

SECTION 10 71 16.13 Demountable Storm Panels

PART 1 - GENERAL

1.1 SCOPE

- A. Section includes modular polycarbonate storm panel system, as shown and specified. Panel System to be impact resistant with design pressure rating : +50psf /-50psf . Project includes furnishing and installing a pre-fabricated system at designated window and door locations.
 - 1. Factory made to order, corrugated, clear, polycarbonate storm panels.
 - 2. Aluminum attachment channels as specified.
 - 3. Related attachment hardware for channel anchorage and panel fastening.

1.2 SUBMITTALS

- A. Submit manufacturer's product data. Include construction details, material descriptions, profiles and finishes of components.
- B. Submit shop drawings. Include elevations, details, dimensions and attachments to other work.
- C. Submit manufacturer's color charts showing the full range of colors available for factory finished aluminum.
- D. Submit Installer Certificate, signed by installer, certifying compliance with project qualification requirements.
- E. Submit product test reports from a qualified independent testing agency indicating that panel system complies with the project performance requirements (DP50), based on comprehensive testing of current products. Previously completed test reports will be acceptable if for current manufacturer and indicative of products used on this project.
 - 1. Test reports required are:
 - a. ASTM E330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
 - b. ASTM E1886: Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials
 - c. ASTM E1996: Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes

1.3 QUALITY ASSURANCE

- A. Manufacturer's Qualifications; Material and products shall be manufactured by a company continuously and regularly employed in the manufacture of specified materials for a period of at least ten (10) consecutive years and which can show evidence of those materials being satisfactorily used on at least six (6) projects of similar size, scope and location. At least three (3) of the projects shall have been in successful use for 3 (three) years or longer.
- B. Installer's Qualifications: Installation shall be by an experienced installer, which has been in the business of installing specified panel systems for at least three (3) consecutive years and can show evidence of satisfactory completion of projects of similar size, scope and type.

- C. Performance Requirements: The manufacturer shall be responsible for the configuration and fabrication of the complete panel system in kit form.
 - 1. When requested, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 DELIVERY STORAGE AND HANDLING

- A. Deliver panel system, components and materials in manufacturer's standard protective packaging.
- B. Panels to be clean and free of dust.

1.5 WARRANTY

- A. Submit manufacturer's written warranty agreeing to repair or replace defective polycarbonate panels for a period of 10 years; aluminum surface finishes for a period of 5 years.
- B. Submit installers written warranty to repair or replace defects in workmanship within 1 year of the date of completion.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. As a Basis-of-Design, details and specifications have been based upon products manufactured by VuSafe Industries, LLC (888-232-2331) or approved equal.
- B. References to named manufacturers shall be construed only as establishing the quality of materials and workmanship to be used under this section, and shall not, in any way, be construed as limiting competition. Products used shall be those upon which the design is based, or shall be equal products approved in advance by the Architect.

2.2 STORM PANELS

- A. Provide polycarbonate panels of corrugated shape and with nominal 14" coverage width. Each panel shall have 2 corrugations. Panels shall be factory pre-cut to length and key hole punched top and bottom at 6.134 inch intervals. Panel spans shall not exceed values established by the manufacturer or as established by approved test reports. Clear panels to have consistent visual transparency with minimal optical distortion.
 - 1. Panel Wall Thickness: .110inches
 - 2. Panel Clips made of fiber/nylon and affixed to each panel per manufacturers requirements.
 - 3. 100% Bayer Makrolon Resin # 3103 (UV stabilized).
 - 4. Corrugation peaks and valleys must match for efficient stacking and storage.
 - 5. No center storm bracing. Panels shall affix at top and bottom in accordance with manufacturers tested and approved attachment guidelines.
 - 6. Panels shall bear permanent markings specifying testing compliance in accordance with ASTM E330, E1886 and E1996.
 - 7. Number panels to corresponding window location number.

2.3 PANEL ATTACHMENT CONDITION AT HEADER



- A. **Install Using Ultra-H Retention Profile**
 - 1. Extruded Aluminum alloy with T-5 temper.

