CCMC CANADIAN CODE COMPLIANCE EVALUATION

CCMC EVALUATION

CCMC 13665-R

CCMC Canadian code compliance evaluation

CCMC number:	13665-R
Status:	Active
Issue date:	2013-07-02
Modified date:	2022-11-17
Evaluation holder:	**Trunorth Composites Inc.** 55 Plant Farm Boulevard Brantford ON N3S 7W2 Canada Website: www.visionecoproducts.com Telephone: 905-265-0022 extension 227 Email: contactus@trunorthdeck.com
Product names:	• Accuspan/Accuspan Cap Solid Grooved Board • Northernlite/Northernlite Cap Solid Decking Board
Code compliance:	NBC 2010, OBC
Evaluation requirements:	CCMC-TG-067314.01-10B "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.

Code compliance opinion

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

National Building Code of Canada 2010

Code provision	Solution type
9.4.2.3. Platforms Subject to Snow and Occupancy Loads	Acceptable
9.4.3.1. Deflections	Acceptable
9.8.9.1. Loads on Stairs and Ramps	Acceptable

Ontario Building Code

Ruling No. 14-25-321 (13665-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 2014-10-27 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 is 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 names

- Accuspan/Accuspan Cap Solid Grooved Board
- Northernlite/Northernlite Cap Solid Decking Board

Product description

The Accuspan/Accuspan Cap Solid Grooved Board and Northernlite/Northernlite Cap Solid Decking Board is a cellulosic/ polymer composite decking made primarily of rice hulls and reclaimed/recycled high-density polyethylene (HDPE) with additives for UV resistance, anti-oxidants and colorants. The composite product is manufactured through a continuous extrusion process in planks of solid cross-section and grooved edges. The planks are manu- factured in nominal dimensions of 24 mm × 130 mm and are available in 3.6 m, 4.88 m and 6.1 m lengths. Both sides of the product are finished in a simulated wood grain pattern; either side can be used as a walking surface. The product is intended to be used as exterior deck boards and stair treads to be installed over traditional structural wood framing spaced at 300 mm on centre (o.c.) and on stair stringers spaced at 300 mm o.c.

The Accuspan Cap Solid Grooved Board and Northernlite Cap Solid Decking Board is the same composition as the Accuspan and Northernlite board with a cap stock incorporating UV inhibitors.

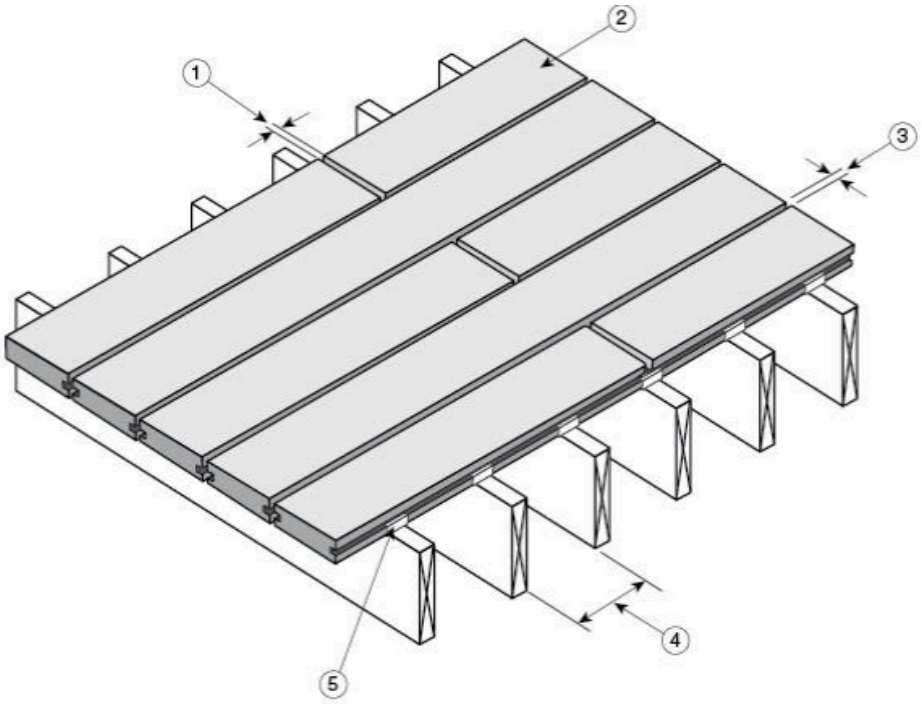

Figure 1. Installation details for the Accuspan Solid Grooved Board

1. gap ranging between 1.5 mm to 4.7 mm depending on length of plank and temperature at installation
2. Accuspan Solid Grooved Board
3. 4.7 mm spacing between boards
4. maximum joist spacing of 300 mm o.c.
5. fastener clip

