UL 1026

STANDARD FOR SAFETY

Household Electric Cooking and Food Serving Appliances

UL Standard for Safety for Household Electric Cooking and Food Serving Appliances, UL 1026

Sixth Edition, Dated January 27, 2012

Summary of Topics

This revision of ANSI/UL 1026 dated September 29, 2023 includes the following changes in requirements:

> ***– Addition UL 969A as an alternative to existing permanency of marking requirements for cord tags; 62.1, 62.6, 67.25, 67.27, 69.12 and SB9.1.***
>
> ***– Clarification of Strain Relief Test Requirement; 10.2.2.5 and 10.2.2.6***

Text that has been changed in any manner or impacted by ULSE's electronic publishing system is marked with a vertical line in the margin.

The new and revised requirements are substantially in accordance with Proposal(s) on this subject dated March 10, 2023 and August 25, 2023.

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ANSI/UL 1026-2023

UL 1026

Standard for Household Electric Cooking and Food Serving Appliances

Prior to the first edition, the requirements for the products covered by this Standard were included in the Standard for Electric Heating Appliances, UL 499.

First Edition – November, 1975
Second Edition – March, 1981
Third Edition – September, 1988
Fourth Edition – July, 1995
Fifth Edition – January, 2007

Sixth Edition

January 27, 2012

This ANSI/UL Standard for Safety consists of the Sixth edition including revisions through September 29, 2023.

The most recent designation of ANSI/UL 1026 as an American National Standard (ANSI) occurred on September 29, 2023. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

Comments or proposals for revisions on any part of the Standard may be submitted to ULSE at any time. Proposals should be submitted via a Proposal Request in the Collaborative Standards Development System (CSDS) at https://csds.ul.com.

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CONTENTS

INTRODUCTION

CONSTRUCTION

PERFORMANCE

MANUFACTURING AND PRODUCTION-LINE TESTS

No Text on This Page

INTRODUCTION

1 Scope

1.1 These requirements cover household electric cooking and food serving appliances, rated at 250 V or less, other than those mentioned in 1.2, for use in ordinary locations, including appliances intended for casual and permanent outdoor use, in accordance with the National Electrical Code, NFPA 70.

1.2 These requirements do not cover household electric ranges, electrode type appliances, skillets and frying type appliances, fondues, woks, tempuras, corn poppers, coffee makers and brewing type appliances, commercial cooking appliances, microwave cooking appliances, or appliances that are covered in individual requirements that are separate from this Standard.

1.3 For the purposes of this Standard, a requirement that applies to one type of equipment is identified by a specific reference to the type of equipment involved (for example, toaster, rotisserie, or other specific appliance). In the absence of such specific reference or if the term "appliance" is employed, it is to be understood that the requirement applies to all types of equipment covered by the Standard.

1.4 These requirements do not cover slow cookers intended for outdoor use.

2 Units of Measurement

2.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

3 Undated References

3.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

4 Glossary

4.1 For the purpose of this Standard the following definitions apply.

4.2 APPLIANCE COUPLER – A single-outlet, female contact device for attachment to a flexible cord as part of a detachable power-supply cord to be connected to an appliance inlet (motor attachment plug).

4.3 APPLIANCE INLET (Motor Attachment Plug) – A male contact device mounted on an end product appliance to provide an integral blade configuration for the connection of an appliance coupler or cord connector.

4.4 APPLIANCE (FLATIRON) PLUG – An appliance coupler type of device having a cord guard and a slot configuration specified for use with heating or cooking appliances.

4.5 COMPONENT – A device or fabricated part of the appliance covered by the scope of a safety standard dedicated to the purpose. When incorporated in an appliance, equipment otherwise typically field installed (e.g. luminaire) is considered to be a component. Unless otherwise specified, materials that compose a device or fabricated part, such as thermoplastic or copper, are not considered components.

4.6 CONTROL, AUTOMATIC ACTION – A control in which at least one aspect is non-manual.

4.7 CONTROL, AUXILIARY – A device or assembly of devices that provides a functional utility, is not relied upon as an operational or protective control, and therefore is not relied upon for safety. For example,

an efficiency control not relied upon to reduce the risk of electric shock, fire, or injury to persons during normal or abnormal operation of the end product is considered an auxiliary control.

4.8 CONTROL, MANUAL – A device that requires direct human interaction to activate or rest the control.

4.9 CONTROL, OPERATING – A device or assembly of devices, the operation of which starts or regulates the end product during normal operation. For example, a thermostat, the failure of which a thermal cutout/limiter or another layer of protection would reduce the risk of electric shock, fire, or injury to persons, is considered an operating control.

4.10 CONTROL, PROTECTIVE – A device or assembly of devices, the operation of which is intended to reduce the risk of electric shock, fire or injury to persons during normal and reasonably anticipated abnormal operation of the appliance. For example, a thermal cutout/limiter, or any other control/circuit relied upon for normal and abnormal conditions, is considered a protective control. (During the testing of the protective control/circuit, the protective functions are verified under normal and single-fault conditions of the control.)

4.11 CONTROL, TYPE 1 ACTION – The actuation of an automatic control for which the manufacturing deviation and the drift (tolerance before and after certain conditions) of its operating value, operating time, or operating sequence has not been declared and tested under this Standard.

4.12 CONTROL, TYPE 2 ACTION – The actuation of an automatic control for which the manufacturing deviation and the drift (tolerance before and after certain conditions) of its operating value, operating time, or operating sequence have been declared and tested under this Standard.

4.13 CORD CONNECTOR – A female contact device wired on flexible cord for use as an extension from an outlet to make a detachable electrical connection to an attachment plug or, as an appliance coupler, to an equipment inlet.

4.14 INDUCTION HEATING APPLIANCES – Appliances that can heat at least one metallic vessel by means of eddy currents. The eddy currents are induced to the cooking vessel by the electromagnetic field of a coil.

4.15 INDUCTION HEATING SYSTEM – The inductor current waveform is created by a high-efficiency switched DC power supply and 1-2 IGBT switches. The analog to dialogue switches are driven by a microcontroller, which responds to a feedback loop that forces conditions, such as size/shape/material of cooking vessel, current, voltage or temperature, monitored by sensors to correspond to settings established by the user.

4.16 *Deleted.*

4.17 INDUCTION TABLE STOVE (HOTPLATE) – Table Stove that can heat at least one metallic vessel by means of eddy currents. The eddy currents are induced in the bottom of the vessel by the electromagnetic field of a coil.

4.18 LINE-VOLTAGE CIRCUIT – A line-voltage circuit is one involving a potential of not more than 250 V and having circuit characteristics in excess of those of a low-voltage circuit. A circuit derived from a source of supply classified as a line-voltage circuit, by connecting resistance in series with the supply circuits as a means of limiting the voltage and current, is not considered to be a low-voltage circuit as described in 4.19.

4.19 LOW-VOLTAGE CIRCUIT – A low-voltage circuit is one involving a potential of not more the 30 V and supplied by a primary battery, by a standard Class 2 transformer, or by an impedance that, as a unit, complies with all of the performance requirements for Class 2 transformer.

4.20 TOUCH CONTROL – Control actuated by contact or proximity of a finger, with no movement of the contact surface.

CONSTRUCTION

5 General

5.1 If the operation of an appliance involves the generation and confining under pressure of steam or other gas, consideration shall be given to the possibility of an explosion risk incident to such operation. The appliance shall not be acceptable unless its strength is adequate with respect to any explosion risk that may be involved.

5.2 A component of a product covered by this Standard shall:

a) Comply with the requirements for that component as indicated in the individual section covering that component;

b) Be used in accordance with its rating established for the intended conditions of use;

c) Be used within its established use limitations or conditions of acceptability;

d) Additionally comply with the applicable requirements of this end product standard; and

e) Not contain mercury, unless used within a fluorescent, high intensity discharge, or neon lamp bulb.

Exception No. 1: A component of a product covered by this Standard is not required to comply with a specific component requirement that:

a) Involves a feature or characteristic not required in the application of the component in the product;

b) Is superseded by a requirement in this Standard; or

c) Is separately investigated when forming part of another component, provided the component is used within its established ratings and limitations.

Exception No. 2: A component complying with a component standard other than those cited in this Standard is acceptable if:

a) The component also complies with the applicable component standard indicated in this Standard; or

b) The component standard:

1) Is compatible with the ampacity and overcurrent protection requirements in the National Electrical Code, NFPA 70, where appropriate;

2) Considers long-term thermal properties of polymeric insulating materials in accordance with the Standard for Polymeric Materials – Long Term Property Evaluations, UL 746B; and

3) Any use limitations of the other component standard is identified and appropriately accommodated in the end use application. For example, a component used in a household application, but intended for industrial use and complying with the relevant component standard may assume user expertise not common in household applications.

5.3 A component that is also intended to perform other functions, such as over current protection, ground-fault circuit-interruption, surge suppression, any other similar functions, or any combination thereof, shall comply additionally with the requirements of the applicable UL standard that cover devices that provide those functions.

Exception: Where these other functions are not required for the application and not identified as part of markings, instructions, or packaging for the appliance, the additional component standard need not be applied.

5.4 A component not anticipated by the requirements of this end product standard, not specifically covered by the component standards noted in this Standard, and that involves a risk of fire, electric shock, or injury to persons, shall be additionally investigated in accordance with the applicable UL standard, and shall comply with 5.2 (b) – (e).

5.5 With regard to a component being additionally investigated, reference to construction and performance requirements in another UL end product standard is suitable where that standard anticipates normal and abnormal use conditions consistent with the application of this end product Standard.

6 Frame and Enclosure

6.1 The frame and enclosure of an appliance shall be sufficiently strong and rigid to resist the abuses likely to be encountered during intended service. The degree of resistance inherent in the appliance shall preclude total or partial collapse with the attendant reduction of spacings, loosening or displacement of parts, and other serious defects that alone or in combination constitute an increase in the risk of fire, electric shock, or injury.

6.2 An appliance shall be provided with an enclosure of material acceptable for the particular application, which shall house all electrical parts, except for a supply cord, and except for an open-wire-element unit as mentioned in 14.3 and 14.4, that may present a risk of fire, shock, or injury under any condition of use. If an appliance is intended for permanent connection to the power supply, the enclosure shall be provided with means for mounting in the intended manner and shall be furnished with any necessary fittings, such as brackets, hangers, or the like.

6.3 In the case of an appliance employing oil or grease in its normal cooking operation, special consideration shall be given to the need for an enclosure over the cooking compartment, and to the acceptability for the purpose of the material employed for such an enclosure.

