

CCMC 13169-R

CCMC Canadian code compliance evaluation

CCMC number:	13169-R
Status:	Active
Issue date:	2004-09-10
Modified date:	2021-12-10
Evaluation holder:	<p>DMX Plastics Limited 165 Orenda Road Brampton ON L6W 1W3 Canada Website: www.dmxmembranes.com Telephone: 905-458-8998 Email: sbahr@dmxmembranes.com</p>
Product name:	DMX AG
Code compliance:	NBC 2015, OBC
Evaluation requirements:	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](#)

Code compliance opinion

It is the opinion of the Canadian Construction Materials Centre that the evaluated product, when used as a material for dampproofing below grade of concrete walls 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. 09-25-223 (13169-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 2009-11-27 (revised 2017-09-25) 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 name:

DMX AG

Product description

The product is a black, dimpled high-density polyethylene (HDPE) membrane with a flat tab on one side. The product is available in rolled sheets that are 0.68 mm thick, 20 m long and up to 3.05 m (10 ft.) wide. When two sheets are joined side by side, they must be overlapped by 200 mm to 300 mm with their dimples meshing. When two sheets are joined top to bottom, they must be overlapped by 150 mm. To ensure correct application, the product's dampproofing system includes a range of accessories such as special trim strips, anchors and nails. Photos of the product are below.

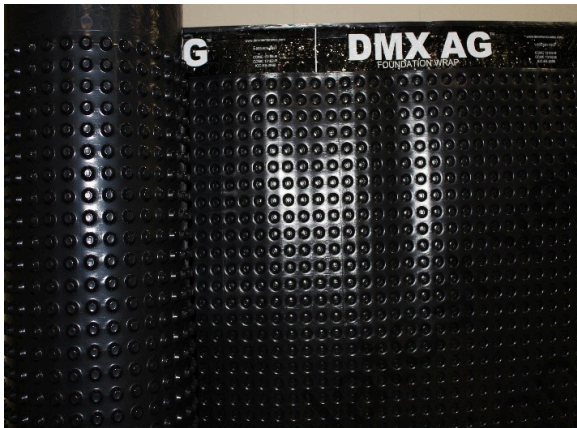


Figure 1. Product

Washer

Figure 2. Anchor

Manufacturing plant

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

- Brampton, Ontario, Canada

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, which can be installed on a vertical wall up to a depth of 3.7 m. 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 (version 4.6, August 10, 2021).
- 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 from transient or intermittent water that may come in contact with the surface of the wall.
- The product must be protected from exposure to ultraviolet (UV) radiation from the sun within a maximum of 30 days of its installation.
- Long-term performance of a drainage system will depend 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. This evaluation does not free the project from requiring proper engineering design of the drainage system.
- The top of the membrane and all vertical joints and terminations must be mechanically fastened and sealed to prevent soil particles from entering behind the membrane.
- Pattern and spacing of anchors must be designed considering site-specific issues such as the type of soil and how these will interact with the product, as well as the backfilling method used.
- The product has also been evaluated as a foundation drainage product and is included in the CCMC registry of product assessments under 13182-R.
- The product must be labelled with the manufacturer's name or logo and the phrase "CCMC 13169-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. Results of testing the performance requirements of the product

Property	Unit	Requirement	Result
Compressive strength (initial)	kPa	150	322.6
Dynamic impact resistance (mean failure energy)	J	≥ 2.45	10.8
Creep resistance (residual thickness at 25 years/10°C)	%	≥ 40% at 25 years/10°C	87.7
Cold bending at -30°C	N/A	No visible crack	No visible crack
Tensile strength at yield	kN/m	≥ 8	MD ⁽¹⁾ 8.3, XD 8.0
Tensile strength – elongation at break	%	≥ 25	36.8
Heat aging ⁽²⁾ – dimensional change	%	≤ 1	MD: -0.6, CD: -0.7
Heat aging – weight change	%	≤ -0.1	-0.2 ⁽³⁾
Heat aging – residual compression strength	%	≥ 80 of initial	97.6
Heat aging – creep resistance (residual thickness at 25 years/10°C)	%	≥ 40% at 25 years/10°C	85.5
Resistance to alkaline environment – appearance	N/A	No visible crack	No visible crack
Resistance to alkaline environment – residual compression strength	%	≥ 80 of initial	94.7
Resistance to alkaline environment – cold bending at -30°C	N/A	No cracks at room temperature	No visible crack
Geometrical properties – orientation of dimples	-	Report value	Perpendicular
Geometrical properties – number of dimples per unit area	Dimples/m ²	Report value	1 676
Geometrical properties – overall thickness	mm	Report value	7.67
Geometrical properties – sheet thickness	mm	Report value	0.58
Geometrical properties – hollow core thickness	mm	≥ 5.0	7.09
Anchorage performance	kN/anchor	Report value	0.406

This PDF is an alternative version. This document was published on 2021-12-10 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.

Notes:

- 1 MD refers to the machine direction of the product; XD refers to the cross direction of the product.
 - 2 Aging of the samples is limited to 2 weeks if OIT > 5 minutes after 2 weeks, and extended to 8 weeks otherwise.
 - 3 If the weight change is greater than 0.1%, an additional creep resistance test must be conducted and the residual thickness must be greater than 40% at 25 years/10°C.
-

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
Telephone: 613-993-6189
Fax: 613-952-0268

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.

Copyright

© 2021 Her Majesty the Queen in Right of Canada, as represented by the National Research Council of Canada.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the CCMC.

This PDF is an alternative version. This document was published on 2021-12-10 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.

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.

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.