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Subjects 2279 (674, 698, 844,
 886, 913, 1010, 1604)
 (In reply refer to Subject 2279)

333 Pfingsten Road
 Northbrook, IL 60062-2096
 May 17, 1996

TO: See Appendix A for the List of Addressees

SUBJECT: Request for Comments on Proposed Requirements for the Proposed First Edition of the Standard for Electrical Equipment for Use In Class I, Zone 0, 1, and 2 Hazardous (Classified) Locations, UL 2279; PROPOSED EFFECTIVE DATE

SUMMARY OF TOPICS

This bulletin contains the proposed draft of the first edition of the Standard for Electrical Equipment for Use In Class I, Zone 0, 1, and 2 Hazardous (Classified) Locations, UL 2279

COMMENTS ON THIS PROPOSAL DUE: JUNE 17, 1996

Attached as Appendix B is the draft of UL 2279. Questions regarding interpretation of requirements should be directed to the responsible UL Staff. Please see Appendices C through I of this bulletin regarding designated responsibility for the subject product categories.

PROPOSED EFFECTIVE DATE

This proposed new standard will not necessitate a review or additional testing of currently Listed products. Therefore, UL proposes that the new standard UL 2279 become effective upon publication.

RATIONALE

UL is proposing to adopt the first edition of the Standard for Electrical Equipment for Use In Class I, Zone 0, 1, and 2 Hazardous (Classified) Locations, UL 2279. This standard will contain requirements for all protection methods for use in Class I, Zone 0, 1, and 2 Hazardous (Classified) Locations. This Standard identifies applicable IEC requirements by reference and then details any specific deviations. The IEC requirements referenced are contained in the following IEC Standards:

IEC 79-0, Electrical Apparatus for Explosive Gas Atmospheres, Part 0: General Requirements,
 IEC 79-1, Electrical Apparatus for Explosive Gas Atmospheres, Part 1: Construction and Verification Test of Flameproof Enclosures of Electrical Apparatus,

A not-for-profit organization
 dedicated to public safety and
 committed to quality service

IEC 79-2, Electrical Apparatus for Explosive Gas Atmospheres, Part 2: Electrical Apparatus - Type of Protection "p",
 IEC 79-7, Electrical Apparatus for Explosive Gas Atmospheres, Part 7: Increased Safety "e",
 IEC 79-11, Electrical Apparatus for Explosive Gas Atmospheres, Part 11: Intrinsic Safety "i",
 IEC 79-15, Electrical Apparatus for Explosive Gas Atmospheres, Part 15: Electrical Apparatus with Type of Protection "n",
 IEC 79-18, Electrical Apparatus for Explosive Gas Atmospheres, Part 18: Encapsulation "m".

This Standard is a result of the newly adopted Zone classification scheme in Article 505 of the National Electrical Code, NFPA 70-1996, and the subsequent need for documenting these protection method requirements. It also represents existing UL internal practice with regard to Listing equipment for use in Zones. The Standard is a natural culmination of UL's efforts to harmonize North American hazardous location requirements with those of the international community, as detailed in UL's Subject 35 bulletin dated October 31, 1995. Additionally, manufacturers indicated a need for a UL Standard to address Zones during a May 14, 1996 Ad Hoc meeting (detailed Meeting Report to follow).

UL's participation in the international standards writing activities for the IEC Publication 79 Series of Standards, and our Memorandum of Understanding and other test data exchange programs with European test houses, has been in place for years, is ongoing and provides a forum for continued harmonization efforts regarding deviations to the IEC 79 Standards.

The current deviations documented by this Standard are based on superseding requirements set forth by the NEC, and on the need to protect against electrical shock and fire hazards that are normally associated with ordinary location requirements. Additionally, requirements for bi-pin fluorescent fixtures were added to this Standard to address the lack of requirements for this common type of design. These requirements are based on existing practice by the European test houses and upcoming revisions to the CENELEC EN50019 Standard.

IMPACT

If this standard is adopted it will not require a review or retest of presently Listed or Recognized products.

UL is willing to consider agreements with other agencies to facilitate test data exchange whereby UL generated test data may be used in foreign certification submittals.

Request for Comments on Proposals

Please provide the following:

1. Your comments concerning the proposed new edition; and
2. Your comments concerning the proposed effective date, should the proposals be adopted.

Comments should be sent to the attention of Alan McGrath at the Northbrook office of UL, 333 Pfingsten Road, Northbrook, Illinois 60062-2096. Please reference all correspondence to Subject 2279.

