

# Preformed Metal Roofing and Siding

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## 1. GENERAL

### 1.1. Description

This specification along with the drawings covers the furnishing of all material, products, equipment, accessories, tools, services, transportation, labor and supervision required for the installation of preformed metal roofing and siding. These items include:

- Wall panels
- Roof panels
- Liner Panels
- Translucent panels
- Accessories including fasteners, closures, flashing and caulking

### 1.2. Quality Assurance

#### 1.2.1. Codes and Standards

The following codes and standards of the latest revision shall be used:

- American Iron and Steel Institute (AISI)
- American Welding Society (AWS), Code of Welding in Building Construction
- American Society for Testing and Materials (ASTM), as noted.
- American Institute of Steel Construction (ASIC)

#### 1.2.2. Manufacturer Qualifications

The siding manufacturer shall be regularly engaged in the production of preformed metal roofing and siding.

#### 1.2.3. Erector Qualifications

The erector shall have been regularly engaged for at least five years in the erection of preformed metal roofing and siding and shall be acceptable to the roofing and siding manufacturer.

### 1.3. Submittals

#### 1.3.1. Shop Drawings

Prior to fabrication, shop drawings shall be submitted to the Engineer for approval. Drawings shall show gauges, profiles, closure materials, fastener types and locations and flashing details. Manufacturer's standard colors shall be submitted for color selection.

#### 1.3.2. Erection Drawings

## Preformed Metal Roofing and Siding

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A complete set of checked erection drawings shall be sent with the material to the job site.

### 1.4. Material Handling

- 1.4.1. Use all means necessary to protect preformed metal panels before, during and after installation.
- 1.4.2. Preformed metal panels not promptly erected shall be stored off the ground with one end elevated for drainage. Protect from weather with a waterproof covering.
- 1.4.3. When placing bundles of metal panels on the roof, care should be exercised to avoid overloading the supporting structural members.
- 1.4.4. Translucent panels should be stored indoors in an upright position. Panels should never be stored flat as condensation may form between the panels causing internal fiberbloom and permanent damage.

## 2. PRODUCTS

### 2.1. Metal Panels

- 2.1.1. Metal panels shall be roll-formed in the specified gauges from galvanized steel coil conforming to ASTM A 525 G90 zinc coating, and ASTM A 446 to meet or exceed a minimum yield strength of 40,000 psi.
- 2.1.2. Panels shall be roll-formed into the profiles specified with corresponding depth corrugations, crest centers and nominal widths.
- 2.1.3. Roof panels shall be minimum 22 gauge and wall panels shall be minimum 24 gauge. Liner panels shall be minimum 26 gauge.
- 2.1.4. Finishes
  - Panels shall be coil coated with the generic formulations specified and in accordance with the manufacturer's standards.
  - Colors shall be as selected from the manufacturer's standard unless otherwise specified.
  - All color coated panels shall have finish coat one side and standard wash coat on reverse side, unless otherwise specified.

## Preformed Metal Roofing and Siding

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### 2.2. Translucent Panels

- 2.2.1. Translucent panels shall be fiberglass reinforced polyester resin preformed panels with a nominal weight of 8 ounces per square foot, and shall have a configuration matching the adjacent roofing or siding.
- 2.2.2. Panels shall be fire retardant with a flame spread not to exceed 25.
- 2.2.3. Colors shall be as selected from the manufacturer's standard.

### 2.3. Subgirts

Where indicated, subgirts shall be minimum 18 gauge with hot dip G90 galvanized steel conforming to ASTM A446. Subgirts shall be roll formed to the required shape to properly receive all panel fasteners and produce the combined action between the face sheet and liner to meet the designated design loads and deflections.

