CAN/ULC-S543:2023

STANDARD FOR INTERNAL LUG QUICK-CONNECT COUPLINGS FOR FIRE HOSE

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

Standard for Internal Lug Quick-Connect Couplings for Fire Hose, CAN/ULC-S543

Second Edition, Dated March 1, 2009

Summary of Topics

This revision of CAN/ULC-S543 dated March 14, 2023 includes Gauge and Coupling Dimensions; Removal of reference in Clause 4.1.1, Deletion of FIGURE 3, 125 mm Internal Lug Quick-Connect Coupling, and an editorial correction in Clause 3.8.1 (English only).

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

The revised requirements are substantially in accordance with Proposal(s) on this subject dated March 15, 2022.

PLEASE NOTE THAT CERTAIN CODES MAY REFER TO A SUPERSEDED VERSION OF THIS STANDARD.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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CAN/ULC-S543:2023

STANDARD FOR INTERNAL LUG QUICK-CONNECT COUPLINGS FOR FIRE HOSE

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REFERENCE PUBLICATIONS

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 B 30-04, Standard Specification for Copper Alloys in Ingot Form

• ASTM B 117-03, Standard Practice for Operating Salt Spray (Fog) Apparatus

• ASTM B 154-01, Standard Test Method for Mercurous Nitrate Test for Copper and Copper Alloys

• ASTM B 584-04, Standard Specification for Copper Alloy Sand Castings for General Applications

• ASTM D 395-03, Standard Test Methods for Rubber Property – Compression Set

• ASTM D 412-98a (2002)e1, Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension

• ASTM D 572-04, Standard Test Method for Rubber-Deterioration by Heat and Oxygen

• ASTM D 3183-02, Standard Practice for Rubber – Preparation of Pieces for Test Purposes from Products

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7 Underwriters Road, Toronto, ON M1R 3B4 Canada
Telephone: (416) 757-3611 or 1-866-9373-ULC
www.ulc.ca

• ULC-S513-1978, Standard for Threaded Couplings for 1-1/2- and 2-1/2-Inch Fire Hose

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PREFACE

This is the Second Edition of the Standard for Internal Lug Quick-Connect Couplings for Fire Hose, CAN/ULC-S543.

This Edition of the Standard has been formally approved by the ULC Standards Committee on Fire Protection Equipment and Systems.

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 informative, is 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 Second Edition National Standard of Canada was based on, and now supersedes the First 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-S543 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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1 SCOPE

1.1 This Standard contains requirements for non-threaded, quick-connect couplings of the internal lug design for use in fire protection service. (See Appendix A.)

1.2 The couplings are intended for use with fire hose in the following standard sizes: 38 mm, 65 mm, 100 mm, 125 mm and 150 mm.

1.3 This Standard also contains requirements for the non-threaded, quick-connect portion of adaptor fittings intended for use in modifying threaded fittings to accommodate couplings of the internal lug design. The remaining requirements for these adaptor fittings shall be in accordance with the applicable sections of the Standard for Threaded Couplings for 1-1/2- and 2-1/2-Inch Fire Hose, ULC-S513.

NOTE: It is also intended that this Standard will contain, in a future edition, requirements for adaptors intended for use in modifying couplings of the external lug design to accommodate the attachment of couplings of the internal lug design.

2 REQUIREMENTS

2.1 GENERAL

2.1.1 The form and dimensions of 38, 65and 150 mm coupling mating faces and operating parts employed in the connection of couplings shall be of the standard design as illustrated by FIGURE 1, FIGURE 2, and FIGURE 4. 100 mm and 125 mm couplings shall meet the requirements specified in Section 4.

2.1.2 Couplings shall be made and finished in a workmanlike manner throughout. All edges shall be chamfered and free from burrs. The tailpiece lip shall have a rounded inner or outer edge to prevent damage to the hose.

2.1.3 An indent or embossed marking shall be provided on each coupling to indicate when the coupling is in the fully locked position.

2.1.4 The 150 mm quick-connect coupling shall be provided with locks as specified in Section 4.2.

2.2 MATERIAL PROPERTIES – COUPLING BODY

2.2.1 The material from which the coupling body is manufactured shall have strength and other characteristics sufficient to withstand the performance tests detailed herein.

2.3 MATERIAL PROPERTIES – SEALS

2.3.1 The material from which the seals are manufactured shall be vulcanized natural rubber or a synthetic compound and have the following minimum strength characteristics as determined by ASTM D412, Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers in Tension:

A Tensile Strength, 15 MPa combined with an ultimate elongation of 200% (25.4 to 76.2 mm); or

B Tensile Strength, 10 MPa combined with an ultimate elongation of 300% (25.4 to 102 mm).

2.4 PERFORMANCE

2.4.1 The performance of the hose-coupling assemblies shall be as required in Subsections 3.1 through 3.9.

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