AAPG Acoustic Clouds

Horizontally suspended acoustical ceiling clouds in real wood veneer or high-pressure laminate with finished edges and underside.

Suspended acoustic clouds at Little Oak. Project installation shown for reference; cloud size, plenum height, and ceiling coverage are as specified for that project and differ from the 12 in. plenum on which the stated absorption is based.

PRODUCT OVERVIEW

AAPG Acoustic Clouds are factory-fabricated horizontally suspended acoustical ceiling units consisting of an acoustically absorptive core faced with wood veneer or high-pressure laminate, with finished edges on all sides and a finished exposed underside, supplied with the suspension hardware required to attach clouds to aircraft cable. Reference specification: Section 09 8436 - Sound-Absorbing Ceiling Units.

Face dimensions	**Nominal 48" x 48" (1219 x 1219 mm) or 48" x 96" (1219 x 2438 mm)**
Shape	**Rectangular, square, circular, or custom**
Thickness	**1" (25 mm), 1-1/2" (38 mm), or 2" (51 mm)**
Open area	**18 percent (supplied by AAPG)**
Rating basis	**Sabins per cloud at 12 in. (305 mm) plenum height**
Weight per cloud	**72 lbs (32.7 kg) at 48" x 48"; 144 lbs (65.3 kg) at 48" x 96"**
Areal density	**Approx. 4.5 lbs/sq. ft. (22 kg/m^2)**

Sound absorption	**1.3 sabins per sq. ft. at 12 in. (305 mm) plenum**

TECHNICAL DATA

Characteristic	Technical data
Core	MDF conforming to ANSI A208.2, industrial grade, with No Added Formaldehyde; or hemp with No Added Formaldehyde
Edge profile	Square, beveled, radiused, or concealed aluminum edge frame, factory-finished. All exposed edges finished to match the underside
Perforation pattern	Micro-perforated 0.020" (0.5 mm) diameter holes; perforated 1/8" (3 mm) diameter holes; grooved; or non-perforated absorptive core only
Open area	18 percent, supplied by AAPG. Applies to the perforated face; confirm against the specified perforation pattern.
Acoustic backer	Acoustically transparent non-woven black fleece factory-laminated behind the perforated face, continuous across all perforations
Acoustic infill	Mineral wool or polyester batt encapsulated within the cloud; density to be specified
Wood veneer facing	Real Wood Veneers "AA" architectural-grade veneer, 0.010" to 0.015" (0.25 to 0.38 mm), with furniture-grade catalyzed finish of approximately 0.003" (0.08 mm); balancing backer 0.015" to 0.025" (0.38 to 0.64 mm)
HPL facing	Vertical-grade high-pressure plastic laminate adhered to the core, with balancing backer sheet
Weight and suspension loading	Approximately 4.5 lbs per sq. ft. (22 kg/m^2): 72 lbs (32.7 kg) for a nominal 48" x 48" (16 sq. ft.) cloud and 144 lbs (65.3 kg) for a nominal 48" x 96" (32 sq. ft.) cloud. Supplied by AAPG. Confirm the figure for the specified thickness before sizing suspension points, cable, and anchors.
Suspension method	Aircraft cable with adjustable gripper and ceiling attachment, minimum four points per cloud; rigid rod suspension; or concealed aluminum carrier frame suspended from structure
Cable and grippers (by others)	Galvanized or stainless steel aircraft cable with a minimum safety factor of 5:1 against the supported load; adjustable grippers permitting field leveling. **Aircraft cable, adjustable grippers, and the fasteners attaching cable to structure are not furnished under Section 09 8436 and are supplied by others.**
Suspension points	Factory-installed with integral framing, located and reinforced to carry the cloud load without deflection, sag, or facing distortion
Seismic restraint	Lateral bracing and restraint provided where required by the authority having jurisdiction; IBC Chapter 8 and applicable seismic design requirements referenced
Surface burning characteristics	ASTM E84; faces required to be Class A (Class 1): flame-spread index 25 or less, smoke-developed index 450 or less. Independent test reports to be submitted

