

SPECIAL SPECIFICATION

SECTION 07611S

PREFORMED PRESSURE RELEASE ROOF PANEL SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Steel faced, pre-finished, foamed-in-place, insulating composite roof panels with double interlocking side joints, snap-on batten cap, integral vapor seals, and concealed structural fastening.
- B. Metal trim, accessories, pressure release fasteners, and sealants related to the roof panel system.

1.02 QUALITY ASSURANCE

- A. CENTRIA, 1005 Beaver Grade Road, Moon Township, Pennsylvania 15108 products will establish the minimum level of quality and performance required. An approved equal may be used.
- B. Manufacturer shall demonstrate a minimum of five years of experience in the specified products and applications.

1.03 SUBSTITUTIONS

- A. Materials, accessories, testing, and processes specified shall establish the minimum level of quality, performance, dimension, and appearance required of any substitution.
- B. No substitution will be considered without written submittals prior to purchase of materials or scheduling of work.
- 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 fasteners.

- B. Thermal transmission performance shall have been established from tests per ASTM C236 and corrected to 15 mph wind outside and still air inside.
- C. Air infiltration shall not exceed .03 cfm per square foot when tested at a static pressure of 1.56 psf per ASTM E1680.
- D. There shall be no uncontrolled water penetration at a static pressure of 6.24 psf when tested per ASTM E1646.
- E. There shall be no evidence of delamination when the panels are tested by simulating two million cycles of positive and negative deflection.
- F. Manufacturer shall demonstrate compliance with UL Class 90, FM I90 or FM 1120 as required.
- G. Manufacturer shall certify pressure release performance of fasteners.
- H. All performance testing shall have been independently conducted or witnessed.

1.05 CODE ACCEPTANCE

- A. Roof panel system shall comply with requirements for foam plastics and finished panel performance as established by the applicable building code. 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 UL Standard 723 9ASTM E84).
 - a. Flame spread – 25* or less
 - b. Smoke developed – 450 or less
 - c. * Numerical flame spread ratings are not intended to reflect hazards presented by these materials under actual fire conditions.
 - 2. Roof panel units shall be classified as a component of fire resistant rated roof assembly designs per UL Standard 263.
 - 3. Roof panel units shall be classified as building units for roof panel construction per UL Standard 1256.
 - 4. Panel units shall be approved as a Class 1 insulated wall or ceiling panel per FM Standard 4880.
 - 5. Ignition temperature testing of the foam plastic insulation shall have been established per ASTM D1929.

- B. Completed assembly shall comply with NFPA 69, NFPA 495 and IFC 911 for relief of explosion pressures.
- C. WARRANTY
 - 1. manufacturer shall warrant for a period of one year that the 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 urethane modified isocyanurate core.
- B. Panel edges shall be double tongue and groove design with factory applied vapor seal. Structural fasteners and clips shall be concealed within the side joint. The 1-3/4" rib at the panel joint shall be covered with webbed mastic sealant and a roll formed cap in the same gage and finish as the panel exterior.
- C. Product to be used as standard of quality.
 - 1. Versapanel 2.50 by Centria in 36" module with a tested U value of .046 BTU/hr-sq. ft. – °F, or approved equal.

2.02 MATERIALS AND FINISHES

- A. Panel exterior skin shall be selected from the following.
 - 1. ASTM A653, Grade 37, G90 galvanized steel, non-directionally embossed (except in Cornstan Plus finish) and planked in 20 gage, containing a min. 35% recycled steel.
 - 2. Panel interior skin shall be selected from the following:
 - a. ASTM A653, Grade 37, galvanized steel, non-directionally embossed and planked in 20 gage, containing a min. 35% recycled steel.
 - 3. Panel exterior finish shall be "DURAGUARD" by Centria, or approved equal, consisting of a 0.8 mil primer with a 0.8 mil 70% Hylar 5000 or Kynar 500 color coat. Color to be chosen from the manufacturer's standards.

4. Panel interior finish shall consist of a 0.2 mil primer each side with a 0.6 mil acrylic on the interior finish and color chosen from the manufacturer's standards.
5. Urethane modified isocyanurate core shall be poured in place to fill all voids in the panel and have the following minimum physical properties:
 - a. Density – 2.7 pcf, Shear stress – 20 psi, Compressive strength – 20 psi, Tensile strength – 20 psi

2.03 FABRICATION

- A. Steel trim shall be the same finish and gage as the exterior and/or interior of the panels.
- B. Panels and trim bundles shall be protected with water resistant paper and provided with wood collars to permit handling and stacking in the field.

2.04 PRESSURE RELEASE FASTENERS

- A. Screw type fasteners with pressure release washers.
- B. Sizes: Diameters and lengths per manufacturer's standard for application designed.
- C. Drive System: Hex head type B thread/point to be installed using standard drive tools.
- D. Material: stainless steel screws with aluminum alloy washers bonded with vulcanized neoprene or EPDM.
- E. Product: Textron "Vent-All" explosion venting fasteners or approved equal. Release pressures and patterns as shown on the drawings.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Building tolerances on the panel support steel shall not exceed those defined by the panel manufacturer.
 1. 3/8 inch in any 20 foot length.
 2. 3/4 inch over any single roof plane.
- B. Alignment of the panel support system should be checked and defects corrected prior to installing panels.

3.02 INSTALLATION

- A. Panel erector shall demonstrate at least five years of experiences installing similar products and applications.
- B. Panels, trim, accessories, and sealants shall be installed in accordance with approved shop drawings to insure a functional and weathertight installation.
- C. Fasteners to be installed per manufacturer's instructions. Panels, fasteners or washers deformed during installation will be replaced at Contractor's expense.
- D. Dry wipe-down of the exterior surface should be done as the panels are installed.

END OF SECTION