

INSTALLATION / HANDLING SPECIFICATIONS FOR LUMINOUS PANELS

SECTION 08840 – Plastic Glazing

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. MATERIALS INC. LUMINOUS™ Honeycomb Panels in Vertical Applications

B. This Section includes the following:

- | | |
|------------------------|-------------------------------|
| 1. Backsplashes | 15. Retail Shelving |
| 2. Backlit wall panels | 16. Sculpture |
| 3. Balustrade Panels | 17. Shower doors & enclosures |
| 4. Bar fronts | 18. Side lights |
| 5. Cabinet Doors | 19. Signage |
| 6. Ceiling Panels | 20. Tabletops |
| 7. Closet Doors | 21. Transaction Tops |
| 8. Door Lights | 22. Vanity tops |
| 9. Doors | 23. Wall Cladding |
| 10. Feature Wall | 24. Wall Panels (back-lit) |
| 11. Furniture | 25. Wall Sculpture |
| 12. Lighting | 26. Worktops |
| 13. Partitions | 27. [Insert Item] |
| 14. Projection screens | |

C. The extent of MATERIALS INC. LUMINOUS™ PANELS IS shown on the drawings.

D. Related Sections include the following:

1. Division 5 Section “Ornamental Railings”
2. Division 6 Section[s] [“Finish Carpentry”][and][“Interior Architectural Woodwork”]
3. Division 8 Section[s] [“Standard Steel Doors and Frames”][“Custom Steel Doors and Frames”][“Flush Wood Doors”]
4. Division 9 Section[s] [“Ceramic Tile”][“Wall Coverings”]
5. Division 10 Section[s] [“Visual Display Surfaces”][“Signs”]
6. Division 14 Section “Elevators”
7. Division 15 Section “Plumbing Fixtures”
8. Division 16 Section[s] [Interior]Lighting

1.3 SUBMITTALS

- A. Product Data: Indicate MATERIALS INC. product description, fabrication information, compliance with specified performance requirements.
- B. Terms and Conditions and Warranty as specified by MATERIALS INC.
- C. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
- D. Samples for Initial Selection: Submit minimum 4 inch by 4 inch samples. Indicate full color and specified honeycomb variation.

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- E. Samples for Verification: Submit minimum 4 inch by 4 inch sample for each type, facing, core pattern and color of honeycomb panel.
 - F. Mockups: Build mockups to verify selections made under sample Submittals and to demonstrate aesthetic effects – Please note visual characteristics below 1.5 C. (*DELETE IF NOT REQUIRED OR NEEDED*)
 - 1. Build mockup of application of LUMINOUS™ APPLICATION.
 - 2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
 - G. Maintenance Data: Submit MATERIALS INC. care and maintenance data, including care, repair and cleaning instructions. Include in Project close-out documents.
- 1.4 PANEL APPLICATIONS
- A. MATERIALS INC. LUMINOUS™ panels are designated for interior use only and have not been tested or designed for exterior use, live loads, flooring or roofing.
 - B. Install as per MATERIALS INC. specifications.
- 1.5 QUALITY ASSURANCE
- A. Visual Characteristics

Certain variations may occur in LUMINOUS™ panels:

 - 1. General Appearance: Color, honeycomb cell geometry, and facing texture may vary slightly between the samples provided to customers and the finished Luminous™ product, as well as between individual panels, due to the organic and flexible nature of honeycomb panel components and processes.
 - 2. Honeycomb Core: Cell geometry and alignment may vary slightly within panels and between different panels. Cells may not always run parallel to panel edges.
 - 3. Custom colors: Slight variations in color may occur between approval samples for custom colors, and the finished LUMINOUS™ panel, as well as between panel lots
 - D. Warranty
 - 1. Manufacturer's Warranty on MATERIALS INC. LUMINOUS™ panels: Manufacturer's standard form agreeing to repair or replace units that fail in material or workmanship within the specified warranty period.
 - 2. Warranty Period: 1 year after the date of substantial completion.
 - 3. The warranty shall not deprive the owner of other rights or remedies the Owner may have under other provisions of the Contract Documents, and is in addition to and runs concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.
- 1.6 DELIVERY, HANDLING AND STORAGE
- A. All LUMINOUS™ panels delivered on a wood skid with protective triple-wall cardboard or plywood enclosure and covered with self-adhesive protective film.
 - B. Immediately upon delivery examine each crate for evidence of damage
 - C. Do not deliver LUMINOUS™ panels, framing systems and/or accessories to Project site until areas are ready for installation.

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- D. If delivered early, panels should remain on skids and in crates with other packing material. Store in a dry shaded area. Flat storage recommended. Do not stack other material on top of shipment.
- E. Handle materials to prevent damage to finished surfaces. Do not remove protective film until installation and project construction is complete and site is prepared for occupation.
- F. Do not install LUMINOUS™ Panels until spaces are enclosed and weatherproof.
- G. Do not force, warp or torque panels during handling or installation.
- H. Carry panels vertically and lengthwise with support on each end.

