National Differences For

UL 60335-1

Safety of Household and Similar Appliances, Part 1: General Requirements

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National Differences For

UL 60335-1

Safety of Household and Similar Appliances, Part 1: General Requirements

Edition: 5

Edition Date: October 31, 2011

UL 60335-1 is an adoption of IEC 60335-1, Safety Standard for of Household and Similar Electrical Appliances, Part 1: General Requirements, (Edition 4.2, Issued by the IEC September 2006). Please note that the national difference document incorporates all of the U.S. national differences for UL 60335-1.

This document provides a single listing of the National Differences included in the UL adoption of the corresponding IEC standard.

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Preface

This document provides a single listing of the technical National Differences included in the UL adoption of the corresponding IEC standard.

In its IEC-based standards, UL uses the notations indicated below to identify national difference type, and these types are additionally noted in this document. The standard may not use all types of these deviations.

D1 - These are deviations which are based on basic safety principles and requirements, elimination of which would compromise safety for U.S. consumers and users of products.

D2 - These are deviations based on safety practices. These are deviations for IEC requirements that may be acceptable, but adopting the IEC requirements would require considerable retesting or redesign on the manufacturer's part.

DC - These are deviations based on the component standards and will not be deleted until a particular component standard is harmonized with the IEC component standard.

DE - These are deviations based on editorial comments or corrections.

DR - These are deviations based on the national regulatory requirements.

Each national difference contains a description of what the national difference entails. Typically one of the following words is used to explain how the text of the national difference is to be applied to the base IEC text:

Addition / Add - An addition entails adding a complete new numbered clause, subclause, table, figure, or annex. Addition is not meant to include adding select words to the base IEC text.

Deletion / Delete - A deletion entails complete deletion of an entire numbered clause, subclause, table, figure, or annex without any replacement text.

Modification / Modify - A modification is an altering of the existing base IEC text such as the addition, replacement or deletion of certain words or the replacement of an entire clause, subclause, table, figure, or annex of the base IEC text.

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National Differences

2DV.1 DR *Addition:*

This standard is applicable to household and similar electrical appliances and equipment which are designed to be installed in accordance with relevant installation codes: National Electrical Code (NEC) ANSI/NFPA 70; or CSA C22.1 Canadian Electrical Code (CEC) Part I; or Mexican Electrical Installations NOM-001-SEDE.

2DV.2 DC *Addition:*

Certain IEC component standard requirements are replaced by the relevant requirements of component standards, examples of which are listed in Annex DVA.

2DV.3 DR *Addition:*

In Mexico, international standards are informative. For the relevant applicable standard in each clause, see annex DVB.

2DV.4 DE *Addition:*

Add the following normative reference:

ISO 9773,
Plastics – Determination of burning behaviour of thin flexible vertical specimens in contact with a small-flame ignition source

3.4.1DV DR *Modification to replace the definition with the following:*

EXTRA-LOW VOLTAGE: Voltage that does not exceed 30 V rms or 42,4 V peak ac or dc.

3.4.2DV DR *Modification to replace the first paragraph with the following:*

SAFETY EXTRA-LOW VOLTAGE: Voltage not exceeding 30 V rms or 42,4 V peak or 30 V dc between conductors and between conductors and earth. Where an appliance is intended for use immersed in water, SAFETY EXTRA-LOW VOLTAGE is 15 V rms or 21,2 V peak or 15 V dc.

3.6.4DV DE *Modification to add the following note:*

NOTE 3 A LIMITED POWER SOURCE is not considered to be LIVE PARTS.

3.10DV D2 *Addition:*

LIMITED POWER SOURCE: A power source whose output voltage is SELV and the maximum output current and other parameters are limited in accordance with Table 3.10DV.1.

