**Price Security Duct/Barrier 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. Security Duct/Barrier Grille.
	1. **Related Requirements**
2. Section 01 30 00 – Administrative Requirements
3. Section 01 40 00 – Quality Requirements
4. Section 01 60 00 – Product Requirements
5. Section 01 74 21 – Construction/Demolition Waste Management and Disposal
6. Section 01 78 00 – Closeout Submittals
7. Section 01 79 00 – Demonstration and Training
	1. **Reference Standards**
8. All referenced standards and recommended practices in this section pertain to the most recent publication thereof, including all addenda and errata.
9. ASHRAE 70 – Method of Testing the Performance of Air Outlets and Air Inlets
10. ASTM D610 – Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces
11. ASTM D714 – Test Method for Evaluating Degree of Blistering of Paints
12. ASTM A627 – Standard Test Methods for Tool-Resisting Steel Bars, Flats, and Shapes for Detention and Correctional Facilities
13. ASTM D1308 – Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes
14. ASTM D1654 – Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
15. ASTM D4752 – Standard Practice for Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub

**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 airflow, static pressure 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.

**1.06 Quality Assurance**

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

**1.07 Warranty**

1. See Section 01 7800 - 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 Security Duct/Barrier Grilles**

1. Basis of Design: Price Industries, Inc.
2. Duct/Barrier Grille: Model MSBG
3. Double Ribbed Duct/Barrier Grille: Model MSDRBG
4. Tool Resisting Duct/Barrier Grille: Model MSTRBG

**2.02 Duct/Barrier Grille**

1. Description:
	1. Furnish and install Price Model MSBG duct/barrier grilles of sizes and mounting types designated by the plans and air distribution schedule.
2. Construction:
	1. The grilles shall be [coated steel] or [stainless steel] construction, consisting of a 3/16 inch thick sleeve with stitch welded seams. One frame shall be welded 1 inch from the end of the grille; the other frame shall be shipped loose for field welding.
	2. Barrier bars shall be [1/2-inch diameter], [3/4-inch diameter], [1 inch diameter], [2 x 1-1/4 inch flat bar], or [2 x 1-1/4 inch flat bar and ¾” diameter vertical bar) located on maximum 6 inch centers. The [hot rolled steel], or [hardened steel] bars shall be welded to the frame and at all cross points.
3. Paint Specification:
	1. The grille paint finish shall be (**select one**):
		1. All steel 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 1000 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 steel components shall have a custom finish in a color to match a customer supplied sample.
		3. All stainless steel components shall have a mill finish.
4. Options:
	1. Mounting Frame (**select one**):
	2. The grille shall be supplied with 1x1 x 3/16-inch four-sided angle mounting frames. One frame shall be welded 1 inch from the end of the grille; the other frame shall be shipped loose for field welding.
		1. The grille shall be supplied with a 2-1/2 x 2-1/2 x 1/4-inch angle frame.
		2. 4-inch-wide sleeve with no mounting frame
	3. Wire Mesh:
		1. The grille shall be supplied with 10 gauge, 3/8 inch clear opening steel mesh.

**2.03 Double Ribbed Duct/Barrier Grille**

1. Description:
	1. Furnish and install Price Model MSDRBG double ribbed duct/barrier grilles of sizes and mounting types designated by the plans and air distribution schedule.
2. Construction:
	1. The grilles shall be coated steel construction, consisting of a 1/4 inch thick sleeve.
	2. The double ribbed barrier bars shall be 7/8 inch diameter steel located on maximum 5 inch centers. The bars shall be mounted in square inserts that are welded to the sleeve.
	3. Flat intermediate bars shall be 3/8 inch thick hot rolled steel, and shall be mounted in the sleeve on maximum 12 inch centers. Flat bars shall be welded to the frame.
3. Paint Specification:
	1. The grille paint finish shall be (**select one**):
		1. All steel 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 1000 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 steel components shall have a custom finish in a color to match a customer supplied sample.
4. Options:
	1. Mounting Frame
		1. The grille shall be supplied with. 1-1/2 x 1-1/2 x 3/16 inch, four-sided angle mounting frames. One frame shall be welded 1 inch from the end of the grille; the other frame shall be shipped loose for field welding.

**2.04 Tool Resisting Duct/Barrier Grille**

1. Description:
	1. Furnish and install Price Model MSTRBG tool resisting duct/barrier grilles of sizes and mounting types designated by the plans and air distribution schedule.
2. Construction:
	1. The grilles shall be coated steel construction, consisting of a 1/4 inch thick sleeve.
	2. Double ribbed barrier bars shall be 7/8 inch diameter tool resisting steel bar located on maximum 5 inch centers. The bars shall be inserted into 3/8 inch tool resisting steel bars welded to the sleeve.
	3. Flat intermediate bars shall be 3/8 inch tool resisting steel welded to the sleeve at maximum 12 inch centers.
	4. The tool resisting steel used for the double ribbed bars and flat intermediate bars shall be in compliance to ASTM A627.
3. Paint Specification:
	1. The grille paint finish shall be (**select one**):
		1. All steel 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 1000 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 steel components shall have a custom finish in a color to match a customer supplied sample.
4. Options:
5. Mounting Frames:
	1. The grilles shall be supplied with 1-1/2 x 1-1/2 x 3/16 inch, four-sided angle mounting frames. One frame shall be welded 1 inch from the end of the grille; the other frame shall be shipped loose for field welding.
6. Fastening:
7. The grille shall be supplied with the following fastening method (**select one**):
8. 3/4 inch diameter x 3 inch masonry rods.
9. 3/4 inch diameter x 3 inch bent out masonry rods.
10. No fastening.
11. Side Frame:
12. The grille shall be supplied with tool resisting side frames.

**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.