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## **SECTION 07 42 13 –Preformed (Manufactured) Flat Wall Panel Systems**

### **PART 1 – GENERAL**

#### **1.01 SECTION INCLUDES**

The work includes, but is not necessarily limited to, furnishing and installation of all preformed metal walls, and accessories as indicated on the drawings and specified herein.

#### **1.02 RELATED SECTIONS**

- A. Structural Steel Supports: Section 05100
- B. Structural Metal Roof and Floor Decking: Section 05300
- C. Miscellaneous Fabricated Steel: Section 05500
- D. Structural Lumber Supports: Section 06100
- E. Structural Glue Laminated Lumber Supports: Section 06181
- F. Thermal Insulation: Section 07200
- G. Fireproofing: Section 07250
- H. Sheet Metal Flashings and Trim Section 07600
- I. Joint Sealants not specified herein: Section 07900
- J. Finish Painting not specified herein: Section 09900

#### **1.03 PERFORMANCE REQUIREMENTS**

Panels that do not meet the following ASTM standards are not acceptable. Performance testing must be proprietary to manufacture's specific panel system.

##### **A. Testing and Certification**

1. Air Infiltration: Panel system to meet the following standard when tested in accordance with ASTM E 283-04
  - a. With recommended joint sealant: 0.00 CFM (No Leakage) at 6.24 psf.
2. Water Penetration: Panel system to meet the following standard when tested in accordance with ASTM E 331-00
  - a. With recommended joint sealant: 0.00 CFM. (No Leakage) at 15.0 psf.
3. Structural Performance: Individual panel meet the following standard when tested in accordance with ASTM E 72
  - a. Using recommended fastener configuration for maximum wind load (see manufacture's recommended fastener chart): average ultimate load (held for 1 minute) must exceed 115 lbs.
  - b. Manufacture must provide a transverse load table utilizing data attained from ASTM E 72 structural testing.
4. Fastener Pull Through: Panel steel and fasteners to meet the following standard when tested in accordance with ASTM E 1761a
  - a. Using the recommended fastener (#8 modified truss head / phillips wafer head screw) average pull through or screw failure must exceed 875lbs.
5. Metposite<sup>TM</sup> Core E-84 panels meet ASTM E-84 Flame spread 0 or less, Smoke development <5
6. Metposite<sup>TM</sup> Iso panels ASTM E84 Flame spread 25 or less, Smoke development <250
6. Zinalume<sup>®</sup> substrates ASTM A 792 and A250
7. Aluminum substrates meet ASTM B-209
8. Exterior finish includes a 0.2 mil thick corrosion-resistant primer and a 0.8 mil thick finish coat of polyvinylidene fluoride (PVF<sub>2</sub>), full 70% Kynar 500<sup>®</sup>/Hylar 5000<sup>®</sup> for a total 1.0 mil dry film thickness with a specular gloss of 10-15% when tested in accordance with ASTM D-523-89 at 60°.
9. Protective coating conforms to ASTM A792, AZ50 (Zinalume<sup>®</sup>).

#### **1.04 SUBMITTALS**

##### **A. Product Data**

1. Submit manufacturer's technical product data, installation instructions and recommendations for each type of wall panel required. Include data substantiating that materials comply with requirements.

## B. Samples

1. Prior to ordering products, submit manufacturer's standard color samples for architect's/engineer's selection.
2. Prior to starting work, submit (quantity) 12 inch by 12 inch long panel samples showing shape and are representative color chip for architect's/engineer's acceptance.

## C. Shop Drawings

1. Show panel layout, trim installation, and panel attachment.

### 1.05 QUALITY ASSURANCE

#### A. Installer's Qualifications

1. Installation of panels and accessories by installers with a minimum of 5 years experience.
2. Applicator must be approved by panel manufacturer in writing.

#### B. Manufacturer's Qualifications

1. Manufacturer shall have a minimum of 5 years experience supplying flat metal wall panels to the region where the work is to be done.
2. Panel manufacturers without full supporting literature, flashings & details guides, guide specifications and technical support shall not be considered equal to the specified product.

