



Evaluation Report CCMC 13534-R DekSmart™ Ultra

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1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that “DekSmart™ Ultra,” when used as a waterproof membrane covering for decks and balconies that will be subject to light pedestrian traffic 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:
 - Section 9.26., Roofing

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 polyvinyl chloride membrane with a nominal thickness of 1.5 mm and a heat-set polyester fabric attached to the back. The surface of the product is embossed to provide a textured finish. The membrane is manufactured in rolls that are 1 829 mm wide and 22 m long.

The product is available in a variety of colours.

A typical roof/deck application is shown in Figure 1.

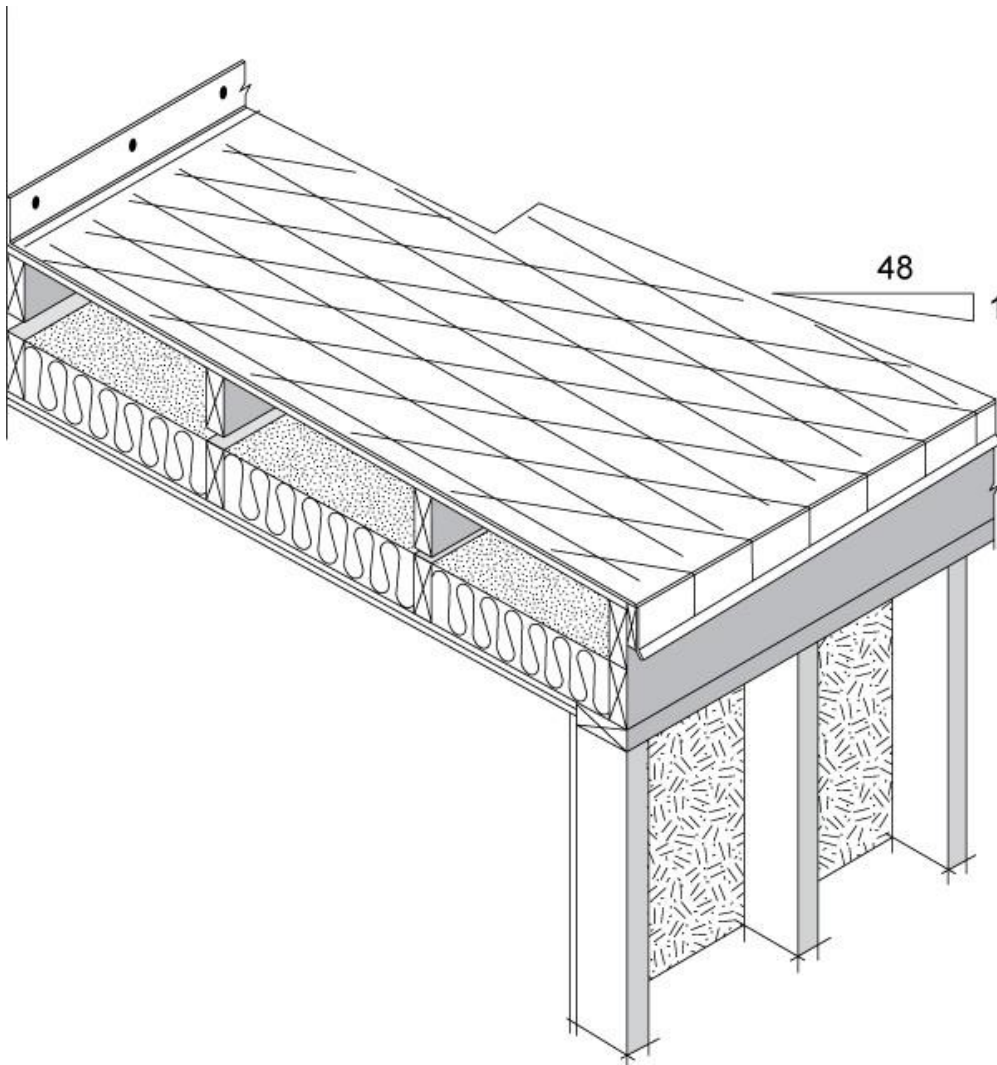


Figure 1. Typical roof/deck application for “DekSmart™ Ultra”

3. Conditions and Limitations

CCMC's compliance opinion in Section 1 is bound by the “DekSmart™ Ultra” being used in accordance with the conditions and limitations set out below.

- The product must be used in conjunction with plywood or concrete substrates. The membrane must be fully adhered to the substrate using the HB Fuller SC-0122 adhesive, and applied as outlined in the installation manual, dated January 2008.
- The product can be considered as an alternative solution to materials referenced in Section 9.26. of Division B of the NBC 2015.
- The product is limited for use in areas that are subject to traffic loads generated by residential occupancies only (light pedestrian traffic).
- The product is limited for use where the roof or deck surface has a minimum slope of 1:48.
- The product must not be exposed to chemical attack or spillage. In situations where extended contact with chemicals or pollutants may occur, the suitability of the product must be determined.
- Any physical or chemical damage to the membrane must be repaired in accordance with the manufacturer's instructions.
- The product must not be installed with butt seam joints.
- Joints must be shingle-lapped in order to shed water.
- The product must be installed by manufacturer-trained installers and in strict conformance with the current installation manual.
- The product or its packaging must be identified with the following information:
 - manufacturer's name or logo; and
 - the phrase “CCMC 13534-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 Material Requirements

4.1.1 Test Results for Material Properties

Property	Unit	Requirement	Result
Overall thickness	mm	Report result	1.5
Coating thickness	mm	≥ 0.4 (no single measurement < 0.32)	n/a

4.2 Performance Requirements

4.2.1 Test Results for Performance Properties

Property		Requirement	Result
Load strain properties - strain energy (kN/m)		Average ≥ 30 (no single value < 26)	42.7 (MD) ⁽¹⁾
			37.3 (XD) ⁽¹⁾
Water vapour transmission (g/m ² /d)		≤ 4.0	0.86
Effect of water absorption - mass increase (%)		≤ 3.0	3.0
Static puncture		Rating > 3	3
Dynamic puncture		Rating > 3	4
Low temperature impact	original	8 out of 10 pass	Pass
	after accelerated weathering		
Low temperature flexibility	original	Material shall not crack or exhibit any visible defects	Pass
	after heat aging		
	after accelerated weathering		
Lap joint strength-strain energy (%)	original	Min. 75% of original membrane	76 (MD) ⁽¹⁾
			86 (XD) ⁽¹⁾
	after heat aging	Min. 70% of original membrane	83 (MD) ⁽¹⁾
			73 (XD) ⁽¹⁾
Resistance to accelerated weathering (visual inspection)		No cracking, blistering or colour change	Pass
Abrasion resistance (g)		Weight loss ≤ 0.4 g (with maximum depth of wear of 0.30 mm)	Pass ⁽²⁾
Adhesion to substrate (N)		≥ 125	130 ⁽³⁾

4.2.1 Test Results for Performance Properties (cont.)

Property		Requirement	Result
Slip resistance	dry condition	leather ≥ 0.50	Pass
		rubber ≥ 0.70	
	wet condition	leather ≥ 0.60	
		rubber ≥ 0.65	

Notes to Table 4.2.1:

1. “MD” means “machine direction;” “XD” means “cross-machine direction.”
2. The performance was deemed acceptable for intended use based on ASTM D 1242, Method A. The test result was 0.025 mm loss of thickness.
3. HB Fuller SC-0122, the solvent-based adhesive, was used in the test.

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