Evaluation Report CCMC 13544-R
Haven® Insulated Siding

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1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that "Haven® Insulated Siding," when used as an exterior siding for buildings of combustible construction in accordance with the conditions and limitations stated in Section 3 of this Report, complies with the National Building Code (NBC) of Canada 2015:

- Clause 1.2.1.1.(1)(a) of Division A, using the following acceptable solutions from Division B:
  - Article 9.25.2.2., Insulation Materials
- Clause 1.2.1.1.(1)(b) of 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:
  - Subsection 9.27.12., Vinyl Siding

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

2. Description

The product is a vinyl siding manufactured in various model profiles with an expanded polystyrene (EPS) thermal insulation backing (see Figure 1). The EPS is glued and contoured to the back of the siding profile.

The following is a list of the models evaluated under CCMC 13544-R:

- D10BBIP - Double 10" Board and Batten Insulated Siding,
- HAVBB10 - Double 10" Board and Batten Insulated Siding,
- HAVD612/616 - Double 6" Insulated Siding,
- HAVD7 - Double 7" Insulated Siding,
- TMD7IP/16I - Double 7" Insulated Siding,
- TMQ45IP - Quad 4.5" Dutch lap Insulated Siding,
- TMQ4IP - Quad 4" Insulated Siding, and
- TMT6IP/616I - Triple 6" Insulated Siding.

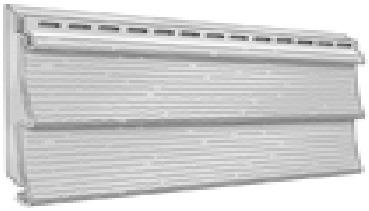

Figure 1. "Haven® Insulated Siding"

3. Conditions and Limitations

CCMC's compliance opinion in Section 1 is bound by the "Haven® Insulated Siding" being used in accordance with the conditions and limitations set out below.

- The siding panels must be installed on furring to provide a second line of defence that consists of a continuous, clear, uninterrupted air space of 19 mm outboard of the sheathing membrane.
- The furring must be installed over a sheathing membrane that meets the requirements of Article 9.27.3.2., Sheathing Membrane Material Standard, of Division B of the NBC 2015.
- In order to drain water to the outside, the system requires flashing at locations specified in Article 9.27.3.8., Flashing Installation, of Division B of the NBC 2015.
- Sealants used in conjunction with the product must meet the requirements of Subsection 9.27.4., Sealants, of Division B of the NBC 2015.
- In order to attach the cladding, the furring must be
  - not less than 19 mm × 38 mm;
  - securely nailed to the framing; and
  - spaced not more than 600 mm on centre in accordance with Article 9.27.5.3., Furring, of Division B of the NBC 2015.
- The product or its packaging must be clearly identified with the phrase "CCMC 13544-R."
- In addition to the above requirements, the product and its accessories must be installed in accordance with the manufacturer's installation manual dated June 2011.

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 Material Requirements

Table 4.1.1 Results of Testing of Component Requirements for the Product

Component	Requirement	Result
Thermal insulation	CAN/ULC-S701-11, "Thermal Insulation, Polystyrene, Boards and Pipe Covering"	Meets CAN/ULC-S701
Vinyl siding	CAN/CGSB-41.24-95, "Rigid Vinyl Siding, Soffits and Fascia"	Meets CAN/CGSB-41.24

4.2 Performance Requirements

4.2.1 Wind Load Resistance Requirements

Table 4.2.1.1 Results of Testing of Wind Load Resistance Requirements for the Product

