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DIVISION 7: THERMAL & MOISTURE PROTECTION

SECTION 07612 – METAL ROOFING SYSTEMS

PART 1 – GENERAL

1.1 DESCRIPTION

- .1 General Requirements
Division 1, is part of this specification and shall apply as if it was repeated here.
- .2 Work furnished and included:
 - .1 Exterior metal roofing sheet.
 - .2 Air / vapour barrier.
 - .3 Metal hold down clips where applicable.
 - .4 Accessories including associated flashings, closures, sealants and fasteners.
- .3 Related work not included:
 - .1 Structural framing members required to support the metal roofing system.
 - .2 Mechanical equipment and / or duct work as well as their supporting framing.
 - .3 All flashings, flats or sheet metal work not directly associated with the Metal Roofing system.

1.2 STANDARDS AND DESIGN CRITERIA

- .1 Design roof system in accordance with:
 - .1 CAN/C.S.A. Standard S136 latest editions for the Design of Cold Formed Steel Structural Members.
 - .2 Canadian Sheet Steel Building Institute Standards 10M and 20M.
 - .3 National Building Code of Canada (latest edition).
 - .4 Applicable local codes and standards.
 - .5 ASTM A653/A653M-04a Specification for Sheet Steel, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated by the Hot-Dip Process.
 - .6 ASTM A792/A792M-03, Specification for Sheet Steel, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
 - .7 CSSBI S8-2001, Quality & Performance Specification for Prefinished Sheet Steel Used for Building Products.
 - .8 CSSBI Fact Sheet #3, Care and Maintenance of Prefinished Sheet Steel Building Products.
 - .9 CSSBI Fact Sheet #13, Position Paper on Oil Canning.
 - .10 CSSBI Fact Sheet # 24, Natural Finish Metallic Coatings.
- .2 Deflection of the roof system is not to exceed [1/180th] of the span for the specified live loading.
- .3 Design roof system to accommodate thermal movement of the roof sheet caused by ambient temperature range of [] to [].
- .4 Design roof system to withstand dead loads, snow loads, snow build-up and rain load. Design fastener system to withstand wind uplift on the roof and sliding forces induced by environmental loads.



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1.3 QUALITY ASSURANCE AND SUBSTITUTIONS

- .1 Manufacturers and installer of the Metal Roofing System shall demonstrate a minimum of five years experience in the fabrication and installation of Metal Roofing projects of similar scope.
- .2 Proposed substitutions of alternate Metal Roofing Systems must meet the standards in this performance standard and will be considered as follows:
 - .1 A written request for approval of a substitution is received at least ten days prior to tender closing.
 - .2 The Request includes a complete item-by-item description comparing the proposed system to the specified system, together with manufacturer's literature, samples, test data and performance evaluation indicating comparable standards to those specified.
 - .3 No substitutions shall be made after the bid date.

1.4 SUBMITTALS

- .1 Submit shop drawings in accordance with Section 01300:
 - .1 Submit [] copies of installation drawings for approval in accordance with Division [] Section [].
 - .2 No fabrication and/or installation shall commence until all shop drawings have been approved.
 - .3 Drawings to indicate arrangement Roof, including joints, types and locations of supports, fasteners, closures, hold down clips, flashings, gutters, and all metal components related to the roof installation.
- .2 Submit [] samples of the metal roof sheet and colour samples for review by the consultant prior to fabrication.

1.5 HANDLING AND PROTECTION

- .1 Store roofing products in accordance with manufacturer's recommendations. Panels should be stored in a clean, dry place. One end should be elevated to allow moisture to run off.
- .2 Protect prefinished steel during fabrication, transportation, site storage and erection in accordance with CSSBI standards.



