

ULC SUBJECT C842-M1984

GUIDE
FOR
THE INVESTIGATION
OF
VALVES FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS

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UNDERWRITERS' LABORATORIES OF CANADA

General Offices and Testing Station 7 CROUSE ROAD, SCARBOROUGH, ONTARIO M1R 3A9

Telephone 757-3611 Area Code 416
Telex 06-963643

In Replying
Please Refer to

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FOREWORD

This is the Second Edition of ULC Subject C842, previously entitled "Guide for the Investigation of Valves for Flammable Fuels, ULC Subject C842-1975".

These requirements are based upon sound engineering principles, research, records of tests and field experience, and an appreciation of the problems of manufacture, installation, and use derived from consultation with and information obtained from manufacturers, users, inspection authorities, and others having specialized experience.

These requirements are subject to revision as further experience and investigation may show is necessary or desirable.

A product which complies with these requirements will not necessarily be acceptable, if, when examined and tested, it is found to have features not covered by these requirements which may impair the result contemplated by these requirements.

A product employing materials or having forms of construction differing from those detailed in these requirements may be examined and tested according to the intent of the requirements, and if found to be substantially equivalent, may be given recognition.

The SI units of measurement used throughout this Guide are the primary units required to satisfy the requirements. The Imperial units of measurement located in Appendix A are to be considered as approximations of the SI units and for information purposes only.

GENERAL

1. SCOPE

1.1 These requirements cover valves that are intended to be used for the control of flammable and combustible liquids. They are of the type commonly used in piping systems and in fuel burning equipment. Valves covered by this Guide are for use with liquids which are handled at temperatures within the range of -29°C to 52°C.

1.2 These requirements cover valves of the manually operated, pressure operated 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 or service, the requirements for which are outside the scope of these requirements.

1.3 These requirements do not cover the following:

- A Valves for handling liquids under cryogenic conditions;
- B Valves for general refinery service, marine and pipe line terminals, or petro-chemical processing facilities;
- C Constant-level oil valves and electrically operated valves;
- D Valves for liquefied petroleum gas (LP-Gas) in the liquid phase;
- E Hose Nozzle valves for gasoline dispensers; nor
- F Emergency Shutoff valves for gasoline dispensers.

1.4 The term "product" refers to any equipment covered by these requirements.

2. GLOSSARY

2.1 FUSIBLE LINK VALVES - Valves intended for use in lines conveying liquids which function to close when the temperature in the vicinity of the valve exceeds the fusing temperature of the fusible element.

3. GENERAL

3.1 A component of a valve shall comply with the requirements for that component, except that such requirements may be modified if appropriate for the particular application.

3.2 All parts of a valve which are subjected to pressure during normal usage shall withstand, without rupture or permanent deformation, a hydrostatic pressure of five times the rated pressure of the valve.

CONSTRUCTION

4. ASSEMBLY

All Valves

4.1 A valve shall include all the components necessary for its normal function and installation.

4.2 If a valve is of a design which requires the use of special pipe flanges, gaskets, bolts, or other special fittings or parts for making a proper installation, such parts shall be furnished by the manufacturer with each valve.

4.3 Two or more subassemblies intended to be assembled in the field as a unit shall be capable of being joined together without requiring any of the subassemblies to be cut, drilled, welded, or otherwise altered.

4.4 If two or more valves or actuating devices, or both, are designed to be used together as one unit, the entire assembly shall, for the purpose of these requirements, be considered and tested as one valve.

4.5 The construction of a valve shall be such that parts can be reassembled after being dismantled to the extent needed for normal care, without impairment of safety features or functions.

4.6 Convenient means shall be provided for the purpose of making any necessary field adjustment.

4.7 A seat shall be attached to its or holder or otherwise assembled so as to prevent it from becoming dislocated under service conditions as determined by the Endurance Test. The means to secure the seat shall not rely upon cement or adhesive.

4.8 A brazing material used for joining liquid confining parts of a valve shall have a melting point (solidus temperature) not less than 538°C.

4.9 A valve designed with socket or butt weld ends shall be constructed so that it can be installed without damaging nonmetallic seats or seals. Necessary instructions for accomplishing this shall accompany each valve.

Shutoff Valves

4.10 A shutoff valve shall not be equipped with a bypass or with a means to prevent it from closing completely.

4.11 The requirement in Clause 4.10 does not apply to a feature provided to permit a take-off to recirculate fluid or to supply a pilot or other individually controlled outlet.

4.12 The appropriate positions or the direction of movement shall be clearly indicated for a manual operating lever or reset handle included in a nonself-closing type valve.