All Weather Insulated Panels

Hourly Rated Wall Panels

***[Select one; delete others]***

**[PL42-MW Planked Mineral Wool]**

**[HE42-MW Heavy Embossed Mineral Wool]**

**Instructions: Modify all bold text in specification. Delete as necessary.**

Questions concerning this specification should be directed to All Weather Insulated Panels Technical Services Department at 1-888-970-AWIP (2947).

1. GENERAL
   * + 1. Section INCLUDES
          1. Manufactured steel faced, mineral wool core, fire resistive insulated wall panels, and related trim and accessories.
       2. RELATed SECTIONS **[Modify as applicable for project]**
          1. Division 07 “Thermal Insulation” for insulation of roof and wall assemblies
          2. Division 07 “Roofing and Siding Panels” for insulated metal panels
          3. Division 07 “Metal Roof and Wall Panels” for factory-formed metal wall or roof panels
          4. Division 07 Section "Sheet Metal Flashing and Trim" for flashings and trim
       3. REFERENCES
          1. Design and Test Standards: Refer to the following organizational publications for design and test standards referenced within specification

American Society of Civil Engineers (ASCE)

International Building Code (IBC)

ASTM International (ASTM)

National Fire Protection Association (NFPA)

FM Global and FM Approvals (FM)

Underwriters Laboratories (UL)

Underwriters Laboratories of Canada (CAN/ULC)

American Architectural Manufacturers Association (AAMA)

* + - 1. DESIGN CRITERIA
         1. General: The mineral wool metal wall panels shall be steel faced mineral wool core panels with fire resistive properties manufactured under strict quality control and must be independently audited by a recognized audit facility/testing lab. The wall panel system (panel thickness, gauge, spans, connections) shall be designed to resist specified wind loads with a deflection not to exceed L/180, thermally induced movement, and exposure to weather without failure.
      2. SUBMITTALS
         1. Product Data: Manufacturer’s data sheets for each product to be provided.
         2. Detail Drawings: Contractor shall furnish detailed drawings showing location and profile of insulated metal panels, as well as location and shape of formed metal flashings, the location and type of sealants and fasteners and design information.

Drawing of panel profile, thickness, gauge

Design information

Insulated Metal Panel Fastening schedule

Samples: Provide for each product specified.

* + - * 1. Maintenance Data: Refer to AWIP’s latest published documents on www.awipanels.com.
        2. Warranty: Provide manufacturer’s current Warranty specimen.

Submit manufacturer’s written two (2) year limited warranty providing materials to be free from defects in material and workmanship from the date of production excluding coil coatings and paint finishes that are covered under a separate warranty.

* + - 1. QUALITY ASSURANCE
         1. Installer Qualifications: Metal wall panels shall be erected by an experienced metal panel contractor in accordance with the approved drawings, specifications, and installation instructions.
         2. Manufacturer Qualifications: Qualified manufacturer that has tests and approvals for panel system identical to that used for this Project.

Approved manufactured listed in this Section with minimum ten years experience in manufacturing of insulated metal panels

* + - * 1. Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing indicated, as documented according to IAS Accreditation or equal.

Source Limitations: Obtain all components, including insulated metal panels, fasteners, trim and other accessories from a single source manufacturer Warrantying the panel system.

* + - * 1. Substitutions: This specification is written with the **[PL42-MW] [HE42-MW]** panels 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.
      1. DELIVERY, STORAGE, AND HANDLING
         1. Protect products of metal panel system during delivery, storage and handling to prevent staining, denting, deterioration of components or other damage. Product panels and trim bundles during shipping.

Deliver insulated metal wall panels in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storage.

Store in accordance with Manufacturer’s written instructions.

Cover insulated metal panels with temporary shelter and from direct sunlight until all components are installed.

Mineral wool core shall be protected from moist air, rain and UV during construction. Stored panels must be wrapped in plastic or tarpaulins. Protect exposed mineral wool from rain or water with plastic sheet during isntallation.

* + - 1. Warranty

Manufacturer’s Warranty: Submit manufacturer’s written two (2) year limited warranty providing materials to be free from defects in material and workmanship from the date of production excluding coil coatings and paint finishes that are covered under a separate warranty.

Paint Finish Warranty: Submit Manufacturer’s limited warranty on the exterior paint finish for adhesion to the metal substrate and on the exterior paint finish for chalk, fade and cracking.

