metal sales™ manufacturing corporation

SPECIFICATION DATA

Metal Sales Manufacturing Corporation

This specification data sheet is provided by Metal Sales Manufacturing Corporation as a technical support tool incident to the sale of its IC72-Panel, 7/8" Corrugated and PBR-Panel metal roof panel products. Contact Metal Sales for more information on these and other products.

Section 07 41 13 - METAL ROOF PANELS

1. PRODUCT NAMES

IC72-Panel, 7/8" Corrugated and PBR-Panel metal roof panel

2. MANUFACTURER

Metal Sales Manufacturing Corporation
545 South 3rd Street, Suite 200
Louisville, KY 40202
Toll Free: 800.406.7387
Phone: 502.855.4300
Fax: 502.855.4200
Web: metalsales.us.com
E-Mail: rgage@metalsales.us.com

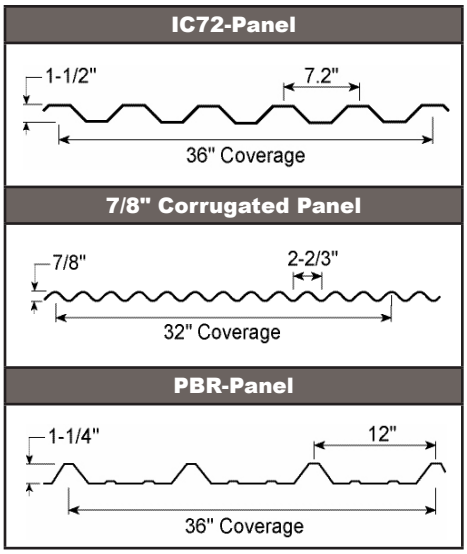
3. PRODUCT DESCRIPTION

Basic Use

For more than 50 years, Metal Sales has earned a reputation as the premier provider of metal building components and accessories. Metal Sales maintains the industry's largest professional sales and service team, supported by 21 branches located throughout the United States and offers a full line of high quality metal roof and wall panels for agricultural, commercial, architectural, industrial and residential projects of every shape and size for both new construction and retrofit applications. Metal Sales is dedicated to leading the metal building component industry, by setting new standards for operating efficiency, product design, active service management and lasting value.

Manufacturer Memberships and Affiliations

CRRC - Cool Roof Rating Council
MCA - Metal Construction Association
CSI - Construction Specifications Institute
NRCA - National Roofing Contractors Association
ILFI - International Living Future Institute
ENERGY STAR® Partner



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4. TECHNICAL DATA

Applicable Standards

ASTM International (ASTM)

- ASTM A 653 – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- ASTM A 792 - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
- ASTM D 2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates.
- ASTM D 4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films.
- ASTM E 283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
- ASTM E 1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference.
- ASTM E 1680 - Standard Test Method for Rate of Air Leakage through Exterior Metal Roof Panel Systems.

Underwriters Laboratories (UL):

- UL 263 - Fire Tests of Building Construction and Materials.
- UL 580 - Tests For Uplift Resistance of Roof Assemblies.
- UL 790 - Standard Test Methods for Fire Tests of Roof Coverings.
- UL 2218 - Impact Resistance of Prepared Roof Covering Materials.

Approval Organizations:

Miami-Dade County: Notice of Acceptance NOA): 18-0131.05 (applies to PBR-Panel product).

Florida Building Code 2017: 10999.1 (applies to 7/8" Corrugated product). 10999.7 and 14645.13 (applies to PBR-Panel product).

Texas Department of Insurance: RC-409 (applies to 7/8" Corrugated product). RC-198, RC-265, RC-279 (applies to PBR-Panel produce).

ICC Evaluation Services: ESR-2385 (applies to IC72-Panel product, 7/8" Corrugated product and PBR-Panel product)

UL: Construction #137 and #244 (applies to IC72-Panel product). #649 (applies to 7/8" Corrugated product). #161 (applies to PBR-Panel product).

Physical Properties:

Test reports are available to design professionals upon request.
Note: Industry designation for material thickness is moving away from "gauge" to decimal thickness in inches. Metal Sales recommends use of a minimum thickness requirement of 0.018-inch (0.46-mm) instead of 26 gauge, 0.0236-inch (0.60-mm) instead of 24 gauge, 0.0296-inch (0.75-mm) instead of 22

metal sales™ manufacturing corporation

SPECIFICATION DATA

gauge, 0.0356 inch (0.904 mm) instead of 20 gauge and 0.0466 inch (1.184 mm) instead of 18 gauge. For Galvalume, specify AZ50 for painted material or AZ55 for unpainted material. For galvanized, specify G90.

