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Safety of hand-held battery-powered motor-operated tools and battery packs -- Part 2-6:
Particular requirements for hammers

Sicherheit für handgeführte akkubetriebene Elektrowerkzeuge und Akkublöcke -- Teil 2-
6: Besondere Anforderungen für Hämmer

Sécurité des outils électroportatifs alimentés par batteries et des blocs de batteries --
Partie 2-6: Règles particulières pour les marteaux

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Ta slovenski standard je istoveten z: EN 50260-2-6:2002

ICS:

25.140.20	Ò\^ dã } æ\ ábæ	Electric tools
29.220.20	Sã ã • \ ã ^ \ } áæ } ã ^ } ã àæ\ ã	Acid secondary cells and batteries

SIST EN 50260-2-6:2002**en**

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EUROPEAN STANDARD

EN 50260-2-6

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2002

ICS 25.140.20

English version

**Safety of hand-held battery-powered motor-operated tools
and battery packs
Part 2-6: Particular requirements for hammers**

Sécurité des outils électroportatifs
alimentés par batteries
et des blocs de batteries
Partie 2-6: Règles particulières
pour les marteaux

Sicherheit für handgeführte
akkubetriebene Elektrowerkzeuge
und Akkublöcke
Teil 2-6: Besondere Anforderungen
für Hämmer

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This European Standard was approved by CENELEC on 2001-01-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and 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

This European Standard has been prepared by the Technical Committee CENELEC TC 61F, Hand-held and transportable electric motor-operated tools.

A first draft was submitted to the Unique Acceptance Procedure in August 1996 with positive result. A second draft incorporating the editorial comments received during the UAP and the modifications necessary to incorporate the mechanical requirements which have been agreed for hand-held tools was submitted to the formal vote in September 2000 and was approved by CENELEC as EN 50260-2-6 on 2001-01-01.

The following dates were fixed:

- latest date by the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2003-03-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2005-03-01

This European Standard is divided into two parts:

Part 1: General requirements which are common to most hand-held battery powered motor operated tools (for the purpose of this European Standard referred to simply as tools).

Part 2: Requirements for particular types of tool 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 (M/083) given to CEN and CENELEC by the European Commission and the European Free Trade Association and supports the essential safety requirements of the Machinery Directive.

Compliance with the clauses of Part 1 of this European Standard together with this Part 2 provides one means of conforming with the specified essential requirements of the Directive concerned.

For noise and vibration, this European Standard covers the requirements for their measurement, the provision of information arising from these measurements and the provision of information about the personal protective equipment required. Specific requirements for the reduction of the risk arising from noise and vibration through design of the tool are not given as this reflects the current state of the art. As with any standard, technical progress will be kept under review so that any developments can be taken into account.

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

Hand-held motor-operated tools are covered by the EN 50144 series.

In order to be consistent with the EN 50144 series, the same order of clauses has been kept; the missing clauses are considered void.

CEN/TC 255 is producing standards for non-electric rotary percussive drills (EN 792-5) and non-rotary percussive power tools (EN 792-4).

This European Standard follows the overall requirements of EN 292-1 and EN 292-2.

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

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

- Requirements proper;
- *Test specifications;*
- Explanatory matter.

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1 Scope

This clause of Part 1 is applicable except as follows:

Addition:

This European Standard applies to hammers including rotary hammers.

This European Standard does not give requirements for the design of the tool to reduce the risks arising from noise and vibration.

2 Definitions

This clause of Part 1 is applicable.

3 General requirements

This clause of Part 1 is applicable.

4 General conditions for the tests

This clause of Part 1 is applicable.

5 Rating

This clause of Part 1 is applicable.

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6 Void

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7 Marking and information for use

This clause of Part 1 is applicable except as follows:

7.8.1 *Addition:*

If the hammer is fitted with a device which allows the connection of an external dust collection equipment, information shall be given in the instruction sheet as to how to connect such a device.

8 Protection against electric shock

This clause of Part 1 is applicable.

9 Void

10 Void

11 Void

12 Void

13 Environmental requirements

This clause of Part 1 is applicable except as follows:

13.1 Void

13.2.2 Addition:

Test requirements for hammers without rotary action are not covered by this European Standard.

