Thank you for giving UL the opportunity to partner with you.
Please note, Follow-Up Procedure Revisions or Report Revisions do not include Authorization Pages, Indices, Section General, and/or Appendices unless revisions were required or requested.

Should you have any questions, after reviewing the material, or need to report any inaccuracies, please reach out to your UL representative or find UL contact details for your local Customer Service Department at https://www.ul.com/about/locations.

Please find attached the related material

For your convenience, the below describes the related updates:

Please replace your existing FUII with the attached FUII dated 2023-03-31.
If you have questions, please reach out to your local Field Representative

InspectionInstructions

Times change, Trust Remains™

UL 50, UL 50E, CSA C22.2 NO 94.1, CSA C22.2 NO 94.2
CABINETS AND CUTOUT BOXES (CYIV, CYIV7)
FOLLOW-UP AND INSPECTION INSTRUCTIONS

Table of Contents

SCOPE

A. These requirements cover Cabinets and Cutout Boxes for use in accordance with the National Electrical Code, NFPA 70. These requirements do not cover junction boxes of the swimming pool type. The Standard for Enclosures for Electrical Equipment, Non-Environmental Considerations, UL 50, is applicable for inspections in this category.

See the table below for corresponding CSA standards which are harmonized with UL 50/50E. Unless otherwise noted in these FUIIs, references to the latest edition of the UL Standard are to be considered to also cover the corresponding CSA Standard.

Harmonized Standards

UL 50	UL 50E	CSA C22.2 No. 94.1	CSA C22.2 No. 94.2
12th Ed.	1st Ed.	1st Ed.	1st Ed.
13th Ed. (2015-10-16)	2nd Ed.	2nd Ed. (2015-10-16)	2nd Ed.
13th Ed. (2020-10-15)	3rd Ed.	2nd Ed. (2020-10-15)	3rd Ed.

For US Certifications only:

After December 15, 2023, new enclosures shall meet the applicable requirements of UL 50 13th Ed. with revision date of October 15, 2020 in combination with UL 50E 3rd Ed.

- Enclosure designs that have been procedure described prior to December 15, 2023 and after December 23, 2019 to UL 50 13th Ed. with revision date of October 16, 2015 in combination with UL 50E 2nd Ed. may continue to maintain their certification to UL 50, 13th Ed. with revision date of October 16, 2015/UL 50E 2nd Ed. Enclosures investigated to UL 50, 13th Ed. (2015)/UL 50E 2nd Ed. shall be marked with “13th Ed.(2015)/2nd Ed.” or “UL 50 13th Ed.(2015)/UL 50E 2nd Ed.”.

- Enclosure designs that have been procedure described prior to December 23rd, 2019 to UL 50 12th Ed. in combination with UL 50E 1st Ed. may continue to maintain their certification to UL 50, 12th Ed./UL 50E 1st Ed. Enclosures investigated to UL 50, 12th Ed./UL 50E 1st Ed. shall be marked with “12th Ed./1st Ed.” or “UL 50 12th Ed./UL 50E 1st Ed.”.

GENERAL

B. As a part of UL’s follow-up inspection, it is required that a Field Engineer periodically visit the factory and select, for test or examination or both, samples of production made since the last inspection visit of the products covered.

C. The Follow-Up Service Procedure covering the product is loaned to the manufacturer and constitutes the basis on which the product is judged for compliance with the applicable requirements.

GENERAL RESPONSIBILITIES OF THE MANUFACTURER AND THE UL FIELD ENGINEER

The Manufacturer's and UL Field Engineer's general responsibilities, as part of the Follow-Up Services Procedure, are as noted in the published document titled, "UL Mark Surveillance Requirements", and is available through UL's internet site www.ul.com/fus. Manufacturers that do not have Internet access may obtain the current version of these requirements from their local UL Customer Service Representative or UL Field Engineer.

