

UNDERWRITERS LABORATORIES INC. CERTIFICATION REQUIREMENT DECISION

This Certification Requirement Decision is prepared by UL LLC. It is normative for the applicable UL Product Certification Program(s); however, it is currently not part of the UL Standard(s) referenced below.

Product Category (CCN): DMKK

Standard Number: UL 1776

Standard Title: Standard for High Pressure Cleaning Machines

Edition Date: June 7, 2002

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Section / Paragraph Reference: 1.2A, Appendix B

Subject: Rechargeable Battery-Powered High Pressure Cleaning Machine Requirements

DECISION:

1 Scope

1.2A These requirements also cover portable rechargeable battery-powered high pressure cleaning machines for indoor or outdoor use with rechargeable non-user and user-replaceable batteries; see Appendix B.

The following new Appendix B is all new text. The text is not underlined for ease of reading.

APPENDIX B: Rechargeable Battery-Powered Machines (Normative)

B1 This Appendix covers machines that are powered by rechargeable batteries either solely or as an alternative or in conjunction with other sources.

B2 Rechargeable battery-powered machines that are covered under this Appendix shall comply with the requirements of UL 2595 with the conditions and specifications as required by Annex D of UL 2595 as indicated in Clauses B3 – B12 below.

B3 In reference to Indent A of Annex D of UL 2595, except as indicated elsewhere in UL 2595, the following requirements in this end-product standard do not apply or are amended as indicated below:

- a) The Clauses specified in Table B2 below do not apply.
- b) The Clauses referenced in (a) above apply to machines that are also powered from mains or other non-isolated sources to the extent that the requirement applies to address the risk of electric shock in the area of the machine containing such an electrical source.
- c) The portions of UL 1776 that require the outcome of the testing to comply with dielectric voltage withstand and leakage current test, and the wetting of any electrical components, shall instead consider increased risk of injury to persons, fire, or shock for those areas where the voltages are in excess of the hazardous voltage; see Section 8 of UL 2595. In the application of Section 8 of UL 2595, a part that is wetted during the testing of Clause 84 is considered an accessible part.
- d) The following warning marking is required:

“Disconnect Battery Pack Before Cleaning or Servicing”, or the equivalent.

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Exception: This warning is not applicable for batteries that cannot be disconnected from the appliance in normal use.

e) For 112.1.2, the electrical rating in volts may be applied. Also see Section 6.2 of UL 2595.

f) In the application of the requirements in 113.2.1, the marking only applies to products operating at hazardous voltages and shall be marked to indicate that such servicing or cleaning is to be done with the battery removed or disconnected, or the equivalent.

B4 With respect to Indent B of Annex D of UL 2595, users are considered to be wet during the use of these products.

B5 With respect to Indent C of Annex D of UL 2595, LT specification is required for batteries for appliances intended and marked to be Stored Indoors, and ELT -35°C specification for appliances intended for Outdoor Use.

B6 With respect to Indent D of Annex D of UL 2595, during the Normal Temperature test, appliances shall be operated with the attachment installed, and without the attachment, to determine which mode yields higher enclosure temperatures. Appliances capable of using several different attachments shall be fitted with the attachment that yields higher enclosure temperatures with the limited energy available in a battery.

B7 With respect to Indent E of Annex D of UL 2595, the temperature limits listed in Table 9.1 of UL 2595 shall be considered suitable.

B8 With respect to Indent F of Annex D of UL 2595, during the abnormal tests, the appliance shall be operated at no-load in accordance to Clause 11.1.3 of Appendix D of UL 2595.

B9 With respect to Indent G of Annex D of UL 2595, additional safety-critical functions (SCFs) are identified in Table B3 below.

B10 With respect to Indent H of Annex D of UL 2595, the impact surface is to be conducted on concrete.

B11 With respect to Indent I, the products specified in Table B.1 below shall have the switching arrangement as specified.

Table B1
Machine types - Switching arrangement requirements

Machine type	Requires compliance with switching arrangement specified in 18.5 of UL 2595
Type 2 Cleaning Machine	Yes
Type 3 Cleaning Machine	Yes
A floor- or ground-supported product in accordance with 56.12	Yes
Other machine employing exposed cutting device or high pressure nozzle whose inadvertent operation may result in a risk of serious injury or death.	Yes
Other machine:	No
a) Without exposed cutting device or high pressure nozzle, or	
b) Whose inadvertent operation does not result in a risk of serious injury or death	

B12 With respect to Indent J of Annex D of UL 2595, battery-operated cleaning machines that can also be operated or charged by mains or a non-isolated source as described in UL 2595, shall also meet the requirements of this end-product standard that apply to the risk of electric shock. For these types of cleaning machines, the exempted requirements specified in Clause B3 of this Appendix may be applicable.

Table B2 - Requirements not applicable for battery-powered cleaning machines
(See Clause B3(a))

Title	Clause
Scope	1.4
Glossary	2.3
Assembly	7.6
Materials, Fluid Confining Parts	8.2.2, 8.2.3
Nonmetallic materials	8.3.1 (covered by UL 2595, resistance to heat and fire)
Frame and Enclosure	11.3, 11.4, 11.5, 11.6, 11.6.1, 11.8 – 11.17
Accessibility of Uninsulated Live Parts and Film-Coated Wire	15
Supply Connections	16
Insulating Material	18
Internal Wiring	19.1 – 19.2, 19.5
Capacitors	20
Grounding	21
Heating Elements	22
Water Heaters	23
Lampholders	24
Motors	25
Overload or Thermal Protective Devices	26
Receptacles	27
Switches and Controls	28
Automatic Temperature Controls	29
Spacings	30
Mechanical Systems and Devices – Engine Driven Products	31 – 32
Mechanical Systems and Devices – Fuel Fired Products	33 – 46

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