

SECTION 09511
ACOUSTICAL PANEL CEILINGS

1 PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY:

- A. This Section includes acoustical panel ceilings installed with exposed suspension systems.

1.3 SUBMITTALS:

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product data for each type of product specified.
- C. Samples for verification purposes of each acoustical panel type, pattern, and color.

1.4 QUALITY ASSURANCE:

- A. Installer Qualifications: Engage an experienced Installer who has successfully completed acoustical ceilings similar in material, design, and extent to those indicated for Project.
- B. Fire-Performance Characteristics: Provide acoustical ceilings that are identical to those tested for the following fire-performance characteristics, per ASTM test method indicated below, by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction. Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.
- C. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 for Class A products.
 - 1. Flame Spread: 25 or less.
 - 2. Smoke Developed: 50 or less.
- D. Single-Source Responsibility for Ceiling Units: Obtain each type of acoustical ceiling unit from a single source with the resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.
- E. Coordination of Work: Coordinate layout and installation of acoustical ceiling units and suspension system components with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment and fire-suppression system components.

1.5 DELIVERY, STORAGE, AND HANDLING:

- A. Deliver acoustical ceiling units to project site in original, unopened packages and store them as recommended by manufacturer in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical ceiling units, permit them to reach room temperature and stabilized moisture content.
- C. Handle acoustical ceiling units carefully to avoid chipping edges or damaged units in any way.

1.6 EXTRA MATERIAL:

- A. Deliver extra materials to Owner. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with appropriate labels.

- 1. Acoustical Ceiling Units: Furnish quantity of full-size units equal to 5.0 percent of amount installed.

2 PART 2 PRODUCTS

2.1 GENERAL:

- A. Products of one or more manufacturers are listed in schedules to establish standards of performance and characteristics of appearance. Equivalent products of other listed manufacturers may be accepted, as judged solely by the Architect.

2.2 MANUFACTURERS:

- A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - 1. Acoustical Panels:
 - a. Armstrong World Industries, Inc.
 - b. Celotex Corp.
 - c. USG Interiors, Inc.
 - 2. Steel Suspension Systems:
 - a. Armstrong World Industries, Inc.
 - b. Chicago Metallic Corporation.
 - c. National Rolling Mills, Inc.
 - d. USG Interiors, Inc.

2.3 ACOUSTICAL CEILING UNITS, GENERAL:

- A. Standard for Acoustical Ceiling Units: Provide manufacturer's standard units of configuration as scheduled that comply with ASTM E 1264 classifications in reference to types, patterns, acoustical ratings, and light reflectance, unless otherwise indicated.
- B. Colors and Patterns: Provide products to match appearance characteristics as scheduled for each product type.

1. Product: ACT-1, Mesa, 686 as manufactured by Armstrong World industries:
 - a. Surface Texture: Fine
 - b. Composition: Mineral Fiber
 - c. Color: White
 - d. Size: 24in x 24in x 5/8in
 - e. Edge Profile: Angled Tegular for interface with Prelude XL 15/16" Exposed Tee.

2. Product: ACT-2, Fine Fissured, 1732 as manufactured by Armstrong World industries:
 - a. Surface Texture: Medium
 - b. Composition: Mineral Fiber
 - c. Color: White
 - d. Size: 24in x 24in x 5/8in
 - e. Edge Profile: Angled Tegular for interface with Prelude XL 15/16" Exposed Tee.

3. Product: ACT-3, Mesa, 684 as manufactured by Armstrong World industries:
 - a. Surface Texture: Fine
 - b. Composition: Mineral Fiber
 - c. Color: White
 - d. Size: 24in x 48in x 5/8in
 - e. Edge Profile: Angled Tegular for interface with Prelude XL 15/16" Exposed Tee.

4. Product: ACT-4, Fine Fissured, 1733 as manufactured by Armstrong World industries:
 - a. Surface Texture: Medium
 - b. Composition: Mineral Fiber
 - c. Color: White
 - d. Size: 24in x 48in x 5/8in
 - e. Edge Profile: Angled Tegular for interface with Prelude XL 15/16" Exposed Tee.

2.4 METAL SUSPENSION SYSTEMS, GENERAL:

- A. Standard for Metal Suspension Systems: Provide manufacturer's standard metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable ASTM C 635 requirements.
 1. Finishes and Colors: Provide manufacturer's standard factory-applied finish for type of system indicated.

- B. Attachment Devices: Size for 5 times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.
 1. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper.
 2. Gage: Provide wire sized to that stress at 3 times hanger design load (ASTM C 635, Table 1, Direct-Hung), will be less than yield stress of wire, but provide not less than 0.106-inch diameter (12 gage).
 3. Hanger Rods and Flat Hangers: Mild steel, zinc coated. or protected with rust inhibitive paint.

2.5 NON-FIRE-RESISTANCE-RATED DIRECT-HUNG SUSPENSION SYSTEMS:

- A. Wide-Face Capped Double-Web Steel Suspension System: Main and cross-runners roll-formed from pre-painted or electrolytic zinc-coated cold-rolled steel sheet, with prefinished 15/16-inch-wide metal caps on flanges; other characteristics as follows:
 - 1. Structural Classification: Intermediate-Duty System.

2.6 MISCELLANEOUS MATERIALS:

- A. Concealed Acoustical Sealant: Nondrying, nonhardening, nonskinning, nonstaining, nonbleeding, gunnable sealant complying with requirement specified in Division 7 Section "Joint Sealers".

3 PART 3 EXECUTION

3.1 EXAMINATION:

- A. Examine substrates and structural framing to which ceiling system attaches or abuts, with Installer present, for compliance with requirements specified in this and other sections that affect installation and anchorage of ceiling system. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION:

- A. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less-than-half-width units at borders, and comply with reflected ceiling plans.

3.3 INSTALLATION:

- A. General: Install acoustical ceiling systems to comply with ASTM C 636 and ASTM E 580 installation standards, per manufacturer's instructions and CISCA "Ceiling Systems Handbook."
- B. Arrange acoustical units and orient directionally patterned units in a manner shown by reflected ceiling plans.
- C. Suspend ceiling hangers from building structural members and as follows:
 - 1. Install hangers plumb, secure to substrate and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 2. Where width of other construction within ceiling plenum produces hanger spacings different than required to support standard suspension system members, install supplemental suspension members and hangers. Size the supplemental members and hangers to support ceiling loads within performance limits established by referenced standards.
 - 3. Secure hangers either directly to structures or to inserts, eyescrews, or other devices that are secure and appropriate for substrate, and in a manner that will

not cause them to deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.

- D. Install edge moldings at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical units.
 - 1. Sealant Bed: Apply continuous ribbon of acoustical sealant, concealed on back of vertical leg before installing moldings.
- E. Screw-attach moldings to substrate at intervals not over 24 inches oc. and not more than 3 inches from ends, leveling with ceiling suspension system to tolerance of 1/8 inch in 12'-0". Miter corners accurately and connect securely.
- F. Install acoustical panels in coordination with suspension system, with edges concealed by support of suspension members. Scribe and cut panels to fit accurately at borders and at penetrations.

3.4 CLEANING:

- A. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION