CAN/ULC-S702.1:2021

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

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Standard for Mineral Fibre Thermal Insulation for Buildings, Part 1: Material Specification, CAN/ULC-S702.1

Fourth Edition, Dated November 30, 2021

Summary of Topics

This Fourth Edition of CAN/ULC-S702.1, dated November 30, 2021, has been issued to reflect the latest SCC approval dates, and to incorporate the proposals dated March 19, 2020, July 13, 2021, and September 27, 2021.

The requirements are substantially in accordance with Proposal(s) on this subject dated March 19, 2020, July 13, 2021, and September 27, 2021.

PLEASE NOTE THAT CERTAIN CODES MAY REFER TO A SUPERSEDED VERSION OF THIS STANDARD. IN THOSE INSTANCES, THE RELEVANT VERSIONS ARE AVAILABLE FOR PURCHASE.

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

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PREFACE

This is the Fourth Edition of the Standard for Mineral Fibre Thermal Insulation for Buildings, Part 1: Material Specification, CAN/ULC-S702.1.

This Edition of the Standard has been formally approved by the ULC Standards Committee on Thermal Performance and Energy Use in the Built Environment.

This Standard has been developed in compliance with the requirements of SCC for accreditation of a Standards Development Organization.

Only metric SI units of measurement are used in this Standard. If a value for measurement is followed by a value in other units in parentheses, the second value may be approximate. The first stated value is the requirement.

Annexes A to C, identified as normative, form a mandatory part of this Standard.

Annexes D and E, identified as informative, are for informational purposes only.

In Canada, there are two official languages, English and French. All safety warnings must be in French and English. Attention is drawn to the possibility that some Canadian authorities may require additional markings and/or installation instructions to be in both official languages.

This Fourth Edition National Standard of Canada, renumbered as CAN/ULC-S702.1, is based on, and supersedes, the Third Edition of CAN/ULC-S702.

Attention is drawn to the possibility that some of the elements of this Canadian standard may be the subject of patent rights. ULC Standards shall not be held responsible for identifying any or all such patent rights.

Requests for interpretation of this Standard should be sent to ULC Standards. The requests should be worded in such a manner as to permit a “yes” or “no” answer based on the literal text of the requirement concerned.

This CAN/ULC-S702.1 Standard is under continuous maintenance, whereby each revision is approved in compliance with the requirements of SCC for accreditation of a Standards Development Organization. In the event that no revisions are issued for a period of four years from the date of publication, action to revise, reaffirm, or withdraw the standard shall be initiated.

Comments or proposals for revisions on any part of the Standard may be submitted at any time. Proposals should be submitted via a Proposal Request in the On-Line Collaborative Standards Development System (CSDS) at https://csds.ul.com/canada.

This Standard is intended to be used for conformity assessment.

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INTRODUCTION

1 Scope

1.1 This Standard specifies the physical property requirements and test methods to determine the properties for mineral fibre thermal insulation for buildings, manufactured in the form of faced or unfaced batts, rolls, boards, and loose-fill intended for use in unconfined spaces with slopes not exceeding 4.5:12, whether installed on a building site or in a prefabrication (manufacturing) facility. Facings, when used, are defined in Table 1.1 for Types 2 and 3. Kraft paper facing is not covered by this Standard.

1.2 The test methods listed in this Standard are used to determine the values for the material properties. These values are intended for use in specifications, material evaluations and quality control. They are not intended to predict end-use material performance.

1.3 This Standard applies to material where the continuous service temperature is what is naturally achievable in a building envelope. The material is not intended to be used in high temperature applications nor cryogenic applications.

1.4 This Standard also includes requirements for the manufacturer to provide the Job Site Certificate for use by the applicators.

1.5 Recommended conformity control systems are provided in Annex D for preformed insulation and Annex E for loose fill insulation.

1.6 The testing and evaluation of a product against this Standard may require the use of materials and/or equipment that could be hazardous. This document does not purport to address all the health and safety aspects associated with its use. Anyone using this Standard has the responsibility to consult the appropriate authorities and to establish health and safety practices, in conjunction with any existing applicable regulatory requirements, prior to its use.

