



Evaluation Report CCMC 14323-R ChamClad® Siding

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1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that “ChamClad® Siding,” when used as an exterior cladding 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:
 - Subsection 9.27.2., Required Protection from Precipitation
 - Subsection 9.27.3., Second Plane of Protection
- 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:
 - Article 9.27.12., Vinyl Siding

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

2. Description

The wall cladding profile is 152 mm wide (overall width 190 mm including a nailing flange) and 3658 mm long and made of heavy gauge polyvinyl chloride (PVC) and coated with a PVC film designed for exterior applications. The profiles are tongue and groove, and fastened to the building structure through pre-punched nailing slots located along the top edge of the profiles, which are concealed after the upper profile is installed. Accessories including finish trim, starter strip and exterior outside corner are also made of heavy gauge PVC.

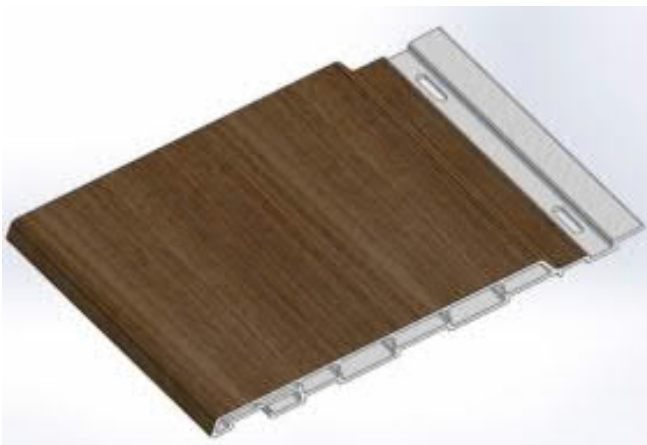


Figure 1. “ChamClad® Siding”

3. Conditions and Limitations

The CCMC compliance opinion in Section 1 is bound by the “ChamClad® Siding” being used in accordance with the conditions and limitations set out below:

- The products are limited to use as exterior cladding for the buildings falling within the scope of Part 9, Housing and Small Buildings, of Division B of the NBC 2015.
- The siding panels must be installed on furring providing a second plane of protection that consists of a continuous, clear, uninterrupted vented air space of not less than 10 mm outboard of the sheathing membrane.
- The furring must be installed over the sheathing membrane.
- The system requires flashing at appropriate locations in order to drain water to the outside.
- Furring for the attachment of the cladding must not be less than 19 mm × 38 mm, securely nailed to the sheathing or framing, and spaced not more than 406 mm on centre (o.c.).
 - The product must be clearly identified with the phrase “CCMC 14323-R” on its packaging.

4. Technical Evidence

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

4.1 Material Requirements

4.1.1 Physical Properties

Table 4.1.1.1 Results of Testing the Physical Properties of the Product

Property	Unit	Requirement	Result	
Thermal expansion	°C ⁻¹	≤ 8.1 × 10 ⁻⁵	5.9 × 10 ⁻⁵	Pass
Flammability	-	Compound shall not exceed an average extent of burning of 25 mm, and the average time of burn shall not exceed 10 s	Pass	
Shrinkage – siding	%	≤ 3%	0.2	Pass
Shrinkage – finish trim			0.1	Pass
Shrinkage – starter strip			0.1	Pass
Shrinkage – exterior outside corner			0.1	Pass
Warp	mm	≤ 3	0.3	Pass
Impact resistance	J	≥ 6.3 J at 23°C and ≥ 4.8 J at 0°C	Pass	
Surface distortion	-	Free from bulges, waves or ripples	Pass	
Flexural strength ⁽¹⁾	MPa	Report value	22.5	–
Loss of flexural strength following soaking	%	≤ 25	8	Pass
Thickness	mm	Face ≥ 0.7 mm	1.81	Pass
		Nail slots ≥ 0.9 mm	1.72	Pass

Note to Table 4.1.1.1:

- (1) Test flexural strength properties of panel specimens after wet conditioning (2-hour soak), following soaking in boiling water for 2 hours and soaking in 25°C water for 30 days.

