



## Polyvinyl Chloride Roofing and Waterproofing Membrane [Annex]

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### Scope

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

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 must 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 Membranes<sup>1</sup>

Property		Unit	Requirement			
			Type 1	Type 2	Type 3	Type 4
Overall thickness		mm	1.2			
Coating thickness <sup>2</sup>		mm	n/a <sup>3</sup>	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 <sup>4</sup>	15 <sup>4</sup>
Lap joint strength	initial <sup>5</sup>	% of tensile/breaking strength	75	75	75	75
	after 7 d in boiling water <sup>6</sup>		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 <sup>4</sup>		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 <sup>4</sup>	90			
	low temperature impact	–	8 out of 10 pass			
	low temperature flexibility	–	Pass			
Water vapour transmission	Classes A and B	Max. g/m <sup>2</sup> 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 <sup>4</sup>	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:

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

### **NBC References**

CAN/CGSB-37.54-95 is referenced in Table 5.9.1.1. and 9.26.2.1.B and Sentence 9.13.3.2.(2) of Division B of the NBC 2015.