All comments should be sent by June 17, 1996.

Subject 2279

-3-

May 17, 1996

Unless specifically requested to do otherwise, UL will not acknowledge comments indicating concurrence with these proposals.

UNDERWRITERS LABORATORIES INC.

Alan McGrath

ALAN McGRATH (Ext. 43038)
Project Engineer
Standards Department

REVIEWED BY:

Kerry McManama/am

KERRY MCMANAMA (Ext. 42469)
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SR:JTM

2279.ULS

Subjects 2279

-A1-

May 1996

A P P E N D I X A

TO: Casualty Council of Underwriters Laboratories Inc.,
 Electrical Council of Underwriters Laboratories Inc.,
 Fire Council of Underwriters Laboratories Inc.,
 Subscribers to UL's Listing, Classification, and Recognition Services for Equipment for
 Use in and Relating to Hazardous (Classified) Locations
 Subscribers to UL's Standards Service for:
 Electric Motors and Generators for Use in Hazardous (Classified) Locations,
 UL 674
 Industrial Control Equipment for Use in Hazardous (Classified) Locations, UL 698
 Electric Lighting Fixtures for Use in Hazardous (Classified) Locations, UL 844
 Outlet Boxes and Fittings for Use in Hazardous (Classified) Locations, UL 886
 Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II,
 and III, Division 1, Hazardous (Classified) Locations, UL 913
 Receptacles Plug Combinations for Use in Hazardous (Classified) Locations,
 UL 1010
 Electrical Equipment for Use in Class I and II, Division 2, and Class III
 Hazardous (Classified) Locations, UL 1604

PROPOSED REQUIREMENTS ARE OF A TENTATIVE AND EARLY NATURE AND ARE FOR REVIEW AND COMMENT ONLY. CURRENT REQUIREMENTS ARE TO BE USED TO JUDGE A PRODUCT UNTIL THESE REQUIREMENTS ARE PUBLISHED IN FINAL FORM.

APPENDIX B

PROPOSED REQUIREMENTS AND PROPOSED EFFECTIVE DATE
FOR THE PROPOSED FIRST EDITION OF THE STANDARD FOR
ELECTRICAL EQUIPMENT FOR USE IN CLASS I, ZONE 0, 1, AND 2 HAZARDOUS (CLASSIFIED)
LOCATIONS, UL 2279

PROPOSED EFFECTIVE DATE: EFFECTIVE UPON PUBLICATION

CONTENTS

1 Scope	3
2 General	3

Part 0 – General Requirements

3 Preface	5
4 Scope	5
5 Connection Facilities for Earthing or Equipotential Bonding Conductors	5
6 Cable and Conduit Entries	5
7 Marking	5
8 Appendix A	5
9 Appendix B	5
10 Appendix C	5

Part 1 – Construction and Verification Test of Flameproof Enclosures of Electrical Apparatus

11 Scope	6
12 Connection of Conductors and Cables	6

Part 2 – Electrical Apparatus - Type of Protection “p” (purged/pressurized)

13 Scope	7
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Part 7 – Increased Safety “e”

14 Scope	8
15 Normative References	8
16 Luminaires Designed for Mains Supply	8
17 Appendix A	11

Part 11 – Intrinsic Safety “i”

18 Scope	12
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Part 15 – Electrical Apparatus with Type of Protection “n” (nonincendive)

19 Scope	13
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Part 18 – Encapsulation “m”

20 Scope	14
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1 Scope

1.1 These requirements cover equipment for use and installation in Class I, Zones 0, 1, and 2, Gas Groups IIA, IIB, and IIC, hazardous (classified) locations, in accordance with the National Electrical Code, NFPA 70.

1.2 These requirements do not cover equipment for use in Gas Group I.

1.3 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, electric shock, or injury to persons shall be evaluated using the appropriate additional component and end-product requirements as determined necessary to maintain the acceptable 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 cannot be judged to comply with this standard. Where considered appropriate, revision of requirements shall be proposed and adopted in conformance with the methods employed for development, revision, and implementation of this standard.

