

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- .1 Comply with requirements of Division 1.

1.2 RELATED SECTIONS

- .1 Section 06 10 00: Rough Carpentry.
- .2 Section 07 42 43: Composite Metal Wall and Roof Panels.
- .3 Section 07 54 19: Polyvinyl-Chloride Roofing.
- .4 Section 07 92 00: Joint Sealing.

1.3 REFERENCES

- .1 ASTM A606-04, Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance.
- .2 ASTM A653/A653M-15e1, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot Dip Process.
- .3 ASTM A792/A792M-10(2015), Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
- .4 ASTM D523-89(1999), Standard Test Method for Specular Gloss.
- .5 CSA A123.3-05(R2015), Asphalt Saturated Organic Roofing Felt.
- .6 CSA B111-74(R2003), Wire Nails, Spikes and Staples.
- .7 CAN/CGSB-51.32-M77, Sheathing Membrane, Breather Type.
- .8 Canadian Roofing Contractors Association (CRCA)
 - .1 Roofing Specifications Manual, current edition.
- .9 Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
 - .1 Architectural Sheet Metal Manual, 7th edition, 2012.

1.4 DESIGN AND PERFORMANCE REQUIREMENTS

- .1 Appearance: neatly and evenly lay out and install components.
- .2 Effects of wind: resist positive and negative wind pressures without detrimental effects.
- .3 Water control: prevent passage of water.
- .4 Thermal movement: accommodate expansion and contraction of component parts without buckling, failure of joints, undue stress on fasteners and other detrimental effects.

1.4 DESIGN AND PERFORMANCE REQUIREMENTS (continued)

- .5 Compatibility: components shall be compatible with dissimilar metals and materials with which they are in contact or fastened to so as to prevent corrosion, staining and other detrimental effects. If required, treat or separate contact surfaces with inert and non-staining insulation material to achieve compatibility.

1.5 SUBMITTALS

- .1 Submit product data in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's printed product literature, for sheet metal flashing systems materials, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
 - .1 Submit duplicate 100 x 100 mm samples of each type of sheet metal material, finishes and colours specified.

1.6 DELIVERY STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 – Common Product Requirements.

1.7 JOB CONDITIONS

- .1 Schedule and co-ordinate installation of metal flashing components with work of other Sections where it is integral or contiguous therewith.
- .2 Install metal counter and cap flashings immediately after installation and inspection of roofing membrane base flashings.

1.8 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 –Construction / Demolition Waste Management and Disposal.
- .2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard and packaging material in appropriate on site bins for recycling in accordance with Waste Management Plan.
- .4 Divert unused metal material from landfill to metal recycling facility as approved by Departmental Representative.
- .5 Fold up metal banding, flatten and place in designated area for recycling.

1.9 QUALITY ASSURANCE

- .1 At no cost to Owner, remedy any defects in work, including work of this and other Sections, due to faults in materials and /or workmanship provided under this Section of Specifications appearing within a period of 5 years from date of Substantial Performance.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Prefinished Steel Sheet: galvanized sheet steel, pretreated, primed and finish coated with nominal coating thickness of not less than 22 micrometres; Stelco 8000 series. Acceptable material as manufactured by:
 - .1 VicWest Steel.
 - .2 Flynn Canada Limited.
 - .3 Agway Metals Inc.
 - .4 or approved equal.
- .2 Galvanized Sheet Steel: Hot dip galvanized, cold rolled with stretcher level degree of flatness to ASTM A653/A653M with zinc coating designation Z275.
- .3 Cleats and Edge Strips: of same material and temper as sheet metal, minimum 50 mm wide. Thickness same as sheet metal being secured and as required to provide rigid support and positive securement for metal flashings.
- .4 Fasteners: Non-corrosive, of same material as sheet metal, to CSA B111, ring thread flat head roofing nails of length and thickness suitable for application.
- .5 Washers: of same material as sheet metal, 1 mm thick with rubber packings.
- .6 Surface fasteners: nylon headed screws of same material as sheet metal. Colour to match metal flashing.
- .7 Sealant: as specified in Section 07 92 00 – Sealants.
- .8 Isolation Coating: Alkali resistant asphalt based enamel to CAN/CGSB-1.108.
- .9 Underlay For Metal Flashing: No. 15 non-perforated asphalt felt to CSA A123.3.
- .10 Plastic Cement: to CAN/CGSB 37.5.

