

# Hand-held motor-operated electric tools — Safety —

## Part 2-6: Particular requirements for hammers

The European Standard EN 60745-2-6:2003 has the status of a  
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### National foreword

This British Standard is the official English language version of EN 60745-2-6:2003. It was derived by CENELEC from IEC 60745-2-6:2003. It supersedes BS EN 50144-2-6:2001 and BS EN 50260-2-6:2002 which will be withdrawn on 2006-02-01.

The CENELEC common modifications have been implemented at the appropriate places in the text and are indicated by tags (e.g.  $\text{\textcircled{E}}$   $\text{\textcircled{I}}$ ).

The UK participation in its preparation was entrusted by Technical Committee CPL/61, Safety of household and similar electrical appliances, to Subcommittee CPL/61/6, Portable motor operated tools, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

#### Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled "International Standards Correspondence Index", or by using the "Search" facility of the *BSI Electronic Catalogue* or of British Standards Online.

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#### Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 22, an inside back cover and a back cover.

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**Hand-held motor-operated electric tools –  
Safety**  
**Part 2-6: Particular requirements for hammers**  
(IEC 60745-2-6:2003, modified)

Outils électroportatifs à moteur –  
Sécurité  
Partie 2-6: Règles particulières  
pour les marteaux  
(CEI 60745-2-6:2003, modifiée)

Handgeführte motorbetriebene  
Elektrowerkzeuge –  
Sicherheit  
Teil 2-6: Besondere Anforderungen  
für Hämmer  
(IEC 60745-2-6:2003, modifiziert)

This European Standard was approved by CENELEC on 2003-02-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

**CENELEC**

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

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**Foreword**

The text of the International Standard IEC 60745-2-6:2003, prepared by SC 61F, Safety of hand-held motor-operated electric tools, of IEC/TC 61, Safety of household and similar electrical appliances, together with the common modifications prepared by the Technical Committee CENELEC TC 61F, Safety of hand-held and transportable motor-operated electric tools, was submitted to the formal vote and was approved by CENELEC as EN 60745-2-6 on 2003-02-01.

This European Standard supersedes EN 50144-2-6:2000 + A1:2001 and EN 50260-2-6:2002.

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) 2004-02-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-02-01

Other standards referred to in this European standard are listed in Clause 2. Clause 2 lists the valid edition of those documents at the time of issue of this EN.

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.

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 rotary percussive drills (EN 792-5) and non-rotary percussive power tools (EN 792-4).

**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 292-1 and EN 292-2.

This Part 2-6 is to be used in conjunction with EN 60745-1:2003. 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.

Subclauses, tables and figures which are additional to those in IEC 60745-2-6 are prefixed "Z".

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

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

**Endorsement notice**

The text of the International Standard IEC 60745-2-6:2003 was approved by CENELEC as a European Standard with agreed common modifications.

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

### Part 2-6: Particular requirements for hammers

#### 1 Scope

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

##### 1.1 Addition:

This standard applies to hammers.

Tools covered by this standard include but are not limited to percussion and rotary hammers.

#### 2 Normative references

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

*Additional normative references:*

ENV 206:1990, *Concrete, performance, production, placing and compliance criteria* ☐

#### 3 Definitions

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

*Additional definitions:*

##### 3.101

##### **percussion hammer**

tool equipped with a built-in percussion system which is not influenced by the operator

##### 3.102

##### **rotary hammer**

tool equipped with a built-in percussion system which is not influenced by the operator and also has the capability of rotational motion

##### 3.103

##### **rotary hammer with "drill only mode"**

rotary hammer able to rotate only with the percussion system disengaged

##### ☐ 3.Z101

##### **concrete breakers and picks**

heavy percussion hammers with a single impact energy greater than 20 J for demolition work and for breaking up concrete, rock and brickwork

##### 3.Z102

##### **chiselling hammers**

light percussion hammers with a single impact energy less than or equal to 20 J for repair and installation work ☐

#### 4 General requirements

This clause of Part 1 is applicable.

#### 5 General conditions for the tests

This clause of Part 1 is applicable.

