

Svenska Elektriska Kommissionen, SEK

Fastställt	Utgåva	Sida	Ingår i
2006-10-23	2	1 (1+158)	SEK Område 61F

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Elektriska handverktyg – Säkerhet – Del 1: Allmänna fordringar

*Hand-held motor-operated electric tools –
Safety –
Part 1: General requirements*

Som svensk standard gäller europastandarden EN 60745-1:2006. Den svenska standarden innehåller den officiella engelska språkversionen av EN 60745-1:2006.

Nationellt förord

Europastandarden EN 60745-1:2006

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 60745-1, Fourth edition, 2006 - Hand-held motor-operated electric tools - Safety - Part 1: General requirements**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 60745-1, utg 1, 2003 och SS-EN 60745-1/A1, utgåva 1, 2003, gäller ej fr o m 2009-06-01.

Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

Svenska Elektriska Kommissionen, SEK, svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

SEK

Box 1284
164 29 Kista
Tel 08-444 14 00
www.sekom.se

English version

**Hand-held motor-operated electric tools -
Safety
Part 1: General requirements
(IEC 60745-1:2006, modified)**

Outils électroportatifs à moteur -
Sécurité
Partie 1: Règles générales
(CEI 60745-1:2006, modifiée)

Handgeführte motorbetriebene
Elektrowerkzeuge -
Sicherheit
Teil 1: Allgemeine Anforderungen
(IEC 60745-1:2006, modifiziert)

This European Standard was approved by CENELEC on 2006-06-01. 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, 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: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 61F/632/FDIS, future edition 4 of IEC 60745-1, prepared by SC 61F, Safety of hand-held motor-operated electric tools, of IEC TC 61, Safety of household and similar electrical appliances, was submitted to the IEC-CENELEC parallel vote.

A draft amendment, prepared by the Technical Committee CENELEC TC 61F, Safety of hand-held and transportable motor-operated electric tools, was submitted to the formal vote.

The combined texts were approved by CENELEC as EN 60745-1 on 2006-06-01.

This European Standard supersedes EN 60745-1:2003 + A1:2003.

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) 2007-06-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2009-06-01

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 covers essential health and safety requirements of the Machinery Directive.

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

A relevant Part 2 is one in which the type of the tool or an accessory which is to be used with the tool is within the scope of that Part 2.

When a relevant Part 2 does not exist, Part 1 can help to establish the requirements for the tool, but will not by itself provide a means of conforming to the relevant essential health and safety requirements of the Machinery Directive.

Other standards referred to in this European Standard are also listed in Clause 2, which gives the valid edition of those documents at the time of issue of this EN.

CEN Technical Committees have produced a range of standards dealing with a similar range of non-electrically powered tools. Where necessary normative references are made to these standards in the relevant Part 2.

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

This European 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.

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

NOTE In this standard the following print types are used:

- requirements proper; in roman type
- *test specifications: in italic type;*
- explanatory matter: in smaller roman type.

Endorsement notice

The text of the International Standard IEC 60745-1:2006 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

[illegible]

Add the following annexes:

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60061	Data-base	Lamp caps and holders together with gauges for the control of interchangeability and safety	EN 60061	Series
IEC 60065 (mod)	2001	Audio, video and similar electronic apparatus - Safety requirements	EN 60065 + corr. March	2002 2006
IEC 60068-2-75	1997	Environmental testing Part 2-75: Tests - Test Eh: Hammer tests	EN 60068-2-75	1997
IEC 60085	- ¹⁾	Electrical insulation - Thermal classification	EN 60085	2004 ²⁾
IEC 60112	2003	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112	2003
IEC 60127-3	- ¹⁾	Miniature fuses Part 3: Sub-miniature fuse-links	EN 60127-3 + corr. June	1996 ²⁾ 1996
IEC 60227 ³⁾ (mod)	Series	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V		
IEC 60245 ⁴⁾ (mod)	Series	Rubber insulated cables - Rated voltages up to and including 450/750 V		
IEC 60309 (mod)	Series	Plugs, socket-outlets and couplers for industrial purposes	EN 60309	Series
IEC 60320	Series	Appliance couplers for household and similar general purposes	EN 60320	Series
IEC 60335-1 (mod) A1	2001 2004	Household and similar electrical appliances - Safety Part 1: General requirements	EN 60335-1 A1 A11 A12 + corr. July	2002 2004 2004 2006 2006

¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

³⁾ The HD 21 series, which is related to, but not directly equivalent with the IEC 60227 series, applies instead.

⁴⁾ The HD 22 series, which is related to, but not directly equivalent with the IEC 60245 series, applies instead.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60384-14	- ¹⁾	Fixed capacitors for use in electronic equipment Part 14: Sectional specification - Fixed capacitors for electromagnetic interference suppression and connection to the supply mains	EN 60384-14	2005 ²⁾
IEC 60417	Data-base	Graphical symbols for use on equipment	-	-
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
A1	1999		+ corr. May A1	1993 2000
IEC 60695-2-11	- ¹⁾	Fire hazard testing Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products	EN 60695-2-11	2001 ²⁾
IEC 60695-11-5	2004	Fire hazard testing Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance	EN 60695-11-5	2005
IEC 60695-11-10	- ¹⁾	Fire hazard testing Part 11-10: Test flames - 50 W horizontal and vertical flame test methods	EN 60695-11-10	1999 ²⁾
IEC 60730-1 (mod)	1999	Automatic electrical controls for household and similar use	EN 60730-1	2000
A1 (mod)	2003	Part 1: General requirements	A1 A11 A12 A13 A14 A15	2004 2002 2003 2004 2005 200X ⁵⁾
IEC 60760	- ¹⁾	Flat, quick-connect terminations	-	-
IEC 60825-1	- ¹⁾	Safety of laser products Part 1: Equipment classification, requirements and user's guide	EN 60825-1 + corr. February + A11	1994 ²⁾ 1995 1996
IEC 60884	Series	Plugs and socket-outlets for household and similar purposes	-	-
IEC 60998-2-1 (mod)	- ¹⁾	Connecting devices for low-voltage circuits for household and similar purposes Part 2-1: Particular requirements for connecting devices as separate entities with screw-type clamping units	EN 60998-2-1	2004 ²⁾
IEC 60998-2-2 (mod)	- ¹⁾	Connecting devices for low-voltage circuits for household and similar purposes Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units	EN 60998-2-2	2004 ²⁾

