**Price Hospital Grade Ceiling System**

***Division 23 – Heating, Ventilating, and Air Conditioning***

***Section 23 37 13 – Diffusers, Registers, and Grilles***

The following specification is for a defined application. Price would be pleased to assist in developing a specification for your specific need.

**PART 1 – GENERAL**

**1.01 Section includes**:

1. Hospital Grade Ceiling System.

**1.02 Related Requirements**

1. Section 01 30 00 – Administrative Requirements
2. Section 01 40 00 – Quality Requirements
3. Section 01 60 00 – Product Requirements
4. Section 01 74 19 – Construction/Demolition Waste Management and Disposal
5. Section 01 78 00 – Closeout Submittals
6. Section 01 79 00 – Demonstration and Training

**1.03 Reference Standards**

A. ASHRAE Standard 170 – Ventilation of Health Care Facilities; 2013

B. ASTM C635 – Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2013

C. ASTM C636 – Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels; 2013

D ASTM D610 – Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces; 2012

E. ASTM D714 – Test Method for Evaluating Degree of Blistering of Paints; 2009

F. ASTM D1308 – Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes; 2013

G. ASTM D1654 – Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments; 2008

H. ASTM D4752 – Standard Practice for Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub; 2015

I. FGI Guideline 2010 – Facility Guidelines Institute, Guidelines for Design and Construction of Health Care Facilities; 2010

**1.04 Administrative Requirements**

A. Pre-installation Meeting: Conduct a pre-installation meeting one week prior to the start of the work of this section; require attendance by all affected installers.

B. Sequencing: Ensure that utility connections are achieved in an orderly and efficient manner.

**1.05 Submittals**

A. See Section 01 30 00 – Administrative Requirements for submittal procedures.

B. Product Data: Provide data indicating configuration, general assembly, and materials used in fabrication.

C. Shop Drawings: Indicate configuration, general assembly, and materials used in fabrication.

D. Manufacturer's Installation Instructions: Indicate support and hanging details, installation instructions, recommendations, and service clearances required.

E. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, maintenance and repair data, and parts lists.

F. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 01 60 00 - Product Requirements for additional provisions.

**1.06 Quality Assurance**

1. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum ten years of documented experience.
2. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

**1.07 Warranty**

1. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
2. Provide 18 month manufacturer warranty from date of shipment for extruded aluminum ceiling system.

**PART 2 – PRODUCTS**

**2.01** **Hospital Grade Ceiling System**

1. Basis of Design: Price Industries, Inc.
2. Hospital Grade Ceiling System: Model HGC
3. Hospital Grade Ceiling System: [Price Model HGC]:
   1. General:
      1. The cleanroom ceiling system shall be supplied to prevent air leakage between the ceiling plenum and occupied space below, preventing the flow of contaminants into or out of the clean zone.
   2. Construction:
      1. Manufacturer shall supply an extruded aluminum ceiling suspension system to support diffuser, fill-in panels, and light fixtures (by others).
      2. The ceiling suspension system shall be provided in pre-cut and pre-punched tee sections as indicated on the final drawings.
      3. All extruded aluminum tees shall include integral channels along the stack to attach hold down clips for fill-in panels, and channels on the back of the face for accepting molded slide-in gasket.
      4. The extruded aluminum tees shall include integral vinyl extruded gaskets to prevent air leakage between the plenum and occupied space.
      5. Factory provided assembly clips shall facilitate tool-free installation of the ceiling system.
      6. Ceiling tees shall have the face width and overall height as specified in the schedule.
      7. Main members shall use a butt connector clip at each end for connection with other main members.
      8. Cross members shall use a two-piece universal clip at each end, permitting the spot removal or 90° rotation of any cross member without the use of tools, and a perimeter bracket shall be used to connect cross members to perimeter tees.
      9. All tees shall have a factory punched regimentation every 24 inches, or as specified, to allow tool-free connection of cross tees.
      10. All tees and half tees shall be supported with minimum 12 gauge, pre-stressed suspension wire on 48 inch centers.
      11. Ceiling systems shall be designed to support 15 pounds per square foot when installed as per ASTM C636.
      12. One additional hanger shall be used to suspend the main member at the mid-module location at each end of the lighting fixtures.
      13. Maximum deflection shall not exceed L/360, according to ASTM C635 defection test based on design loads.
      14. All components of the extruded aluminum ceiling system shall be from a single manufacturer and shall be in accordance with ASHRAE Standard 170 and FGI 2010.
   3. Paint finish:
      1. The ceiling system finish shall have a B12 white baked-on powder coat finish.
         1. The paint finish must demonstrate no degradation when tested in accordance with ASTM D1308 (covered and spot immersion) and ASTM D4752 (MEK double rub) paint durability tests.
         2. The paint film thickness shall be a minimum of 2.0 mils.
         3. The finish shall have a hardness of 2H.
         4. The finish shall withstand a minimum salt spray exposure of 500 hours with measurable creep in accordance with ASTM D1654, and 1000 hours with no rusting or blistering in accordance with ASTM D610 and ASTM D714.
         5. The finish shall have an impact resistance of 80 in-lb.
      2. The ceiling system finish shall have a B25 finish to match a customer supplied sample.

**PART 3 – EXECUTION**

**3.01 Examination**

A. Verify that conditions are suitable for installation.

B. Verify that field measurements are as shown on the drawings.

**3.02 Installation**

1. Verification of the ceiling dimensions and all mechanical and electrical work by the installing contractor shall be completed prior to installation of the extruded aluminum ceiling system.
2. The contractor shall confirm in writing that the intended space is ready for installation.
3. Install ceiling system components in accordance with manufacturer’s instructions, and per ASTM C636.
4. The system shall be installed in an area where the temperature is above 60°F (16°C) and below 85°F (29°C), and relative humidity below 80 percent.
5. Ceilings shall be installed to the heights indicated on the plans and specifications to a tolerance of 1/8 inch per 12 feet (3 mm per 3600 mm).
6. Suspended ceiling hangers shall be plumb and shall not interfere with other objects within the ceiling space that are not part of the supporting structural or integrated ceiling system.
7. See drawings for the size(s) and locations of extruded aluminum ceiling system.
8. Do not support components from ductwork.

**3.03 Adjusting**

1. Verify that field measurements are as shown on the drawings.

**3.04 Field Quality Control**

1. See Section 01 40 00 – Quality Requirements for additional requirements.

**3.05 Cleaning**

1. See Section 01 74 19 – Construction Waste Management and Disposal for additional requirements.

**3.06 Closeout Activities**

1. See Section 01 78 00 – Closeout Submittals for closeout documentation requirements.
2. See Section 01 79 00 – Demonstration and Training for additional requirements.