

# CCMC 13637-R

## CCMC Canadian code compliance evaluation

<b>CCMC number:</b>	13637-R
<b>Status:</b>	Active
<b>Issue date:</b>	2012-12-11
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<b>Evaluation holder:</b>	<p><b>Okaply Industries</b>            1372 Oka Road            Oka QC J0N 1E0            Canada            Website: <a href="http://okaply.com">okaply.com</a>            Telephone: 450-479-8341; 888-479-8341            Email: <a href="mailto:info@okaply.com">info@okaply.com</a></p>
<b>Product name:</b>	Okaroc
<b>Compliance:</b>	NBC 2015
<b>Criteria:</b>	CCMC-TG-092915-15 "CCMC Technical Guide for vinyl-laminated gypsum used as an interior finish (non-structural applications only)"

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

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## Compliance opinion

It is the opinion of the Canadian Construction Materials Centre that the evaluated product, when used as an interior finish on walls for manufactured housing in accordance with the conditions and limitations stated in this evaluation, complies with the following code:

### National Building Code of Canada 2015

Code provision	Solution type
9.10.17.1. Flame-Spread Rating of Interior Surfaces	<u>Acceptable</u>
9.29.5.2.(1) Gypsum products shall conform to ...	<u>Alternative</u>
9.29.5.3.(1) Maximum spacing of supports for gypsum b ...	<u>Alternative</u>
9.29.5.8. Spacing of Nails	<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

Okaroc

### Product description

The product is made from either a 7.9 mm (nominal) thick gypsum board, or a 12.4 mm (nominal) thick gypsum board, laminated with vinyl on one side. The gypsum board is manufactured in accordance with ASTM C 1396/C 1396M-13, "Standard Specification for Gypsum Board." The vinyl is a 4 mil printed wallboard vinyl.

### Manufacturing plants

This evaluation is limited to products produced at the following plants:

Product name	Manufacturing plants	
	Calgary, AB, CA	Oka, QC, CA
Okaroc	☑	☑

☑ 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 product is intended to be used for the interior finish of exterior and interior walls of manufactured, single-family detached, one-storey houses only.
- The product must be installed parallel to framing and include perpendicular let-in furring. The framing must not be spaced more than 600 mm on centre (o.c.) and must comply with Table 9.23.10.1., Size and Spacing of Studs, of Division B of the NBC 2015.
- An air barrier system must be installed as per Subsection 9.25.3., Air Barrier Systems, of Division B of the NBC 2015.
- The product must not be used to support insulation.
- The product must not be used for the protection of foamed plastics.
- The product must not be used where a fire separation is required.
- The boards must be installed over furring or framing that complied with the requirements of the NBC 2015 using adhesive. The adhesive must be third-party or CCMC-evaluated to CAN/CGSB-71.25-M88, "Adhesives, for Bonding Drywall to Wood Framing and Metal Studs," or ASTM C 557-03(2017), "Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing."
- A vapour barrier must be installed as per Subsection 9.25.4., Vapour Barriers, of Division B of the NBC 2015
- The product application in walls around baths and showers is beyond the scope of this evaluation.
- The product must not be used by itself where braced wall panelling is required to meet specific seismic resistance requirements:
  - In locations where the seismic,  $S_a(0.2)$ , is less than 0.70 or the 1-in-50 hourly wind pressure is less than 0.80 kPa (refer to Division B of NBC 2015 Table C-2 and C-3 in Appendix C for locations of low to moderate wind and seismic zones), the exterior walls must be sheathed with oriented strandboard (OSB) as per Article 9.23.17.2., Thickness, Rating and Material Standards, and fastened in accordance with Table 9.23.3.5.-A, Fasteners for Subflooring and for Sheathing, of Division B of the NBC 2015.
  - In locations where the seismic,  $S_a(0.2)$ , is greater than 0.70 but not more than 1.8, and the 1-in-50 hourly wind pressure is less than 1.20 kPa (refer to Table C-2 and Table C-3 in Appendix C of Division B of the NBC 2015 for locations of high wind and seismic zones), bracing to resist lateral load must be designed and constructed in accordance with Article 9.23.13.4., Braced Wall Bands, to Article 9.23.13.7., Additional System Considerations, of Division B of the NBC 2015.
- The staples for the vinyl laminated gypsum board must be installed at 150 mm o.c. around the perimeter. The staples must be minimum 16 gauge with 6.35 mm crown and 31.75 mm leg.
- Due to not achieving the minimum racking load, when the 12.4 mm board is used as the interior finish of exterior walls, exterior wall sheathing must be installed in accordance with Subsection 9.23.17., Wall Sheathing, of Division B of the NBC 2015.
- The product must be installed in accordance with the manufacturer's installation instructions dated 04/05/2021.

