

## SECTION 09 51 00

### ACOUSTICAL TILE CEILINGS

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. Furnish labor, materials, tools, equipment, scaffolding devices and incidentals necessary or required to install all acoustical tile ceilings and suspension system where shown or scheduled on the drawings.

##### 1.2 RELATED WORK

- A. Gypsum Wallboard: Section 09 29 00
- B. Air Distribution Systems: Division 23
- C. Lighting: Division 26

##### 1.3 REFERENCES:

- A. ASTM E1264 – Classification For Acoustic Ceilings
- B. ASTM E84 – Surface Burning Characteristics
- C. ASTM C367 – Strength Properties of Prefabricated Architectural Acoustical Tile or Lay-In Ceiling Panels
- D. ASTM C423 – Sound Absorption
- E. ASTM C636 – Standard Practice for Installation of Metal Suspensions Systems for Acoustical Tile and Lay-In Panels
- F. ASTM E1414 – Sound Attenuation
- G. 2010 Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources. Using Environmental Chambers – Version 1.1 – California
- H. ASTM C518-10 – Thermal Transmission Properties

##### 1.4 SUBMITTALS:

- A. Comply with Requirements of Section 01 33 00.
- B. Submit through Contractor to Architect:

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## 1.5 SAMPLES

- A. Submit one 6 inch x 6 inch piece of each type of acoustical tile to Architect for approval.
- B. Label tile with manufacturer's name, light reflection and noise reduction coefficient, flame spread rating and locations to be installed.
- C. Submit a sample of adequate size to show all component parts of the suspension assembly, including perimeter angles. .

## 1.6 ACOUSTICAL PERFORMANCE

- A. Acoustical ceiling tiles in academic and office areas to have a minimum noise reduction coefficient (NRC) rating of 0.55 and a minimum ceiling attenuation class (CAC) rating of 35.

## 1.7 GUARANTEE

- A. Acoustical ceiling boards shall have a manufacturer's limited system performance warranty against warping, shrinking or sagging, for minimum Thirty (30) years from date of final acceptance of the building. Grid system to be carry a manufacturer's Thirty (30) year guarantee.
- B. All work under this section shall be guaranteed free from defects in materials and workmanship for a period of one (1) year from date of final acceptance of the building, except where longer periods of time are specified.
- C. If during the material guarantee period, shrinkage, buckling or warping of acoustical ceiling occurs, tighten all joints, replace defective acoustical boards as required to maintain tight, neat ceiling.

## PART 2 PRODUCTS

### 2.1 MATERIAL

- A. Acoustical Tile Ceiling

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Acoustical tile ceilings as called for on plans to be exposed grid system, non-combustible, mineral fiber, white ceiling board with factory applied white vinyl washable latex paint. Class 'A', flame spread of 25. 24" x 48" x 5/8" to 7/8" non-directional pattern, Radar ClimaPus Item Numbers: 2410, 2415, 2407, 22441 are acceptable by USG, or Fissured HumiGuard Plus Item Numbers: 1755, 1729, 1830, 466, 1714 are acceptable by Armstrong or approved alternate. NRC rating: 0.55. CAC rating: 35.) Verify to match existing where installed adjacent to existing ceiling.

- B. All suspended ceilings systems shall be grid system as manufactured by USG-Donn DX-24, Armstrong or approved equal manufacturer. Provide Donn ZXLA or approved equal for areas where vinyl covered gypsum board lay-in panels are called for. Components shall be formed from cold rolled steel, electrozinc coated and prepainted white. Main tee shall be double web design, .020 gauge, 1 1/2" in height. Wall angle shall be hemmed edge .024 gauge for galvanized grids. Equals: Chicago Metallic 200 series, Prelude 15/16" exposed tee system by Armstrong World Industries, Inc, or approved alternate.
- C. Fire rated ceiling assemblies shall be as called out above except system shall be equivalent to DXL system by USG, Interiors. System shall meet requirements of U.L. Laboratories.
- D. Provide hold down clips on all fire rated ceilings, vestibules where ceiling tile is installed, and on other areas where called for.
- E. In remodeled areas where existing grid is modified. Any new grid sections used in remodeled areas shall match existing.
- F. Drywall Suspension System: Suspended gypsum board ceilings are to DGL or DGLW drywall suspension system by USG Interiors. Components shall be manufacturer's standard components and installed in strict accordance with manufacturer's specifications.

## PART 3 EXECUTION

### 3.1 HANDLING OF MATERIALS

- A. Deliver materials to job in manufacturer's original containers, properly store and protect before, during and after installation. Damaged or defective materials shall be removed and replaced.

### 3.2 EXAMINATION OF EXISTING CONDITIONS

- A. Contractor shall be responsible for examination and acceptance of all surfaces and conditions affecting installation of suspension system and acoustical ceilings. Unsatisfactory conditions shall be corrected before proceeding with the work.
- B. Start no work until glazing is complete, exterior openings closed in, cement work, plastering or other wet work is completed and dried out. **HVAC SYSTEM MUST BE IN PLACE AND PROPERLY OPERATING BEFORE ANY CEILING TILE IS INSTALLED**
- C. Uniform temperature of 60 degrees F. minimum shall be maintained before, during and after acoustical material installation. Humidity level shall not be any more that what is required by manufacturer's instructions for installation.

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### 3.3 INSTALLATION OF SUSPENDED SYSTEMS

- A. Exposed grid suspension system:
  - 1. Wall molding shall be attached to all perimeter walls in accordance with manufacturer's recommendations.
  - 2. Main runners shall be attached to structure with No. 12 gauge hanger wires spaced not more than 4'-0" on center in one direction and 4'-0" on center in the other.
  - 3. Suspended drywall tees or framing shall be attached to structure with No. 12 gauge hanger wires spaced not more than 2'-0" on center in one direction and 2'-0" on center in the other.
  - 4. Cross tees shall be installed at 24" on center and mechanically fastened to main runners.
  - 5. The suspension system shall be installed to permit border units of the greatest possible size, but no less than 4" wide.
  - 6. All members shall be aligned for true, level surface and straight lines.

### 3.4 INSTALLATION OF ACOUSTICAL TILE CEILINGS

- A. Install units to sub-surfaces from set out points and to pattern shown. Verify location of work of other trades so their items occur within a whole unit or at joints as shown. Make cutouts for recessed items provided by other trades.
- B. Provide additional hangers at two adjacent corners of 2'x 4' light fixtures. Provide two at each strip fixture or incandescent fixture.
- C. Install units in place, fitting snugly. Provide spacers or hold-down clips where required and within 12' of exterior doors.
- D. Paint all rivets exposed to view to match suspension system finish. After installation, clean any soiled surfaces. Replace any damaged units.
- E. EXTRA STOCK: At project completion, provide one additional box of each type of acoustical unit specified, for maintenance use by the owner. These tiles are not to be used to replace tiles damaged as a result of failure of other items under warranty (i.e. roofing systems, HVAC systems, etc.)
- F. SALVAGED STOCK: During demolition, use care to salvage existing ceiling tile at band corridor. Store in area as directed by Owner.

### 3.5 CLEANING

- A. Following installation, clean soiled and discolored surfaces of units.
- B. Remove and replace units which are damaged or improperly installed. Do not use owner's extra stock for replacing damaged ceiling tiles damaged during construction and damage resulting from failed building components or assemblies during the warranty period.

END OF SECTION

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