MANUFACTURER'S TECHNICAL REPRESENTATIVE (MTR)

The UL 50 Enclosures Certification Program provides two options for Enclosures manufacturers. Depending on the option used, the manufacturer may be required to have a "Manufacturer's Technical Representative" (MTR) qualified for the manufacturing location. The two options are described as follows:

OPTION 1 – UL Evaluated Constructions (MTR Not Required):

This option applies when the construction is described in the descriptive section of the UL Follow-Up Services Procedure. Each enclosure produced under this option is also required to comply with applicable parts of the FUII. In addition, the Manufacturer shall monitor construction and component usage to ensure the enclosures continue to be built in accordance with the descriptive report. Construction modifications that deviate from the descriptive report shall be submitted to UL for evaluation and procedure revision prior to these constructions being labeled with the UL Mark.

OPTION 2 – Enhanced General Coverage (MTR Required):

This option applies when the construction of the product relies on construction requirements in the UL Standard and FUII, rather than being specifically described in the Follow-Up Services Procedure. This option requires a complete review at the factory to confirm compliance with UL 50 for each unique design. This Option requires the manufacturer to designate a representative (known as an "MTR") that complies with the requirements.

MANUFACTURER'S TECHNICAL REPRESENTATIVE (MTR)- Each Manufacturer utilizing "Option 2" shall designate and maintain at least one representative that meets the criteria of a Manufacturer's Technical Representative. To qualify, this individual shall successfully obtain at least 80% on the UL 50 MTR Qualification EXAM located on the MyAbsorb website https://www.ul.com/LMS. The "MTR" will demonstrate knowledge of UL requirements and be actively involved in the manufacturer's assessment process to verify compliance with UL requirements. Continued compliance to this requirement will be verified by the UL Field Engineer. Failure to maintain an "MTR" will render the manufacturer ineligible to label products and may result in the issuance of a Variation Notice.

GENERAL INSPECTION GUIDELINES

APPLICATION OF THE LISTING MARK TO THE PRODUCT

L1 The Field Engineer shall examine at least one sample of the products to verify that the application of the label to the product is in compliance with UL's requirements.

L2 The composition of the UL Mark is described in the Follow-Up Service Procedure. Additional information, such as camera ready art work and proportional dimensions for the Marks/Markings, may be found by visiting UL's website at "markshub.ul.com".

L3 The Listee's name, UL File Number, or trade name/trademark (if authorized in the Follow-Up Service Procedure) that identifies the Listee, must appear on the label, unless the subscriber chooses to purchase standard labels, *if* available, from UL's Label Centers, in which case the Listee's identification is not on the UL Label but is placed elsewhere on the product.

L4 The electric cabinet front Certification Mark is to be applied to each cabinet front shipped independently or with a box unless the front is part of an assembly shipped complete and carrying an enclosed-branch-circuit-cutout or an enclosed-panelboard Certification Mark.

L5 The electric cabinet box Certification Mark is to be applied only to a box intended to be used in conjunction with a cabinet front. It is to be used on each cabinet box shipped either independently or with a front, unless the box is a part of an assembly shipped complete and carrying an enclosed-branch-circuit-cutout or an enclosed-panelboard Certification Mark.

FIELD ENGINEER'S COUNTERCHECK PROGRAM

L6 The Field Engineer shall check the construction details of cabinets and cutout boxes with the requirements. The Field Engineer shall examine labeled production for the construction details, dimensions, ratings and markings specified in UL 50/50E, the Follow-Up Service Procedure description, and these Follow-Up and Inspection Instructions.

L7 In TABLE 1 through TABLE 4 shown below, it is required that an investigation be conducted by our Engineering Services Department to evaluate the product's compliance with the requirements. This construction is then to be detailed in the Follow-Up Service Procedure. The acceptability of these paragraphs is not to be determined by the Field Engineer.