6.4 If openings for ventilation are provided in the enclosure of an appliance or in an externally mounted component intended for permanent connection to the power supply, they shall be located so that they do not vent into concealed spaces of a building structure such as into false-ceiling space, into hollow spaces in the wall, or the like, when the appliance is installed as intended.

6.5 Among the factors that shall be considered when an enclosure is being judged for acceptability are its:

a) Physical strength;

b) Resistance to impact;

c) Moisture-absorptive properties;

d) Combustibility;

e) Resistance to corrosion; and

f) Resistance to distortion at temperatures to which the enclosure may be subjected under conditions of normal or abnormal use.

A nonmetallic enclosure, shall comply with the enclosure requirements in the Standard for Polymeric Materials – Use in Electrical Equipment Evaluations, UL 746C. A metal enclosure or enclosure part shall be tested in accordance with Metal Enclosure Impact Tests, Section 52, for resistance to impact.

Exception No. 1: When considering the abnormal and severe conditions tests of UL 746C, the appliance enclosure is to be subjected to the Abnormal Operation Tests of Section 55.

Exception No. 2: Thermoset materials need not be subjected to the relative thermal capability requirements of UL 746C. For a thermoset material operating at a temperature above its temperature rating, the 1000 hour aging test specified in 54.1, shall be conducted.

6.6 A thermoplastic enclosure of an appliance provided with overheating protection (Overheating Protection, Section 28) need not comply with the flammability requirements of UL 746C, if a material rated HB, and possessing 60 arcs minimum resistance to high current arc ignition, and 7 second minimum resistance to hot wire ignition is employed and all enclosure parts including ribs, grills, and the like are spaced a minimum 1/2 inch (12.7 mm) from uninsulated live parts.

6.7 Cast- and sheet-metal portions of enclosure shall be no thinner than indicated in Table 6.1, unless the enclosure is found to be acceptable when judged under considerations as mentioned in 6.5 and 6.8.

6.8 In addition to being considered with reference to the factors mentioned in 6.5, an enclosure of sheet metal shall be judged with respect to its size and shape, the thickness of metal, its acceptability for the particular application, and consideration of the intended use of the appliance.

6.9 Electrical parts of an appliance, except the radiating portion of an open-wire element of an automatic toaster, shall be so located or enclosed that protection against unintentional contact with uninsulated live parts is provided (see also 22.7). Insulated motor brush caps do not require additional enclosure.

Table 6.1
Minimum acceptable thicknesses of enclosure metal

Metal	At small, flat, unreinforced surfaces and at surfaces that are reinforced by curving, ribbing, and the like (or are otherwise of a shape and/or size) to provide equivalent physical strength		At surfaces to which a wiring system is to be connected in the field		At relatively large unreinforced flat surfaces	
	Inches	(mm)	Inches	(mm)	Inches	(mm)
Die-cast	3/64	(1.2)	–	–	5/64	(2.0)
Cast malleable iron	1/16	(1.6)	–	–	3/32	(2.4)
Other cast metal	3/32	(2.4)	–	–	1/8	(3.2)
Uncoated sheet steel	0.026[a]	(0.66[a])	0.032	(0.81)	0.026	(0.66)
Galvanized sheet steel	0.029[a]	(0.74[a])	0.034	(0.086)	0.029	(0.74)
Nonferrous sheet metal	0.036[a]	(0.91 [a])	0.045	(1.14)	0.036	(0.91)

[a] Thinner sheet metal may be employed if found to be acceptable when the enclosure is judged under considerations such those mentioned in 6.5.

6.10 The enclosure shall be constructed so that molten metal, burning insulation, flaming particles, or the like do not fall on the supporting surface.

6.11 The requirement in 6.10, necessitates that an enclosure bottom with an opening be provided with a barrier above or below the opening if the opening is:

a) Under a motor unless:

1) The structural parts of the motor or of the appliance provide the equivalent of such a barrier;

2) The protection provided with the motor is such that no burning insulation or molten material falls to the surface that supports the appliance when the motor is energized under each of the following fault conditions:

i) Open main winding;

ii) Open starting winding;

iii) Starting switch short-circuited; and

iv) For a permanent-split-capacitor motor the capacitor is short circuited. The short circuit is to be applied before the motor is energized and the rotor is to be blocked;

3) The motor is provided with a thermal motor protector (a protective device that is sensitive to both temperature and current) that prevents the temperature of the motor windings from becoming more than 125°C (257°F) under the maximum load under which the motor runs without causing the protector to cycle, and from becoming more than 150°C (302°F) with the rotor of the motor locked; or

4) The motor complies with the requirements for impedance-protected motors.

b) Under wiring, unless the wiring complies with the VW-1 flame test or the Vertical Flame Test described in the Reference Standard for Electrical Wires, Cables, and Flexible Cords, UL 1581.

