

Corrugated Metal Roofing and Siding Suggested Specification

PART 1

GENERAL

REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - 1. ASTM A 366: Steel Sheet, Commercial Quality
 - 2. ASTM A 620: Steel Sheet, Drawing Quality.
- B. Sheet Metal and Air Condition Contractors National Association, Inc. (SMACNA)
 - 1. SMACNA Architectural Sheet Metal Manual, 1993 Edition.
- C. American Iron and Steel Institute (AISI)
 - 1. AISI Cold Formed Steel Design Manual
- D. Metal Construction Association (MCA)
 - 1. Preformed Metal Wall Guidelines
- F. Code references
 - 1. ASCE, Minimum Loads for Buildings and Other Structures
 - 2. BOCA National Building Code
 - 3. UBC Uniform Building Code
 - 4. SBC Standard Building Code

SYSTEM DESCRIPTION

- A. Performance Requirements: Provide factory formed, unfinished, lappable, exposed fastener, corrugated metal roof and wall system that has been pretested and certified by manufacturer to comply with specified requirements under installed conditions.
- B. Structural Requirements: Engineer panels for structural properties in accordance with latest edition of American Iron and Steel Institute's Cold Formed Steel Design Manual using "effective width" concept.

SUBMITTALS

- A. Product Data: submit manufacturer's specifications, standard profile sheet, and product data brochure.
- B. Shop Drawings: shop drawings showing roof plan and wall elevations with layout of panels, screws, underlayment and sections of each flashing/trim condition shall be

submitted for approval prior to fabrication. Drawings shall contain material type, and metal thickness. Drawings shall distinguish between factory and field fabrication.

C. Samples:

1. Submit sample 6" long x full width panel, showing proposed metal gauge, and panel profile.

D. Certification: Submit manufacturer's certification that materials and bare finish meet specification requirements.

QUALITY ASSURANCE

A. Panel manufacturer shall have a minimum of ten (10) years of experience in manufacturing architectural roofing in a permanent stationary indoor facility.

B. Panel installer shall have a minimum of 5 years experience in installation of metal roofing/siding of similar size and scope.

DELIVERY, STORAGE, and HANDLING

A. Panels and flashings shall be protected and properly packaged to protect against transportation damage in transit to the jobsite.

B. Upon delivery, exercise care in unloading, stacking, moving, storing, and erecting panels and flashings to prevent twisting, bending, scratching, or denting.

C. Store panels and flashings in a safe, dry environment under a waterproof covering to prevent water damage. Allow for adequate ventilation to prevent condensation.

D. Protect panels and flashings from foot traffic and from all other trades.

PROJECT CONDITIONS

A. Field dimensions shall be taken prior to fabrication to verify jobsite conditions.

B. Minimum recommended pitch for these panels is 2:12.

C. Maximum panel length in stock is 24' (contact factory for longer panels).

WARRANTIES

A. Since the finish is natural in appearance and based solely on environmental conditions, panel manufacturer shall provide no warranty on the typical paint finish covering chalking, cracking, checking, chipping, blistering, peeling, flaking, and fading.

PART 2

PRODUCTS

MATERIALS AND FINISHES

A. Panel materials

1. 24 or 22g gauge, Grade 40 (40 ksi yield strength) structural steel ASTM A366 CRCQ

- B. Texture: panels shall be smooth.
- C. Finish: Refer to manufacturer's standard samples to determine final finish. All panels shall receive a factory-applied oil-coating prior to corrugating. Final finish is determined by time and geographic location. Panels do not come pre-weathered.
- D. Applicator shall furnish written warranty for a two (2) year period from date of substantial completion of building covering repairs required to maintain roof and flashings in watertight conditions.

PRODUCT SUBSTITUTIONS

- A. Requests to use alternate systems shall be submitted in writing to the project designer at least ten (10) days prior to bid date. Request shall demonstrate proposed substitution meets or exceeds specified performance requirements. Certified statements, samples and descriptive data shall be included in this submittal request.
- B. Manufacturers listed in this section are prequalified manufacturers. Substitution of manufacturer's products for those specified shall not be allowed at anytime during construction.