L8 See Appendix A for the list of significant differences between UL 50/50E 13th/2nd Ed. and UL 50/50 12th/1st Ed. The purpose of Appendix A is to facilitate the inspection of enclosures to UL 50/50E 12th/1st Ed., using UL 50/50E 13th/2nd Ed. after UL 50/50E 12th/1st Ed. is no longer available.
See Appendix B for the list of significant differences between UL 50 13th edition with revision date of October 15, 2020/UL 50E 3rd edition and UL 50 13th edition with revision date of October 16, 2015/UL 50E 2nd edition. The purpose of Appendix B is to facilitate the inspection of enclosures to UL 50 13th edition with revision date of October 16, 2015/UL 50E 2nd edition, using UL 50 13th

edition with revision date of October 15, 2020/UL 50E 3rd edition after UL 50 13th edition with revision date of October 16, 2015/UL 50E 2nd edition is no longer available.

SPECIAL FEATURES

L9 If the construction of a cabinet, cabinet front, or cutout box involves a Type 3, 3X, 3R, 3RX, 3S, 3SX, 4, 4X, 6, or 6P enclosure, glass panels as part of the enclosure, open holes in the cover, or neutral terminals or equipment grounding terminals, such construction is to be described specifically in the Follow-Up Service Procedure if it is to carry the Certification Mark.

L10 A cabinet or cutout box may contain dead metal parts, such as mounting brackets, partitions or barriers without specific Follow-Up Service Procedure authorization.

TABLE 1 - UL 50, 13th Edition with revision date of October 16, 2015

Clause	Comment	Clause	Comment	Clause	Comment
6.1.9		6.6.2.2		6.12.2	
6.2.1		6.6.2.4			
6.2.2		6.6.3.1			
6.2.3		6.6.4.1		7.5.1	
6.3.1.1		6.7.2.2		7.6.1	
6.3.1.2		6.7.2.6		7.7.1	
6.3.3.1		6.7.3.8		7.8.1	
6.3.4.2		6.7.5.5 b)		8.1-8.11.2	
6.4.1.2		6.9.5		10.4.4 – 10.4.9	
6.5.4		6.10.1.2	(non-metallic material)		
6.6.1.1		6.10.2.1	(multiple ring knockouts)		
6.6.1.2		6.10.3.1			
6.6.1.3		6.10.4.1	(threaded hole with only two full threads)		
6.6.1.4		6.10.4.3			
6.6.2.1		6.11.3	(conduit hubs requiring test)		

TABLE 2 - UL 50E, 2nd Edition

Clause	Comment	Clause	Comment
6.2		7.5.2	
7.1.1-7.1.2		7.7.1	
7.2.1.2		7.7.2	
7.2.2.1		7.7.4 – 7.7.7	
7.2.3.1		8.1.1-8.16.1.1	
7.2.3.8		9.2-9.8	
7.2.4			
7.3.1.1			
7.3.1.3			
7.3.4.1-7.3.4.2			
7.3.5			
7.4.2.3			
7.4.2.4			
7.4.3.2			
7.5.1			

TABLE 3 - UL 50, 13th Edition with revision date of October 15, 2020

Clause	Comment	Clause	Comment	Clause	Comment
6.1.9		6.6.2.2		6.12.2	
6.2.1		6.6.2.4		7.5.1	
6.2.2		6.6.3.1		7.6.1	
6.2.4-6.2.6		6.6.4.1		7.7.1	
6.3.1.1		6.7.2.2		7.8.1	
6.3.1.2		6.7.2.6		8.1-8.11.2	
6.3.3.1		6.7.3.8		10.4.4 – 10.4.9	
6.3.4.2		6.7.5.5 b)			
6.4.1.2		6.9.5			
6.5.4		6.10.1.2	(non-metallic material)		
6.6.1.1		6.10.2.1	(multiple ring knockouts)		
6.6.1.2		6.10.3.1			
6.6.1.3		6.10.4.1	(threaded hole with only two full threads)		
6.6.1.4-6.6.1.6		6.10.4.3			
6.6.2.1		6.11.3	(conduit hubs requiring test)		

