



Evaluation Listing CCMC 13695-L Duro-Fleece Plus

Evaluation Issued: 2014-06-02

Revised: 2018-07-19

Preface: Masterformat 07 54 19.03, Polyvinyl Chloride Roofing and Waterproofing Membrane

Preface Issued: 2012-03-06

Scope

These Evaluation Listings apply to flexible polyvinyl chloride (PVC) membranes for use as roofing and waterproofing membranes.

The standard referenced below provides a basis for evaluating PVC membranes used on decking subject to pedestrian traffic, although additional criteria such as skid resistance, abrasion resistance and resistance to puncture from sustained loads may also be important. These additional criteria have not been included in these Evaluation Listings.

The proponent has demonstrated that the product meets the requirements of the following standard:

- CAN/CGSB-37.54-95, “Polyvinyl Chloride Roofing and Waterproofing Membrane.”

The standard classifies the membrane into four types and four classes of products:

- Type 1 – non-reinforced – for flashing only;
- Type 2 – containing embedded fibres;
- Type 3 – with a non-embedded fabric backing; and
- Type 4 – reinforced with an embedded fabric.
- Class A – non-exposed roofing;
- Class B – exposed roofing;
- Class C – waterproofing; and
- Class D – asphalt compatible.

For Classes A and C, if the membrane has been subjected to only 600 h of accelerated weathering, then its class shall be designated as:

- Class A – non-exposed roofing: low ultraviolet (UV) exposure; and
- Class C – waterproofing: low UV exposure.

Standard

Table 1. Requirements for PVC Membranes¹

Property		Unit	Requirement			
			Type 1	Type 2	Type 3	Type 4
Overall thickness		mm	1.2			
Coating thickness ²		mm	n/a ³	n/a	0.4	0.4
Tensile strength		MPa	10.4	10.4	n/a	n/a
Breaking strength		kN/m	n/a	n/a	35	35
Elongation at break		%	250	250	15 ⁴	15 ⁴
Lap joint strength	initial ⁵	% of tensile/breaking strength	75	75	75	75
	after 7 d in boiling water ⁶		70	70	70	70
Low temperature impact		8 out of 10 pass				
Retention of properties after heat aging	tensile/breaking strength	% of original	90	90	90	90
	elongation ⁴		90	90	90	90
	low temperature flexibility		Pass	Pass	Pass	Pass
Low temperature flexibility		Pass				
Resistance to accelerated weathering	visual inspection	—	No cracking, blistering or appreciable colour change			
	elongation	% of original ⁴	90			
	low temperature impact	—	8 out of 10 pass			
	low temperature flexibility	—	Pass			
Water vapour transmission	Classes A and B	Max. g/m ² in 24 h	4.0			
	Class C		1.0			
Effect of water absorption	mass increase	Maximum %	3.0	3.0	3.0	3.0
	tensile breaking strength	% of original	90	90	90	90
	elongation	% of original ⁴	90	90	90	90

Table 1. Requirements for PVC Membranes¹(cont.)

Property			Unit	Requirement			
				Type 1	Type 2	Type 3	Type 4
Dimensional change	without loading		Maximum %	2.0	0.5	0.5	0.5
	with loading	machine direction		0.5	0.5	0.5	0.5
		cross-machine direction		0.2	0.2	0.2	0.2
Core penetration			N	30			
Asphalt compatibility of Class D only, mass decrease			Maximum %	5.0			

Notes to Table 1:

- 1 Unless otherwise specified, these are minimum requirements.
- 2 With no single measurement less than 0.32 mm
- 3 n/a means not applicable
- 4 The PVC matrix must not break before the reinforcement.
- 5 No shearing of the lap joint shall occur.
- 6 With no delamination

Labelling

The containers holding the rolled material shall be suitably marked to show the following information:

- manufacturer or distributor’s name;
- trade name of the product;
- type and class;
- the phrase “Low UV exposure,” if applicable;
- recommended adhesives, if applicable;
- standard number: CAN/CGSB-37.54-95;
- mass; and
- coverage.

