

1 General

1.1 **SECTION INCLUDES**

- .1 Labour, Products, equipment and services necessary for flashing and sheet metal work in accordance with the Contract Documents.

1.2 **REFERENCES**

- .1 AAMA 2605, Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels - Series: Components, Coatings and Finishes.
- .2 ASTM B209, Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- .3 ASTM A653/A653M, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealed) by the Hot-Dip Process.
- .4 ASTM C1193, Standard Guide for Use of Joint Sealants.
- .5 ASTM C920, Specification for Elastomeric Joint Sealants.
- .6 CSA A123.21, Standard Test Method for the Dynamic Wind Uplift Resistance of Membrane-Roofing Systems.
- .7 CRCA Roofing Manual, Canadian Roofing Contractors Association.

1.3 **DESIGN REQUIREMENTS**

- .1 Design flashing elements and fastenings to withstand wind loading and perimeter and corner uplift pressures for roof system in accordance with CSA A123.21.

1.4 **SUBMITTALS**

- .1 Shop drawings:
 - .1 Submit shop drawings in accordance with Section 01 10 10 indicating:
 - .1 Proposed method of shaping, forming, jointing.
 - .2 Application of flashing and sheet metal work.
 - .3 Flashing fastening method, fasteners, and fastener spacing to meet wind loading and uplift pressures.
- .2 Samples:
 - .1 Submit following samples in accordance with Section 01 10 10:
 - .1 50 x 50 mm samples of sheet metal material, colour and finish.
 - .2 Representative sample section of prepainted metal flashing illustrating S locking jointing method, minimum 600 mm long.

1.5 **QUALITY ASSURANCE**

- .1 Retain a licensed Professional Engineer, registered in Province of Ontario, to perform following services for sheet metal flashing work:
 - .1 Design sheet metal flashing work to meet wind uplift requirements.
 - .2 Review, stamp, and sign shop drawings.
 - .3 Conduct shop and field inspections and prepare and submit inspection reports.
- .2 Mock-ups: Refer to Section 01 43 00 for additional information regarding mock-ups pertaining to this Section.

2 Products

2.1 **MATERIALS**

- .1 All materials under work of this Section, including but not limited to, sealants and paints are to have low VOC content limits.
- .2 Prepainted sheet steel:
 - .1 ASTM A653/A653M; Classification LFQ, Grade A, Z275 zinc coating designation, 0.61 mm (24 ga.) minimum base steel thickness, commercial quality, prefinished with 'Perspectra Series' coating system by ArcelorMittal Dofasco, or 'WeatherXL' by Vicwest Steel.
 - .2 Colour: To be selected by the Consultant.
- .3 Aluminum sheet:
 - .1 ASTM B209 and ANSI H35.1 AA1100 aluminum alloy, H14 temper, minimum 1 mm thick, for aluminum cover panels at pre-cast gaps as shown on Contract drawings, complete with invisible fastener clip system.
 - .2 Finish: 'Duranar (XL)' by PPG in accordance with AAMA 2605. Colour: To be selected by Consultant.
- .4 High temperature waterproof membrane:
 - .1 1.0 mm thick, high temperature composite sheet waterproof membrane, comprised of SBS modified bitumen with woven polyethylene reinforcement.
 - .2 Primer recommended by membrane manufacturer.
 - .3 High temperature waterproof membrane, 'CCW 300 HT' by Carlisle Coatings and Waterproofing, 'Blueskin PE200HT' by Henry Company Canada Inc. or 'Lastobond Shield HT' by Soprema.
- .5 Isolation coating: Alkali resistant bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or in compliance with CRCA requirements.
- .6 Plastic cement: Trowel grade asphalt mastic.

- .7 Sealant: ASTM C920, Type S, Grade NS, Class 25; High-performance, medium-modulus, one-part, neutral-cure silicone sealant, capable of being used in high operating temperatures. 'Sikasil 305CN' by Sika or approved alternative by Dow Consumer Solutions or Tremco.
- .8 Starter strips: Starter strips to be continuous, of same material as flashing used, 1.2 mm thick.
- .9 Fasteners: Flat head roofing nails of length, type and thickness suitable for metal flashing application.
- .10 Washers: of same material as sheet metal, 1 mm thick with rubber packings.
- .11 Touch-up paint: Same colour and material as prepainted sheet steel, as recommended by prefinished coating manufacturer.

2.2 FABRICATION

- .1 Fabricate copings, flashings, curb counter flashings, starter strips, scuppers, cover panels and miscellaneous flashings in accordance with CRCA and to details shown.
- .2 Form prepainted sheet material at shop to shapes shown. Make end joints where adjacent lengths of metal flashing meet, in accordance with jointing method specified.
- .3 Form pieces in 2400 mm maximum practical lengths. Make allowance for expansion at joints.
- .4 Hem exposed edges 13 mm minimum on underside for appearance and stiffness. Mitre and seal corners with sealant.
- .5 Reglets and cap flashing: Form flashings of as detailed and in accordance with CRCA. Provide slotted fixing holes and steel/plastic washer fasteners.
- .6 Scuppers:
 - .1 Form scuppers from prefinished steel sheet metal.
 - .2 Sizes and profiles as indicated and to CRCA requirements.
 - .3 Provide necessary fastenings.
- .7 Cover panels:
 - .1 Form cover panels from prefinished aluminum sheet as indicated and to CRCA requirements.
 - .2 Provide necessary fastenings.

3 Execution

3.1 **EXAMINATION**

- .1 Verify condition and dimensions of previously installed work upon which this Section depends. Report defects to Consultant. Commencement of work of this Section means acceptance of existing conditions.

3.2 **INSTALLATION**

- .1 Install coping flashings, curb counter flashings, starter strips, scuppers, cover panels miscellaneous flashings, and fasteners to details indicated and in accordance with reviewed shop drawings and CRCA requirements.
- .2 Use concealed fasteners. Exposed fasteners such as pop rivets are not allowed.
- .3 Metal protection:
 - .1 Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or in compliance with CRCA requirements.
 - .2 Provide dielectric separation for all metal to be embedded in concrete to prevent corrosion.
- .4 High temperature waterproofing membrane:
 - .1 Install primer and waterproof membrane continuously over plywood sheathing, in accordance with manufacturer's instructions.
 - .2 Overlap waterproof membrane 50 mm along sidelaps and 75 mm on end laps and lap in direction of waterflow.
- .5 Install continuous starter strips to present a true, non-waving, leading edge. Anchor to back-up for a rigid, secure installation.
- .6 Counterflash bituminous flashings at intersections of roof with vertical surfaces and curbs. Flash joints using S-lock forming tight fit over hook strips.
- .7 Make end joints using an S lock joint. Execute by inserting end coping length in 25 mm deep S lock formed in end of adjacent length. Extend concealed portion of S lock 25 mm outwards and nail to substrate. Face nailing of joints will not be permitted.
- .8 Seal where necessary to form weathertight seal between flashing and adjoining surfaces and between flashing and other work. Sealing work consists of bedding between members where possible. Tool sealant to concave profile where exposed. Install sealant in accordance with ASTM C1193.
- .9 Insert metal flashing under cap flashing to form weathertight junction.

- .10 Caulk flashing at cap flashing with sealant.
- .11 Cover panels:
 - .1 Damaged panels, waviness, warp or distortion of finished work will not be accepted.
 - .2 Completed installation shall be free from rattles, wind whistles, noise due to thermal movement and other noises.

END OF SECTION