

PART 1 - GENERAL

- 1.1 REFERENCES
- .1 Canada Green Building Council (CaGBC)
    - .1 LEED Canada-NC-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.
  - .2 Canadian Urethane Foam Contractors Association Inc. (CUFCA)
  - .3 Green Seal (GS)
    - .1 GS-11-2013, Standard for Paints and Coatings.
  - .4 South Coast Air Quality Management District (SCAQMD)
    - .1 SCAQMD Rule 1113-13, Architectural Coatings.
  - .5 Underwriters Laboratories of Canada (ULC)
    - .1 CAN/ULC-S101-07, Standard Methods of Fire Tests of Building Construction and Materials.
    - .2 CAN/ULC-S102-10, Standard 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. Includes Amendment 1.2.
    - .4 CAN/ULC-S705.2-05, Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density, Application.
- 1.2 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 polyurethane foam sprayed insulation and include product characteristics, performance criteria, physical size, finish and limitations.
-

- 1.2 ACTION AND INFORMATIONAL SUBMITTALS (Cont'd)
- .2 Product Data: (Cont'd)
- .2 Submit electronic copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements and 01 35 43 - Environmental Procedures.
- .3 Test Reports:
- .1 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.
- .4 Manufacturer's Instructions:
- .1 Submit manufacturer's installation instructions and special handling criteria, installation sequence and cleaning procedures.
- .5 Manufacturer's Reports:
- .1 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.
- .6 Sustainable Design Submittals:
- .1 LEED Canada submittals: in accordance with Section 01 35 21 - LEED Requirements.
- 1.3 QUALITY ASSURANCE
- .1 Applicators to conform to CUFCA Quality Assurance Program.
- .2 Qualifications:
- .1 Installer: person specializing in sprayed insulation installations with 5 years documented experience and approved by manufacturer.
- .2 Manufacturer: company with experience in producing of material used for work required for this project, with sufficient production capacity to produce and deliver required units without causing delay in work.
-

- 1.3 QUALITY ASSURANCE  
(Cont'd)
- .3 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, door 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.
- .4 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, eye protection and protective clothing when applying foam insulation.  
.3 Workers must not eat, drink or smoke while applying foam insulation.
- 1.4 DELIVERY, STORAGE AND HANDLING
- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .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 Replace defective or damaged materials with new.
- .4 Develop Construction Waste Management Plan related to Work of this Section and in accordance with Section 01 35 21 - LEED Requirements.
- .5 Packaging Waste Management: remove for reuse or return of pallets, crates, padding,
-

- 1.4 DELIVERY,  
STORAGE AND  
HANDLING  
(Cont'd)
- .5 Packaging Waste Management: (Cont'd)  
banding, and packaging materials as specified  
in Construction Waste Management Plan in  
accordance with Section 01 74 21 -  
Construction/Demolition Waste Management and  
Disposal and Section 01 35 21 - LEED  
Requirements.
- 1.5 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.

PART 2 - PRODUCTS

- 2.1 MATERIALS
- .1 Insulation: spray polyurethane to  
CAN/ULC-S705.1.
- .2 Primers: in accordance with manufacturer's  
recommendations for surface conditions.  
.1 Maximum VOC limit 100 g/L to SCAQMD Rule  
1113.
-

PART 3 - EXECUTION

- 3.1 EXAMINATION .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for sprayed insulation application accordance with manufacturer's written instructions.
- .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative 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 APPLICATION .1 Apply insulation to clean surfaces in accordance with CAN/ULC-S705.2 and 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 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
-

- 3.4 CLEANING  
(Cont'd)
- .2 Final Cleaning:(Cont'd)  
equipment in accordance with Section 01 74 11  
- Cleaning.
    - .1 Remove insulation material spilled  
during installation and leave work area ready  
for application of wall board.
  
  - .3 Waste Management: separate waste materials  
for reuse and recycling in accordance with  
Section 01 74 21 - Construction/Demolition  
Waste Management and Disposal and Section  
01 35 21 - LEED Requirements.
    - .1 Remove recycling containers and bins  
from site and dispose of materials at  
appropriate facility.