Technical Properties for IC72-Panel Products:
►Panel coverage: 36 inches (914.4 mm).
►Rib Height: 1-1/2 inches (38.1 mm).
►Material: Aluminum-zinc alloy-coated or zinc-coated steel sheet, AZ50, AZ55 or G90 coating designation, structural quality, Grade 50 or Grade 33, 0.0236-inch (0.60-mm), 0.0296-inch (0.75-mm), 0.0356 inch (0.904 mm) and 0.0466 inch (1.184 mm) minimum thickness. Not all thicknesses are produced at all branches.
►Minimum Roof Slope Capability: 1:12.
►Attachment: Exposed, direct-fastened panel.
►Application: Designed for application over open framing or solid substrate.
►Rib Configuration: Trapezoidal.
►Surface Finish: PVDF, MS ColorFast45® or Acrylic-Coated Galvalume®.
►Color: Contact Metal Sales for information on color availability.
►Testing: Fire Resistance Rating: Complies with UL 263 and UL 790 Class A Fire Resistance Ratings per assembly.
Impact Resistance: Complies with UL 2218, Class 4.
Wind Uplift Resistance: Complies with UL 580, Class 90.
Air Leakage: 0.0148 cfm/sq. ft. at 12 psf when tested according to ASTM E 283, 0.0002 cfm/sq. ft. at 12 psf when tested according to ASTM E 1680.
Water Penetration: None at 6.24 psf when tested according to ASTM E 331, None at 12 psf when tested according to ASTM E 1646.
►Code and Testing Agency Approvals:
ICC Evaluation Services Report: ESR-2385.
UL Construction #137, 244.

Technical Properties for 7/8" Corrugated Products:
►Panel coverage: 32 inches (812.8 mm).
►Rib Height: 7/8 inch (22.2 mm).
►Material: Aluminum-zinc alloy-coated or zinc-coated steel sheet, AZ50, AZ55 or G90 coating designation, structural quality, Grade 50 or Grade 33, 0.018-inch (0.46-mm), 0.0236-inch (0.60-mm), 0.0296-inch (0.75-mm) or 0.0356 inch (0.904-mm) minimum thickness.
►Minimum Roof Slope Capability: 1:12.
►Attachment: Exposed, direct-fastened panel.
►Application: Designed for application over open framing or solid substrate.
►Rib Configuration: Sinusoidal.

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►Surface Finish: MS Colorfast45®, PVDF or Acrylic-Coated Galvalume®.
►Color: Contact Metal Sales for information on color availability.
►Testing: Fire Resistance Rating: Complies with UL 263 and UL 790 Class A Fire Resistance Ratings per assembly.
Impact Resistance: Complies with UL 2218, Class 4.
Wind Uplift Resistance: Complies with UL 580, Class 90.
Air Leakage: 0.004 cfm/sq. ft. at 6.24 psf when tested according to ASTM E 283, 0.007 cfm/sq. ft. at 6.24 psf when tested according to ASTM E 1680.
Water Penetration: None at 12 psf when tested according to ASTM E 331, None at 12 psf when tested according to ASTM E 1646.
►Code and Testing Agency Approvals: Complies with 2017 Florida Building Code Approval FL10999.1.
ICC Evaluation Services Report: ESR-2385.
Texas wind storm RC-409.
UL Construction #649.

Technical Properties for PBR-Panel Products:
►Panel coverage: 36 inches (914.4 mm).
►Rib Height: 1-1/4 inches (31.8 mm).
►Material: Aluminum-zinc alloy-coated or zinc-coated steel sheet, AZ50, AZ55 or G90 coating designation, structural quality, Grade 50, 0.018-inch (0.46-mm), 0.0236-inch (0.60-mm) or 0.0296-inch (0.75-mm) minimum thickness.
►Minimum Roof Slope Capability: 1:12.
►Attachment: Exposed, direct-fastened panel.
►Application: Designed for application over open framing or solid substrate.
►Rib Configuration: Trapezoidal.
►Surface Finish: MS Colorfast45®, PVDF or Acrylic-Coated Galvalume.
►Color: Contact Metal Sales for information on color availability.
►Testing: Fire Resistance Rating: Complies with UL 263 and UL 790 Class A Fire Resistance Ratings per assembly. Wind Uplift Resistance: Complies with UL 580, Class 90.
Impact Resistance: Complies with UL 2218, Class 4.
►Code and Testing Agency Approvals: Miami-Dade County Approval NOA 18-0131.05.
2017 Florida Building Code Approval: FL10999.7 and FL14645.13.
Texas Windstorm Evaluation RC-198, RC-265 and RC-279.
ICC Evaluation Services Report: ESR-2385
UL Construction #161.

Environmental Considerations
Construction metals generally are readily recyclable at the end of their service life. The raw materials used in manufacture of metal roof panels also come from recycled sources. Pre-consumer and post-consumer recycled content varies. Consult with manufacturer for more information.

Fire Performance
Flame-Spread Index: 25 or less (Class A).
Smoke-Developed Index: 450 or less.

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SPECIFICATION DATA

5. INSTALLATION

Handling and Storage

Handle and store product according to Metal Sales recommendations. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact. Store materials above ground, under waterproof covering, protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer. Provide proper ventilation of metal panel system to prevent condensation build-up between each panel and trim or flashing component. Tilt stack to drain in wet conditions. Remove strippable plastic film before storage under high-heat conditions. Store products in manufacturer's unopened packaging until just prior to installation. Exercise caution in unloading and handling metal panel system to prevent bending, warping, twisting and surface damage.

