

Preformed Metal Standing Seam Roofing

-- Specifications --

General

Description

These specifications include pre-formed standing seam metal roofing and related flashings, closures, trim and accessories including, but not limited to concealed anchor chips, fascia, drip edge, valley, hip and ridge closure, gable flashings, base and counter flashings, gutters, downspouts, and roof penetration flashings.

System Description

Performance Requirements: Provide manufactured roof panel assembly complying with performance requirements indicated and capable of withstanding structural movement, thermally-induced movement, and exposure to weather without failure or infiltration of water into the building interior.

Reference Standards

American Iron and Steel Institute (AISI). *Light Gauge Cold-Formed Steel Design Manual*.

American Society of Testing Materials. *ASTM A525, A653, A792, B209, E283, E330, E1592, E1646, E1680*.

Sheet Metal and Air Conditioning Contractors National Association (SMACNA). *Architectural Sheet Metal Manual*.

Quality Assurance

Installer Qualifications: Engage in an experienced installer who has, for a minimum of ten (10) years, successfully completed roof panel projects similar in material, design, scope, and extent to that for this project.

Submittals

Product Data: Submit manufacturer's product specifications, standard details, certified product test results, installation instructions, and general recommendations, as applicable to materials and finishes for each component and for total system of pre-formed roof panels.

Shop Drawings: Submit small-scale panel layout, details for edge, flashing, and presentation conditions, joints, corners, panel profile, supports, anchorages, closures, snow guards, and special details. Distinguish between factor and field assembly work.

Samples: Submit full width of panel, 24" long, indicating proposed panel profile. Additionally, submit representative concealed anchor clip and manufacturer's standard color chip for selected material type, color, gauge, texture, and specified finish. Submit additional accessory items such as fasteners, closures, snow guards, and other exposed panel accessories.

Delivery, Storage, and Handling

Deliver panels, coil, flashings, and other components so that they will not be damaged or deformed. Package materials for protection against damage during transportation or handling. Exercise care in unloading, storing, and erecting panels and accessories to prevent bending, warping, twisting, and surface damage.

Stack materials on platforms or pallets, covered with tarpaulins or other suitable weather-tight and ventilated covering. Store materials to ensure dryness. Do not store panels in contact with other materials that might cause staining, denting, or other surface damage.

Project Conditions

Field Measurements: Where possible, prior to fabrication of roof panels, flashings, and trim, take field measurements of structure and substrate to receive panel system. Allow for trimming panels where final dimensions cannot be established prior to fabrication.

Warranty

Provide manufacturer's standard 30 year written warranty for Kynar finish.

Provide two (2) year written warranty for workmanship and materials, signed by this section contractor, agreeing to repair or replace roof panel assembly that fails to remain weather-tight. Repairs shall be made at no expense to the Owner. Warranty period shall commence upon substantial completion of the building.

Products

Acceptable Manufacturers

National Metal Sales

_____ panels and system are specified for standard of quality. Equivalent products meeting or exceeding this standard may be accepted at the discretion of the General Contractor and Owner. All substitutions must be submitted in writing a minimum of two (2) weeks prior to the bid date. No substitutions which are not expressly accepted prior to the bid date shall be accepted.

Roofing System

_____ concealed anchor, pre-formed, pre-finished standing seam roofing system.

Materials

Steel: Hot-dipped zinc-coated steel sheet, ASTM A653, CS-Type B hot-dipped galvanized steel with a minimum yield strength of 40,000 psi. Steel shall be G90 galvanized, non-chemically treated, extra-smooth, minimum spangle, lock-forming quality.

Concealed Anchor Clips: 24ga. G90 galvanized one piece anchor clips. Approved clips shall be installed with two (2) fasteners each. Consult manufacturer for spacing requirements.

Underlayment: Woven synthetic underlayment. One ply, installed shingle fashion with 2” side laps and 6” end laps, stapled.

Accessories: Provide components required for a complete roofing system including, but not limited to, trim, fascia, drip edge, corners, J trim, Zee closure, hip and ridge flashing, valley metal, gable closure, base and counter flashing. Fabricated per manufacturer guidelines and details using same material, gauge and finish as roof panels.

