**Price Shapes Custom Flow Slot Diffusers**

**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. Shapes Custom Flow Slot Diffuser for Armstrong Ceilings DesignFlex™ Shapes Ceiling Systems
	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 70 – Standard Method of Testing the Performance of Air Outlets and Air Inlets
9. ASTM D610 – Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces
10. ASTM D714 – Standard Test Method for Evaluating Degree of Blistering of Paints
11. ASTM D1308 – Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes
12. ASTM D1654 – Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
13. 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, 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 78 00 - Closeout Submittals, for additional warranty requirements.
2. Provide 12 month manufacturer warranty from date of shipment of diffusers.

**PART 2 – PRODUCTS**

**2.01 Manufacturer**

1. Basis of Design: Price Industries, Inc.
2. Shapes Custom Flow Slot Diffusers: Model SHP-CF
3. General:
	1. The Shapes Custom Flow Slot Diffusers (SHP-CF) are designed for lay-in ceiling installations requiring Armstrong Ceilings DesignFlex™ compatible diffusers:
		1. The SHP-CF diffuser produces a horizontal air pattern parallel to its face utilizing the coanda effect to hold its pattern at a wide range of airflows. The pattern controllers can be adjusted to achieve vertical pattern, in addition to partial airflow dampering or full airflow shut-off.

**2.02 Shapes Custom Flow Slot Diffusers**

1. Description:
	1. Furnish and install Price model SHP-CF supply and return diffusers in sizes and capacities as shown by the plans and air distribution schedule. Provide drawings accompanied by an itemized list indicating the unit locations and appropriate product submittal drawings provided by the manufacturer. Exact dimensions of the walls and ceiling are per the architectural drawings.
	2. The diffusers shall be installed in the ceiling system with suspension wire a maximum of every 48 inches on center, and/or attachment plates, or as required to meet the local building code.
2. Construction:
	1. The SHP-CF diffuser shall be constructed with extruded aluminum air deflector frames. The frames shall be designed to accommodate notched compressible space bars, spaced approximately 24 inches on center.
	2. The diffuser shall be supplied with dual layer coated steel air pattern controllers that shall be room-side adjustable to achieve horizontal, vertical, or angular air patterns, and also to adjust the airflow volume between fully open and fully closed without the use of blank-off devices.
	3. The SHP-CF diffuser shall be complete with factory designed corner conditions to integrate with Armstrong Ceilings DesignFlex™ ceiling systems.
	4. SHP-CF engineered plenums shall be manufactured of heavy gauge wipe coated steel.
	5. The engineered plenums shall be equipped with a [top-inlet] or [side-inlet] collar, and shall be [insulated] or [uninsulated].
	6. The SHP-CF diffusers shall be supplied with the following frame style for t-bar lay-in mounting:
		1. 9/16 in. Tegular
	7. The SHP-CF diffusers frames shall be designed to house factory-supplied in-fill panels. These panels shall be flush with the diffuser face and the surrounding ceiling tiles.
	8. The SHP-CF diffusers shall utilize 1 in. slots.
3. Performance:
	1. Performance of the selected curved linear slot diffusers shall be based on catalogued data obtained with the pattern controllers set in the normal operating position and a compatible Price supply air plenum, and tested in accordance with ASHRAE 70.
4. 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.

**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 diffusers.

**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 addition.