

## SECTION 09 77 21

### FIBERGLASS REINFORCED PLASTIC (FRP) WALL PANEL SYSTEM

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Special wall surfaces, including fiberglass reinforced plastic panel system.

##### 1.02 RELATED REQUIREMENTS

- A. Section 06 20 00 - Finish Carpentry.
- B. Section 09 91 23 - Interior Painting.

##### 1.03 REFERENCES

- A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation
- B. ASTM International:
  - 1. ASTM D2583 Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.
  - 2. ASTM D5420 Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight (Gardner Impact).
  - 3. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.

##### 1.04 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide fiberglass reinforced plastic (FRP) panels which have been manufactured and installed to maintain performance criteria stated by manufacturer without defects, damage or failure.

##### 1.05 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit product data, including manufacturer's SPEC-DATA product sheet, for specified products.
- C. Manufacturers Material Safety Data Sheets (MSDS) for adhesives, sealants and other pertinent materials prior to their delivery to the site.
- D. Shop Drawings: Submit elevations of each wall showing location of paneling and trim members with respect to all discontinuities in the wall elevation.
- E. Samples: Submit selection and verification samples for finishes, colors and textures. Submit 2 samples of each type of panel color, trim and fastener.
- F. Quality Assurance Submittals: Submit the following:
  - 1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
- G. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics, criteria and physical requirements.
- H. Manufacturer's installation instructions. Submit manufacturer's Installation Guide #6211.

##### 1.06 QUALITY ASSURANCE

- A. Qualifications:
  - 1. Installer Qualifications: Installer should be experienced in performing work of this section and should have specialized in installation of work similar to that required for this project.
  - 2. Manufacturer Qualifications: Manufacturer should be capable of providing field service representation during construction and should be capable of approving application method.

- B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact. Package sheets on skids or pallets for shipment to project site.
- C. Storage and Protection: Store materials protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer. Store panels indoors in a dry place at the project site.
- D. Handling: Remove foreign matter from face of panel by using a soft bristle brush, avoiding abrasive action.

## **1.07 PROJECT CONDITIONS**

- A. Environmental Requirements:
  - 1. During installation, and for not less than 48 hours before, maintain an ambient temperature and relative humidity within limits required by type of adhesive used and recommendation of adhesive manufacturer.
  - 2. Provide ventilation to disperse fumes during application of adhesive as recommended by adhesive manufacturer.
- B. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

## **1.08 WARRANTY**

- A. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.
  - 1. Warranty Period: 10 years commencing on Date of Substantial Completion.

## **PART 2 PRODUCTS**

### **2.01 FIBERGLASS REINFORCED PLASTIC (FRP) PANELS**

- A. Basis of Design Manufacturer: Crane Composites, Inc. or approved equal.
  - 1. Crane Composites Contact: 23525 West Eames Street, Channahon, Illinois 60410. Toll Free 800-435-0080. Phone 815-467-8600. Fax 815-467-8666. Website [www.cranecomposites](http://www.cranecomposites). FRP Panels: Crane Composites Fiberglass Reinforced Plastic (FRP) Glasbord® wall panels with Surfaseal® finish, or approved equal:
    - a. FRP Face: Fire-X Glasbord, pebbled embossed texture.
    - b. Class A Skin: 0.09 inch (2.3 mm) smooth Fire-X Glasbord.
    - c. Color: One color throughout:
    - d. Crane 48 Pearl Gray; 66 Silver; 70 Soft Beige; 83 Colonial White; 84 Ivory; or 85 White, as selected by Director's Representative.
  - 2. Surface Protection: Provide manufacturer's surface protection for fiberglass reinforced plastic (FRP) panels.

### **2.02 ACCESSORIES**

- A. Moldings/Trim: Division bars, inside and outside corners and edge trim/moldings shall be panel manufacturer's standard length extruded polypropylene/PVC pieces in longest length possible to eliminate end joints, configured to cover all panel edges and inside corners.
  - 1. Color: Provide harmonizing molding color to match panel colors.
- B. Adhesives:
  - 1. Panel Adhesive:
    - a. Advanced Polymer Adhesive
    - b. Fast Grab Adhesive
    - c. Or approved equal
  - 2. Molding Adhesive: Provide molding adhesive if/as recommended by panel manufacturer.
- C. Panel Seam Sealant: Polyurethane sealant, as recommended by FRP panel manufacturer, color matched to FRP panels and trim.
  - 1. VOC Content: 0.0 g/L.

