
Partie 1 General

1.1 RELATED REQUIREMENTS

- .1 The list of Work in this division is indicative but non-limiting. It does not exclude Work described in other specification divisions shown on the drawings or required for full execution of the Work as intended on the drawings.
- .2 Section 04 03 31 Historic – Replacing Work.
- .3 Section 04 03 41 Historic – Repairing Stone.
- .4 Section 04 43 16 Granite Veneer Cladding.
- .5 Section 04 43 26 Dimension Stone Veneer Cladding.
- .6 Section 05 70 10 Ornamental Metals - Restoration
- .7 Section 06 10 00 Rough Carpentry.
- .8 Section 06 20 00 Finish Carpentry
- .9 Section 07 26 00 Vapour Retarders.
- .10 Section 07 44 56 Mineral Fiber Reinforced Cementitious Panels.
- .11 Section 07 52 00 Modified Bituminous Membrane Roofing.
- .12 Section 07 61 00 Sheet Metal Roofing.
- .13 Section 07 72 33 Roof Hatches.
- .14 Section 07 92 00 Joint Sealants.
- .15 Section 08 11 00 Metal Doors and Frames.
- .16 Section 08 11 16 Aluminum Doors and Frames.
- .17 Section 08 36 12 Sectional Metal Doors.
- .18 Section 08 44 13 Glazed Aluminum Curtain Walls.
- .19 Section 08 50 00 Windows.
- .20 Section 08 52 05 Historic works- existing wood windows.
- .21 Section 08 90 00 Louvres and Vents.

1.2 REFERENCES

- .1 ASTM A167-99(2004), Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
- .2 ASTM A240/A240M-07e1, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
- .3 ASTM A606-04, Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance.

- .4 ASTM A653/A653M-07, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .5 ASTM A792/A792M-06a, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
- .6 ASTM B32-04, Standard Specification for Solder Metal.
- .7 ASTM B370-03, Standard Specification for Copper Sheet and Strip for Building Construction.
- .8 ASTM D523-89(1999), Standard Test Method for Specular Gloss.
- .9 ASTM D822-01(2006), Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.
- .10 Canadian Roofing Contractors Association (CRCA)
 - .1 Roofing Specifications Manual, 1997.
- .11 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-51.32-M77, Sheathing, Membrane, Breather Type.
 - .2 CAN/CGSB-93.1-M85, Sheet Aluminum Alloy, Prefinished, Residential.
- .12 Canadian Standards Association (CSA International)
 - .1 CSA A123.3-F05, Asphalt Saturated Organic Roofing Felt.
 - .2 AAMA/WDMA/CSA 101/I.S.2/A440-2008, Standard/Specification for Windows, Doors, and Unit Skylights.
 - .3 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.
- .13 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.
- .14 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .15 South Coast Air Quality Management District (SCAQMD), California State
 - .1 SCAQMD Rule #1113-04, Architectural Coatings.
 - .2 SCAQMD Rule #1168-05, Adhesives and Sealants.

1.3 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 two copies WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 35 29.06 - Health and Safety Requirements.

- .3 Shop Drawings:
 - .1 Shop drawings: submit drawings stamped and signed by professional engineer registered or licensed in the province Quebec, Canada.
- .4 Samples:
 - .1 Submit duplicate 50 x 50 mm samples of each type of sheet metal material, finishes and colours.
- .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 and cleaning.
 - .2 Manufacturer's Field Reports: submit to manufacturer's written reports within 3 days of review, verifying compliance of Work, as described in PART 3, FIELD QUALITY CONTROL.

1.4 QUALITY ASSURANCE

- .1 Pre-Installation Meetings: convene pre-installation meeting one week prior to beginning work of this Section with Departmental Representative in accordance with Section 01 14 23 – Work Schedule and 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.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off the ground, in clean, dry, well-ventilated area.
 - .2 Replace defective or damaged materials with new.
- .4 Waste Management and Disposal:
 - .1 Separate waste materials for reuse/recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .2 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.6 ACCEPTABLE PRODUCTS AND MATERIALS

- .1 Where a particular brand name is stipulated, see Instructions to Bidders for procedure for requesting approval of substitute materials and products

Partie 2 Products

2.1 SHEET METAL MATERIALS

- .1 Copper sheet: to ASTM B370 temper designation with mass of 20 oz/ft² minimum mass. Sheet metal: 915 mm per 3000.
- .2 Zinc coated steel sheet: 0.65 mm thickness, commercial quality to ASTM A653/A653M, with Z275 designation zinc coating.
- .3 Stainless steel sheet: to ASTM A167, Type 316 (contact with copper sheeting), dull finish; 0.76mm base metal thickness.

