

CCMC 13105-R

CCMC Canadian code compliance evaluation

CCMC number:	13105-R
Status:	Active
Issue date:	2003-03-20
Modified date:	2022-12-05
Evaluation holder:	<p>2595385 Ontario Inc. DBA Enviroshake P.O. Box 1462 650 Riverview Drive, Unit 1 Chatham ON N7M 5W8 Canada Website: www.enviroshake.com Telephone: 519-380-9265 Email: info@enviroshake.com</p>
Product names:	<ul style="list-style-type: none"> • Enviroshake® • Enviroslate®
Code compliance:	NBC 2015
Evaluation requirements:	CCMC-TG-073153.01-15 "CCMC Technical Guide for Recycled Plastic Composite Shakes"

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 roofing materials in new and existing constructions in accordance with the conditions and limitations stated in this evaluation, comply with the following code:

National Building Code of Canada 2015

Code provision	Solution type
9.26.1.2.(1) Roofs shall be protected with roofing, i ...	<u>Acceptable</u>
9.26.2. Roofing Materials	<u>Alternative</u>

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

- Enviroshake®
- Enviroslate®

Product description

“Enviroshake® and Enviroslate®” roofing tiles are manufactured from a mixture of industrial plastic(s), recycled rubber elastomers and cellulosic fibre materials. The materials are compounded in a proprietary formulation and processed to resemble taper-sawn wood shakes and slate roofing tiles accordingly.

“Enviroshake®” is available in widths of 400 mm (full), 134/266 mm (2/3 – 1/3 split) and 200/200 mm (50 – 50 split) and are 508 mm long. Each shake tapers from 6 mm at the butt to 3 mm. Similar to wood shakes, these exposed shakes will fade to silver/grey after approximately six months.

“Enviroslate®” shingles are 305 mm wide and 508 mm long. They are stamped to resemble natural slate tiles, and the exposed section will fade slightly during the first six months of exposure.

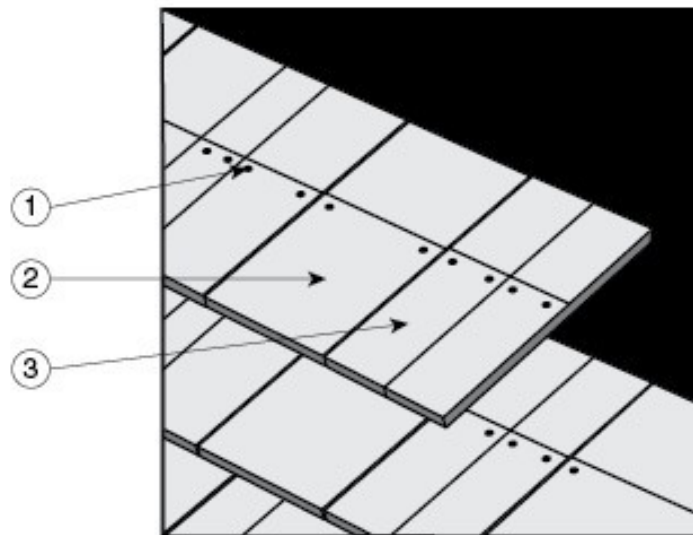


Figure 1. “Enviroshake® and Enviroslate®” shingle

1. nail
2. full shake
3. split shake

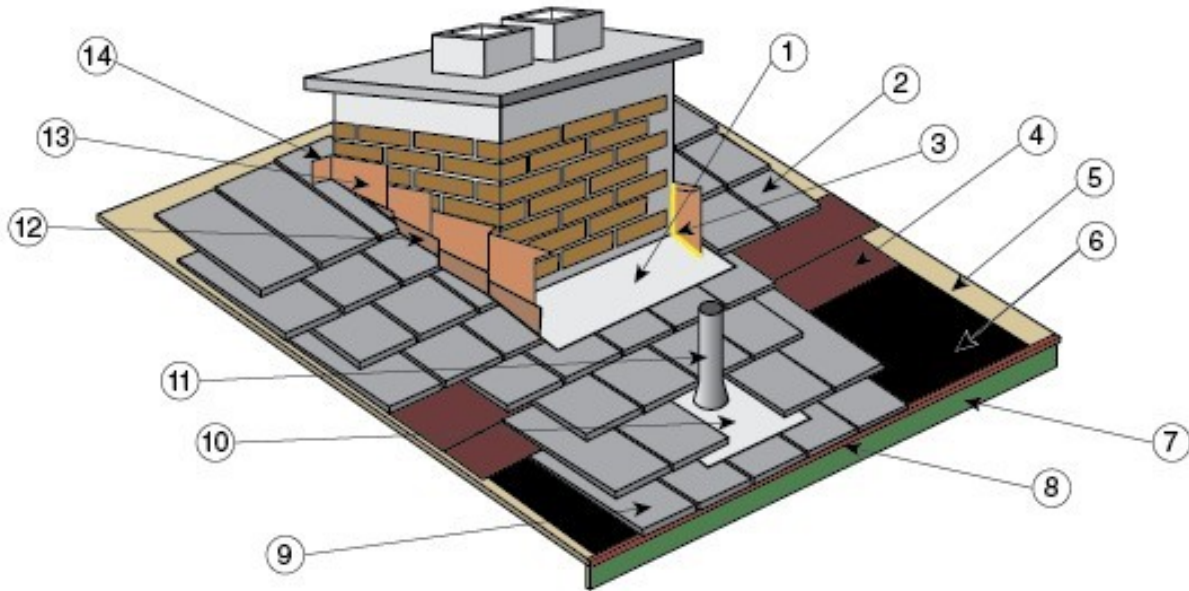


Figure 2. Typical installation details

1. apron flashing
2. "Enviroshake® and Enviroplate®" shingle
3. caulk
4. felt paper underlay
5. solid sheathing
6. eave protection
7. prefinished metal fascia
8. metal drip edge
9. starter course
10. minimum 25-mm clearance around all openings
11. vent stack
12. flashing
13. metal flashing
14. back pan