Test	Model	Requirement[(1),(2),(3)]	Result
Deformation under sustained load	**HAVD7, TMD7IP/16I, TMT6IP/616I**	No damage observed after a sustained pressure for 1 hour at a maximum pressure of ± 850 Pa.	Q_{50} < 0.85 kPa
	D10BBIP, HAVBB10, HAVD612/616, TMQ4IP, TMQ45IP	No damage observed after a sustained pressure for 1 hour at a maximum pressure of ± 450 Pa.	Q_{50} < 0.45 kPa
Cyclic loading	**HAVD7, TMD7IP/16I, TMT6IP/616I**	No damage observed after 2 000 cycles reversing from positive to negative pressures at a maximum of ± 1 240 Pa.	Q_{50} < 0.85 kPa
	D10BBIP, HAVBB10, HAVD612/616, TMQ4IP, TMQ45IP	No damage observed after 2 000 cycles reversing from positive to negative pressures at a maximum of ± 660 Pa.	Q_{50} < 0.45 kPa
Safety (gust loads)	**HAVD7, TMD7IP/16I, TMT6IP/616I**	No damage observed after a maximum applied pressure of ± 1 850 Pa for 3 seconds.	Q_{50} < 0.85 kPa
	D10BBIP, HAVBB10, HAVD612/616, TMQ4IP, TMQ45IP	No damage observed after a maximum applied pressure of ± 980 Pa for 3 seconds.	Q_{50} < 0.45 kPa

Note to Table 4.2.1.1:

(1) Q_{50} represents the 1-in-50 probability of the designated wind speed being exceeded in any given year. Geographical areas and their corresponding reference wind velocity pressures are indexed in the NBC 2015.

(2) The table is generally intended for non-post-disaster low-rise buildings that have a height from grade to the uppermost roof of 12 m or less, and are located within a build-up area, no less than 120 m away from the boundary between this area and open terrain, including bodies of water upwind of the building.

(3) The table did not take into account the site-specific topographic factor Ct, where Ct = 1.0, except for buildings that are constructed on hills or escarpments with a slope defined in Article 4.1.7.4., Topographic Factor, of the NBC 2015. For buildings constructed on hills and escarpments, anticipated wind pressures may be greater.

4.2.2 Maximum Wind Pressures for Deflection Measurements

Test requirements were established based on hourly wind pressures that are associated with designated geographical areas. Q_{10} represents the 1-in-10 probability of the calculated wind speed being exceeded in any given year. Geographical areas and their corresponding hourly wind pressures are indexed in Table C2 of Division B of the NBC 2015.

Table 4.2.2.1 Results of Testing of Deflection Measurements for the Product

Product Profile	Hourly Wind Pressure	Test Wind Pressure (Pa)[(1)]	Maximum Deflection (mm)[(2)]
TMT6IP/616I	$Q_{10} \leq 0.80$ kPa	+2 640	41.9
		−2 640	97.8
HAVD7, TMD7IP/16I	$Q_{10} \leq 0.80$ kPa	+2 640	35.1
		−2 640	75.7
TMQ45IP	$Q_{10} \leq 0.40$ kPa	+1 320	14.0
		−1 320	30.0
TMQ4IP	$Q_{10} \leq 0.40$ kPa	+1 320	14.7
		−1 320	58.7
HAVD612/616	$Q_{10} \leq 0.40$ kPa	+1 320	24.9
		−1 320	32.0
D10BBIP, HAVBB10	$Q_{10} \leq 0.40$ kPa	+1 320	25.9
		−1 320	37.1

Notes to Table 4.2.2.1:

(1) The specimen was loaded for a minimum of 10 seconds for both positive and negative pressures.

(2) Deflections were measured at various locations on the specimen. None of the specimens came off the test wall.

5. Other Technical Evidence

5.1 Additional Performance Data Requested by the Report Holder

Data in this section does not form part of CCMC's opinion in Section 1.

5.1.1 Fire Performance

Table 5.1.1.1 Results of Testing of Fire Performance for the Product[(1),(2)]

Property	Requirement	Result
Flame-spread rating	Report value	40
Smoke development	Report value	440

Notes to Table 5.1.1.1:

(1) The specimens tested were from the series/model "TMT6IP/616I."

(2) Testing was conducted in accordance with CAN/ULC-S102.2, "Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous Materials and Assemblies." A series of three runs were conducted for each test.

Report Holder

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