ULC
STANDARD

ULC-S651-07

STANDARD FOR EMEGENCY VALVES FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS

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UNDERWRITERS' LABORATORIES OF CANADA

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ICS 23.040.60

Prepared and Published by
UNDERWRITERS' LABORATORIES OF CANADA

First Edition ..... October 1990
Second Edition ..... June 2000
THIRD EDITION ..... DECEMBER 2007

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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.

Document Published by the American Society of Mechanical Engineers (ASME)
Three Park Avenue, New York NY 10016-5990 U.S.A.
Telephone: 800-843-2763
www.asme.org

- ANSI/ASME B1.20.1-1983 (R2001), Standard for Pipe Threads, General Purpose (Inch)

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 D471-1998 (R2005), Standard Test Method for Rubber Property - Effect of Liquids
- ASTM D573-2004, Standard Test Method for Rubber - Deterioration in an Air Oven

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Code Published by the National Research Council Canada (NRC)
1200 Montreal Road, Bldg M-58, Ottawa, ON K1A 0R6 Canada
www.nrc-cnrc.gc.ca

- National Fire Code of Canada, 2005

Document Published by Underwriters' Laboratories of Canada
7 Underwriters Road, Toronto, ON M1R 3B4
Telephone: (416) 757-3611
www.ulc.ca

- ULC-S505-1974, Standard for Fusible Links for Fire Protection Services

STANDARD FOR EMERGENCY VALVES FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS

PREFACE

This is the Third Edition of the ULC Standard for Emergency Valves for Flammable and Combustible Liquids, ULC-S651-07.

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

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.

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

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

Requests for interpretation of this Standard should be sent to the Standards Department of Underwriters' Laboratories of Canada. 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 Standard is intended to be used for conformity assessment.

1. SCOPE

1.1 This Standard sets forth minimum requirements for *emergency valves* that are intended to be used for the control of *flammable* and *combustible liquids* which are handled at temperatures within the range of –40 ° to +50 °C. For the purpose of this Standard, *flammable* and *combustible liquids* mean gasoline, fuel oil, kerosene and diesel fuel, including gasoline with small amounts of additives such as detergents, solvents for detergents and anti-icing chemicals; diesel with up to 5% biodiesel and gasoline with up to 15% ethanol or methyl tertiary butyl ether (MTBE).

1.2 The *valve*s are of the type used in the assembly of motor fuel dispensing equipment and associated piping systems.

1.3 *Valves* covered under these requirements shall be newly produced *valves* constructed entirely of new unused parts and materials.

1.4 These requirements cover *valves* of the manually or temperature operated types or combinations of such to the exclusion of types operated wholly or partially by electricity. They may form a part of an assembly, which provides for additional functions of service, the requirements of which are outside the scope of this Standard.

1.5 Requirements for the installation and use of equipment handling *flammable* and *combustible liquids* may be included in the National Fire Code of Canada and the regulations of the *authority having jurisdiction.*

2. GLOSSARY

Note: Terms used in this Standard that are in *italic* print are defined as follows:

ASTM IRM 903 / IRM 903 – A high-swelling petroleum base oil described in ASTM D471, Standard Test Method for Rubber Property – Effect of Liquids

ASTM REFERENCE FUEL H - 85% of combined 70% Isooctane + 30% Toluene, by volume, + 15% Anhydrous Denatured Ethanol, by volume.

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.

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

EMERGENCY VALVE / VALVE(S) - A valve intended for installation at the inlet of a remote *flammable* and *combustible liquid* pumping system. It is normally held open by a mechanical holding means, incorporates a fusible link having a maximum fusion temperature of 76 °C, and is designed to close automatically in the event of fire exposures or break-off resulting from impact.

FLAMMABLE LIQUID - Any liquid having a flashpoint below 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.