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*EVALUATION
REPORT*

DIVISION 07111

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Wrap-N-Drain “X”

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1. Purpose of Evaluation

The proponent sought confirmation from the Canadian Construction Materials Centre (CCMC) that “Wrap-N-Drain “X” can serve as a material for dampproofing of 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 “X” complies with CCMC’s Technical Guide for Rigid Polyethylene or Polystyrene Dampproofing Membrane, Masterformat number 07111, dated 94-04-29, 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 “X” 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 “X” sheet pattern features double cone dimples 6 mm high and about 25 mm on centre, joined by channels. The product is available in rolls that are 0.5 mm thick and 20 m in long, and up to 2.40 m wide.

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

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

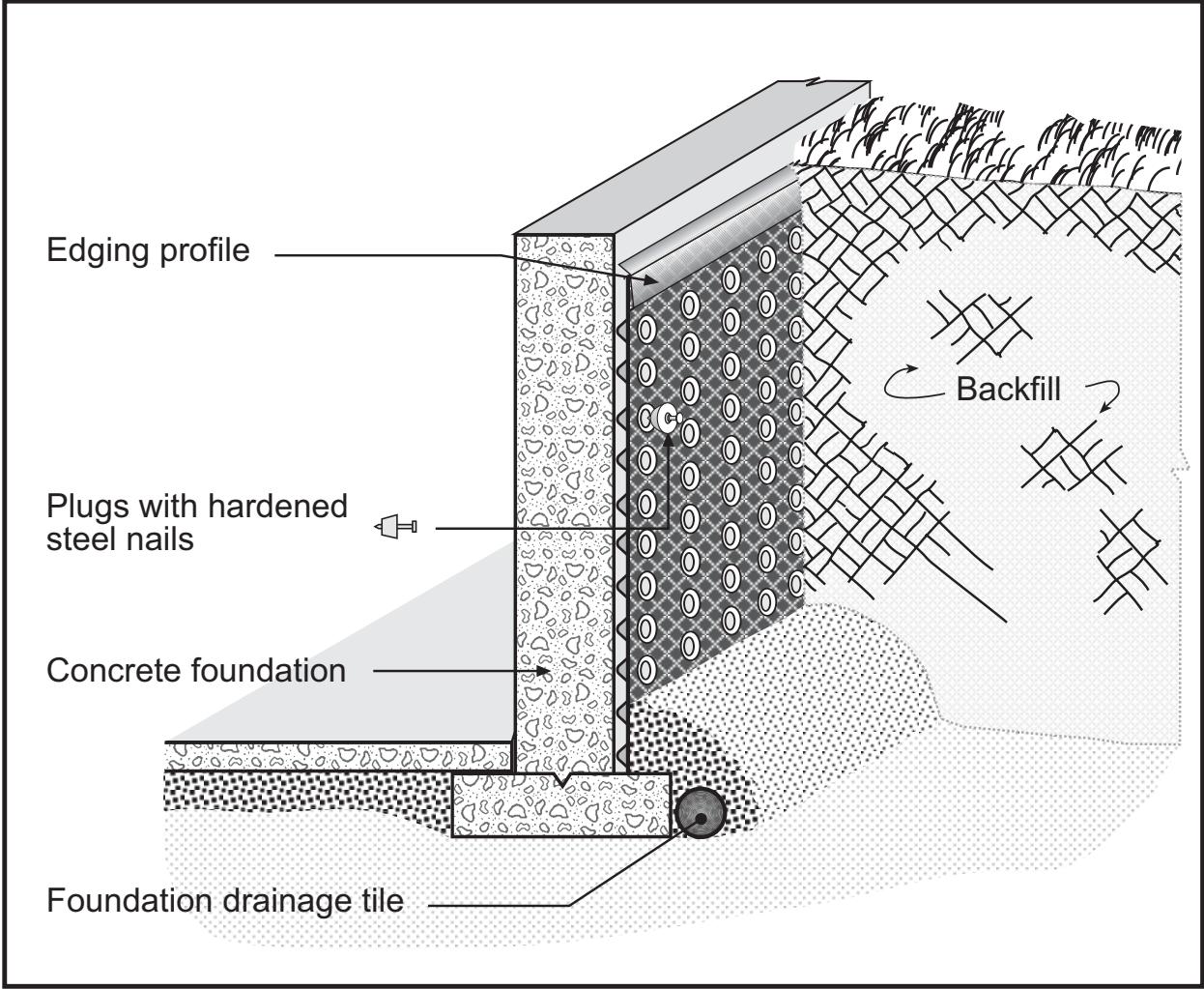


Figure 1. Wrap-N-Drain “X” (face in contact with the soil)

