

**NATIONAL
STANDARD
OF CANADA**

**CAN/ULC-S702.1-14-AMD1
(Including Amendment 1 - formerly CAN/ULC-S702)**

**STANDARD FOR MINERAL FIBRE THERMAL INSULATION
FOR BUILDINGS, PART 1: MATERIAL SPECIFICATION**



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STANDARD FOR MINERAL FIBRE THERMAL INSULATION FOR
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AMENDMENT NOTICE

ULC STANDARDS

STANDARD FOR MINERAL FIBRE THERMAL INSULATION FOR BUILDINGS, PART 1: MATERIAL SPECIFICATION	CAN/ULC-S702.1: 2014
AMENDMENT 1	April 2016

The following amendment is being incorporated into CAN/ULC-S702:2014:

1. Revised Clause 6.3.5.1.1.

NOTICE

PLEASE NOTE THAT THIS STANDARD INCLUDES AMENDMENT(S). THE CURRENT EDITION OF THIS STANDARD IS NOT VALID UNLESS USED TOGETHER WITH THE AMENDMENT(S).

IT IS POSSIBLE, HOWEVER, THAT CERTAIN CODES WILL REFER TO THE SUPERSEDED EDITION OF THIS STANDARD, WITHOUT THE AMENDMENT(S). IN THOSE INSTANCES, THE COMPILATION OF THIS DOCUMENT ALLOWS FOR REFERENCE TO BE MADE TO THE STANDARD PRIOR TO THE INCLUSION OF THE AMENDMENT(S).

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6.3.5 Determination of Thermal Transmission Properties

6.3.5.1 General

6.3.5.1.1 Determine the *thermal transmission properties* in triplicate at a *mean* temperature of 24 ± 1 °C and a temperature differential of 22 ± 2 °C according to ASTM C518 or ASTM C177 at the (each) *design density* ± 5 %. Alternatively, determine the thermal transmission properties by testing at the maximum and minimum design densities, and testing at a minimum of two intermediate densities, using regression analysis to calculate the thermal transmission properties at any other density within this range. Thermal transmission properties shall be tested in triplicate at each density selected, and the (minimum) twelve individual results shall be used for the regression analysis. The apparatus shall be calibrated with a standard traceable to the National Research Council Canada (NRC) or the National Institute of Science and Technology (NIST). The apparatus used shall have a proven capability of measuring to 155 mm thickness. In case of dispute, the ASTM C177 results shall be accepted. Prepare the test frames and the base plates with outside linear dimensions appropriate for the test apparatus used, but not less than 550 X 550 mm. The depth of the frames shall be 150 ± 5 mm. A suitable construction material, such as 25 mm thick rigid expanded polyurethane board or plywood was found satisfactory. The bottom of the test frames shall be of thermally insignificant material, such as 0.1 mm polyethylene film. Measure the effective volume of the frames with 1 mm precision of the linear dimensions. Determine the mass of the empty test frame resting on the base plate with a precision of 0.01 kg.

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ERRATUM NOTICE

ULC STANDARDS

STANDARD FOR MINERAL FIBRE THERMAL INSULATION FOR BUILDINGS, PART 1: MATERIAL SPECIFICATION	CAN/ULC-S702.1: 2014
ERRATUM 1	April 2016

The following erratum is being incorporated into CAN/ULC-S702:2014:

1. Added reference document to Section 2.
2. Revised Clause 6.3.3.3.1.
3. Added item number key to Figure 7.

NOTICE

PLEASE NOTE THAT THIS STANDARD INCLUDES AN ERRATUM. THE CURRENT EDITION OF THIS STANDARD IS NOT VALID UNLESS USED TOGETHER WITH THE ERRATUM.

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2 REFERENCES

Documents Published by the American Society for Testing and Materials (ASTM)

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- ASTM C165-07 (R2012), Standard Test Method for Measuring Compressive Properties of Thermal Insulation
- ASTM C177-13, Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
- ASTM C203-05 (R2012), Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulations
- ASTM C518-10, Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- ASTM C665-12, Specification for Mineral-Fibre Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing
- ASTM C764-11, Standard Specification for Mineral Fiber Loose-Fill Thermal Insulation
- ASTM C1338-14, Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings
- ASTM C1374-14, Standard Test Method for Determination of Installed Thickness of Pneumatically Applied Loose-Fill Building Insulation
- ASTM C1574-04 (R2013), Standard Guide for Determining Blown Density of Pneumatically Applied Loose-Fill Mineral Fiber Thermal Insulation
- ASTM E96/E96M-13, Standard Test Methods for Water Vapor Transmission of Materials

6.3.3 Equipment

6.3.3.1 The following equipment is to be used:

- A Blowing machine - A commercial machine capable of delivering at 80 % gate opening, between 425 kg/h and 900 kg/h of *mineral fibre* using a 89 mm diameter hose (unless the manufacturer specifies a different diameter);
- B Hose and hose holder - Standard *blowing wool* hose, internally corrugated, 45.7 m long with a diameter of 89 mm (unless the manufacturer specifies a different diameter). The hose shall be in good condition and without visible damage, such as partial collapse, kinks, pinholes, tears, cuts, cracks, excessive fray on the inside surface or any internal build-up. The hose holder shall be 1.0 m high and mounted on casters (see Figure 6);

- C Test frames - The standard test frame shall be per ASTM C1574. Alternative test frames, that have the same area as the standard test frame, and appropriate depths per Clause 6.3.3.2.1 of this Standard are used to verify density over a range of thicknesses. The standard test frame may then be used for routine testing, provided that the correlation with the standard frame has been established experimentally;
- D Screed - A rigid board, made of wood paneling, rigid polymer foam or any other material suitable for screeding the surface. Approximate dimensions: 750 mm long, 200 mm wide and 3 mm thick;
- E Scale (a platform scale or load cells) - Capable of measuring the total weight of the deepest test frame when filled with insulation with a precision of $\pm 0.5\%$; and
- F Stopwatch or timer.

FIGURE 7

STANDARD TEST FRAME

- 1 Handle, e.g., 22 mm (0.875 in) diameter pipe.
 - 2 Side walls, minimum 19 mm (0.75 in) thick.
 - 3 Levelling support, e.g., 38 mm (1.5 in) x 6.4 mm (0.25 in) angle iron.
 - 4 Plywood base, minimum 13 mm (0.5 in) thick.
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