



UL 87

Underwriters Laboratories Inc.

Standard for Safety

Power-Operated Dispensing
Devices for Petroleum
Products



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UL Standard for Safety for Power-Operated Dispensing Devices for Petroleum Products, UL 87

Eleventh Edition, Dated October 31, 2001

Revisions: This Standard contains revisions through and including June 12, 2008.

Summary of Topics

This revision to UL 87 is being issued to address universal upkeep of UL Standards for Safety. These revisions are considered to be non-substantive and not subject to UL's STP process.

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.

Text that has been changed in any manner is marked with a vertical line in the margin. Changes in requirements are marked with a vertical line in the margin and are followed by an effective date note indicating the date of publication or the date on which the changed requirement becomes effective.

The revisions dated June 12, 2008 include a reprinted title page (page1) for this Standard.

As indicated on the title page (page1), 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>

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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that have been revised and that have a future effective date are located after the Standard, and are preceded by a "SUPERSEDED REQUIREMENTS" notice.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.

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

Page	Date
1-3	June 12, 2008
4-5	October 31, 2001
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7-26	October 31, 2001
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33-40	October 31, 2001
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OCTOBER 31, 2001

(Title Page Reprinted: June 12, 2008)

1

UL 87

Standard for Power-Operated Dispensing Devices for Petroleum Products

The first and second editions were titled Power-Operated Discharge Devices. The third through sixth editions were titled Power-Operated Dispensing Devices for Flammable Liquids.

First Edition – May, 1930
Second Edition – March, 1951
Third Edition – July, 1958
Fourth Edition – March, 1964
Fifth Edition – April, 1971
Sixth Edition – July, 1974
Seventh Edition – December, 1975
Eighth Edition – July, 1981
Ninth Edition – September, 1990
Tenth Edition – October, 1995

Eleventh Edition

October 31, 2001

The Department of Defense (DoD) has adopted UL 87 on March 11, 1991. The publication of revised pages or a new edition of this Standard will not invalidate the DoD adoption.

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>.

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APPENDIX A

Standards for Components.....	A1
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INTRODUCTION

1 Scope

1.1 These requirements apply to power-operated dispensing devices for petroleum products such as gasoline for use as motor fuel. Requirements for the installation and use of these dispensing devices are included in the Automotive and Marine Service Station Code, NFPA 30A, and the National Electrical Code, NFPA 70.

1.2 These requirements apply to wiring methods used to install or interconnect such control equipment when the equipment is located directly on or within the housing of the dispensing device. These requirements do not apply to control equipment that may authorize, monitor, or interrupt operation of a power-operated dispensing device. Such equipment includes panel mounted equipment located adjacent to the dispensing device, remote consoles located inside a permanent structure, and auxiliary equipment physically attached to the dispensing device or enclosed by the pedestal and housing.

1.3 Deleted October 31, 2001

2 General

2.1 Components

2.1.1 Except as indicated in 2.1.2, a component of a product covered by this standard shall comply with the requirements for that component. See Appendix A for a list of standards covering components used in the products covered by this standard.

2.1.2 A component is not required to comply with a specific requirement that:

- a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or
- b) Is superseded by a requirement in this standard.

2.1.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.1.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

2.2 Units of measurement

2.2.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

2.3 Undated references

2.3.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

3 Glossary

3.1 For the purpose of this standard the following definitions apply.

3.2 AIR GAP – A minimum of 1 inch (25.4 mm) free air space provided between the planes of Division 1 or Division 2 hazardous locations and an unclassified area of a dispensing device.

3.3 BASE – That part of the assembly which is intended to be secured to the foundation on which the device will be installed.

