



# UL 60745-2-9

## STANDARD FOR SAFETY

Hand-Held Motor-Operated Electric  
Tools – Safety – Part 2-9: Particular  
Requirements for Tappers

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UL Standard for Safety for Hand-Held Motor-Operated Electric Tools – Safety – Part 2-9: Particular Requirements for Tappers, UL 60745-2-9

Second Edition, Dated March 26, 2004

### **Summary of Topics**

***The revisions of ANSI/UL 60745-2-9 dated April 30, 2019 is being issued to update the title page to reflect the most recent designation as a Reaffirmed American National Standard (ANS). No technical changes have been made.***

***As noted in the Commitment for Amendments statement located on the back side of the title page, UL and CSA are committed to updating this harmonized standard jointly. However, the revision pages dated April 30, 2019 will not be jointly issued by UL and CSA as these revision pages address UL ANSI approval dates only.***

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

The requirements are substantially in accordance with Proposal(s) on this subject dated February 22, 2019.

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## Hand-Held Motor-Operated Electric Tools – Safety – Part 2-9: Particular Requirements for Tappers

March 26, 2004

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This national standard is based on publication IEC 60745-2-9, Second Edition (2003).

This amendment is an adoption of IEC Amendment 1 (2008) to publication IEC 60745-2-9, Second Edition (2003).



ANSI/UL 60745-2-9-2009 (R2019)



## **Commitment for Amendments**

This standard is issued jointly by the Canadian Standards Association (operating as “CSA Group”) and Underwriters Laboratories Inc. (UL). Comments or proposals for revisions on any part of the standard may be submitted to CSA Group or UL at anytime. Revisions to this standard will be made only after processing according to the standards development procedures of CSA Group and UL. CSA Group 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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This ANSI/UL Standard for Safety consists of the Second Edition including revisions through April 30, 2019. The most recent designation of ANSI/UL 60745-2-9 as a Reaffirmed American National Standard (ANS) occurred on April 30, 2019. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page. The National Difference Page and IEC Foreword are also excluded from the ANSI approval of IEC-based standards.

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## Preface

This is the common CSA and UL standard for hand-held motor-operated electric tools. It is the second edition of CAN/CSA-C22.2 No. 60745-2-9 and the second edition of UL 60745-2-9. This standard is an adoption of IEC 60745-2-9, second edition.

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 Portable 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 and 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. This standard is published as an equivalent standard for CSA and UL. An equivalent standard is a standard that is substantially the same in technical content, except as follows: Technical national differences are allowed for codes and governmental regulations as well as those recognized as being in accordance with NAFTA Article 905, for example because of fundamental climatic, geographical, technological, or infrastructural factors, scientific justification, or the level of protection that the country considers appropriate. 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.

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## FOREWORD

### INTERNATIONAL ELECTROTECHNICAL COMMISSION

#### **HAND-HELD MOTOR-OPERATED ELECTRIC TOOLS – SAFETY – PART 2-9: PARTICULAR REQUIREMENTS FOR TAPPERS**

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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 nongovernmental organizations liaising with the IEC also participate in this preparation. 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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8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.

9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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 consolidated version of IEC 60745-2-9 consists of the second edition (2003) [documents 61F/465/FDIS and 61F/489/RVD] and its amendment 1 (2008) [documents 61F/464/FDIS and 61F/488/RVD] and its amendment 1 (2008) [documents 61F/674/CDV and 61F/724/RVC].

The technical content is therefore identical to the base edition and its amendment and has been prepared for user convenience.

It bears the edition number 2.1.

A vertical line in the margin shows where the base publication has been modified by amendment 1.

The French version of this standard has not been voted upon.

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 electric tappers.

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 the base publication and its amendments will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

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

## PART 2-9: PARTICULAR REQUIREMENTS FOR TAPPERS

### 1 Scope

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

*Addition:*

This standard applies to tappers.

### 2 Normative references

This clause of part 1 is applicable.

### 3 Terms and Definitions

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

*Additional definition:*

3.101 tapper: tool intended for cutting internal screw threads

### 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, except as follows:

8.1 *Addition:*

In addition the tool shall have the following marking:

– maximum diameter, in millimetres, of thread which can be cut.

The diameter shall refer to a unified ISO thread to be cut into steel having a tensile strength of 390 N/mm<sup>2</sup> and a thickness of twice the thread diameter, unless otherwise indicated on the tool.

## **9 Protection against access to live parts**

This clause of part 1 is applicable.

## **10 Starting**

This clause of part 1 is applicable.

## **11 Input and current**

This clause of part 1 is applicable.

## **12 Heating**

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

### **12.4 Replacement:**

*The tool is operated intermittently for 30 cycles or until temperatures stabilise, whichever is achieved first, each cycle comprising a period of continuous operation of 30 s and a rest period of 90 s with the tool switched "off", the tool being loaded during the periods of operation by means of a brake adjusted so as to attain rated input or rated current. The temperature rises are measured at the end of the "on" period. At the manufacturer's option the tool may be operated continuously until thermal stabilisation.*

## **13 Leakage current**

This clause of part 1 is applicable.

## **14 Moisture resistance**

This clause of part 1 is applicable.

## **15 Electric strength**

This clause of part 1 is applicable.

## **16 Overload protection of transformers and associated circuits**

This clause of part 1 is applicable.

## **17 Endurance**

This clause of part 1 is applicable.

## **18 Abnormal operation**

This clause of part 1 is applicable.

## **19 Mechanical hazards**

This clause of part 1 is applicable.

## **20 Mechanical strength**

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

20.5 This subclause is not applicable.

## **21 Construction**

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

21.32 This subclause is not applicable.

## **22 Internal wiring**

This clause of part 1 is applicable.

## **23 Components**

This clause of part 1 is applicable.

## **24 Supply connection and external flexible cords**

This clause of part 1 is applicable.

## **25 Terminals for external conductors**

This clause of part 1 is applicable.

## **26 Provision for earthing**

This clause of part 1 is applicable.

## **27 Screws and connections**

This clause of part 1 is applicable.

## **28 Creepage distances, clearances and distances through insulation**

This clause of part 1 is applicable.

## **29 Resistance to heat, fire and tracking**

This clause of part 1 is applicable.

## **30 Resistance to rusting**

This clause of part 1 is applicable.

## **31 Radiation, toxicity and similar hazards**

This clause of part 1 is applicable.

## Annexes

The annexes A through J of part 1 are applicable.

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