Gutters and Downspouts: Fabricate from same material gauge and finish as metal roof panels.

Sealant: Sealant for concealed joints in sheet metal shall be one part, non-hardening, non-skinning, non-drying, non-migrating Urethane sealant equivalent to NP-1 as manufactured by Sonneborn.

Finishes

General: Roof panels and sheet metal accessories exposed to view shall be coil coated with full strength, 70% Kynar 500 coating over a base coat of epoxy base primer. The dry-film thickness of the exterior coating shall be not less than .8 mil over a minimum .2 mil primer coat for a total dry-film thickness of 1.0 mil. A .5 mil standard wash coat over primer shall be applied to the reverse side.

Color shall be chosen from manufacturer’s standard color chart.

Acceptable Manufacturer: National Metal Sales

Coating Durability: Provide manufacturer’s coating which has been field tested under normal range of weathering conditions for a minimum of 30 years without peel, blister, flake, chip, crack or check in finish, and without chalking in excess of 8 (ASTM D 3361), and without fading in excess of 5 NBS units.

Fabrication

General: Site fabricate roof panels to the greatest extent possible by manufacturer’s specified procedures and processes, and as required to fulfill indicated performance requirements which have been demonstrated by factory testing. Comply with indicated profiles and dimensional requirements.

Metal Gauges: Thicknesses required for structural performance, but not less than manufacturer’s recommended minimums for profiles and applications indicated, and not less than 24 gauge (.0236”).

Fabricate roof panels full length without joints and with nominal 16” spacing between standing seams.

Apply bituminous coating or other permanent separation materials on concealed panel surfaces where panels would otherwise be in direct contact with substrate materials which are non-compatible or could result in corrosion or deterioration of either material or finish.

Trim, Flashings, Closures, Etc.: Fabricate in longest lengths possible. Provide weather-tight joints and allow for expansion.

Form gutters and downspouts of profile and sizes indicated and as required in order to properly collect and remove water. Fabricate complete and required connection pieces. Form sections square, true, and accurate in size, in maximum lengths possible and free from distortions and defects detrimental to appearance or performance. All exposed edges shall be trimmed.

Execution

Inspection

Examine substrate and areas to which the roof panels are to be installed. Verify that dimensions are correct, adjacent or adjoining surfaces are dry, clean and reasonably smooth and free from defects, and there are no conditions that will adversely affect installation. Do not proceed with installation until unsatisfactory conditions have been corrected in an acceptable manner.

Installation

General: Comply with panel manufacturer's standard instructions and recommendations for the installation, as applicable to project conditions and supporting substrates, Anchor panels and other components of the work securely in place, with provisions for thermal or structural movement.

Install underlayment and paper slip sheet under metal roofing, applied shingle fashion from eave to ridge.

Roof panels shall be installed in continuous lengths, having no end laps, cross joints, or transverse seams. Panels shall be attached to structure by means of concealed anchor clips. No through penetration of the roofing panels shall be permitted, except where approved by the manufacturer. Roofing anchor clips shall be spaced to meet design load requirements and approved engineering calculations.

Secure panels without warp or deflection. Shim and align panel units within installed tolerance of 1/4" in 20'-0" on level, plumb and slope within 1/8" offset of adjoining faces and of alignment of matching profiles.

Install closures, gaskets, joint fillers and sealants where indicated and where required for weatherproof performance of panel system of types recommended by panel manufacturer.

Flashing: Details in installation which are not indicated shall be in accordance with NRCA Construction Details, SMACNA Architectural Sheet Metal Manual, AA Specifications for Sheet Metal Work, panel manufacturer's printed instructions and details and the approved shop drawings. Installation shall provide for expansion and contraction of flashing details.

Install work weather-tight, plumb, level and true with components securely attached in accordance with manufacturer's instructions.

Cleaning and Protection

Damaged Units: Replace panels and other components of the work which have been damaged or have deteriorated beyond successful repair by means of finish tough-up or similar minor repair procedure.

Cleaning: Remove temporary protective coatings and strippable films as components are installed. Upon completion of panel installation, clean finished surfaces as recommended by panel manufacturer, and maintain clean condition during construction.