

DIVISION \_\_\_\_\_

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

**GRIDLOCK™ BIO/CR-4 HARD LID CEILING SYSTEM****PART 1 GENERAL**

Furnish and install the GridLock™ Bio/CR-4 Hard Lid 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 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.

## 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-4 Hard Lid Ceiling System by Life Science Products, Inc. (800-638-9874) is used as the standard.

## 2.1 MATERIALS

- 2.1.1 System Overview: The system as specified shall consist of composite 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-4 composite panel series. The panels shall be 6 mm thick and shall be of an aggregate of components made of polymer, metal and polymer saturated fiber that form a durable composite ceiling panel. The exposed face is composed of the saturated fiber with a consistent smooth face. The face of the panel, although smooth, shall have a visible fiberglass thread translation. The surface finish is glossy and the panel assembly is ASTM E 84 Class A for smoke and flame spread. The panel will be supplied in standard 48" x 8' or 48" x 10' sizes. The vertical edge shall be routed for a modified recess that allows for direct fastening to the substrates. 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.
- 2.1.3 The panels shall have the following properties:

Fire Rating: **Entire Assembly - Class 1 ASTM E 84 for flame spread of 25 or less**

Light Reflectance @ 85: **94.3**

Minimum Weight: **1.7 lbs. per square foot**

Finish: **Polyester gel coat smooth**

Standard Sizes: **4' X 8' and 4' x 10'**

Panel thickness: **6 mm**

Color: **White**

Finish: **Semi-Gloss**

Hardness: ASTM D-785 **46 Barcol**

Flexural Mod ASTM D-790-07: **557,693**

Flexural Strength-ASTM D 790-07: **5325 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**

Tensile Strength: ASTM D-638: **3272 psi**

Tensile Mod ASTM D-638: **511,000**

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**

**Life Science Products, Inc. Technical Specification**  
**GridLock™ BioCR-4 Ceiling Specification**

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. Install metal 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 entire back side of the panel, all the way to the edges, prior to applying the panel. Follow Manufacturers recommendations for application and "open times" of the adhesive.
- 3.0.3 Panels are designed to be mounted directly against acceptable substrates only. Put the panels in place against the substrate. Place fastening screws into the substrate at all edges of the panel to secure the edges of the panels first. Secondly, attach the panels to each substrate by inserting mounting screws in the joining joint between the panels so as to assure that the screw head remains below the face of the panel.
- 3.0.4 Apply pressure to the panel using protective posts and pads 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.