

PART 1 – GENERAL

1.1 – GENERAL REQUIREMENTS

1. Division 1, General Requirements, Supplementary General Requirements and Instruction to bidders are part of this specification and shall apply as if repeated here.
2. The requirements for Goods and Services Tax and Provincial Sales Tax are outlined in the General Requirements.

1.2 – SCOPE OF WORK

1. Furnish all materials, labor, equipment and services, necessary for the detailed design, erection drawings, shop drawings, fabrication and erection of the complete roof deck as shown or called for in the tender documents.
2. Supply and install accessories where shown or called for by the tender documents.
3. Cut and reinforce penetrations through the cladding, between 6 inch to 18 inch diameter or maximum dimension across the flutes, as shown on the architectural or structural drawings.

1.3 – SHOP DRAWINGS

1. Submit erection drawings in accordance with General Conditions.
2. Erection drawings shall show clearly the location of various cladding units, section designations, finishes, quantities, fastener specifics, shear diaphragm capacities (if required) and any other information required for erection purposes.
3. Shop drawings shall be signed and sealed by a Specialty Engineer, a Registered Engineer familiar with sheet metal panels components and systems.
4. The Specialty Engineer shall submit the required documentation covering the specified work and conduct field inspections as he deems to be required to assure work is performed in accordance with the shop drawings.

1.4 – WORK NOT INCLUDED

1. Structural steel girts, or other supports, for wall cladding.
2. Structural steel purlins, or other supports, for the roof cladding.
3. Structural framing, or reinforcement, for doors, sash, penetrations or other openings
4. Base angles and caulking of same.
5. Gutters, downspouts, coping trim, cant or parapet flashing, unless shown or called for on the tender documents as being supplied by this division.
6. Overall design of wall and/or roof system for adherence to rainscreen principles, water penetration, internal condensation, air and vapour barriers, insulation design and collateral material selection.

1.5 – STANDARDS

1. Design wall and/or roof cladding in accordance with the latest edition of:
 - i. CAN/C.S.A. – S 136 for the Design of Cold Formed Steel Structural Members.
 - ii. Specified loads, load factors and load distributions shall be in accordance with the National Building code of Canada unless otherwise stated.

1.6 – DESIGN CRITERIA

1. Design wall and/or roof cladding using Limit States Design.
2. Design wall and/or roof cladding to resist:
 - i. Live and dead loads as specified and shown on tender drawings.
 - ii. Net uplift and suction loads as specified and shown on tender drawings.
3. Deflection of wall cladding is not to exceed 1/90 of the span for the specified live loading while deflection of roof cladding is not to exceed 1/180 of the span of the specified live loading.
4. Where possible, span cladding over four or more structural supports (3 continuous spans).
5. For exposed metal roof cladding ensure the following minimum roof slopes are being maintained.
 - i. Screwed roof systems – 1 in 12
 - ii. Standing seam roof systems – 1 in 48

6. Standing seam roof systems shall have a shear device to endure transfer of shear loads into the supporting structure.
7. The supporting structure shall provide the cladding a minimum bearing width equal to the cladding profile depth, but not less than 1.5".

