



## Evaluation Report CCMC 13169-R DMX AG

<b>MasterFormat:</b>	07 11 19.01
<b>Evaluation issued:</b>	2004-09-10
<b>Re-evaluated:</b>	2017-03-30
<b>Revised:</b>	2018-12-21

### 1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that “DMX AG,” when used as a material for dampproofing below grade of concrete walls in accordance with the conditions and limitations stated in Section 3 of this Report, complies with the National Building Code (NBC) of Canada 2015:

- Clause 1.2.1.1.(1)(b), Division A, as an alternative solution that achieves at least the minimum level of performance required by Division B in the areas defined by the objectives and functional statements attributed to the following applicable acceptable solutions:
  - Subsection 9.13.2., Dampproofing

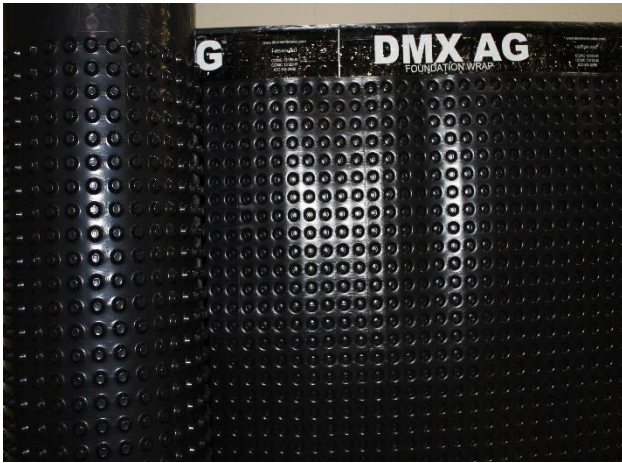
This opinion is based on the CCMC evaluation of the technical evidence in Section 4 provided by the Report Holder.

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 on 2017-09-255) 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.

### 2. 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 2.4 m 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, plugs and nails. Photos of the product are below (Figure 1 and 2).



**Figure 1. Illustration of the product**



**Figure 2. Illustration of the washer**

### **3. Conditions and Limitations**

The CCMC compliance opinion in Section 1 is bound by the “DMX AG” 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 4.3, September 9, 2014).
- The product was evaluated for use against cast-in-place and concrete block foundation 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) sunlight 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 it 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 under 13182-R.
- The product must be labelled with the manufacturer’s name or logo and the phrase “CCMC 13169-R.”

## 4. Technical Evidence

The Report Holder has submitted technical documentation for the CCMC evaluation. Testing was conducted at laboratories recognized by CCMC. The corresponding technical evidence for this product is summarized below.

### 4.1 Performance Requirements

#### 4.1.1 Technical Evidence

**Table 4.1.1.1 Results of Testing the Performance Requirements of the Product**

Property		Unit	Requirement	Result
Compressive strength (initial)		kPa	150	214.2
Dynamic impact resistance (mean failure energy)		J	≥ 2.45	3.2
Creep resistance (residual thickness at 25 years/10°C)		%	≥ 40% at 25 years/10°C	60
Cold bending at -30°C		N/A	No visible crack	No visible crack
Tensile strength	at yield	kN/m	≥ 8	MD <sup>1</sup> 8.7, XD 8.1
	elongation at break	%	≥ 25	MD 28.8, XD 25.2
Heat aging <sup>(2)</sup>	dimensional change	%	≤ 1	MD -0.9, XD -0.9
	weight change	%	≤ -0.1	-0.2 <sup>3</sup>
	residual compression strength	%	≥ 80 of initial	103.9
	creep resistance (residual thickness at 25 years/10°C)	%	≥ 40% at 25 years/10°C	78
Resistance to alkaline environment	appearance	N/A	No visible crack	No visible crack
	residual compression strength	%	≥ 80 of initial	107.5
	cold bending at -30°C	N/A	No cracks at room temperature	No visible crack
Geometrical properties	orientation of dimples	–	Report value	Square MD/XD
	number of dimples per unit area	Dimples/m <sup>2</sup>	Report value	1 059
	overall thickness	mm	Report value	8.11
	sheet thickness	mm	Report value	0.68
	hollow core thickness	mm	≥ 5	7.62
Anchorage performance		kN/anchor	Report value	0.77

#### Notes to Table 4.1.1:

1. MD refers to the machine direction of the product; XD refers to 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.

## Report Holder

DMX Membranes Limited  
165 Orenda Road  
Brampton, ON L6W 1W3

**Telephone:** 905-458-8998

**Fax:** 905-458-8994

**Email:** [sbahr@dmxmembranes.com](mailto:sbahr@dmxmembranes.com)  
[npimentel@dmxmembranes.com](mailto:npimentel@dmxmembranes.com)

**Web site:** [www.dmxmembranes.com](http://www.dmxmembranes.com)

## Plant

Brampton, ON

## Disclaimer

*This Report is issued by the Canadian Construction Materials Centre, a program of NRC Construction at the National Research Council of Canada. The Report must be read in the context of the entire CCMC Registry of Product Evaluations, including, without limitation, the introduction therein which sets out important information concerning the interpretation and use of CCMC Evaluation Reports.*

*Readers must confirm that the Report is current and has not been withdrawn or superseded by a later issue. Please refer to [http://www.nrc-cnrc.gc.ca/eng/solutions/advisory/ccmc\\_index.html](http://www.nrc-cnrc.gc.ca/eng/solutions/advisory/ccmc_index.html), or contact the Canadian Construction Materials Centre, NRC Construction, National Research Council of Canada, 1200 Montreal Road, Ottawa, Ontario, K1A 0R6. Telephone: 613-993-6189. Fax: 613-952-0268.*

*NRC has evaluated the material, product, system or service described herein only for those characteristics stated herein. The information and opinions in this Report are directed to those who have the appropriate degree of experience to use and apply its contents. This Report is provided without representation, warranty, or guarantee of any kind, expressed, or implied, and the National Research Council of Canada (NRC) provides no endorsement for any evaluated material, product, system or service described herein. NRC accepts no responsibility whatsoever arising in any way from any and all use and reliance on the information contained in this Report. 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.*

**Date modified:**  
2020-02-20