

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 2006:

- 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 2009-11-30) 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.

2. Description

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

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

Installation details are shown in Figures 1 and 2.

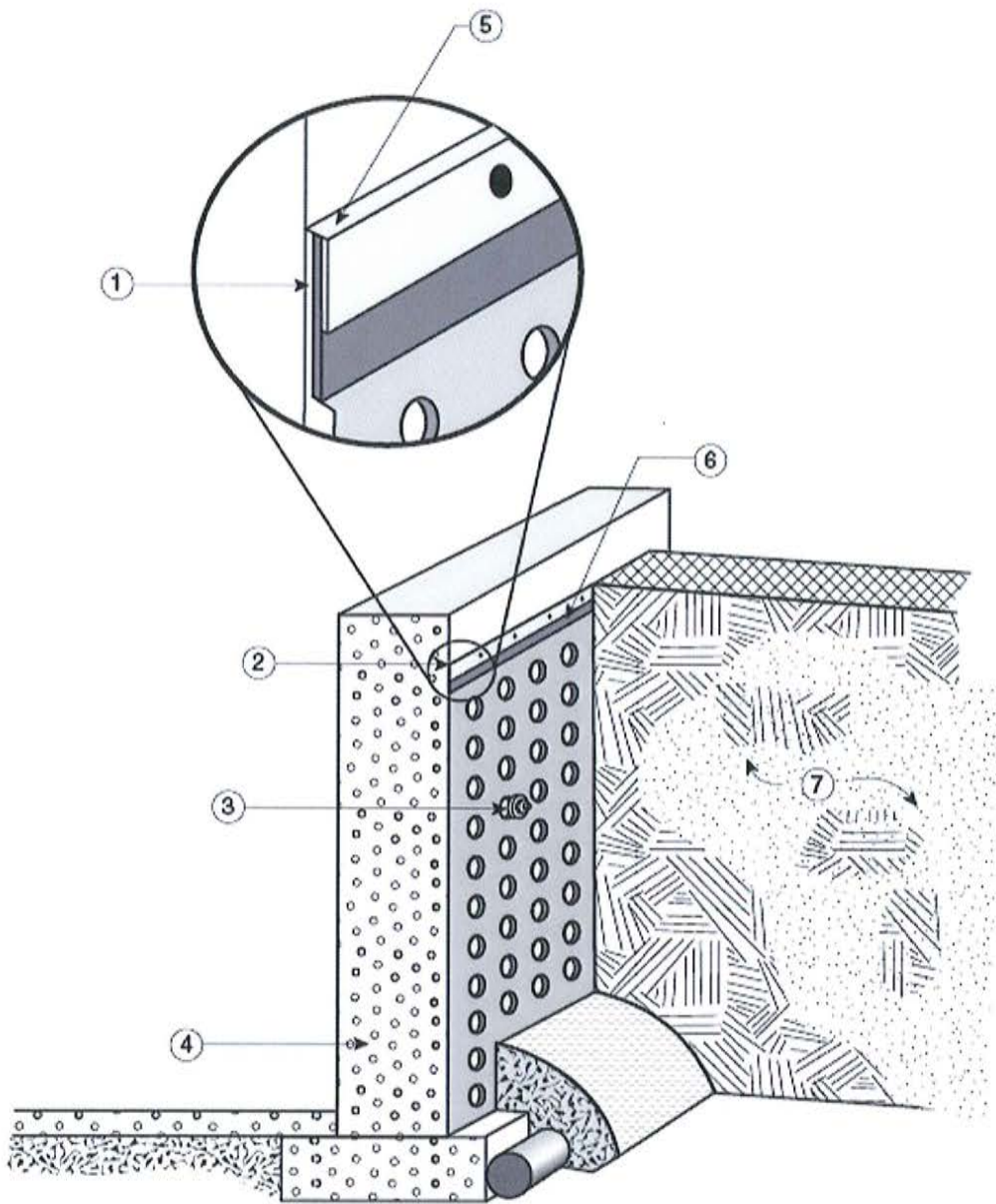


Figure 1. Installation details for “SUPERSEAL Dimpled Membrane (Drainage)” (front view)