2 General

2.1 Except as modified by Parts 0 through 18 of this Standard, equipment shall comply with International Electrotechnical Commission (IEC) Publication 79-0, Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements, and one or more of the following specific protection method Standards:

IEC 79-1, Electrical Apparatus for Explosive Gas Atmospheres, Part 1: Construction and Verification Test of Flameproof Enclosures of Electrical Apparatus
 IEC 79-2, Electrical Apparatus for Explosive Gas Atmospheres, Part 2: Electrical Apparatus - Type of Protection "p",
 IEC 79-7, Electrical Apparatus for Explosive Gas Atmospheres, Part 7: Increased Safety "e",
 IEC 79-11, Electrical Apparatus for Explosive Gas Atmospheres, Part 11: Intrinsic Safety "i",
 IEC 79-15, Electrical Apparatus for Explosive Gas Atmospheres, Part 15: Electrical Apparatus with Type of Protection "n",
 IEC 79-18, Electrical Apparatus for Explosive Gas Atmospheres, Part 18: Encapsulation "m".

Exception: Equipment for use only in Zone 2, and that complies with the requirements of IEC 79-15 as modified by Part 15 of this Standard, need not comply with IEC 79-0, General Requirements, or Part 0 of this Standard.

2.2 Equipment complying with the requirements of one or more of the protection methods specified in 2.1 is suitable for use and installation in a Zone classified hazardous location as specified in Table 2.1

Table 2.1

Area classification	IEC Standard	Protection method identification
Zone 0	IEC 79-11, Electrical Apparatus for Explosive Gas Atmospheres, Part 11: Intrinsic Safety "i"	Ex ia
Zone 1	IEC 79-1, Electrical Apparatus for Explosive Gas Atmospheres, Part 1: Construction and Verification Test of Flameproof Enclosures of Electrical Apparatus	Ex d
	IEC 79-2, Electrical Apparatus for Explosive Gas Atmospheres, Part 2: Electrical Apparatus - Type of Protection "p"	Ex p
	IEC 79-7, Electrical Apparatus for Explosive Gas Atmospheres, Part 7: Increased Safety "e"	Ex e
	IEC 79-11, Electrical Apparatus for Explosive Gas Atmospheres, Part 11: Intrinsic Safety "i"	Ex ib
	IEC 79-18, Electrical Apparatus for Explosive Gas Atmospheres, Part 18: Encapsulation "m"	Ex m
Zone 2	IEC 79-15, Electrical Apparatus for Explosive Gas Atmospheres, Part 15: Electrical Apparatus with Type of Protection "n"	Ex nA, nC, & nR

2.3 The numbering scheme used to number the various parts of this standard is based on the standard number of the IEC document that the particular part of this standard covers. For example, the modifications to IEC 79-18 are contained in Part 18 of this standard.

2.4 Equipment covered by this Standard shall also comply with the applicable requirements for similar equipment for use in ordinary locations.

Part 0 -- General Requirements

3 Preface

3.1 Except as modified by 4.1 through 10, equipment for use in Zone classified hazardous locations shall comply with the requirements that appear in clause 1 through clause 25, Annexes A through E, and Amendments 1 and 2 of the second edition of IEC Publication 79-0, Electrical Apparatus for Explosive Gas Atmospheres, Part 0: General Requirements. The equipment shall also comply with one or more of the protection methods identified in Parts 1 through 18 of this Standard, as applicable.

Exception: Equipment for use only in Zone 2, and that complies with the requirements of IEC 79-15 as modified by Part 15 of this Standard, need not comply with IEC 79-0, General Requirements, or Part 0 of this Standard.

4 Scope

4.1 Clause 1.1 -- Add "Encapsulation (Publication 79-18)" to the specific types of protection that supplement or modify 79-0, and delete "Sand-filled Apparatus(Publication 79-5) and Oil Immersed Apparatus(Publication 79-6)".

5 Connection Facilities for Earthing or Equipotential Bonding Conductors

5.1 Clause 13.1 -- Add the following text, "The requirements of Section 13 shall be superseded by Section 505-25 of the NEC, as applicable."

6 Cable and Conduit Entries

6.1 Clause 15.1 -- Add the following text, "The requirements of Section 15 shall be superseded by Section 505-15 of the NEC, as applicable."

7 Marking

7.1 Clause 25.2.(12) -- Add the sub-clause and text, "Class I, Zone 0, 1, or 2, as applicable."

8 Appendix A -- This is "Informative."

9 Appendix B -- This is "Informative."

10 Appendix C -- Delete.

Part 1 -- Construction and Verification Test of Flameproof Enclosures of Electrical Apparatus

11 Scope

11.1 Except as modified by 12.1, equipment for use in Zone classified hazardous locations shall comply with the requirements that appear in Clause 1 through Clause 15, Annexes A and B, and Amendment 1 of the third edition of IEC Publication 79-1, Electrical Apparatus for Explosive Gas Atmospheres, Part 1: Construction and Verification Test of Flameproof Enclosures of Electrical Apparatus. The equipment shall also comply with Part 0 of this Standard.

