

UL 360

Liquid-Tight Flexible Steel Conduit

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UL Standard for Safety for Liquid-Tight Flexible Steel Conduit, UL 360

Fifth Edition, Dated June 25, 2003

Revisions: This Standard contains revisions through and including July 26, 2007.

Summary of Topics:

A revision to the Conduit Identification Marking in paragraph 23.4 is being issued.

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 revised requirements are substantially in accordance with UL's Proposal(s) on this subject dated June 8, 2007.

The revisions dated July 26, 2007 include a reprinted title page (page1) for this 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 (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>

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.

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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

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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 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
1-4	July 26, 2007
5-31	June 25, 2003
32-34	July 26, 2007

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ANSI/UL 360-2007

1

UL 360

Standard for Liquid-Tight Flexible Steel Conduit

First Edition – April, 1976
Second Edition – August, 1980
Third Edition – August, 1986
Fourth Edition – August, 1996

Fifth Edition

June 25, 2003

The most recent designation of ANSI/UL 360 as an American National Standard (ANSI) occurred on July 20, 2007.

This ANSI/UL Standard for Safety, which consists of the Fifth edition with revisions through July 26, 2007 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. and is not part of the ANSI standard.

The Department of Defense (DoD) has adopted UL 360 on January 20, 1984. 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>.

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CONTENTS

INTRODUCTION

1 Scope	5
2 General	6
2.1 Components	6
2.2 Units of measurement	6
2.3 Undated references	6

CONSTRUCTION

3 General	6
4 Jacket Thickness	7
5 Conduit Diameters	7
6 Corrosion Protection	8

PERFORMANCE

7 Resistance Test	8
8 Fault-Current Test	9
9 Impact Test	10
10 Tension Test	11
11 Crushing Test	13
12 Pipe Stiffness for Conduit Intended for Direct-Burial	14
13 Flexibility Test	14
14 Zinc-Coating Test	15
15 Vertical Flame Test	17
16 Physical Properties of Thermoplastic Jacket	20
16.1 General	20
16.2 Apparatus for making physical tests	20
16.3 Preparation of specimens for physical tests	23
16.4 Elongation and tensile strength	23
17 Deformation Test	25
18 Mechanical Water Absorption Test	26
19 Moisture Penetration Test	28
20 Sunlight-Resistance Test	28
21 Test for Secureness of Fittings	29
22 Test for Durability of Ink Printing	30

MARKINGS

23 Details	32
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INTRODUCTION

1 Scope

1.1 These requirements cover the 3/8, 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, and 4 inch trade sizes of liquid-tight flexible steel conduit. The conduit covered is intended for installation in accordance with the National Electrical Code (NFPA 70) as raceway for wires and cables in motor circuits operating at potentials over 600 volts, in electric-sign circuits operating at potentials up through 1000 volts, over 1000 volts, and in other circuits operating at 0 – 600 V.

1.2 This conduit is for applications in which flexibility of the conduit is necessary during installation, operation, or maintenance and the contained conductors need protection from vapors, liquids or solids.

1.3 This conduit is circular in cross section, having an outer liquid-tight, nonmetallic, sunlight-resistant jacket over an inner flexible metal core, and is for use in wet, dry, or oily locations in which the conduit is exposed but is not subject to physical damage. Conduit that is not marked with a temperature designation or is marked "60 C" is for use at temperatures not in excess of 60°C (140°F). Conduit that is for use in dry or oily locations at a temperature higher than 60°C (140°F) is marked "____ C dry, 60 C wet, 70 C oil res" or "____ C dry, 60 C wet, 70 C oil resistant" with "80 C" or "105 C" inserted as the dry-locations temperature.

1.4 Conduit that is marked "80 C dry, 60 C wet, 60 C oil res" or "80 C dry, 60 C wet, 60 C oil resistant" is for use at 80°C (176°F) and lower temperatures in air, and 60 °C (140°F) and lower temperatures where exposed to water, oil or coolants – that is, to cutting oils and the like in machine-tool and other industrial applications.

1.5 Conduit marked in accordance with 23.4(g) is limited to use in oil free environments.

1.6 Fittings for liquid-tight flexible steel conduit are covered in the Standard for Fittings for Cable and Conduit, UL 514B.

1.7 These requirements do not cover liquid-tight flexible nonmetallic conduit. Flexible nonmetallic conduit is covered in the Standard for Liquid-Tight Flexible Nonmetallic Conduit, UL 1660, and the fittings for this conduit are covered in the Standard for Fittings for Cable and Conduit, UL 514B.

1.8 These requirements do not cover flexible metallic tubing.

1.9 These requirements do not cover electrical nonmetallic tubing (ENT).

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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.

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.

CONSTRUCTION

3 General

3.1 Conduit in trade sizes 3/8 – 1-1/4 inches shall be provided with a bonding strip wound enclosed by the conduit convolutions throughout the entire length of the conduit. The material and dimensions of the bonding strip shall result in the finished conduit having the resistance values shown in Table 7.1 before high-current testing and shall not adversely affect the flexibility and minimum bending radii of the finished conduit.