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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 04 22 00      Masonry Mortaring.
- .3      Section 05 12 23      Structural Steel for Buildings.
- .4      Section 06 10 00      Rough Carpentry.
- .5      Section 07 21 13      Board Insulation.
- .6      Section 07 26 00      Vapour Retarders.
- .7      Section 07 92 00      Joint Sealants.
- .8      Section 08 44 13      Glazed Aluminum Curtain Walls.
- .9      Section 09 21 16      Gypsum Board Assemblies.
- .10    Section 09 22 14      Furring and Lathing.

**1.2      REFERENCES**

- .1      Canadian Urethane Foam Contractors' Association (CUFCA)
- .2      Green Seal Environmental Standards
  - .1      Standard GC-03-93, Anti-Corrosive Paints.
  - .2      Standard GS-11-97, Architectural Paints.
- .3      Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1      Material Safety Data Sheets (MSDS).
- .4      South Coast Air Quality Management District (SCAQMD), California State
  - .1      SCAQMD Rule 1113-06, Architectural Coatings.
- .5      Underwriters' Laboratories of Canada (ULC)
  - .1      CAN/ULC-S101-04, Fire Endurance Tests of Building Construction and Materials.
  - .2      CAN/ULC-S102-03, Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
  - .3      CAN/ULC-S705.1-01, Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density, Material Specification.
  - .4      CAN/ULC-S705.2-05, Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density, Application.

### **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, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit two copies WHMIS MSDS - Material Safety Data Sheets
- .3 Quality assurance submittals: submit following in accordance with Section 01 45 00 - Quality Control.
  - .1 Test reports: submit certified test reports for insulation from approved independent testing laboratories, indicating compliance with specifications for specified performance characteristics and physical properties.
  - .2 Submit test reports in accordance with CAN/ULC-S101 for fire endurance and CAN/ULC-S102 for surface burning characteristics.
  - .3 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence, cleaning procedures and performance.
  - .4 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 Applicators to conform to CUFCA Quality Assurance Program.
- .2 Mock-up:
  - .1 Construct mock-up in accordance with Section 01 45 00 - Quality Control.
  - .2 Construct mock-up 10 m<sup>2</sup> minimum, of sprayed insulation including one inside corner and one outside corner, and window openings.
  - .3 Mock-up may be part of finished work.
  - .4 Allow 24 hours for inspection of mock-up by Departmental Representative before proceeding with sprayed insulation work.
- .3 Health and Safety Requirements: worker protection:
  - .1 Protect workers as recommended by CAN/ULC-S705.2 and manufacturer's recommendations.
  - .2 Workers must wear gloves, respirators, dust masks, long sleeved clothing and eye protection when applying foam insulation.
  - .3 Workers must not eat, drink or smoke while applying foam insulation.

### **1.5 DELIVERY, STORAGE AND HANDLING**

- .1 Packing, shipping, handling and unloading:
  - .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.

- .2 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Waste Management and Disposal:
  - .1 Separate waste materials for reuse/recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

## **1.6 SITE CONDITIONS**

- .1 Ventilate area in accordance with Section 01 51 00 - Temporary Utilities.
- .2 Ventilate area to receive insulation by introducing fresh air and exhausting air continuously during and 24 hour after application to maintain non-toxic, unpolluted, safe working conditions.
- .3 Provide temporary enclosures to prevent spray and noxious vapours from contaminating air beyond application area.
- .4 Protect adjacent surfaces and equipment from damage by overspray, fall-out, and dusting of insulation materials.
- .5 Apply insulation only when surfaces and ambient temperatures are within manufacturers' prescribed limits.
- .6 Prime greasy or oily surfaces as recommended by manufacturer.
- .7 Apply insulation to metallic surfaces only when surfaces and ambient temperatures are under 5°C.
- .8 Allow manufacturer's representative or designated parties access to Work site to provide technical assistance at the beginning and during the course of the Work.
- .9 Ensure completion of fire containment of facades and compliance with NBC requirements prior to applying insulation.

## **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

## **Partie 2 Products**

### **2.1 MATERIALS**

- .1 Product must not contain CFCs or HCFCs or substances with zero ozone-depleting potential.
- .2 Sprayed insulation must contain a minimum 18% recycled content from post-consumer and post-industrial sources. Percentage is based on weight of recycled products and not sprayed insulation.
- .3 Insulation must be manufactured with a renewable vegetable oil (e.g., soy, linseed, sunflower).
- .4 Insulation: sprayed polyurethane foam to CAN/ULC-S705.1.

- .1 Maximum VOC 100 g/L to SCAQMD rule 1113.

## **2.2 ACCESSORIES**

- .1 Perforated galvanized steel 25 mm x 25 mm edging to prevent delamination of the insulation around openings and penetrations.
- .2 Galvanized steel degreaser.
- .3 Primers: to manufacturer's recommendations based on surfaces to insulate.
- .4 Mechanical anchors and galvanized steel screws to secure metal edging.

## **Partie 3 Execution**

### **3.1 MANUFACTURER'S INSTRUCTIONS**

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

### **3.2 APPLICATION**

- .1 Apply insulation to clean surfaces in accordance with CAN/ULC-S705.2 manufacturer's printed instructions.
- .2 Use primer where recommended by manufacturer.
- .3 Apply sprayed foam insulation in thickness as indicated.

### **3.3 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.

### **3.4 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.

**END OF SECTION**