12 Connection of Conductors and Cables

12.1 Clause 11.1 -- Add the following text, "The requirements of Section 11 shall be superseded by Section 505-15 of the NEC, for field connections, as applicable."

Subject 2279

-B7-

May 1996

Part 2 – Electrical Apparatus - Type of Protection "p" (purged/pressurized)

13 Scope

13.1 Except as modified by 13.2, equipment for use in Zone classified hazardous locations shall comply with the requirements that appear in Clause 1 through Clause 19, Annexes A , B, and C, of the third edition of IEC Publication 79-2, Electrical Apparatus for Explosive Gas Atmospheres, Part 2: Electrical Apparatus- Type of Protection "p". The equipment shall also comply with Part 0 of this Standard.

13.2 There are presently no modifications to IEC Publication 79-2, Electrical Apparatus for Explosive Gas Atmospheres, Part 2: Electrical Apparatus- Type of Protection "p".

Part 7 – Increased Safety “e”

14 Scope

14.1 Except as modified by 15.1 through 17.1, equipment for use in Zone classified hazardous locations shall comply with the requirements that appear in Clause 1 through Clause 8, Annexes A through E, and Amendment 1 and 2 of the second edition of IEC Publication 79-7, Electrical Apparatus for Explosive Gas Atmospheres, Part 7: Increased Safety “e”. The equipment shall also comply with Part 0 of this Standard.

15 Normative References

15.1 Add the following “Normative references” resulting from the addition of fluorescent bi-pin lamp requirements:

- a) IEC 68-2-42, Basic environmental testing procedures; part 2: Tests Kc: Sulphur dioxide test for contacts and connections
- b) IEC 68-2-6, Basic environmental testing procedures; part 2: Tests Fc and guidance: Vibration (sinusoidal)
- c) IEC 947-1, low voltage switchgear and control gear. Part 1: General requirements
- d) IEC 400, Lampholders for tubular fluorescent lamps and starter holders
- e) IEC 664, Insulation coordination for equipment within low voltage systems. Part 1: Principles, requirements and tests.
- f) IEC 1195, Double-capped fluorescent lamps - Safety specifications

16 Luminaires Designed for Mains Supply

16.1 Insert the following after a) in clause 5.2.1:

- b) Tubular fluorescent bi-pin lamps with G13 or G5 lamp caps according to IEC 1195. Lampholder and lamp socket shall comply with 5.2.7.

16.2 Add the following clauses after clause 5.2.6:

5.2.7 Luminaires for tubular fluorescent bi-pin lamps shall comply with the following requirements (Annex A.1 through A.4 do not apply while Annex A.5 does apply).

5.2.7.1 The mechanical dimensions and the mounting conditions in the luminaire shall take into account the mechanical values and the tolerances specified for the lamp in IEC 400 and IEC 1195.

5.2.7.2 The lampholder shall comply with the requirements for G 13 or G5 in IEC 400.

5.2.7.3 The two poles on each side of the lamp shall be connected in parallel inside each lampholder. Therefor the filament of the lamp is not heated and the lamp is of the cold starting type using an electronic ballast. The current carrying capacity of each pole (one pin) shall be rated for the whole current of the lamp to achieve redundancy.

5.2.7.4 The creepage distances and clearances shall be based upon the maximum igniting (striking) voltage of the lamp/ballast. The metal ring of the lamp tube shall be assumed to be on the electrical potential of the pins.

5.2.7.5 The maximum values for torque and/or force occurring when fitting or removing the lamp in the luminaire shall be not more than 50% of the limit values that may be applied to the pins of the lamp specified in IEC 1195.

5.2.7.6 The electrical contact between each pin of the lamp and the lampholder must be evaluated under corrosion and vibration conditions. The type tests are given in 6.3.3 and 6.3.4.

5.2.7.7 An isolation switch shall be provided. It shall deenergize each lampholder when the protective cover of the luminaire is removed. The switch shall comply with the following:

- The switch must be an isolator (IEC 664, IEC 947-1 Category III) or the contact clearance of each pole shall be at least 1.25 mm for a maximum supply voltage of 300 V (DC or R.M.S.)
- The operation of the contacts shall be compulsory or the switch must fail to the safe condition (open contact)
- The switch and its operation shall not be capable of manual defeating. one solution may be IP 2X protection according to IEC 529 of the operating part of the switch. Another solution may be that the switch can only be closed (after operating) by means of a tool.