2.2 ACCESSOIRES

- .1 Isolation coating: alkali resistant bituminous paint.
- .2 Plastic cement: to CAN/CGSB 37.5.
 - .1 Maximum VOC limit 50 g/L to SCAQMD Rule 1168.
- .3 Underlay for metal flashing: membrane autocollante (haute temperature) pour éviter le contact électrolytique, selon la norme ASTM D1970.
- .4 Sealants: to Section 07 92 00 – Joint Sealants.
- .5 Cleats: of same material, and temper as sheet metal, minimum 50 mm wide. Thickness same as sheet metal being secured, 50 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.
- .8 Solder: to ASTM B32, alloy composition Sn; 97% tin and 3% copper.
- .9 Flux: rosin, cut hydrochloric acid, or commercial preparation suitable for materials to be soldered.
- .10 Touch-up paint: as recommended by prefinished material manufacturer.
 - .1 Maximum VOC limit 50 g/L to Standard GS-11.
- .11 Flexible wall membrane, temperature, to ASTM D1970, zinc-coated prefinished steel sheet support. At indicated areas.

2.3 FABRICATION

- .1 Fabricate metal flashings and other sheet metal work in accordance with applicable series details as indicated.
- .2 Fabricate aluminum flashings and other sheet aluminum work in accordance with AAI-Aluminum Sheet Metal Work in Building Construction.

- .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 stainless steel and prepainted steel sheet.
 - .2 Weld copper sheet edges.
- .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.

2.4 METAL FLASHINGS AND ACCESSORIES

- .1 Form flashings, copings and fascias to profiles indicated with copper sheet minimum weight of (20 oz/sq. ft.) 570 g, 0.68 mm thick: eaves, flashing, eaves over sunscreen blades, fascias, curtain wall bottom and membrane flashing junction, limestone parapet caps, awnings, limestone/awning/curtain junction, roof expansion joint flashing and other indicated elements.
- .2 Form flashings, trim and other accessories to profiles indicated with zinc-coated prepainted steel 0.65 mm thick: around exterior openings unpainted steel and other elements indicated. Flashing, trim and other required accessories.
- .3 Form flashings, trim and other accessories to profiles indicated, stainless steel 0.76 mm thick sheet: thermal insulation on existing foundation, curtain wall junction adjacent to west square tower and roof, and other indicated elements.

2.5 PANS

- .1 Form pans to receive roofing plastic from (20 oz/pi²) 570 g copper with minimum 200 mm upstand above finished roof 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.

2.6 REGLETS AND CAP FLASHINGS

- .1 Form metal cap flashing, recessed reglets of sheet of same type and thickness as flashings and incorporated as indicated in drawings.
 - .1 Provide slotted fixing holes and steel/plastic washer fasteners.
 - .2 Cover face and ends with plastic tape.

Partie 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 INSTALLATION

- .1 Install sheet metal work as indicated.
- .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 standing seams forming tight fit over hook strips as indicated.
- .5 Lock end joints and caulk with sealant.
- .6 Install surface mounted reglets true and level, and caulk top of reglet with sealant.
- .7 Insert metal flashing into reglets to form weather tight junction.
- .8 Turn top edge of flashing into recessed reglet or mortar joint minimum of 25 mm. Lead wedge flashing securely into joint.
- .9 Caulk flashing at reglet with sealant.
- .10 Install pans, where shown around items projecting through roof membrane.

3.3 EAVES TROUGHS AND DOWNPIPES

- .1 Install eaves troughs as indicated in Section 07 61 00 – Sheet Metal Flashing.

3.4 SCUPPERS

- .1 Install scuppers as indicated in Section 07 61 00 – Sheet Metal Flashing.

3.5 FIELD QUALITY CONTROL

- .1 Manufacturer's Field Services
 - .1 Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

3.6 CLEANING

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at the end of each day.
- .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.
- .4 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

END OF SECTION