

PART 1- GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 07 21 16 – Blanket Insulation
- .2 Section 07 26 00 – Vapour Retarders
- .3 Section 07 27 00.01 – Air Barriers
- .4 Section 08 11 00 – Metal Doors and Frames
- .5 Section 08 11 06 – Aluminum Doors and Frames
- .6 Section 08 50 00 - Windows.

1.2 REFERENCE STANDARDS

- .1 Canadian Urethane Foam Contractors Association Inc. (CUFCA)
- .2 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-S705.1-15, 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.

1.3 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 polyurethane foam sprayed insulation 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 - Health and Safety Requirements.
- .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.

1.4 QUALITY ASSURANCE

- .1 Applicators to conform to CUFCA Quality Assurance Program.
- .2 Health and Safety Requirements: worker protection:
 - .1 Protect workers as recommended by CAN/ULC-S705.2 and manufacturer's recommendations.

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

1.6 SITE CONDITIONS

- .1 Ventilate area in accordance with Section 01 50 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 SUSTAINABLE REQUIREMENTS

- .1 Materials and products in accordance with Section 01 47 15 – Sustainable Requirements

2.2 MATERIALS

- .1 Insulation: spray polyurethane foam to CAN/ULC-S705.1, thickness and RSI Value as indicated on drawings.
 - .1 Initial thermal resistance: minimum RSI 2.5 per 50 mm.
 - .2 Long term thermal resistance: minimum RSI 2.0 per 50 mm.
 - .3 Density: 28 kn/m³, to ASTM D1622.
 - .4 Air barrier properties: to ASTM E2178.
 - .1 @75 Pa: maximum 0.05 L/s.
 - .5 Water Vapour Permeance, to ASTM E96.
 - .1 50 mm thick: maximum 60 ng/ (Pa.s.m²).
 - .6 Tensile Strength: minimum 200 kPa, to ASTM D1621.
 - .7 Flame Spread: to CAN/ULC-S102, in accordance with the latest edition of the National Building Code.
 - .8 Water Absorption by volume: maximum 4% to ASTM D2842
- .2 Primers: in accordance with manufacturer's recommendations for surface conditions.
 - .1 Maximum VOC limit 100 g/L.

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 to seal all openings in exterior wall envelope to produce continuous air/vapour barrier.

3.3 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 insulation material spilled during installation and leave work area ready for application of wall board.

END OF SECTION