### 2.4. Accessories

- 2.4.1. Flashings, closures, fillers, metal expansion joints, ridge covers, fascias and other metal accessories shall be factory formed of the same material, gauge and finish as the roofing and siding.
- 2.4.2. Closure strips shall be closed-cell, self-extinguishing, expanded cellular rubber, cut or pre-molded to match the corrugation configuration of the panels specified.
- 2.4.3. Joint sealant shall meet Federal Specification TT-S-00230.
- 2.4.4. Tape sealant shall be polyisobutylene compound tape not less than 1/8" thick by 1/2" wide with release paper backing.
- 2.4.5. Sealant for translucent panels shall be a clear butyl compound as recommended by the manufacturer of the panels.
- 2.4.6. Fasteners
  - 2.4.6.1. Fasteners shall be in accordance with the manufacturer's standard system of self-tapping screws, bolts and nuts, self-locking rivets, self-locking bolts, end welded studs and other suitable fasteners designed to withstand the specified loads.
  - 2.4.6.2. All fasteners shall be provided with metal-backed neoprene washers on weather side of the panels.
  - 2.4.6.3. Fasteners for attaching roof and wall panels to structural members shall be #14 HHB self-tapping screws. Fasteners for attaching sheet-to-sheet shall be #14 HHA x 3/4 sheet metal screws.

## Preformed Metal Roofing and Siding

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- 2.4.6.4. Fasteners shall be zinc plated with a factory applied finish coating to match the color of roof and siding panels. Fasteners for use with translucent panels shall be stainless steel Type 305.

### 3. EXECUTION

#### 3.1. Inspection

- 3.1.1. Metal panels shall not be installed until panel contractor verifies the structural steel alignment is in accordance with the tolerances established by AISC.
- 3.1.2. All erected work shall be subject to the inspection and approval of the Owner before acceptance.

#### 3.2. Installation

- 3.2.1. Install the roofing and siding in accordance with the authorized shop and erection drawings.
- 3.2.2. The structural frame, with windows, doors, louvers, roof ventilators, etc., shall in place before roofing and siding is installed.
- 3.2.3. All work shall be erected square and plumb, and in proper alignment and relationship to other work.
- 3.2.4. All sheets shall be installed with corrugations vertical and with side laps to leeward of the prevailing wind.
- 3.2.5. Roofing end laps shall be not less than 6" for roof slopes of 3 in 12 or greater and not less than 9" for roof slopes less than 3 in 12. Siding end laps shall be not less than 4". ALL END LAPS SHALL OCCUR ONLY OVER STRUCTURAL MEMBERS.
- 3.2.6. Roofing and siding shall be laid with side laps of two corrugations.
- 3.2.7. Closure strips shall be installed at the termination of siding and roofing (i.e., floor, eave, ridge, etc.)
- 3.2.8. Sealant tape shall be applied continuously at all sidelaps. In order to obtain a weather tight job, gun applied sealant shall be applied at all end laps and all points where closure strips cannot be installed neatly or where it is impractical to use closure strips.
- 3.2.9. Structural fasteners for the roofing shall be located on the crest at every fourth corrugation at each purlin. Side lap fasteners for the roofing shall be located on the crest at 16" on center.

## Preformed Metal Roofing and Siding

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- 3.2.10. Structural fasteners for the siding shall be located in the valley at every fourth corrugation at each girt. Sidelap fasteners for siding shall be located in the valley at 16" on center.
- 3.2.11. Metal flashing material shall be fastened at 12" on center.
- 3.2.12. Translucent Siding
- Roofing - Side laps shall be 1½ corrugations. End laps shall be 6" for roof slopes of 3 in 12 or greater. For roof slopes of less than 3 in 12, manufacturer's standards must be confirmed.
  - Siding - Sidelaps shall be one corrugation. End laps shall be 4".
  - Fastener spacing may vary with type of adjoining panel. Check manufacturer's standard for proper spacing.
- 3.3. Clean-up, Touch-up and Repairs
- 3.3.1. Damaged panels shall be replaced prior to acceptance of the installation.
- 3.3.2. Stains, mud splatters, etc., shall be removed from panels using methods recommended by the manufacturer. Marks, scratches and cut edges shall be touched-up to match the original finish with touch-up paint supplied by manufacturer.