TABLE 4 - UL 50E, 3rd Edition

Clause	Comment	Clause	Comment
6.2		7.5.1	
7.1.1-7.1.4		7.5.2	
7.2.1.2		7.7.1	
7.2.2.1		7.7.2	
7.2.3.1		7.7.4 – 7.7.7	
7.2.3.9		8.1.1- 8.17.3	
7.2.4		9.2-9.8	
7.3.1.1			
7.3.1.3			
7.3.4.1- 7.3.4.2			
7.3.5			
7.4.2.3			
7.4.2.4			
7.4.3.2			

CORROSION PROTECTION – OUTDOOR ENCLOSURES

L11 If the corrosion protection system authorized in the Follow-Up Service Procedure refers to a Recognized Component Metallic Coating (CCN-DTHW2/DTHW8), such as A60, G60, or G90, the manufacturer may obtain the galvanized sheet steel from any Recognized Component vendor.

SHEET METAL

L12 The minimum thickness of sheet metal shall be in accordance with Tables 3, 4, and 5 of the Standard for Enclosures for Electrical Equipment, Non-Environmental Considerations, UL 50 13th Edition with revision date of 2015-10-16, or 13th Ed with revision date of 2020-10-15. (tables are the same between editions). To determine the acceptability of a particular lot of uncoated or galvanized flat rolled steel, the UL Field Engineer shall proceed in the following manner:

a. The thickness of each of five pieces of stock shall be determined by five micrometer reading spaced equally along an edge. Measurements shall be made at least 3/8 inch (10mm) from cut edges and at least ¾ inch (20mm) from mill edges.

b. If all thickness readings of all five pieces of stock are equal to or more than the minimum thickness specified, the particular lot of material shall be considered acceptable.

c. If any of the thickness readings of any of the five pieces of stock is less than the minimum thickness specified, 15 additional pieces shall be selected at random and their thicknesses determined.

d. If the thickness readings of all 15 pieces are equal to or more than the minimum thickness specified, the particular lot of material shall be considered acceptable, except that the individual pieces

among the first five pieces which had the thickness measurements less than the minimum thickness specified shall be rejected.

e. If any of the thickness readings of any of the 15 additional pieces is less than the minimum thickness limit specified, the UL Field Engineer shall reject the lot.

L13 In checking the thickness of metal in fabricated products, it should be noted that several individual devices or their components may be formed from the same sheet of stock. Due to this, the thickness of metal shall be determined by measurements of a sufficient number of fabricated devices to be truly representative of the entire lot inspected.

L14 Galvanized sheet stock classed and marked as “seconds” (known to have defects) shall not be used for use in products carrying the Certification Mark.

ASSEMBLIES

L15 Provisions shall be provided to secure cabinet fronts, trims, etc. to the box. Provisions provided to secure cabinet fronts, trims, etc. shall not secure to the wall or partition in which the box is installed.

L16 Spot welding and seam welding are considered to be the equivalent of riveting in cabinets and boxes. It is impossible to ascertain whether a weld is done well after the application of a finish, such as paint, without destroying the joint; and the Field Engineer should, therefore, take every available opportunity to inspect welds for evidence of poor workmanship, such as openings or cracks in the weld, prior to the application of the finish.

L17 Also, it is impossible to ascertain whether a rivet is installed correctly after the application of a finish, such as paint, without compromising the rivet; the Field Engineer should, therefore, take every available opportunity to inspect rivets for evidence of poor installation, such as loose or bent rivets, or rivets that haven’t been fully pressed, prior to the application of the finish.

LATCHES

L18 The enclosure shall be placed in approximately the same position (usually vertical) in which it will be mounted in actual service, the cover should be opened and closed several times. Each time it is closed, confirm that the cover is held in a positive manner by the latching arrangement. It is not necessary that a latch be automatic; a turn-knob latch or the equivalent is considered to be acceptable.

L19 A spring latch is not to be used, unless the material or the latch is such that when pressed slowly but firmly toward the box wall it will return to its original position to hold the cover closed.