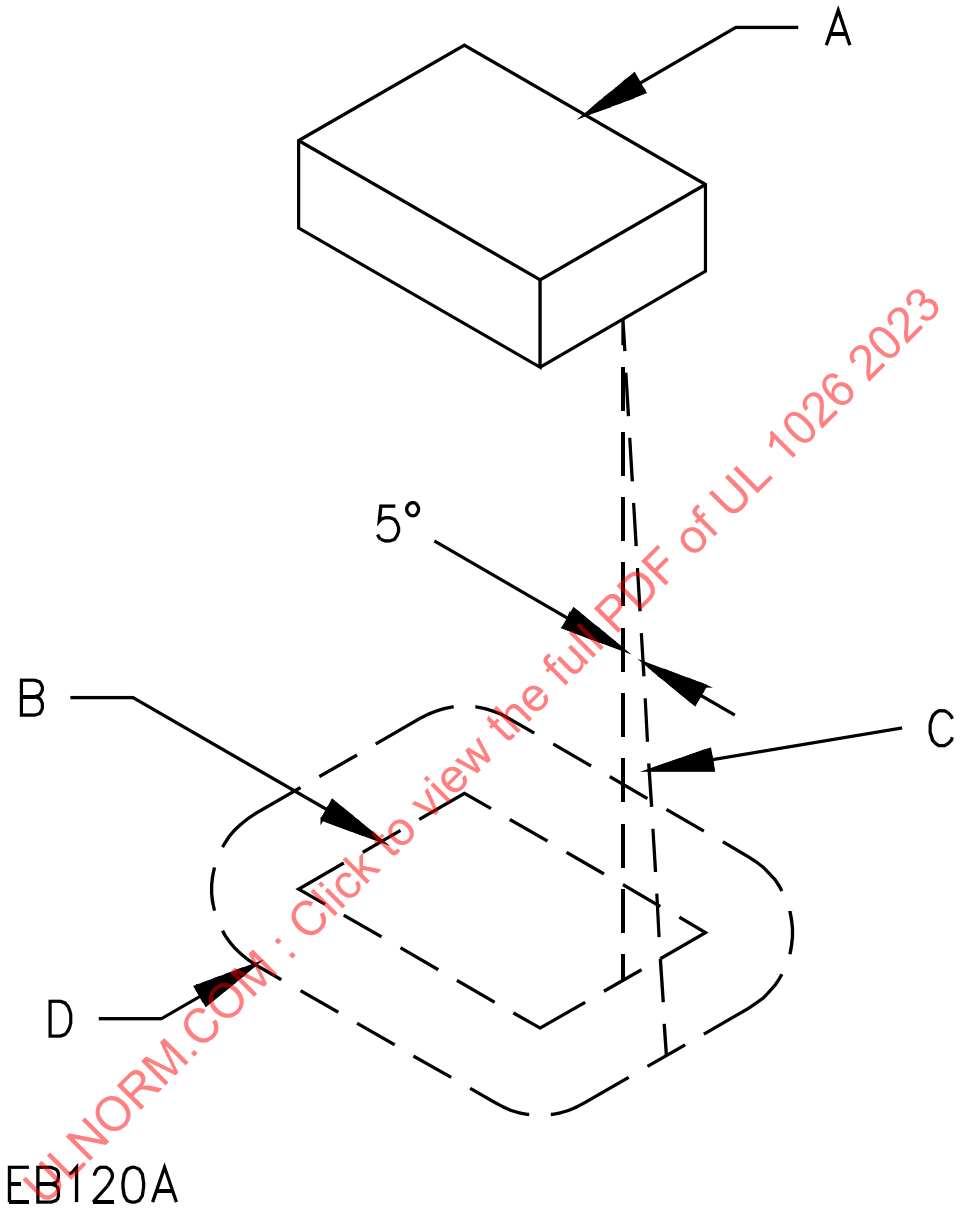
c) Under an unenclosed switch, transformer, relay, solenoid, and the like, unless it can be shown that malfunction of the component is not likely to result in a fire.

d) Under field- and factory-made splices and overload and overcurrent protective devices.

Exception: A barrier is not required if the opening is not within the area under the component requiring a barrier as illustrated by Line D in Figure 6.1.

Figure 6.1

Location and extent of barrier



A – Region to be shielded by barrier. This will consist of the entire component if it is not otherwise shielded and will consist of the unshielded portion of a component that is partially shielded by the component enclosure or equivalent.

B – Projection of outline of component on horizontal plane.

C – Inclined line that traces out minimum area of barrier. The line is always:

1) Tangent to the component;

2) 5 degrees from the vertical; and

3) So oriented that the area traced out on a horizontal plane is maximum.

D – Location (horizontal) and minimum area for barrier. The area is that included inside the line of intersection traced out by the inclined line C and the horizontal plane of the barrier.

6.12 The barrier mentioned in 6.11, shall be:

a) Of metal, ceramic, or a material that is acceptable as an enclosure in accordance with 6.5;

b) Horizontal; and

c) Located as indicated in Figure 6.1, and shall not have an area less than that described in Figure 6.1.

6.13 An opening in the enclosure that has a minor dimension of less than 1 inch (25.4 mm) is acceptable if a probe as illustrated in Figure 6.2, inserted through the opening, cannot be made to touch any uninsulated live part or film-coated wire that involves the risk of electric shock. The probe shall be applied in all possible articulated positions before, during, and after insertion.

6.14 An opening that has a minor dimension of 1 inch (25.4 mm) or more, in an enclosure, as illustrated in Figure 6.3, is acceptable if, within the enclosure, there is no uninsulated live part or film-coated wire less than, R distance from the inside edge of the perimeter of the opening and X distance from the plane of the opening. T equals the enclosure thickness, R equals X minus T, and X equals five times the diameter of the largest round rod that can be inserted through the opening but not less than 6-1/16 inches (154 mm). In evaluating an opening, any barrier located within the volume is to be ignored unless it intersects the boundaries of the volume in a continuous closed line.