### **2.03 RELATED MATERIALS**

- A. Related Materials: Refer to other sections listed in Related Sections paragraph herein for related materials.

### **2.04 SOURCE QUALITY**

- A. Source Quality: Obtain fiberglass reinforced plastic (FRP) panels from a single manufacturer. Provide panels and molding only from manufacturer specified to ensure warranty and color harmonization of accessories.

## **PART 3 EXECUTION**

### **3.01 MANUFACTURER'S INSTRUCTIONS**

- A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions for installation.

### **3.02 EXAMINATION**

- A. Site Verification of Conditions: Verify that substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions, required environmental conditions, manufacturer's product data sheets, product label instructions and other written requirements.
  - 1. Examine backup surfaces to determine that corners are plumb and straight, surfaces are smooth, uniform, clean and free from foreign matter, nails and screws are countersunk and joints and cracks are filled flush and smooth with the adjoining surface.
    - a. Plywood wall substrates must be flat and even, and warped plywood should be removed and replaced.
    - b. Solvent-Free adhesive cannot be used on any installation over pressure treated or fire-rated plywood.
  - 2. Do not begin installing FRP panels without first verifying that any earlier phase deficiencies and discrepancies have been properly corrected to allow for proper installation of panel system.
  - 3. Do not begin preparation or installation until unacceptable conditions are corrected.
    - a. The commencement of FRP panel installation shall be interpreted to mean that the Contractor has determined that the surfaces and substrates are in satisfactory condition.

### **3.03 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. Preplan for base and other trim conditions.

### **3.04 INSTALLATION**

- A. Install FRP panels in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Install panels in accordance with FM Approvals Standard FM 4880, available at [www.approvalguide.com](http://www.approvalguide.com) and [www.FRP.com/FMAproved.pdf](http://www.FRP.com/FMAproved.pdf)
- C. Install FRP panels plumb, level, square, flat, and in proper alignment.
- D. Install FRP panels to be water resistant and washable.
- E. Fiberglass Reinforced Panel (FRP) Installation:
  - 1. Cut and drill panels with carbide tipped saw blades or drill bits or cut with snips.

2. Install panels in accordance with manufacturer's written installation instructions for adhesive-secured panels, installed with manufacturer's recommended gap for panel field and corner joints.
3. Use products acceptable to panel manufacturer and install FRP system in accordance with panel manufacturer's printed instructions. Comply with panel manufacturer's Installation Guide #6211.
4. Install manufacturer's standard Division Bars, Corner and Edge Trim to cover all joints between adjacent panels, between panels and walls and ceilings, and at bottom edge of panel fields.
5. Predrill fastener holes for subsequently installed toilet and bath accessory attachments, etc. in FRP panels with 1/8-inch oversize.

### **3.05 CLEANING**

- A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Repair or replace products that have been installed and are damaged. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove construction debris from project site and legally dispose of debris.
  1. Remove any adhesive or excessive sealant from panel face using solvent or cleaner recommended by panel manufacturer.

### **3.06 PROTECTION**

- A. Protection: Protect installed product and finish surfaces from damage during construction.

### **END OF SECTION**

**SECTION 09 91 01**  
**EXTERIOR PAINTING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Painting of exterior columns below siding, exposed ends of rafter tails, roof fascia boards, trim, exterior doors and related trim, exterior fiber-cement siding and trim.
- B. Painting of steel pipe handrails provided under this contract.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Section 061000 - Rough Carpentry.
- B. Section 062000 - Finish Carpentry.
- C. Section 099123 - Interior Painting.

**1.03 DEFINITIONS**

- A. The word "paint" in this Section refers to substrate cleaners, fillers, sealers, primers, undercoats, enamels and other first, intermediate, last or finish coatings.
- B. The word "primer" in this Section refers to substrate cleaners, fillers, sealers, undercoats, and other first or intermediate coats beneath the last or finish coating.
- C. The words "finish paint" in this Section refers to the last or final coat and previous coats of the same material or product directly beneath the last or final coat.
- D. Finish Paint Systems: Finish paint and primers applied over the same substrate shall be considered a paint system of products manufactured or recommended by the finish coat manufacturer.
  - 1. Finish paint products shall meet or exceed specified minimum physical properties.

