



Evaluation Listing CCMC 13593-L ICYNENE MD-C-200™-v2

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1. Evaluation

The product conforms to CAN/ULC-S705.1-01 including Amendments 1 and 2. The product's classification, minimum field density, long-term thermal resistance (LTTR), water vapour permeance (WVP) and the time to occupancy values are provided in Table 1.1.

Table 1.1 Classification, Field Density, LTTR, WVP and Time to Occupancy Specifications for the Product

Product	Classification	Minimum Field Density ¹ (kg/m ³) [lb/ft ³]	50 mm Design LTTR (m ² °C/W)	50 mm WVP ² (ng/(Pa·s·m ²))	Time to Occupancy ³ (day)
ICYNENE MD-C-200™-v2	Type 1	35.7 [2.23]	1.93	56	1

Notes to Table 1.1:

1. Based on the qualification testing to CAN/ULC-S705.1, the specified minimum field density must comply with CAN/ULC-S705.1, as measured on-site in accordance with CAN/ULC-S705.2.
2. The water vapour permeance (WVP) is determined from a core sample with the skin removed. In the field installed product the WVP at this thickness would be lower due to the effect of the skins.
3. For retrofit constructions the time to occupancy is one (1) day when installed with the requisite ventilation of the segregated retrofit area as per CAN/ULC-S705.2. See Table 1, Note 3 in the Annex for further details.

2. Description

The product is a closed cell, spray-applied rigid polyurethane foam of medium density. The foam system consists of two components that must be labelled as follows along with "CCMC 13593-L":

- Isocyanate (Component A): Base Seal[®] isocyanate; and
- Resin (Component B): ICYNENE MD-C-200™-v2 resin.

The two components are mixed on-site by an Icynene's qualified installer (see Section 3.1) with fixed ratio positive displacement equipment. The colour of the installed final cured product is platinum.

3. Standard and Regulatory Information

See the Annex appended to this Listing, which summarizes the product standard.

This product was evaluated to the product standard referenced in the Annex current as of 2011-04-13. Note that the Annex may have been updated since this Listing was issued to include more recent editions of the applicable product standard. Therefore, this Listing may not reflect the requirements contained in any updated version of this product standard.

3.1 Qualified Installers

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

3.2 Third-party Field Auditing of Qualified Installers

Icynene Inc., as part of their SQAP, also stipulates site audit inspections be conducted by site inspectors licensed by Caliber. Upon completion of the site audit of the specified installers, Caliber will report the product's conformity results and any corrective action required, if necessary, to Icynene Inc. Building officials who would like site-audit inspections to be conducted on specific building sites can contact Caliber at:

Caliber Quality Solutions Inc., delivering Morrison Hershfield QAP
Suite 1000, 120 Eglinton Ave. East
Toronto, ON M4P 1E2

Telephone: 888-572-7435

Listing Holder

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Telephone: 877-636-2648

Email: inquiry@icynene.com

Web site: www.icynene.com

Site – Finished Product

The foam insulation is a site-manufactured product.

Plant – Raw Materials

Mississauga, ON

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2018-03-27



Spray-Applied Rigid Polyurethane Foam Insulation, Medium Density [Annex]

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Scope

These Evaluation Listings apply to spray-applied rigid polyurethane foam, medium density, intended for use as thermal insulation for both building and non-building applications, whether applied on a building site or in a prefabrication (manufacturing) process. This material is also known as foamed in-situ insulation. The continuous-use temperature is within the range -60°C to $+80^{\circ}\text{C}$.

The proponent has demonstrated that the product meets the following standard (see Table 1 for the performance requirements):

- CAN/ULC-S705.1-01 (including Amendments 1 and 2), “Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Material – Specification”; or
- CAN/ULC-S705.1-01 (including Amendments 1, 2 and 3), “Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Material – Specification.”

Spray-applied rigid polyurethane foam, medium density, must be installed by a licensed installer in accordance with the manufacturer’s instructions and the following standard:

- CAN/ULC-S705.2-05, “Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Application.”

For compliance to CAN/ULC-S705.2, users should contact the third-party organization that has been identified by the foam manufacturer as the third party operating the field quality assurance program (FQAP) for the foam product (see product listing).

