SECTION 09 50 13

Cellular Core Acoustical Panel Ceiling and Grid System

**Echelon Grid & Acoustical Surfaces**

 For best results, display hidden notes to specifier

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Echelon Acoustical Panels and Suspension System.

B. Trim and miscellaneous accessories.

1.02 RELATED SECTIONS

A. Section 09 29 00 - Gypsum Board Assemblies

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B. Section 28 31 00 - Fire Detection and Alarm System -- Protected Premises: Fire alarm components located in ceiling.

C. Section 21 05 00 - Fire Suppression Sprinklers: Sprinkler heads in ceiling.

D. Section 23 37 00 - Air Outlets and Inlets - Air diffusers and returns in ceiling.

E. Section 26 51 00 - Interior Luminaires - Light fixtures in ceiling.

F. Section 27 51 16 - Public Address and Music Equipment: Speakers in ceiling.

1.03 REFERENCES

A. ASTM C 423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method; 2000.

B. ASTM C 635 - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2000.

C. ASTM C 636 - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels; 1996.

D. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2000a.

E. ASTM E 580 - Standard Practice for Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Seismic Restraint; 2000.

F. ASTM E 1477 - Standard Test Method for Luminance Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers; 1998a.

 G. ASTM C 1338 – Standard Test Method for Fungal Resistance

H. CISCA (AC) - Acoustical Ceilings: Use and Practice; Ceilings & Interior Systems Construction Association; 1999.

1.04 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

B. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.

2. Storage and handling requirements and recommendations.

3. Installation methods.

C. Verification Samples: Two samples, minimum size 7 by 7 inches (175 x 175 mm), representing acoustical panel product.

D. Verification Samples: Two samples, minimum 12 inches (300 mm) long, representing suspension system.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in manufacturer's unopened packaging and store unopened in fully enclosed space until ready for installation. Protect products from exposure to sunlight, moisture, and mechanical damage.

B. Handle acoustical panels to avoid soiling exposed surfaces or damaging surfaces and edges.

1.06 PROJECT CONDITIONS

A. Sequence work to assure that acoustical ceilings are not installed until building is enclosed, permanent heating system is available, dust generating activities have terminated, wet work is complete and dry, and work above ceilings is complete.

B. Maintain temperature within 15 degrees Fahrenheit (8 degrees C) and relative humidity within 10 percent of design conditions for spaces of installation not less than 48 hours before installation begins and thereafter.

1.07 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

B. Provide manufacturer's standard written ten-year limited warranty for acoustical panels and suspension grid.

1.08 EXTRA MATERIALS

A. See Section 01 60 00 - Product Requirements, for additional provisions.

B. Provide not less than \_\_\_\_\_\_ sq. ft. (\_\_\_ sq m) of acoustical ceiling panel of each panel size for Owner's use in maintenance of the project.

PART 2 PRODUCTS

2.01 MANUFACTURER

* + 1. Acceptable Manufacturer: Hunter Douglas Architectural;

11500 East 53rd Ave. Unit D, Denver, CO 80239. Tel: 866-556-1235; Fax: 720-872-7850; www.HDarchitectural.com.

B. Substitutions: Not permitted.

1. Requests for substitutions may be considered in accordance with provisions of Section 01 60 00.

 2.02 COMPONENTS

A. Echelon Suspension System: Hunter Douglas Echelon Suspension System consisting of Cruciform extruded aluminum interlocking components, perimeter moldings and ancillary accessories.

1. Reveal: Echelon Ceiling Panel and Grid System configured to create a 1/4 inch reveal between grid blade and adjacent panels.

2. Grid Blade: 1/4 inch protruding blade in both reveal directions.

3. Materials: High recycled content (on average 70 percent) extruded aluminum, alloy 6005-T5.

B. Profiles:

1. “Echelon” cruciform Double-Tee Main profile.

a. Width: 15/16 inch.

b. Length: 150 inches.

c. Movable hanger-points and standard modular Cross attachment points every 6 inches.

