



**CSA  
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**CSA C22.2 No. 60745-2-21:05**  
(IEC 60745-2-21:2002, IDT)  
National Standard of Canada  
(reaffirmed 2018)



**CSA C22.2 No. 60745-2-21:05**  
**Hand-held motor-operated electric tools — Safety —**  
**Part 2-21: Particular requirements for drain cleaners**  
(IEC 60745-2-21:2002, IDT)



REVISED DECEMBER 2018



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**Canadian Standards Association**  
**CAN/CSA-C22.2 No. 60745-2-21-05**  
**First Edition**  
**(IEC 60745-2-21:2002, IDT)**



**Underwriters Laboratories Inc.**  
**UL 60745-2-21**  
**First Edition**

**Hand-held motor-operated electric tools – Safety – Part 2-21:  
Particular requirements for drain cleaners**

MARCH 21, 2005

This national standard is an adoption of IEC 60745-2-21, First Edition (2002).



**ANSI/UL 60745-2-21-2005**

Approved  
by  
Standards Council  
of Canada



This is a preview of "CAN/CSA C22.2 No. 60...". [Click here to purchase the full version from the ANSI store.](#)

This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

### **Commitment for Amendments**

This standard is issued jointly by the Canadian Standards Association (CSA) and Underwriters Laboratories Inc. (UL). Comments or proposals for revisions on any part of the standard may be submitted to CSA or UL at any time. Revisions to this standard will be made only after processing according to the standards development procedures of CSA and UL. CSA and UL will issue revisions to this standard by means of a new edition or revised or additional pages bearing their date of issue.

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Revisions of this Standard will be made by issuing revised or additional pages bearing their date of issue. A UL Standard is current only if it incorporates the most recently adopted revisions, all of which are itemized on the transmittal notice that accompanies the latest set of revised requirements.

The most recent designation of ANSI/UL 60745-2-21 as an American National Standard (ANSI) occurred on March 18, 2005.

This ANSI/UL Standard for Safety, which consists of the Second edition, is under continuous maintenance, whereby each revision is ANSI approved upon publication. Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <http://csds.ul.com>.

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## Preface

This is the common CSA and UL standard for *Hand-held motor-operated electric tools — Safety — Part 2-21: Particular requirements for drain cleaners*. It is the first edition of CAN/CSA-C22.2 No. 60745-2-21 and the first edition of UL 60745-2-21. This standard is an adoption of IEC 60745-2-21, first edition.

This Standard CAN/CSA-C22.2 No. 60745-2-21/UL 60745-2-21, first edition, supersedes:

- a) the first edition of CAN/CSA-C22.2 No. 745-2-35/UL 745-2-35 published in 1995; and
- b) CAN/CSA-C22.2 No. 745-4-35/UL 745-4-35 published in 1995 (requirements for battery tools and battery packs are now incorporated into the requirements of CAN/CSA-C22.2 No. 60745-2-21, first edition, and UL 60745-2-21, first edition).

The standard number has been aligned to correspond with the equivalent IEC 60745-2-21 standard.

This common standard was prepared by the Canadian Standards Association (CSA) and Underwriters Laboratories Inc. (UL).

This standard was reviewed by the CSA Subcommittee on Safety of Hand-Held Motor-Operated Electric Tools, under the jurisdiction of the CSA Technical Committee on Consumer and Commercial Products and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the CSA Technical Committee.

This standard has been approved as a National Standard of Canada by the Standards Council of Canada.

This standard has been approved by the American National Standards Institute (ANSI) as an American National Standard.

Note: Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.

A UL standard is current only if it incorporates the most recently adopted revisions, all of which are itemized on the transmittal notice that accompanies the latest set of revised requirements.

Where reference is made to a specific number of samples to be tested, the specified number shall be considered a minimum quantity.

### Level of harmonization

This standard adopts the IEC text with no national differences. This standard is published as an identical standard for CSA and UL. An identical standard is a standard that is exactly the same in technical content except for national differences resulting from conflicts in codes and governmental regulations. Presentation is word for word except for editorial changes.

### Interpretations

The interpretation by the standards development organization of an identical or equivalent standard is based on the literal text to determine compliance with the standard in accordance with the procedural rules of the standards development organization. If more than one literal interpretation has been identified, a revision is to be proposed as soon as possible to each of the standards development organizations to more accurately reflect the intent.

### **CSA effective date**

The effective date for CSA International will be announced through *CSA Informs* or a CSA certification notice.

### **UL effective date**

As of June 1, 2010, all products Listed or Recognized by UL must comply with the requirements in this Standard.

Between March 26, 2004 and June 1, 2010, new product submittals to UL must be evaluated under all requirements in this Standard or, if requested in writing, evaluated under presently effective requirements only. The presently effective requirements are contained in the first edition of UL 745-2-35.

Alternate constructions, currently listed to UL 45, eighth edition, may be evaluated to the first edition of UL 745-2-35 as referenced in the June 7, 2002 bulletin.

A UL effective date is one established by Underwriters Laboratories Inc. and is not part of the ANSI approved standard.

## Foreword (CSA)

The Canadian Standards Association (CSA) develops standards under the name Canadian Standards Association, and provides certification and testing under the name CSA International. CSA International provides certification services for manufacturers who, under license from CSA, wish to use the appropriate registered CSA Marks on certain products of their manufacture to indicate conformity with CSA Standards.

CSA Certification for a number of products is provided in the interest of maintaining agreed-upon standards of quality, performance, interchangeability and/or safety, as appropriate. Where applicable, certification may form the basis for acceptance by inspection authorities responsible for enforcement of regulations. Where feasible, programs will be developed for additional products for which certification is desired by producers, consumers, or other interests. In performing its functions in accordance with its objectives, CSA does not assume or undertake to discharge any responsibility of the manufacturer or any other party. The opinions and findings of the Association represent its professional judgement given with due consideration to the necessary limitations of practical operation and state of the art at the time the Standard is processed.

