**Price Perforated Face Return Grille**

**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. **Section includes**:
1. Perforated Face Return Grille.
	1. **Related Requirements**
2. Section 01 30 00 – Administrative Requirements
3. Section 01 40 00 – Quality Requirements
4. Section 01 74 21 – Construction/Demolition Waste Management and Disposal
5. Section 01 78 00 – Closeout Submittals
6. Section 01 79 00 – Demonstration and Training
	1. **Reference Standards**
7. All referenced standards and recommended practices in this section pertain to the most recent publication thereof, including all addenda and errata.
8. ASHRAE Standard 55 – Thermal Environmental Conditions for Human Occupancy
9. ASHRAE Standard 70 – Method of Testing the Performance of Air Outlets and Air Inlets
10. ASTM 610 – Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces
11. ASTM 714 – Test Method for Evaluating Degree of Blistering of Paints
12. ASTM D1308 – Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes
13. ASTM D1654 – Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
14. ASTM D4752 – Standard Practice for Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub
15. NFPA 90A – Standard for the Installation of Air-Conditioning and Ventilating Systems
16. UL/ULC – Underwriters Laboratories Fire Resistance Directory/Underwriters Laboratories of Canada Equipment and Materials Directory

**1.04 Submittals**

1. See Section 01 30 00 – Administrative Requirements for submittal procedures.
2. Product Data: Provide data indicating configuration, general assembly, and materials used in fabrication. Include catalog performance ratings that indicate air flow, and NC designation.
3. Shop Drawings: Indicate configuration, general assembly, and materials used in fabrication.
4. Project Record Documents: Record actual locations of units and control components.
5. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions (if applicable), and maintenance and repair data.
6. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.
7. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

**1.05 Quality Assurance**

1. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum ten years of documented experience.

**1.06 Warranty**

1. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
2. Provide 12 month manufacturer warranty from date of shipment of grilles and registers.

**PART 2 – PRODUCTS**

**2.01 Perforated Face Return Grilles - General**

1. Basis of Design: Price Industries, Inc.
2. Perforated Face Return Grille: Model 10, 10A, 10SS
3. Perforated Face Filter Frame Return Grille: Model 10FF, 10AFF
4. Fire-rated Perforated Face Return Grille: Model 10-FR
5. Fire-rated Perforated Face Filter Frame Return Grille: Model 10FF-FR
6. General:
	1. The perforated face return grille shall be supplied with a perforated [steel], [aluminum], or [stainless steel] face for high capacity return or exhaust with low sound and pressure drop.

**2.02 Perforated Face Return Grilles**

1. Description:
	1. Furnish and install Price Model [10], [10A], [10SS] perforated face return grilles of sizes and mounting types designated by the plans and air distribution schedule.
2. Construction:
	1. Grilles shall consist of a perforated core with 3/16 inch holes on ¼ inch centers staggered 60 degrees, and an extruded aluminum border.
	2. The perforated core construction shall be (**select one**):
		1. Steel [Model 10]
		2. Aluminum [Model 10A].
		3. Stainless steel [Model 10SS].
	3. The minimum grille size shall be six inches by four inches. The maximum one-piece grille size shall be 48 inches x 24 inches.
3. Paint Specification:
	1. Paint finish shall be (**select one**):
		1. Baked-on powder coat finish.
			1. The paint film thickness shall be a minimum of 2 mils.
			2. The finish shall have a hardness of 2H as tested in accordance with ASTM D3363.
			3. The finish shall pass an ASTM B117 Corrosive Environment Salt Spray Test for 1000 hours with no measurable creep, rusting or blistering as per ASTM D1654, D610 and D714.
			4. The finish shall pass an ASTM D870 Water Immersion test of a minimum of 500 hours with no measurable with no rusting or blistering as per ASTM D610 and D714.
			5. The finish shall have an impact resistance of 100 inch-pounds in accordance with ASTM D2794.
		2. All components shall have a custom finish in a color to match a customer supplied sample.
4. Options:
	1. Mounting Frames:
		1. The grille shall be supplied with a 3/8 inch flat border mounting frame.
	2. Border Style:
		1. The grille shall be suitable for surface or T-bar, lay-in mounting.
	3. Fastening:
		1. The grille shall be supplied with the following fastening method (**select one**):
	4. Countersunk screw holes, complete with oval-head screws.
	5. No screw holes.
5. Dampers:
	1. The grille shall incorporate an opposed blade type damper in [steel] or [aluminum] construction.

**2.03 Perforated Face Filter Frame Return Grille**

1. Description:
	1. Furnish and install Price Model 10FF, 10AFF perforated face filter frame return grilles of sizes and mounting types designated by the plans and air distribution schedule.
2. Construction:
	1. Grilles shall consist of a perforated core with 3/16 inch holes on ¼ inch centers staggered 60 degrees, and a [formed steel] or [aluminum] border and filter frame.
	2. The perforated core construction shall be (**select one**):
		1. Steel [Model 10FF]
		2. Aluminum [Model 10AFF].
	3. The filter frame shall be mounted with (**select one**):
		1. A hinge-tab mechanism to allow hinging or removal of the grille from the filter frame.
		2. Quarter turn fasteners on all sides to allow removal of the grille from the filter frame.
	4. The mounting frame shall be designed to accept a standard [one inch] or [two inch] filter media.
	5. The grille shall be complete with quarter-turn, quick-release fasteners.
	6. The minimum grille size shall be eight inches by four inches. The maximum one-piece grille size shall be 48 inches x 24 inches.
3. Paint Specification:
	1. Paint finish shall be (**select one**):
		1. Baked-on powder coat finish.
			1. The paint film thickness shall be a minimum of 2 mils.
			2. The finish shall have a hardness of 2H as tested in accordance with ASTM D3363.
			3. The finish shall pass an ASTM B117 Corrosive Environment Salt Spray Test for 1000 hours with no measurable creep, rusting or blistering as per ASTM D1654, D610 and D714.
			4. The finish shall pass an ASTM D870 Water Immersion test of a minimum of 500 hours with no measurable with no rusting or blistering as per ASTM D610 and D714.
			5. The finish shall have an impact resistance of 100 inch-pounds in accordance with ASTM D2794.
		2. All components shall have a custom finish in a color to match a customer supplied sample.
4. Border Style:
	1. The grille shall be suitable for surface mount or T-bar, lay-in mounting. T-bar, lay-in mount ceiling module size shall be (**select one**):
		1. 12 x 12 inches.
		2. 24 x 12 inches.
		3. 24 x 24 inches.
		4. 48 x 24 inches (**Model 10FF only**).