**1.04 SUBMITTALS**

- A. Painting Schedule: Cross-referenced Painting Schedule listing all exterior substrates to be painted and specified finish paint type designation; product name and manufacturer, recommended primers and product numbers, and finish paint color designation for each substrate to be painted.
  - 1. Designate exterior substrates by building name and number, substrate to be painted and surface location.
- B. Product Data Sheets: Manufacturer's published product data sheets describing the following for each finish paint product to be applied:
  - 1. Percent solids by weight and volume, solvent, vehicle, weight per gallon, ASTM D 523 gloss/reflectance angle, recommended wet and dry film thickness, volatile organic compound (VOC) content in lbs/gallon, product use limitations and environmental restrictions, substrate surface preparation methods, directions and precautions for mixing and thinning, recommended application methods, square foot area coverage per gallon, storage instructions, and shelf-life expiration date.
  - 2. Manufacturer's recommended primer for each finish paint product and substrate to be painted.
  - 3. Manufacturer's complete range of available colors for each finish paint product to be applied.
- C. Finish Paint Type Samples: Two finish paint samples applied over recommended primers for each substrate to be painted.
  - 1. Samples shall be in the designated color and specified ASTM D 523 reflectance.
  - 2. Label each sample with the following information:
    - a. Project number and Painting Schedule designation describing substrates and locations represented by the sample.
    - b. Finish paint and primer manufacturer, product names and numbers, finish paint color and reflectance.

3. Leave a 1 inch wide exposed strip of unpainted substrate and each coat of primer and finish paint.
- D. Quality Control Submittals:
  1. Test Reports: Furnish certified test results from an independent testing laboratory, showing that products submitted comply with the specifications, when requested by the Director's Representative
  2. Certificates: Furnish certificates of compliance required under QUALITY ASSURANCE Article.

#### **1.05 QUALITY ASSURANCE**

- A. Volatile Organic Compounds (VOCs) Regulatory Requirements: Chapter III of Title 6 of the official compilation of Codes, Rules and Regulations of the State of New York (Title 6 NYCRR), Part 205 Architectural Surface Coatings.
  1. Certificate of Compliance: List of each paint product to be delivered and installed. List shall include written certification stating that each paint product listed complies with the VOC regulatory requirements in effect at the time of job site delivery and installation.
- B. Container Labels: Label each product container with paint manufacturer's name, product name and number, color name and number, thinning and application instructions, date of manufacture, shelf-life expiration date, required surface preparations, recommended coverage per gallon, wet and dry film thickness, drying time, and clean up procedures.
- C. Field Examples:
  1. Prior to on-site painting, at locations designated by the Director's Representative, apply field examples of each paint type to be applied.
  2. Field examples to be applied on actual substrates to be painted and shall duplicate earlier approved paint samples.
    - a. Field Example Minimum Wet and Dry Film Thickness: As indicated on approved product data sheet.
    - b. Application: Apply each coat in a smooth uniform wet mil thickness without brush marks, laps, holidays, runs, stains, cloudiness, discolorations, nail holes and other surface imperfections.
      - 1) Leave a specified exposed width of each previous coat beneath each subsequent coat of finish paint and primer.
    - c. Use of Field Examples: Field examples shall serve as a quality control standard for acceptance or rejection of painting Work to be done under this Section.
  3. Do not begin applying paints represented by field examples until examples have been reviewed and approved by the Director's Representative.
    - a. Protect and maintain approved field examples until all painting work represented by the example has been completed and approved.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Delivery: Deliver materials to the Site in original, unopened containers and cartons bearing manufacturer's printed labels. Do not deliver products which have exceeded their shelf life, are in open or damaged containers or cartons, or are not properly labeled as specified.
- B. Storage and Handling: Store products in a dry, well ventilated area in accordance with manufacturer's published product data sheets. Storage location shall have an ambient air temperature between 45 degrees F and 90 degrees F.

#### **1.07 PROJECT CONDITIONS**

- A. Environmental Requirements:
  1. Ambient Air Temperature, Relative Humidity, Ventilation, and Surface Temperature: Comply with paint manufacturer's published product data sheet or other printed product instructions.
  2. If paint manufacturer does not provide environmental requirements, use the following:
    - a. Ambient Air Temperature: Between 45 degrees F and .75 degrees F.
    - b. Relative Humidity: Below 75 percent.

