

CCMC 13380-R

CCMC Canadian code compliance evaluation

CCMC number:	13380-R
Status:	Active
Issue date:	2011-01-20
Modified date:	2023-11-08
Evaluation holder:	<p>Edco Products Inc. 8700 Excelsior Boulevard Hopkins MN 55343 United States Website: www.edcoproducts.com Telephone: 952-945-2629 Email: sales@edcoproducts.com</p>
Product names:	<ul style="list-style-type: none"> • ArrowLine Shingle Shake • ArrowLine Slate
Compliance:	NBC 2015
Criteria:	CCMC-TG-074113-15A, "CCMC Technical Guide for Metal Roof Panels"

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 products, when used as a metal roofing system 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
9.3.3.2. Galvanized Sheet Steel	<u>Acceptable</u>
9.26.1.2.(1) Roofs shall be protected with roofing, i ...	<u>Acceptable</u>
9.26.2. Roofing Materials	<u>Alternative</u>
9.26.13.1. Thickness	<u>Acceptable</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 names

- ArrowLine Shingle Shake
- ArrowLine Slate

Product description

The panels are manufactured from 0.37-mm-thick galvanized steel coated with polyvinylidene fluoride (PVDF). The underside of the panels is finished with a corrosion-resistant coating. The panels are 1 288 mm × 325 mm, of which 1 270 mm × 305 mm is exposed. The panels are stamped to simulate traditional shake or slate roofing products.

The panels have an interlocking system on all four sides and are installed from left to right using five fastener clips per panel. The complete roofing system includes accessories such as an eave and rake starter, ridge and hip cap, shingle and valley clips, valley flashing and cap, and end wall flashing.

Manufacturing plant

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

Product names	Manufacturing plant
	Hopkins, MN, US
ArrowLine Shingle Shake	☑
ArrowLine Slate	☑

☑ 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 panels must be installed on roofs having a minimum slope of 1 in 3.
- The panels must be installed over solid sheathing complying with the requirements of Subsection 9.23.16., Roof Sheathing, of Division B of the NBC 2015.
- An underlay consisting of two layers of Type 15 organic felt or one layer of Type 30 organic felt must be used in conjunction with the panels.
- The panels must be installed with eave protection as indicated in Subsection 9.26.5., Eave Protection for Shingles and Shakes, of Division B of the NBC 2015.
- Flashing must be installed in compliance with the requirements of Subsection 9.26.4., Flashing at Intersections, of Division B of the NBC 2015.
- Only fasteners and accessories supplied by the manufacturer may be used in conjunction with the products. The fasteners and accessories must be compatible with the base metal of the panels.
- The roofing system is for use in locations where access is limited to maintenance or repair purposes. When access is needed, temporary walkways or roof boards are recommended to avoid any permanent damage to the panels.
- The panels must be installed in strict conformance with the manufacturer's instructions.
- The product must be clearly identified with the phrase "CCMC 13380-R."

Technical information

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

Criteria number	Criteria name
CCMC-TG-074113-15A	CCMC Technical Guide for Metal Roof Panels

Material requirements

Table 1. Material properties of the product

Property		Requirement	Test result
Thickness (mm)		≥ 0.33	0.37
Thickness of zinc coating (g/m ²)		≥ 275	283
Coating quality		Smooth and uniform, free of pinholes, cracks, blisters and flaking	Pass
Flexibility		No flaking or microcracking	Pass
Humidity resistance		No formation or blisters	Pass
Durability		No sign of any change	Slight colour change; not greater than No. 8 degree of chalking; no checking or cracking
Total dry film thickness (µm)		≥ 25	19 ⁽¹⁾
Dry film hardness		No rupture	Pass
Adhesion	dry	No removal of film	Pass
	wet	No removal of film	Pass
Impact resistance		No removal of film	Pass
Abrasion resistance		Coefficient value ≥ 40	Pass
Acid resistance	10% sulphuric acid	No loss of integrity or appreciable change	Pass
	10% hydrochloric acid	No loss of integrity or appreciable change	Pass
	10% nitric acid	No loss of integrity or appreciable change	Pass
Salt spray resistance		≥ 7 rating	Pass

Note

This PDF is an alternative version. This document was published on 2024-02-29 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.

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- 1 Deemed acceptable as both the base material and zinc coating thickness is greater than the minimum required. Moreover, the panel meets all other material requirements.
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Performance requirements

Traffic load

Under an applied load of 900 N over five different impact locations, there were no signs of any plastic deformation or permanent openings at the lap that would adversely affect the function of the roofing system.

Wind uplift

Table 2. Wind uplift results for the product

Pressure (kPa)	Time (s)	Requirement	Result ⁽¹⁾
0.5	10	No evidence of deformation, permanent damage or failure	Pass
1.0	10		Pass
1.4	10		Pass
1.9	10		Pass
2.9	10		Pass
3.8	10		Pass
4.3	10		Pass
4.8	10		Shingles pulled away from the deck; fastener and clip pull-out

Note

- 1 The panels were fastened to a test frame measuring 3 048 mm × 1 981 mm using #10 – 25.4-mm galvanized steel zip screws. The test frame was constructed with 12.7-mm-thick plywood that was fastened to 50 mm × 100 mm S-P-F lumber spaced at 600 mm o.c. using 76-mm 10d common nails.
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Dynamic pressure water infiltration

Table 3. Dynamic pressure water infiltration results for the product

Wind speed (km/h)	Simulated rainfall (L/m ² ·min)	Time (s)	Requirement	Result ⁽¹⁾
34 – 59	3.4	5	No leakage or damage	Pass
84 – 96	3.4	5		Pass
104 – 117	3.4	5		Pass
117 – 144	3.4	5		Pass
154 – 170	3.4	5		Pass

Note

- 1 The panels were fastened to a test frame with a 1 in 3 slope and a valley. The 11-mm-thick OSB sheathing was fastened to 50 mm × 100 mm S-P-F lumber rafters spaced at 600 mm o.c. using 50-mm common nails. The entire roof was covered with one layer of Type 30 organic felt fastened with staples.
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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.

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)



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(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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- it represents the information as it was available at the time of downloading, and
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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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