L20 The Field Engineer is required to inspect and report on randomly selected samples so that follow-up program testing is as representative as possible of a manufacturer's entire product line. These samples shall not be taken from a lot which other samples have been taken during a previous inspection, unless the lot was previously rejected, has been culled (sorted) and reworked, and is resubmitted for re-inspection. [The actual number of (product type) to be taken in individual cases may vary according to conditions, and the Field Engineer shall follow as closely as possible the outline given in Table L1 and the instructions in the paragraphs that follow Table L1.]

TESTS

L21 The Field Engineer shall select samples and witness the tests specified in Table L1.

TABLE L1
Tests to be Witnessed by Field Engineer at Factory

Inspection or Test	Number of Samples to be Selected	Reference
Bending Moment Test	1	L26
Torque Test	1	L30
Rod Entry Test	1	L38

L22 Enclosures with tapped holes or integral hubs (not separable hubs) for conduit connection, having less than three threads, and described in the Procedure shall be grouped and categorized by enclosure material, such as sheet steel, sheet aluminum, cast iron, cast aluminum, die cast steel, etc. Each category shall be subdivided into families based on thickness of material and maximum trade size of the tapped hole for that thickness. (Note: An enclosure having sides fabricated from different thickness of metal may belong to more than one family.)

L23 Each family will be represented by the number having the largest trade size tapped hole in production or stock for test purposes.

L24 Unless otherwise indicated in the Procedure (under special construction and/or assemblies), the Field Engineer shall determine the members of each family. The manufacturer may request that one or more families be further divided into subfamilies for test purposes (as might happen when testing the largest trade size member produces nonconforming results).

L25 During each inspection visit, a sufficient number of families are to be selected so that each family will be tested once within the calendar year. From each family selected, the enclosure having the largest trade size conduit shall be acceptably subjected to the "Torque" and "Bending Moment" tests described below. Two samples of the representative enclosure shall be selected; one sample for the Torque Test and one sample for the Bending Moment Test.

BENDING MOMENT TEST

Test Equipment

L26 Calibrated weights and a length of conduit such that the product of the applied weight, in pounds (kg), and the length of conduit from the enclosure wall to the point of the load application in inches (mm) is equal to 600 pound-inch (6.9 kg-mm).

$$\frac{600 \text{ lb.-in.}}{\text{weight}} = \text{point of application (inch)}$$

Method

L27 The enclosure is to be rigidly supported and the weight is to be suspended, 90 degrees from the conduit axis, at the calculated point of application. The applied load is to be maintained for 5 minutes.

Basis for Acceptability

L28 The test sample shall withstand the 600 pound-inch (6.9 kg-mm) bending moment for 5 minutes. There shall be no evidence of thread stripping or fracturing of the enclosure walls.

Procedure in Case of Nonconformance

L29 If a test result does not conform with the requirements, the family or subfamily is rejected and Certification Marks are not to be applied to any members of the family or subfamily represented by the tested samples. The rejected lot may be resubmitted for inspection and tests only after it has been examined by the manufacturer and the nonconforming features corrected. The Field Engineer is to select two additional samples, and the tests are to be rerun. If either sample does not conform, the entire lot is to be rejected.

TORQUE TEST

Test Equipment

L30 The pipe wrench and torque wrench combination shown by Figure 1 is suggested for uniformity. It is essential that the conduit, torque wrench to pipe wrench fitting and the torque wrench handle pin be on the same center line. Torque wrenches shall have an accuracy within 2 percent of full scale and scale divisions of 5 pound-inch (0.5 N·m) maximum. [Because of the additional lever arm of the pipe wrench, it is anticipated that the torque wrench maximum capacity will be approximately 350 pound-inch (40 N·m).] Torque wrenches with pound-feed (or foot-pound) readings may be used if they have 2 percent (or better) accuracy and the scale divisions are not larger than 2-1/2 pound-feet.

L31 Other test equipment and/or assemblies may be used only when included in the Follow-Up Service Procedure.

