CCMC CANADIAN CODE COMPLIANCE EVALUATION

CCMC 12697-R

CCMC Canadian code compliance evaluation

CCMC number:	12697-R
Status:	Active
Issue date:	1995-09-13
Modified date:	2022-07-05
Evaluation holder:	**Huntsman Building Solutions (Canada) Inc.** 870, Curé-Boivin Boisbriand QC J7G 2A7 Canada Website: www.huntsmanbuildingsolutions.com/en-CA/ Telephone: 450-437-0123 Email: infoCanada@huntsmanbuilds.com
Product name:	SEALECTION 500®
Code compliance:	NBC 2015, OBC
Evaluation requirements:	CCMC-TG-072119.03-15A "CCMC Technical Guide for Spray-in-Place, Open-Cell Polyurethane Foam (OPF) Thermal Insulation"

In most jurisdictions this document is sufficient evidence for approval by Canadian authorities.
Learn more about CCMC recognition

Code compliance opinion

National Building Code of Canada 2015

Code provision	Solution type
9.25.2.2.(1)(g) Insulation Materials	Acceptable

Ontario Building Code

Ruling No. 95-10-29 (12697-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 2007-01-19 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.

The above opinion is based on the evaluation by the CCMC of technical evidence provided by the evaluation holder, and is bound by the stated conditions and limitations. For the benefit of the user, a summary of the technical information that forms the basis of this evaluation has been included.

Product information

Product name

SEALECTION 500®

Product description

The product is a spray-in-place, low-density, semi-flexible plastic foam that has an open-cell structure. The foaming system consists of two components, A100 isocyanate and B500 resin, which are mixed on site by a qualified installer with fixed-ratio positive displacement equipment.

Once the product has expanded the open cells contain air. The chemical reaction that occurs while the product is being installed takes place in seconds, with less than 15 minutes needed for curing. After curing, the product remains semi-flexible.

The final cured product is yellow and has a density of 8.3 kg/m^3. At a thickness of 25.4 mm, the design thermal resistance is 0.61 m^2·K/W (R3.48).

Manufacturing plant

This evaluation is valid only for products produced at the following plant:

Product name	Manufacturing plant
	Boisbriand, QC, CA
SEALECTION 500®	◈

◈ Indicates that the product from this manufacturing facility has been evaluated by the CCMC

Conditions and limitations

The CCMC's compliance opinion is bound by this product being used in accordance with the conditions and limitations set out below.

General

- The product must be applied on-site by qualified installers trained and approved by Huntsman Building Solutions (Canada) Inc.
- Calibery Quality Solutions Inc. (Caliber) [(1)] is the third-party certification organization specified by Huntsman Building Solutions (Canada) Inc. to conduct random follow-up field inspections of qualified installers who are trained to spray semi-flexible urethane-based foam insulation in accordance with the SEALECTION 500® Installer's Manual.
- The product 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 meeting the requirements of the NBC 2015:
  - exterior walls including perimeter joists;
  - cathedral ceilings with a vented air space as required by the NBC 2015;
  - 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 2015 for vapour barriers, air barriers, and dampproofing (interior below-grade walls).
- For retrofit applications, the working area must 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 2015, 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 2015.
- 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 into 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 12697-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.

Note

1	Periodic Caliber audits of the installer are conducted. In cases where the installation is deemed non-conforming and is not being remedied by the installer, Caliber will inform the owner, architect and building official of the non-conforming installation. The Caliber policy is to conduct occasional random inspections and mandatory inspections of larger projects. Building officials may contact Caliber and require an inspection for a specific job site if the building official deems it necessary

Qualified installers

This is a site-manufactured product whereby Huntsman Building Solutions (Canada) Inc. requires that only specific qualified installers be authouried to install their proprietary spray polyurethane insulation in buildings. In accordance with the Hunstman Building Solutions (Canada) Inc. site quality assurance program (SQAP), the certification organization (CO) Calibery Quality Solutions Inc. (Caliber) has been commisioned to licence the specified installers and issue them the requisite CO identificatino card. All specified installers must have a Caliber identification card.

Third-party site auditing of qualified installers

As part of their SQPA, Hunstman Building Solutions (Canada) Inc. also stipulates site audit inspections be conducted by site inspectors licenced by Caliber. Upon completeion of the site audit, Caliber will report the product's conformity results and any correct action, if necessary, to Huntsman Building Solutions (Canada) Inc. Building officials who would like site-audit inspections to be conducted on specific building sites can contact Caliber at:

Caliber Quality Solutions Inc. (Caliber)
120 Eglinton Avenue East
Suite 1000
Toronto, ON M40 1E2
Tel: 888-572-7435