Products in substantial accord with this Standard but which exhibit a minor difference or a new feature may be deemed to meet the Standard providing the feature or difference is found acceptable utilizing appropriate CSA International Operating Procedures. Products that comply with this Standard shall not be certified if they are found to have additional features which are inconsistent with the intent of this Standard. Products shall not be certifiable if they are discovered to contravene applicable laws or regulations.

Testing techniques, test procedures, and instrumentation frequently must be prescribed by CSA International in addition to the technical requirements contained in Standards of CSA. In addition to markings specified in the Standard, CSA International may require special cautions, markings, and instructions that are not specified by the Standard.

Some tests required by CSA Standards may be inherently hazardous. The Association neither assumes nor accepts any responsibility for any injury or damage that may occur during or as the result of tests, wherever performed, whether performed in whole or in part by the manufacturer or the Association, and whether or not any equipment, facility, or personnel for or in connection with the test is furnished by the manufacturer or the Association.

Manufacturers should note that, in the event of the failure of CSA International to resolve an issue arising from the interpretation of requirements, there is an appeal procedure: the complainant should submit the matter, in writing, to the Secretary of the Canadian Standards Association.

If this Standard is to be used in obtaining CSA Certification please remember, when making application for certification, to request all current Amendments, Bulletins, Notices, and Technical Information Letters that may be applicable and for which there may be a nominal charge. For such information or for further information concerning CSA Certification, please address your inquiry to Applications and Customer Service, CSA International, 178 Rexdale Boulevard, Toronto, Ontario, Canada M9W 1R3.

## Foreword (UL)

A. This Standard contains basic requirements for products covered by Underwriters Laboratories Inc. (UL) under its Follow-Up Service for this category within the limitations given below and in the Scope section of this Standard. These requirements are based upon sound engineering principles, research, records of tests and field experience, and an appreciation of the problems of manufacture, installation, and use derived from consultation with and information obtained from manufacturers, users, inspection authorities, and others having specialized experience. They are subject to revision as further experience and investigation may show is necessary or desirable.

B. The observance of the requirements of this Standard by a manufacturer is one of the conditions of the continued coverage of the manufacturer's product.

C. A product which complies with the text of this Standard will not necessarily be judged to comply with the Standard if, when examined and tested, it is found to have other features which impair the level of safety contemplated by these requirements.

D. A product employing materials or having forms of construction which conflict with specific requirements of the Standard cannot be judged to comply with the Standard. A product employing materials or having forms of construction not addressed by this Standard may be examined and tested according to the intent of the requirements and, if found to meet the intent of this Standard, may be judged to comply with the Standard.

E. UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. The opinions and findings of UL represent its professional judgment given with due consideration to the necessary limitations of practical operation and state of the art at the time the Standard is processed. UL shall not be responsible to anyone for the use of or reliance upon this Standard by anyone. UL shall not incur any obligation or liability for damages, including consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Standard.

F. Many tests required by the Standards of UL are inherently hazardous and adequate safeguards for personnel and property shall be employed in conducting such tests.

**NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD**

**CEI  
IEC**

**60745-2-21**

Première édition  
First edition  
2002-01

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**Outils électroportatifs à moteur –  
Sécurité –**

**Partie 2-21:  
Règles particulières pour les curettes**

**Hand-held motor-operated electric tools –  
Safety –**

**Part 2-21:  
Particular requirements for drain cleaners**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**HAND-HELD MOTOR-OPERATED ELECTRIC TOOLS –  
SAFETY –**

**Part 2-21: Particular requirements for drain cleaners**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
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This part of International Standard IEC 60745 has been prepared by subcommittee 61F: Safety of hand-held, motor-operated electric tools, of IEC technical committee 61: Safety of household and similar electrical appliances.

This bilingual version (2003-03) replaces the English version.

The text of this standard is based on the following documents:

FDIS	Report on voting
61F/483/FDIS	61F/504/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This part 2 is to be used in conjunction with the latest edition of IEC 60745-1, *Hand-held motor-operated electric tools – Safety – Part 1: General requirements*, and its amendments. It was established on the basis of the third edition (2001) of that standard.

NOTE 1 When “Part 1” is mentioned in this standard, it refers to IEC 60745-1.

This part 2 supplements or modifies the corresponding clauses of IEC 60745-1, so as to convert that publication into the IEC standard: Safety requirements for drain cleaners.

When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. When this standard states “addition”, “modification” or “replacement”, the relevant text in Part 1 is to be adapted accordingly.

NOTE 2 The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- additional annexes are lettered AA, BB, etc.

NOTE 3 In this standard, the following print types are used:

- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in smaller roman type.

Words in **bold** in the text are defined in Clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

The committee has decided that the contents of this publication will remain unchanged until 2007. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

## **HAND-HELD MOTOR-OPERATED ELECTRIC TOOLS – SAFETY –**

### **Part 2-21: Particular requirements for drain cleaners**

#### **1 Scope**

This clause of Part 1 is applicable, except as follows:

##### **1.1 Addition:**

This standard applies to **drain cleaners**.

#### **2 Normative references**

This clause of Part 1 is applicable.

#### **3 Definitions**

This clause of Part 1 is applicable, except as follows:

##### **3.101**

##### **drain cleaner**

tool for cleaning out blocked drains

#### **4 General requirements**

This clause of Part 1 is applicable.

#### **5 General conditions for the tests**

This clause of Part 1 is applicable.

#### **6 Void**

#### **7 Classification**

This clause of Part 1 is applicable.

#### **8 Marking and instructions**

This clause of Part 1 is applicable.