## Technical information

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

Criteria number	Criteria name
CCMC-TG-092915-15	CCMC Technical Guide for vinyl-laminated gypsum used as an interior finish (non-structural applications only)

The Report 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. Vinyl-laminated gypsum board properties**

Property	Unit	Requirement	7.9 mm result	12.4 mm result
Flexural strength (Method B) <sup>(1)</sup> – bearing edges perpendicular to panel length	N	≥ 476	Pass	Pass
Flexural strength (Method B) <sup>(1)</sup> – bearing edges parallel to panel length	N	≥ 160	Pass	Pass
Humidified deflection (Method B) <sup>(1)</sup>	mm	≤ 32	Pass	Pass
Nail pull resistance (Method B) <sup>(1)</sup>	N	≥ 343	Pass	Pass
Hardness (Method B) <sup>(1)</sup> – core	N	≥ 49	Pass	Pass
Hardness (Method B) <sup>(1)</sup> – end	N	≥ 49	Pass	Pass
Hardness (Method B) <sup>(1)</sup> – edge	N	≥ 49	Pass	Pass
Flame-spread rating	–	≤ 150	15	20

### Note

- <sup>1</sup> "Method B" is a test method described in ASTM C 473-12, "Standard Test Methods for Physical Testing of Gypsum Panel Products."

# Performance requirements

## Racking load

### Results of testing the racking load of the product

Property		Unit	7.9 mm control <sup>(1)</sup>	7.9 mm result <sup>(2)</sup>	12.4 mm control <sup>(1)</sup>	12.4 mm result
Deflection	3.5 kN	mm	9.96	8.32 <sup>(3)</sup>	3.02	4.71 <sup>(4)</sup>
	7.0 kN	mm	– <sup>(5)</sup>	– <sup>(5)</sup>	19.19	– <sup>(6)</sup>
	10.5 kN	mm	– <sup>(5)</sup>	– <sup>(5)</sup>	– <sup>(5)</sup>	<sup>(5)</sup>
Residual deflection	3.5 kN	mm	7.26	5.19 <sup>(3)</sup>	1.74	1.46 <sup>(3)</sup>
	7.0 kN	mm	– <sup>(5)</sup>	– <sup>(5)</sup>	14.14	– <sup>(6)</sup>
	10.5 kN	mm	– <sup>(5)</sup>	– <sup>(5)</sup>	<sup>(5)</sup>	<sup>(5)</sup>
Residual/deflection	3.5 kN	%	73	62 <sup>(3)</sup>	57	31 <sup>(3)</sup>
	7.0 kN	%	– <sup>(5)</sup>	– <sup>(5)</sup>	74	– <sup>(6)</sup>
	10.5 kN	%	– <sup>(5)</sup>	– <sup>(5)</sup>	<sup>(5)</sup>	<sup>(5)</sup>

#### Notes

- <sup>1</sup> Control specimen: single layers of 12.7-mm gypsum board were fastened using 32-mm galvanized ringed wallboard nails every 200 mm o.c. at the edges and in-field. The framing was 38 mm × 89 mm fir wood studs at 406 mm o.c. spacing. The wall specimen was 2.4 m × 2.4 m.
- <sup>2</sup> Okaroc specimen: the framing was notched to accommodate two 25 mm × 100 mm spruce-pine-fir (S-P-F) furring strips evenly spaced across the studs at 800 mm o.c. The furring strips were fastened using 56-mm nails. Structural adhesive was applied to the belt rails as a 9.5-mm bead in a serpentine pattern. The Okaroc sheathing was fastened to the framing using 6.35 mm × 31.75 mm staples on the perimeter at 152.4-mm o.c. spacing. The wall specimen was 2.4 m × 2.4 m.
- <sup>3</sup> The Okaroc specimen did not exceed the control specimen therefore it meets the requirements. See the "Conditions and limitations" section in this report for the installation requirements as per Section 9.23.13., Bracing to Resist Lateral Loads Due to Wind and Earthquake, of Division B of the NBC 2015.
- <sup>4</sup> The Okaroc specimen deflection exceeded the controlled specimen and therefore, did not meet the requirements. See the "Conditions and limitations" section of this report for exterior wall sheathing requirements.
- <sup>5</sup> The control specimen and the Okaroc specimen failed prior to reaching the applied racking load. As a result, no deflection or residual deflection was recorded.
- <sup>6</sup> The Okaroc specimen failed prior to reaching this load; as a result, no deflection or residual deflection was recorded. See the "Conditions and limitations" section of this report for exterior wall sheathing requirements.

## Flame-spread rating

Table 2. Results of testing the flame-spread rating of the product

Property	Requirement	7.9 mm result	12.4 mm result
Flame-spread rating	≤ 150	15	20
Smoke developed classification	≤ 300	– <sup>(1)</sup>	50

### Note

<sup>1</sup> Data not available.

## 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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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:

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(Alliance of Canadian Building Official Associations (ACBOA))

First Nations National Building Officers Association (FNNBOA)



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Canadian Home Builders' Association (CHBA)



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For more information, contact the CCMC by phone at (613) 993-6189 or by email at [ccmc@nrc-cnrc.gc.ca](mailto: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

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