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SECTION 08 31 16 ACCESS PANELS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes furnishing all materials, labor, equipment, and related services necessary to supply and install molded glass fiber reinforced gypsum (GFRG) Access Panels and Frames as indicated in the contract documents, and in compliance with applicable codes.

1.2 RELATED SECTIONS

- A. Section 09 22 00 Supports for Plaster and Gypsum Board
- B. Section 06 10 00 Rough Carpentry
- C. Section 09 90 00 Painting and Coating.

1.3 REFERENCES

- A. ASTM International (ASTM)
 - 1. C1381 Standard Specification for Molded Glass Fiber Reinforced Gypsum Parts.
 - 2. C1467 Standard Specification for the Installation of Molded Glass Fiber Reinforced Gypsum Parts.
 - 3. C1355 Standard Specification of Glass Fiber Reinforced Gypsum Composites.
 - 4. C754 Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
 - 5. C1007 Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories.
 - 6. C840 Specification for Application and Finishing of Gypsum Board.

1.4 ACTION SUBMITTALS

- A. Product Data: Submit product data sheets for each specified product.
- B. Past Projects: Submit a minimum of 3 previously completed installations. Include contact name, e-mail address and phone number for each project.

- C. Shop Drawings: Submit drawings for approval showing sections, dimensions, details for framing opening and the relation of the GFRG parts to the surrounding construction.
- D. Samples: Submit a minimum of 3 flat samples of GFRG for use by the finishing contractor for paint selection.

1.5 QUALITY ASSURANCE

- A. GFRG Access Panels and Installation to conform to ASTM Standards governing Molded Glass Fiber Reinforced Gypsum Parts, namely: C1355; C1381; and, C1467 including physical properties and tolerances. See 1.3 References.
- B. Manufacturer Qualifications: Manufacturer shall have a minimum of 10 years' experience having successfully supplied GFRG Access Panels or parts for other projects similar in scope for the work of this Contract.
- C. Installer Qualifications: Installer shall have a minimum of 5 years' experience having successfully installed GFRG parts for other projects similar to the scope of work in this Contract.
- D. The Alpha gypsum cement used to make the GFRG Access Panels is to be mined and processed in the USA with a purity of not less than 90% in accordance to ASTM C1355. Provide a Manufacturer's Certification of Raw Materials.
- E. Substrates to accept or abut GFRG Access Panels shall be installed straight and true within 1/8 in. in 8 linear ft. (3mm in 2500mm) in accordance to ASTM C1467 and shall be free of obstructions and interference that prohibits the correct alignment and attachment of the GFRG Access Panels.

1.6 DELIVERY, STORAGE AND HANDLING

- A. GFRG Access Panels shall be kept clean and dry and stored to prevent distortion, warping, and other physical damage in accordance with the manufacturer's recommendations.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install GFRG Access Panels until building is enclosed and weatherproof, wet work is complete, and the HVAC system maintains temperature and humidity at normal occupancy levels.
- B. Acclimatize GFRG Access panels for a minimum of 48 hours to the ambient temperature and humidity levels of spaces in which they are to be installed.

1.8 WARRANTY

- A. Manufacturer Warranty: Provide manufacturer's standard product warranty.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Wind-lock Corporation Tel: +1.800.872.5625 – www.stealthpanels.com
- B. Formglas Products Ltd. Tel: +1.866.635.8030 – www.formglas.com

2.2 GLASS FIBER REINFORCED GYPSUM (GFRG) ACCESS PANELS

- A. Fabrications: Non-rated molded GFRG Access Panels for flush ceiling installation with surrounding 5/8" thick gypsum panels. Access Panels to be made in accordance with samples, shop drawings and with ASTM C1381 Standard for Molded Glass Fiber Reinforced Gypsum Parts. Sizes as specified in the contract documents.
- B. Materials: Molded GFRG Access Panels to be made in accordance with ASTM C1355 Standard for Glass Fiber Reinforced Gypsum Composites.
- C. Embedments: GFRG parts to have typical embedments and reinforcement of wood or galvanized steel for the purposes attachment and stiffness.
- D. Molded GFRG Access Panels to be ready for primer for typical flat paint finishes.
- E. GFRG Access Panels subject to critical lighting or scheduled to receive semi-gloss decoration shall be prepared as a Level 5 finish which may require some filling and sanding to hide minor surface imperfections inherent in GFRG, in accordance to ASTM Standards C840 and C1467.
- F. Manufacturer, upon request, to produce copies of laboratory test results verifying that its material meets 2.3 A and B.