2. H-Header / U- Header (interchangeable) with integral positive lock channel.
3. H-header is nominal size: 2.72" X 4.19"
4. Attach with minimum #14 stainless steel screw with at least 1-1/2" embedment into structure.
5. Beauty caps to cover screw heads for aesthetic purposes
6. Install Panel Clips made of fiber/nylon as supplied and specified by manufacturer.

B. Install Using Hurricane Hooks

1. Fiber-nylon casting as supplied by manufacturer- standard color
2. Attach with minimum #14 stainless steel screw with at least 1-1/2" embedment into structure.

C. Install Using Ultra-F Track

1. Extruded Aluminum alloy with T-5 temper.
2. H-header is nominal size: 1.44" x 2.00"
3. Attach with minimum #14 stainless steel screw with at least 1-1/2" embedment into structure.
4. Beauty caps to cover screw heads for aesthetic purposes.
5. Furnish ¼ x 20 track bolts, min. ¾" length.
6. Furnish Zinc plated washer wing nuts.
7. Furnish polycarbonate washers as supplied and specified by manufacturer.

D. Install Using Direct Mount Hardware

1. Install Panel -Mate anchors to accept ¼ x 20 threaded attachment, male or female type.
2. Zinc plated washer wing nuts for male type or ¼ x 20 pan-head screws for female type.
3. Furnish polycarbonate washers as supplied and specified by manufacturer.

E. Adjust Depth of Surface Mounting Plane With Mating Profiles

1. Extruded aluminum alloy with T-5 temper
2. Incremental size channels mated to mounting channels to required projection.

2.4 PANEL ATTACHMENT CONDITION AT SILL 

A. Install Using Ultra-F Track

1. Extruded Aluminum alloy with T-5 temper.
2. H-header is nominal size: 1.44" x 2.00"
3. Attach with minimum #14 stainless steel screw with at least 1-1/2" embedment into structure.
4. Beauty caps to cover screw heads for aesthetic purposes.
5. Furnish ¼ x 20 track bolts, min. ¾" length.
6. Furnish Zinc plated washer wing nuts.
7. Furnish polycarbonate washers as supplied and specified by manufacturer.

B. Install Using Direct Mount Hardware

1. Install Panel -Mate anchors to accept ¼ x 20 threaded attachment, male or female type.
2. Furnish zinc plated washer wing nuts for male anchor type or ¼ x 20 pan-head screws for female anchor type.
3. Furnish polycarbonate washers as supplied and specified by manufacturer.

2.5 DEPTH OF SURFACE MOUNTING PLANE

- A. **Adjust Depth of Mounting Plane Using Mating Profiles.**
 - 1. Extruded aluminum alloy with T-5 temper
 - 2. Incremental size channels mated to mounting channels to required projection.

2.6 SURFACE FINISHES

- 1. Color _____ selected from manufacturer's standard colors.
- 2. Custom Color _____ as specified by project architect.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, supporting structure and installation conditions. Do not proceed with channel installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Metal Protection:
 - 1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose.
 - 2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint or method recommended by manufacturer.
 - 3. Where aluminum will contact pressure-treated wood, separate dissimilar materials by methods recommended by manufacturer.

3.3 INSTALLATION

- A. Install the panel system in accordance with the manufacturer's installation recommendations and approved engineering and/or shop drawings.
 - 1. Anchor component parts securely in place by permanent mechanical attachment system.
 - 2. Verify the fit of pre-cut panels to corresponding channels at each window and door location to be protected.
 - 3. All openings are to be marked and numbered by location on a corresponding map(Locus Map) of the structure. Consult with the architect firm to number all locations on the design prints.
 - 4. Provide consultation with building owner or maintenance to review proper installation and maintenance procedures.
 - 5. Provide locus map with numbered locations.

3.4 CLEANING & MAINTENANCE

- A. Clean and dry panels inside and outside, immediately after de-mounting, according to manufacturer's written recommendations
- B. When not in use, panels shall be stored, stacked vertically, in a clean, dry enclosure protected from sunlight.

END OF SECTION 08 45 23