Standard

Table 1. Technical Requirements for Physical Properties

Property	Unit	Requirement	
		Minimum	Maximum
Air permeance (mandatory material testing)	L/s @ 75 Pa	No min.	0.02
Air permeance (optional system testing)	L/s @ 75 Pa	No min.	0.05
Apparent core density	kg/m ³	28	No max.
Compressive strength	kPa	170	No max.
Dimensional stability volume change at:	-20°C	%	No min. -1
	80°C	%	-1 8
	70°C, 97 ± 3% RH	%	No min. 14
Surface burning characteristics – flame spread	–	No min.	500 ¹
Open-cell content volume	%	No min.	8
Initial thermal resistance of a 50-mm-thick specimen after 3 days at 23 ± 2°C	m ² ·°C/W	2.5	No max.
Conditioned thermal resistance of a 50-mm-thick specimen after:	180 days at 23 ± 2°C, or	m ² ·°C/W	Declare ² No max.
	90 days at 60 ± 2°C		
Long-term thermal resistance of a 50-mm-thick specimen – Type 1	m ² ·°C/W	1.8	No max.
Long-term thermal resistance of a 50-mm-thick specimen – Type 2	m ² ·°C/W	2.0	No max.
Tensile strength	kPa	200	No max.
Volatile organic emissions	–	Pass ³	No max.
Water absorption by volume	%	No min.	4
Water vapour permeance of a 50-mm-thick specimen	ng/(Pa·s·m ²)	No min.	60

Notes to Table 1:

- ¹ Results are valid for qualification to the standard. As noted in the standard, “for building code purposes, the flame-spread rating shall be conducted in accordance with the code-specified flame-spread test details with respect to the number of specimens to be tested, specimens tested intact and cut specimens.”
- ² This requirement is only referenced in CAN/ULC-S705.1-01 (with Amendments 1 and 2).
- ³ “Pass” means that after 30 days the volatile compound emissions do not exceed the maximum indoor air concentration stated in Table 2 of CAN/ULC-S705.1. In cases of retrofit construction (e.g., occupied buildings), CAN/ULC-S705.2 requires that the ventilation rate be no less than 0.3 air changes per hour within the working area during the application of the product and that the working area be isolated during spraying. The same ventilation rate is required after the product has been sprayed and for the time period determined in accordance with CAN/ULC-S705.1. See the product listing for the time period required before occupancy.

Labelling

In compliance with CAN/ULC-S705.1-01 (with Amendments 1 and 2), each liquid component container must be identified as either the polyisocyanate component (“A”) or the resin component (“B”). Unless otherwise specified, each container must be marked with the following information:

- manufacturer’s name;
- product name;
- type of material (e.g., insulation);
- net mass of the contents of the packaged material;
- country of manufacture;
- lot number;
- date of manufacture;
- “use before” date;
- the means to identify the installed product; and
- the phrase “CAN/ULC-S705.1” indicating conformance to the standard.

In compliance with CAN/ULC-S705.1-01 (with Amendments 1, 2 and 3), each liquid component container must be identified as either the polymeric isocyanate component (“A”) or the resin component (“B”). The polymeric isocyanate component must be marked with the following information:

- manufacturer’s name;
- product name;
- type of material (e.g., insulation);
- net mass of the contents of the packaged material;
- country of manufacture;
- lot number; and
- date of manufacture.

The resin component must be marked with the following information:

- manufacturer’s name;
- product name;
- type of material (e.g., insulation);
- net mass of the contents of the packaged material;
- country of manufacture;
- lot number;
- date of manufacture;
- “use before” date;
- the means to identify the installed product;
- the phrase “CAN/ULC-S705.1” indicating conformance to the standard; and
- LTTR (50 mm) RSI result.

National Building Code of Canada (NBC)

NBC References

CAN/ULC-S705.1-01 is referenced in Table 5.10.1.1. and Clause 9.25.2.2.(1)(g) of Division B of the NBC 2010.

CAN/ULC-S705.2-05 is referenced in Sentence 5.3.1.3.(3), Table 5.10.1.1., and Sentence 9.25.2.5.(1) of Division B of the NBC 2010.