Part 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design Product: MATERIALS INC. LUMINOUS™ PANELS is trademark of MATERIALS INC.. The design of Translucent Honeycomb panels is based on LUMINOUS™ PANELS as provided by MATERIALS INC..
- B. Provide product as specified below under “Materials”.
- C. Licensed Distributors

MATERIALS INC.
18 Johnson Ave, Hackensack, NJ 07601

Please visit www.Materials-Inc.com for a listing of our international distributors and terms of sale.

Direct quote requests to: Sales@Materials-Inc.com

Direct product inquiries to: Info@Materials-Inc.com

2.2 MATERIALS

- 1. LUMINOUS™ PANELS BY MATERIALS INC.
- 2. Cores:
 - i. Aluminum Honeycomb options: Hex, Hex Large
 - ii. Polycarbonate honeycomb options: Illusion, Rings and Bubbles
- 3. Facings: Transparent or Satin PMMA (Acrylic), PETG and Polycarbonate
- 4. Colors/Finishes: See Luminous™ product catalogue for color and finish options

2.3 FABRICATION

- A. Cutting – LUMINOUS™ panels
 - 1. For on-site cutting use of a triple-chip tooth grind, 60 tooth, carbide-tipped, thin kerf blade for cutting non-ferrous materials (eg. for cutting acrylics and other plastics).
 - 2. Table saw and use of dust collection system is recommended. Eye protection should be worn when cutting or drilling panels.
 - 3. See fabrication documentation for additional information related to cutting and handling
 - 4. It recommended while cutting. For LUMINOUS™, cut pieces narrower than 3” are not recommended.

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5. Factory applied protective film should remain on panel during cutting and drilling and should be removed only after installation.
- B. Drilling and Attachments
1. On site drilling: LUMINOUS™ HONEYCOMB PANELS should be secured between a wood substrate and drilling template to avoid potential damage or delaminating of facing.
 2. For panels in vertical applications, a minimum of ½" clearance from edge of panel to outside edge of hole is recommended for drilling and attachments.
 3. For horizontal or angled hung installations, the recommended bolting clearance will vary per application. Please inquire with a Materials Inc. Product Specialist.
 4. For bolted or screwed attachments through the panel, use of a washer is recommended.
 5. Do not over-tighten when screwing or bolting through panels to avoid dimpling or damage of facing.
 6. Factory applied protective film should remain on panel during cutting and drilling and should be removed only after installation.
- C. Machining: Acceptable means of machining are listed below. Ensure that material is not chipped or warped by machining operations.
1. Sawing: Select equipment and blades suitable for type of cut required. Use of a jig saw is NOT recommended. Refer to cutting specifications above.
 2. Drilling: Select Drills and drill bits specifically designed for use with plastic products.
 3. Milling: LUMINOUS™ PANELS only, climb cut where possible.
 4. Routing: Caution should be used while routing panels. Core is extremely vulnerable to damage during routing. Due to potential core damage, routed panels should be framed to hide exposed edge. Use two flute, straight carbide tipped router bit.
- D. Forming:
1. Curved LUMINOUS™ panels may be produced by specification to certain curved radii (min: 6", max: 96"). Ruled surfaces only. Panels are delivered pre-curved to site. Install per MATERIALS INC. specifications.
 2. FLAT LUMINOUS™ panels are rigid and cannot installed in curved configurations on site.
- E. Fasteners: Appropriate fasteners vary per panel and per design. Please inquire further with LUMINOUS™ for specific requirements.
- F. Safety and Preparation
1. Eye protection should be worn when cutting or drilling panels. In high volume cutting operations face masks or respirators are recommended.
 2. Wearing work gloves is recommended. Allergic reactions to glass fibers can be avoided by the use of barrier creams on exposed skin areas.
 3. Fire safety precautions must be employed in storage and during application.

Part 3 – EXECUTION

3.1 Handling and Storage

A. General

B. The plastic film protects panel

C. surfaces. • Keep the protective film in place for as long as possible, until panel installation.

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- D. Store in a sheltered location (warehouse) with temperatures between 40°F and 90°F, avoiding direct sunlight, exposure to rain and snow, and presence of corrosive substances and/or solvents.
- E. Handling of a single panel must be done in a vertical position. Avoid rubbing between panels.
- F. Horizontal storage is advised with the following recommendations
- G. Keep the original factory packing intact and place it on an even and regular surface. If stored outside factory packaging, place the panels on an even and regular surface, avoiding the presence of dirt particles between panels (it is advisable to protect surfaces with a secondary protective layer between the panels).

