

CCMC 14323-R

CCMC Canadian code compliance evaluation

CCMC number:	14323-R
Status:	Active
Issue date:	2020-08-19
Modified date:	2024-03-14
Evaluation holder:	<p>ChamClad, a division of Chameleon Wrapping and Lamination Ltd.</p> <p>10235 184 St NW Edmonton AB T5S 2J4 Canada Website: chamclad.com Telephone: 780 454 4430 Email: info@chamclad.com</p>
Product name:	ChamClad® Siding
Compliance:	NBC 2015
Criteria:	CCMC-TG-074633.07-15, "CCMC Technical Guide for Heavy Gage PVC Siding"

In most jurisdictions this document is sufficient evidence for approval by Canadian authorities.

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Compliance opinion

National Building Code of Canada 2015

Code provision	Solution type
9.27.2. Required Protection from Precipitation	<u>Acceptable</u>
9.27.3. Second Plane of Protection	<u>Acceptable</u>
9.27.12. Vinyl Siding	<u>Alternative</u>

The above opinion(s) is/are 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

ChamClad® Siding

Product description

The wall cladding profile is 152 mm wide (overall width 190 mm including a nailing flange) and 3 658 mm long, 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.

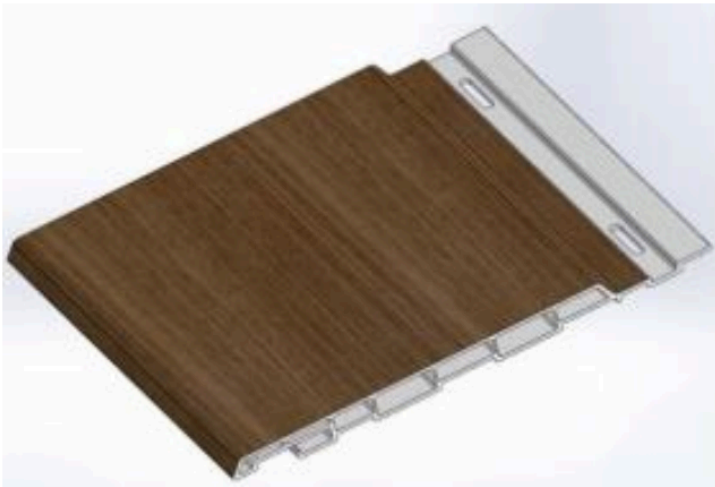


Figure 1. ChamClad® Siding

Manufacturing plant

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

Product name	Manufacturing plant
	Edmonton, AB, CA
ChamClad® Siding	☑

☑ 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.

- The products are limited to use as exterior siding for the buildings falling within the scope of Part 9, Housing and Small Buildings, of Division B of the NBC 2015.
- When installed, all the building elements relevant to the product must comply with the requirements 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.

Technical information

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

Criteria number	Criteria name
CCMC-TG-074633.07-15	CCMC Technical Guide for Heavy Gage PVC Siding

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.

Material requirements

Physical properties

Table 1. Results of testing the physical properties of the product

Property	Unit	Requirement	Result	
Thermal expansion	°C ⁻¹	$\leq 8.1 \times 10^{-5}$	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	%	$\leq 3\%$	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

- 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.

Dimensional tolerance

Table 2. 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

Performance requirements

Cladding performance

Table 3. 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

- 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 dimensions 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.

Wind load resistance

Table 4. 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

Notes

- 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 dimensions 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.

Additional performance data

Data in this section does not form part of the CCMC's opinion in the [code compliance opinion](#).

Fire performance

Table 5. Results of testing the fire performance of 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

- 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.

Administrative information

Use of Canadian Construction Materials Centre (CCMC) assessments

This assessment must be read in the context of the entire [CCMC Registry of Product Assessments](#), any applicable building code or by-law requirements, and/or any other regulatory requirements (for example, the [Canada Consumer Product Safety Act](#), the [Canadian Environmental Protection Act](#), etc.).

It is the responsibility of the user to confirm that the assessment they are using is current and has not been withdrawn or superseded by a later version on the [CCMC Registry of Product Assessments](#).

Disclaimer

The National Research Council of Canada (NRC) has evaluated only the characteristics of the specific product described 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 (such as authorities having jurisdiction, design professionals and specifiers). This evaluation is valid when the product is used as part of permitted construction, respecting all conditions and limitations stated in the evaluation, and in accordance with applicable building codes and by-laws.

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Language

Une version française de ce document est disponible.

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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)



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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

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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)

The CCMC has determined that compliance with this provision of the Code has been demonstrated as an **Alternative 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:

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