

SECTION 07210**INSULATED COMPOSITE BACKUP PANEL SYSTEMS****Including****Air, Water, Vapor and Thermal Barriers****Traditionally Specified in 07260 & 07272****PART 1 GENERAL****1.01 DESCRIPTION OF WORK**

- A. Steel faced, pre-finished, foamed-in-place, insulating composite wall panels with interlocking side joints, integral factory applied air and vapor seals, and concealed structural fastening. The panels should be used as a back up wall for terra cotta rainscreen system.
- B. Accessories, fasteners, and sealants related to the backup panel system for terra cotta façade.

1.02 QUALITY ASSURANCE

- A. Manufacturer shall demonstrate a minimum of five years experience in the specified products and applications and submit projects with contacts and phone numbers that the architect and contractor can use to confirm satisfactory performance.

1.03 SUBSTITUTIONS

- A. Materials, accessories, testing, and processes specified should establish the minimum level of quality, performance, dimension, and appearance required of any substitution.
- B. No substitution will be considered unless written request for approval has been received by the specifying architect at least ten days prior to the established bid date.
- C. Proposed substitutions shall include a complete description of the proposed substitute including testing, samples, and other information necessary to demonstrate the equivalency of the substitute.

1.04 PANEL PERFORMANCE TESTING

- A. Structural designs shall have been established from tests per ASTM E72 chamber method. Ultimate loads shall be established without the use of exposed or back-side fastening.

- B. Thermal transmission performance shall have been established from tests per ASTM C1363 including panel joints, and C518 for k values and corrected to 15 mph wind outside and still air inside. A 2" thick panel shall achieve an R14 insulation value including air films.
- C. Air infiltration shall not exceed .03 cfm per square foot when tested at a static pressure of 1.56 psf (equivalent to 25 MPH wind) per ASTM 283-73.
- D. There shall be no uncontrolled water penetration at a static pressure of 10 psf (equivalent to 62.5 MPH wind) when tested per ASTM E331-70.
- E. All performance testing shall have been witnessed or conducted by independent agencies.

1.05 BUILDING CODE ACCEPTANCE

- A. Wall panel system shall comply with requirements for foam plastics and finished panel performance as established by the IBC Chapter 26. Laboratory and full scale testing including, but not limited to, the following shall be available.
 - 1. Foam core and interior surface of the complete panel system shall demonstrate compliance with the following criteria for surface burning characteristics per ASTM E84.
Flame spread – 25* or less
Smoke developed – 450 or less

* Numerical flame spread ratings are not intended to reflect hazards presented by these materials under actual fire conditions.
 - 2. Wall panel units shall be classified as a component of fire resistant non-load bearing construction per UL Standard 263.
 - 3. Wall panel units shall be approved as a Class 1 insulated wall or ceiling panel per FM Standard 4880.
 - 4. Ignition temperature testing of the foam plastic insulation shall have been established per ASTM D1929.
 - 5. Product shall be tested per NFPA285 for the family of materials used for the subject project.

1.06 SUBMITTALS

- A. Product Data: Manufacturer's data sheets for insulated composite backup wall panels and accessories.
- B. Product Test Reports: Indicating compliance of products with requirements, from a qualified independent testing agency.
- C. LEED Submittals:

Credit MR 4.1/MR4.2: Manufacturer's Product Data indicating the following:

- Percentages by weight of post-consumer and pre-consumer recycled content
 - Total weight of products provided
 - Statement indicating costs for each product having recycled content
 - Substitutions will be required to replace potential LEED credit loss.
- D. Include structural data indicating compliance with performance requirements.
 - E. Qualification Information: For Installer firm, proof of installer's manufacturer trained field supervisor.
 - F. Warranty: Submit proposed warranty meeting requirements of this Section.
 - G. Panel materials to be Cradle to Cradle silver certified or higher by MBDC or equivalent.

1.07 WARRANTY

- A. Manufacturer shall warrant for a period of two years that panels, trim, and accessories furnished by the manufacturer will be free from defects in material and factory workmanship.

PART 2 PRODUCTS

2.01 PANEL DESIGN

- A. Panel units shall consist of roll formed steel face and liner elements chemically bonded to a continuously foamed-in-place isocyanurate core.
- B. Lengthwise panel edges shall be a tongue and groove design with factory applied air, water and vapor seal. Structural fasteners shall be concealed within the side joint. Panel edges shall engage with adjacent panels on the liner side.
- C. Panel unit shall be selected from one of the following:
 - 1. invelope™ 2.00 in 36" or 32" module with a tested R value of 14.

2.02 MANUFACTURER

Subject to compliance with requirements, manufacturers of exterior wall systems that may be incorporated in the work include the following:

Barrier Panel System Supplier: invelope
 593 Skippack Pike
 Suite 200
 Blue Bell, PA 19422

Terra Cotta Facade Supplier: SHILDAN, INC.
 Crescent Business center
 1325 Route 130 South, unit D
 Gloucester City, NJ 08030
 (215) 515-4510

2.02 MATERIALS AND FINISHES

- A. Panel interior and exterior skins shall be ASTM 653, Grade 37, Galvanized or ASTM 792, Grade 37, Galvalume steel either smooth or embossed with plank stiffeners in 28 ga. The exterior facer shall have a 0.2 mil epoxy primer.
- B. Polyisocyanurate core shall be poured in place between the steel face and liner to fill all voids in the panel and have the following minimum physical properties:
 - 1. Density – 2.8 pcf
 Shear stress – 20 psi
 Compressive strength – 20 psi
 Tensile strength – 30 psi

PART 3 EXECUTION

3.01 INSPECTION

- A. Building tolerances on the panel support steel shall not exceed those established by the panel manufacturer.
 - 1. 3/8 inch in any 20 foot length vertically or horizontally.
 - 2. 3/4 inch in any building elevation.
- B. Alignment of the panel support system should be checked and defects corrected prior to installing panels.
- C. No gaps are permitted at the panel end support members. Splices in support members at panel ends or cut edges are to be sealed with a metal cover plate or aluminum tape.

3.02 INSTALLATION

- A. Panel erector shall demonstrate at least five years of experience installing similar products and applications.
- B. Panel erector shall follow the manufacture's standards for product cutting, sealing and attachment.

END OF SECTION