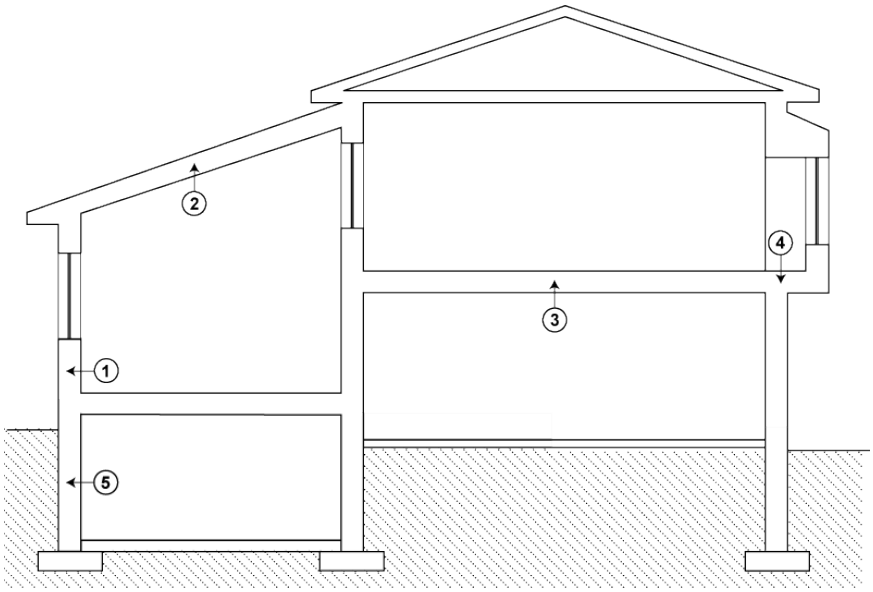

Figure 1. Application locations in wood-frame construction in open cavities

1. exterior, above-grade wall
2. cathedral ceiling (vented)
3. floor above garage

4. cantilever floor
5. interior foundation wall

Technical information

This evaluation is based on demonstrated conformance with the following criteria:

Criteria number	Criteria name
CCMC-TG-072119.03-15A	CCMC Technical Guide for Spray-in-Place, Open-Cell Polyurethane Foam (OPF) Thermal Insulation

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

Performance requirements

Table 1. Results of testing of SEALECTION 500® – Type 1, open-cell urethane

Property	Requirement	Result
Density (kg/m^3)	> 6.8	8.3
Thermal resistance at 25.4 mm thickness (m^2·K/W)	Report value	0.61
Water vapour transmission for 25 mm thickness (ng/Pa·s·m^2)	> 2 800	1 300 (1)
Water absorption (%)	Report value	50
Emissions during aging	(2)	Pass
Dimensional changes (% volumetric) when exposed for 28 days at 80ºC and ambient RH	min. -15	-4.4
Dimensional changes (% volumetric) when exposed for 28 days at 80ºC and ambient RH	max. +10	-4.4
Dimensional changes (% volumetric) when exposed for 28 days at 70ºC and 95 ± 3% RH	min. -15	-5.1
Dimensional changes (% volumetric) when exposed for 28 days at 70ºC and 95 ± 3% RH	max. +14	-5.1
Dimensional changes (% volumetric) when exposed for 28 days at -29ºC and ambient RH	min. -1	-0.5
Dimensional changes (% volumetric) when exposed for 28 days at -29ºC and ambient RH	max. —	-0.5

Notes

1 Although the water vapour transmission is below the specified target, additional testing to simulate service conditions for the service life of this proprietary product was conducted. The resulting performance was deemed acceptable.

2 The volatile organic compound (VOC) emissions 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 2015. The determination of emissions and room concentration calculations were done by the Saskatchewan Research Council. Reported results from emission tests indicate that the product would be unlikely to cause a major adverse health problem. While the testing and evaluation represent the current state-of-the-art in toxicological evaluation, such tests and their results to not purport to be conclusive with respect to the impact on health.

Additional performance data requested by the evaluation holder

Data in this section does not form part of CCMC's opinion in the Code compliance opinion section.

Fire performance

Table 2. Fire test results for SEALECTION 500® (1) (2)

Property	Requirement	Result
Flame-spread rating (3) (CAN/ULC-S102 and CAN/ULC-S127)	Report value	435
Smoke development	Report value	240

	Notes
1	The thickness of the specimens tested varied from 100 mm to 150 mm.
2	The specimens tested were not cut as per Sentence 9.10.3.2.(2), Flame-Spread Ratings, of Division B of the NBC 2015.
3	Contact Huntsman Building Solutions (Canada) Inc. for a flame-spread rating when required for code compliance.

Administrative information

Disclaimer

This evaluation is issued by the Canadian Construction Materials Centre (CCMC), a part of the Construction Research Centre at the National Research Council of Canada (NRC). The evaluation must be read in the context of the entire CCMC Registry of Product Assessments and the legislated applicable building code in effect.