PART 2 – PRODUCTS

2.1 MATERIALS

1. Manufacturer shall be a member of Good Standing with the Canadian Sheet Steel Building Institute (C.S.S.B.I.).
2. Fabrication from ASTM A 653 / A 653M or ASTM A 792 / A 792M SQ (structural quality) grade 230 galvanized steel with a zinc coating of Z275 galvanized as designated by ASTM A653M or an Aluminum / Zinc coating of AZ150 as designated by A 792 M.
3. Profile designation shall be Samson _____ complete with pre-finish colour QC- _____ .
4. Minimum design thickness shall be _____ mm (_____ in).
5. Pre-finished sheet steel, in addition to meeting the requirements of 2.1.2, shall have a 2-coat (minimum) Silicone Modified Polyester Paint System factory applied, cured by baking, using colours of proven durability for exterior exposure.
6. Trim shall be fabricated from the same material, thickness and finish as the respective wall or roof cladding.
7. E.P.T. closures shall be provided, where indicated on the tender documents, to close off the flutes of the cladding at head, sill, base and eaves.
8. Fasteners for attaching cladding to structural framing or other structural supports, for attaching flashing to cladding, and for joining cladding components together shall be as recommended by the Specialty Engineer.
9. Polybutylene Mastic tape caulking of suitable thickness and width will be supply with the roof cladding panels for the sealing of side and end lap joints.
10. Insulation shall be Metal Building Insulation with a thickness of _____ mm (_____ in) complete with a laminated vapor barrier consisting of _____ complete with 52 mm (2 in) side taps for folding and stapling.

PART 3 – EXECUTION

3.1 STORAGE OF MATERIAL ON SITE

1. Steel sheet cladding shall normally be delivered to the jobsite as required for erection, but if site storage becomes necessary, suitable storage areas shall be provided by the general contractor as close to the building site as is practicable. Preferably this storage shall be under cover.
2. When outdoor storage is unavoidable:
 - a. Use good quality covers, other than plastic, loosely shrouded over stacks and firmly anchored to prevent wind blow-off;
 - b. Tilt bundles for drainage;
 - c. Ventilate bundles but do not allow the entry of wind driven precipitation;
 - d. Block bundles off ground for effective ventilation;
 - e. Block bundles to prevent sagging;
 - f. Store away from chemically aggressive substances (e.g. salt, cement, fertilizer) away from materials that could contaminate the surface (e.g. diesel oil, paint, grease) and away from traffic.
3. Moisture can cause wet storage staining of metallic coated and pre-finished material and usually occurs as a result of:
 - a. Condensation from high humidity air and/or temperature cycling;
 - b. Wet shipping conditions;
 - c. Wind driven rain penetration (outdoor storage).

The usual progression is from water staining to unsightly white staining (dark grey to dull black on aluminum-zinc alloy coated sheet) to red rust. On material where wet storage staining has occurred, it should be noted that, except for aesthetic considerations, a nominal amount of staining is not detrimental to the functioning of the product.

3.2 INSTALLATION

1. All erection work shall be carried out by trained erection crews all in accordance with the fabricator's and these specifications.
2. Examine and obtain all necessary measurements of previously executed work which will affect the work of this Division.
3. Report any discovered discrepancies to the Architect/Engineer so that instructions shall be given for the necessary remedial work.
4. Exercise care in unpacking, moving, storing, handling and placing panels to prevent damage likely to impair the adequacy or appearance of the material in the finished structure.
5. Sheet steel cladding shall be adjusted to final position before being permanently fastened to structural supports.
6. End laps shall be located over supports. Minimum end laps shall be:
 - i. 50mm for wall cladding
 - ii. 100mm for roof cladding used on roofs with a slope of 4 in 12 or more
 - iii. as per fabricators specifications for roofs sloping less than 4 in 12.
7. Side laps shall be sealed with continuous lengths of taped caulking where specified and shall be connected at intervals not exceeding 600mm.
8. Openings, and any necessary flashing, shall be provided as called for by the tender documents.
9. If additional openings not shown or called for by the tender documents are required, such openings shall be cut and flashed by the erector, but the cost of such extra work shall be charged to the buyer.
10. When cutting or drilling pre-finished material, care shall be exercised to ensure that cuttings do not remain to rust on exposed pre-finished surfaces. Where practicable, cutting and drilling shall be conducted so that cuttings do not strike or accumulate on exposed cladding surfaces.

3.3 TOUCH-UP AND CLEANING

1. The contractor shall remove undue grime and dirt from cladding by dry wiping the panels as the material is erected.
2. At completion of the work of this Division, remove any excess materials, debris and equipment pertaining to the work of this Division, from the site.