CAN/ULC 642:2021 (R2026)

Standard for Compounds and Tapes for Threaded Pipe Joints

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

Standard for Compounds and Tapes for Threaded Pipe Joints, CAN/ULC 642

Fourth Edition, Dated June 30, 2021

Summary of Topics

This reaffirmation of CAN/ULC 642 dated January 5, 2026 is being issued to update the title page to reflect the reaffirmation of this Fourth Edition National Standard of Canada. No changes in requirements are involved.

Text that has been changed in any manner or impacted by ULSE's electronic publishing system is marked with a vertical line in the margin.

The requirements are substantially in accordance with Proposal(s) on this subject dated October 10, 2025.

PLEASE NOTE THAT CERTAIN CODES MAY REFER TO A SUPERSEDED VERSION OF THIS STANDARD.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 Compounds and Tapes for Threaded Pipe Joints

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CONTENTS

ULC STANDARDS COMMITTEE ON FITTINGS FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS.....7

PREFACE 9

INTRODUCTION

1 Scope 11
2 Reference Publications.....11
3 Glossary.....12

PERFORMANCE

4 General 12
5 Pressure Tests.....12
5.1 General 12
5.2 Manifolds 12
5.3 Test pressures.....14
5.4 Test media 15
5.5 Pressure/Media exposure 15
6 Proof Pressure Test.....16
7 Electrical Resistance At Joints.....16
8 Low Temperature Assembly 16
9 Temperature Variation 16
10 Toxicity (Potable Water Applications Only).....16
11 Flash Point Test.....17
12 Autoignition Temperature Test 17
13 Flammability Test 17
14 Spontaneous Heating Tests 17

MARKING

15 General 18

INSTRUCTIONS

16 General 18

ANNEX A (INFORMATIVE) – RECOMMENDED HAND TIGHT ENGAGEMENT OF STANDARD TAPER PIPE THREADS

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This list represents the membership at the time the Committee balloted on the final text of this edition. Since that time, changes in the membership may have occurred.

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PREFACE

This is the Fourth Edition of the Standard for Compounds and Tapes for Threaded Pipe Joints, CAN/ULC 642.

This Edition of the Standard has been formally approved by the ULC Committee on Fittings for Flammable and Combustible Liquids.

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.

Annex A, identified as informative, is for information purposes only.

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

This Fourth Edition National Standard of Canada is based on, and now supersedes, the Third Edition.

Attention is drawn to the possibility that some of the elements of this Canadian standard may be the subject of patents rights. ULC Standards shall not be held responsible for identifying any or all such patents 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 642 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 Collaborative Standards Development System (CSDS) at https://csds.ul.com.

This Standard is intended to be used for conformity assessment.

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INTRODUCTION

1 Scope

1.1 This Standard sets forth minimum requirements for the determination of the acceptability of pipe joint compounds and tapes for piping systems intended for the containment of alcohol, alcohol fuel blends, natural gas and methane, oxygen, petroleum distillates, propane and butane, steam, and water (potable and non-potable).

1.2 Unless otherwise specified, products meeting this Standard are considered suitable for the sealing of all sizes of metal threaded connections.

1.3 Products intended for use on limited sizes of connections may be considered in accordance with the intent of these requirements and suitably marked.

1.4 This standard also provides for the determination of the flash point and ignition temperatures, and evidence of spontaneous heating, of pipe joint compounds.

2 Reference 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.

Other Standards

ANSI/ASME B1.20.1, Standard for Pipe Threads, General Purpose (Inch)

ANSI/ASME B16.3, *Standard for Malleable Iron Threaded Fittings Classes 150 and 300*

ASTM A53/A53M, *Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless*

ASTM D56, *Standard Test Method for Flash Point by Tag Closed Cup Tester*

ASTM D93, *Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester*

NRC, *National Fire Code of Canada*

ANSI/NSF 61, *Drinking Water System Components – Health Effects*

Abbreviations

ANSI – American National Standards Institute

ASME – American Society of Mechanical Engineers

ASTM – American Society for Testing and Materials

NRC – National Research Council of Canada

NSF – National Sanitation Foundation International

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3 Glossary

3.1 ALCOHOL – 100 % methyl alcohol (Methanol).

3.2 ALCOHOL FUEL BLENDS – A blend of a minimum of 85 % by volume of gasoline and a maximum of 15 % by volume of anhydrous ethyl alcohol (ethanol).

3.3 ASTM REFERENCE FUEL C – A blend of 50 % Isooctane and 50 % Toluene by volume.

3.4 ASTM REFERENCE FUEL H – A blend of 85 % of ASTM Reference Fuel C and 15 % Anhydrous Denatured Ethanol by volume.

3.5 AUTHORITY HAVING JURISDICTION – The governmental body responsible for the enforcement of any part of this Standard or the official or agency designated by that body to exercise such a function.

3.6 COMBUSTIBLE LIQUID – Any liquid having a flash point at or above 37.8 °C and below 93.3 °C and as defined in the National Fire Code of Canada.

3.7 FLAMMABLE LIQUID – Any liquid having a flash point of 37.8 °C and having a vapour pressure not exceeding 275 kPa (absolute) at 37.8 °C and as defined in the National Fire Code of Canada.

3.8 PETROLEUM DISTILLATES – Petroleum-based flammable and combustible liquids such as; benzene, gasoline, kerosene, naphtha, fuel oil, diesel with up to 5 % biodiesel, and lubricating oil.

3.9 STEAM – The vapour into which water is converted when heated to the boiling point and kept under pressure.

PERFORMANCE

4 General

4.1 Acceptance of the product shall be based on tests aimed at determining its ability to seal threaded joints of a variety of fittings against leakage when exposed to products and pressures in accordance with its intended use, together with other characteristics relating to toxicity, electrical conductivity and fire hazards.

5 Pressure Tests

5.1 General

5.1.1 Pressure tests shall be conducted using test manifolds.

5.2 Manifolds

5.2.1 Unless otherwise specified manifolds shall be assembled, as shown in Figure 5.1, from commercial grade steel pipe conforming to ASTM A53/A53M, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless, and fittings conforming to ANSI/ASME B16.3, the Standard for Malleable Iron Threaded Fittings Classes 150 and 300, and both shall be of a schedule appropriate for the test pressure.

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