Manufacturing plant

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

Product names	Manufacturing plant
	Woodbridge, ON, CA
Accuspan/Accuspan Cap Solid Grooved Board	⊙
Northernlite/Northernlite Cap Solid Decking 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.

- The deck board must be installed with supports spaced no greater than 300 mm o.c.
- Each plank must be supported by at least three joists.
- The product must be fastened to the wood joists clips with fasteners specified by the manufacturer and conforming to Article 9.23.3.1., Standards for Nails and Screws, of Division B of the NBC 2010.
- The clips and fasteners must have a corrosion protection coating or be made of stainless steel.
- The clips must be fastened with a 64-mm-long fastener.
- The product can be used where termite protection is required.
- The product must be gapped end to end based on the length of the plank and the temperature at installation. The end-to-end gapping range must be between 4.2 mm for installations at a temperature below 7°C and 0.7 mm for installations at temperatures over 29°C.
- The width-to-width gapping must be 3 mm.
- The product can be used as stair treads on stringers spaced at 300 mm o.c.
- 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 product is **not** to be considered as an equivalent to dimensional lumber.

Technical information

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

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

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

Table 1. Basic physical and mechanical properties

Property	Unit	Requirement	Result
Dimensional change – coefficient of linear expansion (thermal) – longitudinal	$°c^{-1}$	$< 2\times10^{-5}$	2.92×10^{-5} (1)
Dimensional change – coefficient of linear expansion (thermal) – cross-sectional	$°c^{-1}$	$< 2\times10^{-5}$	4.28×10^{-5} (1)
Dimensional change – coefficient of linear expansion (swelling) – oven-dry to vacuum pressure soak	%	< 0.5, by 80% of specimens	−0.08
Strength and stiffness – flexural rigidity (EI)	$kN{\cdot}mm^2$	> 300 000	350 000
Strength and stiffness – moment capacity (M_R)	N·mm	> 190 000	218 000
Strength and stiffness – impact resistance (IZOD impact, notched)	J/m	> 53.4	22.4 (2)
Creep, recovery and load duration	%	< 25 for creep	27 (3)
Creep, recovery and load duration	%	> 75 for recovery	86
Creep, recovery and load duration	%	No failure in step 6	Passed
Strength and stiffness after aging – weathering – impact resistance	%	> 75 of non-weathered value	101
Strength and stiffness after aging – accelerated aging – % retention flexural rigidity	%	> 50 of non-aged value	87
Strength and stiffness after aging – accelerated aging – % retention moment capacity	%	> 50 of non-aged value	95
Screw withdrawal – redry condition	N	≥ 600	2026
Screw withdrawal – wet/redry condition	N	≥ 720	2032
Lateral screw strength – redry condition – parallel	N	> 700	1453
Lateral screw strength – redry condition – perpendicular	N	> 700	2369
Lateral screw strength – wet/redry condition – parallel	N	> 700	1454
Lateral screw strength – wet/redry condition – perpendicular	N	> 700	1194
Flame-spread rating	No unit	≤ 200	85 60 (Cap)
Smoke developed classification	No unit	Report	380 310 (Cap)

Notes:

1 CCMC deemed acceptable. The manufacturer's gapping installation instructions shall address the linear expansion values.

2 CCMC deemed acceptable. The IZOD impact is a small-scale test used to characterize the material. Very low performance values show a sensitivity to a loss of impact strength when the product is significantly damaged by a notch, cut or split. The results of the large-scale impact floor tests are the primary performance indicator with respect to floor impact loads.

