

Evaluation Report CCMC 13098-R SUPERSEAL Dimpled Membrane (Drainage), SUPERPRO Dimpled Membrane (Drainage)

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1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that “SUPERSEAL Dimpled Membrane (Drainage), SUPERPRO Dimpled Membrane (Drainage)”, when used as a drainage medium for basement walls in accordance with the conditions and limitations stated in Section 3 of this Report, complies with the Ontario Building Code 2012:

- Clause 1.2.1.1.(1)(a), Division A, using the following acceptable solutions from Division B:
 - Clause 9.14.2.1.(2)(b), Foundation Wall Drainage

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

Ruling No. 08-01-186 (13098-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 2008-01-18 (revised on 2017-02-02) 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 products are black or brown polyethylene, quasi-rigid plastic sheet membrane extruded in a manner that results in a dimpled surface on one side and a smooth surface on the other. The dimpled surface provides an air gap between the concrete wall and the adjacent soil.

The products are available in rolls that are 0.635 mm thick, 20 m long, and up to 4 m wide.

To ensure correct application, the products must be installed as part of the drainage system with appropriate accessories, such as fasteners, washers, and moulding strips as recommended by the manufacturer.

Installation details are shown in Figures 1 and 2.

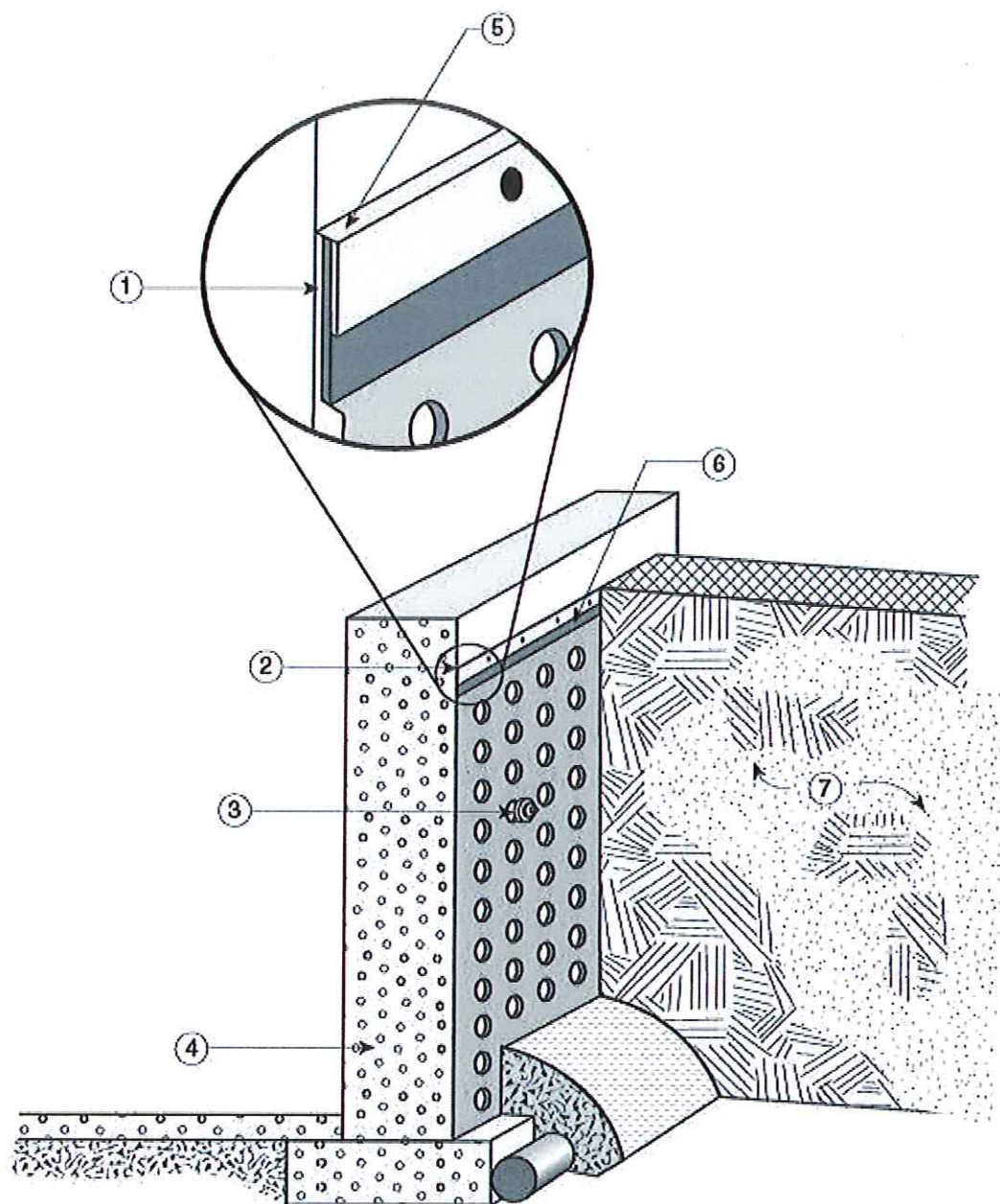


Figure 1. Installation details for the products (front view)

1. apply appropriate amount of caulking
2. caulking (behind membrane)
3. fastener
4. concrete foundation
5. rest moulding lip over tab or membrane edge
6. terminator bar
7. backfill

