

Suggested Specifications

Price Linear Floor Grilles

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 Summary

- A. This section includes the following:
 - 1. Linear Floor Grilles.

1.02 Related Documents

- A. Section 01 30 00 – Administrative Requirements
- B. Section 01 40 00 – Quality Requirements
- C. Section 01 60 00 – Product Requirements
- D. Section 01 74 19 – Construction/Demolition Waste Management and Disposal
- E. Section 01 78 00 – Closeout Submittals
- F. Section 01 79 00 – Demonstration and Training
- G. Section 23 30 00 – HVAC Air Distribution
- H. Section 23 32 00 – Air Plenums and Chases

1.03 Reference Standards

- A. All referenced standards and recommended practices in this section pertain to the most recent publication thereof, including all addenda and errata.
- B. ASHRAE Standard 55 – Thermal Environmental Conditions for Human Occupancy
- C. ASHRAE Standard 62.1 – Standards for Ventilation and Indoor Air Quality
- D. ASHRAE Standard 70 – Method of Testing the Performance of Air Outlets and Air Inlets
- E. ASTM Standard D610 – Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces
- F. ASTM Standard D714 – Standard Test Method for Evaluating Degree of Blistering of Paints
- G. ASTM Standard D1308 – Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes
- H. ASTM Standard D1654 – Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
- I. ASTM Standard D4752 – Standard Practice for Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub
- J. ASTM Standard E84 – Standard Test Method for Surface Burning Characteristics of Building Materials
- K. NFPA Standard 70A, Article 100 – National Electrical Code

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:
 - 1. Provide data indicating configuration, general assembly, materials used in fabrication, rated capacities, and furnished specialties and accessories.
 - 2. Include drawings indicating size, profiles and dimensional requirements of the linear floor grilles that are based on the specific system indicated.
 - 3. Include catalog performance ratings that indicate air volume flow, initial pressure drops, sound performance, and throw, as tested in accordance with ASHRAE 70.
- C. Shop Drawings: For each type of product indicated, include the following:
 - 1. Equipment assemblies and indicated dimensions.
 - 2. Required clearances.
 - 3. Method of field assembly.
 - 4. Revit models.
- D. Coordination Drawings:
 - 1. Include floor plans, and other details, drawn to scale, on which the following items are shown and coordinated based on input from installers:

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- a. Floor or underfloor-mounted items including:
 - 1. Floor structure (floor tiles, concrete, etc.)
 - 2. Floor finishing (carpet, tile, etc.)
 - 3. Access panels
 - 4. Electrical components
 - 5. Plumbing
 - 6. Networking components
 - 7. Terminal Units and other HVAC components
- E. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, maintenance schedules and repair data, and parts lists.

1.06 Quality Assurance

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum ten years of documented experience.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.
- C. Electrical Components, Devices and Accessories: Listed and labeled as defined in NFPA 70, Article 100 by a testing agency acceptable to authorities having jurisdiction and marked for intended use.

1.07 Warranty

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
- B. Provide 18 month manufacturer warranty from date of shipment for grilles and registers.

PART 2 – PRODUCTS

2.01 General

- A. Basis of Design: Price Industries, Inc.
 - 1. Linear Floor Grille [Price Model LFG]
- B. General Product Information:
 - 1. Furnish and install Price model LFG linear floor grilles of the sizes and capacities indicated on the drawings or outlet schedule.
 - 2. Unit sizes shall be selected in accordance with ASHRAE guidelines and manufacturer's literature.
 - 3. Manufacturers shall demonstrate that they have successfully supplied and installed underfloor HVAC products, as well as the computer modeling thereof for a minimum of 10 years.
 - 4. Manufacturers must be pre-qualified to bid based on the completion of a minimum of [xx] jobs in similar climates.
 - 5. Manufacturers shall provide a list of completed jobs and references.

