CCMC CANADIAN CODE COMPLIANCE EVALUATION

CCMC EVALUATION

CCMC 14114-R

CCMC Canadian code compliance evaluation

CCMC number:	14114-R
Status:	Active
Issue date:	2018-11-27
Modified date:	2024-07-15
Evaluation holder:	**Universal Consumer Products** 2801 East Beltline Avenue NE Grand Rapids MI 49525 United States Website: www.ufpi.com Telephone: 616-364-6161 Email: deckoratorscs@ufpi.com
Product name:	Veranda Wood/Plastic Composite Deck Board
Compliance:	NBC 2010, OBC
Criteria:	CCMC-TG-067314.01-10, "CCMC Technical Guide for Wood Thermoplastic Composite Lumber Exterior Decking"

In most jurisdictions this document is sufficient evidence for approval by Canadian authorities.
Learn more about CCMC recognition Look for the trusted CCMC mark on products to verify compliance.

Compliance opinion

It is the opinion of the Canadian Construction Materials Centre that the evaluated product, when used as exterior decking and stair treads in accordance with the conditions and limitations stated in this evaluation, complies with the following code:

National Building Code of Canada 2010

Code provision	Solution type
9.3.2.9. Termite and Decay Protection	Alternative
9.4.2. Specified Loads	Alternative
9.4.3.1. Deflections	Alternative
9.8.9.1. Loads on Stairs and Ramps	Alternative
9.23.15.5. Subfloor Thickness or Rating	Alternative

Ontario Building Code

Ruling No. 24-03-377 (14114-R) authorizing the use of this product in Ontario, subject to the terms and conditions contained in the Ruling, was made by the Minister of Municipal Affairs and Housing on 2024-07-15 pursuant to s.29 of the Building Code Act, 1992 (see Ruling for terms and conditions). This Ruling is subject to periodic revisions and updates.

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

Veranda Wood/Plastic Composite Deck Board

Product description

The products are solid deck boards intended for use as exterior decking installed over traditional structural wood framing (see Figure 1, Figure 2 and Figure 3). Comprised of a wood, thermoplastic composite made primarily from wood fibre, virgin and reclaimed polyethylene and talc, the boards are rectangular in shape with rounded corners that can have solid or slotted edges.

The boards have a natural-looking wood grain pattern embossed on the top side. The boards have an average thickness of 24.89 mm with an average width of 133 mm.

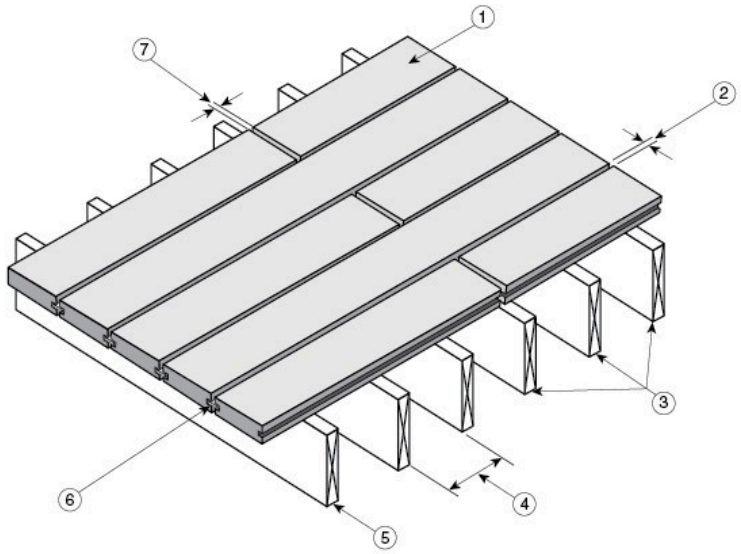

Figure 1. Veranda Wood/Plastic Composite Deck Board with hidden fastener system

1. Veranda deck boards
2. 6 mm minimum spacing between sides of the planks, depending on temperature at installation
3. Minimum of three joists per plank
4. Maximum joist spacing: 300 mm on centre (o.c.)
5. Joist designed to support applicable loads
6. Hidden plastic fasteners provided by manufacturer
7. 1.6 mm minimum spacing between ends of the planks, depending on length of plank and temperature at installation