2.3 PHYSICAL PROPERTIES

- A. Molded Glass Fiber Reinforced Gypsum Parts to meet the mechanical properties specified in section 5.2 of ASTM Standard C1355:
 - (1) Flexural Strength in accordance to ASTM C947;
 - (2) Impact Resistance in accordance to ASTM D256;
 - (3) Hardness in accordance to ASTM D2583;
 - (4) Coefficient of Linear Thermal Expansion in accordance to ASTM D696;
 - (5) Humidified Deflection in accordance to ASTM C473;
 - (6) Surface Burning Characteristics in accordance to ASTM E84;
 - (7) Behavior at 750° C in accordance to ASTM E136;
 - (8) Nail Pull Resistance in accordance to ASTM C473.
- B. Matrix: Alpha Gypsum Cement
 - Shell thickness: 3/16" (4.5 mm) nominal
 - Edge thickness: 5/8" (19 mm) typical with tapered edges for seamless drywall finishing
 - Density: ~105 lb/ft³ (1675 kg/m³)
 - Weight: 1½ - 2 lb/ft² (7-10 kg/m²)
 - Glass Fiber: 5% typical
 - Embedments: Wood or galvanized steel
 - Color: Unfinished, white to off-white
 - Surface: Smooth, unless otherwise specified

ASTM C1355 - Specified Tests for Glass Fiber Reinforced Gypsum Composites

Flexural strength:

Average Flexural Yield Strength (ASTM C947): 1,875 psi (13 MPa)

Average Flexural Ultimate Strength (ASTM C947): 4,700 psi (32 MPa)

Impact Resistance (ASTM D256): 6.5 ft·lbf/in (347 J/m)

Hardness (ASTM D2583): 60 Barcol

Coefficient of Linear Thermal Expansion (ASTM D696): 5.5 X 10⁻⁶ in/in/°F
(9.9 x 10⁻⁶ mm/mm/°C)

Humidified Deflection (ASTM C473): 1/8" (3mm)
Surface Burning Characteristics (ASTM E84):
Flame Spread: 0
Smoke Development: 0
Behavior at 750°C (ASTM E136): Pass
Nail Pull Resistance (ASTM C473): 176 lbf (782 N)

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Site Conditions: Verify conditions for compliance with the Contract requirements including environmental conditions and installation tolerances that may affect the installation and performance of GFRG Access Panels. Any unsatisfactory conditions to be corrected prior to installation.

3.2 PREPARATION

- A. Substrate: Substrates to accept or abut GFRG Access Panels shall be installed straight and true within 1/8 in. in 8 ft. (3mm in 2500mm) and free of obstructions and interference that prohibits correct attachment and finishing of GFRG Access Panels.
- B. Framed Openings for Access Panels: Framing on all 4 sides to provide a rough opening that is square, flush and of the proper size for the specified Access Panel frame. Refer to the shop drawings for specific dimensions and details. Locate Access Panels for proper access to concealed areas requiring access. Framing to be sufficient to properly support the installed GFRG Access Panels. Metal framing members shall be installed in accordance with ASTM Standards C754 or C1007, as required.
- C. Access Clearance: Clearance space between top of framed opening and services to be accessed to be sufficient to allow the removal of access panels, if required.

3.3 INSTALLATION

- A. Follow Manufacturer's Installation Instructions and comply with ASTM C1467 Standard for the Installation of Molded Glass Fiber Reinforced Gypsum Parts.
- B. It is the Installer's responsibility to verify scope and to order the correct size and quantities of Access Panels.
- C. Supply and install all Access Panel frames level, securely and without warp or rack to ensure the access panel seats properly in the frame.
- D. Countersunk fasteners, damage to be patched. Use joint-treatment materials to finish GFRG parts to produce surfaces ready to receive primers and paint finishes as detailed. Note: Unfinished GFRG parts may exhibit slight imperfections, some filling and sanding will be required to hide imperfections inherent in GFRG.

3.4 FINISHING OF GFRG PARTS

- A. Finishing of the GFRG parts to be carried out by the painting contractor. Proper sealing of the finished GFRG assemblies must be provided to avoid joint tape read through. For more information, consult the ASTM C840 – see 1.3 References.

END OF SECTION