



Evaluation Report CCMC 13243-R Home Foam

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1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that “Home Foam”, when used as a thermal insulation in accordance with the conditions and limitations stated in Section 3 of this Report, complies with the National Building Code 2010:

- Clause 1.2.1.1.(1)(b), Division A, as an alternative solution that achieves at least the minimum level of performance required by Division B in the areas defined by the objectives and functional statements attributed to the following applicable acceptable solutions:
 - Clause 9.25.2.2.(1)(g), Insulation Materials

This opinion is based on CCMC's evaluation of the technical evidence in Section 4 provided by the Report Holder.

Ruling No. 06-14-158 (13243-R) authorizing the use of this product in Ontario, subject to the terms and conditions contained in the Ruling, was made by the Minister of Municipal Affairs and Housing on 2006-12-20 (revised on 2009-11-27) pursuant to s.29 of the Building Code Act, 1992 (see Ruling for terms and conditions). This Ruling is subject to periodic revisions and updates.

2. Description

“Home Foam” is a spray-in-place, low-density, semi-flexible plastic foam that has an open-cell structure. “Home Foam” consists of components A, isocyanate, and B, resin, which are mixed on-site in a 1:1 fixed-ratio by a qualified installer using positive displacement equipment.

The colour of the final cured product is cream and has a density of approximately 6.8 kg/m³. At a thickness of 25.4 mm, the thermal resistance is 0.66 m²·°C/W.

3. Conditions and Limitations

CCMC's compliance opinion in Section 1 is bound by the “Home Foam” being used in accordance with the conditions and limitations set out below.

- “Home Foam” must be applied on-site by qualified installers trained and approved by Home Insulation Corp.
- Urethane Foam Consultants (UFC) is the third-party certification organization retained by Home Insulation Corp. to conduct random follow-up field inspections of installers trained to spray semi-flexible urethane-based foam insulation in accordance with the “Home Foam” Installer’s Manual. UFC can be reached at 905-702-2555.
- “Home Foam” can be used in new or retrofitted construction. The product is to be installed in open cavities in the following locations of wood-frame construction while meeting the requirements of the NBC 2010:
 - exterior walls including perimeter joists;
 - cathedral ceilings with a vented air space as required by the NBC 2010;

- floors separating living spaces from a garage;
- cantilever overhang floors; and
- interior below-grade foundation walls.

The application locations are illustrated in Figure 1.

- The building envelope in which this product is installed must conform to the requirements of the NBC 2010 for vapour barriers, air barriers, and dampproofing (interior below-grade walls).
- For retrofit applications, the working area shall be isolated and negatively pressurized by using an exfiltration rate of 0.3 air changes per hour for at least one (1) day. An independent toxicological assessment determined that this ventilation rate must also be in effect for one (1) day before occupancy is permitted in the newly insulated suite.
- The sprayed material should completely cover the surfaces between the studs, joists and other framing members. The surfaces to be covered should be clean, dry, and not covered in frost, oil, grease, dust or other unsuitable material. As required in Article 9.25.2.3., Installation of Thermal Insulation, of Division B of the NBC 2010, the insulation must be installed so that there is a reasonably uniform insulating value over the entire face of the insulated area.
- The interior side of the applied semi-flexible polyurethane insulation must be covered with an approved thermal barrier as per Article 9.10.17.10., Protection of Foamed Plastics, of Division B of the NBC 2010.
- The insulation must be kept away from heat-emitting devices, such as recessed light fixtures and chimneys, at the minimum distance required by building regulations and safety codes.
- The maximum in-service temperature of the insulation must not exceed 70°C.
- The product must not be used where it may come in contact with water and must not be installed after its expiry date of six (6) months from the date of manufacture.
- The A and B components must have their respective containers (i.e., drums) identified by the phrase “CCMC 13243-R.”
- The installation procedure must follow the manufacturer’s instruction manual. A copy of the manual must be available at the job site at all times during the installation for review by the building official.