5.2.7.8 For the insulating material of the lampholder, IEC 79-0 applies.

16.3 Add clause 6.3.3 and 6.3.4 after clause 6.3.2:

6.3.3 Sulfur dioxide test for bi-pin lamp caps/lampholders

the contacts shall be tested according to IEC 68-2-42, Sulfur dioxide test for contacts and connections, with the following conditions applying:

- State of the contacts during the test: fully assembled
- Duration of the test: 21 days
- After the test the contact resistance shall not have increased by more than 50% of the initial value.

6.3.4 Vibration test for luminaires with bi-pin lamp caps/lampholders.

The luminaires shall be submitted to a vibration endurance test according to IEC 68-2-6.

A complete sample of the luminaire is mounted by its normal fixings to a rigid test fixture, and exposed to frequencies between 1 Hz and 100 Hz.

Between 1 and 9 Hz the amplitude shall be 1.5 mm; between 9 and 100 Hz the test unit shall be subjected to an acceleration of 0.5 g.

The frequency sweep rate shall be 1 octave per minute with an endurance exposure of 20 cycles in each of the orthogonal planes.

After the exposure, there shall be no visible mechanical damage on all parts of the luminaire. Furthermore, during the test the luminaire shall be operated and the current from the lampholder to the lamp shall be monitored. Only one pin shall be connected electrically at each side of the lamp. The test is satisfactory, if during the exposure to vibration no significant change in the current flow occurs. In the case that it is difficult to detect interruptions of the lamp current at the rated frequency, a test with a direct current of similar value than the rated lamp current (r.m.s. value) may be conducted. In this case the test arrangement in Fig. 1 shall be used.

Alternatively, the test may be conducted with hydrogen/air mixture of $(21 \pm 2\%$ hydrogen in air) inside the luminaire. The test is passed if no ignition occurs during the exposure.

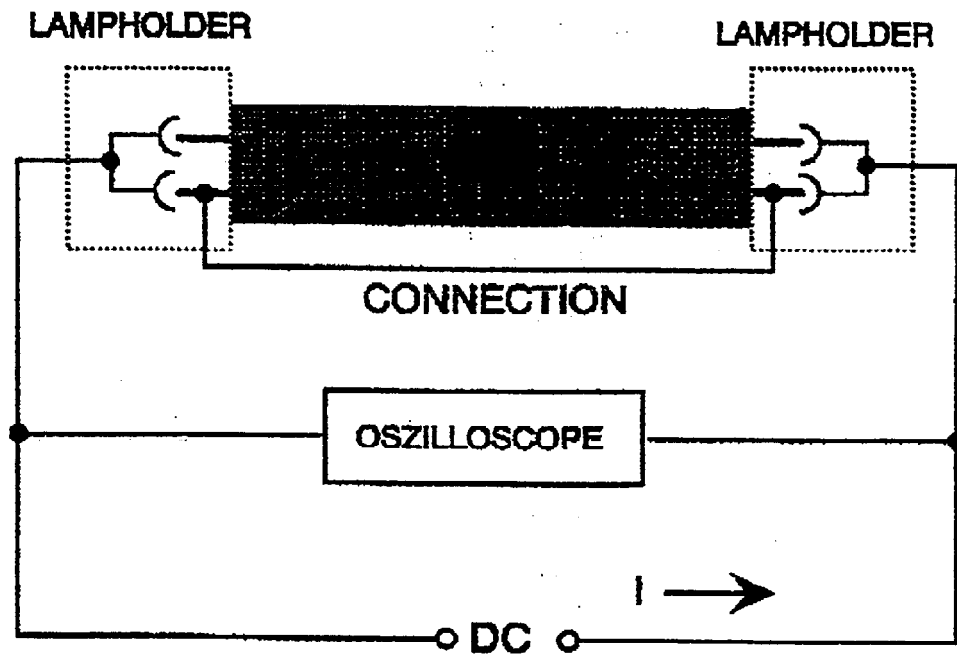


Fig. 1: Test arrangement for vibration test with direct current

17 Appendix A

17.1 Add the following after A.4:

A.5 Requirements for Current Transfer

A.5.1 The current transfer to the lamp cap shall be effected:

a) in the case of screw caps

- to the bottom contact of the caps through resilient or spring contact elements with a force of at least 15N, and

- to the lamp cap through at least two threads or through one or more spring elements with a total contact force of at least 30N;

b) in the case of cylindrical pin caps through spring elements having a contact force of at least 10N;

c) in the case of cylindrical plug-in caps, where the design shall not allow electrical sparking in or external to the joint between the cap and holder, through spring elements having a contact force of at least 10N;

d) in the case of caps where, on removal from the respective lamp holder, the circuit is interrupted in a separate flameproof enclosure (complying with IEC 79-1) in such a way that the contact force exerted by the spring elements on the caps is not less than 7.5N at the moment of circuit interruption.

