



Evaluation Report CCMC 14091-R HardieBacker® 6.4 mm (1/4 in.) underlayment, HardieBacker® 6.4 mm (1/4 in.) EZ Grid® underlayment, HardieBacker® 10.3 mm (1/2 in.) 500 backerboard

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1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that “HardieBacker® 6.4 mm (1/4 in.) underlayment,” “HardieBacker® 6.4 mm (1/4 in.) EZ Grid® underlayment,” and “HardieBacker® 10.3 mm (1/2 in.) 500 backerboard,” when used as an interior backerboard and as a rigid floor underlay in accordance with the conditions and limitations stated in Section 3 of this Report, comply 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:
 - 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.

2. Description

“HardieBacker® 6.4 mm (1/4 in.) underlayment,” “HardieBacker® 6.4 mm (1/4 in.) EZ Grid® underlayment,” and “HardieBacker® 10.3 mm (1/2 in.) 500 backerboard” are fibre-cement boards made mainly of hydraulic Portland cement, and reinforced integrally with cellulose fibres.

“HardieBacker® 6.4 mm (1/4 in.) underlayment” is manufactured in the following dimensions:

- 914 mm or 1 219 mm wide
- 1 524 mm or 2 438 mm long, and
- nominally 6.4 mm thick.

“HardieBacker® 6.4 mm (1/4 in.) EZ Grid® underlayment” is manufactured in the following dimensions:

- 914 mm wide,
- 1 524 mm long, and
- nominally 6.4 mm thick.

“HardieBacker® 10.3 mm (1/2 in.) 500 backerboard” is manufactured in the following dimensions:

- 812 mm, 914 mm or 1 219 mm wide,
- 1 524 mm or 2 438 mm long, and
- nominally 10.3 mm thick.

“HardieBacker® 6.4 mm (1/4 in.) underlayment” and “HardieBacker® 10.3 mm (1/2 in.) 500 backerboard” have a smooth finished surface and square edges.

“HardieBacker® 6.4 mm (1/4 in.) EZ Grid® underlayment” has a smooth surface with a grid pattern and nail alignment feature. This assists installers by providing grid lines and marks for cutting-to-size, and nail placement designed to facilitate building applications for the attachment of tile.

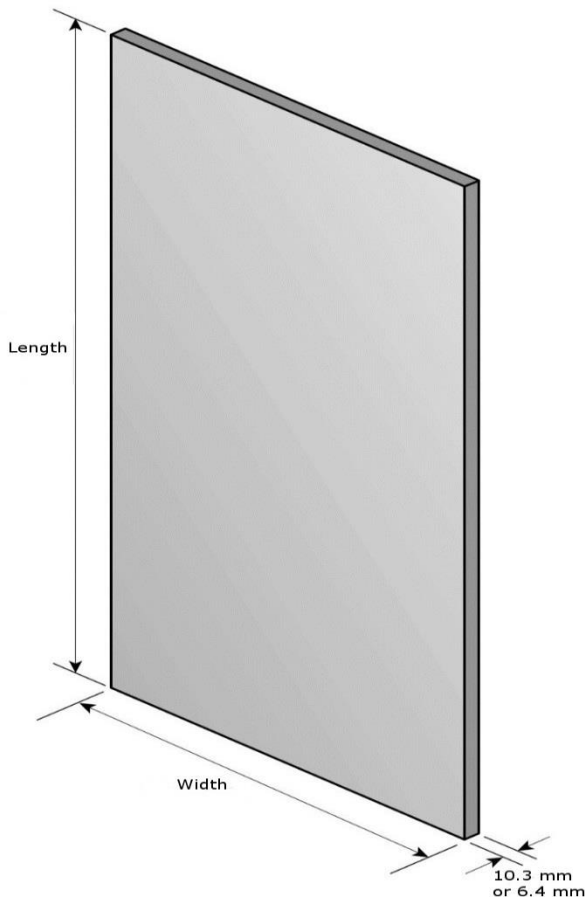


Figure 1. “HardieBacker® 10.3 mm (1/2 in.) 500 backerboard”

