CAN/ULC-S712.1:2021

STANDARD FOR THERMAL INSULATION – LIGHT DENSITY, OPEN CELL SPRAY APPLIED SEMI-RIGID POLYURETHANE FOAM – MATERIAL SPECIFICATION

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CETTE NORME NATIONALE DU CANADA EST DISPONIBLE EN VERSIONS FRANÇAISE ET ANGLAISE

Standard for Thermal Insulation – Light Density, Open Cell Spray Applied Semi-Rigid Polyurethane Foam – Material Specification, CAN/ULC-S712.1

Third Edition, Dated November 30, 2021

This Third Edition of CAN/ULC-S712.1, dated November 30, 2021, has been issued to reflect the latest SCC approval dates, and to incorporate the proposals dated July 1, 2021 and October 6, 2021.

The requirements are substantially in accordance with Proposal(s) on this subject dated July 1, 2021 and October 6, 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PLEASE NOTE THAT CERTAIN CODES MAY REFER TO A SUPERSEDED VERSION OF THIS STANDARD.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 THERMAL INSULATION – LIGHT DENSITY, OPEN CELL SPRAY APPLIED SEMI-RIGID POLYURETHANE FOAM – MATERIAL SPECIFICATION

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PREFACE

This is the Third Edition of the Standard for Thermal Insulation – Light Density, Open Cell Spray Applied Semi-Rigid Polyurethane Foam – Material Specification, CAN/ULC-S712.1.

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 Standards Council of Canada (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.

Annex A, identified as Informative, is for information 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 Third Edition National Standard of Canada is based on, and now supersedes, the Second Edition.

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-S712.1 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 material properties for light density, open cell spray applied semi-rigid polyurethane foam, used as a thermal insulation for building applications, whether applied on a building site or in a prefabrication (manufacturing) facility.

1.2 The spray polyurethane foam system installer site manufactures the light density, open cell spray applied semi-rigid polyurethane foam material identified by this Standard. The spray polyurethane foam system supplier produces a liquid “resin” component and supplies the corresponding polymeric isocyanate which, when mixed together on a fixed ratio basis, produce the material which results in the physical properties listed in this Standard. The Standard CAN/ULC-S712.2 includes mandatory requirements for the installation of the material as well as qualification of contractors and the qualification of installers and forms an integral part of the manufacturing process for the finished material.

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

1.4 This standard applies to material where the continuous service temperature of the substrate is within the range of -60 to +70 °C.

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

2 Referenced Publications

2.1 The documents shown below are referenced in the text of this Standard. Any undated reference to a code or standard appearing in the requirements of this Standard shall be interpreted as referring to the latest edition of that code or standard.

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

ASTM C390, *Standard Practice for Sampling and Acceptance of Thermal Insulation Lots*

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

ASTM C1045, *Standard Practice for Calculating Thermal Transmission Properties Under Steady-State Conditions*

ASTM C1338, *Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings*

ASTM D618, *Standard Practice for Conditioning Plastics for Testing*

ASTM D1622, *Standard Test Method for Apparent Density of Rigid Cellular Plastics*

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ASTM D2126, *Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging*

ASTM D2842, *Standard Test Method for Water Absorption of Rigid Cellular Plastics*

ASTM D6226, *Standard Test Method for Open-Cell Content of Rigid Cellular Plastics*

ASTM E96E/96M, *Standard Test Methods for Water Vapour Transmission of Materials*

ASTM E2178, *Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials*

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

CAN/ULC-S127, *Standard Corner Wall Method of Test for Flammability Characteristics of Non-Melting Foam Plastic Building Materials*

CAN/ULC-S712.2, *Standard for Thermal Insulation – Light Density, Open Cell Spray Applied Semi-Rigid Polyurethane Foam – Installation*

CAN/ULC-S770, *Standard Test Method for Determination of Long-Term Thermal Resistance of Closed-Cell Thermal Insulating Foams*

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

CAN/ULC-S774, *Standard Test Method for the Determination of Volatile Organic Compound Emissions from Polyurethane Foam*

3 Terminology

3.1 Definitions common to ULC S700 thermal insulation standards are given in CAN/ULC-S773, and some of these have been listed below with a (CAN/ULC-S773) identifier. Additional definitions not listed in CAN/ULC-S773 but required for this Standard have also been listed below.

3.2 AUTHORITY HAVING JURISDICTION (AHJ) – a representative of a governmental (federal, provincial or municipal) agency predominantly involved in regulating by statute the use of products, materials and services (CAN/ULC-S773).

3.3 LIGHT DENSITY, OPEN CELL SPRAY APPLIED SEMI-RIGID POLYURETHANE FOAM – a semi-rigid cellular plastic material that is formed in place by the catalyzed reaction of polymeric isocyanate and polyhydroxyl compounds, expanded with non-captive blowing agents and producing an open-cell material with a minimum of 80 % open cell content that has a density between 6.8 and 12 kg/m^3.

3.4 SPRAY POLYURETHANE FOAM SYSTEM SUPPLIER (SUPPLIER) – A manufacturer or distributor responsible for the liquid chemical system which is designed to be mixed and sprayed to form spray polyurethane foam material in-situ.

3.5 TIME TO OCCUPANCY – the period of time required after installation of the material where that portion of the building shall be isolated, ventilated and uninhabited.

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