

SECTION 09511 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Suspended metal grid ceiling system.
 - 2. Acoustical panels.
 - 3. Perimeter trim.
 - 4. Column trim.
 - 5. Fire rated assembly.

- B. Related Requirements:
 - 1. Section 01351 - Regulatory Compliance: Removal and recycling of acoustical ceiling tile.
 - 2. Section 13900 - Fire Suppression: Sprinkler heads in ceiling system.
 - 3. Section 15800 - Air Distribution: Air diffusion devices in ceiling system.
 - 4. Section 16500 - Lighting: Light fixtures attached to ceiling system.

1.2 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. Publications are reference within the text by these basic designations only.

- B. ASTM International (ASTM):
 - 1. ASTM C 635 - Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
 - 2. ASTM C 636 - Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
 - 3. ASTM E 84 - Test Method for Surface Burning Characteristics of Building Materials.
 - 4. ASTM E 1264 - Acoustical Ceiling Products.

- C. American Society of Civil Engineers (ASCE):
 - 1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures

1.3 SUBMITTALS

- A. Comply with the requirements of Section 01330.

- B. Product Data. Provide manufacturer's product data for suspension systems, showing all components.

- C. Shop Drawings: Show the following:
 - 1. Layout of grid components and hanger spacing, including perimeter support wires.
 - 2. Locations and methods of attachment of grid to walls. Clearance where grid is not attached to walls.
 - 3. Connection of ends of main beams and cross tees.
 - 4. Locations and details of compression struts and horizontal restraint wires or rigid bracing.
 - 5. Locations and details of seismic separation joints.
 - 6. Bracing for changes in ceiling plane.
 - 7. Locations and support details for light fixtures, diffusers, and other items within the ceiling system.

- D. Evaluation Report: ICC-ES report verifying code compliance for systems with alternative materials, design or methods of construction not specifically prescribed by the building code.

1.4 SYSTEM DESCRIPTION

- A. Design Requirements:
 - 1. Rigidly secure acoustical ceiling system including integral mechanical and electrical components with maximum deflection of 1/360.
 - 2. Conform to Underwriters Laboratories (UL) Fire Resistance Rating design Number for roof/ceiling assembly indicated on Drawings.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 - Product Requirements: Transport, handle, store, and protect products.
- B. Deliver acoustical units in manufacturer's original unopened containers with brand name and type clearly marked.
- C. Store under cover in dry, watertight conditions.
- D. Prior to installation, store acoustical units for 24 hours minimum at same temperature and relative humidity as space where Work will be installed.

1.6 PROJECT CONDITIONS

- A. Environmental Requirements: Maintain uniform temperature range of 60-85 degrees F, and humidity of no more than 70 percent relative humidity prior to, during, and after installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Provide products by the following manufacturers as specified:
 - 1. Armstrong World Industries Incorporated, Lancaster, PA (800) 448-1405.
 - 2. CertainTeed Ceilings, Valley Forge, PA (800) 233-8990.
 - 3. Chicago Metallic Corporation, Chicago, IL (800) 323-7164.
 - 4. Gold Bond Building Products, National Gypsum Company, Charlotte, NC (704) 365-7300.
 - 5. USG Interiors, Chicago, IL (800) 950-3839.

2.2 REGULATORY REQUIREMENTS

- A. Surface Burning Characteristics in Accordance with ASTM E 84 for Class A finish:
 - 1. Flame Spread: Less than 25.
 - 2. Smoke Density: Less than 50.
- B. Food Serving and Preparation Areas where Scheduled:
 - 1. United States Department of Agriculture (USDA): Approved for incidental food contact.
- C. Conform to Underwriters Laboratories (UL) Fire Resistance Design Number for roof/ceiling assembly indicated on Drawings.

2.3 SUSPENSION SYSTEM

- A. Provide suspension system specified herein for the corresponding ACT system as applicable as shown on the drawings. Provide suspension system compatible with acoustical panels selected.
- B. Grid: ASTM C635, intermediate duty, steel exposed T; nominal 1 inch width; stab-in connections.
- C. Accessories: Stabilizer bars, clips, and splices.