2.02 Linear Floor Grilles

- A. Description:
 - 1. Furnish and install Price model LFG linear floor grille in the sizes, core style, configurations and capacities indicated on the plans and air outlet schedule.
- B. Performance:
 - 1. The manufacturer of the linear floor grilles shall provide performance data for air volume, initial pressure drop, and sound levels.
 - 2. Air shall be delivered to the space without the use of nozzles.
 - 3. All data must be tested in accordance with the most recent publication of ASHRAE 70.
- C. Construction:
 - 1. The grille face and border shall be suitable for a drop-in installation.
 - 2. Grilles shall have fixed [0 degree], [15 degree], or [30 degree] blades spaced [1/4 inch], [1/2 inch], or [7/16 inch] on center, with the blades running parallel to the long dimension of the grille.
 - 3. The outlet core shall have extruded aluminum receiving bar.
 - 4. The grille border shall be heavy-duty extruded aluminum construction with precise factory mitered corners and reinforcing support bars for extra support for the core receiving bar.
 - 5. The support and receiving bars shall not exceed six inches on center.
- D. Mounting/Fastening:
 - 1. The core shall be held into the border with removable core clips, allowing the removal of the core without special tools.
 - 2. The frame shall be attached to the floor with (**select one**):

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- a. Countersunk screws
 - b. Spring-clips
- E. Finish:
1. The grille shall be finished in (**select one**):
 - a. B11 Pure White powder coat
 - b. B12 White powder coat
 - c. B13 Off-White powder coat
 - d. B15 Aluminum powder coat
 - e. B17 Black powder coat
 - f. B25 Baked enamel color to match a customer supplied sample
 - g. PC12 Prime coat powder coat
 - h. #66 Brushed aluminum with clear powder coat
 - i. Prepared aluminum, mill finish and factory cleaned
 - j. Raw mill finish aluminum
 - k. Black anodized
 - l. Clear anodized
 - m. Light bronze anodized
 - n. Medium bronze anodized
 - o. Dark bronze anodized
 - p. Champagne anodized
 - q. Special anodized color to match customer supplied sample
 2. The paint finish shall comply with the following (**powder coat paint finishes only**):
 - a. 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.
 - b. The paint film thickness shall be a minimum of 2.0 mils.
 - c. The finish shall have a hardness of 2H.
 - d. The finish shall withstand a minimum salt spray exposure of 1000 hours.
 - e. The finish shall have an impact resistance of 80 inch-pounds.
 3. The paint finish shall comply with the following (**non-powder coat finishes only**):
 - a. The finish shall withstand a minimum salt spray exposure of 500 hours with no measureable creep in accordance with ASTM D1654.
 - b. The finish shall exhibit no rusting or blistering as per ASTM D610 and ASTM D714.

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 Manufacturer's Field Services

- A. The manufacturer shall provide the services of an underfloor air systems specialist. This engineer shall make at a minimum the following trips to the site with construction and design personnel.
 1. The first trip to the job shall occur right before the raised access floor is being installed. The engineer will inspect all plenum penetrations and construction to see that proper methods are being used. Any deficiencies found shall be brought to the general contractor's attention on site that day. Site observation report shall be made and emailed to the HVAC engineer for approval. If approved they shall forward the report to the construction team as appropriate.
 2. The second trip to the job shall occur during the building commissioning process. Communication shall occur with all associated trades to solve any problems that prevent contract completion. The engineer shall assist with system testing and verify proper functioning of the UFAD system. Any deficiencies found shall be brought to the general contractor's attention on site that day. Site observation report shall be made and emailed to the HVAC engineer for approval. If approved they shall forward the report to the construction team as appropriate.

3.03 Installation

- A. Install linear floor grilles level and plumb.
- B. Complete installation and startup checks according to manufacturer's instructions and perform the following.
 1. Verify that inlet duct connections are as recommended by manufacture to achieve proper performance.
 2. Verify that any identification tags are visible.
 3. Verify locations of thermostats, humidistats, and other exposed control sensors with drawings and room details before installation.
- C. Maintain sufficient clearance for normal services, maintenance, or in accordance with construction drawings.
- D. See drawings for the size(s) and locations of linear floor grilles.
- E. Connect to ductwork in accordance with Section 23 31 00.

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3.03 Adjusting

- A. Balance outlets according to manufacturer's recommendations.
- B. Verify that field measurements are as shown on the drawings.

3.04 Field Quality Control

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

3.05 Cleaning

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

3.06 Closeout Activities

- A. See Section 01 78 00 – Closeout Submittals for closeout documentation requirements.
- B. See Section 01 79 00 – Demonstration and Training for additional requirements.