

CCMC 13562-R

CCMC Canadian code compliance evaluation

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Status:	Active
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Evaluation holder:	<p>Soprema Inc.</p> <p>1688 rue Jean-Berchmans-Michaud Drummondville QC J2C 8E9 Canada</p> <p>Website: www.soprema.ca Telephone: 819-478-2400, 866-478-2400 Email: info@soprema.ca</p>
Product name:	Elastophene 1500, Resisto Self-Adhered Waterproofing Membrane, Membrane d'Étanchéité autocollante de Resisto
Compliance:	NBC 2010, OBC
Criteria:	CCMC-TG-071326.01-10 "CCMC Technical Guide for Self-Adhered Modified Bituminous Membrane for Waterproofing Concrete Foundation Walls"

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Compliance opinion

It is the opinion of the Canadian Construction Materials Centre that the evaluated product, when used as a self-adhered, modified bituminous membrane for waterproofing below-ground concrete foundation walls in accordance with the conditions and limitations stated in this evaluation, complies with the following code:

National Building Code of Canada 2010

Code provision	Solution type
9.13.3.1.(1)(b) Required Waterproofing	<u>Acceptable</u>
9.13.3.2.(1) Except as otherwise specified in this Se ...	<u>Alternative</u>
9.13.3.3.(1) The method of application of all bitumin ...	<u>Alternative</u>
9.13.3.5.(1) Concrete or unit masonry walls that are ...	<u>Alternative</u>

Ontario Building Code

Ruling No. 12-20-290 (13562-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 2012-12-20 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.

The above opinion(s) is/are based on the evaluation by the CCMC of technical evidence provided by the evaluation holder, and is bound by the stated conditions and limitations. For the benefit of the user, a summary of the technical information that forms the basis of this evaluation has been included.

Product information

Product name

Elastophene 1500, Resisto Self-Adhered Waterproofing Membrane, Membrane d'Étanchéité autocollante de Resisto

Product description

The product is a self-adhered, modified bituminous membrane intended to be used for waterproofing below-grade concrete foundation walls (poured-in-place and unit masonry walls). The membrane consists of a styrene-butadiene-styrene (SBS) modified bitumen that is laminated to a tri-laminated woven polyethylene film. A silicone release film is applied on the other side of the membrane to facilitate the installation. The membrane has vertical overlap markings to help installers achieve suitable overlaps at the seams.

The membrane is installed following the application of the manufacturer's specified primer over the foundation wall and at the membrane seams. The membrane must be adequately adhered to the wall and to itself at the seams to prevent water infiltration in between the membrane and the wall and at the seams.

The membrane is available in two grades that are made of different modified bituminous blends. The grade is identified on the membrane: the regular grade for the summer (E/S) and the cold-weather grade for the winter (H/W).

The Elastophene 1500 summer grade membrane is manufactured in rolls that measure 10 m × 1 m, 20 m × 1 m and 7 m × 0.5 m. The winter grade measures 20 m x 1 m. The Resisto Self-Adhered Waterproofing Membrane summer grade membrane is manufactured in rolls that measure 10 m × 1 m, 18.6 m × 1 m and 7 m × 0.5 m. The winter grade measures 18.6 m x 1 m. In both grades, the membrane is 1.5 mm thick.

Manufacturing plant

This evaluation is valid only for products produced at the following plant:

Product name	Manufacturing plant
	Drummondville, QC, CA
Elastophene 1500, Resisto Self-Adhered Waterproofing Membrane, Membrane d'Étanchéité autocollante de Resisto	☑

☑ Indicates that the product from this manufacturing facility has been evaluated by the CCMC

Conditions and limitations

The CCMC's compliance opinion is bound by this product being used in accordance with the conditions and limitations set out below.