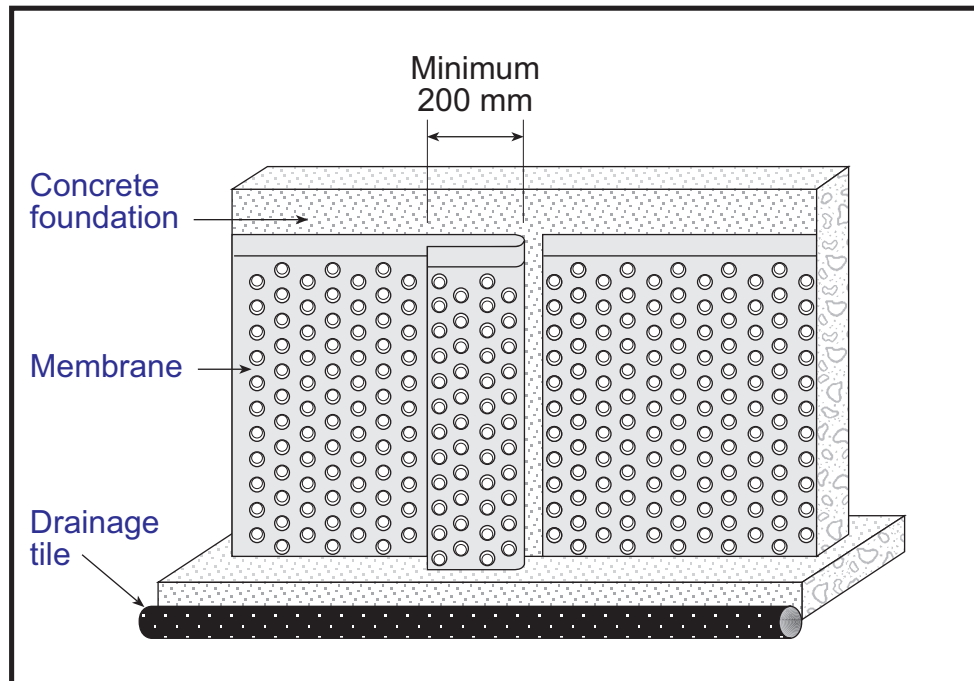


Figure 2. Wrap-N-Drain “X” (face in contact with the wall)

4. Usage and Limitations

The 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 NBC 1995, Section 9.14.
- The use of Wrap-N-Drain “X” has been evaluated for applications falling under the provision of Part 9 of the NBC 1995, in depths up to 3.7 m. Applications deeper than 3.7 m are considered beyond the scope of this evaluation.
- The product must be installed in accordance with the manufacturer’s current instructions.
- The product must be protected from exposure to ultra-violet radiation (sunlight) within 30 days of its installation.

- When used over concrete and concrete block foundation walls, the wall must be covered with Wrap-N-Drain “X” from the top of the footing to the final grade, and the top of the sheet must be securely fastened against the foundation surface.
As the dampproofing sheet 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.

5. Performance

Testing and assessments were conducted by independent laboratories recognized by the Canadian Construction Materials Centre. The results of testing the “Wrap-N-Drain “X” are summarized in Table 1.

Table 1. Test Results for Wrap-N-Drain “X”

Property	Requirements	Results
Thickness (mm)	min. 0.6 in flat area min. 0.5 in bubble area	0.653 0.738
Weight (g/m ²)	min. 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)	max. 4	3.3
Original		
- Tensile strength (kN/m width)	min. 8	MD 13.6, XD 11.5
- Elongation (%)	min. 25	MD 492, XD 120
Water immersion		
- Tensile strength (%)	80% of original	MD 107% XD 103%
- Elongation (%)	70% of original	MD 108% XD 115%
Heat aging		
- Dimensional change (%)	1	MD -0.68, XD -0.22
- Weight change (%)	0.10	0.08
- Tensile strength (%)	80% of original	MD 13.7 (Pass) XD 11.8 (Pass)
- Elongation (%)	70% of original	MD 533 (Pass) XD 86.0 (Pass)
Chemical attack exposure Ammonium chloride		
- Tensile strength (%)	80% of original	MD 13.9 (Pass) XD 12.7 (Pass)
- Elongation (%)	70% of original	MD 533 (Pass) XD 86 (Pass)
Sodium sulfate		
Tensile strength (%)	80% of original	MD 14.5 Pass XD 12.7 Pass
Elongation (%)	70% of original	MD 533 Pass XD 86 Pass
Compressive strength (kN/m ²) ⁽¹⁾	100	115

⁽¹⁾ The compressive load test was done on the dimpled surface.

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