**2.04 Fire-Rated Perforated Face Frame Return Grilles**

1. Description:
	1. Furnish and install Price Model 10-FR fire-rated perforated face grilles and registers of sizes and mounting types designated by the plans and air distribution schedule. Grilles shall be Fire-Rated Assemblies listed in the UL Fire Resistance Directory, and in the ULC Equipment and Materials Directory. The grilles shall meet UL time versus temperature test criteria and NFPA 90A requirements.
	2. This design is intended for use in an exposed grid suspended celling (T-bar, lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.
2. Construction:
	1. Grilles shall consist of a perforated steel core with 3/16 inch holes on ¼ inch centers staggered 60 degrees, and a steel frame and border.
	2. The grille size shall be (**select one**):
		1. 12 x 12 inches.
		2. 24 x 12 inches.
		3. 24 x 24 inches.
3. Damper:
	1. The grille shall incorporate a non-adjustable, non-asbestos, curtain-type ceiling radiation damper.
4. Thermal Blanket:
	1. The diffuser shall be externally wrapped with a non-asbestos thermal blanket.
5. Fusible Link:
	1. The diffuser shall be supplied with a fusible link rated for (**select one**):
		1. 165 degrees Fahrenheit.
		2. 212 degrees Fahrenheit.
6. Paint Specification:
	1. Paint finish shall be (**select one**):
		1. Baked-on powder coat finish.
			1. The paint film thickness shall be a minimum of 2 mils.
			2. The finish shall have a hardness of 2H as tested in accordance with ASTM D3363.
			3. The finish shall pass an ASTM B117 Corrosive Environment Salt Spray Test for 1000 hours with no measurable creep, rusting or blistering as per ASTM D1654, D610 and D714.
			4. The finish shall pass an ASTM D870 Water Immersion test of a minimum of 500 hours with no measurable with no rusting or blistering as per ASTM D610 and D714.
			5. The finish shall have an impact resistance of 100 inch-pounds in accordance with ASTM D2794.
		2. All components shall have a custom finish in a color to match a customer supplied sample.

**2.05 Fire-Rated Perforated Face Filter Grilles**

1. Description:
	1. Furnish and install Price Model 10FF-FR fire-rated perforated face filter return grilles and registers of sizes and mounting types designated by the plans and air distribution schedule. Grilles shall be Fire-Rated Assemblies listed in the UL Fire Resistance Directory, and in the ULC Equipment and Materials Directory. The grilles shall meet UL time versus temperature test criteria and NFPA 90A requirements.
	2. This design is intended for use in an exposed grid suspended celling (T-bar, lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.
2. Construction:
	1. Grilles shall consist of a perforated steel core with 3/16 inch holes on ¼ inch centers staggered 60 degrees, and a formed steel border and filter frame.
	2. A hinge-tab mechanism shall allow hinging or removal of the grille from the filter frame to ease cleaning of the grille.
	3. The mounting frame shall accept a standard one inch filter media.
	4. The grille shall be complete with quarter turn quick-release fasteners.
	5. The grille size shall be (**select one**):
		1. 12 x 12 inches.
		2. 24 x 12 inches.
		3. 24 x 24 inches.
3. Damper:
	1. The grille shall incorporate a fire-rated ceiling radiation damper.
4. Thermal Blanket:
	1. The diffuser shall be externally wrapped with a non-asbestos thermal blanket.
5. Fusible Link:
	1. The diffuser shall be supplied with a fusible link rated for (**select one**):
		1. 165 degrees Fahrenheit.
		2. 212 degrees Fahrenheit.
6. Paint Specification:
	1. Paint finish shall be (**select one**):
		1. All components shall have a 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 no measurable creep in accordance with ASTM D1654, and 1000 hours of exposure with no rusting or blistering as per ASTM D610 and ASTM D714.
			5. The finish shall have an impact resistance of 80 inch-pounds.
		2. All components shall have a custom finish in a color to match a customer supplied sample.
7. Options:
	1. Border Style:
		1. The grille shall be suitable T-bar, lay-in mounting, complete with a border in the following style (**select one**):
		2. T-bar border.
		3. T-bar Panel mount border. The maximum grille size shall equal the module size minus four inches. The panel module size shall be the following size (**select one**):
			1. 12 x 12 inches.
			2. 24 x 12 inches.
			3. 24 x 24 inches.
8. Volume Controller:
	1. The grille shall be supplied with a steel volume controller that is room side adjustable for balancing.

**PART 3 – EXECUTION**

**3.01 Examination**

1. Verify that conditions are suitable for installation.
2. Verify that field measurements are as shown on the drawings.

**3.02 Installation**

1. Install in accordance with manufacturer’s instructions.
2. See drawings for the size(s) and locations of grilles and registers.

**3.03 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.