#### C. Regulatory Agency Requirements

1. Comply with UBC and local building code requirements if more restrictive than those specified herein.

### 1.06. PRODUCT DELIVERY, STORAGE AND HANDLING

#### A. Keep panels dry.

#### B. Protect against damage and discoloration.

#### C. Handle panels with non-marring slings.

#### D. Do not bend panels.

#### E. Store panels above ground, with one end elevated for drainage.

#### F. Protect panels against standing water and condensation between adjacent surfaces.

#### G. If panels become wet, immediately separate sheets, wipe dry with clean cloth, and allow to air dry.

#### H. Remove all strippable film coating immediately after installation and do not allow it to remain on the panels in extreme cold, heat or in direct sunlight. (see manufacture's installation instructions)

### 1.07 WARRANTY

#### A. Manufacture's Warranty

1. Metposite LLC warrants its Metposite™ STD, STD-DRI-RS™, Metflush™ and Metflush II™ (ISO, Pro-Form™, PRO™ or Core E84 backed) panels to be free of manufactures faults and defects for a period of ( ) years, including materials manufacturer's 20-year paint warranty on painted products. (See sample warranty in manufacture's literature)

#### B. Contractor's Warranty

1. Warrant panels, flashings, sealants, fasteners and accessories against defective materials and/or workmanship, to remain watertight and weatherproof with normal usage for ( ) years following project substantial completion date.

### 1.08 PROJECT CONDITIONS

#### A. Examine the condition and substrates in which metal panel work is to be installed. Substrate shall be installed level, flat and true to avoid panel stress.

#### B. Field measurements shall be taken prior to fabrication of panels.

#### C. Proceed with panel installation only after satisfactory conditions are met.

## PART 2 – PRODUCTS

### 2.01 ACCEPTABLE MANUFACTURER

#### A. Metposite LLC PO Box 156, Hubbard, OR 97032 phone 503.981.5900 fax 503.981.5901 e-mail info@metposite.com

1. Panel: Metposite™ STD and STD-DRI-RS™ flat-faced panel with fully bonded, weather resistant (ISO and Pro-Form™) or repellent (PRO™ & Core E84) integral stiffener. Wet joint panel system.
2. Panel: Met-Flush™ and Metflush II™ flat-faced panel with fully bonded, water resistant, weather resistant (ISO and Pro-Form™) or repellent (PRO™ & Core E84) integral stiffener. With female/male leg receiver to form positive adjoining panel system.
3. Typical vented Metposite™ STD, STD-DRI-RS™, Met-Flush™ or Metflush II™ panels to be perforated with .125" holes spaced inline or staggered .25" on center apart. The pattern and percentage of surface area per design requirements. (Typical: Full face or 3" wide strips full length of panel.)

## 2.02 MATERIALS

### A. Panels

#### 1. Base Metal:

##### a. Material

1. Steel conforming to ASTM A792 Zincolume<sup>®</sup>, minimum yield 40,000 psi., thickness [*choose one*] 22 gauge (standard), 24, 20, gauge (non-standard).
2. Panels are also available [*choose one*] .032, .040 (limited colors may apply), .050 aluminum with a Kynar 500<sup>®</sup> or anodized finish.

##### b. Protective Coating:

1. Conform to ASTM A792, AZ50 (Zincolume<sup>®</sup>).

##### c. Fully bonded stiffener material

1. ISO
2. Pro-form
3. PRO<sub>tm</sub>
4. Metposite Core E-84

#### 2. Configuration.

General: Provide factory formed metal wall panels with integral stiffener designed to be mechanically attached to supports using concealed fasteners. Include accessories required for a concealed fastener water tight or rain screen application.

- a. Flat faced wall panels: Formed with vertical & horizontal panel edges and flat pan between panel edges with flush joints between panels.
- b. Water resistant closed cell foam stiffener (ISO or Pro-form) fully bonded to concealed side of panel
- c. Water repellent stiffener (PRO or Core E-84) fully bonded to concealed side of panel
- d. Bottom and top edges concealed fastener through panel flange.
- e. Side edges butt panel to panel in concealed, continuous vertical drainage channel with joint sealer.
- f. Panel coverage: refer to drawings for panel sizes
- g. Panel depth [*choose one*] ISO 1" / Pro-form 1 3/8" / PRO 1" or 1/2", Core E-84 1" or 1/2"

