



**NSAI**  
Standards

Irish Standard  
I.S. EN 60745-2-1:2010

# Hand-held motor-operated electric tools - Safety -- Part 2-1: Particular requirements for drills and impact drills (IEC 60745-2-1:2003 (MOD) + A1:2008 (EQV))

## I.S. EN 60745-2-1:2010

*Incorporating amendments/corrigenda issued since publication:*

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**I.S. xxx:** Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

**S.R. xxx:** Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

**SWiFT xxx:** A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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<b>NSAI</b> 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	<b>Sales:</b> T +353 1 857 6730 F +353 1 857 6729 W standards.ie
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**EUROPEAN STANDARD**  
**NORME EUROPÉENNE**  
**EUROPÄISCHE NORM**

**EN 60745-2-1**

March 2010

ICS 25.140.20; 25.140.30

Supersedes EN 60745-2-1:2003 + A1:2009 + A11:2007 + A12:2009

English version

**Hand-held motor-operated electric tools -**  
**Safety -**  
**Part 2-1: Particular requirements for drills and impact drills**  
(IEC 60745-2-1:2003, modified + A1:2008)

Outils électroportatifs à moteurs -  
Sécurité -  
Partie 2-1: Règles particulières  
pour les perceuses  
(CEI 60745-2-1:2003, modifiée + A1:2008)

Handgeführte motorbetriebene  
Elektrowerkzeuge -  
Sicherheit -  
Teil 2-1: Besondere Anforderungen  
für Bohrmaschinen  
und Schlagbohrmaschinen  
(IEC 60745-2-1:2003, modifiziert +  
A1:2008)

This European Standard was approved by CENELEC on 2010-02-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of the International Standard IEC 60745-2-1:2003, prepared by SC 61F (transformed into IEC TC 116, Safety of hand-held motor-operated electric tools), together with the common modifications prepared by the Technical Committee CENELEC TC 61F (transformed into TC 116) was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 60745-2-1 on 2002-12-01.

A number of amendments to EN 60745-2-1 have since been voted on and published as amendments A11, A1 and A12.

A further draft amendment (FprAE) including improvements to the vibration test code and some editorial corrections, was submitted to the Unique Acceptance Procedure.

The combined texts were approved by CENELEC as a new edition of EN 60745-2-1 on 2010-02-01.

This European Standard supersedes EN 60745-2-1:2003 + A11:2007 + A1:2009 + A12:2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2011-02-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2013-02-01

This standard is divided into two parts:

Part 1: General requirements which are common to most hand-held electric motor-operated tools (for the purpose of this standard referred to simply as tools) which could come within the scope of this standard;

Part 2: Requirements for particular types of tools which either supplement or modify the requirements given in Part 1 to account for the particular hazards and characteristics of these specific tools.

This European Standard has been prepared under a mandate given to CEN and CENELEC by the European Commission and the European Free Trade Association and supports the essential health and safety requirements of the Machinery Directive 2006/42/EC. See Annex ZZ.

Compliance with the clauses of Part 1 together with this Part 2 provides one means of conforming with the essential health and safety requirements of the Directive concerned.

CEN/TC 255 is producing standards for non-electric drills and tappers (EN 792-3) and for non-electric rotary percussive tools (EN 792-5).

**Warning:** Other requirements and other EC Directives can be applicable to the products falling within the scope of this standard.

This standard follows the overall requirements of EN ISO 12100-1 and EN ISO 12100-2.

This Part 2-1 is to be used in conjunction with EN 60745-1:2009. When this standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

Subclauses and figures which are additional to those in Part 1 are numbered starting from 101.

Annexes, subclauses, tables and figures which are additional to those in IEC 60745-2-1 are prefixed "Z".

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

#### **Part 2-1: Particular requirements for drills and impact drills**

#### FOREWORD

- 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 non-governmental 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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International Standard IEC 60745-2-1 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 60745-2-1 consists of the second edition (2003) [documents 61F/451/FDIS and 61F/471/RVD] and its amendment 1 (2008) [documents 61F/731/FDIS and 61F/751/RVD].

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 2-1 is to be used in conjunction with the third edition of IEC 60745-1. When this standard states “addition”, “modification” or “replacement”, the relevant text in part 1 is to be adapted accordingly.

With amendment 1, this Part 2 is established on the basis of the fourth edition (2006) of IEC 60745-1, *Hand-held motor-operated electric tools – Safety – Part 1: General requirements*.

Main changes include editorial modifications to match with the fourth edition of IEC 60745-1 and the addition of a new safety warning to Clause 8: Marking and instructions.

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

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

IEC 60745 consists of the following parts, under the general title *Hand-held motor-operated electric tools – Safety*:

- Part 1: General requirements
- Part 2-1: Particular requirements for drills and impact drills
- Part 2-2: Particular requirements for screwdrivers and impact wrenches
- Part 2-3: Particular requirements for grinders, polishers and disk-type sanders
- Part 2-4: Particular requirements for sanders and polishers other than disk type
- Part 2-5: Particular requirements for circular saws and circular knives
- Part 2-6: Particular requirements for hammers
- Part 2-7: Particular requirements for spray guns for non-flammable liquids
- Part 2-8: Particular requirements for shears and nibblers
- Part 2-9: Particular requirements for tappers
- Part 2-11: Particular requirements for reciprocating saws (jig and sabre saws)
- Part 2-12: Particular requirements for concrete vibrators
- Part 2-13: Particular requirements for chain saws
- Part 2-14: Particular requirements for planers
- Part 2-15: Particular requirements for hedge trimmers and grass shears
- Part 2-16: Particular requirements for tackers
- Part 2-17: Particular requirements for routers and trimmers
- Part 2-18: Particular requirements for strapping tools
- Part 2-19: Particular requirements for jointers
- Part 2-20: Particular requirements for band saws
- Part 2-21: Particular requirements for drain cleaners

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 2-1: Particular requirements for drills and impact drills

#### 1 Scope

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

*Addition:*

This standard applies to drills and impact drills.

#### 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 definitions:*

##### 3.101

##### **drill**

tool specifically designed to bore holes in various materials such as metal, plastics, wood, etc.

##### 3.102

##### **impact drill**

drill specifically designed to bore holes in concrete, stone and other materials. It is similar, in appearance and construction, to a drill, but has a built-in percussion system which gives an axial percussion movement to rotating output spindle

It may have a device for rendering the percussion system inoperative, so that it may be used as a conventional drill.

#### 4 General requirements

This clause of Part 1 is applicable.

#### 5 General conditions for the tests

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

##### 5.5 *Addition:*

*For drills which have both a mechanical means of setting different ranges of speed and an electronic means of setting the speed within a given range, the mechanical device is adjusted to the lowest range possible and the electronic device is adjusted to the highest setting within the given range.*

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