13.2.2.4 Replacement of paragraph 2:

For hammers with rotary action, the speed setting shall be that recommended by the manufacturer for the drill bit size defined for the test for drilling into concrete.

13.2.2.5 Replacement of paragraphs 3, 4 and 5:

Rotary hammers are tested under load as shown in Figure 101 and in accordance with the conditions shown in Tables 101, 102 and 103. A fully charged battery shall be used for each test.

Table 101 - Test conditions for rotary hammers

Orientation	Drilling vertically down into a concrete block having the formulation specified in Table 102, with dimensions 500 mm x 500 mm x 200 mm and supported on resilient material
Tool bit/cutter/abrasive	Drill bit as recommended by the manufacturer for drilling into concrete and of the size defined in Table 103
Feed force	1,5 times the mass of the tool but not less than 80 N
Test cycle	Measurement starts when the drill has reached a depth equal to its diameter and stops when the depth has reached 80 % of its usable length or 180 mm, whichever is the shorter

Table 102 - Concrete formulation (per cubic metre)

Cement	Water	Aggregate	
		Particle size mm	Fraction %
330 kg	99 kg	1844 kg	
		0 to 2	38 ± 3
		0 to 8	50 ± 5
		0 to 16	80 ± 5
		0 to 32	100
Compressive strength after 28 days to be 40 N/mm ²			

Table 103 - Drill bit size

Drill bit size Mm	Mass of hammer kg					
	Up to 3,5	Over 3,5 up to 5	Over 5 up to 7	Over 7 up to 10	Over 10 up to 18	Over 18
Diameter	10	16	20	25	32	40
Usable length	100	100	200	200	250	250

13.3.4 Replacement of paragraph 2:

For hammers without rotary action, all speed setting devices shall be adjusted to the highest value.

For hammers with rotary action, the speed setting shall be that recommended by the manufacturer for the drill bit size defined for the test for drilling into concrete.

13.3.6 Replacement of paragraph 1:

Rotary hammers are tested under load as shown in Figure 101 and in accordance with the conditions shown in Tables 101, 102 and 103.

Hammers without rotary action are tested under load in the test fixture shown in Figure 102 and defined in Table 104, which is mounted on a concrete block having the dimensions and formulation specified in Tables 101 and 102.

The test fixture shown in Figure 102, which is made of steel, consists of a tube filled with hardened steel balls (ball bearings) on which a specially constructed test tool bit impacts. The parts of the fixture apart from the test tool shall be rigidly clamped to prevent additional vibration. The length of the test tool bit shall correspond to the shortest normal tool recommended by the manufacturer, the test tool bit rebound shall be restrained by means of a spring exerting just sufficient force to prevent "chattering".

Table 104 - Test fixture parameters for hammers without rotary action

Shank diameter d mm	Steel tube diameter D mm	Steel ball diameter mm	Ball column height H mm
d ≤ 23	40	4	100
d > 23	60	4	150

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When using the test fixture shown in Figure 102, the force to be applied to the tool in addition to its weight shall be sufficient to ensure stable operation. In general, this is achieved by a feed force, expressed in newtons, which is 30 times the mass of the tool in kilograms but not more than 200 N.

Paragraph 3 is not applicable.

14 Moisture resistance

This clause of Part 1 is applicable.

15 Insulation resistance and electric strength

This clause of Part 1 is applicable.

16 Void**17 Abnormal operation**

This clause of Part 1 is applicable.

18 Mechanical hazards

This clause of Part 1 is applicable.

19 Mechanical strength

This clause of Part 1 is applicable.

20 Construction

This clause of Part 1 is applicable.

21 Components

This clause of Part 1 is applicable.

22 Internal wiring

This clause of Part 1 is applicable.

23 Void**24 Void****25 Void**

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26 Screws and connections

This clause of Part 1 is applicable. [SIST EN 50260-2-6:2002
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27 Creepage distances, clearances and distances through insulation

This clause of Part 1 is applicable.

28 Resistance to heat, fire and tracking

This clause of Part 1 is applicable.

29 Resistance to rusting

This clause of Part 1 is applicable.