3. Conditions and Limitations

CCMC’s compliance opinion in Section 1 is bound by the “HardieBacker® 6.4 mm (1/4 in.) underlayment,” “HardieBacker® 6.4 mm (1/4 in.) EZ Grid® underlayment,” and “HardieBacker® 10.3 mm (1/2 in.) 500 backerboard” being used in accordance with the conditions and limitations set out below:

“HardieBacker® 10.3 mm (1/2 in.) 500 backerboard”

- The product may be used as an interior backerboard 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 corrosion-resistant fasteners only.
- The interior backerboard 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.

“HardieBacker® 6.4 mm (1/4 in.)” and “HardieBacker® 6.4 mm (1/4 in.) EZ Grid® underlayment”

- The products may be used as a panel-type underlay for resilient flooring, parquet flooring, ceramic tile, felted synthetic fibre floor coverings or carpeting. The products 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 products may not be used as a panel-type underlay installed over:
 - lumber subflooring, or
 - panel-type subflooring whose edges are unsupported.
- The products must not be used where they may be subjected to impact.
- The products shall be fastened at least 9.5 mm (3/8 in.) from edge of board in all directions

The products or their wrapping must be identified with the following information:

- product name,
- manufacturer’s name or logo, and
- the phrase “CCMC 14091-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)	10.3 mm (1/2 in.)	% by weight	Report value	34.0
	6.4 mm (1/4 in.)			37.0

4.2 Performance Requirements

Table 4.2.1 Results of Testing the Performance Requirements of HardieBacker® 10.3 mm (1/2 in.) 500 Backerboard

Property		Unit	Requirement	Result
Humidified deflection		–	≤ 1/360	Pass
Linear variation	machine direction	%	≤ 0.20	0.08
	cross-machine direction			0.07
Flexural strength		MPa	≥ 5.17	5.40
Hardness	core	N	≥ 2 200	4 448 ⁽¹⁾
	end			4 448
	edge			4 448
Hard body impact resistance	indentation	mm	≤ 1.9 ⁽²⁾	dry
				wet
	failure load	N·m	10.9	No failure at 10.9
				wet
Soft body impact resistance	visual inspection	N/A	No damage	Pass
	failure load	N·m	20.4	Pass
Fastener pull-through resistance		N	≥ 289	986
Fastener lateral resistance	dry	N	≥ 400	1 027 at 9.5 mm (3/8 in.) from edge
	wet			769 at 9.5 mm (3/8 in.) from edge

Note to Table 4.2.1:

- (1) 4 448 N was capacity of test equipment.
 (2) 1.9 mm maximum indentation depth for easily repairable surface

Table 4.2.2 Results of Testing the Performance Requirements of HardieBacker® 6.4 mm (1/4 in.) and HardieBacker® 6.4 mm (1/4 in.) EZ Grid® Underlayment

Property		Unit	Requirement	Result
Linear variation	machine direction	%	≤ 0.20	0.07
	cross-machine direction			0.09
Flexural strength		MPa	≥ 5.17	5.26
Hardness	core	N	≥ 2 200	4 387
	end			4 448
	edge			4 367
Hard body impact resistance	indentation	dry	≤ 1.9 ⁽¹⁾	1.37
		wet		1.24
	failure load	N·m	10.9	Fails ⁽²⁾
Soft body impact resistance	visual inspection	N/A	No damage	Pass
	failure load	N·m	20.4	Fails ⁽²⁾
Fastener pull-through resistance		N	≥ 179	445
Fastener lateral resistance	dry	N	≥ 400	742 at 9.5 mm (3/8 in.) from edge
	wet			525 at 9.5 mm (3/8 in.) from edge

Notes to Table 4.2.2:

- (1) 1.9 mm maximum indentation depth for easily repairable surface
 (2) The products must not be used where they may be subjected to impact.

Report Holder

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