Method

L32 The enclosure is to be rigidly supported. Locknuts or washers or other torque resistance components are not to be used. The conduit is to be threaded into the tapped hole by hand. The torque wrench is to be placed adjacent to the enclosure without touching it. An initial measurement of the pipe wrench (Lw) and an initial dial reading (DR) is to be made (See Figure 1). If the torque wrench is calibrated in pound-foot, convert to pound-inch (see conversion note §, Figure 1). The conduit is to be gradually tightened until 90 to 95 percent of the required torque has been applied. The tightening force is then to be relaxed, the test equipment is to be maintained in place, dimension L_W measured again and the final DR recorded, in pound-inches. The required tightening torque shall then be applied for 5 minutes. The tightening torque shall be determined from the following:

Trade Size of Conduit, In.	Tightening Torque, Pound-Inch (N·m)
¾ and smaller	1000 (113)
1, 1-1/4, 1-1/2	1250 (141)
2 and larger	2000 (226)

Basis for Acceptability

L33 The test sample shall withstand the required torque for 5 minutes without stripping of threads and without fracturing the enclosure walls.

Procedure in Case of Nonconformance

L34 If a test result does not conform with the requirements, the family or subfamily is rejected and Certification Marks are not to be applied to any members of the family or subfamily represented by the tested samples. The rejected lot may be resubmitted for inspection and tests only after it has been examined by the manufacturer and the nonconforming features corrected. The Field Engineer is to select two additional samples, and the tests are to be rerun. If either sample does not conform, the entire lot is to be rejected.

KNOCKOUTS

L35 Single Ring Knockouts on cabinets and cutout boxes are required to comply with "UL Requirements for Knockouts in Sheet Metal Enclosures" available on UL.com.

L36 Multiple ring knockouts on cabinets and cutout boxes shall be investigated by our Engineering Services Department and procedure described.

SHARP EDGES

L37 Sharp edges which require referee measurements shall have the referee measurements completed by either of the following methods:

1. The referee measurement is conducted by our Engineering Services Department

2. The manufacturer shall demonstrate compliance under the supervision of Field Engineer using a sharp edge tester compliant with UL 1439. Compliance to UL 1439 shall be determined by supporting literature provided by the sharp edge tester manufacturer. The sharp edge tester shall be immediately moved along the edge in question a distance of 2 inches and then back to its starting position without removal of the test from the edge and then withdrawn from the edge. If the edge is less than 2 inches long, the edge shall be tested its full length front to back. The time of travel no longer than 5 seconds and no shorter than 2 seconds. After removal of the tester from the edge, the head of the tester shall be examined and the outer two layers of tape on the head shall not have been penetrated.

ROD ENTRY TEST

Test Equipment

L38 A rod having a diameter of 12.7 mm (1/2 inch)

Method

L39 Note: This test is intended to simulate incidental contact with enclosed equipment. For ventilated enclosures with live parts located less than 102 mm (less than 4 inches) from the openings, this test shall be made by attempting to insert a rod having a diameter of 12.7 mm (1/2 inch).

Basis for Acceptability

L40 The enclosure shall be considered to have met the requirement if the rod cannot enter the enclosure.

