

1. Product Overview

1.1 Product Identifier

Ballesta® Acoustic Honeycomb Wall Panel

AWH-202

Premium acoustic wall panel featuring a lightweight aluminum honeycomb core with precision-perforated aluminum face skins. Three perforation levels available: standard (1.8–3.0mm), micro (0.8–1.0mm), and ultra-micro (0.4–0.6mm, up to 500,000 holes/m²). Hook-on bracket installation with gravity-assisted flat alignment. NRC up to 0.80 with acoustic fleece backing. Class A fire rated. Ideal for noise-sensitive environments requiring exceptional panel flatness and architectural quality.

2. Technical Specifications

Core Material	Aluminum honeycomb — AA3003H18, hexagonal cell structure	
Face Skins	Aluminum Alloy AA1100 / AA3003 (0.6–1.2mm)	
Core Cell Size	6.35mm (1/4"), 9.53mm (3/8"), 12.7mm (1/2")	
Total Panel Thickness	10mm, 15mm, 20mm, 25mm (custom available)	
Max Panel Size	1500mm x 4000mm	
Surface Finish	Polyester powder coating (RAL/Pantone), PVDF, anodizing	
Perforation Type	Standard / Micro / Ultra-Micro	

Standard Perf Diameter	1.8mm, 2.0mm, 2.5mm, 3.0mm (open area 15–28%)	
Micro Perf Diameter	0.8mm, 1.0mm (open area 3–8%)	
Ultra-Micro Perf Diameter	0.4mm, 0.6mm (300,000–500,000 holes/m ²)	
NRC (Standard perf + fleece)	0.70 – 0.80	
NRC (Ultra-micro + cavity)	0.55 – 0.70	
Fire Rating	Class A — ASTM E84 / EN 13501-1 (A2-s1,d0)	
Panel Weight	Approx. 5–8 kg/m ²	
Installation System	Hook-on bracket — gravity flat alignment	
Warranty	15 years (manufacturing defects)	
Certification	ISO 9001:2015, CE marked	

2.1 Raw Material Preparation

High-grade aluminum coils (AA1100/AA3003) are inspected for surface quality, flatness, and thickness tolerance. Aluminum honeycomb core (AA3003H18) is sourced with certified cell dimensions.

2.2 Face Skin Processing

Aluminum face sheets are cut to size, then precision perforated on CNC machines with standard, micro, or ultra-micro hole patterns. Holes are staggered for optimal open area and structural integrity.

2.3 Surface Coating

Perforated face skins undergo surface pretreatment (degreasing, chemical conversion coating), followed by polyester powder coating (RAL/Pantone), PVDF

fluorocarbon, or anodizing in controlled production lines with $25\mu\text{m}\pm 3\mu\text{m}$ film thickness.

2.4 Honeycomb Core to Skin Bonding

The honeycomb core is bonded to the back of the perforated face skin and the bottom skin using high-strength structural adhesive. Panels are cured under controlled temperature and pressure for optimal bond integrity.

2.5 Acoustic Fleece Application

For acoustic versions, a black acoustic fleece is heat-bonded to the back of the perforated panel. The fleece thickness and density are selected based on target NRC requirements.

2.6 Edge Finishing & Packaging

Panel edges are finished with protective edge banding or sealed. Each panel is individually wrapped with interleaving paper, packed in reinforced cartons with foam edge protectors, and palletized for shipment.

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

Ballesta Acoustic Honeycomb Wall Panels are designed for the following applications:

- Performance halls, auditoriums and conference rooms requiring superior acoustics
- Office buildings, hotel lobbies and premium retail environments
- Airport terminals, metro stations and railway concourses
- Hospital corridors, school classrooms and libraries
- Recording studios, data centers and noise-sensitive technical spaces

5. Compliance Standards

- **ASTM E84: Class A flame spread and smoke development (Flame Spread Index ≤ 25 , Smoke Developed Index ≤ 50)**
- **EN 13501-1: Class A2-s1, d0 fire classification**
- **ASTM C423: NRC up to 0.80 (standard perforation + acoustic fleece)**
- **ASTM E90: Sound Transmission Class (STC) ~ 19 dB**
- **ISO 7724-1: Color difference $\Delta E^*_{ab} \leq 0.5$ (batch-to-batch)**
- **ASTM B117: Salt spray resistance ≥ 1000 h**
- **ASTM D3363: Pencil hardness HB minimum**
- **ASTM C393: Core shear ultimate ≥ 0.77 MPa**

6. Packaging & Storage

Each acoustic honeycomb wall panel is individually wrapped with interleaving craft

paper and polyethylene foam edge protectors.

Panels are packed vertically in reinforced export-grade wooden crates. Maximum 20 panels per crate depending on panel size.

Storage conditions: Temperature 5°C–35°C, relative humidity ≤ 75%. Panels should be stored flat on elevated racks in a dry, ventilated environment.

Shelf life: 12 months from manufacture date when stored per recommended conditions.

Transport: Crates must be handled with forklift and transported in covered vehicles. Do not stack more than 2 crates high.

7. Quality Assurance

Ballesta honeycomb panel production is ISO 9001:2015 certified. Each panel undergoes dimensional inspection, surface quality check, peel test, and acoustic performance verification before packing.

Third-party acoustic testing (ASTM C423 / ISO 354) is conducted quarterly. Test reports are available upon request.
