

## PART 1 - GENERAL

### 1.1 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
  - .1 ASTM A 653/A 653M-07, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .2 ASTM B 32-04, Standard Specification for Solder Metal.
  - .3 ASTM C920-11 Standard Specification for Elastomeric Joint Sealants
  - .4 ASTM D2822 Cement-5(2011)el, Standard Specification for Asphalt Roof Cement, Asbestos Containing
  - .5 ASTM D3018-08, Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, Asbestos-Fibered, and Non-Asbestos-Fibered
- .2 Canadian Roofing Contractors Association (CRCA)
  - .1 Roofing Specifications Manual 2011.
- .3 Canadian Standards Association (CSA International)
  - .3 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.
- .4 Green Seal Environmental Standards
  - .1 Standard GS-03-93, Anti-Corrosive Paints.
  - .2 Standard GS-11-97, Architectural Paints.
  - .3 Standard GS-36-00, Commercial Adhesives.
- .5 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .6 South Coast Air Quality Management District (SCAQMD), California State
  - .1 SCAQMD Rule #1113-04, Architectural Coatings.
  - .2 SCAQMD Rule #1168-05, Adhesives and Sealants.

### 1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals 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.
  - .2 Submit 2 copies WHMIS MSDS - Material Safety Data Sheets.

- .3 Shop Drawings:
  - .1 Shop drawings: submit drawings stamped and signed by professional engineer registered or licensed in Province of Manitoba, Canada.
- .4 Samples:
  - .1 Submit duplicate 50 x 50 mm samples of each type of sheet metal material, finishes and colours from manufacturer's full colour range. .
- .5 Quality assurance submittals: submit following in accordance with Section 01 45 00 - Quality Control.
  - .1 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence, cleaning procedures.

### 1.3 QUALITY ASSURANCE

- .1 Pre-Installation Meetings: convene pre-installation meeting one week prior to beginning work of this Section and on-site installation, with contractor's representative and Departmental Representative in accordance with Section 01 32 16.07 - Construction Progress Schedule - Bar (GANTT) Chart to:
  - .1 Verify project requirements.
  - .2 Review installation and substrate conditions.
  - .3 Co-ordination with other building subtrades.
  - .4 Review manufacturer's installation instructions and warranty requirements.

### 1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Waste Management and Disposal:
  - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/ Demolition Waste Management and Disposal.

## PART 2 - PRODUCTS

### 2.1 SHEET METAL MATERIALS

- .1 Zinc coated steel sheet: 0.76 mm thickness, commercial quality to ASTM A 653/A 653M, with Z275 designation zinc coating.

### 2.2 PREFINISHED STEEL SHEET

- .3 Prefinished steel with factory applied silicone modified polyester.
  - .1 Class F1S
  - .2 Colour selected by Departmental Representative from manufacturer's standard range.
  - .3 Specular gloss: 30 units +/- 5 in accordance with ASTM D 523.
  - .4 Coating thickness: not less than 25 micrometres.
  - .5 Resistance to accelerated weathering for chalk

rating of 8, colour fade 5 units or less and erosion rate less than 20 % to ASTM D 822 as follows:

- .1 Outdoor exposure period 1000 hours.
- .2 Humidity resistance exposure period 1000 hours.

## 2.3 ACCESSORIES

- .1 Isolation coating: alkali resistant bituminous paint.
- .2 Plastic cement: to CAN/CGSB 37.5.
- .3 Cement to ASTM D2822-5(2011)e1.
- .4 Sealants: Sealants: Metal to metal one part high performance silicone Sealant to CAN/CGSB-19.13
  - .1 Primer as recommended by sealant manufacturer.
  - .2 Application as per sealant manufacturer written instructions.
- .5 Cleats: of same material, and temper as sheet metal, minimum 50 mm wide. Thickness 0.91 mm.
- .6 Fasteners: of same material as sheet metal, to CSA B111, ring thread flat head roofing nails of length and thickness suitable for metal flashing application.
- .7 Washers: of same material as sheet metal, 1 mm thick with rubber packings.
- .10 Touch-up paint: as recommended by prefinished material manufacturer.
- .11 Provide rainwater gutters, downspipes and concrete splash pads in accordance with contractor's roof consultant report.

## 2.4 FABRICATION

- .1 Fabricate metal flashings and other sheet metal work in accordance with applicable CRCA 'FL' series details and as indicated.
- .3 Form pieces in 2400 mm maximum lengths.
  - .1 Make allowance for expansion at joints.
- .4 Hem exposed edges on underside 12 mm.
  - .1 Mitre and seal corners with sealant.
- .5 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
- .6 Apply isolation coating to metal surfaces to be embedded in concrete or mortar.

## 2.5 METAL FLASHINGS

- .1 Form flashings, copings and fascias to profiles indicated of 0.76 mm thick prefinished SHEET steel

<u>2.6 PANS</u>	.1	Form pans to receive roofing plastic as indicated galvanized sheet metal with minimum 75 mm up-stand above finished roof and as indicated and 100 mm continuous flanges with no open corners.
	.1	Solder joints.
	.2	Make pans minimum 50 mm wider than member passing through roof membrane.

<u>2.7 CAP FLASHINGS</u>	.1	Form recessed surface mounted metal cap flashing of 0.76 mm thick in accordance with CRCA FL series detail.
	.1	Provide slotted fixing holes and steel/plastic washer fasteners.
	.2	Cover face and ends with plastic tape.

<u>2.8 GUTTERS / SCUPPERS</u>	.1	Form gutters scuppers from 0.97mm thick prefinished
	.1	Sizes and profiles as indicated.
	.2	Provide necessary fastenings.

### PART 3 - EXECUTION

<u>3.1 MANUFACTURER'S INSTRUCTIONS</u>	.1	Compliance: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.
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<u>3.2 INSTALLATION</u>		<u>SPEC NOTE:</u> Refer to CRCA to ensure adequate coverage of project details.
	.1	Install sheet metal work in accordance with CRCA FL series details and as detailed.
	.2	Use concealed fastenings except where approved before installation.
	.3	Provide underlay under sheet metal.
	.1	Secure in place and lap joints 100 mm.
	.4	Counterflash bituminous flashings at intersections of roof with vertical surfaces and curbs.
	.1	Flash joints using S-lock forming tight fit over hook strips, as detailed.
	.5	Lock end joints and caulk with sealant.
	.6	Install pans, where shown around items projecting through roof membrane.

<u>3.3 SCUPPERS</u>	.1	Install gutters, scuppers and downs-pipes as indicated in shop drawings.
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<u>3.4 CLEANING</u>	.1	Proceed in accordance with Section 01 74 11 - Cleaning.
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- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.
- .3 Leave work areas clean, free from grease, finger marks and stains.