A.5.2 The above minimum values prescribed for the contact force apply with the lamp fitted to the holder and ready for use. The pressure of the contact elements shall not be affected significantly by heating and other effects to be expected during operation.

Subject 2279

-B12-

May 1996

Part 11 -- Intrinsic Safety "i"

18 Scope

18.1 Except as modified by 18.2, equipment for use in Zone classified hazardous locations shall comply with the requirements that appear in Clause 1 through Clause 10, Annexes A , B, and C, of the third edition of IEC Publication 79-11, Electrical Apparatus for Explosive Gas Atmospheres, Part 11: Intrinsic Safety "i". The equipment shall also comply with Part 0 of this Standard.

18.2 There are presently no modifications to IEC Publication 79-11, Electrical Apparatus for Explosive Gas Atmospheres, Part 11: Intrinsic Safety "i".

Subject 2279

-B13-

May 1996

Part 15 -- Electrical Apparatus with Type of Protection 'n' (nonincendive)

19 Scope

19.1 Except as modified by 19.2, equipment for use in Zone classified hazardous locations shall comply with the requirements that appear in Clause 1 through Clause 23 and Appendix A of the first edition IEC Publication 79-15, Electrical Apparatus for Explosive Gas Atmospheres, Part 15: Electrical Apparatus with Type of Protection "n".

19.2 There are presently no modifications to IEC Publication 79-15, Electrical Apparatus for Explosive Gas Atmospheres, Part 15: Electrical Apparatus with Type of Protection "n".

Part 18 – Encapsulation "m"

20 Scope

20.1 Except as modified by 20.2, equipment for use in Zone classified hazardous locations shall comply with the requirements that appear in Clause 1 through Clause 10, Annexes A, B, and C, of the first edition of IEC Publication 79-18, Electrical Apparatus for Explosive Gas Atmospheres, Part 18: Encapsulation "m". The equipment shall also comply with Part 0 of this Standard.

20.2 There are presently no modifications to IEC Publication 79-18, Electrical Apparatus for Explosive Gas Atmospheres, Part 18: Encapsulation "m".

APPENDIX C

Designated Responsibility for UL 674 Product Categories

PSPT, Generators for Use in Hazardous Locations
PTDR and PTDR2, Motors for Use in Hazardous Locations
PTKQ, Motors and Generators, Rebuilt, for Use in Hazardous Locations
PUCJ, Motors, Specialty, for Use in Hazardous Locations

The following individual is involved with the investigation of products covered under the subject categories. As the Primary Designated Engineer, he coordinates the establishment and uniform interpretation of UL requirements applicable to the product categories.

Should you have questions regarding the interpretation of the requirements proposed in this bulletin or any adopted requirements that affect your product, you are encouraged to contact:

CCN	Office/Subsidiary	Responsible Engineer	Extension
PSPT, PTDR, PTKQ, PTDR2, PUCJ	Northbrook	RUSS FILIP	42841

The Industry Advisory Conference (IAC) Chairman for the subject categories is Lee Hewitt at UL's Northbrook Office. The IAC Chairman oversees the significant interpretations made by the Primary Designated Engineer and arbitrates any differences regarding interpretation of UL requirements.

A P P E N D I X D

Designated Responsibility for UL 698 Product Categories for Use in Hazardous Locations, except as noted

NNNY, Control Panels and Assemblies
 NNRL, Control Assembly Covers
 NOIV, Motor Controllers, Auxiliary Devices
 NOPU2, Motor Controllers, Auxiliary Devices
 NOTH, Combination Motor Controllers
 NOWT, NOWT2, Motor Controllers Float- and Pressure-Operated
 NPKR, NPKR2, Magnetic Motor Controllers
 NPXZ, NPXZ2, Manual Motor Controllers
 NQLX, Miscellaneous Motor Controllers
 NQMJ2, Controllers, Switches
 NRBX, Industrial Control Panels Relating to Hazardous Locations
 NRDZ, Auxiliary Devices Relating to Hazardous Locations
 NRFQ, Magnetic Motor Controllers

The following individuals are involved with the investigation of products covered under the subject categories. The Primary Designated Engineer (shown in UPPERCASE letters) coordinates the establishment and uniform interpretation of UL requirements applicable to the product categories.