6.15 If a marking draws attention of the user to a hole of any size in the enclosure for the adjustment of a thermostat or for a similar activity, it shall not be possible to damage insulation or contact uninsulated live parts through the hole with a 1/16-inch-diameter rod (1.6 mm).

6.16 During the examination of an appliance in connection with the requirements in 6.9 and 6.13 – 6.15, any part of the enclosure shall be disregarded (opened or removed) – that is, it shall not be assumed that the part in question affords protection against electric shock or injury to persons – if it either:

a) Must be opened or removed, with or without the use of tools, to perform manufacturer's recommended user servicing, maintenance, operating adjustments, attachment of accessories, or other instructions; or

b) Can be opened or removed without the use of tools. See 6.17.

Exception: A part that requires a tool for opening or removal to perform manufacturer's recommended user servicing, maintenance, operating adjustments, attachment of accessories, or other instructions shall remain in place if the appliance is marked in accordance with 67.9.

6.17 With reference to 6.16(b), to determine that a part of an enclosure requires the use of tools for opening or removal, the enclosure or any part of the enclosure that relies for mechanical securement on non-metallic parts, such as plastic tabs or snap-action inserts and posts, shall comply with Non-Metallic Enclosure-Fasteners Test, Section 53.

Exception: An enclosure or enclosure part secured entirely by metallic fasteners (such as screws or rivets) to other enclosure parts is not required to be subjected to this test.

Figure 6.2

Accessibility probe

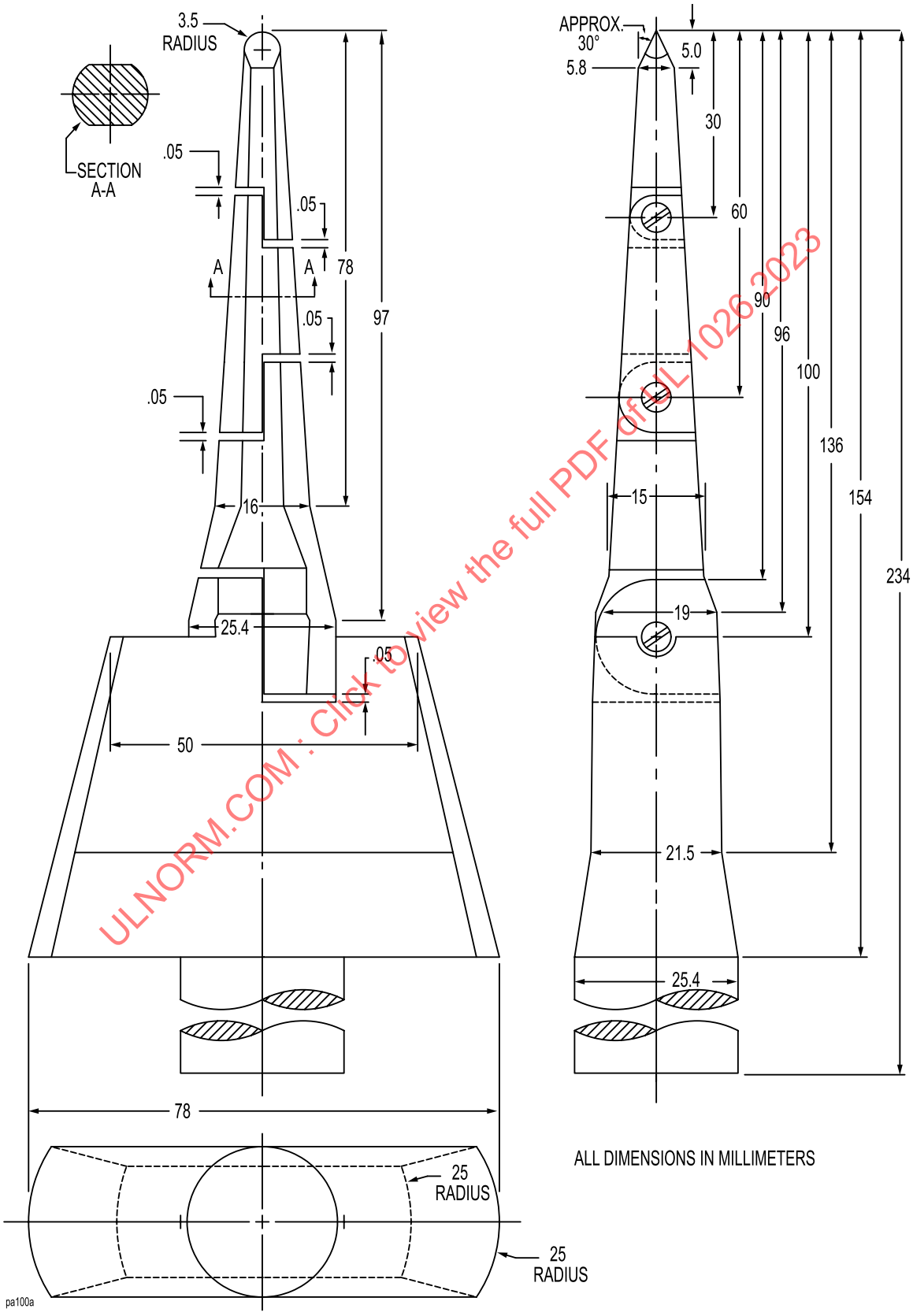
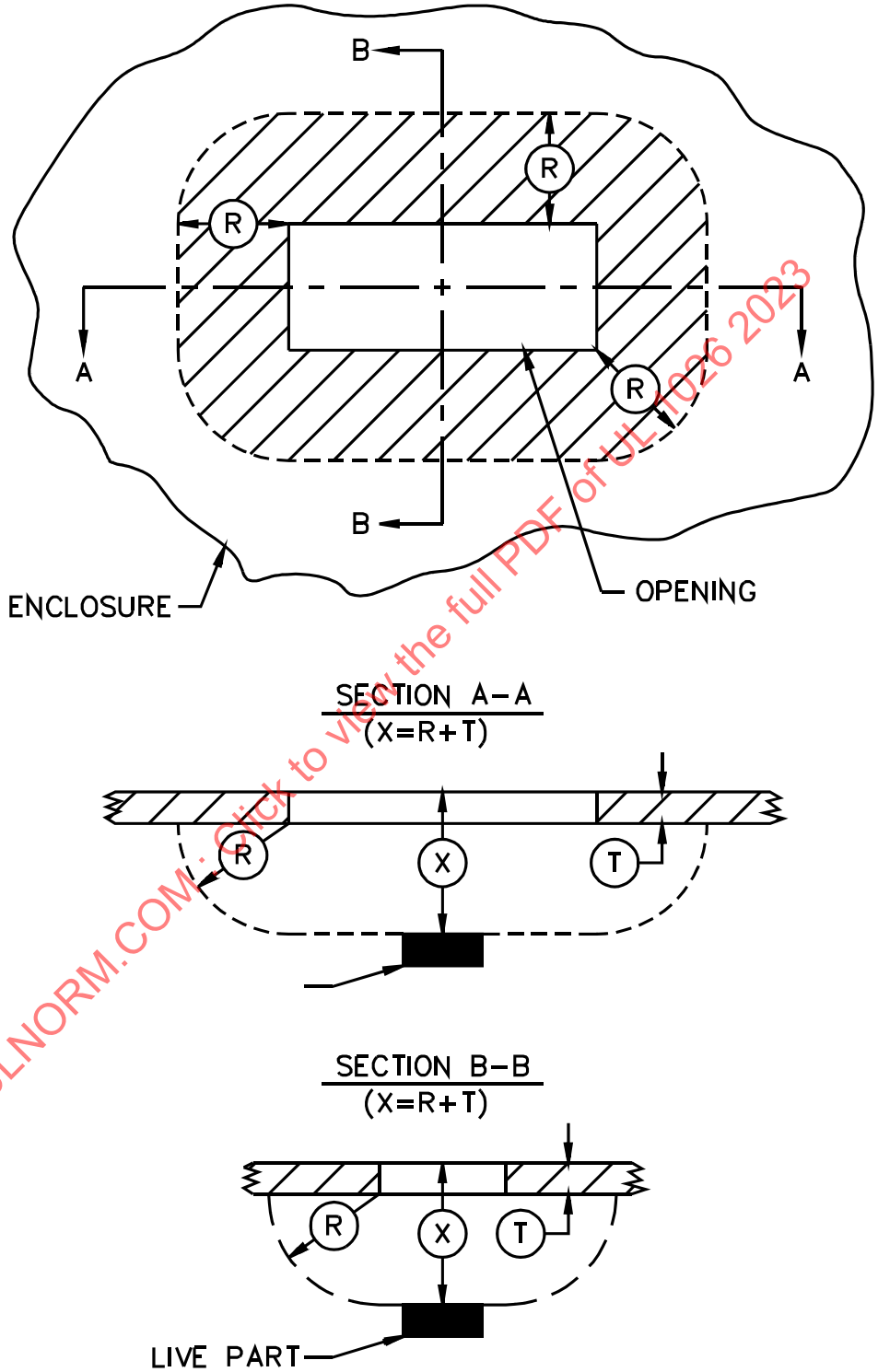