The CCMC was established in 1988 on behalf of the applicable regulator (i.e., the provinces and territories) to ensure—through assessment—conformity of alternative and acceptable solutions to regional building codes as determined by the local authority having jurisdiction (AHJ) as part of the issuance of a building permit.
It is the responsibility of the local AHJs, design professionals, and specifiers to confirm that the evaluation is current and has not been withdrawn or superseded by a later issue. Please refer to the website or contact:

Canadian Construction Materials Centre
Construction Research Centre
National Research Council of Canada
1200 Montreal Road
Ottawa, Ontario, K1A 0R6
Telephone: 613-993-6189
Fax: 613-952-0268

The NRC has evaluated the material, product, system or service described herein only for those characteristics stated herein. The information and opinions in this evaluation are directed to those who have the appropriate degree of experience to use and apply its contents (i.e., AHJs, design professionals and specifiers). This evaluation is only valid when the product is installed in strict compliance with the stated conditions and limitations of evaluation and the applicable local building code. In circumstances where no applicable local building permit is issued and that no confirmation of compliance ‘for use in the intended field application’ is undertaken, this evaluation is null and void in all respects. This evaluation is provided without representation, warranty, or guarantee of any kind, expressed, or implied, and the NRC provides no endorsement for any evaluated material, product, system or service described herein. The NRC accepts no responsibility whatsoever arising in any way from any and all use and reliance on the information contained in this evaluation with respect to its compliance to the referenced code(s) and standard(s). The NRC is not undertaking to render professional or other services on behalf of any person or entity nor to perform any duty owed by any person or entity to another person or entity.

Language

Une version française de ce document est disponible.
In the case of any discrepancy between the English and French version of this document, the English version shall prevail.

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CCMC recognition

The Canadian Construction Materials Centre (CCMC) assesses compliance with Canadian building, energy and safety codes. We are the only construction code compliance service supported and operated by the Government of Canada. Trusted by over 6,000 regulators across Canada.

> Most Canadian authorities having jurisdiction (AHJs) consider CCMC product assessments acceptable as evidence for product approval.

CCMC assessments are recognized by construction authorities across Canada:

Alliance of Canadian Building Official Associations (ACBOA)	(Alliance of Canadian Building Official Associations (ACBOA))
First Nations National Building Officers Association (FNNBOA)	(First Nations National Building Officers Association (FNNBOA))
Canadian Home Builders' Association (CHBA)	(Canadian Home Builders' Association (CHBA))
Alberta Building Officials Association (ABOA)	(Alberta Building Officials Associations (ABOA))
Saskatchewan Building Officials Association (SBOA)	(Saskatchewan Building Officials Association (SBOA))
Manitoba Building Officials Association (MBOA)	(Manitoba Building Officials Association (MBOA))
Ontario Building Officials Association (OBOA)	(Ontario Building Officials Association (OBOA))
New Brunswick Building Officials Association (NBBOA)	(New Brunswick Building Officials Association (NBBOA))
Nova Scotia Building Officials Association (NSBOA)	(Nova Scotia Building Officials Association (NSBOA))

The CCMC provides code compliance assessments to Canadian code requirements, consulting nationwide with construction regulators to elicit regional variations in code requirements as well as provincial and local interpretations. Users are advised to review the technical information presented in CCMC assessments when making approval decisions. Learn more about how the CCMC provides a unique service for Canada.

For more information, contact the CCMC by phone at (613) 993-6189 or by email at ccmc@nrc-cnrc.gc.ca

Code compliance as an acceptable solution

Code Compliance via Acceptable Solutions

> If a building design (e.g. material, component, assembly or system) can be shown to meet all provisions of the applicable **acceptable solutions** in Division B (e.g. it complies with the applicable provisions of a referenced standard), it is deemed to have satisfied the objectives and functional statements linked to those provisions and thus to have complied with that part of the Code.
>
> — **National Building Code of Canada, Sentence A-1.2.1.1.(1)(a)**

The CCMC has determined that compliance with this provision of the Code has been demonstrated as an **Acceptable Solution**. The evaluation report provides a summary of the basis of CCMC's compliance opinion.

CCMC's code compliance opinions

All CCMC evaluation reports are opinions of code compliance established in accordance with the National Building Code of Canada, Subsection 1.2.1. "Compliance with this Code," which requires compliance to be achieved by:

- complying with the applicable acceptable solutions in Division B, or
- using an alternative solution that will achieve at least the minimum level of performance required by Division B in the areas defined by the objective and functional statements attributed to the applicable acceptable solutions.

The CCMC assesses compliance with Canadian building, energy and safety codes, and is trusted by over 6,000 regulators across Canada.

Code compliance as an alternative solution

Code Compliance via Alternative Solutions

> Where a design differs from the acceptable solutions in Division B, then it should be treated as an "**alternative solution**." A proponent of an alternative solution must demonstrate that the alternative solution addresses the same issues as the applicable acceptable solutions in Division B and their attributed objectives and functional statements. However, because the objectives and functional statements are entirely qualitative, demonstrating compliance with them in isolation is not possible. Therefore, Clause 1.2.1.1.(1)(b) identifies the principle that Division B establishes the quantitative performance targets that alternative solutions must meet. In many cases, these targets are not defined very precisely by the acceptable solutions [...] Nevertheless, Clause 1.2.1.1.(1)(b) makes it clear that an effort must be made to demonstrate that an alternative solution will perform as well as a design that would satisfy the applicable acceptable solutions in Division B—not “well enough” but “as well as.”
>
> — **National Building Code of Canada, Sentence A-1.2.1.1.(1)(b)**

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