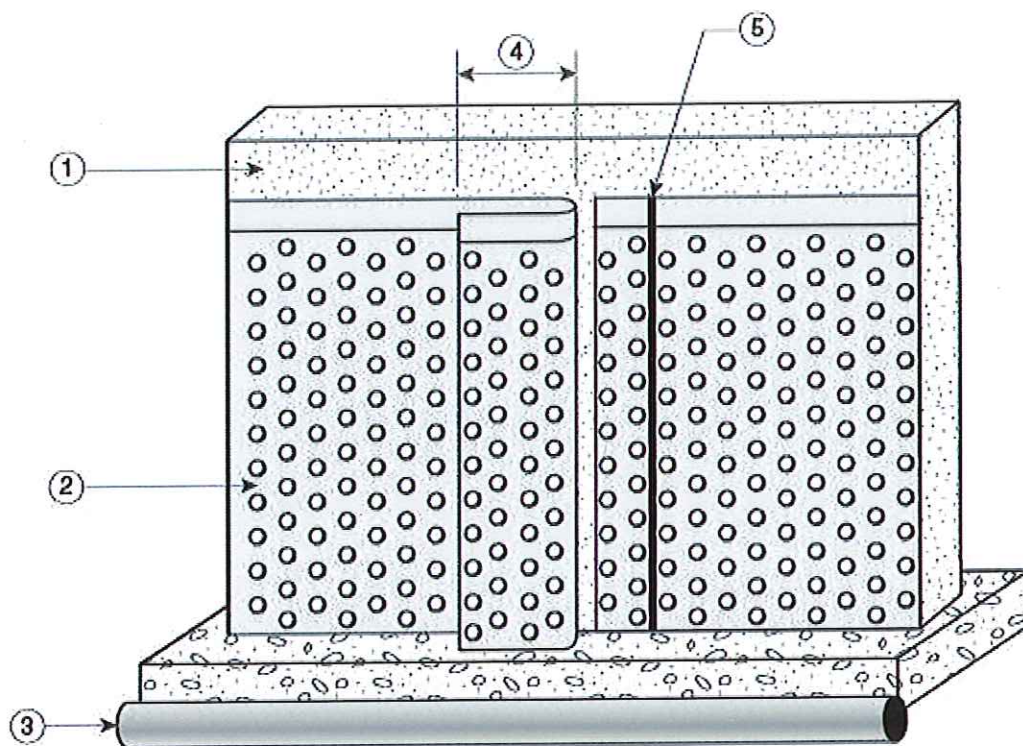


Figure 2. Installation details for the products (side view)

1. concrete foundation
2. membrane
3. drainage tile
4. minimum 152.4-mm overlap
5. caulking

3. Conditions and Limitations

CCMC's compliance opinion in Section 1 is bound by the "SUPERSEAL Dimpled Membrane (Drainage), SUPERPRO Dimpled Membrane (Drainage)" being used in accordance with the conditions and limitations set out below.

- The products were evaluated for use against cast-in-place and concrete block foundation only.
- The products are only one portion of the total foundation drainage system. They must be used in accordance with Article 9.14.2.1. of Division B of the OBC 2012.
- The products must be installed in accordance with the manufacturer's instructions and be protected from exposure to ultraviolet radiation from the sun within 30 days.
- The products are evaluated for use 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 Report.
- The products are suitable for use in pervious and semi-pervious soil conditions that allow for some drainage through the soil. Such soils include very fine sand, organic and inorganic silts, mixtures of sand, silt and clay, glacial till, and stratified clay deposits that have a soil grain size defined by $D_{10} > 0.002$ mm, where D_{10} is the sieve size that permits 10% by weight of the soil to pass through it in a sieve analysis test.
- The products are not to be used in practically impervious soil conditions (homogeneous clays below zone of weathering) where the soil grain size is $D_{10} < 0.002$ mm.
- The products must cover the foundation wall from the top of the footing to the final grade.
- 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.
- As the drainage membrane does not have to adhere to the surface and can permanently bridge any normal joint, tie hole, fault or shrinkage crack, the wall surface does not have to be parged, cleaned, patched or sealed before hanging the membrane.
- The products have been evaluated for use as a foundation wall dampproofing material. For details, see CCMC 13099-R.
- The products' label and/or packaging must be clearly identified with the following:
 - manufacturer's name or logo; and
 - the phrase "CCMC 13098-R".

4. Technical Evidence

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

4.1 Performance Requirements

Table 4.1.1 Results of Testing of Performance Requirements for the Products

Properties		Requirements	Results	
			Black membrane	Brown membrane
Thickness (mm)		Report	0.635	0.635
Weight (g/m ²)		≥ 500	732	640
Impact load		min. 12 of 15 must pass a rating of 3	15 of 15 passed	15 of 15 passed
Static puncturing		min. 5 of 6 must pass a rating of 3	6 of 6 passed	6 of 6 passed
Cold bending		No visible cracking	No visible cracking	No visible cracking
Side water flow		< 15 minutes	3 seconds	3 seconds
Original ¹	tensile strength at yield (kN/m)	≥ 8	13	15
	elongation at break (%)	≥ 25	930	911
Water immersion ¹	tensile strength at yield (%)	≥ 80 of original	116	104
	elongation at break (%)	≥ 70 of original	105	94
Heat aging ¹	dimensional change (%)	≤ ±1	0	0
	weight change (%)	≤ 0.10	-0.06	-0.05
	tensile strength at yield (%)	≥ 80 of original	130	108
	elongation at break (%)	≥ 70 of original	105	107
Chemical attack exposure	ammonium chloride	tensile strength at yield (%)	107	98
		elongation at break (%)	105	128
	sodium sulfate	tensile strength at yield (%)	111	101
		elongation at break (%)	105	128
Compressive strength (kN/m ²)		≥ 100	335	290

Note to Table 4.1.1:

- ¹ It was deemed through analysis and testing that the products' tensile and elongation properties are not dependent on the orientation of the product samples, i.e., machine or cross direction.

Report Holder

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