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Table 3.10DV.1 – Limits for inherently LIMITED POWER SOURCES

Output voltage[1] (U_{OC})		Output current[2] (I_{SC})	Apparent power[3] (S)
V a.c.	V d.c.	A	VA
≤ 20	≤ 20	≤ 8,0	≤ 5 × U_{OC}
20 < U_{OC} ≤ 30	20 < U_{OC} ≤ 30	≤ 8,0	≤ 100
–	30 < U_{OC} ≤ 42,4	≤ 150 /U_{OC}	≤ 100

[1] U_{OC}: Output voltage measured with all load circuits disconnected. Voltages are for substantially sinusoidal a.c. and ripple free d.c. For non-sinusoidal a.c. and d.c. with ripple greater than 10% of the peak, the peak voltage shall not exceed 42,4 V.

[2] I_{SC}: Maximum output current with any non-capacitive load, including a short circuit measured 5 s after application of the load if the limited power circuit is protected by an electronic circuit or a PTC and 60 s if protected by an impedance.

[3] S (VA): Maximum output VA with any load. Initial transients lasting less than 5 s are permitted to exceed the limit if the limited power circuit is protected by an electronic circuit or a PTC and 60 s if protected by an impedance.

3.11DV D2 *Addition:*

PROTECTIVE EARTHING CONDUCTOR: **A conductor connecting the main protective earthing terminal or lead in the equipment to the building earth, or in the power SUPPLY CORD, connecting a main protective earthing terminal in the equipment to an earth point in the building installation.**

3.12DV D2 *Addition:*

PROTECTIVE BONDING CONDUCTOR: **A conductor in the equipment, or a combination of conductive parts in the equipment, connecting a main protective earthing terminal to a part of the equipment that is required to be earthed.**

4DV DE *Modification of the first paragraph:*

Replace "cause no danger to persons or surroundings." with "reduce the risk of fire, electric shock, and/or injury to persons."

6.1DV.1 DR *Modification to add the following:*

Class 0I **appliances are not allowed.**

NOTE Class 0I may be allowed if specified in the applicable part 2.

6.1DV.2 DR *Modification to add the following:*

CLASS 0 **appliances shall not exceed 150 volts (rms) to ground.**

7.1DV.1 D2 *Modification to add the following note:*

NOTE 5 Where IP numbers are required to be marked, alternate markings may be used. Where the alternate markings are used, compliance with 6.2 is determined by the applicable part 2.

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7.1DV.2 DR *Modification to add the following paragraph and notes after the last paragraph:*

If the temperature rise of the insulation of the fixed wiring supplying an appliance for permanent connection to the supply mains exceeds the temperature rise specified in Table 3 during the test of Clause 11, the equipment shall be marked with the substance of the following:

"Use supply wires suitable for ____ °C"

NOTE 6 The temperature specified in the marking will be 75°C or 90°C except where another rating is permitted by national electrical installation code wiring rules.

NOTE 7 Additional information (e.g. AWG size) may be provided as part of the marking where appropriate to facilitate installation in accordance with the national electrical installation code wiring rules.

Compliance is checked by inspection and during the test of Clause 11.

7.8DV DR *Modification to add the following note:*

NOTE The marking of the letter N for the neutral conductor terminal is not required for Type Y attachments.

7.12.3DV DR *Deletion:*

Delete Clause 7.12.3.

7.14DV D2 *Modification to delete Note 2 and add the following to the end of the first paragraph of the test specification:*

The petroleum sprit to be used for the test is aliphatic solvent hexane.

7.17DV DR *Addition:*

Appliances requiring the usage of time delay overcurrent protective devices in accordance with 9DV.2 shall be so marked to indicate the use of time delay fuses only.

7.18DV DR *Addition:*

Appliances equipped with output terminals supplied from a LIMITED POWER SOURCE shall be marked to indicate Class 2 wiring.

8.1.1DV D1 *Modification to add the following after the third paragraph:*

The articulated probe of Figure 12DV shall be applied without appreciable force when the product is:

a) A hand-held product, or a hand-held part of a product, or

b) Accessible to children while the product is operating.

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9DV DR *Addition of 9DV.1 – 9DV.4:*

9DV.1 An appliance shall start and operate on a circuit protected by a non-time delay fuse having a current rating corresponding to the supply mains to which the appliance would normally be connected.