- c. Ventilation: Maintain the painting environment free from fumes and odors throughout the Work of this Section.
  - d. Surface Temperature: At least 5 degrees F above the surface dewpoint temperature.
- 3. Maintain environmental requirements throughout the drying period.
- B. The following items are not to be painted under this section unless otherwise specified, noted or directed:
  - 1. Woodwork not exposed on the exterior side of the building.
  - 2. Concrete

## **PART 2 PRODUCTS**

### **2.01 PAINT MANUFACTURERS**

- A. The following finish paint manufacturers produce the paint types specified for wood and epoxy filler substrates:
  - 1. Benjamin Moore & Co., 101 Paragon Dr., Montvale, NJ 07645; Telephone (201)-573-9600
    - a. ARBORCOAT Exterior Waterborne Solid Deck & Siding Stain, Solid Color 640
      - 1) Color: Cordovan Brown.
    - b. Or approved equal.
  - 2. The following finish paint manufacturers produce the paint types specified for steel substrates:
    - a. Rustoleum, [www.rustoleum.com](http://www.rustoleum.com)
      - 1) Primer: Cold Galvanizing Compound/Primer.
      - 2) Top Coats (2): "Stops Rust" Protective Oil-based Enamel.
        - (a) Color to be selected by Director's Representative.
  - 3. Approved finish paint manufacturers shall match designated colors of other manufacturers where colors are shown on contract documents.
  - 4. Safety Colors: Industry Standard ANSI Safety Colors.

### **2.02 MISCELLANEOUS PRODUCTS**

- A. Cleaning Solvents: Low toxicity with flash point in excess of 100 degrees F.
- B. Color Pigments: Pure, nonfading, finely ground pigments with at least 99 percent passing a 325 mesh sieve.
  - 1. Use exterior pigments in exterior paints where opaque finishes are specified.
- C. Masking Tape: Removable paper or fiber tape, self-adhesive and nonstaining.
- D. Mineral Spirits: Low odor type recommended by finish paint manufacturer.
- E. Turpentine: ASTM D 13.
- F. Wood Putty: Two-part epoxy wood filler.
- G. Wood Substrate Cleaner, Brightener, Conditioner, and Open-grain Sealer: As recommended by finish paint manufacturer.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine surfaces to be prepared, primed, or painted for compliance with contract documents, required environmental conditions, manufacturer's product data sheets, product label instructions and other written requirements.
  - 1. Do not begin any phase of the work without first checking and verifying that surfaces and environmental conditions are acceptable for such work and that any earlier phase deficiencies and discrepancies have been properly corrected.
    - a. The commencement of new work shall be interpreted to mean acceptance of surfaces to be affected.

### 3.02 PREPARATION

- A. Protection: Cover and protect surfaces to be painted, adjacent surfaces not to be painted, and removed furnishings and equipment from existing paint removals, airborne sanding particles, cleaning fluids and paint spills using suitable drop cloths, barriers and other protective devices.
  - 1. Adjacent exterior surface protections include roofs, walls, landscaping, driveways and walkways. Interior protections include floors, walls, furniture, furnishings and electronic equipment.
  - 2. Remove and replace removable hardware, lighting fixtures, telephone equipment, other devices and cover plates over concealed openings in substrates to be painted.
    - a. Cover and neatly mask permanently installed hardware, lighting fixtures, cover plates and other devices which cannot be removed and are not scheduled for painting.
  - 3. Schedule and coordinate surface preparations so as not to interfere with work of other trades or allow airborne sanding dust particle to fall on freshly painted surfaces.
  - 4. Provide adequate natural or mechanical ventilation to allow surfaces to be prepared and painted in accordance with product manufacturer's instructions and applicable regulations.
  - 5. Provide and maintain "Wet Paint" signs, temporary barriers and other protective devices necessary to protect prepared and freshly painted surfaces from damages until Work has been accepted.
- B. Clean and prepare surfaces to be painted in accordance with specifications, paint manufacturer's approved product data sheets and printed label instructions. In the event of conflicting instructions or directions, the more stringent requirements shall apply.
  - 1. Cleaners: Use only approved products manufactured or recommended by finish paint manufacturer. Unless otherwise recommended by cleaner manufacturer, thoroughly rinse with clean water to remove surface contaminants and cleaner residue.