⁵⁾ To be published.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60999-1	1999	Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm ² up to 35 mm ² (included)	EN 60999-1	2000
IEC 61058-1 (mod) + A1	2000 2001	Switches for appliances Part 1: General requirements	EN 61058-1	2002
IEC 61540 (mod) + A1 (mod)	1997 1998	Electrical accessories - Portable residual current devices without integral overcurrent protection for household and similar use (PRCDs)	HD 639 S1 + corr. July + A1	2002 2003 2003
IEC 61558-1	- ¹⁾	Safety of power transformers, power supplies, reactors and similar products Part 1: General requirements and tests	EN 61558-1 + corr. August	2005 ²⁾ 2006
-	-	Mechanical vibration - Declaration and verification of vibration emission values	EN 12096	1997
CR 1030-1	1995	Hand-arm vibration - Guidelines for vibration - hazards reduction Part 1: Engineering methods by design of machinery	-	-
ISO 1463	- ¹⁾	Metallic and oxide coatings - Measurement of coating thickness - Microscopical method	EN ISO 1463	2004 ²⁾
ISO 2178	- ¹⁾	Non-magnetic coatings on magnetic substrates - Measurement of coating thickness - Magnetic method	EN ISO 2178	1995 ²⁾
ISO 3744	1994	Acoustics - Determination of sound power levels of noise sources using sound pressure - Engineering method in an essentially free field over a reflecting plane	EN ISO 3744	1995
ISO 3864-2	- ¹⁾	Graphical symbols - Safety colours and safety signs Part 2: Design principles for product safety labels	-	-
ISO 4871	1996	Acoustics - Declaration and verification of noise emission values of machinery and equipment	EN ISO 4871	1996
ISO 5347	Series	Methods for the calibration of vibration and shock pick-ups	-	-
ISO 5349	Series	Mechanical vibration - Measurement and evaluation of human exposure to hand-transmitted vibration	EN ISO 5349	Series
ISO 7010	- ¹⁾	Graphical symbols - Safety signs in workplaces and public areas	-	-

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 7574-4	1985	Acoustics - Statistical methods for determining and verifying stated noise emission values of machinery and equipment Part 4: Methods for stated values from batches of machines	EN 27574-4	1988
ISO 8041	2005	Human response to vibration - Measuring instrumentation	EN ISO 8041	2005
ISO 9772	- ¹⁾	Cellular plastics - Determination of horizontal burning characteristics of small specimens subjected to a small flame	-	-
ISO 11203	1995	Acoustics - Noise emitted by machinery and equipment - Determination of emission sound pressure levels at a work station and at other specified positions from the sound power level	EN ISO 11203	1995
ISO/TR 11688-1	1995	Acoustics - Recommended practice for the design of low noise machinery and equipment Part 1: Planning	EN ISO 11688-1	1998
ISO/TR 11690-3	1997	Acoustics - Recommended practice for the design of low noise workplaces containing machinery Part 3: Sound propagation and noise prediction in workrooms	EN ISO 11690-3	1998
ISO 16063-1	1998	Methods for the calibration of vibration and shock transducers Part 1: Basic concepts	-	-
ISO 20643	2005	Mechanical vibration - Hand-held and hand-guided machinery Principles for evaluation of vibration emission	EN ISO 20643	2005

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HAND-HELD MOTOR-OPERATED ELECTRIC TOOLS – SAFETY –

Part 1: General requirements

1 Scope

This part of IEC 60745 deals with the safety of hand-held motor-operated or magnetically driven electric tools, the rated voltage of the tools being not more than 250 V for single-phase a.c. or d.c. tools, and 440 V for three-phase a.c. tools.

So far as is practicable, this standard deals with the common hazards presented by hand-held tools which are encountered by all persons in the normal use and reasonably foreseeable misuse of the tools.

Tools with an electric heating element are within the scope of this standard. They should also comply with relevant parts of IEC 60335.

Requirements for motors not isolated from the supply, and having basic insulation not designed for the rated voltage of the tools, are given in Annex B. Requirements for rechargeable battery-powered motor-operated or magnetically driven tools and the battery packs for such tools are given in Annex K. Those for such tools that are also operated and/or charged directly from the mains or a non-isolated source are given in Annex L.

Hand-held electric tools, hereinafter referred to as tools, which can be mounted on a support or working stand for use as fixed tools without any alteration of the tool itself, are within the scope of this standard. Requirements for such supports or working stands are given in Annex M.

This standard does not apply to:

- hand-held tools intended to be used in the presence of explosive atmosphere (dust, vapour or gas);
- hand-held tools used for preparing and processing food;
- hand-held tools for medical purposes (IEC 60601);
- heating tools which are covered by IEC 60335-2-45.

For hand-held tools intended to be used in vehicles or on board ships or aircraft, additional requirements may be necessary.

For hand-held tools intended to be used in tropical countries, special requirements may be necessary.

NOTE Attention is drawn to the fact that in many countries, additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour, the national water supply authorities, etc.