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Lockdown[®] SPECIFICATION

Section 09545 - Suspended Metal Panel Ceiling System

1.0 SCOPE OF WORK

1.1 WORK INCLUDED: This specification covers the material, installation, and related requirements for the Suspended Metal Acoustical Security Panel Ceiling System including all necessary acoustical insulation, suspension systems, and fasteners.

1.2 RELATED WORK: The following items of related work are not included in this Section of the specifications.

1.2.1 Ceiling Lighting Systems; their components, layout, coordination, installation, or support systems. Compatible recessed Security Lighting Fixtures are to be furnished and installed by Division 16 Electrical.

1.2.2 Ceiling Air Supply and Return Systems; their components, layout, coordination, installation, or support systems. Compatible Air supply and return systems are to be furnished and installed by Division 15 Mechanical.

2.0 SUBMITTALS

2.1 A manufacturer's certification of compliance with the acoustical performance required under Section 6.2 of this specification.

2.2 Shop drawings shall be submitted and approved before fabrication of the ceiling panels or their suspension systems.

2.3 1' x 1' assembled samples of each ceiling panel and its suspension system.

2.4 Manufacturers' Product Data and Installation Instructions.

3.0 **FIELD CONDITIONS:** The ceiling contractor shall verify all dimensions, elevations, and job site conditions before installation commences.

4.0 PRODUCT COMPONENTS

- 4.1 SUSPENDED METAL PANEL CEILINGS:** Ceiling panels shall be nominally 24" x 24" (24" x 48") 1" deep with sloping vertical legs on all four sides. All ceiling panels shall be factory formed from perforated **18 gauge galvanized steel**. Where noted on the drawings for high humidity areas, the ceiling panels shall be formed of aluminum with a minimum thickness of .060". All perforated panels shall have .080" diameter holes on .220" staggered 45 degree centers. When installed, the face of the panels shall rest on the inside surface of the exposed horizontal flanges of the main runners and cross tees. **The sloping vertical legs of the panels shall lock-down positively and continuously under the bottom surface of the bulb of the tee sections, providing a visual concealment barrier without the use of concealed clips or fasteners.**
- 4.2 SUPPORT SYSTEMS FOR SUSPENDED METAL PANEL CEILING:** The ceiling panel support system shall consist of main runners , cross tees, hanger wires, perimeter channel with hold down, and compression struts.
- 4.2.1 MAIN RUNNERS AND CROSS TEES:** Shall conform to the requirements of a heavy-duty classification in accordance with ASTM C-635. They shall be rolled with a double web and a rectangular bulb from **Hot Dipped Galvanized steel, minimum .020" thick**, to an overall height of 1-1/2" with a flange width of 15/16". The cross tees shall provide a positive mechanical lock into the main runners.
- 4.2.2 HANGERS:** Supporting the main runners shall be **12 gauge galvanized** steel wire hung on minimum 48" centers from the structure above the ceiling.
- 4.2.3 COMPRESSION STRUTS:** Shall be composed of telescoping 1/2" diameter and 3/4" diameter steel galvanized tubing. The 1/2" diameter tube shall be notched on one end to fit over the bulb of the main runner. At the other end, a length of 3/4" diameter tube is to be telescoped over the top portion of the 1/2" diameter tube and screw fastened to it with two (2) 3/8" long TEK screws so that the top of the 3/4" diameter tube bears on the structure above and the bottom of the 1/2" diameter tube fits snugly over the bulb of the main runner. A compression strut is required at each hanger wire and shall be tied to the hanger wire at the top and bottom.
- 4.2.4 WALL MOLDINGS:** Exposed wall moldings shall be channel shaped and be of the same material and have the same finish as the suspension system runners and shall include closure channels to hold perimeter panels in place.
- 4.2.5 FASTENERS:** All exposed fasteners shall be tamper proof and shall be a minimum No. 12 size. Fasteners are to be selected and furnished by the contractor and approved by the architect/engineer.

