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Proposed Change 1467

Code Reference(s):	NBC20 Div.B 9.26.2.1. (first printing)
Subject:	Roofing, Dampproofing and Waterproofing Standards
Title:	Introduction of a New Standard for Asphalt Core Boards
Description:	This proposed change introduces CSA A123.25:18, "Asphalt core boards used in roofing," into Table 9.26.2.1.-B.
Related Code Change Request(s):	CCR 1270
Related Proposed Change(s):	PCF 1483

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input checked="" type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input checked="" type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

There are currently no explicit requirements related to asphalt core boards in Part 9 of Division B of the National Building Code of Canada (NBC), although the material is commonly used in practice as a substrate in flat or low-slope roofing. This lack of requirements leads to inconsistency in the design, construction and performance of asphalt core boards across Canada, which can lead to roof membrane issues and potential water ingress, which could put Canadians at an unacceptable risk of illness due to poor indoor air quality (e.g., exposure to mould resulting from water ingress) and inadequate thermal comfort resulting from the degradation of thermal insulation material following contact with moisture.

Justification

Given the current inconsistency in the design, construction and performance of asphalt core boards used as roofing materials in Canada, there is a need to introduce a reference to a standard into the NBC.

CSA A123.25:18, "Asphalt core boards used in roofing," is suitable for referencing in the NBC and reflects the minimum performance requirements for substrates of asphalt-based and low-slope roofing membranes (e.g., built-up roofing or modified bitumen). In such systems, the roofing membrane can be adhered to the asphalt core board with hot asphalt or cold-applied adhesive, heat-welded to the asphalt core board, or mechanically attached to the structural deck through the asphalt core board.

Adding the standard to Table 9.26.2.1.-B would introduce minimum requirements for the performance of asphalt core boards across Canada and thus limit the probability of roof membrane issues and water ingress, which would help minimize health risks associated with poor indoor air quality, inadequate thermal comfort and exposure to moisture.

PROPOSED CHANGE

[9.26.2.1.] 9.26.2.1. Material Standards

- [1] 1)** Where materials used for the preparation of the substrate for roofing are covered in the scope of a standard listed in Table 9.26.2.1.-A, they shall conform to that standard.

**Table [9.26.2.1.-A] 9.26.2.1.-A
Materials for Preparation of the Substrate for Roofing
Forming Part of Sentence [9.26.2.1.] 9.26.2.1.([1] 1)**

Type of Material	Standards
Sheathing membranes	CAN/CGSB-51.32-M, "Sheathing, Membrane, Breather Type"
Primers	CGSB 37-GP-9Ma, "Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing"

- [2] 2)** Where roofing materials are covered in the scope of a standard listed in Table 9.26.2.1.-B, they shall conform to that standard.

**Table [\[9.26.2.1.-B\]](#) 9.26.2.1.-B
Roofing Materials
Forming Part of Sentence [\[9.26.2.1.\]](#) 9.26.2.1.([2] 2)**

Types of Roof Covering	Standards
Built-up roofing (BUR)	ASTM D3019/D3019M, "Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, and Fibered" ⁽¹⁾
	ASTM D4479/D4479M, "Standard Specification for Asphalt Roof Coatings – Asbestos-Free"
	CAN/CGSB-37.50-M, "Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing"
	CGSB 37-GP-56M, "Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing"
	CAN/CSA-A123.2, "Asphalt-Coated Roofing Sheets"
	CSA A123.25, "Asphalt core boards used in roofing"
	CSA A123.3, "Asphalt Saturated Organic Roofing Felt"
	CAN/CSA-A123.4, "Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems"
	CSA A123.17, "Asphalt Glass Felt Used in Roofing and Waterproofing"
Single-ply membranes	ASTM D4637/D4637M, "Standard Specification for EPDM Sheet Used In Single-Ply Roof Membrane"
	ASTM D4811/D4811M, "Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing"
	ASTM D6878/D6878M, "Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing"
	CAN/CGSB-37.54, "Polyvinyl Chloride Roofing and Waterproofing Membrane"
	CAN/CGSB-37.58-M, "Membrane, Elastomeric, Cold-Applied Liquid, for Non-Exposed Use in Roofing and Waterproofing"
Shingles, shakes, tiles, panels	CSA A123.5, "Asphalt shingles made from glass felt and surfaced with mineral granules"
	CAN/CSA-A220 Series, "Concrete Roof Tiles"

Types of Roof Covering	Standards
	CSA O118.1, "Western Red Cedar Shakes and Shingles"
	CSA O118.2, "Eastern White Cedar Shingles"
Eave protection	CAN/CSA-A123.16, "Asphalt-coated glass-base sheets"
	CSA A123.22, "Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection"
Flashing	ASTM D4811/D4811M, "Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing"

Note to Table [\[9.26.2.1.-B\]](#) 9.26.2.1.-B:

- (1) For the purpose of this Subsection, ASTM D3019/D3019M shall only apply to the non-fibered and non-asbestos-fibered types (I and III) of asphalt roll roofing.
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Impact analysis

Manufacturers would need to test their materials according to the standard. The cost of the test ranges from \$7,000 to \$9,000. This requirement can be a benefit to manufacturers, as it gives them an opportunity to acquire market share through an initial investment in testing, but it may also be a barrier to entry for smaller companies. Since it is an initial investment decision by the manufacturer to acquire market share, no significant additional cost is expected to be incurred by Code users or end users of the building.

Building officials would need to verify that the materials have been tested according to the standard. This verification can be accomplished through communication with the certifying agency or by confirming with the manufacturer's published literature (e.g., technical data sheets).

Adding the standard to the NBC would decrease workloads for contractors, manufacturers, designers, specification writers and building officials in determining Code compliance by providing minimum performance requirements.

Enforcement implications

The standard can be enforced without additional resources.

Who is affected

Designers, specifiers, manufacturers, contractors, building owners and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[\[9.26.2.1.\]](#) 9.26.2.1. ([\[1\]](#) 1) [F61-OH1.1,OH1.2,OH1.3]

[\[9.26.2.1.\]](#) 9.26.2.1. ([\[1\]](#) 1) [F61-OS2.3]

[\[9.26.2.1.\]](#) 9.26.2.1. ([\[2\]](#) 2) [F61-OH1.1,OH1.2,OH1.3]

[\[9.26.2.1.\]](#) 9.26.2.1. ([\[2\]](#) 2) [F61-OS2.3]