



## Preface

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# ***Expanded Polystyrene Insulation Board and Pipe Covering***

## **Scope**

This Evaluation Listing applies to factory-made, rigid expanded polystyrene insulation in the form of pipe covering and boards with or without facings or coatings and made by molding (EPS) or extrusion (XPS) of expandable polystyrene beads. It is intended for use as a thermal insulation in building construction and other applications within the temperature range of  $-54^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$ .

Products covered by one of the standards listed below are also used for sound insulation and in prefabricated thermal insulation systems and composite panels. The performance of systems incorporating these products is not covered by the Evaluation Listing.

The proponent has demonstrated that the product meets at least one of the following standards:

- CAN/ULC-S701-05, “Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering”
- CAN/ULC-S701-11, “Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering”

Products meeting the above standards are classified as Type 1, 2, 3 or 4.

## **Notes:**

1. The molded/expanded polystyrene (EPS) insulation industry subscribes to an accredited certification program as part of their quality assurance. The Listings for EPS insulation products that are published in the Registry are based on the participation of one of the certification organizations accredited by the Standards Council of Canada (SCC).
2. Annex A of CAN/ULC-S701-11 includes requirements for flat, uncoated EPS thermal insulation boards that are to be used in exterior insulation and finish systems (EIFS). Annex A forms a mandatory part of the Standard.

## Standard

**Table 1. CAN/ULC-S701-05 and CAN/ULC-S701-11<sup>(1)</sup> Material Properties**

Property	Unit	Requirement			
		Type 1	Type 2	Type 3	Type 4
Thermal resistance of a 25-mm-thick specimen	m <sup>2</sup> ·°C/W	≥ 0.65	≥ 0.70	≥ 0.74	≥ 0.86
Long-term thermal resistance	-	(2) and (3)			
Water vapour permeance for a 25-mm-thick specimen	ng/(Pa·s·m <sup>2</sup> )	≤ 300	≤ 200	≤ 130	≤ 60 (CAN/ULC-S701-05) <sup>(4)</sup> ≤ 90 (CAN/ULC-S701-11) <sup>(5)</sup>
Dimensional stability	% linear change	≤ 1.5	≤ 1.5	≤ 1.5	≤ 1.5
Flexural strength	kPa	≥ 170	≥ 240	≥ 300	≥ 350
Water absorption	% by volume	≤ 6.0	≤ 4.0	≤ 2.0	≤ 0.7
Compressive strength	kPa	≥ 70	≥ 110	≥ 140	≥ 210
Limiting oxygen index	%	≥ 24	≥ 24	≥ 24	≥ 24

**Notes to Table 1:**

- (1) As per CAN/ULC-S701-11, where EPS insulation is to be used in EIFS applications, users must refer to Annex A for mandatory additional requirements.
- (2) CAN/ULC-S701-05 requires a minimum value of 1.73 m<sup>2</sup>·°C/W for a 50-mm-thick product. The long-term thermal resistance value shall also be reported for the 25-mm- and 75-mm-thick products.
- (3) CAN/ULC-S701-11 requires a minimum value of 1.68 m<sup>2</sup>·°C/W for a 50-mm-thick product. The long-term thermal resistance value shall also be reported for the 25-mm- and 75-mm-thick products.
- (4) CAN/ULC-S701-05 requires a maximum value of 60 ng/(Pa·s·m<sup>2</sup>).
- (5) CAN/ULC-S701-11 requires a maximum value of 90 ng/(Pa·s·m<sup>2</sup>).

## Labelling

The product shall be marked with the following information:

As per CAN/ULC-S701-05

- Type;
- ULC standard number; and
- Manufacturer's name or trademark.

As per CAN/ULC-S701-11

- ULC Standard number;
- Type;
- Product thickness;
- Thermal resistance per unit of thickness (LTTR for XPS insulation);
- Production identification number; and
- Manufacturer's name or trademark.

As per both standards, the product shall also be marked with a warning:

**“Caution: This product is combustible. A protective barrier or thermal barrier is required as specified in the appropriate building code.”**

## ***National Building Code of Canada (NBC)***

### *NBC References*

The NBC 2010 references CAN/ULC-S701-05 in Sentences 9.15.4.1.(1) and 9.25.2.2.(1) and Tables 5.10.1.1. and 9.23.17.2.A.

The NBC 2010 does not reference CAN/ULC-S701-11.



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## **Comfort-R, THERMAL 3Ht, QUIK-THERM™**

### **1. Evaluation**

The evaluation of these products is based solely on their certification and listing by Intertek Testing Services (ITS) NA Ltd. to CAN/ULC-S701-05, Type 2.

### **2. Description**

Faced and unfaced rigid board thermal insulation made of Type 2 moulded/expanded polystyrene (EPS).

### **3. Standard and Regulatory Information**

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

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