- Use of the product has been evaluated for applications falling under the scope of Part 9 of Division B of the NBC 2010. The foundation walls must meet the structural requirements of the NBC 2010.
- The poured-in-place concrete must be cured prior to the application of the product.
- The maximum hydrostatic pressure the membrane and seams can sustain is 48 kPa.
- Unit masonry or poured-in-place concrete walls must meet the surface preparation requirements of Article 9.13.3.4., Preparation of Surface, of Division B of the NBC 2010.
- The concrete wall must be cleaned, dried and primed with exterior primer as per the manufacturer's installation instructions prior to the installation of the membrane.
- The product must be installed as per the manufacturer's specified application temperature for the summer and winter grade.
- The width of the overlap joint (seam) must be a minimum of 75 mm. The exterior primer must be applied along the overlap marking (75 mm) prior to the application of the next membrane.
- The thickness of the membrane when installed on-site must be equivalent to the thickness of the evaluated product which is 1.5 mm.
- The membrane rolls must be stored vertically on-site at a temperature less than the maximum temperature recommended by the manufacturer and must be protected from solar radiation as per the manufacturer's instructions.
- While the waterproofing continuity of the membrane to other parts of the wall (slabs, footing, etc.) is beyond the scope of this report, the installer must follow engineer-approved solutions to provide the waterproofing continuity.
- A mastic must be applied to seal the top and bottom edges (terminations) of the membrane in accordance with the manufacturer's instructions.
- Following its application, the entire membrane must be protected from exposure to ultraviolet (UV) radiation from the sun within three weeks of its application and in accordance with the manufacturer's additional recommendations.
- The membrane must stop at grade level. Exposed above-grade portions of the membrane after soil settling must be protected from UV radiation and mechanical impact with additional backfill graded away from the foundation.
- When used in soils containing high levels of organic matters, chemicals and microbiological activity, the manufacturer must be consulted to determine suitability.
- Prior to backfilling, the membrane must be covered with a protection board that consists of a semi- or rigid board with a smooth surface facing the membrane (e.g., mineral fibre boards, EPS/XPS boards). The use of mechanically attached board systems may affect the waterproofing performance of the product. The manufacturer must provide instructions for the selection of appropriate fasteners and evidence that such fasteners produce a permanent waterproof seal for the foundation. If any self-seal performance is claimed by the manufacturer, then evidence must be supplied as to the extent of the capability and how tests were performed.
- The foundation wall must be backfilled in accordance with the requirements of the Subsection 9.12.3., Backfill, of Division B of the NBC 2010.
- The product must be applied in accordance with the manufacturer's installation instructions by qualified installers using the manufacturer's recommended tools.
- The product must be identified with the phrase "CCMC 13562-R."

Technical information

This evaluation is based on demonstrated conformance with the following criteria:

Criteria number	Criteria name
CCMC-TG-071326.01-10	CCMC Technical Guide for Self-Adhered Modified Bituminous Membrane for Waterproofing Concrete Foundation Walls

The evaluation holder has submitted technical documentation for the CCMC's evaluation. Testing was conducted at laboratories recognized by the CCMC. The corresponding technical evidence for this product is summarized below

Material requirements

Table 1. Results of testing the material requirements of the product

Property	Unit	Requirement	Result	
			Summer grade	Winter grade
Thickness variation	%	±10% of the manufacturer's declared value	0.01 ⁽¹⁾	0.05 ⁽¹⁾
Hardness (Type 00 hardness gauge)	–	Report value	82.1	81.4
Water vapour permeance (WVP), Procedure B	ng/(Pa·s·m ²)	±10% of the manufacturer's declared value	1.32	1.24
Tensile strength at break - machine direction	kN/m ⁽²⁾	Report value	11.91	12.38
Tensile strength at break - cross-machine direction			13.57	13.67

Notes:

- ¹ The average measured thickness of the summer grade is 1.49 mm and the winter grade is 1.42 mm.
- ² The tensile strength is expressed in force unit per meter width of the specimen due to the particular behaviour of the multi-layered membrane.