**Fluoropolymer (PVDF or FEVE) Two-Coat System:**

**Chalk in excess of a numerical rating of eight (8) when measured in accordance with the standard procedures outlined in ASTM D4214**

**Fade or change in color in excess of five (5) E units when calculated in accordance with ASTM D2244. The color change is to be measured on exposed painted surface cleaned of surface soils and oxidation.**

**Failure of adhesion, peeling, checking or cracking.**

**Warranty Period: Twenty (20) years from the date of Installation of the panels.**

**OR**

**Silicone Modified Polyester (SMP) Two-Coat System:**

**Chalk in excess of a numerical rating of eight (8) when measured in accordance with the standard procedures outlined in ASTM D4214**

**Fade or change in color in excess of five (5) E units when calculated in accordance with ASTM D2244. The color change is to be measured on exposed painted surface cleaned of surface soils and oxidation.**

**Failure of adhesion, peeling, checking or cracking.**

**Warranty Period: Twenty (20) years from the date of installation of the panels.**

Installer’s Warranty: The installation contractor shall issue a separate warranty against defects in installed materials and workmanship, beginning from the date of substantial completion of the installation.

1. PRODUCTS
   * + 1. Manufacturer
          1. All Weather Insulated Panels, 929 Aldridge Rd, Vacaville, CA 95688, Telephone: 888-970-AWIP, Email: [sales@awipanels.com](mailto:sales@awipanels.com); Website: [www.awipanels.com](http://www.awipanels.com)
          2. Basis of Design: **[PL42-MW] [HE42-MW]**

Basis of Design Manufacturer: All Weather Insulated Panels, 929 Aldridge Rd, Vacaville, CA 95688, Telephone: 888-970-AWIP, Email: sales@awipanels.com; Website: www.awipanels.com

* + - 1. Performance requirements
         1. General: Provide metal panel system meeting performance requirements as determined by specification.
         2. Structural Performance: Provide metal panel assemblies capable of withstanding positive and negative loads and stresses as determined by ASTM E72 with the standard deflection criteria to be L/180.

Wind Loads: Determine wind loads based on applicable building code, wind speed, importance factor, risk category, exposure category and internal pressure coefficient.

Deflection Limits: Withstand inward and outward wind-load design pressures in accordance with applicable building code with maximum deflection of **[L/120] (Interior Partitions) or [L/180] (Exterior walls)**

* + - * 1. Thermal Performance: Provide metal panel assemblies meeting specified insulation value as determined by ASTM C518 steady state thermal transmission

Nominal R-value of 4.0 [hr·ft2·°F/Btu] per inch thickness at 75°F mean temperature

* + - * 1. Fire Performance Characteristics: Provide metal panel systems with the following fire-test characteristics determined by applicable test standard

Hourly fire rating: The panel composite shall be tested per ASTM E119 and pass as a **[1-hour] [2-hour] [3-hour]** wall assembly.

Surface-Burning Characteristics: The foam core shall be tested per ASTM E84. The core shall have:

Flame Spread Index: 0

Smoke Developed Index: 5

Canadian Certifications **[as applicable]**

Hourly fire rating: The panel composite shall be tested per CAN/ULC S101 and pass as a **[1-hour] [2-hour] [3-hour]** wall assembly.

Fire Endurance Tests of Building Construction and Materials: The wall panel system shall be tested in accordance to CAN/ULC S101. Must meet the 15-min stay in place requirements in the orientation of panel installation.

Penetrations: Panel penetrations shall have passed the requirements of CAN/ULC S115.

Combustibility: Panels shall have successfully passed the requirements of CAN/ULC S114 as a non-combustible material.

* + - * 1. Air Infiltration: Provide metal panel assemblies tested per ASTM E283

Air leakage shall not exceed .03 cfm/ft2 at a static air pressure differential of 6.24 PSF.

* + - * 1. Water Penetration: Provide metal panel assemblies tested per ASTM E331

Water penetration shall not be observed at the panel joint at a static pressure differential of 20 PSF for a duration of two hours.

* + - 1. mINERAL WOOL metal wall panels
         1. Performance Criteria

The mineral wool metal wall panel shall have a monolithic tongue and groove joint design, permitting exterior side installation. The panels shall be fastened with self-drilling fasteners installed through round 1 1/8’’ diameter sealing washers. The fasteners shall positively lock the face and liner sheet of the panel to the structural supports and provide positive resistance to negative wind loads. Stitch fasteners shall be used to fasten the joints on the exterior and interior facings at panel ends as required for the hourly rated assembly.A minimum 1/4 inch continuous bead of approved non-skinning gun grade sealant and SAFIRE Intumescent Sealant shall be applied at the panel joint prior to engagement as shown on the panel shop/erection drawings

Basis of Design: All Weather Insulated Panels, **[PL42-MW] [HE42-MW]**

Provide mineral wool metal panel with minimum R Value: [**insert R Value] [minimum required by applicable code].**

Provide mineral wool metal panel with minimum fire rating: **[1-hour] [2-hour] [3-hour]**

Provide mineral wool metal panel with minimum thickness: **[4’’, 6’’, 8’’]**

The mineral wool metal panel shall be 42’’ wide with a roll-formed monolithic tongue and groove side joint.

