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**BULLETIN 2004-004-BU**

**APRIL 19, 2007**  
*(Revised)*

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## **SPRAY-IN-PLACE THERMAL INSULATION**

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The intent of this bulletin is to highlight some of the Vancouver Building By-law (VBBL) requirements pertaining to the use of spray-in-place thermal insulation in wood-framed construction, especially in single family houses where there may not be a Design Professional involved. There are many products available in the marketplace: ranging from low density to medium density foam, each with a variety of chemical compositions and characteristics. Medium density foams meeting CAN/ULC-S705.1-01 are accepted outright as a thermal insulation since they are referenced under Sentence 9.25.2.2.(1) of Division B. The City also accepts materials if they are tested by the Canadian Construction Materials Centre (CCMC). The test report must be submitted to the City for acceptance and demonstrate the thermal resistance performance equivalent to that required in Article 9.25.2.2. of Division B.

The installation of these spray-in-place foam must also comply with other VBBL requirements pertaining to walls and roof construction, namely:

### **Subsection 9.25.4. of Division B - Vapour Barrier**

For wall cavity insulation (i.e. insulation between stud or joist spaces), a vapour barrier is not exempted with the use of spray-in-place foams. Some products are better suited with using a membrane type vapour barrier or vapour permeant paint meeting code's requirement of either Class I or II (depending on application), other than polyethylene. The CCMC report of the specific product would list these limitations, therefore it is important for the applicant to be familiar with the specifications of these products. Unless the foam has been tested to meet the VBBL's requirement of vapour permeance and is applied on the exterior over a continuous substrate, a vapour barrier meeting the permeance level of the wall system must be present.

### **Subsection 9.25.3. of Division B - Air Barrier**

Some medium density foams are tested as barriers when the foam is applied on the exterior as a continuous layer, but not in wall studs or joist spaces. As such an air barrier meeting all the design criteria under Sentence 9.25.3.3. must be present.

### **Subsection 9.19.1. of Division B - Roof Venting**

Sentence 9.19.1.3.(1) requires that roof venting be provided between the top of the insulation and the underside of the roof sheathing. This requirement applies to all roofs or undersides of decks where the decks cover heated spaces. This requirement is necessary to limit moisture-induced deterioration, given that imperfections normally exist in the roof system. The use of spray-in-place foams must meet this requirement by the use of strapping and mesh backing to hold the foam insulation in place.

### **Permit Information**

The information on the type of insulation to be used in the building or house must be on the building permit drawings. Where the product has a CCMC listing, the CCMC report number must be referenced on

the building permit drawings. The drawings must also provide details and locations of the foam insulation and its method of application.

If the insulation is changed post permit issuance, the applicant will need to amend the building permit with a revision to the drawings and will not be allowed to continue construction until the revision is completed. As this is time consuming for both the applicant and the City, the preferred process will be to have the information known on the building permit drawings prior to permit issuance.

### Ongoing Development

All licensed installers have been informed of the City's requirements via the Canadian Urethane Foam Contractors Association (CUFCA). The City understands the industry will be proposing CCMC testings for a medium density foam in the near future to address some of the above Code requirements. Until the test reports are issued, the above guidelines shall be followed.

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