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STANDARD
OF CANADA

CAN/ULC-S633:2017

STANDARD FOR FLEXIBLE CONNECTOR PIPING FOR FUELS

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TABLE OF CONTENTS

ULC STANDARDS COMMITTEE ON FUELING ACCESSORIES FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS I

ULC STANDARDS TASK GROUP ON FUELING ACCESSORIES FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS II

PREFACE III

1 SCOPE 1

2 REFERENCE PUBLICATIONS 2

3 GLOSSARY 4

4 CONSTRUCTION 5

4.1 GENERAL 5

5 PERFORMANCE 6

5.1 GENERAL 6
5.2 SHORT TERM PRESSURE TESTS 7
5.2.1 General 7
5.2.2 Leakage Test 8
5.2.3 Hydrostatic Test 8
5.2.4 Breakdown Test 8
5.3 VACUUM TESTS 9
5.3.1 General 9
5.3.2 Static Vacuum Test 9
5.3.3 Cyclic Vacuum Test 9
5.4 PHYSICAL ABUSE TESTS 10
5.4.1 General 10
5.4.2 Drop Test 10
5.4.3 Impact Test 10
5.4.4 Puncture Test 10
5.4.5 Fitting Torque Test 11
5.4.6 Pipe Torque Test 11
5.4.7 Tension Test 11
5.4.8 Compression Test 11
5.4.9 Bending Test 12
5.5 CYCLIC USE TEST 12
5.5.1 General 12
5.5.2 Vibration Test 12
5.5.3 Surge Test 13
5.5.4 Flex Test 13
5.5.5 Swivel Joint Test 13
5.6 SHORT TERM COMPATIBILITY TESTS 14
5.6.1 General 14
5.6.2 UV Exposure Test 14
5.6.3 Metallic Stress Crack Test 14

5.6.4 Nonmetallic Stress Crack Test 15
5.7 LONG TERM COMPATIBILITY TESTS 15
5.8 FIRE TEST 16
5.9 INTERSTITIAL COMMUNICATION TEST 17

6 MANUFACTURING AND PRODUCTION TESTS 17

6.1 GENERAL 17
6.2 DIMENSIONAL MEASUREMENTS 17
6.3 LEAKAGE TESTS 17

7 MARKINGS 18

7.1 GENERAL 18

8 INSTALLATION INSTRUCTIONS 19

8.1 GENERAL 19

TABLES 21

APPENDIX A (NORMATIVE) – TEST FUEL FORMULATIONS 23

APPENDIX B (INFORMATIVE) – LIST OF STANDARDS ON FUELS 25

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STANDARD FOR FLEXIBLE CONNECTOR PIPING FOR FUELS

PREFACE

This is the Fourth Edition of the Standard for Flexible Connector Piping for Fuels, CAN/ULC-S633.

This Edition of the Standard has been formally approved by the ULC Standards Committee on Fueling Accessories 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.

Appendix A, identified as Normative, forms a mandatory part of this Standard.

Appendix B, identified as Informative, is for guidance and 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 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 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.

The review and action to revise or reaffirm this Standard will not exceed 5 years from the date of publication, unless the Standard is identified as fitting within a stabilized category, whereby the review will commence within the appropriate time frame set out by ULC Standards.

This Standard is intended to be used for conformity assessment.

1 SCOPE

1.1 This Standard sets forth the minimum requirements for *primary, secondary*, and *coaxial* types of *flexible connector pipes* intended for short length transfer and containment of the specific liquid *fuels* (or vapours thereof) identified in this Standard, at commercial (public) or fleet (private) automotive motor vehicle fueling stations or similar *fuel* dispensing applications, and piping systems for *fuel* supply of generators, burners or similar equipment.

1.2 *Flexible connector pipes* may be metallic, nonmetallic, or composite, but are limited to maximum 3.65 m (12 ft) lengths in nominal *sizes* up to 102 mm (4 in) as flexible transition components within *fuel* dispensing and/or vapour recovery piping systems, typically intended for use in the following automotive fueling station applications:

A *Underground* use (below surface but accessible such as within chase piping) when connected to *underground* tanks or *underground* pipes with expected exposures to soil, water, and soil fluids;

B *Sump* use (enclosed tank, transition or dispenser types) when connected to pumps, valves, monitors, or dispensing devices with expected exposures to soil, water, soil fluids, and occasional sunlight;

C *Aboveground* use (above surface but with additional physical protection, as applicable) when connected to *aboveground* tanks or *aboveground* pipes with expected exposures to soil, water, soil fluids, and sunlight.

1.3 *Flexible connector pipes* are intended for containment of automotive *fuels* and similar *fuels* or liquids under the expected use conditions, and exposures that have similar chemical, physical and material compatibility properties as represented in these requirements. Refer to Appendix B (Informative) for a list of Standards on *fuels* and other liquids.

1.4 Products covered by this Standard are intended to be installed and used in accordance with:

A National Fire Code of Canada, Part 4;

B CSA B139, Installation code for oil-burning equipment; and

C CCME PN 1326, Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products.

1.5 These products are factory manufactured and intended for on-site field assembly, inspection, and leak testing for the specified applications and use conditions by *qualified persons* in accordance with the manufacturer's instructions and local requirements.

1.6 These products are intended to be periodically inspected and maintained for continued service, or taken out of service if necessary, by *qualified persons* in accordance with industry recommended practices and/or the manufacturer's instructions.

1.7 These products have not been evaluated for use after natural disasters, fires or exposures to chemicals not representative of the test liquids or excessive physical damage beyond the expected assembly, installation and uses as identified in these requirements.

1.8 These products have not been evaluated for special use piping applications where exposed to heavy or continuous physical abuses, excessive mechanical stresses; or environments that are highly corrosive; or operate outside of the expected ambient use temperature range for significant times.

1.9 These requirements do not cover *underground* piping products for liquid *fuels*, which are found in CAN/ULC-S667, Standard for Metallic Underground Piping for Flammable and Combustible Liquids.

1.10 These requirements do not cover *aboveground* piping products for gaseous *fuels* (such as natural gas, liquefied petroleum gas, propane, butane, etc.), which are found in ULC/ORD-C536, Flexible Metallic Hose.

1.11 These requirements do not cover *fuel* dispensing and vapour recovery hose, which are found in CAN/ULC-S612, Standard for Hose and Hose Assemblies for Flammable and Combustible Liquids.

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.

Documents Published by the American Society for Testing and Materials (ASTM)
100 Barr Harbour Drive, PO Box C700, West Conshohocken, PA 19428-2959 U.S.A.
Telephone: (610) 832-9585
www.astm.org

• ASTM A653/A653M-15 (E 2016), Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot Dip Process

• ASTM D471-16 , Standard Test Method for Rubber Property–Effect of Liquids

• ASTM D664-11 REV A, Standard Test Method for Acid Number of Petroleum Products by Potentiometric Titration

• ASTM D975-15, Standard Specification for Diesel Fuel Oils

• ASTM D1193-06 (R 2011), Standard Specification for Reagent Water

• ASTM D4814-16 REV A, Standard Specification for Automotive Spark-Ignition Engine Fuel

• ANSI/ASTM D5798-15, Standard Specification for Fuel Ethanol (Ed75–Ed85) for Automotive Spark-Ignition Engines

• ASTM D6751-15 REV C (E 2016), Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels

• ASTM D7467-15 REV C (E 2016), Standard Specification for Diesel Fuel Oil, Biodiesel Blends (B6 to B20)

• ASTM G153-13, Standard Practice for Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials

• ASTM G155-13, Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Nonmetallic Materials

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