- 4.3** ACOUSTICAL MATERIAL: The inside surface of all perforated ceiling panels shall be covered with **Class "A"** fiberglass insulation wrapped in black Fire Retardant Poly. Insulation shall be of sufficient thickness and density to provide the acoustical requirements as outlined in Section 6.2 of this specification.
- 4.4** LIGHTS AND AIR: Although not furnished by the ceiling system manufacturer, all light and air units are to be system compatible and sized so as to fit into and trim off full module opening and shall be independently supported from the structure above by the installing trade.

5.0 FINISH

- 5.1** CEILING PANELS: The metal panels shall have a **Polyester Powder Coated Paint finish factory applied after perforation to ensure coating of perforated holes.** Panels shall be coated with white polyester powder to a thickness min 2.0 mil. Before painting, galvanealed steel or aluminum surfaces shall be cleaned, rinsed, and properly treated to receive the finish. Finish to achieve the following performance characteristics: Salt Spray per ASTM B-117 - 1000 hours PASS at less than 1/8" from score; Humidity Resistance per ASTM D-2247 - 1000 hours PASS at less than 1/8" from score.
- 5.2** SUSPENSION SYSTEMS: The main runners, cross tees, and wall moldings shall have a factory applied finish coat to match the color of the ceiling panels.

6.0 PERFORMANCE

- 6.1** ACCESSIBILITY: Suspended metal panel ceiling systems shall be designed and installed to resist access to the plenum area above except through pre-designated removable ceiling panels which shall be secured to the suspension system with tamper proof screws. System compatible, hinged, locking, downward accessible doors are to be provided in locations indicated on architectural reflected ceiling plans.
- 6.2** ACOUSTICAL REQUIREMENTS: The ceiling systems shall provide a noise reduction co-efficient (NRC) of not less than .80 when tested in accordance with ASTM C423-84a in an E-400 mounting as defined in ASTM E795-83.

7.0 MATERIAL PROTECTION AND INSTALLATION

- 7.1** MATERIAL PROTECTION: Material shall not be delivered to the job site, nor installed, until all exterior openings have been closed in and all concrete and other wet work is completed and dry.
- 7.2** SITE INSPECTION: Prior to installation of the ceiling systems, the general

contractor shall verify that the structure and surfaces provided by other trades are properly built to the dimensions shown on the approved ceiling shop drawings and that the structure is ready to receive the ceiling system. All discrepancies shall be corrected prior to commencing installation.

- 7.3** INSTALLATION: The ceiling system shall be installed in accordance with ASTM C636 in layouts as reflected on the approved shop drawings, all in compliance with the manufacturer's installation instructions. The suspension system and wall moldings shall be installed plumb and level. Except for the openings for light, air, fire protection, or access shown on the reflected ceiling plans, all openings or cut-outs required in the ceiling panels shall be field cut by the trades requiring the openings.

8.0 QUALITY ASSURANCE

- 8.1** MANUFACTURER QUALIFICATIONS: Company specializing and regularly engaged in the domestic manufacture of metal panel security ceilings with a minimum of five (5) years experience in the manufacture of ceiling systems for Justice Facilities.
- 8.2** ERECTOR QUALIFICATIONS: Company specializing in the installation of metal acoustical ceilings, approved by the manufacturer, and having a minimum of three (3) years experience in the installation of ceiling systems for Justice Facilities
- 8.3** SINGLE SOURCE RESPONSIBILITY. To insure proper compatibility, all ceiling components listed in Section 4.0 Product Components, shall be provided by a single source.

9.0 ACCEPTABLE MANUFACTURERS

- 9.1** SUSPENDED METAL SECURITY PANEL CEILING SYSTEM: Shall be Lockdown[®] as manufactured by Gordon Corrections Division, Bossier City, LA, 866-733-3851, sales@gordoncorrections.com or equal as approved by architect in accordance with Paragraph 9.2 below.
- 9.2** SUBSTITUTIONS: Ceiling systems by other manufacturers may be substituted only after written approval of the architect, such approval being received ten (10) calendar days prior to the bid opening. The proposed system shall meet all the requirements of this specification.