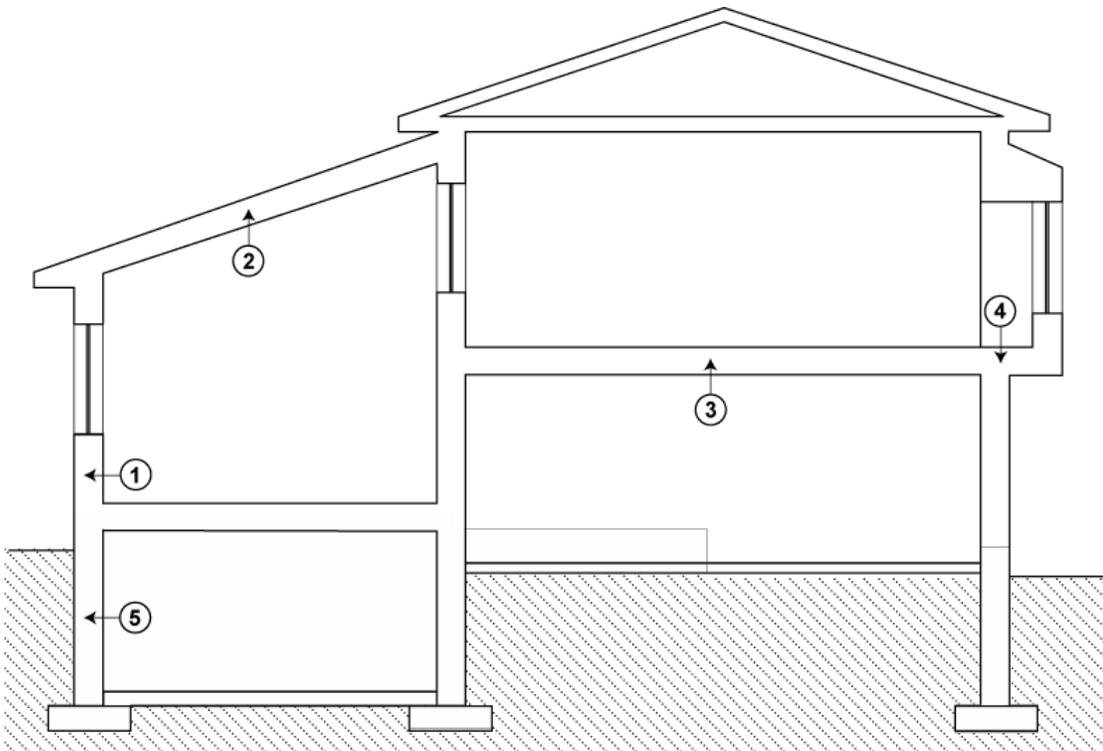


Figure 1. Application locations in open cavities of wood-frame construction:

- 1. above-grade wall**
- 2. cathedral ceiling (vented)**
- 3. floor above garage**
- 4. cantilever floor**
- 5. foundation wall**

4. Technical Evidence

The Report Holder has submitted technical documentation for CCMC's evaluation. Testing was conducted at laboratories recognized by CCMC. The corresponding technical evidence for this product is summarized below.

4.1 Performance Requirements

4.1.1 Test Results

Table 4.1.1 Test Results for "Home Foam"

Property		Unit	Requirement		Result
Density		kg/m ³	Report value		6.83
Thermal resistance at 25.4-mm thickness		m ² ·°C/W	Report value		0.66
Water vapour transmission for 50-mm thickness		ng/(Pa·s·m ²)	> 1 400		1 861 (average of 3 tests)
Water absorption		%	Report value		18.0 (average of 3 tests)
Dimensional changes when exposed to:	80°C and ambient R.H.	% volumetric	Min. -15	Max. +10	-9.1 (average of 6 tests)
	70°C and 95 ± 3% R.H.		Min. -15	Max. +14	-11.9 (average of 6 tests)
	-29°C and ambient R.H.		Min. -1	—	-0.9 (average of 6 tests)
Emissions during aging			<u>1</u>		Pass

1 The Volatile Organic Emissions (VOC) under consideration were below the detection limit after one (1) day with a room ventilation rate of 0.3 air changes per hour as per the NBC 2010. The determination of emissions and room concentration calculations were carried out by the Saskatchewan Research Council. Reported results from emissions tests indicate that the product should not pose a significant health risk to occupants of homes insulated with "Home Foam." While state-of-the-art toxicological tests and evaluations were used, such tests and their results do not purport to be conclusive with respect to the product's impact on health.

5. Other Technical Evidence

5.1 Additional Performance Data Requested by the Report Holder

5.1.1 Fire Test Results

Table 5.1.1 Fire Test Results for "Home Foam"

Property	Requirement	Result
Flame-spread rating	Report value	454
Smoke development	Report value	350

Report Holder

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