Characteristic	Technical data
Installation tolerance	Within 1/8" (3 mm) of indicated elevation; level within 1/8" in 12 ft (3 mm in 3.6 m); maximum 1/16" (1.6 mm) alignment variation between adjacent units
Environmental limits	Maintain 60 to 80 °F (16 to 27 °C) and 35 to 55 percent relative humidity during storage, installation, and the product life cycle. Not for exterior, high-humidity, or wet locations. Acclimate 72 hours prior to installation.
Applications	Suspended from interior ceilings and overhead structure

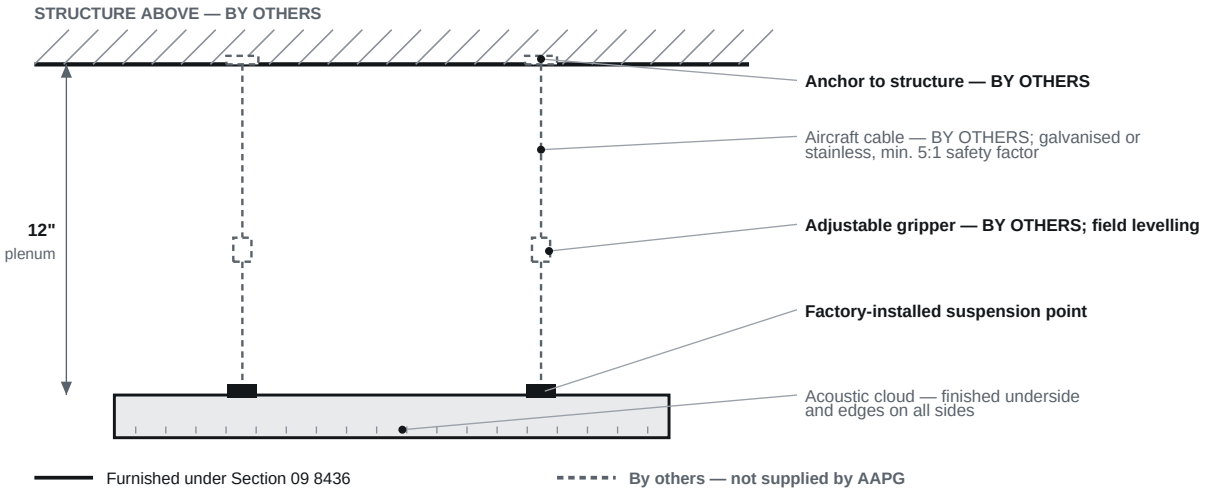
Weight applies to the tested/standard build. The areal density of 4.5 lbs per sq. ft. is consistent across both catalog face sizes. This sheet offers 1 in., 1-1/2 in., and 2 in. thicknesses, and a single areal density cannot apply to all three: a thicker cloud weighs proportionally more. Confirm the weight for each thickness before it is used to size suspension points, aircraft cable, and structural anchors. **Acoustic values**: 1.3 sabins per sq. ft. at a 12 in. plenum, with no coverage percentage cited — see Acoustic Performance.

Nominal dimensions: All dimensions shown are nominal. Final product selection and detailing should be confirmed against current production data, project conditions, applicable codes, and installation requirements.

Installation. This data sheet is issued for product selection and design coordination only. **It is not an installation instruction, and nothing on this document is to be used for installation.** Install in accordance with AAPG's current published installation instructions and the approved shop drawings. The dimensions, details, and data shown here describe the product; they do not describe the substrate preparation, sequence, fixings, or tolerances required to install it. Where this sheet and the installation instructions differ, the installation instructions govern.

Typical Suspension Detail

The detail below shows the typical suspension interface for AAPG Acoustic Clouds. The 12 in. plenum height shown is the basis of the stated acoustic performance; a deeper plenum increases absorption and a shallower one reduces it.



