

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)

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- .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

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- .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.
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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,
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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.

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### 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
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- 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.