Figure 6.3

Opening in enclosure



Proportions exaggerated for clarity

6.18 Any moving parts, such as rotors of motors, chains, pulleys, belts, and gears, shall be enclosed or guarded to reduce the likelihood of injury to persons.

6.19 With reference to the requirements in 6.18, the degree of protection required of the enclosure depends upon the general construction and intended use of the appliance. The factors to be taken into consideration in judging the acceptability of exposed moving parts are:

a) The degree of enclosure;

b) The sharpness of the moving parts;

c) The likelihood of unintentional contact with the moving parts;

d) The speed of movement of those parts; and

e) The likelihood of fingers, arms, or clothing being drawn into the moving parts (such as at points where gears mesh, where belts travel onto a pulley or where moving parts close in a pinching or shearing action).

6.20 The door or cover of an enclosure shall be provided with means for holding it securely in place in the closed position.

6.21 The door or cover of an enclosure shall be hinged or otherwise attached in an equivalent manner if it gives access to any overload protective device whose functioning requires renewal, or if it is necessary to open the cover in connection with the operation of the protective device. Such a door or cover shall be provided with a latch or the equivalent, and shall be tight-fitting or shall overlap the surface of the enclosure around the opening.

6.22 A component of an appliance shall be readily accessible without the use of special tools (tools not available to other than service personnel) if it is intended to be manually operated or adjusted or periodically serviced.

6.23 The bulb and capillary tube of a thermostat shall be protected from mechanical damage if damage of the tube or bulb increases the risk of fire.

