



Evaluation Report CCMC 13417-R GreenE-Board™

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1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that “GreenE-Board™”, when used as an interior backer board and as a rigid floor underlay in accordance with the conditions and limitations stated in Section 3 of this Report, complies with the National Building Code 2015:

- 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:
 - Article 9.29.10.4., Moisture-Resistant Backing
 - Article 9.30.2.2., Materials and Thickness

This opinion is based on CCMC’s evaluation of the technical evidence in Section 4 provided by the Report Holder.

Ruling No. 14-06-302 (13417-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 2014-09-23 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 building panel manufactured from magnesium oxychloride cement, perlite, reinforcing mesh and recycled wood dust. The nominal mass per unit area of the board is 11.2 kg/m².

The product is available in sheets that are 915 mm or 1 220 mm wide, 1 525 mm, 1 220 mm or 2 438 mm long, and 12.7 mm nominal thick.

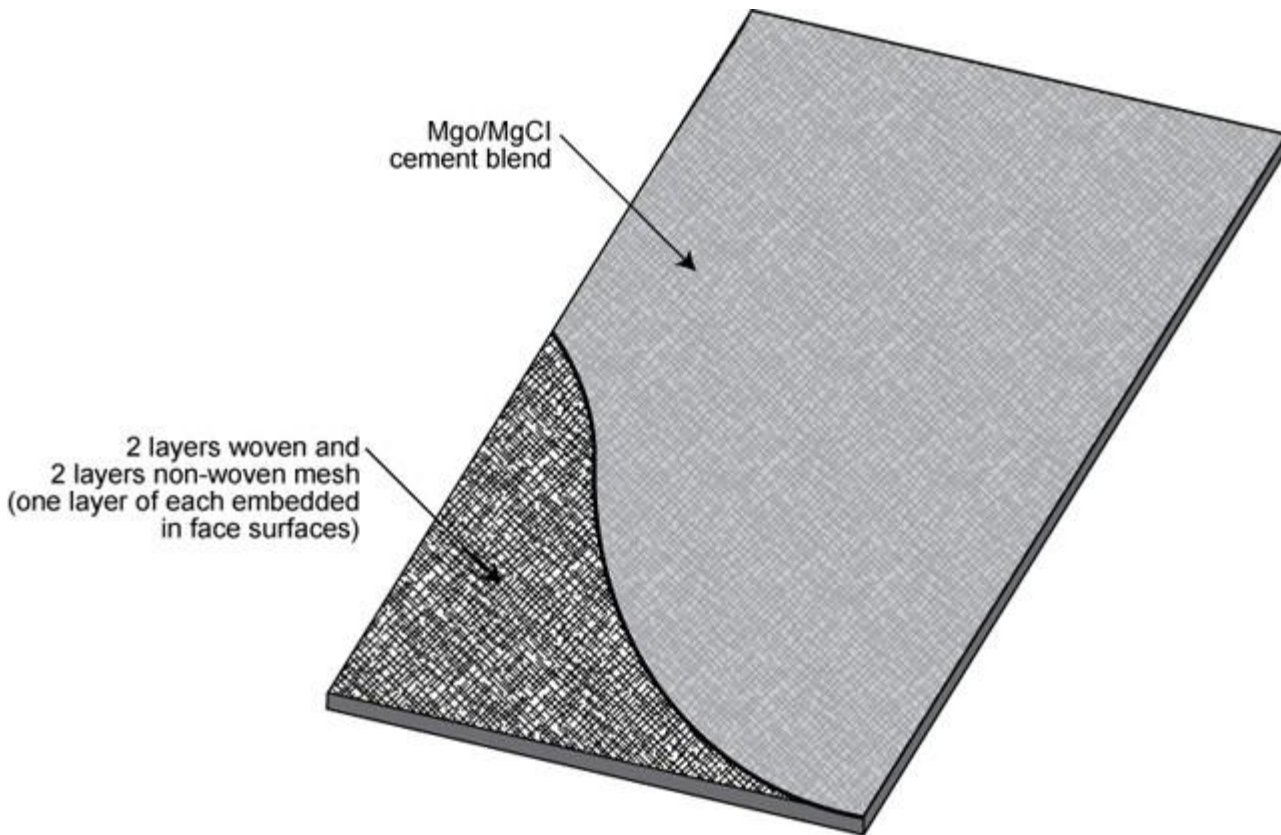


Figure 1. Construction of “GreenE-Board™”

3. Conditions and Limitations

CCMC’s compliance opinion in Section 1 is bound by the “GreenE-Board™” being used in accordance with the conditions and limitations set out below:

- The product may be used as an interior backer board on wood or metal studs for ceramic tile installations around showers, tubs and other interior areas requiring a moisture-resistant backing.
- The product is not water impermeable. Any areas behind the product that must be kept totally free of moisture, water or steam must be protected by a water impermeable membrane installed between the board and the framing.
- The product must be installed and fastened with 316 stainless steel fasteners only.
- The interior backer board installation is limited to support spacing no greater than 400 mm on centre (o.c) and must be carried out in accordance with the manufacturer’s instructions. In these installations the panel is not providing appropriate bracing that complies with Subsection 9.23.13., Bracing to Resist Lateral Loads Due to Wind and Earthquake, of Division B of the NBC 2015. The product must not be used in areas that need to provide lateral strength or other structural loading resistance.
- The product may be used as a panel-type underlay for resilient flooring, parquet flooring, ceramic tile, felted synthetic fibre floor coverings or carpeting. The product must be installed over subflooring that meets Subsection 9.23.15., Subflooring, of Division B of the NBC 2015, and in accordance with the manufacturer’s instructions.
- The product may not be used as a panel-type underlay installed over:
 - lumber subflooring, or
 - panel-type subflooring whose edges are unsupported.
- The board should not be used where it may be subject to common hard body impact.
- The product or its wrapping must be identified with the following information:
 - product’s name,
 - manufacturer’s name or logo, and
 - the phrase “CCMC 13417-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

Table 4.1.1 Results of Testing the Water Absorption Requirements of the Product

Property		Unit	Requirement	Result
Water absorption	48-h submersion	% by weight	Report value	29.0
	24-h submersion			27.0

4.2 Performance Requirements

Table 4.2.1 Results of Testing the Performance Requirements of the Product

Property		Unit	Requirement	Result
Humidified deflection		–	$\leq 1/360$	Pass
Linear variation	machine direction	%	≤ 0.20	.10
	cross-machine direction			.10
Flexural strength		MPa	≥ 5.17	3.14 ¹
Hardness	core	N	$\geq 2\,200$	2 674
	end			2 483
	edge			2 438
Hard body impact resistance	indentation	mm	Indentation ≤ 1	0.66 (dry), 0.71 (wet)
	failure load	N·m	10.9	6.8 ²
Soft body impact resistance	visual inspection	N/A	No damage	Pass
	failure load	N·m	20.4	20.4 (dry), 40.7 (wet)
Fastener pull-through resistance		N	≥ 320	958
Fastener lateral resistance	as received	N	≥ 400	720
	water soaked			558
	after accelerated aging			481

Notes to Table 4.2.1:

- 1 Comparative tests showed that the product exceeds conventional gypsum board flexural strength values.
- 2 The board should not be used where it may be subject to common hard body impact.

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