3 CCMC deemed acceptable performance for decking application based on other test results.

Performance requirements

Table 2. Performance under both concentrated static loads and impact loads

Property	Requirement	Result (1)
Concentrated static load – decking at 50°C – minimum ultimate load (kN)	≥ 2.45	4.89
Concentrated static load – decking at 20°C – minimum ultimate load (kN)	≥ 2.45	4.56
Concentrated static load – decking at 50°C – maximum deflection under 0.89 kN load (mm)	≤ 2.0	1.59
Concentrated static load – decking at 20°C – maximum deflection under 0.89 kN load (mm)	≤ 2.0	1.21
Following impact load of 102 N·m – decking at 50°C – minimum ultimate load (kN)	≥ 1.78	1.78
Following impact load of 102 N·m – decking at 50°C – maximum deflection under 0.89-kN load (mm)	≤ 2.0	1.58

Notes:

1 Test results for planks with supports at 300 mm o.c.

Table 3. Durability

Property	Requirement	Result – SPF lumber	Result – Accuspan Deck Board
Bending stiffness	Mean percentage loss in bending stiffness (EI) after ultraviolet (UV) exposure and accelerated aging must be less than or equal to spruce lumber	22.5%	9.6% 13.8% (Cap)
Bending strength	Mean percentage loss in moment capacity (M_R) after UV exposure and accelerated aging must be less than or equal to spruce lumber	24.5%	15% -0.7 (Cap)

Table 4. Decay and termite resistance

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

Table 5. Performance under concentrated static load – stair tread

Property	Requirement – minimum ultimate load (kN)	Requirement – maximum deflection under 1 kN (mm)	Result (1) – applied ultimate load (kN)	Result (1) – deflection under 1 kN (mm)
Concentrated load – stair tread	5 (2)	0.75	5.75	1.07 (3)
Concentrated load – stair tread nosing	5 (4)	0.75	7.5	1.07 (3)

Notes:

1 Test results are for stair stringers spaced at 300 mm o.c.

2 Applied through a 75-mm-diameter disk positioned at the centre line of the plank and midway betweeen stringers.

3 CCMC deemed deflection result was acceptable based on the higher applied ultimate load results.

4 Applied through a 38-mm-diameter disk positioned along the outside edge of the nosing at the stringer location.

Additional performance data

Table 6. Additional performance data (1)

Property	Slip index reference value	Result
Slip resistance – dry condition	≥ 0.5	0.57 0.36 longitudinal (Cap) 0.46 transverse (Cap)
Slip resistance – wet condition	≥ 0.5	0.53 0.30 longitudinal (Cap) 0.39 Transverse (Cap)

Notes:

1 Results provided in this Table do not invalidate the CCMC's opinion concerning the product's compliance with the NBC 2010.

Administrative information

Disclaimer

This evaluation is issued by the Canadian Construction Materials Centre (CCMC), a part of the Construction Research Centre at the National Research Council of Canada (NRC). The evaluation must be read in the context of the entire CCMC Registry of Product Assessments and the legislated applicable building code in effect.

The CCMC was established in 1988 on behalf of the applicable regulator (i.e., the provinces and territories) to ensure—through assessment—conformity of alternative and acceptable solutions to regional building codes as determined by the local authority having jurisdiction (AHJ) as part of the issuance of a building permit.

It is the responsibility of the local AHJs, design professionals, and specifiers to confirm that the evaluation is current and has not been withdrawn or superseded by a later issue. Please refer to the website or contact:

Canadian Construction Materials Centre
Construction Research Centre
National Research Council of Canada
1200 Montreal Road
Ottawa, Ontario, K1A 0R6
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The NRC has evaluated the material, product, system or service described herein only for those characteristics stated 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 (i.e., AHJs, design professionals and specifiers). This evaluation is only valid when the product is installed in strict compliance with the stated conditions and limitations of evaluation and the applicable local building code. In circumstances where no applicable local building permit is issued and that no confirmation of compliance ‘for use in the intended field application’ is undertaken, this evaluation is null and void in all respects. This evaluation is provided without representation, warranty, or guarantee of any kind, expressed, or implied, and the NRC provides no endorsement for any evaluated material, product, system or service described herein. The NRC accepts no responsibility whatsoever arising in any way from any and all use and reliance on the information contained in this evaluation with respect to its compliance to the referenced code(s) and standard(s). 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

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.

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