### 3.03 APPLICATION

- A. Environmental Conditions:
  - 1. Water-based Paints: Apply when surface temperatures will be 50 degrees Fahrenheit to 90 degrees Fahrenheit throughout the drying period.
  - 2. Other Paints: Apply when surface temperatures will be 45 degrees Fahrenheit to 95 degrees Fahrenheit throughout the drying period.
  - 3. Apply exterior paints during daylight hours free from rain, snow, fog and mist when ambient air conditions are more than 5 degrees above the surface dewpoint temperature and relative humidity less than 85 percent.
    - a. When exterior painting is allowed or required during nondaylight hours, provide portable outdoor weather recording station with constant printout showing hourly to diurnal air temperature, humidity, and dewpoint temperature.
  - 4. Exterior Cold Weather Protection: Provide heated enclosures necessary to maintain specified temperature and relative humidity conditions during paint application and drying periods.
- B. Install approved paints where specified, or shown on the drawings, and to match approved field examples.
  - 1. Paint Applicators: Brushes, rollers or spray equipment recommended by the paint manufacturer and appropriate for the location and surface area to be painted.
    - a. Approved minimum wet and dry film thicknesses shall be the same for different application methods and substrates.
- C. Paint Type Coats To Be Applied: Unless specified otherwise by finish paint manufacturer's product data sheet, the number of coats to be applied for each paint type are as follows:
  - 1. New Unpainted Surfaces: Apply 1 coat of primer and 2 coats of finish paint.
  - 2. Unless otherwise noted, paint exterior exposed wood work.
  - 3. Doors and Frames: Unless otherwise noted, paint doors and frames the same color in the next highest gloss as adjacent wall surfaces.
    - a. Prime and finish paint door faces and edges before installation.
    - b. Paint door edges the same paint type color as the exterior side of the door.



- c. Do not paint door components which are clearly not intended to be painted such as non-ferrous hardware, frame mutes, and weather stripping.
- d. Do not allow doors and frames to touch until paint is thoroughly dry on both surfaces.

#### **3.04 FIELD QUALITY CONTROL**

- A. Paint Samples: Assist the Director's Representative in obtaining random one quart paint samples for testing at any time during the Work.
  - 1. Notify the Director's Representative upon delivery of paints to the Site.
  - 2. Furnish new one quart metal paint containers with tight fitting lids and suitable labels for marking.
    - a. Furnish labor to thoroughly mix paint before sampling and provide assistance with sampling when required.

#### **3.05 ADJUSTING AND CLEANING**

- A. Reinstall removed items after painting has been completed.
  - 1. Restore damaged items to a condition equal to or better than when removed. Replace damaged items that cannot be restored.
- B. Touch up and restore damaged finish paints. Touch up and restoration paint coats are in addition to the number of specified finish paint coats.
- C. Remove spilled, splashed, or spattered paint without marring, staining or damaging the surface. Restore damaged surfaces to the satisfaction of the Director's representative.
- D. Remove temporary barriers, masking tape, and other protective coverings upon completion of painting, cleaning and restoration work.

**END OF SECTION**

**SECTION 09 91 23**  
**INTERIOR PAINTING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Surface preparation.
- B. Field application of paints and sealers/transparent finishes.
- C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
- D. Mechanical and Electrical:
  - 1. In finished areas, paint insulated and exposed pipes, conduit, and boxes, unless otherwise indicated.
  - 2. Do Not Paint or Finish the Following Items:
    - a. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
    - b. Items indicated to receive other finishes.
    - c. Items indicated to remain unfinished.
    - d. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
    - e. Ceramic and other tiles.
    - f. Glass.
    - g. Concealed pipes, ducts, and conduits.

**1.02 DEFINITIONS**

- A. The word "paint" in this Section refers to substrate cleaners, fillers, sealers, primers, undercoats, enamels and other first, intermediate, last or finish coatings.
- B. The word "primer" in this Section refers to substrate cleaners, fillers, sealers, undercoats, and other first or intermediate coats beneath the last or finish coating.
- C. The words "finish paint" in this Section refers to the last or final coat and previous coats of the same material or product directly beneath the last or final coat.
- D. Finish Paint Systems: Finish paint and primers applied over the same substrate shall be considered a paint system of products manufactured or recommended by the finish coat manufacturer.
  - 1. Finish paint products shall meet or exceed specified minimum physical properties.