#### 3. Exterior Finish: [*choose one*]

- a. Zincolume<sup>®</sup> Plus or G-90 Galvanized
- b. Exterior finish includes a 0.2 mil thick corrosion-resistant primer and a 0.8 mil thick finish coat of polyvinylidene fluoride (PVF<sub>2</sub>), full 70% Kynar 500<sup>®</sup>/Hylar 5000<sup>®</sup> for a total 1.0 mil dry film thickness with a specular gloss of 10-15% when tested in accordance with ASTM D-523-89 at 60°. supplied over Zincolume base metal alternate finishes.
- c. DuraTech<sup>TM</sup> *mx* metallic finish, consisting of a baked-on acrylic primer (0.2 mil.) and a baked-on polyvinylidene fluoride finish coat (0.8 mil.) totaling a nominal 1.0 mil. dry film thickness

#### 4. Interior Finish:

- a. Primer coat material: Corrosion-resistant primer; primer coat dry film thickness: 0.15 mils; finish coat material: polyester paint, finish coat dry film thickness: 0.35 mils.
- b. Total interior dry film thickness: 0.50 mils.
- c. Color: Off-White.

#### 5. Color: [*choose one*]

- a. Manufacturer's standard selection of not less than 20 colors.
- b. Custom color as selected by architect to be \_\_\_\_\_.

### B. Fabrication

1. Panels shall be factory formed. Field formed or general shop formed panels are not acceptable. Provide profiles and sizes indicated in drawings.
2. Form panel lines, breaks, and angles sharp and true.
3. Fabricate panels to include integral fully bonded stiffeners required to maintain flat face surface fabrication tolerances.
4. Provide panels with [*choose one*] smooth face, embossed.

### C. Flashing

1. Material and Finish: Match panels in base metal, color and gauge. Do not use lead or copper.

### D. Sealants

1. Joint sealants and fillers per section 07900

## PART 3 – EXECUTION

### 3.01 EXAMINATION

#### A. Existing Conditions

1. Inspect installed work of other trades and verify that such work is complete to a point where this work may continue.
2. Verify that installation may be made in accordance with approved shop drawings and manufacturer's instructions.

### **3.02 PREPARATION**

- A. Field Measurements
  - 1. Verify prior to fabrication.
  - 2. If field measurements differ from drawing dimensions, notify architect/engineer prior to fabrication.
- B. Protection
  - 1. Treat, or isolate with protective material, and contacting surfaces of dissimilar materials to prevent electrolytic corrosion.
  - 2. Protect work of other trades against damage and discoloration.
- C. Surface Preparation
  - 1. Clean and dry surfaces prior to applying sealant.
  - 2. Install flashings and other sheet metal to comply with requirements of section 07600.

### **3.03 INSTALLATION**

- A. Panels
  - 1. Follow panel manufacturer's directions.
  - 2. Do not stretch or compress panel side-laps.
  - 3. Secure panels without warp or deflection.
- B. Fasteners
  - 1. Per manufacturer recommendation. (See transverse load requirements in performance requirements of this section.)
- C. Allowable Erection Tolerances
  - 1. Maximum alignment variation: ¼ inch in 40 feet.
- D. Panel Joints
  - 1. Install joint fillers and sealants where indicated and where required for a water tight metal wall panel assembly..
- E. Flashing
  - 1. Follow manufacturer's directions and architect approved shop drawings.
  - 2. Install flashings to allow for thermal movement.
  - 3. Remove strippable protective film, if used, immediately preceding flashing installation.
- D. Cutting and Fitting
  - 1. Neat, square and true. Torch cutting is prohibited where cut is exposed to final view.
  - 2. Openings 6 inches and larger in any direction: Fabricate and reinforce to maintain original load capacity.

### **3.04 CLEAN UP AND CLOSE OUT**

- A. Panel Damage and Finish Scratches
  - 1. Do not apply touch-up paint to damaged paint areas that involve minor scratches.
  - 2. Panels or flashings that have severe paint and/or substrate damage shall be replaced as directed by the architect's or owner's representative.
- B. Cleaning and Repairing
  - 1. At completion of each day's work and at work completion, wipe clean removing dirt and dust. Do not allow fasteners, cuttings, filings or scraps to accumulate.
  - 2. Remove debris from project site upon work completion.

[End of Section]