

**SECTION 09511 - ACOUSTICAL PANEL CEILINGS****PART 1 - GENERAL****A. RELATED DOCUMENTS**

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

**B. SUMMARY**

1. This Section includes fire rated acoustical panel ceilings installed with exposed suspension systems where indicated in Drawings and as scheduled.

**C. SUBMITTALS**

1. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
2. Product data for each type of product specified.
3. Coordination drawings for reflected ceiling plans drawn accurately to scale and coordinating penetrations and ceiling-mounted items. Show the following:
  - a. Ceiling suspension members.
  - b. Ceiling-mounted items including light fixtures; air outlets and inlets; speakers; sprinkler heads; and special moldings at walls, column penetrations, and other junctures with adjoining construction.
  - c. Scale: 1/8 inch = 1'-0".
4. Samples for selection purposes in form of manufacturer's samples consisting of actual acoustical units or sections of units showing full range of colors, textures, and patterns available for each type of unit indicated.

**D. DELIVERY, STORAGE, AND HANDLING**

1. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.
2. Before installing acoustical ceiling units, permit them to reach room temperature and stabilized moisture content.
3. Handle acoustical ceiling units carefully to avoid chipping edges or damaging units in any way.

**E. PROJECT CONDITIONS**

1. Space Enclosure: Do not install interior acoustical ceilings until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above ceilings is complete, and ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

**F. EXTRA MATERIALS**

1. 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.
  - a. Acoustical Ceiling Units: Furnish quantity of full-size units equal to 2.0 percent of amount installed.

**PART 2 - PRODUCTS**

## A. ACOUSTICAL LAY IN PANELS

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. Armstrong World Industries, Lancaster, PA.
  - b. BPB Celotex, Tampa, FL
  - c. Daiken Corporation, Osaka, Japan.
  - d. USG Interiors, Inc., Chicago, IL
2. Materials: Basis-of-design; Provide the product specified or equivalent by one of the listed manufacturers.
  - a. Corridor and public area ceilings where scheduled:
    - (1) Acoustical Lay-in Ceiling Board: USG Interiors, Inc., "Frost" or approved equal.
    - (2) Size: 24 inch x 24 inch x 3/4 inch thick, No. 405.
    - (3) Composition: Wet formed mineral fiber.
    - (4) Color: White
    - (5) Surface texture: Fine-textured.
    - (6) Edge: Tegular.
    - (7) NRC: Range: 0.65 - 0.70.
    - (8) Fire Hazard Classification: Firecode
  - b. Remaining ceiling where scheduled:
    - (1) Acoustical Lay-in Ceiling Board: USG Interiors, Inc., Radar "Climaplus" or approved equal.
    - (2) Size: 24 inch x 24 inch x 3/4 inch thick, No. 2215.
    - (3) Composition: Wet formed mineral fiber
    - (4) Color: White
    - (5) Surface texture: Smooth.
    - (6) Edge: Square.
    - (7) NRC: Range: 0.55 – 0.65.
    - (8) Fire Hazard Classification: Firecode.

## B. METAL SUSPENSION SYSTEMS, GENERAL

1. Manufacturers:
  - a. Metal Suspension System: Hot-dip galvanized, fire rated heavy duty system; USG Interiors, Inc.'s "Donn DXL" or approved equal by Chicago Metallic or CBI USA, Inc.
    - (1) Warrantee: Manufacturer's standard 10 year.
    - (2) Color: White.
    - (3) Hold-Down Clips: For interior ceilings composed of lay-in panels weighing less than 1 lb. per sq. ft., or as required to achieve fire rated assembly, provide hold-down clips as recommended by manufacturer.

**PART 3 - EXECUTION**

## A. EXAMINATION

1. 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.

## B. PREPARATION

1. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.
2. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Generally avoid use of less-than-half-width units at borders, and comply with reflected ceiling plans.

## C. INSTALLATION

1. General: Install acoustical ceiling systems to comply with installation standard referenced below, per manufacturer's instructions and CISCA "Ceiling Systems Handbook."
2. Standard for Installation of Ceiling Suspension Systems: Comply with ASTM C 636.
3. Suspend ceiling hangers from building structural members and as follows:
  - a. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural 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.
  - b. Where width of ducts and other construction within ceiling plenum produces hanger spacing that interfere with the location of hangers at spacing required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
  - c. Secure wire hangers by looping and wire-tying, 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. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eyescrews, or other devices that are secure and appropriate for structure to which hangers are attached as well as for type of hanger involved, and in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
  - e. Space hangers as recommended by manufacturer.
  - f. Install edge moldings of type indicated 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.
  - g. Screw-attach moldings to substrate at intervals not over 16 inches o.c. 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.
4. 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.
5. Install hold-down clips in areas indicated and in areas where required by governing regulations or for fire-resistance ratings; space as recommended by panel manufacturer, unless otherwise indicated or required.

#### D. CLEANING

1. 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.
2. Provide final protection and maintain conditions that ensure ceiling assemblies remain without damage or deterioration at time of Substantial Completion, in a manner suitable to Installer.

**END OF SECTION 09511**