4.1.2 Dimensional Tolerance

Table 4.1.2.1 Results of Testing the Dimensional Tolerance Requirements of the Product

Property	Unit	Requirement	Result	
Length	mm	± 3.0	+ 1.0	Pass
Width	mm	± 3.0	- 1.0	Pass
Overall thickness	mm	± 1.6	+ 0.3	Pass
Squareness	mm	± 4.0	- 1.0	Pass
Skew	mm/m	≤ 1.3 of length	0	Pass
Edge straightness	mm/m	≤ 1.3 of length and width	+ 0.4	Pass

4.2 Performance Requirements

4.2.1 Cladding Performance

Table 4.2.1.1 Results of Testing the Cladding Performance of the Product

Property	Unit	Requirement	Result	
Acid rain resistance	-	The surface shall not have any defects or occurrences of new voids	Pass	
Residual hardness following acid rain exposure	%	Hardness of the panels after acid rain exposure shall not be less than 80% of the unexposed value	101	Pass
Durability ⁽¹⁾	-	The durability of the cladding is assessed by observing changes in appearance (e.g., cracking, crazing)	Pass	
Loss of flexural strength following durability exposure	%	≤ 25	2.2	Pass
Accelerated weathering resistance	-	No visual surface or physical changes such as cracking, flaking or any other deleterious effects after 2 000 h of UV exposure	Pass	

Note to Table 4.2.1.1:

- (1) The durability test was performed on a back-up wall consisting of 38 mm × 140 mm (2 in. x 6 in.) wood studs and 10.5 mm oriented strandboard (OSB) sheathing. The spacing between each stud section was 406 mm o.c. unless otherwise required to accommodate the sheathing joint locations. Along the studs, wood furring strips of dimension 19 mm × 38 mm were installed and fastened using 63 mm long nails at 200 mm o.c. spacing. Each siding panel was installed by using No. 8 50.8 mm long hot galvanized screws at 406 mm o.c. and on furring strips.

4.2.2 Wind Load Resistance

Table 4.2.2.1 Results of Testing the Wind Load Resistance ⁽¹⁾⁽²⁾ of the Product at $Q_{1/50} < 0.85$ kPa

Property	Requirement	Result
Deformation (sustained pressure)	No fracture or permanent deformation after sustained pressure of 850 Pa for 1 h	Pass
Repeated positive and negative pressure test (cyclic pressure), 2 000 cycles	No fracture or permanent deformation after the cyclic pressure 1 240 Pa	Pass
Safety test (gust loads)	Resist wind gusts to 1 850 Pa	Pass

Note to Table 4.2.2.1:

- (1) The wind load resistance test was performed on a back-up wall consisting of 38 mm × 140 mm (2 in. x 6 in.) wood studs and 10.5 mm OSB sheathing. The spacing between each stud section was 406 mm o.c. unless otherwise required to accommodate the sheathing joint locations. Along the studs, wood furring strips of dimension 19 mm × 38 mm were installed and fastened using

63 mm long nails at 200 mm o.c. spacing. Each siding panel was installed by using No. 8 50.8 mm long hot galvanized screws at 406 mm o.c. and on furring strips.

(2) The performance level shown in the table is for installations limited to non-post-disaster buildings.

4.3 Additional Performance Data

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

4.3.1 Fire Performance

Table 4.3.1.1 Results of Testing of Fire Performance for the Product ⁽¹⁾

Property	Test Method	Result
Flame-spread rating ⁽²⁾	CAN/ULC-S102:2018	75
Smoke developed classification ⁽²⁾	CAN/ULC-S102:2018	> 600 (estimated) ⁽³⁾

Notes to Table 4.3.1.1:

- (1) Siding specimens were tested.
- (2) Based on Element Test Report# 20-002-009 (issued January 14, 2020).
- (3) Please refer to section 7.1 on page#3 of Element Test Report# 20-002-009 (issued January 14, 2020) for details.

Report Holder

ChamClad / A division of Chameleon Wrapping and Lamination Ltd
10235 184 St NW
Edmonton, AB T5S 2J4

Telephone: 780 454 4430

Email: accounts@chamclad.com

Web site: www.chamclad.com

Plant(s)

Edmonton, AB

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