

PART 1 - GENERAL

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| <u>1.1 REFERENCES</u> | .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. |
| <u>1.2 ACTION AND INFORMATIONAL SUBMITTALS</u> | .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.
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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 m² 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,

<u>1.4 DELIVERY, STORAGE AND HANDLING (Cont'd)</u>	.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.
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<u>1.5 SITE CONDITIONS</u>	.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

<u>2.1 MATERIALS</u>	.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.