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PART 2 – PRODUCTS

2.1 METAL ROOF COMPONENTS

.1 Metal Roof Sheet:

- .1 Profile: Profile will be Agway Metals AR Panel {25} {38} {50}, Agway Metals Snap Lock (SL) {25} {38} or Agway Metals Nail Strip (NS) {25} {38} with rib spacing as specified.
- .2 Base material: Z275 galvanized sheet steel conforming to ASTM A653M Grade 230 or {AZ 150} {AZ 180} Galvalume sheet steel conforming to ASTM A792M Grade 230 or aluminum or zinc or copper.
- .3 Core Thickness: Nominal core thickness of [] mm [].”
- .4 Coating: material to be plain finished or prefinished with {Perspectra Plus Series} {10,000 Series} {Elite Series} {Print Series} on one side with a standard wash coat on the reverse or painted on two sides.
- .5 Colour: Colour shall be QC[]. Colour to be selected by consultant from manufacturer’s standard colour range and must be specified at time of tender.

2.2 FASTENING SYSTEMS

- .1 Roof Panel Support Clips: For AR and SL panels: Concealed, full height clip made from material and thickness to suit design parameters. Fixed clip for roof lengths up to 15’ long, thermally responsive sliding clip designed to accommodate thermal expansion and contraction for roof lengths over 15’ long.
- .2 Roof fasteners: As specified by the manufacturer to resist wind uplift and sliding snow forces.

2.3 ACCESSORIES

- .1 Flashings in accordance with Section [07620]. Formed from the same materials (thickness and finish) as the Metal Roofing material. Flashing to be custom fabricated to suit architectural details as required.
- .2 Closures: Foam and metal closures to suit profiles selected, to manufacturer’s recommendation.
- .3 Sealants: In accordance to manufacturer’s recommendation and Section [07900].
- .4 Air/Vapour Barrier - Membrane shall be Platinum HT-B underlayment or an approved type to meet performance specified in Section { }.
- .5 Snow Fence (if specified): Snow fence and/or ice defectors, shown on the architectural / structural drawings, shall be designed by a professional engineer, registered in the province of { }.

2.4 FABRICATION

- .1 Fabricate the Metal Roofing System components to comply with dimensions, profiles, gauges and details as shown on the approved shop drawings, including all companion flashings and accessories.
- .2 Fabricate all components in the factory, ready for field installation.
- .3 Provide roof sheet and all accessories in longest practicable length to minimize filed lapping.



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PART 3 – EXECUTION

3.1 EXAMINATION

- .1 Prior to proceeding with installation of the Metal Roof System, inspect the work of all preceding trades to ensure conformity to drawings. All discrepancies or incomplete work should be reported, in writing, to the Architect and General Contractor for corrective measures. Installation of the Metal Roof shall not proceed until all discrepancies are corrected and accepted by this trade.

3.2 INSTALLATION

- .1 Air/Vapour Barrier: Install the Air/Vapour barrier according to the manufacturer's recommendation. Ensure that all joints are properly lapped, sealed and tied in with the roof and wall air/vapour barriers to ensure airtight construction. Provide a continuous seal around all openings in the Metal Roof System.
- .2 Metal Roofing Sheet:
 - .1 Install starter and edge trim before installing roof panels.
 - .2 Install metal roofing sheets {AR} {SL} with support clips using [insert proper fastener specification here] as shown on approved shop drawings, to suit the substrate, and to resist wind uplift forces.
 - .3 Install panels in such a manner that horizontal lines are true and level and vertical lines are plumb.
 - .4 For AR Panel, ensure Metal Roofing sheet side-lap is mechanically seamed for full length of roof.
 - .5 Field cut sheets as required.
 - .6 Where indicated on approved shop drawings, secure the end-lap of Metal Roofing sheets in accordance with manufacturers specifications and details to provide a weather-tight seal. Any exposed fasteners to match colour of the roof sheet.
 - .7 Install notched and formed closures in accordance with approved shop drawings. Seal against weather penetration, at changes in pitch and at ridges and eaves, where required.
 - .8 Install all companion flashings, {gutters}, {ventilators} as shown on the approved shop drawings.

3.3 TOUCH-UP AND CLEANING

- .1 Touch-up all minor abrasions with touch-up paint.
- .2 Clean any foreign materials from the roof by dry wiping.
- .3 Remove all scrap and construction debris from the site.