

# CCMC 12658-R

## CCMC Canadian code compliance evaluation

<b>CCMC number:</b>	12658-R
<b>Status:</b>	Active
<b>Issue date:</b>	1995-01-23
<b>Modified date:</b>	2023-11-08
<b>Evaluation holder:</b>	<p><b>Dörken Systems Inc.</b>                      4655 Delta Way                      Beamsville ON L0R 1B4                      Canada                      Website: <a href="http://www.dorken.com">www.dorken.com</a>                      Telephone: 905-563-3255</p>
<b>Product name:</b>	Dörken DELTA®-MS dampproofing membrane
<b>Compliance:</b>	NBC 2015, OBC
<b>Criteria:</b>	CCMC-TG-071119.01-15, "CCMC Technical Guide for Foundation Wall Dampproofing Systems – Dimpled Membranes"

**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 a material for dampproofing 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
9.13.2. Dampproofing	<u>Alternative</u>

### Ontario Building Code

Ruling No. 09-38-236 (12658-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 2009-12-30 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

Dörken DELTA®-MS dampproofing membrane

## Product description

The product is a high-density, polyethylene, quasi-rigid plastic sheet membrane that is brown in colour and extruded in such a way to produce a dimpled surface on one side (dimples are 8-mm high) and a smooth surface on the other. The product is available in rolls 20 m (65 ft. 7 in.) long and 1.07 m (3 ft. 6 in.) to 3 m (9 ft. 10 in.) wide.

A range of accessories, fasteners, sealants and mould strips is available to assist in the correct application of the product.

Product profiles and anchors are illustrated below in [Figure 1](#), [Figure 2](#) and [Figure 3](#).

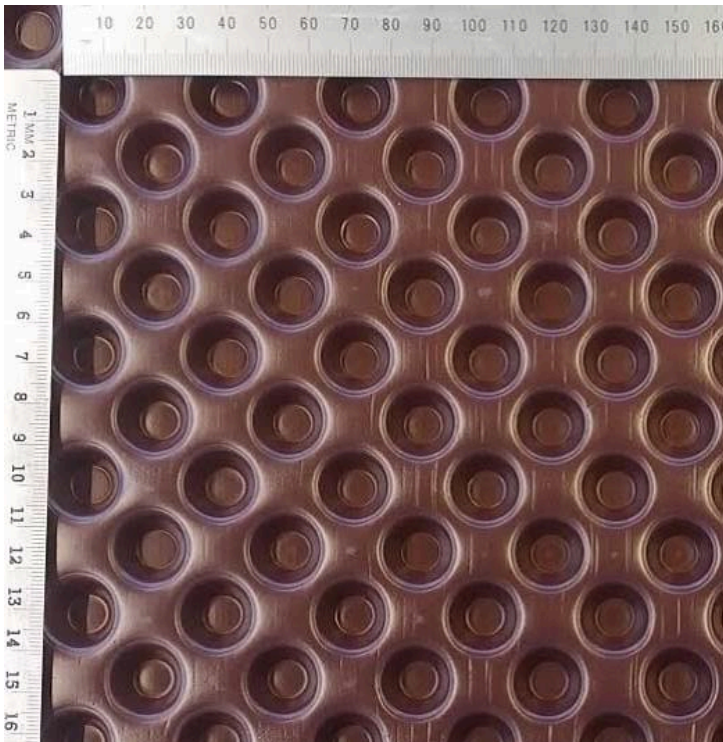


Figure 1. Dörken DELTA®-MS dampproofing membrane – face in contact with the soil

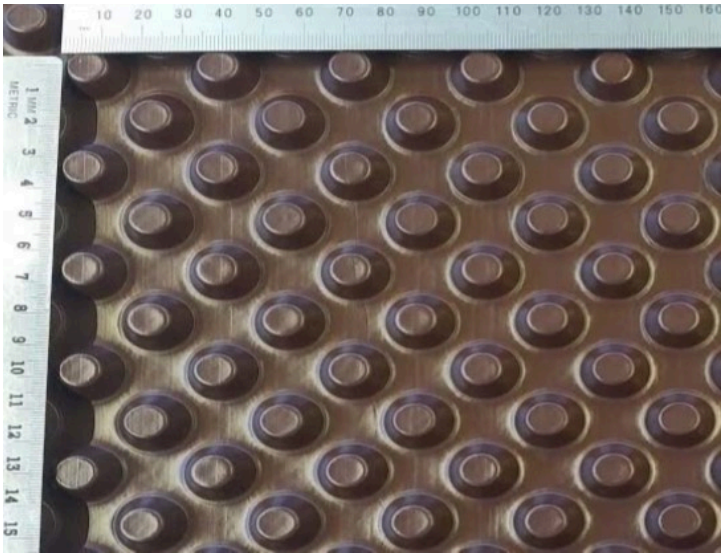


Figure 2. Dörken DELTA®-MS dampproofing membrane – face in contact with the wall



Figure 3. Dörken DELTA®-MS dampproofing membrane – anchor

## Manufacturing plant

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

Product name	Manufacturing plant
	Beamsville, ON, CA
Dörken DELTA®-MS dampproofing membrane	☑

☑ Indicates that the product from this manufacturing facility has been evaluated by the CCMC

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## 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.