**1.03 REFERENCE STANDARDS**

- A. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials; 2016.
- B. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.
- C. SSPC V1 (PM1) - Good Painting Practice: Painting Manual, Volume 1; 2016.
- D. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).

**1.04 SUBMITTALS**

- A. See Section 013300 - Submittals, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
  - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
  - 2. MPI product number (e.g. MPI #47).
  - 3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

- C. Manufacturer's Instructions/Directions: Indicate special surface preparation procedures.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 016000 - Product Requirements, for additional provisions.
  - 2. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
  - 3. Label each container with color in addition to the manufacturer's label.

#### **1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

#### **1.07 FIELD CONDITIONS**

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply materials when relative humidity exceeds 85 percent; at temperatures less than 5 degrees F above the dew point; or to damp or wet surfaces.
- D. Minimum Application Temperatures for Paints: 50 degrees F for interiors unless required otherwise by manufacturer's instructions.
- E. Minimum Application Temperature for Polyurethane Finishes: 65 degrees F for interior, unless required otherwise by manufacturer's instructions.
- F. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
  - 1. In the event that a single manufacturer cannot provide specified products, minor exceptions will be permitted provided approval by Director's Representative is obtained using the specified procedures for substitutions.
  - 2. Paints:
    - a. Behr Process Corporation: [www.behr.com](http://www.behr.com).
    - b. PPG Paints: [www.ppgpaints.com/sle](http://www.ppgpaints.com/sle).
    - c. Pratt & Lambert Paints: [www.prattandlambert.com](http://www.prattandlambert.com).
    - d. Sherwin-Williams Company: [www.sherwin-williams.com](http://www.sherwin-williams.com).
    - e. Valspar Corporation: [www.valsparpaint.com](http://www.valsparpaint.com).
  - 3. Primer Sealers: Same manufacturer as top coats.

#### **2.02 PAINTS AND FINISHES - GENERAL**

- A. Paints and Finishes: Ready mixed, unless intended to be a field-catalyzed paint.
  - 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
  - 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

3. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
  4. Supply each paint material in quantity required to complete entire project's work from a single production run.
  5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Director's Representative from the manufacturer's full line.
- C. Colors: To be selected from manufacturer's full range of available colors.
1. Selection to be made by Director's Representative after award of contract.
  2. Allow for minimum of two colors for each system, unless otherwise indicated, without additional cost to Owner.
  3. Extend colors to surface edges; colors may change at any edge as directed by Director's Representative.
  4. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling they are mounted on/under.
  5. In utility areas, finish equipment, piping, conduit, and exposed duct work in colors according to the color coding scheme indicated.

### **2.03 PAINT SYSTEMS - INTERIOR**

- A. Paint I-OP - All interior exposed wood surfaces of the columns, underside of the roof deck, rafter/ridge/roof framing, and all trusses.
1. Two top coats
  2. Top coat(s): Oil modified Urethane
    - a. Products:
      - 1) Spar Marine Varnish - Satin (clear) finish.

### **2.04 ACCESSORY MATERIALS**

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
- C. Test shop-applied primer for compatibility with subsequent cover materials.
- D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
1. Interior Wood: 15 percent, measured in accordance with ASTM D4442.

### **3.02 PREPARATION**

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Apply all paints and sealers/transparent finish products in accordance with manufacturer's written instructions/directions for use.
- E. Wood Surfaces to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has

dried; sand lightly between coats. Spray apply sealer/transparent finish per manufacturer's directions.

- F. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.

### **3.03 APPLICATION**

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- C. Always maintain adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during product application and drying.
- D. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.
- E. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- F. Spray apply each coat to uniform appearance in thicknesses specified by manufacturer.
- G. Periodically stir/mix floor paints as required to suspend anti-skid/anti-slip additive for uniform additive dispersal in finish coats.
- H. Sand wood and metal surfaces lightly between coats to achieve required finish.
- I. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- J. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

### **3.04 CLEANING**

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

### **3.05 PROTECTION**

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

### **END OF SECTION**