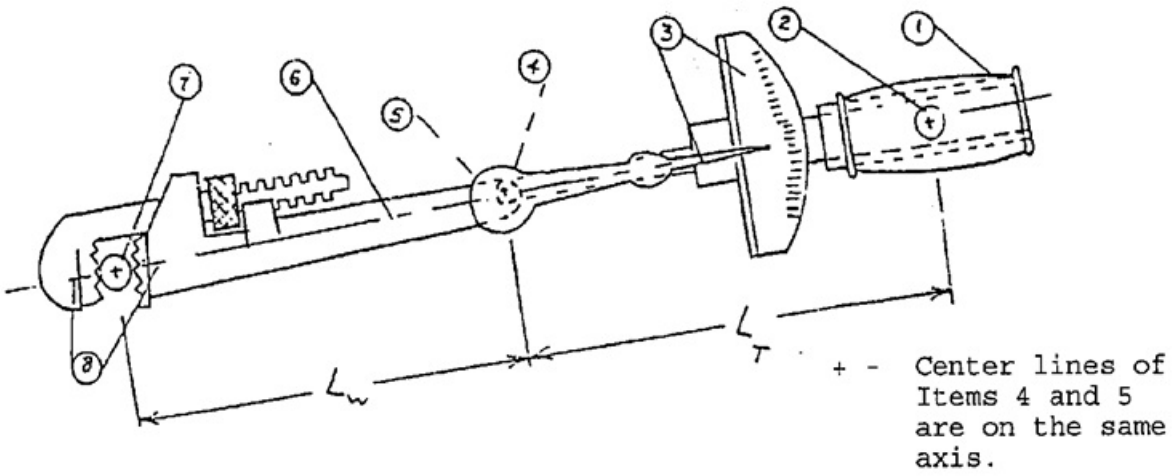
Procedure in Case of Nonconformance

L41 If the 12.7 mm (1/2 inch) rod can enter the enclosure through a ventilation opening reject the lot.

FIGURE 1

$$DR = \frac{T\ L}{L_W + L_T}$$

DR = Dial reading (Item 3) (pound-inches) §
T = Required torque on fitting (pound-inches – from table)
L_T = Length of torque wrench from pin axis (Item+2) to drive (Item 4) axis is in.
L_W = Length of pipe wrench from center line of fitting (Item+5) to center line of thread in enclosure under test (in in).



§ - If the torque wrench scale (or dial) is marked in pound-feet (or foot-pounds) then the calculated value is to be converted to pound-inches by multiplying by 12.

1. Handle
2. Handle pin
3. Scale and torque indicator (DR in equation)
4. Torque wrench drive fitting
5. Fitting welded to pipe wrench so that 2, 4, 5, 7, and 8 are on the same center line.
6. Pipe wrench modified by addition of Item 5 and 8
7. Conduit or equivalent threaded into tapped opening under test
8. Die-stamped markings added to pipe wrench to locate center line through 2, 4, 5, (and 7). Use to properly located Item 7 during test.

Note: Most torque wrenches float that handle on a load pivot pin. To use the torque wrench properly, the hand is to be approximately centered over the pin so that all the force is applied to the pin. The handle should not contact other parts of the wrench. Additional handles should not be applied to the wrench.

Appendix A

A.1 The purpose of Appendix A is to facilitate the inspection of enclosures to UL 50, 12th Ed. and UL 50E, 1st Ed. using UL 50/50E 13th Ed.(2015)/2nd Ed. after UL 50 11th Ed. is no longer available; or to facilitate the inspection of enclosures to UL 50/50E 12th/1st Ed., using UL 50/50E 13th Ed.(2015)/2nd Ed. after UL 50/50E 12th/1st Ed. is no longer available.

Paragraphs	**General subject and comment**
UL 50, 13th Ed.(2015) 1.1, 5.8, 6.3.3.1, 6.3.4.1 – 6.3.4.3, 7.8, 7.8.1	Addition of Types 3X, 3SX, 3RX. These are the same as current enclosure Types 3, 3S, and 3R, except that they have "additional" corrosion protection equal to the corrosion protection requirements for Types 4X and 6P. Enclosures investigated to previous editions of UL 50 cannot be rated Types 3X, 3SX, or 3RX
UL 50, 13th Ed.(2015) 6.1.4, 6.1.5	Sharp edges. Previous requirements did not allow for any sharp edges. The revised requirements allow for sharp edges if they are protected by a barrier, needed for a working function of the enclosure, or if procedures are described by instructions or markings to avoid the hazard. They also require a new test for sharp edges if referee measurements are needed. If referee measurement is needed, the measurement shall be completed by according to L41. Enclosures investigated to previous editions of UL 50 are not allowed to have sharp edges.
UL 50, 13th Ed.(2015) 6.5.5	Clarification of allowable materials for cast metal. Previous requirements did not specify what types of cast metal could be used, only that zinc cast metal could not be used. New requirements specify that cast shall be iron, steel, copper, brass, or aluminum and shall not be aluminum with less than 80% aluminum or magnesium based. Exclusion of zinc based cast metal remains. Enclosures investigated to previous editions of UL 50 are not limited to the types of cast metal.
UL 50, 13th Ed.(2015) 6.7.1.2	New requirement that doors shall open a minimum of 90 degrees. Enclosures investigated to previous editions of UL 50 are not required to have doors that open 90 degrees minimum.