#### 6 ☐ Environmental requirements

This clause of Part 1 is applicable except as follows:

##### 6.1.2.2 Sound power level determination

*Modification:*

6.1.2.2.101 For concrete breakers and picks, the following applies:

The sound power level shall be measured according to EN ISO 3744, where the acoustic environment, instrumentation, quantities to be measured, quantities to be determined, and the measurement procedure are specified.

The sound power level shall be given as A-weighted sound power level in dB reference 1 pW. The A-weighted sound pressure levels, from which the sound power is to be determined, should be measured directly, and not calculated from frequency band data. Measurements shall be made in an essentially free field over a reflecting plane.

The sound power level shall be determined by using a hemispherical measurement surface according to Figure Z101. The location of the six microphone positions distributed on the surface of the hemisphere of radius  $r$  are listed in the form of Cartesian coordinates in Table Z101.

Table Z101 — Coordinates of the six microphone positions

Number of microphone	$x/r$	$y/r$	Mass of equipment < 10 kg Radius $r = 2$ m	Mass of equipment $\geq 10$ kg Radius $r = 4$ m
			$z$	$z$
1	0,7	0,7	0,75 m	1,5 m
2	- 0,7	0,7	0,75 m	1,5 m
3	- 0,7	- 0,7	0,75 m	1,5 m
4	0,7	- 0,7	0,75 m	1,5 m
5	- 0,27	0,65	0,71 $r$	0,71 $r$
6	0,27	- 0,65	0,71 $r$	0,71 $r$

The A-weighted sound power level,  $L_{WA}$ , shall be calculated, in accordance with EN ISO 3744, Subclause 8.6, as follows:

$$L_{WA} = \overline{L_{pA}} + 10 \lg \left( \frac{S}{S_0} \right), \text{ in dB} \quad (1)$$

with  $\overline{L_{pA}}$  determined from ☐

$$L_{p1A} = 10 \lg \left[ \frac{1}{6} \sum_{i=1}^6 10^{0,1L_{pA,i}} \right] - K_{1A} - K_{2A}$$

where

- $L_{p1A}$  is the A-weighted surface sound pressure level according to EN ISO 3744
- $L_{pA,i}$  A-weighted sound pressure level measured at the *i*-th microphone position, in decibels
- $K_{1A}$  Background noise correction, A-weighted
- $K_{2A}$  Environmental correction, A-weighted
- $S$  Area of the measurement surface, in  $m^2$
- $S_0 = 1 \text{ m}^2$

Concrete breakers and picks shall be measured on a reflecting surface of concrete or non-porous asphalt. For open test sites with a hard, flat ground surface, such as asphalt or concrete, and with no sound-reflecting objects within a distance from the source equal to three times the greatest distance from the source centre to the lower measurement points, it is assumed that the environmental correction is less than or equal to 0,5 dB and therefore negligible.

For the hemispherical measurement surface, the area  $S$  of the measurement surface is calculated as follows:

$$S = 2\pi r^2, \text{ in } m^2. \quad (2)$$

where  $r$  is the radius of the hemisphere as given in Table Z101.

**6.1.2.2.102** For chiselling hammers, 6.1.2.2 of Part 1 applies.

**6.1.2.2.103** For rotary hammers, 6.1.2.2 of Part 1 applies.

#### 6.1.2.4 Installation and mounting conditions of the power tools during noise tests

*Modification:*

**6.1.2.4.101** Concrete breakers and picks are fixed in vertical position to the test equipment described in 6.1.2.5.101.

**6.1.2.4.102** Chiselling hammers are held by the operator in vertical position using the test equipment described in 6.1.2.5.102.

**6.1.2.4.103** Rotary hammers are held by the operator for drilling vertically down in accordance with 6.1.2.5.103.

#### 6.1.2.5 Operating conditions

*Modification:*

**6.1.2.5.101** Concrete breakers and picks

The hammer shall be coupled during the test run to a tool embedded in a cube-shaped concrete block placed in a concrete pit, sunk into the ground.

The block shall be in the shape of a cube  $0,60 \text{ m} \pm 2 \text{ mm}$  long at the edge and as regular as possible; it shall be made of reinforced concrete and thoroughly vibrated in layers of up to  $0,20 \text{ m}$  to avoid excessive sedimentation.  $\text{C}$

$\text{E}$  The quality of the concrete shall correspond to C 50/60 of ENV 206.