6.24 A part relied upon for compliance with this Standard, when fabricated from polymeric materials, shall have clear traceability as to composition, ingredients, and processing for the fabricated part to the extent that the composition, ingredients, or process impacts the compliance of the product. Fabricated parts complying with the Standard for Polymeric Materials – Fabricated Parts, UL 746D, meets this requirement.

7 Assembly

7.1 A switch, lampholder, attachment-plug receptacle, plug-type receptacle, or plug-type connector provided as part of an appliance shall be mounted securely and prevented from turning by means other than friction between surfaces.

7.2 A lock washer properly applied is acceptable as a means to prevent turning of a stem-mounted switch.

7.3 Uninsulated live parts shall be secured to the base or surface so that they are prevented from turning or shifting in position as a result of stresses, if such motion may result in a reduction of spacings below the minimum required in 29.1 – 29.4.

7.4 Friction between surfaces is not acceptable as a means to prevent shifting or turning of live parts, but a lock washer properly applied is acceptable.

8 Stability

8.1 The stability of an appliance shall be such that it cannot be readily overturned during intended use.

8.2 A household cooking or warming appliance that is easily carried or conveyed by hand (such as a slow cooker, food warmer, and the like) in which liquids are heated to a temperature greater than 115°F (46°C) shall be placed on a plane inclined at an angle of 15 degrees to the horizontal. All other appliances shall be placed on a plane inclined at an angle of 10 degrees to the horizontal. The appliance shall be positioned and loaded with whatever combination of separable components, liquid, or other media (material) that results in the maximum tendency to overturn under conditions of intended use. Appliances in which liquids are heated shall contain a minimum of 5 ounces (148 mL) of liquid. The appliance shall be prevented from sliding on the inclined surface. The appliance shall not overturn as a result of this test.

9 Corrosion Protection

9.1 Iron and steel parts shall be protected against corrosion by enameling, galvanizing, plating, or other equivalent means, if the malfunction of such unprotected parts increases the risk of fire or electric shock.

Exception: In certain equipment where the oxidation of steel is not likely to be accelerated due to the exposure of metal to air and moisture or other oxidizing influence – thickness of metal and temperature also being factors – surfaces of sheet steel within an enclosure may not be required to be protected against corrosion. Cast-iron parts are not required to be protected against corrosion. A sheath employed on a heating element operating in air and terminal parts attached directly to the heating element need not be protected against corrosion.

9.2 The aging characteristics of plating or other finish used in an appliance shall be such that deterioration of the finish does not result in unacceptable performance of the appliance.

10 Supply Connections

10.1 Permanently connected appliances

10.1.1 General

10.1.1.1 Except as noted in 10.1.1.2, an appliance intended for permanent connection to the power supply shall have provision for connection of one of the wiring systems that, in accordance with the National Electrical Code, NFPA 70, is acceptable for the appliance.

10.1.1.2 An appliance that is intended to be fastened in place or located in a dedicated space may be acceptable if provided with a short length of appropriate flexible cord and an attachment plug for supply connection. The investigation of such a feature shall include consideration of the utility of the appliance and the necessity of having it readily detachable from its source of supply by means of the attachment plug.

10.1.1.3 The location of a terminal box or compartment in which power-supply connections to a permanently connected appliance are to be made shall be such that these connections can be readily inspected after the appliance is installed as intended.

10.1.1.4 A terminal compartment intended for the connection of a supply raceway shall be attached to the appliance in a manner to prevent turning.

10.1.2 Field wiring terminals

10.1.2.1 An appliance intended for permanent connection to the power supply shall be provided with wiring terminals or leads for the connection of conductors having an ampacity of not less than 125 percent of the current rating of the appliance when the load is continuous (3 hours or more) and not less than the current rating of the appliance when the load will be intermittent.

10.1.2.2 For the purpose of these requirements, wiring terminals are considered to be terminals to which power-supply or control connections are made in the field when the appliance is installed.

10.1.2.3 A wiring terminal shall be provided with a soldering lug or with a pressure wire connector securely fastened in place (for example, firmly bolted or held by a screw), except that a wire-binding screw may be employed at a wiring terminal intended to accommodate a 10 AWG (5.3 mm^2) or smaller conductor if upturned lugs or the equivalent are provided to hold the wire in position.

10.1.2.4 A wiring terminal shall be prevented from turning or shifting in position by means other than friction between surfaces. This may be accomplished by two screws, rivets, square shoulders or mortises, a dowel pin, lug or offset, by a connecting strap or clip fitted into an adjacent part, or by some other equivalent method.

10.1.2.5 A wire-binding screw at a wiring terminal shall not be smaller than No. 10, except that a No. 8 screw may be used at a terminal intended for the connection of a 14 AWG (2.1 mm^2) or smaller conductor, and a No. 6 screw may be used for the connection of a 16 AWG (1.3 mm^2) or smaller control-circuit conductor.

10.1.2.6 A terminal plate tapped for a wire-binding screw shall be of metal not less than 0.050 inch (1.3 mm) thick, except that a plate not less than 0.030 inch (0.8 mm) thick is acceptable if the tapped threads provide equivalent mechanical strength. There shall be two or more full threads in the metal, which may be extruded if necessary to provide the threads.

10.1.2.7 Upturned lugs or a cupped washer shall be capable of retaining a conductor of the size mentioned in 10.1.2.1, but not smaller than 14 AWG (2.1 mm^2), under the head of the screw or the washer.