- Based on the evidence provided, the product has been classified as Type 2 for use in vertical applications in depths up to 3.7 m below grade. Application depths greater than 3.7 m are considered to be outside the scope of this evaluation.
- The product must be installed in accordance with the manufacturer's instructions. In the event of conflict between the manufacturer's instructions and this Report, this Report shall govern.
- The product was evaluated for use against cast-in-place and concrete block foundations only and must cover the foundation wall from the top of the footing to the final grade.
- The product must be used in locations where the foundation wall is well-drained in accordance with Subsection 9.14.2., Foundation Drainage, of Division B of the NBC 2015.
- The product is a dimpled membrane drainage system designed to act as a protective layer or a capillary breaking layer against the foundation wall to protect the wall against transient or intermittent water that may come in contact with the wall's surface.
- The product must be protected from exposure to ultraviolet (UV) light (sunlight) within a maximum of 30 days of installation.
- Long-term performance of the dampproofing system depends on local conditions such as the soil type, hydrogeology of the site, mineralogy and presence of microorganisms in the soil (i.e., iron ochre), as well as compatibility of the filter with the soil, among other issues. Compliance with this Report does not exempt the project from requiring proper engineering design of the drainage system.
- The performance of fixtures used to anchor the product in the wall was evaluated for a single anchor. It is the responsibility of the manufacturer to define the pattern and spacing of anchors, considering the anchor strength as well as site-specific issues such as the type of soil, how it will interact with the product, as well as the backfilling method used.
- The top of the membrane and all vertical joints and terminations must be mechanically fastened with trim, moulding strips, termination bars or other accessories to prevent soil particles from entering behind the membrane. Accessories used to anchor the product are part of the evaluation.
- The product's label and/or packaging must be clearly identified with the following:
  - manufacturer's name or logo; and
  - the phrase "CCMC 12658-R."

# Technical information

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

Criteria number	Criteria name
CCMC-TG-071119.01-15	CCMC Technical Guide for Foundation Wall Dampproofing Systems – Dimpled Membranes

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.

**Table 1. Test results for Dörken DELTA®-MS dampproofing membrane**

Property	Unit	Requirement	Result
Compressive strength (initial)	kPa	150	223
Dynamic impact resistance (mean failure energy)	J	≥ 2.45	8.3
Creep resistance (residual thickness at 25 years/10°C)	%	≥ 40% at 25 years/10°C	77.5
Cold bending at -30°C	N/A	No visible crack	No visible crack
Tensile strength (at yield)	kN/m	≥ 8	XD <sup>(1)</sup> 8.1
Tensile strength (elongation at break)	%	≥ 25	XD <sup>(1)</sup> 29.8
Tensile strength (anisotropy ratio)	N/A	≥ 0.5	1.1
Tensile strength (tensile strength in print area)	kN/m	≥ 90% of tensile strength	100%
Heat aging for 8 weeks (dimensional change)	%	≤ 1	MD <sup>(1)</sup> -0.6, XD <sup>(1)</sup> -0.5
Heat aging for 8 weeks (weight change)	%	≤ -0.1	0.0
Heat aging for 8 weeks (residual compression strength)	%	≥ 80 of initial	107.8
Resistance to alkaline environment (appearance)	N/A	No visible crack	No visible crack
Resistance to alkaline environment (residual compression strength)	%	≥ 80 of initial	101.5
Resistance to alkaline environment (cold bending at -30°C)	N/A	No visible crack	No visible crack

**Note:**

<sup>1</sup> "MD" refers to the machine direction of the product; "XD" refers to cross direction of the product.

**Table 2. Geometrical properties of the membrane**

Property	Unit	Requirement	Result
Orientation of the dimples	–	Report value	Diagonal

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Property	Unit	Requirement	Result
Number of dimples per unit area	dimples/m <sup>2</sup>	Report value	1 560
Overall thickness	mm	Report value	8.43
Sheet thickness	mm	Report value	0.48
Hollow core thickness	mm	Report value	7.95
Anchorage performance (anchorage efficiency)	kN/anchor	Report value	0.95

## 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](mailto:ccmc@nrc-cnrc.gc.ca)

## NOTICE

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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.

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