Performance requirements

Table 2. Results of testing the watertightness performance of the product

Property ^{(1), (2)}	Requirement	Result	
		Summer grade	Winter grade
Watertightness	No leakage	Pass	

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Property ^{(1), (2)}	Requirement	Result	
		Summer grade	Winter grade
Water immersion/watertightness	No leakage	Pass	
Heat aging/watertightness	No leakage	Pass	
Chemical aging (NaOH)/watertightness	No leakage	Pass	
Chemical aging (acetic acid)/watertightness	No leakage	Pass	
UV aging/watertightness	No leakage	Pass	
Low temperature flexibility/watertightness	No leakage	Pass	

Notes:

- 1 The specimens passed the watertightness test at 48 kPa of water pressure.
- 2 The "/" indicates that a test sequence was performed (e.g., a water immersion test was performed followed by a watertightness test).

Table 3. Results of testing the crack bridging resistance of the product

Property ⁽¹⁾		Requirement	Result	
			Summergrade	Winter grade
Crack bridging	30 cycles at -20°C 30 cycles at 30°C	No cracking, breakage, tearing, adhesion failure or other observable failures	Pass	
Water immersion/ crack bridging	30 cycles at -20°C 30 cycles at 30°C	No cracking, breakage, tearing, adhesion failure or other observable failures	Pass	
Heat aging/crack bridging	10 cycles at -20°C 10 cycles at 30°C	No cracking, breakage, tearing, adhesion failure or other observable failures	Pass	
Chemical aging (NaOH)/crack bridging	10 cycles at -20°C 10 cycles at 30°C	No cracking, breakage, tearing, adhesion failure or other observable failures	Pass	
Chemical aging (acetic acid)/crack bridging	10 cycles at -20°C 10 cycles at 30°C	No cracking, breakage, tearing, adhesion failure or other observable failures	Pass	
UV aging/crack bridging	10 cycles at -20°C 10 cycles at 30°C	No cracking, breakage, tearing, adhesion failure or other observable failures	Pass	

Note:

- 1 The "/" indicates that a test sequence was performed (e.g., a water immersion test was performed followed by a crack bridging test).

Table 4. Results of testing the peel adhesion performance of the product

Property ⁽¹⁾	Unit ⁽²⁾	Requirement	Result	
			Summer grade	Winter grade
Peel adhesion	N/m	≥ 175	1 239	1 120
Water immersion/peel adhesion	N/m	158 (≥ 90% of 175)	984	367
Heat aging/peel adhesion			949	526
UV aging/peel adhesion			2 581	592

Notes:

- 1 The "/" indicates that a test sequence was performed (e.g., a water immersion test was performed followed by a peel adhesion test).
- 2 The peel adhesion is expressed as a force unit per meter width of the specimen.

Table 5. Results of testing the tensile strength of the product

Property ⁽¹⁾	Unit ⁽²⁾	Requirement ⁽³⁾	Result ⁽⁴⁾	
			Summer grade	Winter grade
Heat aging/tensile strength	kN/m	Summer grade ≥ 10.72 Winter grade ≥ 11.14 (≥ 90% of original value)	13.00	13.08
Chemical aging (NaOH)/tensile strength			12.85	12.28
Chemical aging (acetic acid)/tensile strength			12.12	11.93
UV aging/tensile strength			11.96	11.93

Notes:

- 1 The "/" indicates that a test sequence was performed (e.g., a heat aging test was performed followed by a tensile strength test).
- 2 The tensile strength is expressed in force unit per meter width of the specimen due to the particular behaviour of the multi-layered membrane.
- 3 The original values for tensile strength are shown in Table "[Results of testing the material requirements of the product](#)".
- 4 The aging test sequences were conducted with specimens that showed the weakest tensile test results prior to aging either in the machine or cross-machine direction.