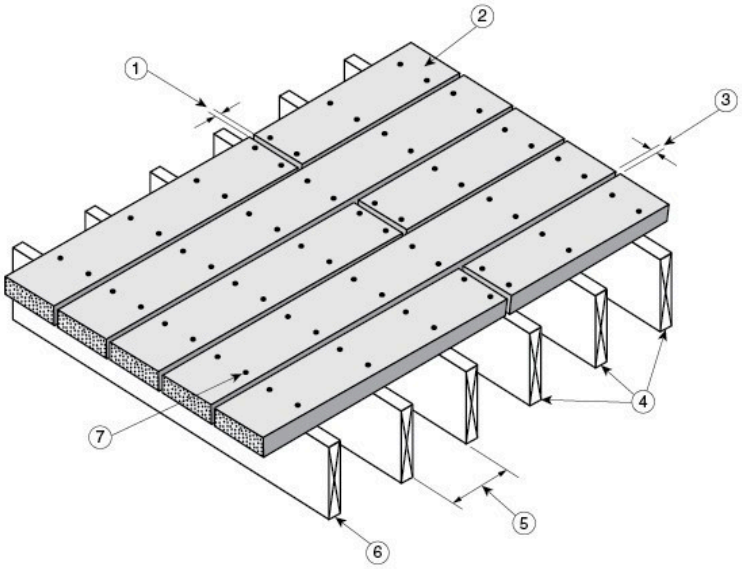

Figure 2. Veranda Wood/Plastic Composite Deck Board with fasteners

1. 1.6 mm minimum spacing between ends of the planks, depending on length of plank and temperature at installation
2. 6 mm minimum spacing between sides of the planks, depending on temperature at installation
3. Minimum of three joists per plank
4. Maximum joist spacing: 300 mm o.c.
5. Joist designed to support applicable loads
6. Two 63.5-mm-long fasteners per support

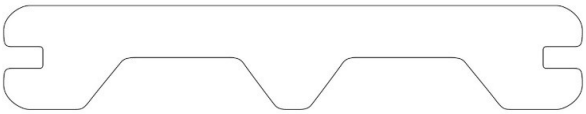

Figure 3. Veranda profile (also known as Veranda HP, Veranda Elite and Veranda Vintage)

Manufacturing plant

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

Product name	Manufacturing plant
	Prairie du Chien, WI, US
Veranda Wood/Plastic Composite Deck Board	⊘

⊘ 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.

- When the products are installed in conjunction with traditional structural wood framing designed to carry the applicable loads, the products may be used as exterior decking and as stair treads in combustible constructions for light duty applications such as residential occupancies that fall within the scope of Part 9, Housing and Small Buildings, of the NBC 2010, or for light commercial applications within the scope of Part 4, Structural Design, of Division B of the NBC 2010.
- Slip-resistance strips shall be provided in accordance with Article 9.8.9.6, Finish for Treads and Landings, of Division B of the NBC 2015.
- The products must be installed in accordance with the manufacturer's usage guidelines for the Canadian market and in accordance with the following limitations:
  - The planks must be installed with supports spaced at no greater than 300 mm o.c.
  - The products must be fastened to the wood joists with fasteners conforming to Article 9.23.3.1., Standards for Nails and Screws, of Division B of the NBC 2010. The fasteners must have a corrosion protection coating [(1)] or be made of stainless steel. The planks must be fastened with a minimum of two fasteners of 63.5 mm in length per support.
  - The products can also be installed using a hidden plastic fastening system as supplied by the manufacturer.
  - The products must be gapped end-to-end based on the length of the plank and the temperature at installation. The end-to-end gapping must be a minimum of 1.5 mm for every 11°C difference between the installation temperature and the hottest expected temperature. The width-to-width gapping must be 6 mm.
  - The products are not to be considered equivalent to dimensional lumber.
  - The products may be installed by a person familiar with the products installation guide.
  - The products are permitted to be installed where decay and termite resistance protection is required as per Article 9.3.2.9., Termite and Decay Protection, of Division B of the NBC 2010.
- Where possible the label or packaging of the products must be identified with the manufacturer's name or logo and the phrase "CCMC 14114-R."