Should you have questions regarding the interpretation of the requirements proposed in this bulletin or any adopted requirements that affect your product, you are encouraged to contact:

CCN	Office/Subsidiary	Responsible Engineer	Extension
NNNY, NNRL, NOIV, NOPU2, NOTH, NOWT, NOWT2, NPKR, NPKR2, NPXZ, NPXZ2, NQLX, NRDZ, NRFQ	Northbrook	ED BRIESCH	43174

CCN	Office/Subsidiary	Responsible Engineer	Extension
NQMJ2	Northbrook	DON ANKELE	42965

Subject 2279

-2-

May 1996

CCN	Office/Subsidiary	Responsible Engineer	Extension
NRBX	Northbrook	ED BRIESCH	43174
	Camas	D. Kumandan	55604

The Industry Advisory Conference (IAC) Chairman for the subject categories is Lee Hewitt at UL's Northbrook Office. The IAC Chairman oversees the significant interpretations made by the Primary Designated Engineer and arbitrates any differences regarding interpretation of UL requirements.

APPENDIX E

Designated Responsibility for UL 844 Product Categories for Use in Hazardous Locations

FTEV, Emergency Lighting Equipment
FTGT, Emergency Lighting Equipment Fittings
IFUX, Fixtures
IFYJ, Paint Spray Booth Fixtures
IGBW, Fixtures, Recessed Type
IGIV, Fixture Fittings
IGMX, Fixture Fittings for Use with Specified Fittings

The following individual is involved with the investigation of products covered under the subject categories. As Primary Designated Engineer, he coordinates the establishment and uniform interpretation of UL requirements applicable to the product categories.

Should you have questions regarding the interpretation of the requirements proposed in this bulletin or any adopted requirements that affect your product, you are encouraged to contact:

CCN	Office/Subsidiary	Responsible Engineer	Extension
FTEV, IFUX, IFYJ, IGBW, IGIV, IGMX, FTGT	Northbrook	FRANCIS MAH	43217

The Industry Advisory Conference (IAC) Chairman for the subject categories is Lee Hewitt at UL's Northbrook Office. He oversees the significant interpretations made by the Primary Designated Engineer and arbitrates any differences regarding interpretation of UL requirements.

APPENDIX E

Designated Responsibility for UL 886 Product Categories for Use in Hazardous Locations

CYMX , Cable Sealing Fittings
EBNV,EBNV2, Conduit-Fittings
FTRQ , Enclosures
POWX , Mineral Insulated Cable Fittings
QAZV, Outlet Box Accessories
QBCR, QBCR2, Outlet Boxes and Fittings
UBVX, Shielded Nonmetallic Sheathed Cable Fittings

The following individuals are involved with the investigation of products covered under the subject categories. The Primary Designated Engineer (shown in UPPERCASE letters) coordinates the establishment and uniform interpretation of UL requirements applicable to the product categories.

Should you have questions regarding the interpretation of the requirements proposed in this bulletin or any adopted requirements that affect your product, you are encouraged to contact:

CCN	Office/Subsidiary	Responsible Engineer	Extension
EBNV, EBNV2, QAZV, QBCR, QBCR2, POWX	Northbrook	TOM DIGANCI	42844
UBVX, FTRQ, CYMX	Northbrook	DON ANKELE	42965

The Industry Advisory Conference (IAC) Chairman for the subject categories is Lee Hewitt at UL's Northbrook Office. He oversees the significant interpretations made by the Primary Designated Engineer and arbitrates any differences regarding interpretation of UL requirements.

Subject 2279

-1-

May 1996

A P P E N D I X G

DESIGNATED RESPONSIBILITY FOR UL 913 PRODUCT CATEGORIES FOR USE IN HAZARDOUS (CLASSIFIED) LOCATIONS

ARCX, INTRUSION DETECTION UNITS
OERX, OERX2, INTRINSICALLY SAFE EQUIPMENT AND SYSTEMS
QGXT, OCCUPATIONAL HEAD PROTECTION
QQPX2, POWER SUPPLIES
QUZW, PROCESS CONTROL EQUIPMENT
RMGR, RADIO DEVICES

The individual shown is involved with the investigation of products covered under the subject categories. As Primary Designated Engineer he coordinates the establishment and uniform interpretation of UL requirements applicable to the product categories.

