***CUFCA Approved LD OC SPF***

***Note****: This specification should be adopted for each project. All notes are for guidelines only.*

**PART 1- GENERAL**

1. **Work Included**
2. Spray application of polyurethane foam to provide insulation and air sealing.

*Note: areas to be insulated and air sealed can be generally described here if desired and then covered in detail in Part 3. Execution and /or show on the drawings.*

1. **Related Sections**

***Note:*** *Amend to suit project*

1. Cast in place concrete Section 03300
2. Structural Pre-cast Concrete Section 03400
3. Unit Masonry Section 04200
4. Metal Decking Section 05300
5. Cold Formed Metal Framing Section 05400
6. Rough Carpentry Section 06100
7. Waterproofing Section 07100
8. Vapour-Barrier Section 07260
9. Preformed Roofing and Cladding/Siding Section 07400
10. Fireproofing Section 07800
11. Thermal Barrier Section 07840
12. Flexible flashing Section 07650
13. Metal Support Systems Section 09110
14. Gypsum board Section 09250

**1.3 References**

 1. CCMC Evaluation Report 13655-R Grizzly 005 Insulation material

1. ASTM E84 Surface Burning Characteristics
2. CAN/ULC S 102 M Surface Burning Characteristics.
3. CAN/ULC S712.1 Material Standard for LD OC SPF
4. CAN/ULC S712.2 Installation Standard for LD OC SPF
5. CAN?ULC S718-18 Site Quality Assurance Standard for Spray Applied Foam

**1.4 Submittals and Samples**

1. Before commencing work, submit in accordance with Section *01330, 01000.*
2. Submit independent laboratory test reports, data sheets, physical proprieties, and samples meeting or exceed requirements of this specification.
3. Submit the technical data sheet from the manufacturer showing the test results from the

CAN/ULC S 102

**1.5 Quality Assurances**

1. Contractor performing work under this section must be licensed under CUFCA (Canadian.

Urethane Foam Contractors Association)

1. Applicators performing work under this section must be trained and/or certified for ***LD OC SPF by CUFCA (The Canadian Urethane Foam Contractors Association)***.
2. Upon request, spray an area 1m2 (10 ft2) in accordance with Section *1300.*
3. Installer Photo ID, Jobsite Label, and Daily work records are to be made available to AHJ, GC, and CUFCA as requested.
4. **Delivery, Storage and Handling**

1 Materials shall be delivered in manufacturers original sealed containers clearly labelled with manufacturer’s name, product identification, safety, information, net weight of contents and lot number.

2 Material is to be stored in a safe manner and where the temperatures are in the limits specified by the material manufacturer.

3 Empty containers have to be removed from site on a daily basis and disposed of properly.

**1.7 Protection**

1. Ventilate area to receive insulation to maintain safe working conditions.
2. Protect workers as recommended by standards and manufacturer’s recommendations.
3. Protect adjacent surfaces, windows, equipment and site areas from damage of over-spray.

**PART 2- PRODUCTS**

1. **Materials**
2. Spray Applied Semi Rigid Polyurethane Foam Insulation systems
3. Product: ***CUFCA Approved LD OC SPF by member manufacturer using CUFCA SQAP***
4. Product shall have a CCMC Listing Report to confirm material compliance with CAN/ULC S712.1 Material Standard for LD OC SPF and list CUFCA as the third party Quality Assurance Provider

**2.1.2.**

**PHYSICAL PROPERTIES** **TEST RESULTS UNITS**

|  |  |  |
| --- | --- | --- |
| Method | Description | Value |
| ASTM D 1622 | Density | **0.45-1.0 lb./ft3****7,37 Kg / m3** |
| **ASTM C 518** | Thermal Resistance 90 days @ 230 CThermal Resistance 90 days @ 760 F | **0,61 m2** 0 **C/W****3.5 ft. 2h. 0F/BTU.in** |
| **ASTM E 283 – 91** | Air leakage @ 75 Pa (25 miles/hr. wind)Sustained Wind Load for 60 minutes@ 1000 Pa (90 miles/hr. wind)Gust Wind Load Test@ 3000 Pa (160 miles/hr.) | **0.04 L/s.m2**No damageNo damage |
| **ASTM D 1621** | Compressive Strength | **0.7 psi** **5 kPa** |
| ASTM D 1623 | Tensile Strength | * 1. **psi**

**17 kPa** |
| **ASTM E 90 & E 483****ASTM C 423** | Sound Transmission Classification (STC)Noise Reduction Coefficient (NRC) | **39****0.75** |
| ASTM E 96 | Water Vapor Permeance | **1580 ng/Pa.s. m2** |
| CAN/ULC 705.1**CAN/ULC 774** | Off Gassing Tests (VOC Emissions) | **Pass**  |
| ASTM E84 | Surface Burning Characteristics (6”)* Flame Spread Index
* Smoke Development
 | 210 Class 1**195** |
| CAN/ULC S102 M | Surface Burning Characteristics | **25 < F.S.> 500** |

|  |  |  |
| --- | --- | --- |
|  |  |  |

**2.1.3 Primers:**

 As per manufacturer’s recommendations for surface conditions.

**2.2 EQUIPMENT**

Equipment used to apply the foam insulation shall have fixed ratio positive displacement pumps as approved by foam manufacturer.

PART 3- EXECUTION

**3.1 Examination**

1. Verify that surfaces and conditions are suitable to accept work as outlined in this section.

2. Report in writing, any defects in surfaces or conditions, which may adversely affect the performance of products, installed under this section to the consultant prior to commencement of work.

3. Commencement of work outlined in this section shall be deemed as acceptance of existing work and conditions.

**3.2 Application**

1. Spray-application of polyurethane foam shall be performed in accordance with the manufacturer’s product specific recommendations and in compliance with the CAN/ULC S712.2 Installation Standard for LD OC SPF products.

2. Apply only when surfaces and environmental conditions are within limits prescribed by the material manufacturer. Refer to the material technical data sheet and CCMC Listing.

3. Apply passes as recommended by manufacturer to thickness as indicated on drawings. *Specification Note:* R-values may be substituted for thickness.

**3.3 Protection**

All plastic insulation must be separated from interior occupancy space by an approved thermal barrier to meet the requirements of local Building Codes. (see Section 07840)

*Note: Work related to thermal barrier installation should be specified under appropriate sections*

*----------------------------------END OF THE SECTION-----------------------------------------------*