

DIVISION \_\_\_\_\_

Specification Section # \_\_\_\_\_

**GRIDLOCK BIO/CR-1 CEILING SYSTEM**

**PART 1 GENERAL**

Furnish and install the GridLock Bio/CR-1 Ceiling System designed for biocontainment and clean room applications as described in this Section. Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications apply to work in this section.

**1.1 RELATED WORK:** (NOTE TO SPECIFIER: Include appropriate detail drawings and information pertinent to the specific project.)

**1.2 SUBMITTALS**

1.2.1 Submit #\_\_\_\_\_ samples of the materials to be used to show corner and joining details as well as final panel finish.

1.2.2 All parties wishing to have materials considered as equals for this project must submit such materials for evaluation to the design professional at least 10 (ten) days prior to bid date. Bidders not complying with this requirement will be considered non-responsive.

**1.3 QUALITY ASSURANCE**

1.3.1 Provide Single Source responsibility for the supply of all ceiling finish materials used in the installation.

1.3.2 A Contractor approved by Manufacturer must perform installation.

**1.4 DELIVERY, HANDLING AND STORAGE**

1.4.1 Deliver materials packaged so that materials are clearly marked and identifiable showing the following:

- A) Product Name
- B) Manufacturer's Name
- C) Component Designation

1.4.2 Handle Materials by methods to prevent damage

1.4.3 Inspect direct job-site deliveries to assure that quantities are correct and that materials comply with specifications and are not damaged.

1.4.4 Replace, at no cost to owners, materials that are found defective either in manufacture, handling or storage.

1.4.5 Store materials on site at the final installation temperature for at least 24 hours prior to, during, and after installation.

**1.5 WARRANTY**

1.5.1 Provide a limited 10 year warranty for materials and installation against any defects in manufacturing and workmanship.

**Life Science Products, Inc. Technical Specification**  
**Gridlock Bio/CR-1 Ceiling Specification**

**1.6 JOB CONDITIONS**

- 1.6.1 A Representative of the Manufacturer shall visit the job-site with the Contractor prior to installation to insure that field conditions are acceptable for installation.
- 1.6.2 For 24 hours before, during the installation, and for 72 hours after the installation, maintain temperature and relative humidity at in-service conditions.

**PART 2 PRODUCTS**

For the purposes of this specification, GridLock Bio/CR-1 Ceiling System by Life Science Products, Inc. (800-638-9874) is used as the standard.

**2.1 MATERIALS**

- 2.1.1 System Overview: The ceiling system as specified shall consist of composite ceiling panels manufactured from materials having physical properties as specified in Section 2.1.3 below. Panels shall have a consistent smooth high gloss finish.
- 2.1.2 Panels: The panels used in this system shall be GridLock Bio/CR-1 composite ceiling panels. The panels shall be 12 mm thick and shall be of an aggregate of components made of polymer, metal and fiberglass composite that form a durable composite ceiling panel. The exposed face is composed of a resin saturated fabric with a consistent smooth face (no fiberglass print through). The surface finish is glossy and ASTM E 84 Class A for smoke and flame spread. The panel will be supplied in standard 47" x 10' size. The vertical edge shall be routed to for a modified recessed ship lap design that allows for direct fastening to the ceiling studs. The final recess shall be filled with a 100% solids LEED compliant urethane adhesive which shall also provide a gloss finish consistent with the panel face. Inside corners shall be formed of urethane sealant with a ½ inch radius and outside corner moldings shall be 16 gauge, 304 stainless steel corner guards with 1/8" radius and 3" wings. Stainless corner moldings shall be adhesive mounted.
- 2.1.3 The panels shall have the following properties:

Recycle Content: **Minimum 50%**  
Fire Rating: **Class 1 ASTM E 84 for flame spread of 25 or less**  
Light Reflectance @ 85: **94.3**  
Maximum Weight: **3.1 lbs. per square foot**  
Finish: **Polyester gel coat smooth**  
Panel thickness: **12 mm**  
Color: **White**  
Finish: **Gloss**  
Hardness: ASTM D-785 **46 Barcol**  
Flexural Mod ASTM D-790-07 : **657,693**  
Flexural Strength-ASTM D 790-07: **6751 psi**  
Water Vapor Transmission ASTM E-96: **< 0.0001 perms**  
Air Permeance ASTM E-2178 (L/s/m<sup>2</sup>): **0.00001 @ 300 pa**  
STC Rating ASTM E-90: **32**  
Tensile Strength: ASTM D-638: **3672 psi**  
Tensile Mod ASTM D-638: **581,000**  
Coefficient of Linear Thermal Expansion CLTE (mm mm C) ASTM D-696: **4.30 E -05**  
Compressive Strength ASTM D-695: **5364 psi**  
Modulus: ASTM D695: **49,873 psi**

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Chemical Resistance	20% Acetic Acid	Occasional Spill
	50% Citric Acid	Good
	20% Nitric Acid	Occasional Spill
	30% Hydrochloric Acid	Occasional Spill
	10% Hydrofluoric Acid	Occasional Spill
	Hydrogen Peroxide	Good
	40% Potassium Hydroxide	Good
	40% Sodium Hydroxide	Good
	50% Sulfuric Acid	Good
	Urea	Good

2.1.4 The joint adhesive/sealant shall have the following properties:

Hardness Shore D	ASTM D-1706	70 - 80
Tensile Strength	ASTM D-638	3,000 psi min.
Flexural Strength	ASTM D-790	4,000 psi min.
Thermal Shock	Mil F-52505	No cracking or loss of adhesion
Abrasion Resistance (Taber Abrader, CS-17 Wheels, 1000 gm. load, 1000 cycles)	ASTM D-4060	.035 gm loss
Ultimate Elongation	ASTM D-638	20% min.

**PART 3 EXECUTION**

- 3.0.1 Check with the panel manufacturer before installing the metal studs to determine the exact stud spacing within the ceiling. Install metal ceiling studs in accordance with local applicable zoning and building codes but also to match the sizing for the panels.
- 3.0.2 Apply adhesive of type recommended by Manufacturer to the stud face prior to applying the panel. If mounting to a different substrate, adhesive is applied to the entire back side of the panel, all the way to the edges. Follow Manufacturers recommendations for application and "open times" of the adhesive.
- 3.0.3 Panels are designed to be mounted directly against the studs. Put the panels in place against the studs approximately ½ inch above the floor. Place fastening screws into the studs at both the top and bottom of the panel to secure the top and bottom edges of the panels first. Secondly, attach the panels to each stud by inserting mounting screws in the joining joint between the panel so as not to assure that the screw head remains below the face of the panel.
- 3.0.4 If necessary, apply pressure to the center of the panel using a weighted lever until adhesive cures.
- 3.0.5 Mask the panel edges for protection and fill the vertical seams between panels with urethane adhesive recommended by manufacturer. Fill to a plane that will fill the seam flush with the adjacent panel surface. Finish the adhesive/sealant and remove the masking before the adhesive has set.
- 3.0.6 Inside corners shall be formed of urethane sealant with a ½ inch radius and outside corner moldings shall be 16 gauge, 304 stainless steel corner guards with 1/8" radius and 3" wings. Stainless corner moldings shall be adhesive mounted.
- 3.0.7 The ceiling angle and flooring cove base will cover top and bottom screw lines respectively. Be sure to consult the appropriate trades to assure the lower mounting screws are within the cove base field.