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**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 05 12 23      Structural Steel for Buildings.
- .3      Section 06 10 00      Rough Carpentry.
- .4      Section 06 10 01      Structural Carpentry.
- .5      Section 07 21 13      Board Insulation.
- .6      Section 07 21 23      Loose Fill Insulation.
- .7      Section 07 52 00      Modified Bituminous Membrane Roofing.
- .8      Section 07 62 00      Sheet Metal Flashing and Trim.
- .9      Section 07 92 00      Joint Sealants.

**1.2      REFERENCES**

- .1      ASTM International
  - .1      ASTM A506-12, Standard Specification for Alloy and Structural Alloy Steel, Sheet and Strip, Hot-Rolled and Cold-Rolled.
  - .2      ASTM A653/A653M-11, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .3      ASTM D2369-10e1, Standard Test Method for Volatile Content of Coatings.
  - .4      ASTM D2832-2011, Standard Guide for Determining Volatile and Nonvolatile Content of Paint and Related Coatings.
  - .5      ASTM D5116-10, Standard Guide For Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products.
- .2      CSA International
  - .1      CSA B111-1974(R2005), Wire Nails, Spikes and Staples.
- .3      Green Seal Environmental Standards (GS)
  - .1      GS-11-11, Standard for Paints and Coatings.
  - .2      GS-36-11, Standard for Adhesives for Commercial Use.
- .4      The Master Painters Institute (MPI)
  - .1      Architectural Painting Specification Manual - [édition courante].
    - .1      MPI #76, Primer, Alkyd, Quick Dry, for Metal.

**1.3      ACTION AND INFORMATIONAL SUBMITTALS**

- .1      Submit in accordance with Section 01 33 00 - Submittal Procedures.

- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for roof hatches and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements.
    - .1 Indicate VOC's for caulking materials during application and curing.
- .3 Shop Drawings:
  - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Canada, in the province.
    - .1 Indicate size and description of components, materials, attachment devices, description of frame and finish, and construction details.
- .4 Manufacturer's Instructions:
  - .1 Submit manufacturer's installation instructions.

#### **1.4 QUALITY ASSURANCE**

- .1 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

#### **1.5 CLOSEOUT SUBMITTALS**

- .1 Soumettre les documents/éléments requis conformément à la section 01 78 00 - Documents/Éléments à remettre à l'achèvement des travaux.
- .2 Submit operation and maintenance data for hardware complete with pertinent details, spare parts lists and warnings against harmful maintenance materials and practices for incorporation into manual.

#### **1.6 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 ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect roof hatches from nicks, scratches, and blemishes.
  - .3 Replace defective or damaged materials with new.

#### **1.7 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

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**Partie 2      Products**

**2.1            DESIGN REQUIREMENTS**

- .1      Roof hatches must withstand snow load of 195 kN/m<sup>2</sup>, and wind uplift of 97 kNm/m<sup>2</sup> without damage to unit or permanent deformation to seals.

**2.2            MATERIALS**

- .1      Galvanized steel sheet: commercial quality to ASTM A653/A653M, Z275 designation zinc coating.
- .2      Aluminum sheet: mill finish plain utility sheet.
- .3      Aluminum: extruded sections of AA6063-T5 alloy, all components one piece without splices.
- .4      Copper sheet: to ASTM B370 cold rolled.
- .5      Gaskets: extruded silicone, with full recovery after 50% compression.
- .6      Fasteners: screws to manufacturer's standard cadmium plated steel.
- .7      Sealants: to Section 07 92 00; colour selected by Departmental Representative.
  - .1      Test for acceptable VOC emissions in accordance with ASTM D2369 and ASTM D2832.
- .8      Primers, Paints and Coating: in accordance with manufacturer's recommendations for surface conditions.
- .9      Primer paint for steel: to MPI #76.
- .10     Isolation coating: alkali resistant bituminous paint or epoxy solution.
- .11     Mineral fibre insulation: 25 mm (for all hatches).
- .12     Vented sheet metal covering (QM area):
  - .1      Prepainted galvanized steel sheet metal 0.85 mm with edges overlapping hatch covers and perforated to dimensions required for vent.
- .13     Hatch vents (QM area): enamelled steel 0.7 mm thick, grey, vented at the top, with galvanized steel grill and filter media to CAN-3-A930M82 and ASTM-527.
- .14     Insulated for vented hatch (QM area): enamelled steel 0.85 mm thick, grey, sized to fit in hatch vent.
- .15     Separator membrane for vented hatch (QM area): SBS and polymer modified high-temperature self-adhesive membrane with woven polyethylene.
  - .1      To ASTM 1970 and ASTM E96.
  - .2      Application temperature: 10 to 50oC.
  - .3      Service temperature: -49 to 239oC.
- .16     Primer for separator membrane: synthetic SBS rubber, resin and solvent.
  - .1      Weight at 20oC: 0.79 kg/l.

