

All Weather SR2 Roof Panel Specifications

Pre-Insulated Metal Panels
Division 7, Section 07400

Part 1 – General

1.01 Description

Furnish and install all steel faced factory insulated roof panels forming the exterior cladding and the related accessories and trims required for a complete weathertight roof installation.

1.02 Design

The metal faced foam core roof panels shall be produced on a continuous process manufacturing line under strict quality control and must be independently audited quarterly by a recognized audit facility/testing lab. Panel thickness, gauges, spans between supports and overall lengths shall be as required to contribute to the combined action of the roof in resisting the specified design loads with a deflection not to exceed $L/240$.

1.03 Shop Drawings

Contractor shall furnish detailed drawings showing location and profile of insulated panels, as well as location and shape of formed metal flashings, and the location and type of sealants and fasteners.

1.04 Acceptable Manufacturers

Insulated wall panels shall be manufactured by All Weather Insulated Panels, 929 Aldridge Rd, Vacaville, CA 95688, 888-970-AWIP, www.awipanel.com

1.05 Substitutions

This specification is written with the SR2/3 roof panel as the basis of acceptable design, quality and performance. Requests for substitutions must be submitted in writing no less than 14 days prior to bid.

Part 2 – Products

2.01 Material

- A. The insulated metal roof panel shall be _____ (3.25, 4, 5 and 6) inches thick and 40 inch wide as detailed on the design drawings. The side joint shall be a 2" high trapezoidal standing seam rib design utilizing a continuous non-skinning butyloid sealant bead. ¼-14 hex head fasteners shall be installed through the pre-punched hidden SR series joint

clip. The clip assembly shall positively lock the face and liner sheet of the panel to the structural supports and provide positive resistance to negative wind loads. An additional minimum 1/4 inch continuous bead of approved non-skinning butyloid gun grade sealant equivalent to Schnee-Morehead 5430 may be applied at the liner side grooved joint of the roof panel joint prior to engagement as shown on the panel shop/erection drawings .

- B. The panel exterior shall be SR2. The exterior metal substrate shall be 26ga G90 Galvanized or AZ50 Galvalume Steel coated with a 30 year PVDF finish with a total dry film thickness of 1.0 mil including primer. The exterior color shall be selected from manufacturer's six in-stock standards. The panel interior shall have lightly planked mesa ribs on 2.22" centers. The interior metal substrate shall be minimum 26ga G60 Galvanized or AZ35 Galvalume Steel coated with a polyester finish with a dry film thickness of 1.0 mil including primer. Interior color shall be Imperial White.
- C. The continuously foamed in-place panel core shall be Class 1 rigid polyisocyanurate (polyurethane) foam meeting the physical properties listed under section 2.02 G.
- D. The insulated panel manufacturer shall furnish either the formed metal flashings or the flat stock in the same gauge, color and paint finish system as the panel facings.

2.02 Performance Tests

- A. The panels ability to withstand positive and negative design loads shall be verified by testing in accordance with the ASTM E 72 Vacuum Chamber Method with the standard deflection criteria to be L/240.
- B. The panel thermal properties shall be verified by actual tested values in accordance with the ASTM C 518 steady state thermal transmission test method. Aged K Factor shall not exceed .14 @ 75° F mean temperature or .13 @ 40° F mean temperature.
- C. The panel core shall have a flame spread maximum of 25 and smoke developed maximum of 450 as tested in accordance with the ASTM E 84 test method.
- D. The panel shall have Factory Mutual Class 1 Approval for wall and roof/ceiling construction in accordance with the full scale FM 4880 test program with no height restriction.
- E. The panels shall have Factory Mutual Approval for wind uplift, hailstorm, foot traffic, and spread of flame (ASTM E 108- Class A rated) in accordance with FM 4471.
- F. The panels shall be State of Florida and Dade County Product Approvals.
- G. The polyisocyanurate foam core shall meet or exceed the following physical properties:
 - i. Compressive Strength: 25 psi
 - ii. Density (in-place): 2.1-2.5 pcf
 - iii. Shear Strength: 28-32 psi
 - iv. Closed Cell Content: 95%
 - v. Dimensional Stability: 14 day aged (ASTM D 2126) -20 degree F < 1% chg, dry heat 158 degree F < 1% chg, Humid Heat 158 degree F
- H. Panels not meeting these testing and performance criteria are not permitted to be used for this exterior roof application.

Part 3 – Execution

- 3.01 For quality panel installation, the contractor/installer shall examine the alignment of the structural steel before installing the metal wall panels. The steel shall be aligned

to the tolerances established in the AISC code of standard practice, section 7, and the supplemental modification control section 7.11.3, adjustable items. The maximum deviation of steel alignment shall be limited to $-0 = 3/16''$ from the control with a $1/8''$ maximum change in deviation for any member of any $10'-0''$ run of panel. The erector shall not proceed with installation if the structural steel is not within the specified tolerances. The face of all structural members to which the panels are attached must be in the same vertical plane, flat and free of obstructions such as weld marks, bolts or rivet heads. Roof panels shall only be mechanically attached to structural or secondary roof framing that is running perpendicular the roof panel lengths.

- 3.02 The metal roof panels shall be erected by an experienced metal panel contractor in accordance with the approved drawings, specifications and installation instructions.
- 3.03 The applicable seaming tools, motorized or crimp style, shall be as specifically recommended by your AWIP sales or technical representative. These seaming tools can be purchased or rented through an AWIP approved seaming tool manufacturer/distributor.
- 3.04 Manufacturer shall provide panel contractor with written instructions for recommended product storage and handling.
- 3.05 Repair or replace any damaged or defective panels after determination of responsibility.
- 3.06 Manufacturer shall warrant the panels as free from defects in material and workmanship for 2 years from the date of production.
- 3.07 Manufacturer shall warrant that the exterior paint finish will not:
 - A. Chip, crack, check, or peel for a period of (30) thirty years from date of installation (except for such crazing that may occur on tightly roll-formed edges and brake bends).
 - B. Chalk in excess of a numerical rating of (8) for a period of (30) thirty years from date of installation when measured in accordance with the standard procedures outlined in ASTM D-659.
 - C. Fade or change color in excess of (5) E units for a period of (30) thirty years from date of installation when calculated in accordance with ASTM D-2244. The color change is to be measured on exposed painted surface cleaned of surface soils and oxidation.