PRODUCT DESCRIPTION

- A. RCM corrugated, exposed fastener panels as provided by Recla Metals
136 So Maple Ave, Montrose, CO 81401 1-888-621-0807
- B. The corrugated panels shall have ribs that are specific to the profile.
- C. Panels shall be attached to the substrate with exposed screws.
- D. Inside and outside closures will be supplied and used as recommended in Recla Metals details.

ACCESSORIES

- A. Screws
 - 1. All screws shall be plated steel or stainless steel. They shall have a combination EPDM gasket and a painted flange to match the patina of the roofing material.
 - 2. Screws for panel to girt/purlins shall be of the type and size and of sufficient length to penetrate the supporting member by 1". All fasteners shall be applied in accordance with the fastening schedule for RCM Corrugated.
 - 3. Screws for flashings and sidelaps shall be #14 x 7/8" sheet metal stitch screws. All accessories, flashings, and sidelaps shall be fastened 12" o.c.
- B. Flashings shall be shop-fabricated from material that is the same thickness and finish as the RCM Corrugated panels to which they are attached. Where practicable, flashings shall be furnished in maximum 10' lengths. Exposed flashings shall be lapped 6".
- C. Closures shall be pre-molded polyethylene to match the profile of the RCM Corrugated panel and shall be in lengths as supplied by the panel manufacturer.
- D. Caulking shall be a polyurethane where it is exposed and there is no thermal movement. All caulking or sealing shall be done in a neat manner with

excess caulking or sealant removed from exposed surfaces.

- E. Caulking shall be non-skinning, non-hardening gun grade butyl sealant or butyl sealant tape with a minimum width of 1" where it is concealed and where thermal movement must be accommodated. All caulking or sealing shall be done in a neat manner with excess caulking or sealant removed from exposed surfaces.

SOURCE QUALITY

- A. Source Quality: obtain metal panels and accessories from a single manufacturer.
- B. Fabrication tolerances
 - 1. Rib height: +/- .0625
 - 2. Panel shearing length 31' maximum.
 - 3. Follow tolerances in MCA's Preformed Metal Wall Guidelines.
- C. Tests and inspections
- D. Verification of performance

FABRICATION

- A. Panels are lappable. It is recommended that individual steel roof panels not exceed 32' in length for thermal movement reasons.
- B. Panels shall be roll-formed on a stationary industrial type rolling mill to gradually shape the sheet metal. Portable rollformers, rented or owned by the installer, are not acceptable.
- C. Fabricate flashings from the same material as the roof system.

PART 3

EXECUTION

MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions, and product inserts for installation.

EXAMINATION

- A. Installer shall:
 - 1. Inspect purlins, girts, and/or roof deck to verify that they comply with shop drawings and are smooth, even, sound, and free of depressions.
 - 2. Report variations and potential problems in writing to the architect.

INSTALLATION

- A. Conform to the standard set forth in the SMACNA architectural sheet metal manuals and the approved shop drawings detailed for the project.
- B. Install panels plumb, level, and straight with the ribs parallel, conforming to the design as indicated.
- C. Install panel system so it is watertight, without waves, warps, buckles or distortions, and allow for thermal movement considerations.
- D. Apply sealant tape or caulking as necessary at flashing and panel joints to prevent water penetration.
- E. Underlayment (solid substrate):
 - 1. Provide one layer of peel and stick high temperature grade ice and water shield with horizontal overlaps and endlaps staggered between layers.
 - 2. Lay parallel to ridge line with 2" horizontal laps and 6" vertical laps

CLEANING

- A. Dispose of excess materials and debris from jobsite.
- B. Remove filings, grease, stains, marks, or excess sealants from roof panel system to prevent staining.
- C. Protect work from damage from other trades until final acceptance.