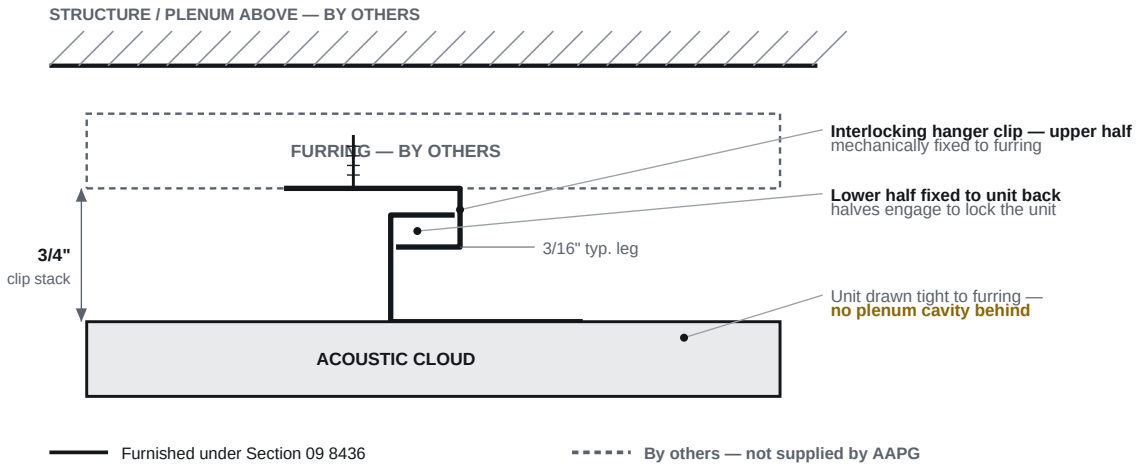
MINIMUM FOUR SUSPENSION POINTS PER CLOUD

Two shown. Section through cloud; remaining points occur on the opposite axis.

Typical detail, shown for coordination only. This is a schematic representation of the suspension interface and is not an engineered detail, a shop drawing, or a substitute for one. Anchors, aircraft cable, adjustable grippers, and the fasteners attaching cable to structure are not furnished under Section 09 8436 and are supplied by others. Anchor type, embedment, and capacity depend on the overhead structure and the imposed load, and must be selected and verified by the project structural engineer. Provide seismic restraint and lateral bracing where required by the authority having jurisdiction. **This detail is not an installation instruction.** Install in accordance with AAPG's current published installation instructions and the approved shop drawings, which govern.

Alternate: Direct Attachment to Structure

Where site conditions require the unit to be fixed directly to structure rather than suspended on cable, a two-part interlocking hanger clip is used: the upper half is mechanically fixed to furring and the lower half to the back of the unit, the two halves engaging to lock the unit in place.



Clip profile is schematic. Confirm the specified clip, fastener type, and spacing against manufacturer's current data.

Direct attachment changes acoustic performance. The absorption values stated on this data sheet depend on the cavity behind the unit. Fixing the unit tight to furring removes that cavity, and the stated values do not apply to this condition. Absorption will be lower, and the reduction is greatest at low frequencies. Where direct attachment is used, obtain assembly-specific test data or have the acoustical consultant model the installed condition. Do not carry the suspended values into a reverberation calculation for a direct-fixed ceiling. **This detail is not an installation instruction** — install in accordance with AAPG's current published installation instructions and the approved shop drawings, which govern.

Acoustic Performance

Suspended clouds are rated in sabins per unit rather than NRC, because absorption depends on plenum height above the cloud and on the percentage of ceiling area covered, and because the unit absorbs on more than one face. AAPG states an absorption of 1.3 sabins per square foot of cloud face area at a plenum height of 12 in. (305 mm). The per-cloud figures below are derived from that stated value at the two catalog face sizes.

Note: values apply to the 12 in. plenum only — a deeper plenum increases absorption, and a shallower one reduces it.

Cloud size	Plenum height	Sabins per cloud (stated)
Nominal 48 in. x 48 in. (1219 x 1219 mm) — 16 sq. ft.	12 in. (305 mm)	20.8
Nominal 48 in. x 96 in. (1219 x 2438 mm) — 32 sq. ft.	12 in. (305 mm)	41.6

IMPORTANT LIMITATION

Values apply to a 12 in. (305 mm) plenum only. Absorption per cloud also varies with the percentage of ceiling coverage, cloud size and thickness, perforation and infill, and the absorption of the deck above. At close spacings adjacent clouds shadow one another, so total room absorption does not scale linearly with cloud count. Plenum height must be coordinated with the Architect and acoustical consultant.

Section 09 8436 requires submission of independent laboratory test reports establishing sound absorption in accordance with ASTM C423, reported as sabins per cloud at the tested plenum height and percentage of ceiling coverage, identifying both. No such report is cited in the guide specification.