What Constitutes a UL Listing?

New England AFAA
Dinner Meeting
September 24, 2019

Bruce E. Johnson
UL Codes and Advisory Services
Topics to Cover Tonight

I. Overview of UL
II. UL Certification Process
III. UL Marks
IV. UL Product iQ Database
V. What Affects a UL Listing or Certification?
VI. Questions & Answers
Our Mission: Working for a Safer World since 1894
UL Overview

Founded in 1894
22 billion UL Marks on products globally
UL operates in more than 143 countries
14,000 employees work at more than 230 locations around the world
UL has helped to set 1,600 Standards defining safety, security, quality and sustainability
What We Do

➢ Certify (list)
➢ Validate
➢ Test
➢ Verify
➢ Advise
➢ Educate
UL Structure

UL, Inc. – Not for Profit

Standards Developer (SDO) & Research (FSRI)

UL, LLC – For Profit

Nationally Recognized Testing Lab (NRTL) US and globally accredited lab
UL Standard Development Process

How can an interested stakeholder get involved with revising or developing UL standards?

Details on the UL standards development process are included on the Standards web page.
STANDARDS

UL Standards encompass UL’s extensive safety research and scientific expertise. With over a century of experience in the development of more than 15,000 Standards, UL is an accredited standards developer in the US and Canada. In extending its global public safety mission, UL Standards partners with national standards bodies in countries around the world to build a safer, more sustainable world.

CONNECT WITH UL STANDARDS

Stay informed about UL Standards development activities and news. Join our LinkedIn group and follow us on Twitter. For tutorials and other resources, visit UL Standards YouTube.

UL STANDARDS: ACCREDITED IN THE US AND CANADA

In the US, UL is accredited by the American National Standards Institute (ANSI) as an audited designator. In 2013, UL was accredited by the Standards Council of Canada (SCC) as a nationally recognized Standards Development Organization (SDO) able to develop National Standards of Canada (NSCs).

UL’s Standards Technical Panels (STPs) serve as the consensus body for both American National Standards (ANSI) and National Standards of Canada (NSC). Essential information About UL’s standards development programs, how to Access Standards, and how to participate in the UL programs used to Develop Standards is available on this site.

Visit UL Standards for Canada for information on UL’s development of National Standards of Canada (NSCs) and about specific projects under New Project Activity, Public Review and Work Programs.

FEATURED

Search for Standards and Outlines by keyword or number. View the scope, table of contents, referenced standards, and other details.

UL Catalog of Standards

Know what you are looking for? Go directly to the UL Standards Sales Site to obtain the standard you need and to see What’s New.

UL Standards sales site

UL’s Collaborative Standards Development System provides free access to proposal and meeting information for UL Standards.

UL CSOS
DEVELOP STANDARDS
Actively involved in creating or revising a UL Standard? You can access tools for reviewing and submitting Standards proposals here.

UL COLLABORATIVE STANDARDS DEVELOPMENT SYSTEM
Details
- AssistCEOSG
- CEOSG Information
- CEOSG Video Tutorial

STANDARDS TECHNICAL PANEL
Details
- CFP
- Regulations
- Roles

PROPOSALS
Details
- Available Proposals
- Submit a Proposal Request through CEOSG
- Upcoming Meetings
- Style Manual

PARTICIPATE
Details
- Call for Members
- Interest Coordinators
- CFP Liaison
- Membership Options
Questions / Comments
Getting UL Certified

❖ Performance Standard Exists
❖ New Or Innovative Products
Product Investigation

Request for certification (listing) by UL

- Initial manufacturer request received
- UL provides application forms
- Investigation opened
- Successful investigation results in product listing
- A separate investigation may be needed to address problems/failures
- Cost and time frame
UL respects our client’s proprietary manufacturing and marketing information.

Details on product construction, product manuals, test results, and ongoing investigation status cannot be divulged to outside parties.

*Certification* or *Listing* information published on Product iQ is considered “public information”.
Factory Surveillance

UL performs periodic inspections of certified products

UL Marks are only applied at authorized factories
Listing and Labeling

Only products bearing the UL Mark are considered to be Listed or Certified

Marks and Labels

UL is a global leader in testing, inspection, certification, auditing and validation. The UL Mark is the single most accepted Certification Mark in the United States, appearing on 22 billion products annually. Explore more about our Certification Marks below.

UL LISTING AND CLASSIFICATION MARKS

All current Listing and Classification Marks can be found through the link. Artwork for each Mark is available for instant download. In addition to the Mark artwork, you will find information about ordering, promoting and using Marks and labels properly.

STANDARD LABELS

Information about ordering standard labels, a database of authorized label suppliers and specific instructions related to labels can be viewed using this link.

ENHANCED UL CERTIFICATION MARKS AND UL BADGES

Just Added

UL is introducing an enhanced version of our Certification Marks intended to eventually replace those currently in use today. The enhanced Mark format utilizes a modular approach to illustrate the attributes of a product that UL has Certified.
Options for Unlabeled Equipment

Field evaluation – UL evaluates compliance with product standards.

See the Resources Code Authorities web pages for details.

**NOTE:** Fire Alarm equipment is not eligible for field evaluation because critical functions can only be evaluated in the laboratory.
Questions / Comments
UL Product iQ
Works Best with Chrome

Work Smarter with UL Product iQ™

Improved access to UL's certification data.

A new benefit includes:
Guided Keyword Search

Create your account today!
Product iQ – www.ul.com/database

Trusted Data. Modern Design.

UL Product iQ marries the longstanding UL safety certification information relied upon by millions of users with the intuitive design and user-friendliness of a modern search engine.

Log In    Register For Free

UL Product iQ™ Features

Trusted UL Data
Access the same trusted UL certification data.

Superior Usability
Experience a clean, mobile-friendly interface with superior usability.

Advanced Search
Pinpoint the exact content you need with advanced search features.

Personalized Account
Customize your account with a custom dashboard, saved searches and tagging features.

Letters of Compliance
Get confirmation letters of UL compliance with one click.
Trusted Data. Modern Design.

UL Product iQ marries the longstanding UL safety certification information relied upon by millions of users with the intuitive design and user-friendliness of a modern search engine.
Product iQ – UL’s New Online Directory

✓ Helps you achieve code compliance
✓ Is continuously updated
✓ Requires registration to create user account
✓ Basic Service – no charge for use
✓ Paid Subscription Service provides more features
Why did UL replace the Online Certifications Directory?

- Digital Transformation – Product iQ meets growing demands of a digital world
- Modern search engine platform – Offers a better experience, more relevant information and multiple new user features
- Same information as the old platform
- No impact on testing results or certifications
Questions / Comments
Listing of products required by model codes or standards
NFPA 72 Definitions

3.2.4 Labeled. Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

3.2.5* Listed. Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

A.3.2.5 Listed. The means for identifying listed equipment may vary for each organization concerned with product evaluation; some organizations do not recognize equipment as listed unless it is also labeled. The authority having jurisdiction should utilize the system employed by the listing organization to identify a listed product.
10.3 Equipment.

10.3.1 Equipment constructed and installed in conformity with this Code shall be listed for the purpose for which it is used.

10.3.2 System components shall be installed, tested, inspected, and maintained in accordance with the manufacturer’s published instructions and this Code.
Model Codes

- International Building Code (IBC); International Fire Code (IFC) and NFPA 1 Fire Code all have similar definitions.

- Each model code includes NFPA 72 as a reference standard for design, installation, testing, inspection and maintenance of Fire Alarm Systems.
13.9 Non-Listed Fire Protection or Suppression Devices and Equipment.

13.9.1 It shall be unlawful to market, sell, advertise, or distribute any device or equipment as suitable for fire protection or fire suppression purposes unless the device or equipment is listed for such purpose by a nationally recognized testing laboratory or as otherwise permitted by 13.9.2.

13.9.2 The requirements of 13.9.1 shall not apply where NFPA standards, other adopted standards, or the adopted code allow the use of non-listed fire protection or suppression equipment.
Questions / Comments
NEC Adds Provisions for Reconditioned Electrical Equipment
2020 NEC
Reconditioned Electrical Equipment
Reconditioned. Electromechanical systems, equipment, apparatus, or components that are restored to operating conditions. This process differs from normal servicing of equipment that remains within a facility, or replacement of listed equipment on a one-to-one basis. (CMP-10)

Informational Note: The term Reconditioned is frequently referred to as rebuilt, refurbished, or remanufactured.
110.21 Markings.
(A) Equipment Markings.

(2) Reconditioned Equipment.
Reconditioned equipment shall be marked with the name, trademark, or other descriptive marking by which the organization responsible for reconditioning the electrical equipment can be identified, along with the date of the reconditioning. Reconditioned equipment shall be identified as “reconditioned” and the original listing mark removed. Approval of the reconditioned equipment shall not be based solely on the equipment’s original listing.

Exception: In industrial occupancies, where the conditions of maintenance and supervision ensure that only qualified persons service the equipment, the markings indicated in 110.21(A)(2) shall not be required for equipment that is reconditioned by the owner or operator as part of a regular equipment maintenance program.
2020 NEC Requirements

Informational Note No 1: Industry standards are available for application of reconditioned and refurbished equipment.

Informational Note No 2: The term *reconditioned* may be interchangeable with the terms *rebuilt*, *refurbished* or *remanufactured*.

Informational Note No 3: The original listing mark may include the mark of the certifying body and not the entire equipment label.
2020 NEC Equipment Prohibited from being Reconditioned

- Equipment that provides ground-fault circuit-interrupter protection for personnel (GFCI) (4-6 mA)
- Equipment that provides arc-fault circuit-interrupter protection (AFCI)
- Equipment that provides ground-fault protection of equipment (GFPE) (20-50 mA)
- Low-voltage fuse holders and low-voltage nonrenewable fuses
- Molded-case circuit breakers
- Low-voltage power circuit breaker electronic trip units
- Medium-voltage fuse holders and medium-voltage nonrenewable fuses
- Receptacles (UL does certify replacement parts in the form of a listed kit for large pin-and-sleeve receptacles)
- Attachment Plugs, cord connectors, and flanged surface devices
- Panelboards
- Luminaires, lamp holders and retrofit kits (Retrofitted luminaires shall not be considered reconditioned)
- Listed low voltage lighting systems or a lighting system assembled from listed parts
- Fire Pump controllers
- Transfer Switches
2020 NEC Equipment Permitted to be Reconditioned

- Low-and medium-voltage power circuit breakers
- High-voltage circuit breakers
- Electromechanical protective relays and current transformers
- Switchboards and switchgear
- Medium Voltage Switchgear

All electrical equipment specifically permitted to be reconditioned shall be listed as “reconditioned”.
Additionally Switchboards and Switchgear are permitted to be field labeled as “reconditioned”.

Currently UL does not have reconditioning programs for any of the above products.
Example – UPS Equipment

Uninterruptible Power-supply Equipment, YEDU

Guide Information for Electrical Equipment for Use in Ordinary Locations

USE AND INSTALLATION

This category covers indoor- and outdoor-use uninterruptible power supply (UPS) equipment that may be stationary or fixed. This equipment is rated 600 V or less and is intended for use in accordance with ANSI/NFPA 70, "National Electrical Code" (NEC).

This category also covers large UPS equipment requiring field assembly of modules or subassemblies, which are appropriately marked as indicated below.

A UPS is used to provide alternating-current power to a load for some period of time in the event of a utility power failure. In addition, it may provide a more constant voltage and frequency supply to the load, reducing the effects of utility voltage and frequency variations.

These products include the following equipment intended for use with a UPS: (1) battery supply modules with or without batteries, (2) remote status panels, (3) bypass switches, (4) maintenance bypass switches, (5) battery circuit disconnect switches, (6) rectifier and power conversion units, and (7) power distribution panels.

The investigation of UPS equipment does not include the effects the load that may be caused by momentary disruption of alternating-current power.

A UPS identified with an enclosure type designation or as "Rain tight" or "Rainproof" is intended for use as indicated in Electrical Equipment for Use in Ordinary Locations (AALZ).

Products suitable for use in computer rooms in accordance with ANSI/NFPA 75, "F ire Protection of Information Technology Equipment," are marked "Suitable for Computer Room Applications," or the equivalent.

This category does not cover a UPS intended as a component of a fire-protective or burglary-protective signaling system.

REBUILT PRODUCTS

This category also covers UPS equipment that is rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt UPS equipment is rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt UPS equipment is subject to the same requirements as new UPS equipment.
Electrical Equipment for Use in Ordinary Locations

FIELD-MODIFIED OR REBUILT EQUIPMENT

An authorized use of the UL Mark is the manufacturer’s declaration that a product was manufactured in accordance with the applicable certification requirements, and was in compliance with those requirements when it was shipped from the factory. When a product bearing a UL Mark is modified or rebuilt (including being refurbished, remanufactured, reconditioned or renovated) after it leaves the factory where the UL Mark was applied, UL does not know if the product continues to meet the applicable requirements unless the modification or rebuilding has been specifically investigated by UL. The only exceptions to this are when a UL-certified product has specific markings for field-installed equipment or the replacement of components, or when the individual product is addressed through one of the specific programs noted below.

Evidence that UL has specifically investigated the modification or rebuilding can only be demonstrated by a product that bears the UL Mark or label of one of UL’s programs for modified or rebuilt equipment, which include:

UL Rebuilt Product Certifications — UL’s rebuilt product certifications cover a wide range of product types. The general Guide Information for each product category with a rebuilt certification program identifies the applicable requirements and the specific marking for products rebuilt under the program. Only rebuilt products that bear the UL Mark together with the word “Rebuilt,” “Refurbished,” “Remanufactured,” “Reconditioned” or “Renovated” have been investigated by UL to the applicable certification requirements.

UL Retrofit Certifications — UL’s retrofit certifications include an investigation of all required component parts, including instructions, for retrofitting specific types of certified products in the field. Products investigated under this program bear a UL Mark together with the product identity including the word “Retrofit.”

UL Field Evaluated Products — For products identified by the Authority Having Jurisdiction, owner, or other regulatory body
104.9.1 Used materials and equipment. Materials that are reused shall comply with the requirements of this code for new materials.

Used equipment and devices shall not be reused unless approved by the building official.
Questions / Comments
“What Voids a UL Listing?”
Certification (labeling) to UL Standards

UL evaluates fire arm products as they are configured and interconnected in accordance with the manufacturer’s published instructions.

UL fire alarm standards include requirements for the minimum information to be included in the manufacturer’s published instructions and UL’s assessment includes reviewing those instructions.

Test set-up configurations for testing evaluation are based on those instructions.

NFPA 72 stipulates that fire alarm products be installed and used in accordance with the manufacturer’s published instructions and those instructions are to be included in the system Completion Documentation.
What the UL Listing Means

The product meets the requirements of the applicable UL Standard and is eligible to bear the UL Certification (Listing) Mark.

Look for the UL Mark.

Note for fire alarm control units and accessories, inclusion of the model number on the Listing Information Page means that 100% of manufacturer’s production of that model are to bear the UL Listing Mark.
What does UL Certification Cover?

Equipment bearing the UL Mark certifies that the product meets the minimum requirements in the applicable standard.

Some products perform better than others, however the Certification confirms the product meets the minimum requirements related to safety concerns – risk of electrical shock and fire hazard.

Life safety products, such as smoke alarms and fire alarm control units, are additionally assessed for critical operation parameters.
When is the Certification Mark Valid?

When does the UL Certification take effect and when does it end?
The Certification goes into effect when the UL Mark is applied to the product.

Look for the Certification Mark (UL Label) or verify with UL Product iQ.

There is no expiration to the UL Certification for a product bearing the UL Mark because the product complied with the requirements in effect at the time manufacture and the application of the Certification Mark.

Some installations may require the product meet subsequent editions or revisions of the applicable standard, so an older product may **not** be acceptable for a particular installation – that is determined by the AHJ.
This category covers replacement parts for fire alarm systems that consist of products or subassemblies of complete products for installation in fire alarm systems installed in accordance with a previous edition of ANSI/NFPA 72, "National Fire Alarm and Signaling Code." These replacement parts are not intended for new system installations.

These parts are intended solely for the purpose of affecting maintenance and repair of an existing installed fire alarm system where the use of currently certified fire alarm parts would not be compatible. The use of replacement parts in existing systems is subject to the approval of the Authorities Having Jurisdiction.

Replacement parts consist of 1) parts that have been removed from previously installed fire alarm systems that are serviced, or 2) parts that are newly manufactured in accordance with the requirements in effect at the time of the system installation.

Information marked on the part or contained in the accompanying installation instruction details the appropriate use and installation of the part, including the original part number. Use in any other manner has not been investigated.

This category requires that a factory or service center be established where the replacement part is subject to UL's Follow-up Service. This category does not cover field servicing of certified products.

An overview of the differences between the requirements in the specified edition of ANSI/NFPA 72 and the current edition is contained in UL's Certification Report, available from the manufacturer.
CATEGORY FOR FIRE ALARM SYSTEM REPLACEMENT PARTS (UTHH)

Background
Modifications After Product Leaves the Factory

In some cases products are modified after they leave the factory. These field modifications can include adding/replacing equipment and/or modules, repairing/replacing/revising component(s) on a printed wiring board, utilizing a different enclosure/modifying the enclosure, or interconnecting products.

UL is not in a position to determine the continued validity of the UL Certification unless the product is further evaluated when modifications are not consistent with the manufacturer’s published instructions because UL did not assess the modified product/system for compliance with the applicable UL standard.

The modified product/system may or may not comply with the applicable UL standard.
Example – Painting of Fire Alarm Cable

Q. What happens when fire alarm cable has been covered after installation (i.e. painted, foam insulation, etc.)?

A. The painting of wire and cable after it is installed is considered a modification to an existing listed product. As such, UL is not in a position to determine the continued validity of the listing unless the product is further evaluated. Our expectation is that painting of wire and cable could have an adverse impact on the required fire growth, smoke, and other characteristics of the wire and cable products, potentially causing them to no longer comply with UL’s Standard requirements.

NOTE: The 2017 Edition of NFPA 70 (NEC) includes Informational Notes (800.24) that states that paint, plaster, cleaners etc. may result in undetermined alteration of the cables properties. Mark Ode has further added: Section 110.12 state no conductors shall be exposed to gases, fumes, vapors, liquids, or other agents that have a deteriorating effect on the conductors, unless identified for that use. This is a general requirement in 110.11 but still applies to fire alarm cable.
Time for the Q & A
THANK YOU!

Bruce E. Johnson  
Senior Regulatory Engineer  
*Codes and advisory Services*  
UL LLC  

631-680-5174  
Bruce.Johnson@ul.com