NRC·CNRC
Institute for Research in Construction

Evaluation Report CCMC 12658-R

MASTERFORMAT: 07 11 19.01
Issued: 1995-01-23
Re-evaluated: 2009-11-09
Revised: 2010-01-05
Re-evaluation due: 2013-01-23
Re-evaluation in Progress

Cosella-Dörken Delta-MS Dampproofing Membrane

1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that "Cosella-Dörken Delta-MS 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 2005:

- Clause 1.2.1.1.(1)(b), 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:
  - Subsection 9.13.2. Dampproofing

This opinion is based on CCMC's evaluation of the technical evidence in Section 4.1 provided by the Report Holder.

Ruling No. 09-38-236 (12658-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 2009-12-30 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 high-density polyethylene, quasi-rigid plastic sheet membrane, extruded in such a way that results in a dimpled surface on one side (dimples are 8 mm deep) and a smooth surface on the other.

The sheets are available in rolls that are 0.6 mm thick, 20 m long and 1.07 m to 3 m wide.

To ensure correct application, the "Cosella-Dörken Delta-MS" dampproofing system includes a range of accessories, such as fasteners, washers and molding strips.

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

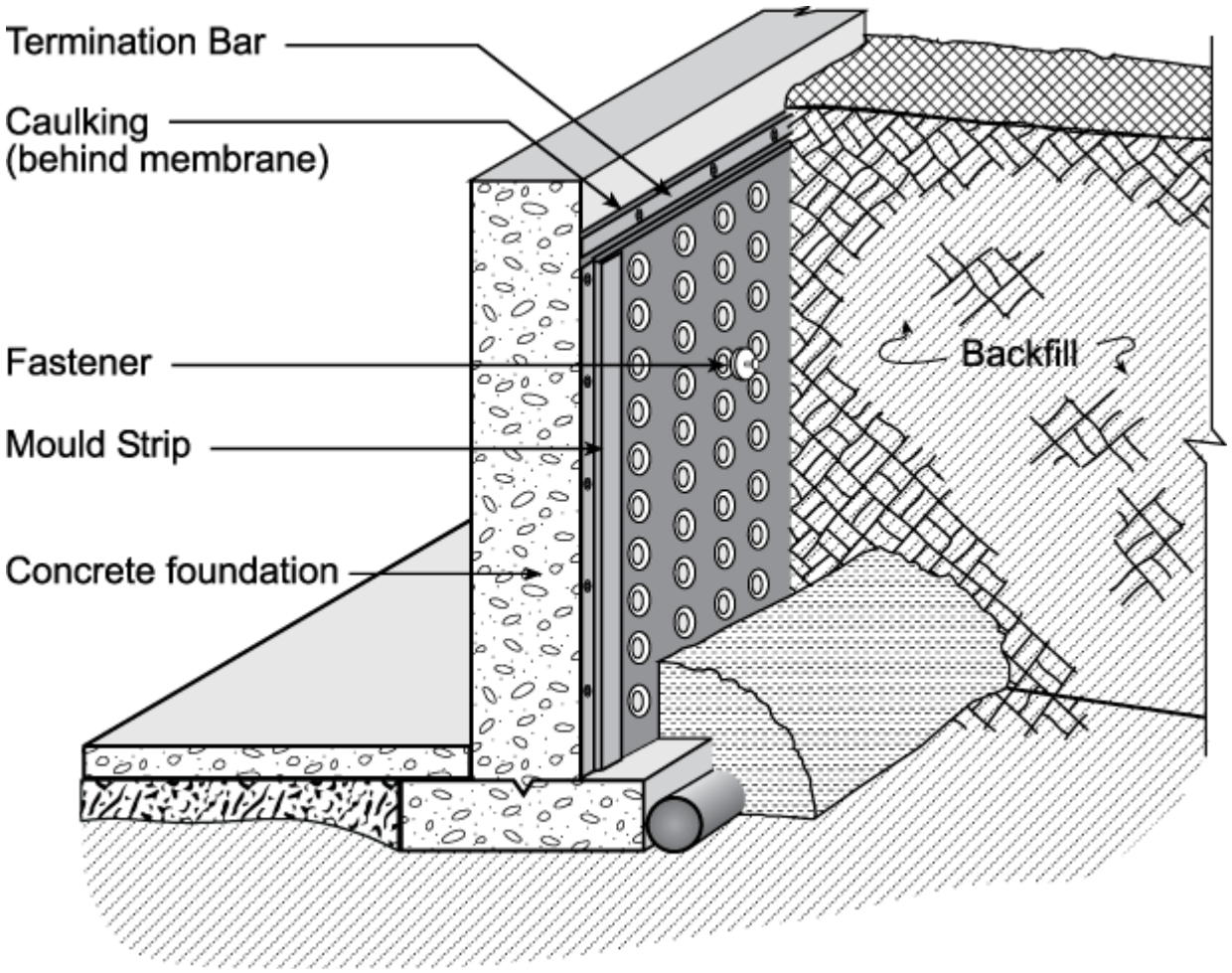

Figure 1. "Cosella-Dörken Delta-MS Dampproofing Membrane" – face in contact with the soil

