbon / Anodizing	Per specification
Color Options	All RAL colours; standard white RAL 9016, silver metallic, black RAL 9005	Custom colours available
Fire Classification	Class A – non-combustible	ASTM E84 / EN 13501-1 A2-s1,d0
Suspension System	Adjustable hanger rods + perimeter trim	Galvanized steel
Weight	2–6 kg/m ² approximately	Varies by profile and grid size
Installation	Interlocking snap-fit assembly; panel-by-panel demountable	No special tools required
Acoustic Option	Acoustic fleece backing available for sound absorption	NRC up to 0.95
Maintenance	Individual panels replaceable; accessible plenum	Easy maintenance
Certification	ISO 9001:2015 / ISO 14001:2015	SISA certified

3. Manufacturing Process

3.1 Aluminum Substrate Cutting:

Precision cutting of 3003/5005 series aluminum sheet into 300mm×3750mm size with 0.7mm thickness, ensuring dimensional tolerance (Length±2mm, Width±1mm, Thickness±0.03mm).

3.2 Surface Pretreatment:

Degreasing and dust removal treatment on aluminum substrate surface to enhance the

adhesion between UV ink and substrate, and improve the overall corrosion resistance of the panel.

3.3 UV Printing

Coating environmentally friendly UV ink on the pretreated substrate, precisely controlling ink dosage, printing speed and curing time. The ink is cured by UV technology to form a uniform and firm coating ($\geq 60\mu\text{m}$), and the matte surface gloss is adjusted to 15-25°. Custom texture (wood grain/stone grain) can be printed according to customer requirements with high restoration degree.

3.4 Forming & Splicing Processing

Edge folding treatment of the panel with precise control of fold angle ($90^\circ \pm 1^\circ$) and consistent fold width, no visible cracks/distortions at the folds. Seamless splicing design is adopted, and the joint is reinforced by intermittent welding or structural adhesive to ensure structural stability.

3.5 Post-Processing:

Edge trimming, deburring and flatness calibration of the panel. Multi-point testing of surface gloss, color difference and thickness by professional equipment to ensure all indicators meet the standard.

3.6 Installation Accessory Matching:

Configure special hangers for ceiling installation; steel support frames or counter supports are equipped for hangers longer than 1.5m to enhance the stability of the suspension system.

4. Application Scope

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

- Indoor ceilings, interior walls, column cladding and ground decoration (special anti-slip customization)
- Exterior facades of commercial buildings, office buildings and residential buildings
- Decoration of public places such as shopping malls, hotels, airports and subway stations
- Customized decoration projects requiring Grade A fire resistance, seamless splicing and matte effect
- Decoration in harsh environments such as high temperature ($\leq 70^\circ\text{C}$), high humidity ($\text{RH} \geq 95\%$) and 5% salt spray concentration

5. Compliance Standards

- **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)

- **ASTM D1186:** Standard Test Method for Thickness of Organic Coatings
- **ASTM D3359:** Standard Test Methods for Measuring Adhesion by Tape Test
- **AAMA 501.6:** Standard Practice for Installation of Exterior Wall Cladding Panels

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 and deformation during transportation. The folding edge and splicing part are protected by special anti-collision accessories.

Storage: · Store in a dry, ventilated and rainproof warehouse, avoid direct sunlight, high temperature ($>70^{\circ}\text{C}$) and high humidity ($\text{RH}>95\%$) environment.

· Avoid contact with sharp objects, chemicals and corrosive substances to prevent surface damage and substrate corrosion.

· Stacking height shall not exceed 3 layers to prevent flatness damage caused by excessive pressure.

· 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 UV printing coating shall have no obvious fading, peeling, cracking and color loss; the aluminum substrate shall have no corrosion, deformation and other defects, and the splicing part shall remain stable and firm.
