



Evaluation Listing CCMC 13555-L SWD Quik-Shield 112

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Evaluation issued:	2011-12-16
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Revised:	2018-07-17

1. Evaluation

The product conforms to CAN/ULC-S705.1-01 (including Amendments 1 and 2), Type 1.

For retrofit constructions, the time period before occupancy is one (1) day.

2. Description

The product is spray-applied rigid polyurethane foam of medium density. The foam system consists of two components: “SWD Quik-Shield 112-A” isocyanate and “SWD Quik-Shield 112-B” resin. The two components are mixed on-site by a qualified installer with fixed-ratio positive displacement equipment.

The colour of the final cured product is pearl gray.

The long-term thermal resistance (LTTR) for 50 mm is RSI 1.83.

3. Standard and Regulatory Information

Morrison Hershfield has been identified by SWD Urethane Company as the third-party organization that operates the field quality assurance program (FQAP) for the products in accordance with CAN/ULC-S705.2-05.

Morrison Hershfield can be contacted at 416-499-3110, ext. 1477.

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

This/these product(s) was/were 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.

Listing Holder

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2016-03-17



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

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Scope

These Evaluation Listings apply to spray-applied, rigid polyurethane foam of 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 of -60°C to $+80^{\circ}\text{C}$.

The proponent has demonstrated that the product meets the following standards (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;”
- CAN/ULC-S705.1-01 (including Amendments 1, 2 and 3), “Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Material – Specification;” or
- CAN/ULC-S705.1-15, “Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Material Specification.”

Spray-applied, rigid polyurethane foam of 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 site quality assurance program (SQAP) for the foam product (see product Listing).

Standard

Table 1. Technical Requirements for Physical Properties

Property	Unit	Requirement for CAN/ULC-S705.1-01		Requirement for CAN/ULC-S705.1-15		
		Minimum	Maximum	Minimum	Maximum	
Air permeance (mandatory material testing)	L/s @ 75 Pa	No min.	0.02	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.	28	No max.	
Compressive strength	kPa	170	No max.	170	No max.	
Dimensional stability volume change at:	–20°C	%	No min.	–1	–2	5
	80°C	%	–1	8	–2	8
	70°C, 97 ± 3% RH	%	No min.	14	–2	14
Surface burning characteristics – flame spread rating	–	No min.	500 ⁽¹⁾	No min.	500 ⁽¹⁾	
Fungi resistance	–	–	–	No growth	–	
Open-cell content volume	%	No min.	8	No min.	10	
Initial thermal resistance of a 50-mm-thick specimen after 3 days at 23 ± 2°C	m ² ·°C/W	Declare	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 (LTTR) ⁽⁴⁾ of a 50-mm-thick specimen –	Type 1	m ² ·°C/W	1.8	No max.	–	–
	Type 2		2.0			
Long-term thermal resistance (LTTR) ⁽⁴⁾ of a 50-mm-thick specimen at	25-mm-thick	m ² ·°C/W	–	–	Declare	No max.
	50-mm-thick				1.80	
	75-mm-thick				Declare	
Tensile strength	kPa	200	No max.	200	No max.	
Volatile organic emissions	–	Pass ⁽³⁾	–	–	–	
Volatile organic emissions (time-to-occupancy)	d - days	–	–	No min.	30	
Water absorption by volume	%	No min.	4	No min.	4	
Water vapour permeance of a 50-mm-thick specimen	ng/(Pa·s·m ²)	No min.	60	No min.	60	

Notes to Table 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.”
- This requirement is only referenced in CAN/ULC-S705.1-01 (including Amendments 1 and 2).
- “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.
- The LTTR determined in accordance with CAN/ULC-S770-09, “Determination of Long-Term Thermal Resistance of Closed-Cell Thermal Insulating Foams,” which is referenced in CAN/ULC-S705.1-15, is a more complex procedure than CAN/ULC-S770-03, which is an earlier version referenced in CAN/ULC-S705.1-01. Therefore, results may differ for the same spray polyurethane product obtained from both test methods.

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.

In compliance with CAN/ULC-S705.1-15, 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:

- supplier’s name;
- material name;
- type of material (e.g., closed cell spray applied medium density);
- net mass of the contents of the containers;
- country of manufacturer; and
- lot number.

The resin component must be marked with the following information:

- supplier’s name;
- material name;
- type of material (e.g., closed cell spray applied medium density);
- net mass of the contents of the containers;
- manufacturing location;
- lot number;
- date of manufacture;
- expiry date;
- means to identify the installed material;
- CAN/ULC-S705.1;
- LTTR (50 mm) RSI X.XX; and
- The statement “required to be installed according to CAN/ULC-S705.2.”

National Building Code (NBC) of Canada

NBC 2015 References

CAN/ULC-S705.1-01 (including Amendment 1, 2 and 3) is referenced in Table 5.9.1.1., Sentence 9.25.2.2.(1) and Table A-9.36.2.4.(1)-D of Division B of the NBC 2015.

CAN/ULC-S705.2-05 is referenced in Table 5.9.1.1., and Sentence 9.25.2.5.(1) of Division B of the NBC 2015.

NBC 2010 References

CAN/ULC-S705.1-01 (including Amendment 1 and 2) is referenced in Table 5.10.1.1. and Clause 9.25.2.2.(1)(g) of Division B of the NBC 2010 (Revisions and Errata released on December 21, 2012).

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.