Provide exterior metal substrate. G90 galvanized coated steel conforming to ASTM A653 or AZ50 aluminum-zinc (Galvalume) alloy coated steel, conforming to ASTM A792, minimum grade 33, prepainted by the coil-coating process per ASTM A755

The exterior profile shall be **[embossed and planked (PL42-MW)] [heavy embossed and flat (HE42-MW)]**

Facing Thickness: **[26 ga (for PL42-MW only), 24 ga, 22 ga]**

Finish: **[Fluoropolymer (PVDF or FEVE) Two-Coat System] [Silicone Modified Polyester (SMP) Two-Coat System]**

Thickness: 1.0 mil dry film thickness

Color: **[As Indicated] [As Selected by Architect from manufacturer’s standard colors] [Match Architect’s custom color]**

Provide interior metal substrate. G90 galvanized coated steel conforming to ASTM A653 or AZ50 aluminum-zinc (Galvalume) alloy coated steel, conforming to ASTM A792, minimum grade 33, prepainted by the coil-coating process per ASTM A755

The interior profile shall be standard embossed with planked ribs.

Facing Thickness: **[26 ga, 24 ga, 22ga]**

Finish: **[USDA Polyester Two-Coat System] [Silicone Modified Polyester (SMP) Two-Coat System] [Fluoropolymer (PVDF or FEVE) Two-Coat System] [USDA Vinyl Plastisol (PVC) Two-Coat System] [304-2B Stainless Steel]**

Thickness: 1.0 mil dry film thickness

Color: [**Imperial White] [As Indicated] [As Selected by Architect from manufacturer’s standard colors] [Match Architect’s custom color]**

The mineral wool core shall meet or exceed the following physical properties:

Density (ASTM C303): 8.5 lb. /cu. ft. +/- 10% or minimum 7.65 lb. /cu. ft., maximum 9.4 lb. / cu. ft.

Combustibility (ASTM E136): Non-combustible at 1382º F

Combustibility (CAN/ULC S114): Non-combustible, Flame Spread = 0, Smoke Developed = 5.

Thermal Resistance (ASTM C518): Maximum K-factor shall not exceed 0.25 at 75 degree F mean temperature

Compressive Strength (ASTM C165): Force applied parallel to fiber orientation (cut lamella pieces) Maximum 10% deformation at 9.2 KN of force

Dimensional stability (ASTM C612): Linear shrinkage 2% max. at 1200º F

Moisture resistance (ASTM C612): Maximum 5% water vapor absorption by weight

Odor emission (ASTM C612): No objectionable odor

* + - * 1. Panels not meeting these testing and performance criteria are not permitted to be used for this metal wall panel application.

“Best practice” to retain for all.

* + - 1. Metal wall panel accessories

Flashings: The insulated metal 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

* + - * 1. Flashings: The mineral fiber metal 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. Panel Fasteners: Self-drilling or self-tapping screws and other acceptable fasteners recommended by panel manufacturer. Where exposed fasteners cannot be avoided, supply corrosion-resistant fasteners with heads matching color of metal panels by factor-applied coating, with weather tight sealing washers.
        3. Sealant: Provide non-skinning butyl sealant and SAFIRE Intumescent sealant in accordance to manufacturer’s standards

Retain for all.

1. EXECUTION
   * + 1. EXAMINATION
          1. Examine metal panel system substrate with Installer. Inspect for erection tolerances and other conditions that would adversely affect installation of metal panels.

The contractor or installer shall examine the alignment of the steel supports before installing the metal wall panel system. The steel shall be aligned to the tolerances established in the AISC code of standard practice, Section 8 and the supplemental modification control Section 7.11.

Panel support tolerances:

Maximum deviation of steel alignment shall be limited to -0 to 3/16’’ from the control with a 1/8’’ maximum change in deviation for any member of any 5’-0’’ run of panel.

The erector shall not proceed with installation if steel support 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. In no case shall vertically installed wall panels be fastened directly to structural columns or vertical framing members. In no case shall horizontally installed wall panels be fastened directly to structural beams or horizontal framing members.

* + - 1. Metal Panel Installation
         1. Manufacturer shall provide panel contractor with written instructions for recommended product storage and handling as well as standard installation procedures.
      2. FIELD QUALITY CONTROL

Retain if required.

* + - * 1. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform tests and inspections and to prepare test reports.

PROTECTION AND CLEANING

* + - * 1. Remove temporary protective films in accordance with manufacturer’s written instructions. Do not leave in direct sunlight.
        2. Clean finished surfaces as recommended by metal panel manufacturer.
        3. Repair or replace any damaged or defective panels after determination of responsibility.

END OF SECTION

Qr code

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