SECTION 095100 - ACOUSTICAL CEILINGS

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Suspended metal grid ceiling system and perimeter trim.
B. Acoustical tile and panels.

1.2 RELATED SECTIONS

A. Section 09 29 00 – Gypsum Board.
B. Division 23 - Air Conditioning: Air diffusion devices in ceiling system.
C. Division 26 - Electrical: Light fixtures in ceiling system.

1.3 REFERENCES

A. ASTM C635 - Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
B. ASTM C636 - Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
C. ASTM E1264 - Classification of Acoustical Ceiling Products.
D. UL - Fire Resistance Directory and Building Material Directory.

1.4 SYSTEM DESCRIPTION

A. Suspended acoustical tile.
B. Suspension system to rigidly secure acoustical ceiling system including integral mechanical and electrical components with maximum deflection of 1/360.

1.5 SUBMITTALS

A. Submit under provisions of Section 01 33 00.
B. Product Data: Provide data on metal grid system components and acoustical units.
C. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention.

1.6 QUALIFICATIONS

A. Grid Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
B. Acoustical Unit Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

1.7 REGULATORY REQUIREMENTS

A. Conform to applicable code for fire rated assembly and combustibility requirements for materials.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 70 percent prior to, during, and after acoustical unit installation.

1.9 SEQUENCING

A. Sequence work under provisions of Section 01 31 00.
B. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
C. Install acoustical units after interior wet work is dry.

1.10 EXTRA MATERIALS

A. Furnish under provisions of Section 01 70 00.
B. Provide five (5) extra acoustical tiles to Owner.

1.11 WARRANTY

A. Acoustical panel. Submit a written warranty executed by the manufacturer, agreeing to repair or replacement of acoustical panels that falls within the warranty period. Failures include, but are not limited to:
   1. Acoustical Panels: Sagging or warping.
   2. Grid System: Rusting and manufacturer's defects.
B. Warranty period for acoustical panels is one (1) year from date of Substantial Completion.
C. Warranty period for grid system is ten (10) years from date of Substantial Completion.
D. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run the concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Armstrong World Industries, Inc. (Basis of Design)
B. United States Gypsum (USG).
C. Substitutions: As described in Section 01 60 00.

2.2 SUSPENSION SYSTEM

A. Components: Components: Main beams and cross tees, base metal and end detail, fabricated from commercial quality hot dipped galvanized steel complying with ASTM A 653. Main beams and cross tees are double-web steel construction with exposed flange design. Exposed surfaces chemically cleansed, capping prefinished galvanized steel in baked polyester paint. Main beams and cross tees shall have rotary stitching.
   1. Fire Performance: FireGuard
   2. Duty Rating: Heavy Duty

3. Face Dimension: 15/16"
4. Profile Type: Exposed Tee
5. Material: Hot-Dipped Galvanized Steel
6. Color: White
7. Acceptable Product: Prelude XL

B. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

C. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft annealed, with a yield stress load of at least time three design load, but not less than 12 gauge.

D. Edge Moldings and Trim:

E. Support Channels and Hangers: Galvanized steel; size and type to suit application and ceiling system as specified.

2.3 ACOUSTICAL CEILING UNITS

A. Acoustical Panels: Basis of Design: Armstrong Optima
1. Surface Texture: Fine
2. Composition: Fiberglass
3. Color: White
4. Size: 24" x 24" x 1"
5. Edge Profile: Square
6. Noise Reduction Coefficient (NRC): 0.90
7. Ceiling Attenuation Class (CAC): 26
8. Fire Performance: Class A
9. Light Reflectance White Panel: 0.90Acceptable Product: Armstrong Optima

2.4 ACCESSORIES

A. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify site conditions under provisions of Section 01 45 00.

B. Verify that layout of hangers will not interfere with other work.

3.2 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C636 manufacturer's instructions and as supplemented in this section.

B. Install system capable of supporting imposed loads to a deflection of 1/360 maximum.

C. Locate system on room axis according to reflected plan.

D. Install after major above ceiling work is complete. Coordinate the location of hangers with other work.

E. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

F. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability. Support fixture loads by supplementary hangers located within 6 inches of each corner; or support components independently.
H. Do not eccentrically load system, or produce rotation of runners.
I. Install edge molding at intersection of ceiling and vertical surfaces, using longest practical lengths. Miter corners. Provide edge moldings at junctions with other interruptions. Wall angles to be black.

3.3 INSTALLATION - ACOUSTICAL CEILING UNITS

A. Install acoustical units in accordance with manufacturer's instructions.
B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
C. Lay directional patterned units one way with pattern parallel to longest room axis. Fit border trim neatly against abutting surfaces.
D. Install units after above ceiling work is complete.
E. Install acoustical units level, in uniform plane, and free from twist, warp and dents.
F. Cut tile panels to fit irregular grid and perimeter edge trim. Field rabbet tile panel edge. Double cut and field paint exposed edges of units.
G. Where bullnose concrete block corners or chamfered column corners or round obstructions occur, provide preformed closers to match edge molding.

3.4 ERECTION TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: two (2) degrees.

END OF SECTION 095100