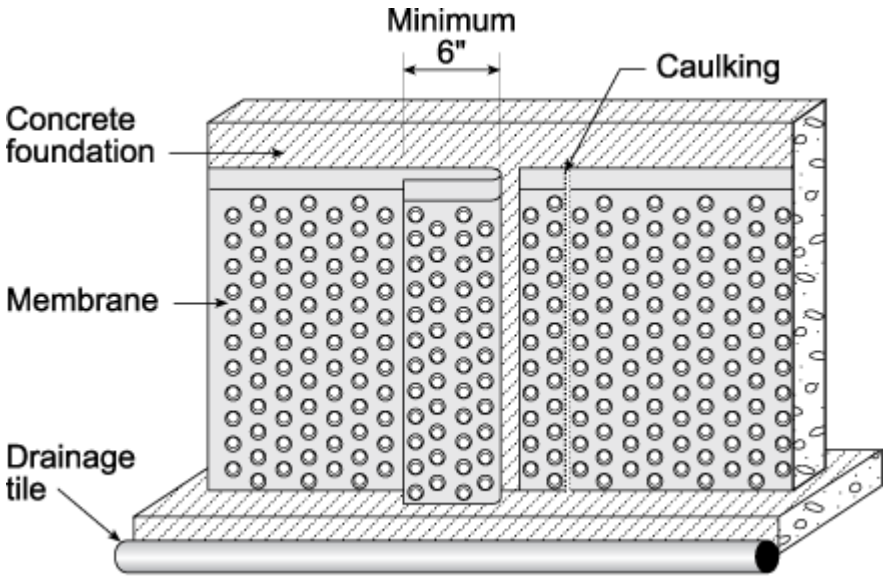

Figure 2. "Cosella-Dörken Delta-MS Dampproofing Membrane" – face in contact with the wall

3. Conditions and Limitations

CCMC's compliance opinion in Section 1 is bound by the "Cosella-Dörken Delta-MS Dampproofing Membrane" being used in accordance with the conditions and limitations set out below.

- The product must be used in locations where the foundation base is well drained in accordance with the NBC 2005.
- Use of the product has been evaluated for applications falling under the provisions of Part 9 of Division B of the NBC 2005.
- The product must be protected from exposure to ultra-violet radiation (sunlight) within 30 days of its installation.
- The product must be installed in accordance with the manufacturer's current instructions.

4. Technical Evidence

CCMC's Technical Guide for "Cosella-Dörken Delta-MS Dampproofing Membrane" sets out the nature of the technical evidence required by CCMC to enable it to evaluate a product as an acceptable or alternative solution in compliance with the NBC 2005. The Report Holder has submitted test results for CCMC's evaluation. Testing was conducted at independent laboratories recognized by CCMC. The corresponding test results for "Cosella-Dörken Delta-MS Dampproofing Membrane" are summarized below.

4.1 NBC 2005 Compliance Data for "Cosella-Dörken Delta-MS Dampproofing Membrane" on which CCMC Based its Opinion in Section 1

4.1.1 Performance Requirements

4.1.1.1 Technical Evidence

Table 4.1.1.1 Test results for "Cosella-Dörken Delta-MS Dampproofing Membrane"

Properties	Requirements	Results
Thickness (mm)	Min. 0.6 in flat area Min 0.5 in dimpled area	0.7 0.5
Weight (g/m^2)	min. 500	590
Impact load	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) • Elongation (%)	 Min. 10 Min. 25	 MD 13.11, XD 12.63 MD 37.5, XD 34.2

Water immersion • Tensile strength (%) • Elongation (%)	 80% of original 70% of original	 MD 13.04 (99%) XD 13.08 (> 100%) MD 32 (99%) XD 49 (> 100%)
Heat aging • Dimensional change (%) • Weight change (%) • Tensile strength (%) • Elongation (%)	 ± 1 0.10 80% of original 70% of original	 MD -0.68 XD -0.22 0.10 MD 13.95 (> 100%) XD 14.12 (> 100%) MD 30.3 (81%) XD 30.8 (90%)
Chemical attack exposure • Ammonium chloride ◦ Tensile strength (%) ◦ Elongation (%)	 80% of original 70% of original	 MD 13.06 (99%) XD 13.02 (> 100%) MD 47 (> 100%) XD 82 (> 100%)
• Sodium sulfate ◦ Tensile strength (%) ◦ Elongation (%)	 80% of original 70% of original	 MD 12.72 (97%) XD 12.93 (> 100%) MD 48 (> 100%) XD 58 (> 100%)
Compressive strength (kN/m^2) (1)	Min. 100	132

Note to Table 4.1.1.1:

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

Report Holder: Cosella-Dörken Products Ltd.
4655 Delta Way
Beamsville, ON L0R 1B4
Tel: 905-563-3255
Fax: 905-563-5582

Plant(s): Beamsville, ON