2.2 FINISHES

- .1 Exposed surfaces: prefinished sheet steel, 8000 series by Baycoat Inc. or Colorite HMP by VICWEST. Custom colours to match existing composite metal panel colours as described in Section 07 42 43 – Composite Metal Wall and Roof Panels.
 - .1 Colour A: to match existing light green colour.
 - .2 Colour B: to match existing dark green colour.
 - .3 Colour C: to match existing dark blue colour.
- .2 Concealed surfaces: galvanized.

2.3 FABRICATION GENERAL

- .1 Fabricate metal flashings and other sheet metal work in accordance with applicable CRCA Manual, SMACNA Architectural Manual and as indicated.
- .2 Shop fabricate metal flashing components to profiles indicated where flashings are required but not detailed follow applicable requirements of SMACNA Architectural Manual. Provide minimum metal gauge of 0.76 mm thickness (22 Ga.) sheet material for all components unless otherwise indicated.
- .3 Form pieces in 3.0 m maximum lengths. Make allowance for expansion at joints. Provide slotted fixing holes and steel / plastic washer fasteners.
- .4 Form sections square, true and accurate to size, free from distortion, waves, twists, buckles and other defects detrimental to performance and appearance.
- .5 Hem exposed edges on underside minimum 12 mm. Mitre and seal corners with sealant.
- .6 Seams: space seams uniformly at maximum 3.0 m o.c. Make allowance for expansion at joints. Unless otherwise indicated, use flat locked seams, lapped 25mm. Make horizontal seams in directions of water flow.
- .7 Unless otherwise indicated, counter flashings shall completely cover base flashings.
- .8 Furnish everything necessary for complete metal flashing installation, including clips and fastening devices.
- .9 Apply isolation coating to metal surfaces in contact with concrete or mortar.

2.4 SLEEVE FLASHING SYSTEMS

- .1 Aluminum flashing system by Thaler Roofing Specialties Products, or approved equal.

2.4 SLEEVE FLASHING SYSTEMS (continued)

- .2 Fabricate sleeve flashings square or circular and of size to suit component being flashed. Unless otherwise indicated fabricate sleeves of 1.5 mm thick sheet metal, 450 mm high.
- .3 Inside of jacket base flange and all sides of protection cup shall be coated with bituminous paint.
- .4 Where possible size sleeves to allow minimum 25 mm thick insulation between component and sleeve.
- .5 Provide the following types where required:
 - .1 Stack jack: SJ-27 by Thaler Roofing Specialties Products, "Flash-Tite" standard model (VSC-S) by Lexcor Corporation or approved equal.
 - .2 Other types where required suitable for purposes intended, as recommended by manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Install sheet metal work in accordance with CRCA Manual, SMACNA Architectural Manual and as indicated.
- .2 Provide metal flashings at roof perimeters, penetrations, curbs, copings, and where indicated on drawings. Protect all bituminous membrane flashings with metal counter-flashings.
- .3 Clean surfaces to be covered with metal flashings of dirt and other foreign matter. Do not apply metal flashings over substrates likely to cause rupture.
- .4 Provide underlay under metal flashings installed over masonry, concrete or wood. Lay underlay dry as sheet metal work is installed. Secure in place and lap joints 100 mm.
- .5 Surface fasten flashings to supporting building elements with 31 mm long nylon headed screws at 600 o.c. maximum. Provide slotted fixing holes and aluminum / plastic washer fasteners.
- .6 Fill and seal seams with sealant; rivet corners.
- .7 Where flashing is punctured by bolts, provide sheet lead or neoprene washers, 6 mm larger than bolt hole.
- .8 Where flashing is installed around circular components and upper flashing edge is exposed, provide draw band around upper edge of flashing collar.
- .9 Counterflash bituminous membrane flashings at intersections of roof with vertical surfaces and curbs. Flash joints using S-lock forming tight fit over hook strips, as detailed. Make horizontal seams in direction of water flow.

3.1 INSTALLATION (continued)

- .10 Install sleeve flashing systems at penetrations through roof membrane. Install systems in accordance with manufacturer's directions.
- .11 Imperfections in metal flashing work such as holes, dents, creases, or oil-canning will not be accepted.
- .12 Lock end joints and caulk with sealant.

3.2 CLEANING

- .1 Proceed in accordance with Section 01 74 11 – Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.
- .3 Leave work area's clean, free from grease, finger marks and stains.

END OF SECTION