The cube shall be reinforced by 8 mm-diameter steel rods without ties, each rod being independent of the other; the design concept is illustrated in Figure Z102.

The support tool shall be sealed into the block and shall consist of a rammer of no less than 178 mm or no more than 220 mm diameter and a tool chuck component identical to that normally used with the appliance being tested. Its upper end protruding above the screening slab shall be sufficiently long to enable the practical test to be carried out, but, as indicated in Figure Z103, it shall not exceed 100 mm.

Suitable treatment shall be carried out to integrate the two components. The tool shall be fixed in the block so that the bottom of the rammer is 0,30 m from the upper face of the block (see Figure Z102).

The block shall remain mechanically sound, particularly at the point where the support tool and the concrete meet. Before and after each test, it shall be established that the tool sealed in the concrete block is integrated with it.

*The cube shall be set in a pit cemented throughout, covered by a screening slab of at least  $100 \text{ kg/m}^2$ , as indicated in Figure Z103, so that the upper surface of the screening slab is flush with the ground. To avoid any parasitic noise, the block shall be insulated against the bottom and the sides of the pit by elastic blocks, the cut-off frequency of which shall not be more than half the striking rate of the appliance tested, expressed as strokes per second.*

The opening in the screening slab through which the tool chuck component passes shall be as small as possible and sealed by a flexible sound-proof joint.

All speed setting devices shall be adjusted to the highest value.

The hammer is tested under load, connected to the support tool. The feed force applied to the hammer by an appropriate fixture in addition to its weight shall be just sufficient to ensure stable operation.

#### 6.1.2.5.102 Chiselling hammers

All speed setting devices shall be adjusted to the highest value.

Chiselling hammers shall be tested under load applying the loading device shown in Figure Z104, which is mounted on a concrete block having the minimum dimensions specified in Table Z104.

The loading device shown in Figure Z104, 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 test tool bit rebound shall be restrained by means of a spring exerting just sufficient force to prevent "chattering".

In order to minimise the noise from the loading device, the loading device shall be enclosed in an acoustically insulating box, see Figure Z105, which shall have an insulation effect of at least 10 dB in each octave band of interest. The upper end of the test tool protruding above the acoustically insulating box shall be sufficiently long to enable the practical test to be carried out, but, as indicated in Figure Z105, it shall not exceed 100 mm.

*When using the loading device shown in Figure Z104, the force to be applied to the tool in addition to its weight shall be just sufficient to ensure stable operation.*

#### 6.1.2.5.103 Rotary hammers

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 in concrete.  $\text{C}$

Ⓒ Rotary hammers are tested under load as shown in Figure Z106 and in accordance with the conditions shown in Tables Z102, Z103 and Z104.

Table Z102 — Concrete formulation (per cubic metre)

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

Table Z103 — Drill bit size

Tool mass kg	≤ 3,5	> 3,5 ≤ 5	> 5 ≤ 7	> 7 ≤ 10	> 10 ≤ 18	> 18
Diameter of drill bit mm	10	16	20	25	32	40
Usable length of drill bit mm	100		200		250	

Table Z104 — Test conditions for rotary hammers

Orientation	Drilling vertically down into a concrete block having the formulation specified in Table Z102 and having the minimum dimensions 500 mm x 500 mm and 200 mm in height and supported on resilient material. The concrete block, its support and the tool shall be so oriented that the geometric centre of the tool is 1 m above the reflecting plane. The centre of the concrete block shall be located under the top microphone.
Tool bit	Drill bit as recommended by the manufacturer for drilling in concrete and of the size defined in Table Z103
Feed force	The feed force applied to the tool in addition to its weight shall be just sufficient to ensure stable operation
Test cycle	Measurement starts when the drill bit 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

#### 6.2.2.4 Operating conditions

Modification:

6.2.2.4.101 Percussion hammers without rotary action (concrete breakers and picks, chiselling hammers) Ⓒ

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

Hammers without rotary action are tested under load in the loading device shown in Figure Z104 and described in 6.1.2.5.102, which is mounted on a concrete block having the minimum dimensions specified in Table Z104.

