**Suggested Specification Guidelines for GageWoven – Long Form**

SECTION 10240

ORNAMENTAL FABRIC GRILLES

1. **GENERAL**
	1. SECTION INCLUDES
		1. Woven wire fabrics, mounting systems and support framing as indicated.
	2. RELATED SECTIONS
		1. Section 05500 - Metal Fabrications: Supporting structure.
	3. SUBMITTALS
		1. Submit under provisions of Section 01300.
		2. Product Data: Manufacturer's data sheets on each product to be used, including:
			1. Preparation instructions and recommendations.
			2. Storage and handling requirements and recommendations.
			3. Installation methods.
		3. Material Certification: Provide material certification (Certs) for each alloy scheduled or required.
		4. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
		5. Verification Samples: For each finish product specified, two samples, minimum size 5 by 7 inches (125 by 175 mm), representing actual product, color, and patterns.
	4. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Minimum 5 years manufacturing similar products.
		2. Installer Qualifications: Minimum 2 years experience installing similar products.
		3. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
			1. Finish areas designated by Architect.
			2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
			3. Refinish mock-up area as required to produce acceptable work.
	5. DEFINITIONS
		1. Apparent Percent Opening (APO): We have developed optical testing procedures and can provide performance curves for all our products. We refer to this enhanced version of Percent Open Area as Apparent Percent Open (APO).
		2. Area Moment of Inertia: A property of a shape that is used to predict its resistance to bending and deflection.
		3. Aspect Ratio (AR): Aspect ratio is the ratio of the larger pattern repeat distance to the smaller pattern repeat distance.
		4. Asymmetric: For our purposes, any fabric that is woven with a flat top crimp style wire will have two surfaces with different textures - a front and a back, or a top and bottom.
		5. Crimp: The manner in which the wire is formed. See Crimp Styles.
		6. Gauge: A numerical integer method of designating wire diameters. Many different gauges exist. To avoid confusion, use decimals of an inch or mm to designate wire diameter.
		7. Mesh to Diameter Ratio (MD): Mesh to diameter ratio MD is the mesh spacing (center to center) divided by the wire diameter.
		8. Mesh Spacing, Mesh Count: Generally refers to the repeat pattern of the woven material.
		9. Metallurgy: The general science of metals.
		10. Mill Certs: Material certification documents. See Metallurgy.
		11. Modulus of Elasticity: An elastic modulus, or modulus of elasticity, is the mathematical description of an object or substance's tendency to be deformed when a force is applied to it. For our purposes, when a light force is applied to a piece of wire, of same diameter and length, it will deflect differing amounts depending on material. Aluminum and copper based alloys will deflect approximately three times the amount of steel based alloys. Modulus is different from strength.
		12. Opacity: The degree to which a particular mesh is opaque.
		13. Patina: A chemical compound formed on the surface of metal.
		14. Percent Open Area: Percent open area is the ratio of hole area to total screen area at a 90° angle of incidence to the plane of the material, expressed as a percentage.
		15. Scale: For our purposes, the ability to create larger or smaller weaves without changing any proportions or crimp styles.
		16. Shute (or Fill Wires): Wires that lie perpendicular to the direction in which the fabric is being woven.
		17. Stiffness: Resistance to deflection by an applied force. How firm, or, conversely, how springy does an object feel.
		18. Strength: For our purposes, how much load will a piece of wire withstand before:
			1. Permanent bending (yield strength).
			2. Breaking (tensile strength).
		19. Striation: A thin line or band, especially one or several that are close together.
		20. Warp Wires: The wires that lie parallel to the direction in which the fabric is being woven.
	6. DELIVERY, STORAGE, AND HANDLING
		1. Store products in manufacturer's unopened packaging until ready for installation.
	7. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
2. **PRODUCTS**
	1. MANUFACTURERS
		1. Acceptable Manufacturer: The Gage Corporation, Int.; 777 S. Black River St., Suite 2; Sparta, WI 54656; Toll Free Tel: 800-786-4243; Tel: 608-269-7447; Email: info@gagecorp.net; Web: www.gagecorp.net
		2. Substitutions: Not permitted.
		3. Requests for substitutions will be considered in accordance with provisions of Section 01600.
	2. MESH
		1. Product Name:
			1. Wire Diameter:
			2. Crimp Style(s):
			3. Percent Open:
			4. Weight (lbs/sq ft):
			5. Material Availability:
	3. MOUNTING SYSTEMS
		1. Perimeter Systems:
			1. CPS:
				1. Framing Material and Finish:

 Aluminum, satin, anodized extrusion.