3.2 APPLIED FRAMING FOR LUMINOUS™ PANELS

- A. It is recommended that all edges of panels be protected, either by being built-in, or if freestanding, with the use of edge treatment. For MATERIALS INC. LUMINOUS™ panels either applied U-channels, an aluminum framing system, or integral flush edge closeout are recommended. Consult MATERIALS INC. for edge treatment recommendations for specific applications.
- B. High quality heavy-duty epoxy or silicone adhesive is recommended for applied framing of LUMINOUS™ panels. The adhesive should be applied to the inside face of the framing that will be in contact with the facing and then pressed firmly onto the panel. To avoid squeeze-out onto the face of the panel, the amount of adhesive should be sufficient but not excessive, approximately a 1/8" bead. Allow for curing – 48 hours minimum. For full performance, allow 7-10 days for curing.
- B. An initial test of adhesive is recommended to determine the appropriate amount. Remove excess adhesive or sealant before it cures. Installer shall test for most appropriate method of adhesion. This may vary according to facing material and specific application.
- C. If panels will be exposed to moisture or water, ensure a continuous seal between edge of panel and framing by applying a bead of clear silicone where the framing and panel facing meet after the framing is applied.
- D. The use of glazing suction cups should be avoided. Framing detail should be a precise fit to avoid the need for unnecessary force.

3.3 CLEANING AND MAINTENANCE

LUMINOUS™ PANELS BY MATERIALS INC.:

- A. Non-abrasive glass and all-purpose surface cleaners may be used (i.e. Windex, etc.)
- B. DO NOT USE ABRASIVE CLEANERS (such as Ajax, Comet, etc.) or cleaners containing phosphates.
- C. General-purpose adhesive solvent can be used to rid fiberglass and resin panels of any adhesive residue or other surface marks. Testing on an inconspicuous area of panel is recommended.
- D. Handle panels with care. Avoid direct impact to panel faces or edges.
- E. Keep panels away from permanent or excessive heat sources.

3.4 Luminous™ - Panel Cleaning

- A. Edge cleaning: blow with compressed air on the edges. •
- B. Surface Cleaning: blow with compressed air and/or use an antistatic cloth wiping gently in order to avoid abrasions.
- C. **Do Not:**
 - a. Use detergents others than those indicated above •
 - b. Use a dry cloth for dry dirt removal •
 - c. Clean panels under direct sunlight or high temperatures. •
 - d. Use abrasives, squeegees, blades, pointed tools, roto-brush systems

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D. Surface Polishing

- E. Luminous™ Panels surfaces can be polished:
- a. to restore original gloss of surfaces damaged by scratches or abrasions due to faulty repairs • t
 - b. o finish surfaces deriving from cutting/milling operations, giving them a look very similar to those of the external sheets of the panel; •
 - c. to refine (give a final touch) after edging
 - d. Instructions:
 - i. Step 1: Removal of material up to the disappearance of processing scratches-marks.
 - ii. Use a rotor-orbital polishing machine (orbit: mm) with speed regulation and rigid sanding disk diam. 150mm treating in succession the surfaces with abrasive paper grain (150, 240-360 (dry), abrasive 3M 260L P600 (dry) and abrasive 3M TRIZACT P1000 (wet) •
 - iii. Step 2a: Polishing (glossy surfaces), using an electronic polishing machine with speed regulation and sanding disk for sponges 3M09552 treating the surfaces either a felt 3M 0358 and universal abrasive paste 3M 09375 or orange sponge pad 3M 09550 with universal abrasive paste 3M 09375
 - iv. Step 2b: Polishing matt surfaces, it is possible to carry out an opacifying treatment in alternative to polishing with a rotating orbital (orbit mm) with speed regulation, rigid sanding disk 3M 02329, with abrasive 3M TRIZACT P3000 (WET)

F. Sealing Edges

- a. If panels are exposed to weather conditions or if they are placed in very humid environments (such as bathroom, saunas, etc.) edges MUST be sealed with acid-free silicon protecting surfaces near the edges with masking cellar tape.

G. Troubleshooting

Scratches or Tears of the Protective Film

- a. If during panels transportation or successive handling the protective film is removed or altered, damage to panel surfaces can occur. If it is necessary to remove the protective film to inspect the plastic surface, it is important to recover the surface with the film and to use a low adhesive tape to keep the film in place
- b. If damages are present on the panel surface small scratches and abrasions can be removed.
- c. **Partial Detachment of External Skin**
- d. If the surface sheet separates from the core: •
- e. Trimming: apply tape to the affected areas to prevent further delamination. •
- f. Repairing: gently lift the detached skin (without causing a further detachment) and place a light layer of Anglosol 2000 or Anglo 731 adhesive over the core. Clamp the area to be repaired and allow approximately 2 hours for the adhesive to harden.
- g. **Condensation Within Core Cells**
- h. When Bonded Series panels are placed in environment at low temperature, even after edge sealing, condensate can occur inside the cells of the core. This phenomenon is not to be considered a panel defect, as it is transitory and tends to disappear when temperature increases.

END OF SECTION