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

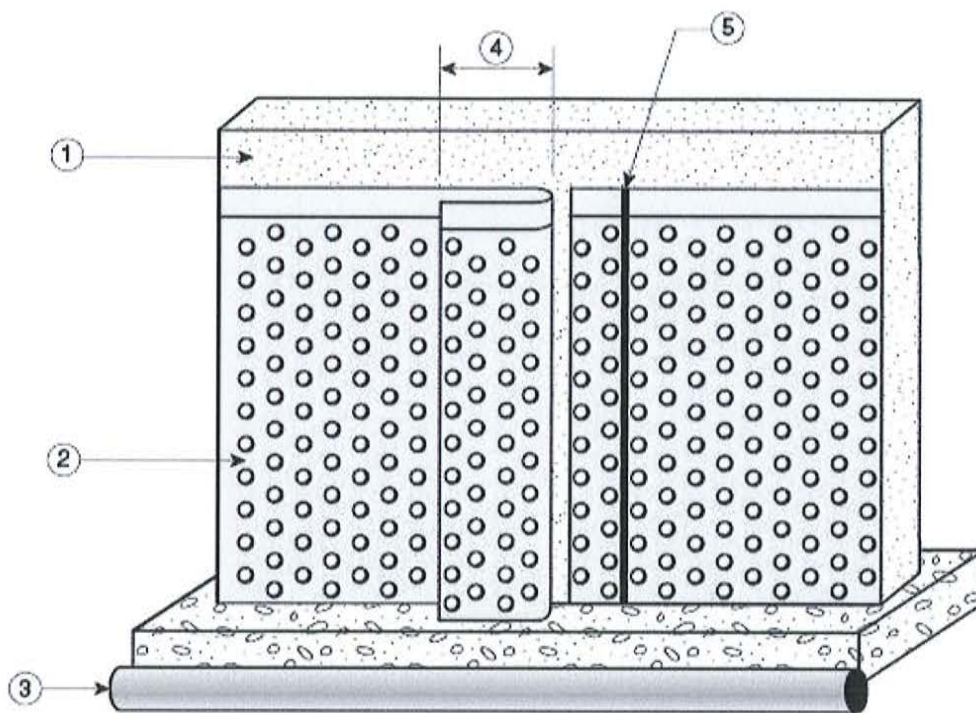


Figure 2. Installation details for "SUPERSEAL Dimpled Membrane (Drainage)" (side view)

1. concrete foundation
2. membrane
3. drainage tile
4. minimum 152.4 mm
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.

1. The product was evaluated for use against cast-in-place and concrete block foundation only.
2. The product is only one portion of the total foundation drainage system. It must be used in accordance with Article 9.14.2.1. of the OBC 2006.
3. The product must be installed in accordance with the manufacturer's instructions and be protected from exposure to ultraviolet radiation from the sun within 30 days.
4. The product is 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.
5. The product is 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.
6. The product is 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.
7. The product must cover the foundation wall from the top of the footing to the final grade.
8. 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.
9. 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.
10. The product has been evaluated for use as a foundation wall dampproofing material. For details, see CCMC 13099-R.
11. The product 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 for "SUPERSEAL Dimpled Membrane (Drainage)"

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 (%)	≥ 80 of original	107	98
		elongation at break (%)	≥ 70 of original	105	128

Table 4.1.1 Results of Testing for “SUPERSEAL Dimpled Membrane (Drainage)” (cont.)

Properties			Requirements	Results	
				Black membrane	Brown membrane
	sodium sulfate	tensile strength at yield (%)	≥ 80 of original	111	101
		elongation at break (%)	≥ 70 of original	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 product’s 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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