 Aluminum, custom color extrusion

* + - * 1. Mounting Z-Clip: On back of panel.
				2. CPS utilizes 3/4” (19.05 mm) or 3/8” (9.53 mm) MDF (medium density fiberboard) or plywood to fabricate panel for strength and rigidity.
				3. Visible backer (applicable only with open mesh)

1) Aluminum, custom color

 2) High pressure laminate

 3) Painted MDF

 4) Other options per customer request

2. Universal Spine: Two laser-cut covers attached to either side of the center spine.

 a. Material and Finish:

 1) Stainless Steel, satin

 b. Mounting Tabs: Spacing and positioning as indicated on drawings.

3. U Channel: Sizes as indicated on drawings.

 a. Mitered corners

 b. Satin brush finish

4. Angle Iron: Mesh welded to inside leg of angle. Sizes as indicated on drawings.

 a. Materials and Finish:

 1) Satin stainless steel

* 1. MESH MATERIALS
		1. Stainless Steel:
			1. 300 Series Stainless Steels:
				1. T304 Stainless
				2. T316 Stainless

 B. Aluminum

 C. Copper Based Alloy

2.5 MESH FINISHES

A. Mechanical Finish

* + 1. Powder coating
		2. Anodizing
		3. Topcoat clear urethane as required for Copper Based Alloys

2.6 MESH FABRICATION

A. Crimp Styles:

* + - 1. Plain Crimp - PL:
				1. Plain Crimp is a simple zigzag style of crimping with an intersection of two wires at every available pocket. When MD ratios are under 4:1, this style of crimping is usually the only practical style. Plain Crimp styles are most effective at MD ratios of 5:1 or less.
			2. Flat Top Crimp - FT:
				1. Flat top is really a modified version of Lock Crimp, except that all the crimping is offset to one side of the material. The result is that the top surface of Flat Top presents a smooth surface with all the wire surfaces in a single plane. The bottom side has crimp bumps approximately twice the height of Lock Crimp bumps. Originally developed to present a smooth surface to material flow, or as a backer screen for finer mesh, Flat Top is also used extensively in architectural applications.
			3. Lock Crimp - LC:
				1. Lock Crimp is a more modern and very versatile crimp style that has been largely overlooked for architectural applications. Unlike Plain Crimp, Lock Crimp is characterized by straight sections of wire connected by a well defined 'bump' at the wire intersections. Lock Crimp yields material with superb dimensional stability and has a clean look that many designers find visually appealing. Lock Crimp works well at practically any MD ratios of 4:1 and greater.
			4. Triple Shoot Crimp - TS:
				1. Triple Shoot is a specialty crimp style that is generally always used in conjunction with another crimp style. It consists of relatively long sections of straight wire connected by groupings of three Plain Crimp pockets. The resulting material has rectangular openings of very high aspect ratio. Developed originally as a non-blinding sizing product, it also has interesting architectural properties.
			5. Intercrimp - I3, I5, I7 etc.:
				1. While not really a fundamental crimp style, because of its widespread use, we choose to list it with other fundamental styles. Intercrimp is simply Plain Crimp except that wire intersections occur only at every 3rd, 5th, 7th, etc intersection. This type of weave is practical only at MD ratios of 6 or more, and is best suited for ratios of 8:1 or more. We designate this style of weave as 13, 15, 17 etc. Intercrimp was the first weave style that was produced in the late 19th century.
			6. Faux Cable - PS:
				1. Faux Cable is a variant of the triple shoot crimp style, but instead of having the clusters of three closely space wires separated by a small space, Faux Cable has its clusters of wire (generally 2, 3 or 4) spaced tightly together with no gaps between adjacent wires. While some manufacturers produce this style of material by simply pressing groups of wires together, Gage places special crimps in the surface of the wire. This technique assures absolute repeatability in the mesh spacing and eliminates any problems associated with cumulative pitch variation. Cumulative pitch variation can result in aesthetic problems when attempting to align multiple panels. Our designation for this crimp style is PS.
			7. Hybrid Crimp Styles:
				1. Intercrimp / Plain.
				2. Lock Crimp / Plain.
				3. Flat Top / Plain.
				4. Triple Shoot / Plain.
				5. Triple Shoot / Lock Crimp.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions.

3.4 PROTECTION

* + 1. Protect installed products until completion of project.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION