



UL Answers to questions from the ULPA/LPI 2008 Conference in Orlando Florida.

Some of the questions have been slightly altered to improve clarity and they are not in the original order. The answers are in **bold Blue**

1. Our work covers several states, so we have contact with many different UL field inspectors. Some of your inspectors issue Master Labels for additions. There appears to be confusion about when a system is eligible for a Master Label Certificate. Can you please clarify to your inspectors (and to your applicants) what structures are eligible for a Master Label?

The Master Label Certificate (MLC) is available for structures that meet the requirements of UL96A 11th or 12th edition, NFPA780 2008 edition, and published US military specifications. The MLC is also available for portions of a structure that have firewall separations. The separated portions must have complete systems installed; the firewall separations are treated like any exterior wall section. The building owner should provide documents that support the location and type of firewall installed.

2. UL is spending a lot of time renaming their certifications. Is there a reason or this change?

UL answered this question in a letter (dated April 12, 2007), which is posted on the lightning protection web page. In June 2007, UL reinstated the term "Master Label Certificate".

3. How does UL intend to provide re-inspections on buildings that have eave heights over 50' and met UL's requirements 5 years ago but will not meet the requirements now?

Installations inspected after September 30, 2008 must meet the requirements in the twelfth edition of UL96A.

4. Does UL intend to keep the surge protection exemption in effect on future certificates?

No. However, we have not established the end date for limited scope inspections relating to surge protection. September 30, 2009 is a date being considered. This coincides with the effective date of UL 1449, Third Edition.

5. Is UL taking steps to enforce a code of ethics for UL listed installers who cheat the system?

UL has a zero tolerance policy for counterfeit UL Marks, including the Master Label Certificate. This is a serious criminal activity and UL seeks to prosecute offenders to the fullest extent of the law.

Counterfeiting activity can be reported to UL's Anti-Counterfeiting Operations at Anticounterfeiting@us.ul.com.

6. How does UL intend to inspect items concealed in the structure? Pictures or blueprints?

Digital pictures and drawings may now be attached to the inspection application.

If details of a structure are hidden, we advise that installers offer the inspector pictures and drawings. Installers are responsible to give the UL inspector all information necessary to determine compliance.



7. Please explain how the requirements are applied when a firewall is submitted as one or more boundaries of the protected structure.

- a. **The boundaries of the protected structure must be clearly defined.**
- b. **The type and rating of the separating firewall must be specified.**
- c. **The type and rating shall be as described in the UL FIRE RESISTANCE DIRECTORY for firewall construction.**
- d. **The builder/owner must attest that the firewall is continuous from the lowest level to the underside of the roof.**
- e. **20 minutes minimum rating on wall construction.**
- f. **Firewall documentation should be in electronic form and attached to the application at the time of submittal.**
- g. **The firewall separation will be treated the same as an out side wall of a structure. The placement of air terminals will be as specified in the standard for structure parameters.**

8. Does different ownership of structures separated by a firewall effect the requirements in question 7?

No, we do not distinguish between owners of a structure in this situation.

9. After submitting a lightning protection inspection application we receive a message confirming the submittal, and a note that we will be contacted by the assigned inspector. This never happens. We have been told to contact the inspector directly. Does UL plan to change their response?

Our program requires that UL field staff call the installer within 48 hours of receiving the inspection request. Also, when the application is assigned the name and phone number of the inspector is listed on the web application. Assignment normally happens within 24 hours of submittal.

10. Is UL still implementing the additional fee for travel over 100 miles, or has this been eliminated if more than 3 inspections are scheduled on that particular day?

We are no longer charging travel fees unless we anticipate air travel and associated travel expenses. If so, we communicate the estimated charges to the installer before the inspection.

11. Is UL still taking the position that their inspectors are not allowed to get on a pitched roof, but may walk around the structure and look up to inspect?

There are no rules that prohibit inspectors from performing inspections on roofs. However, your safety and that of our inspectors is extremely important to us. Our inspectors are advised to reschedule inspections when weather events or other circumstances make inspection work unsafe. It is the installer's responsibility to provide needed safety equipment, ladders, lifts etc. that may be needed to safely conduct each inspection.

12. UL Master Label Certificates will begin to expire this year. Will UL advise installers of pending expirations?



Automatic email notifications are sent to installers six months before certificates expire. The notifications are sent once a month and batch all certificates expiring within a calendar month. The notifications are sent to the primary contact listed on the account for the installing company. Please know this may not be the same contact named on the original certificate application form. Installers may update their UL account details by contacting a customer service representative at 1-877 UL-HELPS

13. Will expiring certificate information be tracked on the UL website?

When logged in to their LPS Internet account, installers may sort their active certificate list by expiration date.

14. Can building owners view the certificate expirations via the website?

LPS Certificates will be removed from the public certificate directory on the expiration date. Historical records of expired certificates will not be available to building owners.

15. We understand that September 30, 2008 has been adopted as the effective date for the 12th Edition of UL 96A. It appears several of your inspectors are not aware of this date. Is this the official date and when do you plan to let everyone know?

After reviewing comments regarding the proposed September 30th effective date a November 19th, 2007 bulletin was sent to all UL staff and lightning protection subscribers adopting it as the effective date. All of the field staff have been informed that they may conduct inspections to the 11th or 12th edition of the standard until September 30th, 2008.

16. What provisions for UL Master Label certification are in place for projects that were bid and started prior to publication of the 12th Edition of UL 96A? Some of these projects will not be complete until after the effective date for the 12th Edition passes

All inspections after September 30, 2008 shall reference the 12th Edition of UL 96A.

17. For a short time during 2007, UL issued "Inspection Certificates" as opposed to "Master Labels". Some of our customers are unhappy because their certificates, issued during that time period, do not say "Master Label". Owners are accusing the contractors of not fulfilling their contracts. Can customers have their Inspection Certificates reissued as Master Labels?

Yes. We are working with our IT group revise those certificates

18. Does UL intend to encourage inexperienced electrical contractors to become Listed lightning protection installers by paying a fee to sit through your class?

It is not UL's policy to discourage anyone from becoming a listed installer provided they satisfy our program requirements. All new installers are required to attend a lightning protection seminar as part of program enrollment.

19. How does UL coordinate with the NFPA-780 document and LPI certification of installers/inspectors?

Training and qualification programs for UL lightning protection inspectors are independent of NFPA and LPI Certification programs.



20. Is there a way to get copies of UL-96A without setting up an account for every installer and without the security watermark in the text?

Free access to UL standards are limited to UL customers only, and controlled through UL's Standards organization. All UL clients get copies of the standard the same way. Corporate policy dictates this - not the Lightning Protection program group.

21. Please help contractors and UL inspectors determine which suppressors meet the current UL requirements.

With the publication of UL 1449, 3rd Edition there are now four types of surge devices that are acceptable for installation in lightning protection systems according to UL 96A.

To help you identify these four types of devices it is appropriate to first describe the organization of UL's certification directories. All certified products are grouped by alphanumeric codes called Category Control Numbers (CCN's). There is guide information for each CCN that describes the scope of the category and the basic standards used to determine compliance. Searching through UL's directories by CCN will provide a list of all manufacturers certified products within that grouping.

The CCN's relating to surge protection requirements in UL 96A are as follows:

Category Control Number in parenthesis.

Surge Arresters, (OWHX)

Surge Arresters 1000 Volts and Higher, (VZQK)

Surge Protective Devices, (VZCA)

Transient Voltage Surge Suppressors, (XUHT)

The four types of surge protectors described in UL 96A, Paragraph 13.1 are:

1) Complimentary Listed TVSS/Surge Arresters installed on the line or load side of the service disconnect over current protection. These devices must be Listed under two categories, (XUHT) and (OWHX).

2) Listed TVSS for LPS application installed on the load side of the service disconnect over current protection. These devices will be Listed in (XUHT), and must be marked "Suitable for LPS". These devices are evaluated to the 2nd Edition of UL 1449.

3) Listed Type 1 SPD, rated 20KA (In), installed on the line or load side of the service disconnect over current protection. These devices are Listed in (VZCA) and evaluated to the 3rd Edition of UL 1449.

4) Listed Type 2 SPD, rated 20 KA (In), installed on the load side of the service disconnect over current protection. These devices are Listed in (VZCA) and evaluated to the 3rd Edition of UL 1449.

5) 13.3 Surge arresters for use on circuits over 1 KV, 48 – 60 Hz, installed in accordance with Article 280 of the National Electrical Code, ANSI/NFPA 70, shall be acceptable for the particular application and comply with ANSI/IEEE C62.11, Standard for Metal – Oxide Surge Arresters for AC Power Circuits or ANSI/IEEE C62.1, Standard for Gapped Carbide Surge Arresters for AC Power Circuits.

There are certification directory search instructions on the lightning protection installers



web page that can be down loaded and given to anyone specifying SPD (surge protective devices.)

22. Is UL1449 is due to issue a third edition soon?

UL 1449, 3rd Edition was published in 2007, with an effective date of September 2009. Products may be submitted for evaluation to the 3rd Edition now.

23. Does publication of UL 1449, 3rd Edition make devices evaluated to the 2nd edition unacceptable?

No. However, products manufactured after the effective date must comply with the third edition to bear a UL Mark. The only devices acceptable for LPS application under the 2nd edition would be Complimentary Listings, OWHX/XUHT or XUHT marked for LPS applications.

24. What is the latest regarding connected walkways between two buildings, if only one building is protected?

This will be covered in program guidelines that will be published later this year.

25. Is Listed 4/0 bare copper conductor acceptable for use in a lightning protection installation? Electrical contractors often use these conductors when attempting to bond structural steel as required by lightning protection installation standards.

Unless labeled as a Listed lightning protection conductor, 4/0 bare copper wire used by the electrical industry is not acceptable without further evaluation. See UL96A, Section 1, Paragraph 1.4. During an inspection, UL field staff may evaluate conductors according to UL 96 on site provided a test sample and calibrated measurement equipment are made available. Additional charges apply to these special evaluations. Please contact the lightning protection group for a quote.

26. Has UL decided on accepting a roofing manufacturer's recommendation of using a heat-welded strip of roofing membrane over or around the conductor as an acceptable fastening device?

This method of securing conductors is not permitted by UL 96A, 12th Edition. All changes to UL 96A are submitted to a Standards Technical Panel (STP) made of manufacturers, installers, regulators and consumers. The STP reviews all proposals and also votes to approve or reject each change.

27. If an item on a structure exceeds a Class I tubular air terminal and safety issues have been allowed to eliminate air terminals on railings as long as they are 1/8" thick, why are we still required to provide air terminals on aluminum pool enclosures that clearly exceed these requirements?

During the last revision cycle of UL 96A railings were added as an exception to the requirements for strike termination devices. Also, specific requirements covering pool enclosures were added to address this situation.

28. If the pool enclosure is part of the structure, why is UL requiring that the metal enclosure needs bonding only at 60' intervals, but the main structure cannot utilize the enclosure structure as a down lead?

The STP chose to make the requirements for these types of enclosures different from that of the rest of the house or building.



29. In the event it is not feasible to install a ground rod within 24" of the exterior wall foundation because of 0' lot line or remodeling removed the concrete flooring interior but left the concrete sidewalk exterior, is it allowed to provide a down lead on the exterior wall of the structure and to provide a ground rod within 24" of the foundation and to have the ground rod inside instead of outside?

Yes - see UL 96A, Section 10.1.7

30. Are the adhesives used to adhere cable holders to the roof required to be accepted and/or UL listed?

No

31. What is the ruling on ground loops for existing buildings and new buildings that butt up to existing buildings?

The ground loop is one method the standard allows for termination of down leads. On existing structures, installers must verify that the loop is still intact and meets the requirements in the standard. Also, they must inform the field rep how the system down leads are terminated.

32. The new 8.2.2.4 pitched roofs with an eave over 50' now require protection if not in a protection zone. I questioned this at a meeting in 2004, at which time UL was going to keep the pitched roof as it was. Then questioned during comment stage why you accepted NFPA-780. Can you explain why this came to be and the logic for the final outcome?

This question should be directed to the CSDS on UL.com. The Standards Technical Panel (STP) changed the requirements of UL96A to coincide with the requirements in NFPA 780.

33. How or what is going to happen when all of the projects that received a UL Master Label certification under the 11th Edition of the UL are required to recertify and are no longer able to meet UL96A-12th Edition because of 8.2.2.4?

The structures must be altered to meet the current standard's requirement.

34. UL 96A, Section 8.2.2.4, Pitched Roof Edges. Are flat plates acceptable?

No. See UL96A, Section 8.2.2.1

35. UL 96A, Sections 16.3 and 16.4. Please explain these codes. They seem to say the same thing. They are the almost the same.

This amounts to an editorial error in the standard. UL will correct this during the next revision.

36. If an all copper lightning protection system needs to be coursed over a small painted aluminum ridge vent. Rather than installing 2 bi-metal connectors and 1 foot of aluminum as required by an inspector, is it acceptable to place a roof shingle between the cable and the vent?

No. The roofing material has not been evaluated or listed for the purpose of separating galvanically incompatible materials.

Is the coating of the ridge vent with silicone acceptable?



No it also has not been evaluated as a separator of incompatible materials. The first method mentioned in this question is the correct way to handle this situation.

37. None of the codes, LPI-175, NFPA-780 or UL-96A, indicates how to protect a circular structure such as a 28-inch radius mushroom vent or a 16-foot diameter fiberglass cooling tower. Some say they require 3 or 4 air terminals because the code states that the distance between air terminals is 20 feet along a straight perimeter. Please comment.

Both UL96A and NFPA 780 cover this situation but not in a single section. See UL 96A, Sections 8.5.1, 8.7.1, and 8.8.4. Also see figure 8.9 & 8.10

38. Why do the three codes eliminate the terms “body of inductance” and “body of conductance”?

These terms were unique to lightning protection standards, and confusing to many. For clarity, bonding requirements relating to these terms now refer to grounded and isolated metal bodies.

39. UL 96A, Section 8.1.6, Securing terminals against overturning. We suggest this needs to be reviewed. This is the original requirement for a tripod or a freestanding air terminal that exceeds 24” (the old-time farm). We have successfully mounted air terminals (extremely securely) from overturning in situations where we mounted to a (example) handrail to the lower rail and upper rail. This installation will bend before overturning. A UL inspector bent the air terminal in an attempt to prove the installation inadequate.

This is a great opportunity for ULPA/LPI members to submit a proposal to the STP through the CSDS at UL. This system processes your requests for change at UL. The lightning protection program uses these documents, and we help maintain them for the industry, but their ultimate control lies with the STP and Standards group within UL.

40. UL 96A, Section 7.7 Bi-metallic splices. Are tin coated bronze parallel splices acceptable?

No. They must be listed for the purpose and marked as required in UL96.

41. It appears that manufacturing inspectors are inconsistently accepting this.

UL will need specific information on this so we can correct any training issues in the field.

This section of the standard is intended to cover situations in which corrosive gasses - not moist air - could cause system components to deteriorate. Some inspectors interpret this to mean any conditions, (HVAC unit, air exhaust, or intake) that cause excess moisture.

Please send the details of this inspection to lightningprotection@us.ul.com so that we may investigate.

42. Why would a 12” insulated coated unit wind tie-down on an HVAC require bonding?

Many situations that could require that the tie-down be bonded. Each situation needs to be evaluated individually. Please refer to section 11.4, 11.5, 11.6

43. UL96A, Section 10.5 concrete encased grounding. Can this be substituted for other grounding and still meet certification requirements?

This section indicates when this type of ground termination can be used in conjunction with other acceptable ground terminations.



44. Should 8' and 16' dead-ends going to roof equipment be measured to the air terminal base, or the closest edge of the equipment?

The measurement is between the fitting at the origin of the dead-end and the last air terminal base. If you are attaching to an object that is a strike termination (something 3/16in or greater) then it is the attachment point on that object.

What if the first cable connection is to a bond plate, then up to the base?

It would still be measured from the air terminal base.

45. UL 96A, Section 11.4. Please explain this, it appears to line up with the NFPA-780 without the calculation of allowing less distance.

Correct. It is a set distance

Also, if you have two bonded bodies with an insulated metal wire between, this insulated wire would be considered isolated – no bonding required.

Correct. You would still need to see if this isolated metal body (Wire) might influence the other non-isolated (grounded) metal bodies within 6 ft of them. There are no insulations for wire that are rated for lightning voltages or currents.

46. UL 96A, Section 14.3 – if the embedded concrete conductors are run in PVC, does this exclude rebar bonding?

No. The PVC is not an insulator for lightning voltages

47. For years we have been using aluminum or copper strap (meets UL code) to bond between roof bodies that are relatively close. One inspector has told us that this is not acceptable; we believe this fully meets all code requirements.

Unless the straps are listed as a connector they do not meet bonding requirements of the standard.

48. UL 96A, Section 15.3 – the requirement for connection to roof steel not to exceed 100' is not taking job conditions into account.

Correct. For example, a thru roof to steel at 110' or 120' would give a cross run cable or an equipment bond a more direct path to ground. These requirements are for a specific for when structural steel is used as part of the down conductor system. The 100 ft max spacing is to insure even connection to the structural steel.

49. UL 96A, Section 12.3 Membrane Roofs – Does this mean that roofs in which the membrane is used as the fastening method are no longer acceptable?

Yes. The STP removed this type of securement as an acceptable method. You may submit a proposal to change this requirement to CSDS.

50. UL 96A, Section 11.4. This paragraph states that grounded metal bodies within 6' of main conductor require bonding. Do all light fixtures, junction boxes, receptacles, etc. within 6' of main conductor/down conductor require bonding?



Yes

If a large or long metal body (drip edge, flashing, etc.) is bonded, does this extend the 6' bonding requirement to all grounded metal bodies near the bonded item?

Yes

51. UL 96A, Paragraph 11.7. This paragraph states that isolated metal bodies shall not require bonding. After many decades of requiring bonding of door tracks, gutters, etc. what scientific evidence has UL found that suggests bonding is no longer required?

This is the same requirement found in NFPA 780 4.21.3.3.

52. When the surge exemptions is phased out, what will the procedure be for buildings with systems for which there is no UL listed surge suppressor?

If you are requesting an inspection to the standard, the structure must be brought into compliance with those requirements or UL will issue an inspection letter of findings *(For examples: solar [PV] systems, communication antennas and other markets that are too small for surge manufacturers to be able to pay the exorbitant costs of meeting UL's ever-changing requirements and testing procedures)* *(Also, see question 53 below)*

53. UL requires surge suppression on the coax cable for a satellite dish that is mounted on a building, bonded and within the zone of protection. The Master Label surge exemption states that all incoming and outgoing wires should have suppression. Therefore, is surge suppression required on wires connected to irrigation systems, CCTV cameras, landscape lighting, municipal fire alarms, electric gates (power & communication wires)?

Yes. These have been requirements in the standard for at least 3 code cycles.

Best Regards,

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