2. “Echelon” Interlocking Cruciform Cross-Tee Profiles with W-hold-down clips

a. Width: 15/16 inch.

b. Length: 48 inches, or 30 inches, or 24 inches or 6 inches, as required.

c. Trims: Echelon System Extruded Trim for conditions as follows:

3. Floating Trim: ‘C’ channel; Height; 2.5 inches**.**

4. Perimeter Wall Trim: ‘C’ channel; Height; 2.5 inches.

5. Curved Edge: Factory Curved to meet Project requirements.

6. Curved Transition Trim from drywall.

7. Finish:

a. White Powder Coat or Black Powder Coat

b. Custom Color Powder Coat

c. Clear anodized

8. Seismic perimeter attachments: As required to meet code requirements.

9. Support Channels and Hangers and Fasteners: Galvanized steel, size and type to suit application. Supplied by Others.

CONTACT HUNTER DOUGLAS FOR SPECIFICATIONS OF INTEGRATABLE FIXTURES, DIFFUSERS AND OTHER OPTIONAL ITEMS

C. Acoustical Panels: Echelon TechStyle Cellular Structural Fiberglass Core with printed non-woven or white mineral coated surface.

1. Panel Thickness: 1.125 inches (28.5 mm).

2. Panel Size (3 widths and multiple lengths)

a. Panel width: 24” (clip-side)

1. Panel Length: 6”, 24”, 30”, 36”, 42”, 48”, 54”, 60”, 66” or 72”

b. Panel width: 30” (clip-side)

1. Panel Length: 6”, 30”, 36”, 42”, 48”, 54”, 60”, 66” or 72”

c. Panel width: 48” (clip-side)

1. Panel Length: 6”, 24”, 30”, 36”, 42”, 48”, 54”, 60”, 66” or 72”

3. Attachment: Integral clip-on hinged support clip, downward accessible by use of a standard putty knife, disengaging hinge support rail on one side of panel from the Cross-Tee Profile Flange. Swing and hinge panel downward to provide complete access to plenum.

4. Panel Color:

a. White: Techstyle White

b. Custom Color/Pattern Print:

* + - * 1. Standard Print # (see [www.HDarchitectural.com](http://www.HDarchitectural.com) )
				2. Custom Print #

5. Noise Reduction Coefficient (NRC): 0.85, absorption coefficient at specified frequencies:

 **Frequency: 125 250 500 1000 2000 5000**

 **Absorp 0.81 1.03 0.63 0.79 0.95 0.90**

6. Sound Absorption Average: (SAA) 0.86.

7. Surface Burning Characteristics: Flame spread less than 25 and smoke developed less than 50, Class A (1).

8. Light Reflectance (white only): LR-1 (81%).

9. Moisture Resistance: Resistant to relative humidity up to 95 percent at 105 degrees F (40.5 degrees C) for 30 days.

10. Mold and Mildew Resistant: In accordance with requirements of ASTM C 665.

11. Fungi Resistant: In accordance with requirements of ASTM C 1338.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that layout of hangers will not interfere with other work; make adjustments in layout as necessary.

B. Do not begin ceiling installation until services above ceiling are complete except for final trim.

C. Notify Architect of unsatisfactory conditions before proceeding.

3.02 PREPARATION

A. Coordination: Furnish system layouts including ceiling penetrations such as sprinklers, light fixtures, HVAC components, columns etc.

B. Lay out system for a balanced grid design, with edge units not less than 50 percent of acoustical unit size.

C. Locate system on room axis or in accordance with reflected ceiling plan.

3.03 INSTALLATION OF SUSPENSION SYSTEM

A. Conform to the requirements of CISCA (AC) - Acoustical Ceilings: Use and Practice.

B. Install in accordance with manufacturer's instructions, ASTM C 636 and ASTM E 580.

C. Space hangers or direct mount fasteners not more than 48 inches o.c.

D. Hang suspension system independently from walls, columns, ducts, pipes and conduit. Where carrying members are spliced, use system Main-Tee splices, avoiding visible displacement of face plane and blade of adjacent members. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span extra distance.

E. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently. Do not eccentrically load Suspension Grid System or induce rotation of runners.

F. Perimeter Trim: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.

3.04 INSTALLATION OF ACOUSTICAL PANELS

A. Install acoustical panels in accordance with manufacturer's written instructions.

B. Scribe and cut panels for accurate fit at perimeter and at penetrations.

C. Hold tile field in compression when performing cuts. Match field cut edges with factory edges in accordance with manufacturer's instructions.

D. Install acoustical panels after above-ceiling work is complete. Install panels level, in uniform plane and orientation, free from warp, twist, and dents.

E. Installation Tolerance: Maximum variation from flat and level surface is 1:360.

3.05 CLEANING AND PROTECTION

A. Clean exposed surfaces of acoustical ceiling system, including panels, suspension components and edge trim, complying with manufacturer's written instructions for cleaning of minor finish damage. Replace acoustical panels which cannot be cleaned to an appearance matching unmarred panels.

B. Protect installed acoustical panel ceilings until completion of project.

END OF SECTION