National Building Code of Canada (NBC)

NBC References

CAN/CGSB-37.54-95 is referenced in Table 5.10.1.1. and Sentence 9.26.2.1.(1) of Division B of the NBC 2010.

Evaluation Listing CCMC 13695-L: Duro-Fleece Plus

Evaluation Issued: 2014-06-02

Revised: 2018-07-19

1. Evaluation

The product conforms to CAN/CGSB-37.54-95, Type 4, Class B.

2. Description

The product is a PVC roofing membrane that is reinforced with a weft-inserted polyester fabric and a polypropylene fleece backing.

The product is available in 1.3-mm and 1.5-mm thicknesses.

3. Standard and Regulatory Information

The roofing and waterproofing membrane is suitable for use in exposed and non-exposed applications. Only materials recommended by the manufacturer should be in contact with the membrane. The manufacturer's installation recommendations must be followed.

See the [Preface](#) and the standard for explanation.

Listing Holder

Duro-Last Roofing Inc.
525 Morley Drive
Saginaw, MI 48601
U.S.A.

Telephone: 800-248-0280

Fax: 800-432-9331

Plant(s)

Hillside, NJ, U.S.A.

Disclaimer

This Listing is issued by the Canadian Construction Materials Centre, a program of NRC Construction at the National Research Council of Canada. The Listing must be read in the context of the entire CCMC Registry of Product Evaluations.

Readers must confirm that the Listing is current and has not been withdrawn or superseded by a later issue. Please refer to http://www.nrc-cnrc.gc.ca/eng/solutions/advisory/ccmc_index.html, or contact the Canadian Construction Materials Centre, NRC Construction, National Research Council of Canada, 1200 Montreal Road, Ottawa, Ontario, K1A 0R6. Telephone (613) 993-6189. Fax (613) 952-0268.

NRC has evaluated the material, product, system or service described herein only for those characteristics stated herein. The information and opinions in this Listing are directed to those who have the appropriate degree of experience to use and apply its contents. This Listing is provided without representation, warranty, or guarantee of any kind, expressed, or implied, and the National Research Council of Canada (NRC) provides no endorsement for any evaluated material, product, system or service described herein. NRC accepts no responsibility whatsoever arising in any way from any and all use and reliance on the information contained in this Listing. NRC is not undertaking to render professional or other services on behalf of any person or entity nor to perform any duty owed by any person or entity to another person or entity.

Date modified:
2014-06-17



Polyvinyl Chloride Roofing and Waterproofing Membrane [Annex]

MasterFormat: 07 54 19.03
Issued: 2017-06-26

Scope

Evaluation

These Evaluation Listings apply to flexible polyvinyl chloride (PVC) membranes for use as roofing and waterproofing membranes.

The standard referenced below provides a basis for evaluating PVC membranes used on decking subject to pedestrian traffic, although additional criteria such as skid resistance, abrasion resistance and resistance to puncture from sustained loads may also be important. These additional criteria have not been included in these Evaluation Listings.

The proponent has demonstrated that the product meets the requirements of the following standard:

- CAN/CGSB-37.54-95, “Polyvinyl Chloride Roofing and Waterproofing Membrane.”

The standard classifies the membranes into four types and four classes of products:

- Type 1 – non-reinforced – for flashing only;
- Type 2 – containing embedded fibres;
- Type 3 – with a non-embedded fabric backing; and
- Type 4 – reinforced with an embedded fabric.

- Class A – non-exposed roofing;
- Class B – exposed roofing;
- Class C – waterproofing; and
- Class D – asphalt compatible.

Where Class A or C membranes have been subjected to only 600 h of accelerated weathering, their class must be designated as:

- Class A – non-exposed roofing: low ultraviolet (UV) exposure; and
- Class C – waterproofing: low UV exposure.

Polyvinyl chloride sheet applied roofing membrane shall be installed in accordance with the manufacturer’s instructions and the following standard:

- CGSB 37-GP-55M, “Application of Sheet Applied Flexible Polyvinyl Chloride Roofing Membrane.”