- .2 Solids content: 24%.
- .3 Brookfield viscosity at 25°C: 200 cP.

## **2.3 HATCH COVER**

- .1 Metal Cover
  - .1 Preformed, galvanized steel, insulated sandwich construction, 25 mm overall thickness.

## **2.4 CURBED FRAME**

- .1 Preformed metal curb: 1.9 mm thick x 915 mm x 915 mm x 915 x 305 mm high, insulated sandwich construction, wood fibre insulation, 25 mm mm overall thickness, with deck flange for attachment.

## **2.5 ACCESSORIES**

- .1 Screws: galvanized steel for curb to structure.
- .2 Hinges: type recommended by roof hatch manufacturer.
- .3 Latch: positive snap with turn handles inside and out and padlock hasps inside.
- .4 Securing latch: hold open operating arm with vinyl grip handle to permit one-handed release.
- .5 Resilient gasket/seal to inner face of lid in contact hatch lid.

## **2.6 ATTIC HATCHES**

- .1 Type 1 (west wing)
  - .1 Finish: steel primed for paint:
  - .2 No fire resistance or thermal insulation.
  - .3 Dimensions: 915mm X 915mm X 1.6 mm thick.
  - .4 Frame pre-drilled for gypsum board.
  - .5 Cover: designed for gypsum board.
  - .6 Piano hinges.
  - .7 Securing latch.
- .2 Type 2: (central building)
  - .1 Finish: steel primed for paint:
  - .2 One-hour fire resistance with thermal insulation (mineral fibre insulation).
  - .3 Dimensions: 915mm X 915mm X 1.6mm thick.
  - .4 Frame pre-drilled for gypsum board.
  - .5 Piano hinges.
  - .6 Securing latch.

- .3 Type 3: (east wing – adm. and qm)
  - .1 Finish: primed steel.
  - .2 1 hour fire resistance with thermal insulation (mineral fibre insulation).
  - .3 Dimensions: 915 mm x 915 mm x 1.6 mm thick.
  - .4 Frame predrilled for gypsum board.
  - .5 Piano hinge.
  - .6 Securing latch.
  - .7 Semi-rigid 25 mm mineral fibre insulation.

## **2.7 EXTERIOR ACCESS HATCHES WITH INTEGRATED VENTS (4 REQUIRED QM AREA)**

- .1 Access hatches to modify to ventilate attic with vent attached to hatch cover.
- .2 Refer to points 2.2.12 to 2.2.16 inclusively above, for the list of hatch components.

## **2.8 FABRICATION**

- .1 Fabricate components free of twists, bends, or visual distortion and insulated. Weld corners and joints.
- .2 Assemble roof hatch components as indicated.
- .3 Ensure continuity of weather-tight seal.
- .4 Design flashings and extrusions to collect and lead off accumulated condensation.
- .5 Zinc plate hardware and attachments and shop prime ready for field painting.

## **Partie 3 Execution**

### **3.1 INSPECTION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for roof hatch installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

### **3.2 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

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**3.3            INSTALLATION**

- .1      Erect components plumb, level and in proper alignment.
- .2      Ensure continuity of building envelope air barrier and vapour retarder systems.
- .3      Adjust and seal assembly with provision for expansion and contraction of components.
- .4      Secure brake formed metal curb to structure.
- .5      Coat aluminum and copper in contact with dissimilar materials, with isolation coating.
- .6      Secure and seal frame to curb.

**3.4            CLEANING**

- .1      Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1          Leave Work area clean at end of each day.
- .2      Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
  - .1          Remove recycling containers and bins from site and dispose of materials at appropriate facility.

**3.5            PROTECTION**

- .1      Protect installed products and components from damage during construction.
- .2      Repair damage to adjacent materials caused by roof hatch installation.

**END OF SECTION**