10.1.2.8 A wire-binding screw shall thread into metal.

10.1.2.9 An appliance intended for connection to a grounded power-supply conductor and employing a lampholder or element holder of the Edison-screw-shell type, a single-pole switch, or a single-pole automatic control shall have one terminal or lead identified for connection of the grounded conductor of the supply circuit. The terminal or lead so identified shall be the one that is connected to screw shells of lampholders or element holders, and with no connections to single-pole switches or single-pole automatic controls, except as noted in 24.2.

10.1.2.10 A terminal intended for the connection of a grounded circuit conductor shall be made of or plated with a metal substantially white in color and shall be readily distinguishable from the other terminals, or proper identification of that terminal shall be clearly shown in some other manner, such as on an attached wiring diagram. A lead intended for the connection of a grounded circuit conductor shall be finished to show a white or gray color and shall be readily distinguishable from the other leads.

10.1.2.11 Except as noted in 10.1.2.12, the free length of a lead inside an outlet box or wiring compartment shall be 6 inches (152 mm) or more if the lead is intended for field connection to an external circuit.

10.1.2.12 A lead may be less than 6 inches (152 mm) in length if it is evident that the use of a longer lead results in an increased risk of fire or electric shock.

10.1.2.13 The surface of an insulated lead intended solely for the connection of an equipment-grounding conductor shall be green with or without one or more yellow stripes, and no other lead shall be identified.

10.1.2.14 A wire-binding screw intended for connection of an equipment-grounding conductor shall have a green-colored head that is hexagonal, slotted, or both. A pressure terminal connector intended for connection of an equipment-grounding conductor shall be plainly identified by:

a) A marking, such as "G ", "GR ", "GND", "Ground ", "Grounding ", or the like;

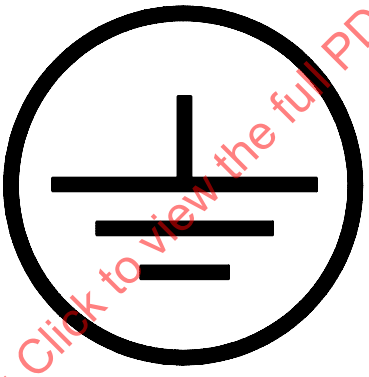
b) A wiring diagram provided on the appliance; or

c) The grounding symbol illustrated in Figure 10.1, on or adjacent to the terminal, or on a wiring diagram provided on the appliance.

The wire-binding screw or pressure terminal connector shall be located so that it does not require removal during normal servicing of the appliance.

Figure 10.1

Grounding Symbol



IEC417, Symbol 5019

10.1.2.15 A terminal solely for connection of an equipment-grounding conductor shall be capable of securing a conductor of the proper size for the particular appliance.

10.2 Cord-connected appliances

10.2.1 General

10.2.1.1 A cord-connected appliance (an appliance intended to be connected to the power-supply circuit by means of a flexible cord) shall be provided with a power-supply cord for connection to the supply circuit, or shall have male pin terminals that accommodate a detachable power-supply cord. The length of attached cord or separable cord shall be within the limit indicated in Table 10.1.

10.2.1.2 For a cord-connected appliance, the rating (both current and voltage) of the cord and the fittings, shall not be less than that of the appliance. The current rating of the attachment plug shall not be less than 125 percent of the current rating of the appliance when the load will constitute a continuous load (3 hours or more).

10.2.1.3 An attached flexible cord and the cord in a detachable power-supply cord that is provided with an appliance shall be of a type indicated in Table 10.2, or shall have such properties that it will be at least equally as serviceable for the particular application.

10.2.1.3.1 A cord set or power supply cord shall comply with the Standard for Cord Sets and Power-Supply Cords, UL 817.

10.2.1.3.2 Flexible cords and cables shall comply with the Standard for Flexible Cords and Cables, UL 62. Flexible cord and cables are considered to fulfill this requirement when preassembled in a cord set or power supply cord complying with the Standard for Cord Sets and Power-Supply Cords, UL 817.

10.2.1.4 An appliance with multiple supply connections, or an appliance and any of its accessories provided with independent supply connections, shall not exceed the rating of the intended branch circuit supply under simultaneous operation. See also 10.1.2.1. Any markings and instructions regarding using separate branch circuits shall be disregarded. Both sources of supply shall be considered to be on the same branch circuit.

Exception No. 1: Not applicable to an appliance with multiple sources of supply, or an appliance and each accessory with independent sources of supply, if provided with a single detachable power-supply cord acceptable for the purpose. No additional detachable power-supply cord shall be provided with either the appliance or the accessory.

Exception No. 2: Not applicable to accessories that comply with all requirements of this Standard independently. Tests are performed with the accessory placed on the supporting surface and not on the appliance.

Table 10.1
Lengths of cord connection

Type of appliance	Kind of cord connection	Minimum acceptable length[a]		Maximum acceptable length[a]	
		Feet	(Meters)	Feet	(Meters)
All counter top or table-top appliances, except slow cookers	Attached cord or detachable power supply cord	2.0	(0.6)	7.0	(2.1)
Slow cookers, for indoor use	Attached cord or detachable power supply cord	2.0	(0.6)	3.0	(0.9)
All appliances intended for outdoor use	Attached cord or detachable power supply cord	1.0	(0.3)	12.0	(3.6)
All appliances not covered above	Attached cord or detachable power supply cord	6.0	(1.8)	7.0	(2.1)

[a] Measured external to the appliance and including the fittings but excluding the blades on the attachment plug.