

SECTION 09510
ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.01 SUMMARY

- A. Furnish and install all acoustical panels and suspension systems for acoustical ceilings complete as indicated on the Drawings and specified herein.
- B. Review Architectural, Mechanical and Electrical Drawings for layout, location, and pattern of acoustical panels, location of recessed light fixtures, ceiling diffusers, and grilles, details of suspension system, details of change of level, details at ceiling penetrations, access door locations, special edge treatment, and all necessary connections to work of other trades.

1.02 RELATED WORK.

- A. MECHANICAL SYSTEMS: Division 15.
- B. LIGHTING FIXTURES: Division 16.

1.03 QUALITY ASSURANCE

- A. Installer Qualifications: Installation shall be performed only by a qualified installer with at least five (5) years documented experience in installations of a similar nature, and as approved by the manufacturer and Architect.
- B. Design Criteria:
 - 1. All finish materials specified under this Section shall have a minimum Class A flame spread rating of 25 or less when tested in accordance with ASTM E 84.
 - 2. The Acoustical grid system shall conform to structural classifications of ASTM C 635, and those established by the Ceiling and Interior Systems Construction Association (CISCA).

1.04 SUBMITTALS

- A. Product Data: Submit product data for each type of product specified.
- B. Shop Drawings: Submit complete shop drawings. Shop drawings shall indicate sizes and layout of ceiling panels and suspension system component details. Manufacturer's names and product data shall be clearly indicated on all shop drawings.
- C. Samples: Submit three (3) full-size samples of each kind of acoustical material proposed for use including suspension system. Each sample shall bear a label indicating the type, quality, and color of the material, and shall bear the manufacturer's name.
- D. Installer Qualifications: Submit documented evidence of installer's qualifications.

1.05 PRODUCT, DELIVERY, STORAGE AND HANDLING

- A. The materials shall be delivered to the site in the manufacturer's original, unopened, labeled containers, or packages. Materials shall be stored in enclosed areas with same temperature and humidity conditions as areas in which materials are to be installed.
- B. All packages under this Section shall be properly marked on the outside with the identification of the material contained in the packages, so that they may be readily identified with the location to be used.

1.06 PROJECT CONDITIONS

- A. Mechanical and electrical equipment and fixture installers shall furnish all necessary supports for their materials independent of, and prior to, installation of suspended grid systems.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Acoustical Ceiling Panels:

- 1. Basis of Design/Description:
 - a. ACT-1: Armstrong – Ultima 1986
Size: 24" x 60"
Color: White
Description: Tegular – Reveal Edge
Grid: 9/16" Interlude Grid
 - b. ACT-2: Armstrong – Ultima 1912A
Size: 24" x 24"
Color: White
Description: Tegular
Grid: 9/16" Interlude Grid
- 2. Compliance Standard: ASTM E 1264.

B. Metal Suspension System:

- 1. Description: ASTM C 635 Heavy-duty structural classification. Main tees and cross tees roll formed from cold-rolled steel sheet, hot-dip galvanized according to ASTM A 653 (G30), with metal caps on flanges.
 - a. Color: White
- 2. Dimensions: System to consist of main tees and cross tees, built to snap together modules of size indicated for installation of lay-in acoustical ceiling panels.
- 3. Accessories shall be specifically designed as an integral part of the suspension system, and shall be installed in accordance with manufacturer's published recommendations.
 - a. Attachment Devices: Size for 5 times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated.

- b. Wire Hangers, Braces, and Ties: Zinc-coated carbon steel wire complying with ASTM A 641, Class 1 zinc coating, soft temper. Provide minimum 12 gauge diameter wire.
 - c. Metal Edge Moldings and Trim: Shall be fabricated from sheet metal of same material, finish, and color as that used for exposed flanges of tee.
4. There shall be no exposed fasteners.

2.02 FABRICATION

- A. Suspension system components shall be designed to support the ceiling assembly indicated on project Drawings with maximum deflection of 1/360 of the span, including appropriate load-carrying capacity for acoustical panels, light fixtures, and HVAC elements, and shall be 1-1/2 inch high double-web intermediate main tees with 1-1/8 inch or 1-1/2 inch high cross tees.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Examine the areas and conditions under which the acoustical ceiling system is to be installed. Do not proceed with acoustical ceiling work until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Installation of acoustical ceilings shall be in strict accordance with the manufacturer's published instructions, unless otherwise specified.
- B. Install acoustical ceiling panels in a true and even plane, in straight line course laid out symmetrically about center lines of ceiling or panel. Border panels shall not be less than 6 inches wide. Unless shown otherwise on reflected ceiling plan Drawings, the work shall be so laid out that border panels shall be of the same width on opposite sides and fit neatly against vertical surfaces.
- C. Suspend main tees from structure by not less than 12-gauge, galvanized wire located not over 4 feet on center, attached to the acoustical panel suspension system from the structural system above. Do not suspend grid system from metal deck, HVAC ducts, electrical conduit, or plumbing lines. Use trapeze-type hangers at HVAC ducts over 4 feet wide. Joint cross tees shall be located by routs in web of transverse cross tees. Main tees and cross tees shall rest on angle moldings at walls. Tabs of cross tees intersecting cross tees shall remain unbent.
- D. Keep finished surface of acoustical ceiling panels free of soiling and left in a condition acceptable to Owner. Replace all damaged units at no cost to Owner.
- E. All suspension grid components damaged during construction activities shall be replaced prior to panel installation.

3.03 EXTRA STOCK

- A. Furnish to the Owner prior to Final Acceptance, extra stock of acoustical materials, consisting of a minimum of 2 percent of the area of each size, type, and thickness installed on the job. Properly package, seal, and identify stock materials.