Table 1.1
Requirements for Mineral Fibre Thermal Insulation

Property	Applicability	Unit	Requirement	Test method
Length	Batts, Rolls	%	-1, +3 %	8.5
	Boards	mm	-3, +10 mm	
Width	Batts, Rolls	%	-0, +3 %	8.6
	Boards	mm	±3 mm	
Thickness	Batts, Rolls	–	Mean thickness not less than the design thickness and none of the individual specimen thicknesses less than 90 % of the design thickness.	8.4
	Boards	mm	-1, +3 mm	
Density	Pouring Wool	≥	Design Density for Applicable Thickness Range.	9.2
	Blowing Wool	≥	Design Density for Applicable Thickness Range.	9.3

Table 1.1 Continued on Next Page

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Table 1.1 Continued

Property	Applicability	Unit	Requirement	Test method
Thermal Resistance	Batts, Rolls, and Boards	%	Mean thermal resistance not less than the design thermal resistance (i.e. stated on the product).	8.7
Thermal Resistivity	Batts, Rolls, and Boards	(m·K)/W	≥18.5 (m·K)/W	8.7
	Loose Fill			9.5
Surface Burning Characteristics	Batts, Rolls, and Boards	–	For Type 1 products not intended for exterior of basement walls: Flame spread rating shall not exceed 25. Smoke developed classification shall not exceed 50. For Types 2 and 3 the test values shall be reported without reference to the acceptance criteria.	8.8
	Loose Fill	–	Flame Spread Rating ≤25, Smoke Developed Classification ≤50.	9.6
Smoulder Resistance	Batts, Rolls, and Boards	%	Applicable only to Type 1 product not intended for exterior of basement walls. Mean mass loss ≤2 % and each specimen ≤3 %. Smoulder zone shall not reach specimen periphery.	8.9
	Loose Fill	%	Mean mass loss ≤2 %, Individual mass loss ≤3%, Smoulder zone shall not reach specimen periphery.	9.7
Breaking Load of Exterior Wall Frame Sheathing	Boards	kg	≥2.7 kg	8.10
Compressive Resistance of Draining Insulation	Boards	kPa	≥7 kPa or ≥10 kPa	8.11
Corrosiveness	Batts, Rolls, and Boards (Copper, Aluminum, Steel)	–	Test Corrosion ≤ Control	8.12
	Batts, Rolls, and Boards (Steel)	MLCR	Test MLCR < Control	
	Loose Fill (Copper, Aluminum, Steel)	–	Test Corrosion ≤ Control	9.8
	Loose Fill (Steel)	MLCR	Test MLCR < Control	
Fungi Resistance	Batts, Rolls, and Boards	–	Growth ≤ Control	8.13
	Loose Fill	–	Growth ≤ Control	9.9
Water Vapour Permeance	Batts, Rolls, and Boards (with Vapour Barrier Membranes)	ng/(Pa·s·m^2)	Report	8.14

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2 Referenced Publications

2.1 The documents shown below are referenced in the text of this Standard. Unless otherwise stated elsewhere in this Standard such reference shall be considered to indicate the edition and/or revisions of the document available at the date on which the Committee approved this ULC Standard. If a standard is used other than those given herein, the issue used shall be that which was in force at the time of the full Committee review of this edition of this Standard.

ASTM C165-07 (R2017), *Standard Test Method for Measuring Compressive Properties of Thermal Insulation*

ASTM C177-19, *Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus*

ASTM C203-05a (R2017), *Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulations*

ASTM C518-17, *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*

ASTM C665-17, *Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing*

ASTM C764-17, *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 C1374-18, *Standard Test Method for Determination of Installed Thickness of Pneumatically Applied Loose-Fill Building Insulation*

ASTM C1574-04 (R2018), *Standard Guide for Determining Blown Density of Pneumatically Applied Loose-Fill Mineral Fiber Thermal Insulation*

ASTM E96/E96M-16, *Standard Test Methods for Water Vapor Transmission of Materials*

CAN/ULC-S102:2018, *Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies*

CAN/ULC-S102.2:2018, *Standard Method of Test for Surface Burning Characteristics of Floorings, Floor Coverings and Miscellaneous Materials and Assemblies*

CAN/ULC-S129-15, *Standard Method of Test for Smoulder Resistance of Insulation (Basket Method)*

CAN/ULC-S773-15, *Standard for Thermal Insulation Terminology*

3 Terminology

3.1 General

3.1.1 Terms, definitions, and symbols used in this specification are found in CAN/ULC-S773. Where a term or an appropriate definition is not currently listed in CAN/ULC-S773 but required for this Standard have been listed below.

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