Note:

1 As of January 2004, pressure-treated lumber requires specific hot-dipped galvanized fasteners for satisfactory performance.

Technical information

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

Criteria number	Criteria name
CCMC-TG-067314.01-10	CCMC Technical Guide for Wood Thermoplastic Composite Lumber Exterior Decking

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

Performance requirements

Table 1. Results of testing the basic physical and mechanical properties of the product

Property		Unit	Requirement	Result
Dimensional change	**coefficient of linear expansion (thermal)**	$°C^{-1}$	$\leq 2 \times 10^{-5}$	1.86^{-6}
	coefficient of linear expansion (swelling)	%	≤ 0.5 (by 80% of specimens)	0.26
Strength and stiffness	**modulus of elasticity (MOE)**	MPa	≥ 750	3 418
	modulus of rupture (MOR)		≥ 9	21
	impact resistance	J/m	≥ 53.4	22.2 (1)
	hardness	kN	≥ 1.8	10
	creep, recovery and load duration	%	≤ 25% for creep	51.4 (2)
		%	≥ 75% for recovery	≥ 92.2
		%	No specimen failure in Step 6	No specimen failure (2)
	impact resistance (after weathering)	%	≥ 75% of non-weathered value	98.2
	MOE and MOR (after accelerated aging)	%	≥ 50% of non-aged value	97.3 (MOE) 104 (MOR)
Fastener holding capacity (3) : fastener withdrawal strength	**proprietary clip system with screws only**	N	≥ 600	2 813 (R), (4) 3 774 (WR)
	proprietary clip system	N	≥ 600	1 123 (R), 1 147 (WR)
	deck screws	N	≥ 600	3 691 (R), 3 762 (WR)
Fastener holding capacity (3) : lateral fastener strength	**deck screws**	N	≥ 720	4 097 (R), 3 830 (WR)

Property		Unit	Requirement	Result
	proprietary clip system	N	≥ 720	1 313 (R), 1 287 (WR)

Notes:

1 Deemed acceptable based on the full-scale structural impact test result.

2 The product creep (deformation under constant load) will be greater than that of lumber planks for sustained loads.

3 Sample preparation designation as per CAN/CSA-O325.1-88 (R2003), "Construction Sheathing."

4 R = redry; WR = wet/redry.

Table 2. Results of testing the concentrated static load for Veranda (1)

Property		Requirement		Result (2)	
		Minimum ultimate load (kN)	Maximum deflection under 0.89 kN load for 300 mm span (mm)	Ultimate load (kN)	Deflection under 0.89 kN load (mm)
Concentrated load	**decking at 50°C**	2.45	2.0	2.309	3.28 (3)

Notes:

1 Testing was done as per ASTM E 661-03(2009), "Standard Test Method for Performance of Wood and Wood-Based Floor and Roof Sheathing Under Concentrated Static and Impact Loads," with modifications to suit the testing of planks.

2 Test results for 23.8 mm × 133.35 mm planks with supports at 300 mm o.c.

3 Deemed acceptable. Although the result of 3.28 mm is greater than the 2.0 mm requirement, the additional deflection amount of 1.28 mm is not considered significant.

