

SECTION 06 83 16 - FIBERGLASS REINFORCED PANELING**I.1 SECTION INCLUDES**

- A. Fiberglass reinforced plastic (FRP) wall panels.

I.2 RELATED REQUIREMENTS

- A. Section 07 92 00 – Joint Sealants.

I.3 REFERENCE STANDARDS

- A. ASTM International (ASTM) (www.astm.org):
 - 1. ASTM D 2583 – Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.
 - 2. ASTM D 5319 – Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels.
 - 3. ASTM D 5420 – Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight (Gardner Impact).
 - 4. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials.

I.4 ACTION SUBMITTALS

- A. Product Data: Submit manufacturer's product data for each type of product required.
- B. Samples: Submit manufacturer's selection and verification samples for finish, colors, patterns, and textures.
 - 1. Submit 2 samples of each type of panel, trim, and fastener.
- C. Certificates: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.
- D. Test and Evaluation Reports: Submit reports showing compliance with specified performance characteristics and physical properties.
- E. Manufacturer's Instructions: Submit manufacturer's installation and storage instructions.
- F. Manufacturer's Project References: Submit manufacturer's list of successfully completed FRP panel projects, including project name and location, name of architect, and type and quantity of FRP panels furnished.
- G. Installer's Project References: Submit installer's list of successfully completed FRP panel projects, including project name and location, name of architect, and type and quantity of FRP panels installed.

I.5 CLOSEOUT SUBMITTALS

- A. Comply with Division 01.
- B. Care and Maintenance Instructions: Submit manufacturer's care and maintenance instructions, including cleaning and repairing instructions.
- C. Warranty Documentation: Submit manufacturer's standard warranty.

I.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Comply with Division 01.
- B. Extra Stock Materials:
 - 1. Deliver to Owner extra stock materials from same production run as products installed.
 - 2. Quantity: Furnish quantity of FRP panels equal to 2% percent of amount installed.
 - 3. Delivery, Storage, and Protection:
 - a. Comply with Owner's requirements for delivery, storage, and protection of extra stock materials.
 - b. Package extra stock materials with protective covering and include labels clearly identifying product name and manufacturer.

I.7 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Manufacturer regularly engaged, for a minimum of 10 years, in the manufacturing of FRP panels of similar type to that specified.
- B. Installer's Qualifications:
 - 1. Installer regularly engaged, for a minimum of 5 years, in installation of FRP panels of similar type to that specified.
 - 2. Employ persons trained for installation of FRP panels.
- C. Mock-ups:
 - 1. Install at Project site a mock-up using acceptable products and manufacturer-approved installation methods.
 - 2. Construct mock-up in place.
 - 3. Obtain Architect approval and acceptance of finish, color, texture, pattern, trim, fasteners, and quality of installation.
 - 4. Mock-Up Size min.: 4' x 8'.
 - 5. Mock-up may be incorporated into final construction upon Architect approval.

I.8 DELIVERY, STORAGE, AND HANDLING

- A. Delivery Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage and Handling Requirements:
 - 1. Store and handle materials in accordance with manufacturer's instructions.
 - 2. Keep materials in manufacturer's original, unopened containers and packaging until installation.
 - 3. Store materials in clean, dry area indoors at temperature and humidity conditions in accordance with manufacturer's instructions.
 - 4. Store materials on flat, level surface, raised above floor, with adequate support to prevent sagging.
 - 5. Store materials out of direct sunlight.
 - 6. Protect materials and finish during storage, handling, and installation to prevent damage.

I.9 AMBIENT CONDITIONS

- A. Do Not Begin Installation Until:
 - 1. Building is enclosed.
 - 2. Permanent heating and cooling equipment is in operation.
 - 3. Residual moisture from plaster, concrete, or terrazzo has dissipated.
- B. During installation and within 48 hours before installation, maintain ambient temperature and relative humidity within limits required by type of FRP panel adhesive used and adhesive manufacturer's instructions.