3.4 CLASS I HAZARDOUS LOCATIONS – Locations in which flammable gases or vapors are or may be present in the air in quantities sufficient to produce explosive or ignitable mixtures. For the purpose of these requirements, as applied to dispensing systems of other than the overhead type, the following classified areas are further defined. Such areas for overhead type systems shall be as specified in the Automotive and Marine Service Station Code, NFPA 30A. The area of the dispensing system covered by these requirements is the envelope defined by the maximum outer dimensions.

a) Class I, Group D, Division 1 –

- 1) The area within a dispenser housing up to 4 feet (1.2 m) vertically above the base, except for that area defined as Division 2 or unclassified.
- 2) Any area within a nozzle boot.

b) Class I, Group D, Division 2 –

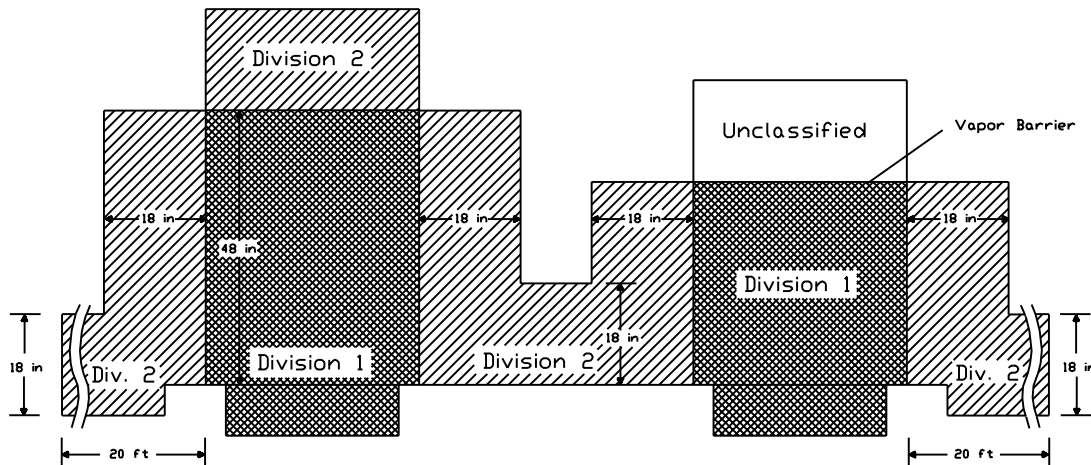
- 1) Areas within a dispenser housing above the Division 1 area.
- 2) The area surrounding the dispenser housing within 18 inches (46 cm) horizontally in all directions from the Division 1 area located within the housing.
- 3) The area within 18 inches horizontally, in all directions from the opening of a nozzle boot not isolated by a vapor-tight partition, except that the area is not required to be extended around a 90-degree or greater corner.

See Figures 3.1 and 3.2 for an illustration of Class I hazardous locations.

3.5 DISPENSER, REMOTE-CONTROL TYPE – A dispensing device that does not contain a power-operated pump as part of the assembly, and which is intended for connection to a fluid piping system containing the power operated pumps at a remote location. Also commonly identified as a "dispenser."

3.6 DISPENSER, SELF-CONTAINED – A dispensing device that includes a power operated pump as part of the assembly. Also commonly identified as a "pump" or "suction dispenser."

Figure 3.1
Hazardous location classifications within a typical dispenser
 Dispenser Without Vapor Barrier Construction Dispenser With Vapor Barrier Construction



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3.7 DISPENSING DEVICE – A product consisting of a meter, motor, or fluid control, and an area for storing a hose nozzle valve with or without a pump.

3.8 ELECTRICAL CIRCUITS –

a) High-Voltage Circuit – A circuit involving a potential of not more than 600 volts and having circuit characteristics in excess of those of a low-voltage or Class 2 circuit.

b) Low-Voltage Circuit – A circuit involving a potential of not more than 30 volts alternating-current (rms) (42.4 volts peak or direct current) and

1) Supplied by a Class 2 transformer, or by a battery, by a battery and fixed impedance, or by a transformer and fixed impedance each of which, as a unit, is in compliance with what is required for a Class 2 transformer or

2) Limited to a maximum of 100 volt-amperes.

A circuit derived from a source of supply classified as a high-voltage circuit, by connecting resistance in series with the supply circuit as a means of limiting the voltage and current, is not considered to be a low-voltage circuit.

