

UL 842

ISBN 0-7629-1302-9

Valves for Flammable Fluids

*UL COPYRIGHTED MATERIAL –
NOT AUTHORIZED FOR FURTHER REPRODUCTION OR
DISTRIBUTION WITHOUT PERMISSION FROM*



Documents

Document Sharing Hub

Underwriters Laboratories Inc. (UL)
333 Pfingsten Road
Northbrook, IL 60062-2096

UL Standard for Safety for Valves for Flammable Fluids, UL 842

Ninth Edition, Dated April 19, 2007

Summary of Topics

This new edition of ANSI/UL 842 includes editorial revisions consisting of updated references and renumbering of the standard. No changes in requirements have been made.

UL Standards for Safety are developed and maintained in the Standard Generalized Markup Language (SGML). SGML -- an international standard (ISO 8879-1986) -- is a descriptive markup language that describes a document's structure and purpose, rather than its physical appearance on a page. Due to formatting differences resulting from the use of UL's new electronic publishing system, please note that additional pages (on which no requirements have been changed) may be included in revision pages due to relocation of existing text and reformatting of the Standard.

As indicated on the title page (page 1), this UL Standard for Safety is an American National Standard. Attention is directed to the note on the title page of this Standard outlining the procedures to be followed to retain the approved text of this ANSI/UL Standard.

As indicated on the title page (page 1), this UL Standard for Safety has been adopted by the Department of Defense.

The UL Foreword is no longer located within the UL Standard. For information concerning the use and application of the requirements contained in this Standard, the current version of the UL Foreword is located on ULStandardsInfoNet at: <http://ulstandardsinfo.net/ulforeword.html>

The master for this Standard at UL's Northbrook Office is the official document insofar as it relates to a UL service and the compliance of a product with respect to the requirements for that product and service, or if there are questions regarding the accuracy of this Standard.

UL's Standards for Safety are copyrighted by UL. Neither a printed copy of a Standard, nor the distribution diskette for a Standard-on-Diskette and the file for the Standard on the distribution diskette should be altered in any way. All of UL's Standards and all copyrights, ownerships, and rights regarding those Standards shall remain the sole and exclusive property of UL.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form by any means, electronic, mechanical photocopying, recording, or otherwise without prior permission of UL.

Revisions of UL Standards for Safety are issued from time to time. A UL Standard for Safety is current only if it incorporates the most recently adopted revisions.

UL provides this Standard "as is" without warranty of any kind, either expressed or implied, including but not limited to, the implied warranties of merchantability or fitness for any purpose.

In no event will UL be liable for any special, incidental, consequential, indirect or similar damages, including loss of profits, lost savings, loss of data, or any other damages arising out of the use of or the inability to use this Standard, even if UL or an authorized UL representative has been advised of the possibility of such damage. In no event shall UL's liability for any damage ever exceed the price paid for this Standard, regardless of the form of the claim.

UL will attempt to answer support requests concerning electronic versions of its Standards. However, this support service is offered on a reasonable efforts basis only, and UL may not be able to resolve every support request. UL supports the electronic versions of its Standards only if they are used under the conditions and operating systems for which it is intended. UL's support policies may change from time-to-time without notification.

UL reserves the right to change the format, presentation, file types and formats, delivery methods and formats, and the like of both its printed and electronic Standards without prior notice.

Purchasers of the electronic versions of UL's Standards for Safety agree to defend, indemnify, and hold UL harmless from and against any loss, expense, liability, damage, claim, or judgement (including reasonable attorney's fees) resulting from any error or deviation introduced while purchaser is storing an electronic Standard on the purchaser's computer system.

If a single-user version electronic Standard was purchased, one copy of this Standard may be stored on the hard disk of a single personal computer, or on a single LAN file-server or the permanent storage device of a multiple-user computer in such a manner that this Standard may only be accessed by one user at a time and for which there is no possibility of multiple concurrent access.

If a multiple-user version electronic Standard was purchased, one copy of the Standard may be stored on a single LAN file-server, or on the permanent storage device of a multiple-user computer, or on an Intranet server. The number of concurrent users shall not exceed the number of users authorized.

Electronic Standards are intended for on-line use, such as for viewing the requirements of a Standard, conducting a word search, and the like. Only one copy of the Standard may be printed from each single-user version of an electronic Standard. Only one copy of the Standard may be printed for each authorized user of a multiple-user version of an electronic Standard. Because of differences in the computer/software/printer setup used by UL and those of electronic Standards purchasers, the printed copy obtained by a purchaser may not look exactly like the on-line screen view or the printed Standard.

An employee of an organization purchasing a UL Standard can make a copy of the page or pages being viewed for their own fair and/or practical internal use.

The requirements in this Standard are now in effect, except for those paragraphs, sections, tables, figures, and/or other elements of the Standard having future effective dates as indicated in the note following the affected item. The prior text for requirements that have been revised and that have a future effective date are located after the Standard, and are preceded by a "SUPERSEDED REQUIREMENTS" notice.

New product submittals made prior to a specified future effective date will be judged under all of the requirements in this Standard including those requirements with a specified future effective date, unless the applicant specifically requests that the product be judged under the current requirements. However, if the applicant elects this option, it should be noted that compliance with all the requirements in this Standard will be required as a condition of continued Listing, Recognition, and Follow-Up Services after the effective date, and understanding of this should be signified in writing.

Copyright © 2007 Underwriters Laboratories Inc.