Should you have questions regarding the interpretation of the requirements proposed in this bulletin or any adopted requirements that affect your product, you are encouraged to contact:

CCN	Office/Subsidiary	Responsible Engineer	Extension
ARCX, OERX, QGXT, QQPX2, QUZW, RMGR	Northbrook	DAVE STYRCULA	43213

The Industry Advisory Conference (IAC) Chairman for the subject categories is Lee Hewitt at UL's Northbrook office. The IAC Chairman oversees the significant interpretations made by the Primary Designated Engineer and arbitrates any differences regarding interpretation of UL requirements.

APPENDIX H

Designated Responsibility for UL1010 Product Categories for Use in Hazardous Locations

RRHS, Receptacle-Plug Combinations, Accessories
RROR, RROR2, Receptacles with Plugs
RSBZ, Receptacles with Plugs Interlocked with Circuit Breakers
RSPX, Receptacles with Plugs Interlocked with Switches

The following individual is involved with the investigation of products covered under the subject categories. As Primary Designated Engineer, he coordinates the establishment and uniform interpretation of UL requirements applicable to the product categories.

Should you have questions regarding the interpretation of the requirements proposed in this bulletin or ant adopted requirements that affect your product, you are encouraged to contact:

CCN	Office/Subsidiary	Responsible Engineer	Extension
RRHS, RROR, RSBZ, RSPX	Northbrook	RON BEAUCHAMP	43243

The Industry Advisory Conference (IAC) Chairman for the subject categories is Lee Hewitt at UL's Northbrook Office. He oversees the significant interpretations made by the Primary Designated Engineer and arbitrates any differences regarding interpretation of UL requirements.

Subject 2279

-1-

May 1996

A P P E N D I X I

DESIGNATED RESPONSIBILITY FOR UL 1604 PRODUCT CATEGORY NRAG, INDUSTRIAL CONTROL EQUIPMENT, PROGRAMMABLE CONTROLLERS

The following individual is involved with the investigation of products covered under the subject category. As Primary Designated Engineer he coordinates the establishment and uniform interpretation of UL requirements applicable to the product category.

Should you have questions regarding the interpretation of the requirements proposed in this bulletin or any adopted requirements that affect your product, you are encouraged to contact:

CCN	Office/Subsidiary	Responsible Engineer	Extension
NRAG	Northbrook	R. BAIRD	42132

The Responsible Department Manager for the subject category is Lee Hewitt at UL's Northbrook office. The Responsible Department Manager oversees the significant interpretations made by the Primary Designated Engineer and arbitrates any differences regarding interpretation of UL requirements.



Underwriters Laboratories Inc.®

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May 10, 1996

Revision pages for

Standard for

**Intrinsically Safe Apparatus and Associated Apparatus For Use In Class I, II, and III,
Division 1, Hazardous (Classified) Locations**

UL 913, Fourth Edition

Attached to this distribution notice is a revision of the Fourth edition of UL 913.

A CHANGE ON A PAGE DATED MAY 10, 1996 IS INDICATED BY A SMALL PRINT NOTE FOLLOWING THE AFFECTED ITEM, PRECEDED AND FOLLOWED BY AN ASTERISK.

THESE NEW AND REVISED REQUIREMENTS IN THIS STANDARD ARE NOW IN EFFECT EXCEPT FOR THOSE PARAGRAPHS, SECTIONS, TABLES, FIGURES, AND OTHER ELEMENTS OF THE STANDARD HAVING FUTURE EFFECTIVE DATES AS INDICATED IN THE NOTE FOLLOWING THE AFFECTED ITEM. TO RETAIN THE REQUIREMENTS IN EFFECT UNTIL THESE FUTURE EFFECTIVE DATES, DO NOT DISCARD THE PAGES REPLACED BY THOSE HAVING FUTURE EFFECTIVE DATES UNTIL THOSE DATES.

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

The new and/or revised requirements are substantially in accordance with UL's Bulletin on this subject dated June 30, 1995. The bulletin is now obsolete and may be discarded.

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 text of this ANSI/UL Standard.

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

(Continued)

May 10, 1996 — UL 913

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

Page	Date
1	July 29, 1988(Reprinted May 10, 1996)
2	May 10, 1996
3, 4	July 29, 1988
5	May 10, 1996
6	July 29, 1988
7, 8	May 10, 1996
9 — 20	July 29, 1988
21, 22	May 10, 1996
23 — 26	July 29, 1988
27, 28	December 12, 1988
29 — 41	July 29, 1988
A1 — A9, B1	July 29, 1988