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Institute for
Research in
Construction

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construction

CCMC 13093-R

CCMC

EVALUATION
REPORT

DIVISION 07111

Issued 2002-11-15

Re-evaluation due 2005-11-15

*Delta-MS-Clear/The Max Foundation Wrap**

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Note:

* Trade name used Anx Building Systems Inc.

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1. Purpose of Evaluation

The proponent sought confirmation from the Canadian Construction Materials Centre (CCMC) that "Delta-MS-Clear" can serve as a material for dampproofing 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 "Delta-MS-Clear" 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*.

3. Description

Cosella-Dörken Delta-MS is a high density polyethylene, quasi-rigid plastic sheet membrane, extruded in such a way that results in a dimpled surface on one side and a smooth surface on the other.

The Delta-MS-Clear, sheets have dimples 8 mm high, and are offered in rolls 0.6 mm thick, 20 m long and 1.8m and 2.4 m wide.

To ensure correct application, the Delta-MS-Clear dampproofing system includes a range of

accessories such as fasteners, washers and molding strips.

The Delta-MS-Clear dampproofing system and its installation are illustrated in Figures 1 and 2.

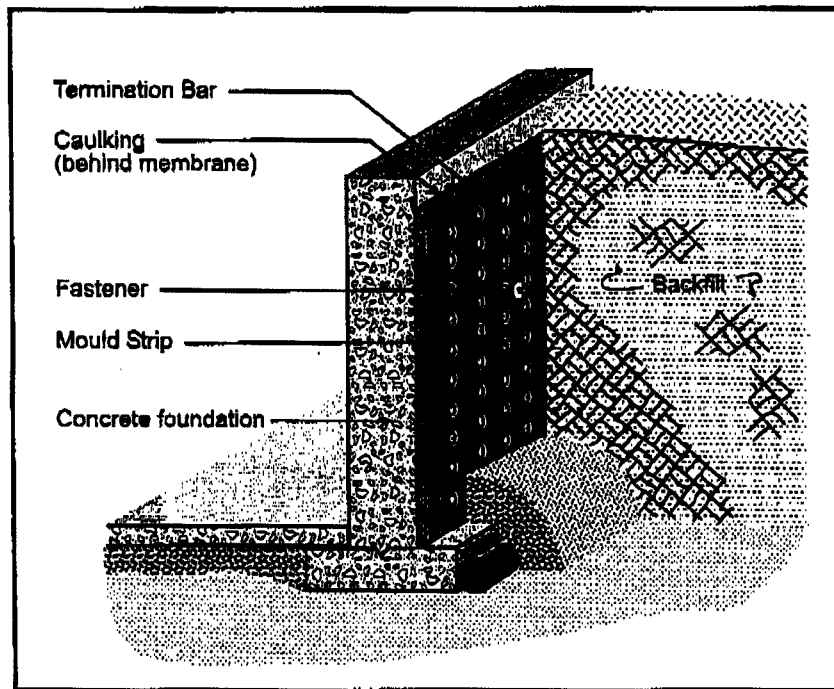


Figure 1. Delta-MS-Clear (face in contact with the soil)

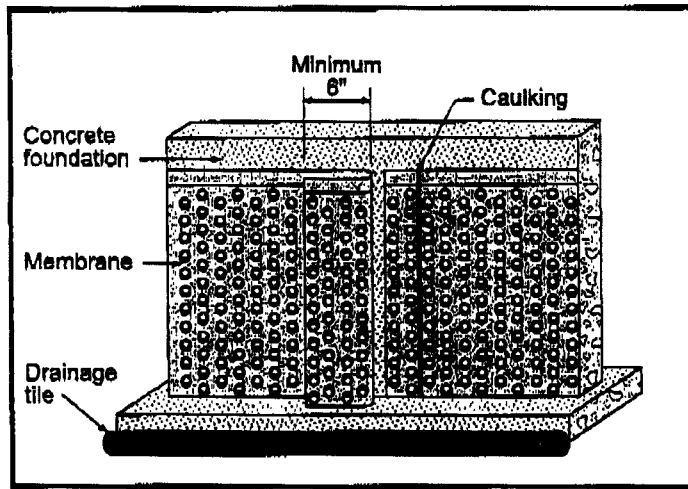


Figure 2. Delta-MS-Clear (face in contact with the wall)

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 Delta-MS-Clear 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 Delta-MS-Clear from the top of the footing to the final grade, and the top of the membrane must be securely fastened against 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 NBC 9.13.3.1 prior to installation.

5. Performance

Testing and assessments were conducted by independent laboratories recognized by the Canadian Construction Materials Centre. The results of testing the "Delta-MS-Clear" are summarized in Table 1.

Table 1. Test Results for Delta-MS-Clear

Property	Requirements	Results
Thickness (mm)	min. 0.6 in flat area	0.7
	0.5 in dimple area	0.5
Weight (g/m ²)	min. 500	590
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	3.4
Original		
- Tensile strength (kN/m width)	min. 8	MD 13.1, XD 12.6
- Elongation (%)	min. 25	MD 37.5, XD 34.2
Water immersion		
- Tensile strength (%)	80% of original	MD 13.04 (Pass) XD 13.08 (Pass)
- Elongation (%)	70% of original	MD 32 (Pass) XD 49 (Pass)
Heat aging		
- Dimensional change (%)	1	MD -0.68, XD -0.22
- Weight change (%)	0.10	0.10
- Tensile strength (%)	80% of original	MD 13.95 (Pass) XD 14.12 (Pass)
- Elongation (%)	70% of original	MD 30.3 (Pass) XD 30.8 (Pass)
Chemical attack exposure		
Ammonium chloride		
- Tensile strength (%)	80% of original	MD 13.06 (Pass) XD 13.02 (Pass)
Elongation (%)	70% of original	MD 47 (Pass) XD 82 (Pass)

Table 1. Test Results for Delta-MS-Clear (Cont'd)

Property	Requirements	Results
Sodium sulfate		
- Tensile strength (%)	80% of original	MD 12.72 (Pass) XD 12.93 (Pass)
- Elongation (%)	70% of original	MD 48 (Pass) XD 58 (Pass)
Compressive strength (kN/m ²) ⁽¹⁾	100	132

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

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Note: Readers are asked to refer to limitations imposed by NRC on the interpretation and use of this report. These limitations are included in the introduction to CCMC's Registry of Product Evaluations, of which this report is part.

Readers are advised to confirm that this report has not been withdrawn or superseded by a later issue by referring to www.nrc.ca/ccmc, or contacting the Canadian Construction Materials Centre, Institute for Research in Construction, National Research Council of Canada, Montreal Road, Ottawa, K1A 0R6; Telephone (613) 998-6189, Fax (613) 952-0268.

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