This Standard consists of pages dated as shown in the following checklist:

Page	Date
1-30	April 19, 2007

No Text on This Page



APRIL 19, 2007

1



ANSI/UL 842-2007

UL 842

Standard for Valves for Flammable Fluids

The first edition was titled Construction and Performance of Hazardous Liquid Valves. The second edition was titled Valves for Hazardous Liquids. The third and fourth editions were titled Valves for Flammable Liquids and Fuel Gases.

First Edition – May, 1930
Second Edition – July, 1950
Third Edition – November, 1959
Fourth Edition – May, 1973
Fifth Edition – January, 1974
Sixth Edition – June, 1980
Seventh Edition – June, 1993
Eighth Edition – April, 1997

Ninth Edition

April 19, 2007

The most recent designation of ANSI/UL 842 as a Reaffirmed American National Standard (ANS) occurred on April 19, 2007.

This ANSI/UL Standard for Safety, which consists of the Eighth Edition is under continuous maintenance, whereby each revision is ANSI approved upon publication.

An effective date included as a note immediately following certain requirements is one established by Underwriters Laboratories Inc.

The Department of Defense (DoD) has adopted UL 842 on August 10, 1989. The publication of revised pages or a new edition of this Standard will not invalidate the DoD adoption.

Revisions of this Standard will be made by issuing revised or additional pages bearing their date of issue. A UL Standard is current only if it incorporates the most recently adopted revisions, all of which are itemized on the transmittal notice that accompanies the latest set of revised requirements. Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <http://csds.ul.com>.

ISBN 0-7629-1302-9

COPYRIGHT © 1974, 2007 UNDERWRITERS LABORATORIES INC.

UL COPYRIGHTED MATERIAL –
NOT AUTHORIZED FOR FURTHER REPRODUCTION OR
DISTRIBUTION WITHOUT PERMISSION FROM  Documents
Document Sharing Hub

No Text on This Page



CONTENTS

INTRODUCTION

1 Scope	5
2 Glossary	6
3 General	6
3.1 Components	6
3.2 Units of measurement	7
3.3 Undated references	7

CONSTRUCTION

4 Assembly	7
4.1 All valves	7
4.2 Shutoff valves	8
4.3 Hose nozzle valves	8
5 Materials	10
6 Bodies and Covers	11
7 Seals and Stuffing Boxes	11
8 Diaphragms	12
9 Springs	13
10 Operating Mechanisms	13

PERFORMANCE

11 General	13
12 Deformation Test	14
13 External Leakage Test	15
13.1 General	15
13.2 Fuel gas valves	15
13.3 Diaphragm-type fuel gas valves	16
14 Seat Leakage Test	17
15 Hose Nozzle Valve Strength Test	18
16 Operation Test	19
16.1 General	19
16.2 Hose nozzle valve	20
17 Fire Test	20
18 Weak Section Strength Test	21
19 Pull Test	22
20 Sensitivity Test	22
21 Endurance Test	23
22 Hydrostatic Strength Test	24
23 Electrical Continuity Test	24
24 Salt Spray Test	25
25 10-Day Moist Ammonia-Air Stress Cracking Test	25
26 Tests of Synthetic Rubber Parts	26
26.1 General	26
26.2 Volume change test	26
26.3 Weight loss test	27
27 Marking Adhesion Test	27

UL COPYRIGHTED MATERIAL –
NOT AUTHORIZED FOR FURTHER REPRODUCTION OR
DISTRIBUTION WITHOUT PERMISSION FROM UL



Documents

Document Sharing Hub

MANUFACTURING AND PRODUCTION TESTS

28 General	28
------------------	----

INSTALLATION INSTRUCTIONS

29 General	28
------------------	----

MARKING

30 General	28
------------------	----

INTRODUCTION

1 Scope

1.1 These requirements cover valves that are intended to be used for the control of flammable fluids. They are of the type commonly used in piping systems and in the assembly of motor fuel dispensing and fuel burning equipment. Valves covered by this standard are for use with flammable fluids which are handled at temperatures within the range of minus 29°C (minus 20°F) to 52°C (125°F).

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. When they form a part of an assembly which provides for additional functions or service, the requirements 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, offshore and pipe line terminals, natural gas processing plants, gas distribution systems, petrochemical processing facilities, or the like.
- c) Constant-level oil valves and electrically operated valves.
- d) Relief valves and pressure regulators for liquefied petroleum gas (LP-Gas) service.
- e) Shutoff and check valves for liquefied petroleum gas (LP-Gas) in the liquid phase.
- f) Manually operated gas valves of the plug and body or rotating disc type which are evaluated under the Standard for Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves, ANSI Z21.15.
- g) Valves covered by the Standard for Gas Appliance Pressure Regulators, ANSI Z21.18; the Standard for Automatic Valves for Gas Appliances, ANSI Z21.21; or the Standard for Gas Appliance Thermostats, ANSI Z21.23.

1.4 A product that contains features, characteristics, components, materials, or systems new or different from those covered by the requirements in this standard, and that involves a risk of fire or of electric shock or injury to persons shall be evaluated using appropriate additional component and end-product requirements to maintain the level of safety as originally anticipated by the intent of this standard. A product whose features, characteristics, components, materials, or systems conflict with specific requirements or provisions of this standard does not comply with this standard. Revision of requirements shall be proposed and adopted in conformance with the methods employed for development, revision, and implementation of this standard.