Table 3. Results of testing the impact load for Veranda (1)

Property		Requirement		Result (2)	
		Minimum ultimate load following impact load of 100 N·m (kN)	Maximum deflection under 0.89 kN load following impact load for 300 mm span (mm)	Load of 1.78 kN following impact load of 100 N·m	Deflection under 0.89 kN load following impact load (mm)
Impact load	**decking at 50°C**	1.78	2.0	No break	2.26 (3)

Notes:

1 Testing was done as per ASTM E661 with modifications to suit the testing of planks.

2 Test results for 23.8 mm × 133.35 mm planks with supports at 300 mm o.c.

3 Deemed to be acceptable. Although the result of 2.26 mm is greater than the 2.0 mm requirement, the additional deflection amount of 0.26 mm is not considered significant.

Table 4. Results of testing the durability of Veranda

Property	Requirement	Result
MOE and MOR	Mean percentage loss in MOE and MOR after UV exposure. (1) Accelerated aging (2) must be less than or equal to spruce lumber.	Pass

Notes:

1 4 000 h of Cycle 1 as outlined in Appendix X3.1 of ASTM G 155-05a, "Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials."

2 The accelerated aging cycle, which includes wetting, freezing, thawing and drying, is repeated five times.

Table 5. Results of testing the slip resistance properties of Veranda

Property		Reference value	Result
Slip resistance (longitudinal)	**dry condition**	> 0.5 ASTM F 1679-04, "Standard Test Method for Using a Variable Incidence Tribometer (VIT)"	Pass
	wet condition	> 0.5 ASTM F 1679-04, "Standard Test Method for Using a Variable Incidence Tribometer (VIT)"	Fail (1)

Note:

1 The combed finish met the 0.5 criteria under the wet condition. The embossed/combed combination finish fell to 0.46 and 0.47, respectively, under the wet condition. The embossed finish fell to 0.47 and 0.48, respectively, under wet conditions. These criteria may not meet all occupant expectations. Deemed to be acceptable due to the tested values being slightly less than the reference value. The manufacturer may be contacted for further information.

Table 6. Results of testing the decay resistance properties of Veranda

Property	Requirement	Result
Percentage loss in weight and compressive strength	Mean percentage loss in weight and compressive strength after exposure to decay-causing fungi must be equal or better than preservative-treated wood conforming to CAN/CSA-O80.1-M97, "Preservative Treatment of All Timber Products by Pressure Processes."	Pass (1)

Note:

1 The data presented was not in accordance with the CCMC evaluation requirements, but demonstrated a resistance to decay-causing fungi that was deemed to meet the intent of the CCMC requirements.

Table 7. Results of testing the termite resistance properties of Veranda

Property	Requirement	Result
ASTM D 3345 rating	Rating must be equal to or better than preservative-treated wood conforming to CAN/CSA-O80.1-M97.	Pass (1)

Note:

1 The data presented was not in accordance with the CCMC evaluation requirements. However, the data did demonstrate a termite resistance that was deemed to meet the intent of the CCMC requirements.

Flame-spread rating and flammability

The flame-spread rating of the products is 81, which is in accordance with CAN/ULC-S102.2-M88, “Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous Materials and Assemblies,” whose requirement is < 200. The smoke development rating of the products is 100.

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.

This evaluation is provided without representation, warranty or guarantee of any kind, expressed or implied, and the NRC provides no endorsement for any evaluated product. The NRC accepts no responsibility whatsoever arising in any way from any and all use of or reliance on the information contained herein or the use of any evaluated product. The NRC is not undertaking to render professional or other services on behalf of any person or entity nor to perform any duty owed by any person or entity to another person or entity.

Language

Une version française de ce document est disponible.
In the case of any discrepancy between the English and French version of this document, the English version shall prevail.

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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)	(New Brunswick Building Officials Association (NBBOA))
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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- this PDF is intended for record-keeping purposes only,
- it represents the information as it was available at the time of downloading, and
- it may not reflect the latest available information at some future date.

References to this CCMC assessment (in product literature, on websites, etc.) must be made by linking to the evaluation webpage. **This PDF must not be used as a means of distributing this assessment to an audience.**

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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

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