Additional Information

If stated in the Listing, the proponent has provided information related to:

Fire Classification of Roof Covering

The membrane was tested in accordance with CAN/ULC-S107-10, “Standard Methods of Fire Tests of Roof Coverings.”

Fire-Resistance Rating

The membrane used in a roofing assembly was tested in accordance with CAN/ULC-S101-14, “Standard Method of Fire Endurance Test of Building Construction and Materials.”

Wind Uplift Resistance of Membrane-Roofing Assemblies

The membrane used in a roofing assembly tested in accordance with CAN/CSA-A123.21-10, “Dynamic Wind Uplift Resistance of Membrane-Roofing Systems.”

Evaluation Standard

Table 1. Requirements for PVC Membranes¹

Property		Unit	Requirement			
			Type 1	Type 2	Type 3	Type 4
Overall thickness		mm	1.2			
Coating thickness ²		mm	n/a ³	n/a	0.4	0.4
Tensile strength		MPa	10.4	10.4	n/a	n/a
Breaking strength		kN/m	n/a	n/a	35	35
Elongation at break		%	250	250	15 ⁴	15 ⁴
Lap joint strength	initial ⁵	% of tensile/breaking strength	75	75	75	75
	after 7 d in boiling water ⁶		70	70	70	70
Low-temperature impact			8 out of 10 pass			
Retention of properties after heat aging	tensile/breaking strength	% of original	90	90	90	90
	elongation ⁴		90	90	90	90
	low-temperature flexibility		Pass	Pass	Pass	Pass
Low-temperature flexibility			Pass			
Resistance to accelerated weathering	visual inspection	–	No cracking, blistering or appreciable colour change			
	elongation	% of original ⁴	90			
	low-temperature impact	–	8 out of 10 pass			
	low-temperature flexibility	–	Pass			
Water vapour transmission	Classes A and B	Max. g/m ² in 24 h	4.0			
	Class C		1.0			
Effect of water absorption	mass increase	Maximum %	3.0	3.0	3.0	3.0
	tensile breaking strength	% of original	90	90	90	90
	elongation	% of original ⁴	90	90	90	90
Dimensional change	without loading		2.0	0.5	0.5	0.5
	with loading	machine direction	0.5	0.5	0.5	0.5
		cross-machine direction	0.2	0.2	0.2	0.2
Core penetration		N	30			
Asphalt compatibility of Class D only, mass decrease		Maximum %	5.0			

Notes to Table 1:

¹ Unless specified otherwise, these are minimum requirements.

² With no single measurement less than 0.32 mm

<u>3</u>	n/a means not applicable.
<u>4</u>	The PVC matrix must not break before the reinforcement.
<u>5</u>	No shearing of the lap joint must occur.
<u>6</u>	With no delamination

Labelling

The containers holding the rolled material must be suitably marked to show the following information:

- manufacturer or distributor's name;
- trade name of the product;
- type and class;
- the phrase "Low UV exposure" (if applicable);
- recommended adhesives (if applicable);
- the phrase "CAN/CGSB-37.54-95" (indicating conformance to the standard);
- mass; and
- coverage.

National Building Code of Canada (NBC)

References in Division B of the NBC 2015

Evaluation Standard

CAN/CGSB-37.54-95 is referenced in Tables 5.9.1.1. and 9.26.2.1.-B and Sentence 9.13.3.2.(2).

Standards Containing Additional Information

CAN/CSA-A123.21-10, which is referenced in Sentence 5.2.2.2.(4).

CAN/ULC-S101-14, which is referenced in Sentences 3.1.5.7.(2), 3.1.5.14.(5), 3.1.5.14.(6), 3.1.5.15.(3), 3.1.5.15.(4), 3.1.7.1.(1), 3.1.11.7.(1), 3.2.3.8.(1), 3.2.6.5.(6), 9.10.16.3.(1) and Table 9.10.3.1.-B.

CAN/ULC-S107-10, which is referenced in Sentence 3.1.15.1.(1).