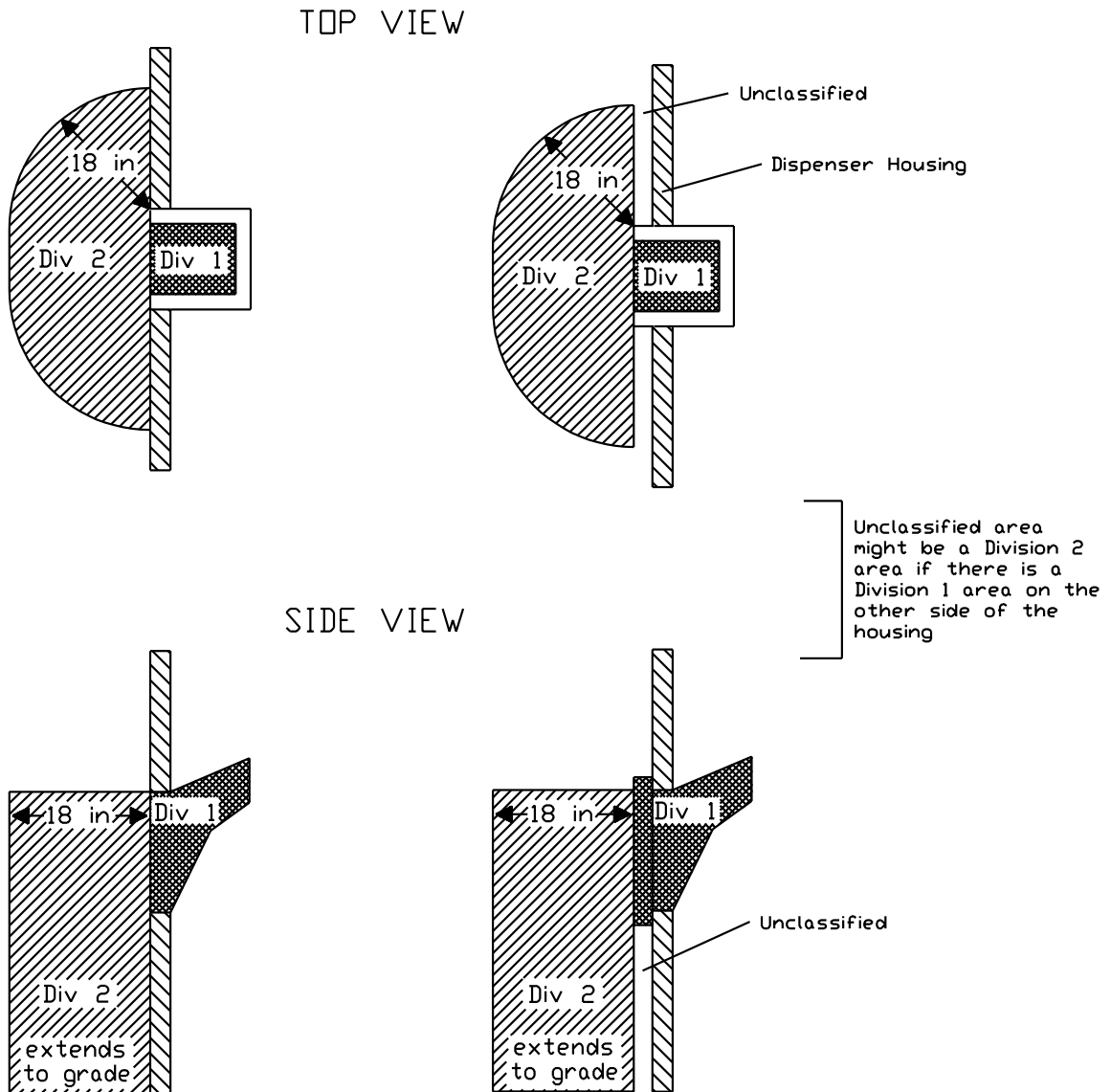
c) Intrinsically Safe Circuit – A circuit incapable of releasing sufficient electrical energy under normal or abnormal conditions to cause ignition of a specific hazardous atmospheric mixture. Abnormal conditions include unintentional damage to any part of the equipment or wiring, insulation or other malfunction of electrical components, application of overvoltage, adjustment and maintenance operations, and other similar conditions.

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Figure 3.2
Hazardous location classifications associated with a hose nozzle valve boot



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