Preparation

Install substrate boards over roof deck and sheathing over entire roof surface using recommended fasteners. Install furring, eave angles, sub-purlins and other miscellaneous roof panel support members and anchor according to metal roof panel manufacturer's recommendations. Ensure panel support is in-plane. Limit in-plane variance to no more than a total of 1/4 inch (6mm) on 10 feet (3.05 m).

Underlayment Installation

Install self-adhering sheet underlayment and felt underlayment as required. Apply slip sheet over underlayment prior to installing metal roof panels. Install flashing in compliance with requirements in Division 07 Section "Sheet Metal Flashing and Trim."

Thermal Insulation Installation

Install polyethylene vapor retarder if required. Install board insulation if required, in compliance with installation requirements in Division 07 Section "Thermal Insulation" requirements. Install blanket insulation if required, in compliance with installation requirements in Division 07 Section "Thermal Insulation."

Metal Roof Panel Installation

Verify that site conditions are acceptable for installation. Do not proceed with installation until unacceptable conditions are corrected. Comply with panel manufacturer's installation instructions including but not limited to special techniques, interface with other work and integration of systems. Attach roof panels to supports with proper fasteners, fastening pattern and spacing, as recommended by panel manufacturer. Comply with installation tolerances as required.

Accessory Installation

Install accessories using techniques recommended by manufacturer and which will assure positive anchorage to building and weather tight mounting. Provide for thermal movement. Coordinate installation with flashings and other components. For Flashing and Trim, comply with performance requirements, manufacturer's written installation instructions and the SMACNA "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and install units to true level. Install work with laps, joints and seams that will be permanently watertight. Metal Sales recommends S-5! systems for the attachment of snow guards and solar panels.

Field Quality Control

If requested by Owner, provide manufacturer's field service consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

Precautions, Cleaning and Protection

Touch-up paint is used to cover and protect unexpected scratches on the paint finish that may occur during installation of panel. Touch-up paint will not weather as well or at the same rate as the original system. Test in an area that will not be noticeable. Metallic paint colors are available at an additional charge. Minor differences in color and appearance are normal and to be expected.

To minimize possible differences in appearance, an entire project should be painted at one time, from one batch of paint, using the same application equipment. Additionally, fabricated panels, flat sheet and flashings should be oriented in the same direction.

After installation remove temporary coverings and protection of adjacent work areas. Repair or replace any installed products that have been damaged. Clean installed panels in accordance with manufacturer's instructions prior to Owner's acceptance. Remove and lawfully dispose of construction debris from Project site. Protect installed product and finish surfaces from damage during construction.

Building Codes

Current data on building code requirements and product compliance may be obtained from Metal Sales technical support specialists. Installation must comply with the requirements of authority having jurisdiction.

6. AVAILABILITY AND COST

Availability

Metal Sales products are nationally distributed and supported from 21 convenient locations nationwide, including Alaska. Manufacturer has the ability to ship worldwide. Contact manufacturer for information on local availability.

Cost

Budget installed cost information may be obtained from a local Metal Sales distributor or directly from the manufacturer.

7. WARRANTY

Special Exposed Panel Finish Warranty: Manufacturer's standard form PVDF (Fluorocarbon System) Warranty for film integrity, chalk rating and fade rating in which manufacturer agrees to repair or replace panels that show evidence of deterioration within specified warranty period. Deterioration shall include, but is not limited to, color fading of more than 5 Hunter units when tested according to ASTM D 2244, chalking in excess of a No. 8 rating when tested according to ASTM D 4214 or cracking, checking, peeling or failure of paint to adhere to bare metal. Warranty Period for film integrity is 45 years and for chalk and fade rating is 35 years. Metal Sales warranty excludes surface deterioration due to physical damage and exposure to salt air environments.

Metal Sales standard MS Colorfast45® warranty for film integrity, chalk rating and fade rating in which manufacturer agrees to repair or replace panels that show evidence of deterioration within specified warranty period. Deterioration shall include, but is not limited to, color fading of more than 5 Hunter units on vertical applications or more than 6 Hunter units on non-vertical applications when tested according to ASTM D 2244, chalking in excess of a No. 8 rating on vertical applications or a No. 7 rating on non-vertical applications when tested according to ASTM D 4214, cracking, checking, peeling or failure of paint to adhere to bare metal or perforation. Warranty Period for film integrity is 45 years, chalk and fade rating for 30 years and perforation for 25 years for AZ50 material. Metal Sales warranty excludes surface deterioration due to physical damage and exposure to salt air environments.

8. MAINTENANCE

No specific maintenance is required for properly installed Metal Sales metal roof panel products. Periodic roof inspection to verify system integrity, drainage functionality and repair of storm damage is advised.

9. TECHNICAL SERVICES

Technical assistance, including more detailed information, product literature, test results, project lists, assistance in preparing project specifications and arrangements for application supervision, is available by contacting Metal Sales.

10. FILING SYSTEMS

Additional product information is available from the manufacturer upon request. Metal Sales product information may be found in McGraw-Hill Sweets.