- D. Grid Finish:
 - 1. White, unless noted otherwise.
 - E. Support System: Hot or cold rolled steel channels; galvanized hanger wire, minimum 12 gage.
 - F. Edge Moldings: Metal channel with exposed flange to match suspension system. Minimum 2 inch wide horizontal leg.
 - G. Hold-Down Clips:
 - 1. Standard Duty Clip: Manufacturer's standard retention clips to suit conditions specified.
 - A. ACT-1: Non Fire-Rated Suspension System: Provide one of the following:
 - 1. Prelude 15/16 inch, XL #7300 Exposed Tee System, by Armstrong.
 - 2. Classic Stab System, 15/16 inch, #C12-12-15, by CertainTeed.
 - 3. 1200 System, by Chicago Metallic.
 - 4. Donn DX System, by USG.
 - B. ACT-2: Fire Rated - USDA Approved Suspension System: Provide one of the following:
 - 1. Prelude Plus Fire Guard, XL, HDA8200, by Armstrong.
 - 2. Environmental HDG Steel System, 1830 Fire Front, by Chicago Metallic.
 - 3. Environmental System ZXLA, by USG.
 - C. ACT-4: Non Fire-Rated Suspension System: Provide one of the following:
 - 1. Environmental HDG Steel System 1830 Fire Front, by Chicago Metallic.
 - 2. Environmental System ZXLA, by USG.
 - 3. Protectone Aluminum Fire-Rated Capped Stab System 15/16 inch, #PACS 12-12-15 by CertainTeed.
 - 4. Prelude Plus XL, by Armstrong.
 - D. Substitutions: Not Permitted.
- 2.4 ACOUSTICAL LAY-IN PANELS:
- A. Provide acoustical panels specified herein for the corresponding ACT system as applicable as shown on the drawings.
 - B. ACT-1: Non Fire-Rated Panels, square edge, nonperforated, abuse-resistant vinyl film facing, size as shown. Provide one of the following:
 - 1. Vinyl Faced Fiberglass Ceiling Panels, Random Fissured; Item #2911 by Armstrong.
 - 2. Premier Hi-Lite ClimaPlus Kapok Panels, unperforated, Item #7057G, by USG.
 - 3. Versatone Unperforated Vintage Item #1530-VIN-1, by CertainTeed.
 - 4. Coral Soft Touch Series, Item #7010-01F, by Chicago Metallic.
 - C. ACT-2: Square edge, non-perforated vinyl-faced gypsum panels, which satisfy USDAFISIS guidelines for sanitary applications. Size as shown. Provide one of the following:
 - 1. VinylRock, by CertainTeed.
 - 2. Sheetrock Lay-in Ceiling Panel ClimaPlus, by USG.
 - 3. Gridstone Brand Gypsum Ceiling Panels, by National Gypsum.
 - D. ACT-4: Non fire-rated panels, min. 2.00 pounds per square foot, square edge, factory-applied vinyl facing, embossed stipple pattern, size as shown. Provide one of the following:
 - 1. VinylRock X, Item #1140-CRF-1, by CertainTeed.
 - 2. Gridstone, by Gold Bond.
 - 3. Sheetrock Brand ClimaPlus Lay-In Ceiling Tile Panels, #3270 White, by USG.
 - E. Substitutions: Comply with the requirements of Section 01600.

2.5 ACCESSORIES

- A. Flexible curved angle trim for Sales Area Columns.

PART 3 - EXECUTION

3.1 PREPARATION/DEMOLITION

- A. Examine surfaces and adjacent areas where products will be installed and verify that surfaces conform to product manufacturer's requirements for substrate conditions. Do not proceed until unsatisfactory conditions have been corrected.
- B. Coordinate extension of existing grid ceiling system if existing system is to remain.
- C. Clean or paint existing grid as shown on Drawings prior to removal of "old" panels. Refer to Section 09900.
- D. Remove existing ceiling panels as shown on Drawings. Store removed panels for recycling as specified in Section 01351.
 - 1. If ceiling batt insulation is present, remove, retain and re-install batts above new ceiling panels.
- E. In new ceiling grid installation, verify that layout of hangers will not interfere with other Work.
- F. Beginning of installation indicates acceptance of existing conditions.

3.2 INSTALLATION – GENERAL

- A. Interface with Other Work:
 - 1. Do not install acoustical ceilings until building is enclosed, heating is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
 - 2. Schedule installation of acoustic units after interior wet work is completed.
 - 3. Install after major above ceiling work is complete.
 - 4. Coordinate location of hangers with other Work.
- B. Site Tolerances:
 - 1. Variation from Flat and Level Surface: 1/8 inch in 12 feet.

3.3 INSTALLATION - SUSPENSION SYSTEM

- A. Install system in accordance with ASTM C636 and manufacturer's published instructions.
- B. Install system in accordance with UL Fire Resistance Rating Design Number for roof/ceiling assembly indicated on Drawings.
- C. Rigidly secure acoustical ceiling system including integral mechanical and electrical components with maximum deflection of 1/360.
- D. If metal deck is not supplied with hanger tabs, coordinate installation of hanger clips during steel deck erection. Provide additional hangers and inserts as required.
- E. Hang system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members. Where ducts or other equipment prevent regular spacing of hangers, reinforce nearest affected hangers and related carrying channels to span extra distance.
- F. Locate system on room axis to a balanced grid design with edge units no less than 50 percent of acoustical panel size where Reflected Ceiling Plan not shown on Drawings. Match direction of existing ceiling grid unless directed otherwise by the Drawings.

- G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability. Do not eccentrically load system, or produce rotation of runners.
- H. Install edge molding at intersection of ceiling and vertical surfaces using longest practical lengths. Miter corners. Provide edge moldings at junctions with other interruptions. Secure at 16 inches on center.
 - 1. Rivet cross tee's at 4 feet on center to edge mold.

3.4 INSTALLATION - ACOUSTICAL PANELS

- A. Fit acoustic units in place free from damaged edges or other defects. Install acoustic units level, in uniform plane, and free from twist, warp, and dents.
- B. Construct light fixture boxes of gypsum board above light fixtures in accordance with UL fire Resistance Rating Design Assembly requirements.
- C. Install manufacturer's standard duty hold-down clips to retain panels tight to grid system where ACT 4 is scheduled.

3.5 FIELD QUALITY CONTROL

- A. Inspect acoustical panel placement, ceiling grid suspension system installation and connection to structure.
- B. Correct deficiencies in Work which inspection indicates are not in compliance with contract requirements.

3.6 CLEANING

- A. Clean exposed surfaces of acoustical ceilings including trim, edge moldings, and suspension system members

END OF SECTION