Paragraphs	General subject and comment
UL 50, 13th Ed.(2015) 6.10.5.2	New requirements for nonmetallic-sheathed cable clamps. Adds component requirements for cable clamps and requirements for openings used with cable clamps. This requirement applies to previous editions of UL 50 as it was detailed in a Practical Application Guideline (PAG).
UL 50, 13th Ed.(2015) 9.2.1, 9.2.1.1	New requirements added to allow notching of the front flanges of cabinets used for panelboards for the purpose of hanging the cover during installation and maintenance. Enclosures investigated to previous editions of UL 50 are not allowed to have notching in the flanges per 9.2.1, 9.2.1.1
UL 50, 13th Ed.(2015) 9.2.2	New requirements to allow slot and tab fastenings in cabinets when other acceptable fasteners are also used. This requirement applies to previous editions of UL 50 due to PAG
UL 50E, 2nd Ed. 1.1, 5.7, 7.1.1, 7.2.3.1, 7.2.4.1, 7.3.3.1 – 7.3.3.3, 7.3.4.1, 7.3.5.1, 7.5.2, 7.6.1, 8.3.4, 8.5.2, 8.5.3, 8.9, 8.13.1,1, 8.13.3.1, 9.2.3, 9.3.2, 9.3.3, 9.3.7, 9.5.1, 9.5.2, 9.5.3, 9.7.1, 9.7.2, Table 1, Table 2, Table C.1	Addition of Types 3X, 3SX, 3RX. These are the same as current enclosure Types 3, 3S, and 3R, except that they have “additional” corrosion protection equal to the corrosion protection requirements for Types 4X and 6P.
UL 50E, 2nd Ed. 7.2.1.3	Previous requirement for brass inserts required inserts that were at least 80% brass. The revised requirements allow for inserts with 60% or more brass.

Appendix B

B.1 The purpose of Appendix B is to facilitate the inspection of enclosures to UL 50 13th edition with revision date of October 16, 2015/UL 50E 2nd Ed., using UL 50 13th edition with revision date of October 15, 2020/UL 50E 3rd Ed. after UL 50 13th edition with revision date of October 16, 2015/UL 50E 2nd Ed. is no longer available.

Subject/Topic	Paragraphs	General subject and comment
Exemption of Crush and Impact Tests if Using Safety Type or Wire Mesh Glass in Large Openings	UL 50 - 6.2.2, 6.2.3	For glass made of clear safety type or wire-reinforced type designated AS2 to ANSI Z26.1, Clause 6.2.2 does not apply.
Restrictions on Use of Sheet Metal Screws for Grounding and Requirements for Wire Binding Screws	UL 50 - 10.4.12, 10.4.13, 10.4.14, Annex B	A tapped hole provided for a grounding screw shall have a minimum of two full threads or shall comply with Clause 10.4.13. The threads of holes provided in a box for attachment of a ground screw having fewer than 2 full threads shall not strip when a No. 8 screw is tightened to a torque of 2.26 N·m (20 lbf-in), or a No. 10 screw is tightened to a torque of 3.96 N·m (35 lbf-in). Wire binding screws of equipment grounding terminals shall comply with Annex B, Ref. No.18 (Metallic Outlet Boxes, UL 514A).
Expand Eligible Grades of Austenitic Stainless Steel	UL 50E - 7.2.4.1, 8.9	Stainless steel grades 302, 303, 305, and 309 were added as suitable for additional corrosion protection (in addition to 304 and 316).