I.10 WARRANTY

- A. Warranty Period: 1 year from date of purchase.
- B. Limited Warranty Period: Prorated years 2 to 10 from date of purchase.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: Crane Composites, Inc. (formerly Kemlite) 23525 West Eames Street, Channahon, Illinois 60410. Toll Free 800-435-0080. Phone 815-467-8600. Fax 815-467-8666. Website www.cranecomposites.com. Email salesbp@cranecomposites.com.
- B. Substitutions: Comply with Division 01.

2.2 FRP PANELS

- I. As per Architectural Finish Schedule (A11.1).
- B. Panel Compliance: ASTM D 5319.
- C. Panel Surface Protection: "Surfaseal" molecularly-bonded surface protection film for impact, abrasion, and scratch resistance.
- D. Panel Color: As selected by Architect from manufacturer's full range.
 - I. Wall Panel Size: As indicated on the Drawings.

2.3 ACCESSORIES

- A. Moldings, Trim, and Caps: 1-piece extruded polypropylene, configured to cover panel edges and corners.
 - I. Color: As selected by Architect from manufacturer's full product range.
- B. Panel Adhesive: As recommended by FRP panel manufacturer for required substrates.
- C. Panel Seam Sealant: Bright white, 2-part urethane sealant, as recommended by FRP panel manufacturer.
 - I. VOC Content: 0.0 g/L.
- D. Rivets:
 - I. Color: Match FRP panels.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive FRP panels.
- B. Examine Substrate Surfaces to Determine:
 - 1. Corners: Plumb and straight.
 - 2. Surfaces: Smooth, sound, and uniform.
 - 3. Nails or Screw Fasteners: Countersunk.

4. Joints and Cracks: Filled flush and smooth with adjoining surfaces.

- C. Notify Architect of conditions that would adversely affect installation or subsequent use.
- D. Do not begin preparation or installation until unacceptable conditions are corrected.

3.2 PREPARATION

- A. Clean substrates to remove substances that could impair bond of adhesive, including oil, grease, dirt, dust, or other contaminants.
- B. Acclimate FRP panels by unpacking and placing in installation space a minimum of 24 hours before installation.
- C. Lay out FRP panels before beginning installation.
 1. Locate panel joints to provide equal panel widths at ends of walls.
 2. Locate panel joints to provide trimmed panels at corners a minimum of 12 inches (300 mm) wide.

3.3 INSTALLATION

- A. Install FRP panels in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Install FRP panels plumb, level, square, flat, and in proper alignment.
- C. Install FRP panels to be water resistant and washable.
- D. Install FRP panels with manufacturer's recommended gap for panel field and corner joints.
- E. Fasteners:
 1. Use fasteners in accordance with manufacturer's instructions to install FRP panels securely to supports.
 2. Pre-drill fastener holes in FRP panels, 1/8 inch (3.2 mm) greater in diameter than fasteners.
- F. Adhesive:
 1. Install FRP panels in full spread of adhesive.
 2. Follow adhesive manufacturer's instructions for application of adhesive.
- G. Install trim accessories with adhesive and nails or staples.
 1. Do not fasten through FRP panels.
- H. Sealant:
 1. Fill grooves in trim accessories with sealant before installing FRP panels.
 2. Bed inside corner trim in bead of sealant.
 3. Remove excess sealant and smears as FRP panels are installed.
 4. Clean in accordance with sealant manufacturer's instructions.
- I. Tolerances: Install FRP panels within manufacturer's installation tolerances.

3.4 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: If requested by Owner, provide manufacturer's field service consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.
 - I. Site Visits: I.

3.5 ADJUSTING

- A. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.
- B. Remove and replace with new material, damaged components that cannot be successfully repaired, as determined by Architect.

3.6 CLEANING

- A. Clean FRP panels promptly after installation in accordance with manufacturer's instructions.
- B. Do not use harsh cleaning materials or methods that could damage finish.

3.7 PROTECTION

- A. Protect installed FRP panels and finish surfaces from damage during construction.

END OF SECTION 06 83 16