9DV.2 The use of time delay fuses is acceptable for stationary appliances marked as indicated in Clause 7.17DV.

9DV.3 Compliance is checked by the test specified in 9DV.4

9DV.4 The appliance shall be capable of starting 3 times at the conditions of Clause 11 at the rated voltage. The appliance shall start under conditions representing the beginning of normal operation and the beginning of the normal operating cycle. The performance is unacceptable if the fuse opens or an overload protector provided as part of the appliance operates.

11.8DV DC *Modification to revise Table 3 as specified in 11.8DV.1 – 11.8DV.6:*

11.8DV.1 Change temperature rise for "Points where the insulation of the wires can come into contact with parts of the terminal block or compartment for fixed wiring, for stationary appliances not provided with a supply cord" to 35K.

11.8DV.2 Change temperature rise for "Material used as insulation, other than that specified for wires and windings[e]: impregnated or varnished textile, paper or press-board" from 70 to 65.

11.8DV.3 Change temperature rise for "–polytetrafluoroethylene" from 265 to 180.

11.8DV.4 Replace footnote "c" with the following:

[c]This limit may be exceeded if the marking specified in 7.1DV.1 is supplied.

11.8DV.5 Add footnote k:

[k]Maximum temperature rise for RTV silicone rubber is 105°.

11.8DV.6 Add footnote l:

[l]The maximum temperature rise of parts in contact with oil should be considered in the applicable part 2.

13.1DV.1 D1 *Modification to replace the last paragraph with the following:*

Protective impedance and radio interference filters shall not be disconnected before carrying out the tests.

13.1DV.2 D1 *Modification to add the following note:*

NOTE At operating temperature includes warm-up and cool-down periods.

13.2DV.1 D1 *Modification to replace all the dashed items of the 6th paragraph with the following dashed items:*

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- for CLASS II APPLIANCES	0,25 mA
- for CLASS 0, CLASS 0I AND CLASS III APPLIANCES	0,5 mA
- for portable CLASS I APPLIANCES	0,75 mA
- for all cord connected STATIONARY APPLIANCES	0,75 mA
- for other STATIONARY CLASS I MOTOR-OPERATED APPLIANCES	3,5mA
- for other STATIONARY CLASS I HEATING APPLIANCES	0,75 mA or 0,75 mA per kW rated power input of the appliance with a maximum of 5 mA, whichever is higher

13.2DV.2 D2 *Modification to add the following 9th paragraph:*

For a cord connected product employing a sheathed type heating element, the leakage current may exceed 0,5 mA or 0,75 mA, as applicable, but shall not exceed 2,5 mA during a period of 5 minutes beginning when the 0,5 mA or 0,75 mA value was exceeded. At the end of the 5 minute period, the leakage current shall not exceed 0,5 mA or 0,75 mA, as applicable.

13.2DV.3 D1 *Modification to add the following 10th paragraph:*

For heating appliances incorporating a user adjustable heater control, the control shall be additionally adjusted, if necessary, so that it interrupts operation while the final measurements are taken.

13.2DV.4 D1 *Modification to add the following note after Note 4:*

NOTE 5 Higher leakage current values, not exceeding 3.5mA, may be allowed by the applicable part 2 standards for Class 1 appliances employing radio interference filters.

13.3DV.1 D1 *Modification to replace footnote "a" of Table 4 with the following:*

[a]Appliances rated more than 250 V are tested at 2 U + 1000 V.

13.3DV.2 D1 *Modification to add footnote "c" to Table 4 and add superscript "c" after "Basic insulation":*

[c]For wet and moist applications, special test voltages could be considered in the applicable part 2.

15.1.1DV DR *Modification to add the following note:*

NOTE For use in other than indoor ordinary locations, appliances may need to be evaluated in accordance with the alternative standards (Standard for Enclosures for Electrical Equipment, UL 50, Special Purpose Enclosures, CAN/CSA C22.2 No. 94, and NMX-J-529-ANCE).

16.1DV D1 *Modification to replace the 3rd paragraph with the following.*

Protective impedance and radio interference filters shall not be disconnected before carrying out the tests.

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