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CCMC 13094-R



*EVALUATION
REPORT*

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Wrap-N-Drain

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1. Purpose of Evaluation

The proponent sought confirmation from the Canadian Construction Materials Centre (CCMC) that “Wrap-N-Drain” can serve as a material for dampproofing basement walls in compliance with the intent of the National Building Code of Canada (NBC) 1995.

2. Opinion

Subject to the limitations and conditions stated in this report, test results and assessments provided by the proponent show that “Wrap-N-Drain” complies with CCMC’s Technical Guide for Rigid Polyethylene or Polystyrene Dampproofing Membrane, MasterFormat number 07111, dated 05-12-08, and provides a level of performance equivalent to that required in:

- NBC 1995, Subsection 9.13.3.

Canada Mortgage and Housing Corporation permits the use of this product in construction financed or insured under the National Housing Act.

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3. Description

“Wrap-N-Drain” is a black polypropylene sheet roll with a dimpled surface on one side to provide an air gap between the concrete wall and the adjacent soil.

The “Wrap-N-Drain” sheet pattern features double cone dimples 6 mm high and approximately 25 mm on centre, joined by channels. The product is 0.5 mm thick by 20 m long by 2.4 m wide and is available in rolls.

To ensure correct application, the “Wrap-N-Drain” dampproofing system includes a range of accessories such as fasteners, washers and molding strips.

The “Wrap-N-Drain” dampproofing system and its installation are illustrated in Figures 1 and 2.

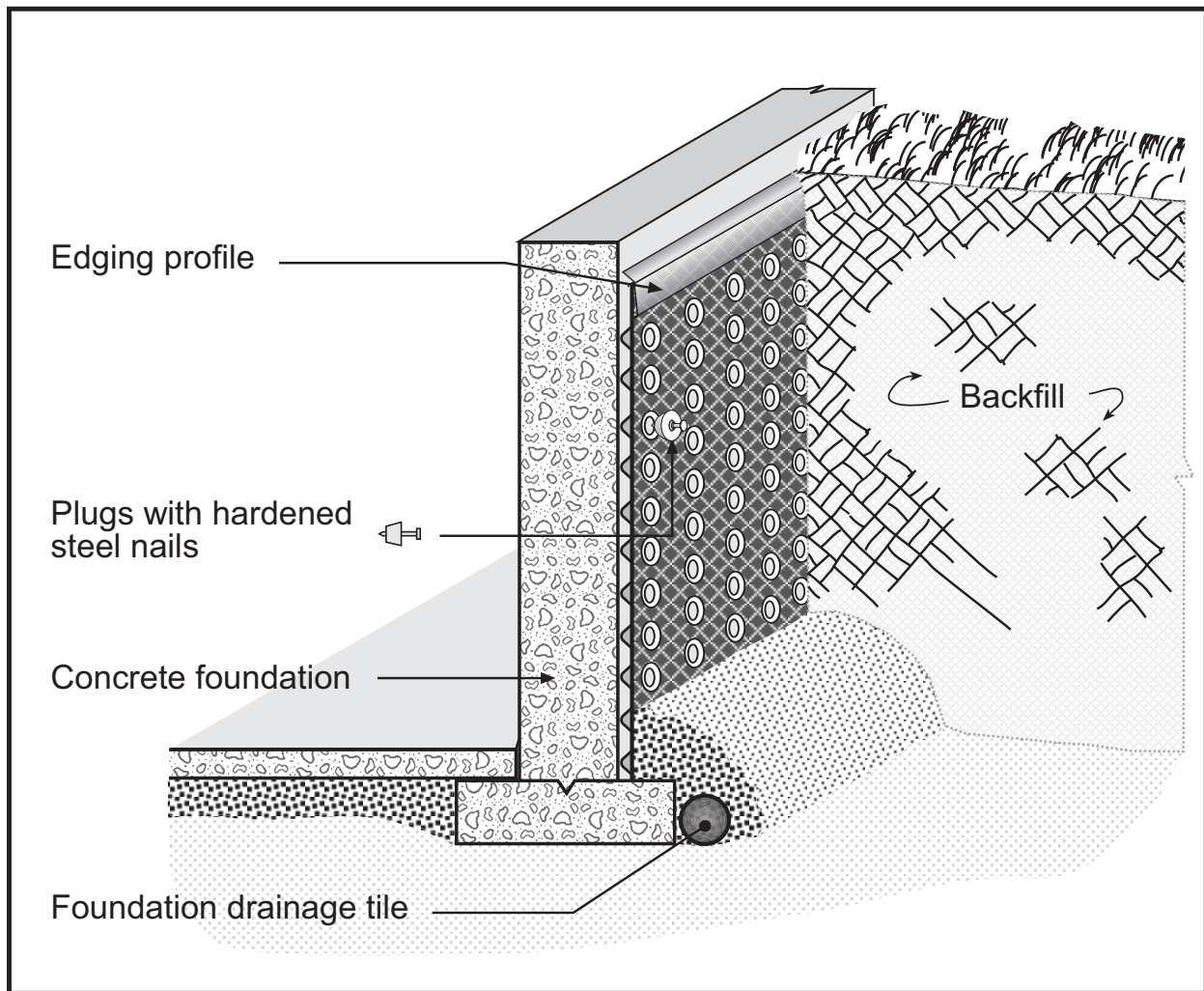


Figure 1. “Wrap-N-Drain” (face in contact with the soil)