Manufacturing plant

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

Product names	Manufacturing plant
	Chatham, ON, CA
Enviroshake®	☑
Enviroplate®	☑

☑ 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 must be installed on roofs having a minimum slope of 1 in 3. The product can be installed on roofs having a minimum slope of 1 in 4 provided the solid sheathing sections are completely covered with self-adhered modified bituminous eave protection.
- The shingles must be installed over solid sheathing complying with the requirements of Subsection 9.23.16., Roof Sheathing, of Division B of the NBC 2015.
- The product is limited to installations where no fire-resistance rating is required.
- The use of the product is limited to geographical areas where the wind load, as factored for local exposure conditions and building height, does not exceed 140 km/h.
- An underlayment consisting of a minimum of two layers of Type 15 organic felt must be installed in accordance with the manufacturer's installation instructions.
- The product must be used in conjunction with self-adhered modified bituminous eave protection extending a minimum of 900 mm up from the edge of the roof. The eave protection must be overlapped with Type 15 or Type 30 felt.
- The product must be installed with regular galvanized roofing nails of at least 38 mm in length, which must be spaced 25 mm from each side of the shake and 70 mm under succeeding courses. Full shakes require at least two nails per shake and split shakes require at least four nails.
- This Evaluation Report is applicable only to products with the phrase "CCMC 13105-R" on their packaging.
- The product must be installed in strict conformance to the manufacturer's installation instructions.

Technical information

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

Criteria number	Criteria name
CCMC-TG-073153.01-15	CCMC Technical Guide for Recycled Plastic Composite Shakes

Material requirements

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

Property		Requirement	Result
Density (kg/m ³)		Report value	1.038
Impact izod (J/m)		≥ 45.0	42.1 ⁽¹⁾
Dimensional stability (%)	width	≤ 5.0	0.04
	length		0.27
	thickness		2.8
Water absorption (%) (by volume)		≤ 3.0	2.2
Strain energy original (kJ/m)		Report value	0.715
Modulus of rupture ⁽²⁾ (kPa)		Report value	67.37 dry
			27.92 soaked
Ozone resistance		No cracks	Pass

Notes:

- ¹ The result obtained is deemed acceptable as it is of the same order as other similar products using recycled plastic
- ² A sample size of 203 mm × 50.8 mm × 6 mm was used due to the configuration of the shakes.

Performance requirements

Table 2. Results of testing the performance requirements of the roofing system

Test	Requirement	Result
Traffic load (N)	> 900	Pass
Nail pull-through (N)	> 440	874
Accelerated weathering exposure (2 000 h) – strain energy (%)	80% retention, no defects other than colour change	> 100
Heat aging - strain energy (%)	≥ 80% retention of original	> 100
Freeze/thaw (24 cycles)	No deleterious effects	Pass

Table 3. Result of testing the wind uplift bend of the products

Location	Uplift height (mm)	Load direction	Load applied (N)	Load specified	Comment
Second course: centre of butt end, inner tile	3.0	Perpendicular and outward	21	Min. 20.4 N	Pass
	51.0	Perpendicular and outward	73	Force required to pull tile 51.0 mm	Max. load
Top course: centre of butt end, inner tile	3.0	Perpendicular and outward	22	Min. 20.4	Pass
	51.0	Perpendicular and outward	74	Force required to pull tile 51.0 mm	Max. load
Second course of butt end, inner tile	-	Perpendicular and outward	30.6	No cracking, breaking or falling off the deck	Pass

Table 4. Results of testing the wind resistance of the products

Interval	Wind speed (km/h)	Observation	Result
1	80	No loss of integrity or damage noted	Pass
2	100	No loss of integrity or damage noted	Pass
3	120	No loss of integrity or damage noted	Pass
4	140	No loss of integrity or damage noted	Pass
5	170	No loss of integrity or damage noted	Two shakes broke ⁽¹⁾

Notes:

This PDF is an alternative version. This document was published on 2022-12-05 and may not be the latest version of this evaluation. Users should consult the latest [published assessment](#) on the [CCMC Registry of Product Assessments](#), which contains the most up to date information. This PDF is intended for use as a record, not the latest information available.

1 Two shakes broke off at the leading edge of the test roof at 170 km/h.

Table 5. Results of testing the dynamic water infiltration of the products

Wind speed (km/h)	Duration of test (min)	Observation
50	15	No loss of integrity or damage noted
100	15	No loss of integrity or damage noted
140	5	No loss of integrity or damage noted
170	5	No loss of integrity or damage noted

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

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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))

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(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.

CCMC's code compliance opinions

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