Table 6. Results of testing the performance properties of the lap joint on the product ⁽¹⁾

Property ⁽¹⁾	Requirement	Result	
		Summer grade	Winter grade
Water immersion/watertightness ⁽²⁾	No leakage	Pass	
Heat aging/watertightness ⁽²⁾	No leakage	Pass	
Water immersion/peel adhesion	≥ 158 N/m (≥ 90% of 175)	1 280	982
Heat aging/peel adhesion		1 167	516
UV aging/peel adhesion		1 254	775
Lap joint shear test	No bounding and slippage failure prior to reaching the breaking strength of the membrane	Pass	
Heat aging/lap joint shear test	No bounding and slippage failure prior to reaching the breaking strength of the membrane	Pass	

Notes:

- ¹ The overlap joint width is 75 mm. The exterior primer was applied along the overlap marking of the tested specimens.
- ² The lap joint specimens passed the watertightness test at 48 kPa of water pressure.

Administrative information

Use of Canadian Construction Materials Centre (CCMC) assessments

This assessment must be read in the context of the entire [CCMC Registry of Product Assessments](#), any applicable building code or by-law requirements, and/or any other regulatory requirements (for example, the [Canada Consumer Product Safety Act](#), the [Canadian Environmental Protection Act](#), etc.).

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Disclaimer

The National Research Council of Canada (NRC) has evaluated only the characteristics of the specific product described herein. The information and opinions in this evaluation are directed to those who have the appropriate degree of experience to use and apply its contents (such as authorities having jurisdiction, design professionals and specifiers). This evaluation is valid when the product is used as part of permitted construction, respecting all conditions and limitations stated in the evaluation, and in accordance with applicable building codes and by-laws.

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Language

Une version française de ce document est disponible.

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Most Canadian authorities having jurisdiction (AHJs) consider CCMC product assessments acceptable as evidence for product approval.

CCMC assessments are recognized by construction authorities across Canada:

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For more information, contact the CCMC by phone at (613) 993-6189 or by email at ccmc@nrc-cnrc.gc.ca

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Code compliance as an acceptable solution

Code Compliance via Acceptable Solutions

If a building design (e.g. material, component, assembly or system) can be shown to meet all provisions of the applicable **acceptable solutions** in Division B (e.g. it complies with the applicable provisions of a referenced standard), it is deemed to have satisfied the objectives and functional statements linked to those provisions and thus to have complied with that part of the Code.

— National Building Code of Canada, Sentence A-1.2.1.1.(1)(a)

The CCMC has determined that compliance with this provision of the Code has been demonstrated as an **Acceptable Solution**. The evaluation report provides a summary of the basis of CCMC's compliance opinion.

CCMC's code compliance opinions

All CCMC evaluation reports are opinions of code compliance established in accordance with the National Building Code of Canada, Subsection 1.2.1. "Compliance with this Code," which requires compliance to be achieved by:

- complying with the applicable acceptable solutions in Division B, or
- using an alternative solution that will achieve at least the minimum level of performance required by Division B in the areas defined by the objective and functional statements attributed to the applicable acceptable solutions.

The CCMC assesses compliance with Canadian building, energy and safety codes, and is trusted by over 6,000 regulators across Canada.

Code compliance as an alternative solution

Code Compliance via Alternative Solutions

Where a design differs from the acceptable solutions in Division B, then it should be treated as an **"alternative solution."** A proponent of an alternative solution must demonstrate that the alternative solution addresses the same issues as the applicable acceptable solutions in Division B and their attributed objectives and functional statements. However, because the objectives and functional statements are entirely qualitative, demonstrating compliance with them in isolation is not possible. Therefore, Clause 1.2.1.1.(1)(b) identifies the principle that Division B establishes the quantitative performance targets that alternative solutions must meet. In many cases, these targets are not defined very precisely by the acceptable solutions [...] Nevertheless, Clause 1.2.1.1.(1)(b) makes it clear that an effort must be made to demonstrate that an alternative solution will perform as well as a design that would satisfy the applicable acceptable solutions in Division B—not “well enough” but “as well as.”

— National Building Code of Canada, Sentence A-1.2.1.1.(1)(b)

The CCMC has determined that compliance with this provision of the Code has been demonstrated as an **Alternative Solution**. The evaluation report provides a summary of the basis of CCMC's compliance opinion.

CCMC's code compliance opinions

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