

DOCUMENT NUMBER: UL 486D

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Underwriters Laboratories Inc.®

An independent, not-for-profit organization testing for public safety

June 18, 1993

Revision pages for

Standard for

Insulated Wire Connectors For Use With Underground Conductors

UL 486D, Third Edition

Attached to this transmittal notice is a revision of the Third edition of UL 486D.

A CHANGE ON A PAGE DATED JUNE 18, 1993 IS INDICATED BY A SMALL PRINT NOTE FOLLOWING THE AFFECTED ITEM, PRECEDED AND FOLLOWED BY AN ASTERISK.

The new requirements were originally published as revisions to the Second edition of UL 486D. These requirements are now issued for, and renumbered in accordance with, the Third edition of UL 486D.

Attention is directed to the note on the title page of this standard outlining the procedure to be followed to retain the approved text of ANSI/UL 486D-1985 (R1993).

Revised and/or additional pages may be issued from time to time.

With the inclusion of the accompanying material, the standard consists of pages dated as shown in the following checklist:

Page	Date
1	June 17, 1993 (Reprinted: June 18, 1993)
2	—
3, 4	June 17, 1993
5	June 18, 1993
6 – 12	June 17, 1993

JUNE 17, 1993
(Title Page Reprinted: June 18, 1993)



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UL 486D

Standard for

Insulated Wire Connectors For Use With Underground Conductors

First Edition – March, 1982
Second Edition – September, 1986

Third Edition

June 17, 1993

Approval as an American National Standard (ANSI) covers the numbered paragraphs on pages dated June 17, 1993. These pages should not be discarded when revised or additional pages are issued if it is desired to retain the ANSI approved text.

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

Approved as ANSI/UL 486D-1985, November 13, 1985
Reaffirmed as ANSI/UL 486D-1985(R1993), March 9, 1993

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 published set of revision pages.

ISBN 1-55989-408-3

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(1 – 06/17/93 – 06/18/93)

INTRODUCTION

1 Scope

1.1 These requirements cover insulated pressure wire connector systems intended for direct burial. The pressure wire connectors covered by these requirements are for use with copper, aluminum or copper-clad aluminum wire, or both in accordance with installations covered by the National Electrical Code. These requirements cover insulating caps, covers, resins, tubing, and tapes that are part of a system for use with specific wire connectors where the seal is made at the conductor.

1.2 These requirements apply only to insulated connectors intended for use with No. 14 AWG (2.1 mm²) through 2000 kcmil (1012 mm²) conductors with currents not exceeding the ampacity of insulated conductors rated 75°C (167°F) and intended for use at 600 volts or less.

1.3 A product that contains features, characteristics, components, materials, or systems new or different from those in use when the standard was developed, and that involves a risk of fire, electric shock, or injury to persons shall be evaluated using the appropriate additional component and end-product requirements as determined necessary to maintain the level of safety for the user of the product as originally anticipated by the intent of this standard.

1.3 added June 18, 1993

2 General

2.1 Units of measurement

2.1.1 If a value for measurement is followed by a value in other units in parentheses, the second value may be only approximate. The first stated value is the requirement.

2.2 Undated references

2.2.1 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.

2.2.1 added June 18, 1993

CONSTRUCTION

3 General

3.1 Wire connectors intended for use only with copper conductors shall comply with the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A. Wire connectors intended for use with aluminum conductors or copper-clad aluminum conductors only or connectors intended for use with copper to aluminum conductors shall comply with the Standard for Wire Connectors for Use With Aluminum Conductors, UL 486B.

3.2 A material used in the outer cover to insulate a wire connector for direct burial shall be resistant to fungi attack. Materials not known to be resistant to fungi shall be judged in accordance with the Standard Recommended Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi, ANSI/ASTM G21-90. A material, such as cotton, paper, jute, hemp, or the like, is not acceptable under any condition. A material known to be resistant to fungi, such as polypropylene, polyvinyl chloride, EPDM rubber, or glass, need not be investigated.

PERFORMANCE

4 General

4.1 A wire connector intended to accommodate only copper wire shall perform acceptably when subjected to the static-heating and mechanical sequence test described in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A. A wire connector intended to accommodate both aluminum and copper wire and combinations of aluminum and copper wire shall perform acceptably when subjected to the heat-cycling, static-heating and mechanical sequence tests described in the Standard for Wire Connectors for Use With Aluminum Conductors, UL 486B.

Exception: The heat-cycling test described in UL 486B need not be conducted if the connector complies with the requirements for Sealed Insulated Underground Connector Systems Rated 600 Volts, ANSI C119.1-1986. See 10.1 and 10.2.

4.2 A wire connector and all components that comprise a direct burial system (hereinafter referred to as an assembly or assemblies) in the as-received condition shall be subjected to the tests in Table 4.1. After subjecting the assemblies to a test sequence, the insulating properties of the covers or the like shall not be adversely affected as determined by the tests specified in Sections 6.2 – 9.1.

Table 4.1
Test sequences

A	B	C	D
Immersion heating	Heating conditioning before assembly	Heat conditioning	Heat and cold
Insulation resistance	Flexing and twisting	Immersion and insulation	Conditioning
Dielectric voltage-withstand	Immersion	Resistance	Impact
Heat conditioning	Insulation resistance		Immersion
Flexing and twisting			Dielectric
Immersion			Voltage-withstand
Insulation resistance			
Cold conditioning			
Flexing and twisting			
Immersion			
Insulation resistance			
Heat cycling and			
Submersion			
Dielectric voltage-withstand			
Leakage current			

4.3 An insulating system, such as a cap, cover, or the like, not provided with a wire connector system is to be tested using the wire connector recommended by the manufacturer. See 10.4.

5 Preparation of Sample Assemblies

5.1 Unless otherwise indicated in this standard, the preparation of sample assemblies is to be as specified in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, and the Standard for Wire Connectors for Use With Aluminum Conductors, UL 486B. Each assembly is to have provision for the connection of at least two conductors.

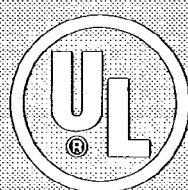
5.2 For the tests specified in Sections 6.1 – 9.1, the conductors are to be Type RHW, USE, or XHHW.

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Insulated Wire Connectors for Use With Underground Conductors



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Standard

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