Evaluation Report CCMC 12266-R
Platon Dampproofing Membrane

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1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that "Platon Dampproofing Membrane," when used as a material for dampproofing 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) of 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:
  - Article 9.13.2.2., Dampproofing Materials

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

2. Description

The product is a carbon-compounded, high-density polyethylene membrane with a dimpled surface on one side to provide an air gap between the concrete wall and the adjacent soil.

The product features double cone dimples, which are 6 mm high, spaced at about 30 mm on centre (o.c.) and joined by channels. The product is available in rolls that are 0.6 mm thick, 20 m long, and up to 3.05 m wide.

To ensure correct application, the manufacturer offers a complete dampproofing system with compatible and durable fasteners, sealants and accessories where needed. The configuration of the system is shown in Figures 1, 2 and 3.

Figure 1. “Side facing the soil”

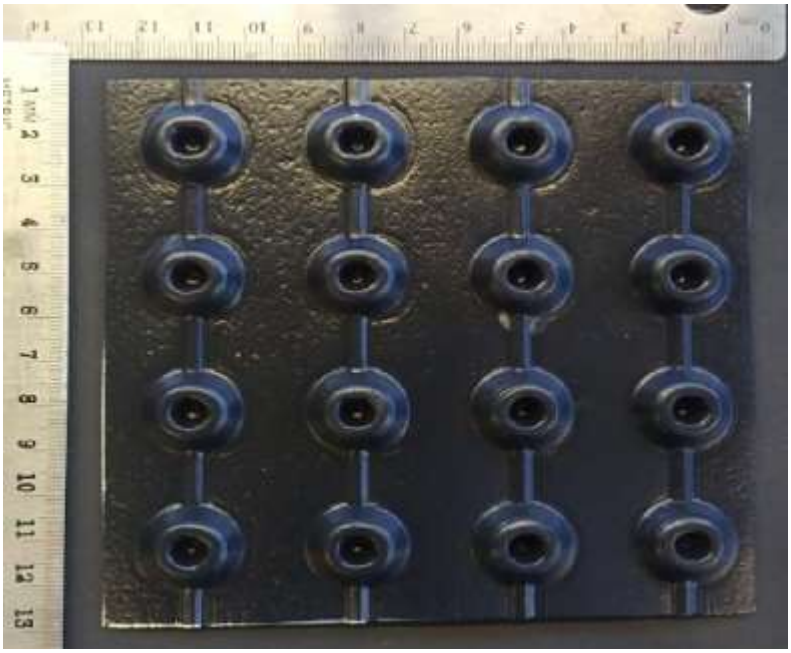

Figure 2. “Side facing the wall”

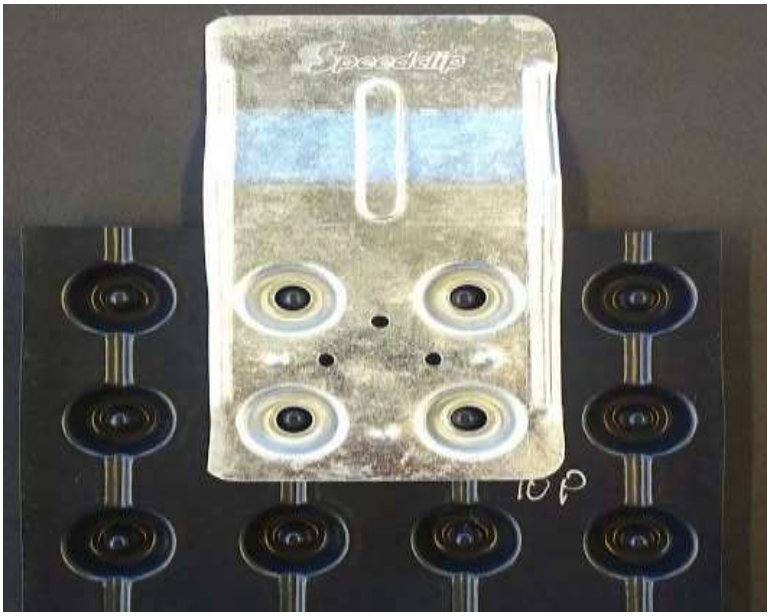

Figure 3. "Anchor"

3. Conditions and Limitations

CCMC's compliance opinion in Section 1 is bound by the "Platon Dampproofing Membrane" 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 dampproofing 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 six months 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 and sealed 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 12266-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 General

The "Platon Dampproofing Membrane" test results are summarized in Table 4.1.1.

Table 4.1.1 Test Results for "Platon Dampproofing Membrane"

Property		Unit	Requirement	Result
Compressive strength (initial)		kPa	150	176.5
Dynamic impact resistance (mean failure energy)		J	≥ 2.45	2.6
Creep resistance (residual thickness at 25 years/10°C)		%	≥ 40% at 25 years/10°C	64.8
Cold bending at -30°C		N/A	No visible crack	No visible crack
UV Resistance (residual compression strength)		%	≥ 80% of original	116[(1)]
Tensile strength	**at yield**	kN/m	≥ 8	XD[(2)] 10.1
	elongation at break	%	≥ 25	XD 26.3
	anisotropy ratio	N/A	≥ 0.5	0.67
Heat aging for 2 weeks	**OIT after 2 weeks**	min	Note 3	5.95[(3)]
	weight change	%	≤ |-0.1|	-0.2[(4)]
	residual compression strength	%	≥ 80 % of initial	127
	creep resistance after heat aging	%	≥ 40 % at 25 years/10°C	62.6
Resistance to alkaline environment	**appearance**	N/A	No visible crack	No visible crack
	residual compression strength	%	≥ 80 of initial	118
	cold bending at -30°C	N/A	No cracks at room temp	No visible crack
Geometrical properties:				
Orientation of the dimples		-	Report value	Square MD/CD
Number of dimples per unit area		dimples/m^2	Report value	884
Overall thickness		mm	Report value	6.18
Sheet thickness		mm	Report value	0.86
Hollow core thickness		mm	Report value	5.32
Anchorage performance	**anchorage efficiency**	kN/anchor	Report value	1.03

Notes to Table 4.1.1:

(1) Test to permit exposure of product up to 6 months before backfilling.
(2) "MD" refers to the machine direction of the product; "XD" refers to cross direction of the product.
(3) When Oxidation Induction Time (OIT) after 2 weeks aging > 5 min, the heat aging duration can be reduced to 2 weeks instead of 8 weeks.
(4) 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.

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