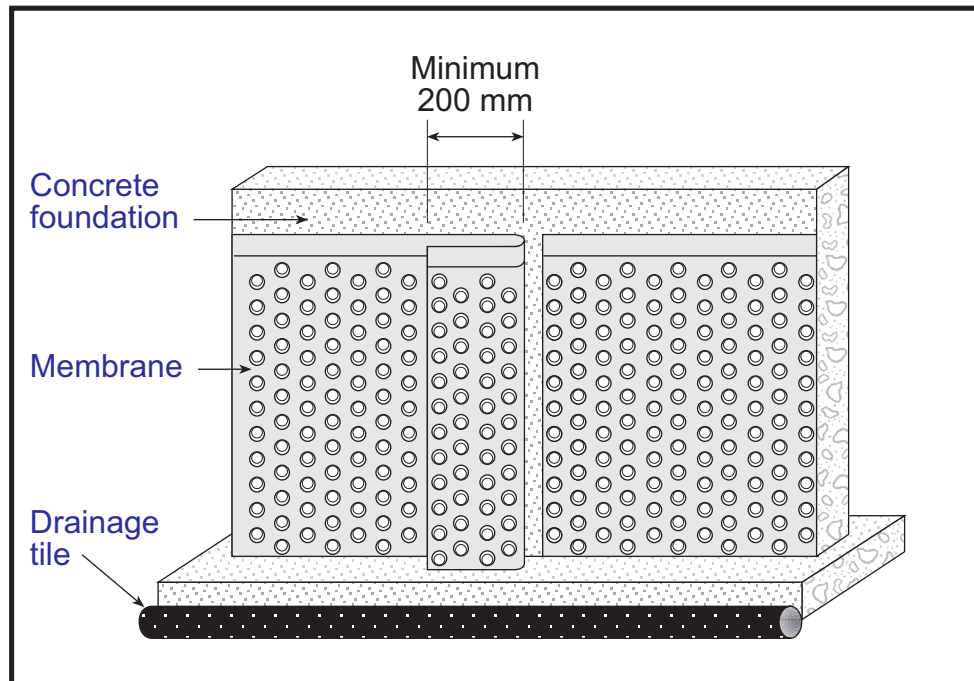


Figure 2. "Wrap-N-Drain" (face in contact with the wall)

4. Usage and Limitations

This product can be used for foundation wall and floor slab dampproofing, subject to the following conditions and recommendations:

- The product must be used in locations where the foundation base is well drained in accordance with the NBC 1995, Section 9.14.
- The use of "Wrap-N-Drain" has been evaluated for applications falling under the provisions of Part 9 of the NBC 1995, at depths up to 3.7 m. Applications at depths greater than 3.7 m are considered beyond the scope of this evaluation.
- The product must be installed in accordance with the manufacturer's instructions.
- The product must be protected from exposure to ultraviolet radiation (sunlight) within 30 days of its installation.
- When used over concrete and concrete block foundation walls, "Wrap-N-Drain" must cover the wall from the top of the footing to the final

grade, and the top of the sheet must be securely fastened to the foundation surface.

- As the dampproofing 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. For enhanced performance the manufacturer recommends parging of concrete block in accordance with the NBC 1995, Article 9.13.3.1., prior to installation.
- "Wrap-N-Drain" has also been evaluated for use as foundation wall drainage material. For details see CCMC # 13079-R.

The product label must be identified with the following information:

- manufacturer's name or logo; and
- the phrase "CCMC 13094-R."

5. Performance

Testing was conducted at independent laboratories recognized by CCMC. The

corresponding test results for “Wrap-N-Drain” are summarized in Table 1.

Table 1. Basic Physical and Mechanical Properties of “Wrap-N-Drain”

Property	Requirements	Results
Thickness (mm)	≥ 0.6 in flat area ≥ 0.5 in dimpled area	0.653 0.738
Weight (g/m ²)	≥ 500	546
Impact load (rating of 3)	min. 12 of 15 shall pass a rating of 3	15 of 15
Static puncturing (rating of 3)	min. 5 of 6 shall pass a rating of 3	6 of 6
Cold bending	no visible cracking	no visible cracking
Water vapour permeability (g/m ² /d)	≤ 4	3.3
Original – tensile strength (kN/m width) – elongation (%)	≥ 8 ≥ 25	MD 13.6, XD 11.5 ⁽¹⁾ MD 492, XD 120
Water immersion – tensile strength (%) – elongation (%)	80% of original 70% of original	MD 14.5 (107%) XD 11.8 (103%) MD 533 (108%) XD 115 (96%)
Heat aging – dimensional change (%) – weight change (%) – tensile strength (%) – elongation (%)	max. ± 1% ≤ 0.10% 80% of original 70% of original	MD –0.08 XD –0.06 –0.08 MD 13.7 (101%) XD 11.8 (103%) MD 533 (108%) XD 254 (211%)
Chemical attack exposure: ammonium chloride – tensile strength (%) – elongation (%)	80% of original 70% of original	MD 13.9 (102%) XD 12.4 (108%) MD 533 (108%) XD 86 (72%)
Chemical attack exposure: sodium sulfate – tensile strength (%) – elongation (%)	80% of original 70% of original	MD 14.5 (107%) XD 12.7 (110%) MD 533 (108%) XD 86 (72%)
Compressive strength (kN/m ²) ⁽²⁾	≥ 100	103

Notes to Table 1:

(1) MD means machine direction and XD means cross-direction.

(2) The compressive load test was done on the dimpled surface.

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Readers are advised to confirm that this report has not been withdrawn or superseded by a later issue by referring to <http://irc.nrc.gc.ca/ccmc>, or contacting the Canadian Construction Materials Centre, Institute for Research in Construction, National Research Council of Canada, Montreal Road, Ottawa, Ontario, K1A 0R6; Telephone (613) 993-6189, Fax (613) 952-0268.