When using the loading device shown in Figure Z104, the force to be applied to the tool in addition to its weight shall be just sufficient to ensure stable operation.

#### 6.2.2.4.102 Rotary hammers

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

Hammers with rotary action are tested under load as shown in Figure Z106 and in accordance with the conditions shown in Tables Z102, Z103 and Z104. Ⓒ

### 7 Classification

This clause of Part 1 is applicable.

### 8 Marking and instructions

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

#### 8.12.1 Addition:

- **Wear ear protectors.** *Exposure to noise can cause hearing loss.*
- **Use auxiliary handles supplied with the tool.** *Loss of control can cause personal injury.*

#### Ⓒ 8.12.2 a) Addition

- Z101) Information on the correct use of the dust collection system, if any
- Z102) Advice to wear a dust mask Ⓒ

Ⓒ

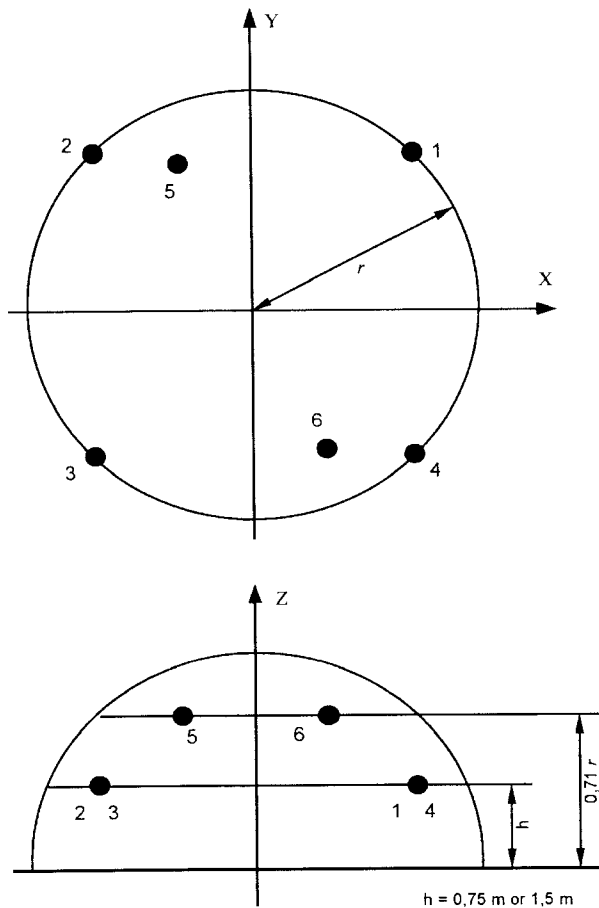


Figure Z101 – Positions of microphones for the hemispherical measurement surface Ⓒ

Ⓒ

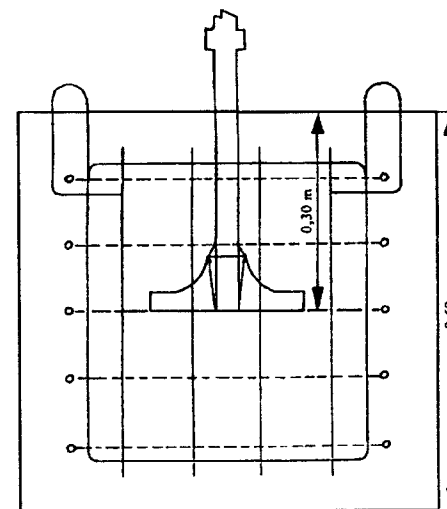
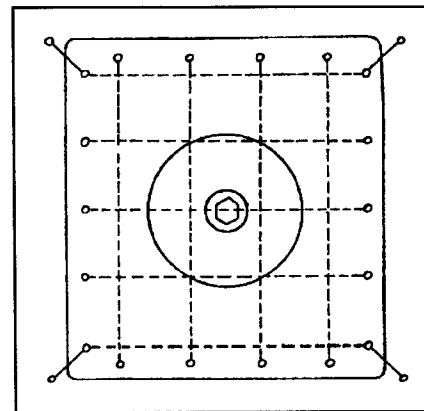


Figure Z102 – Test block Ⓒ

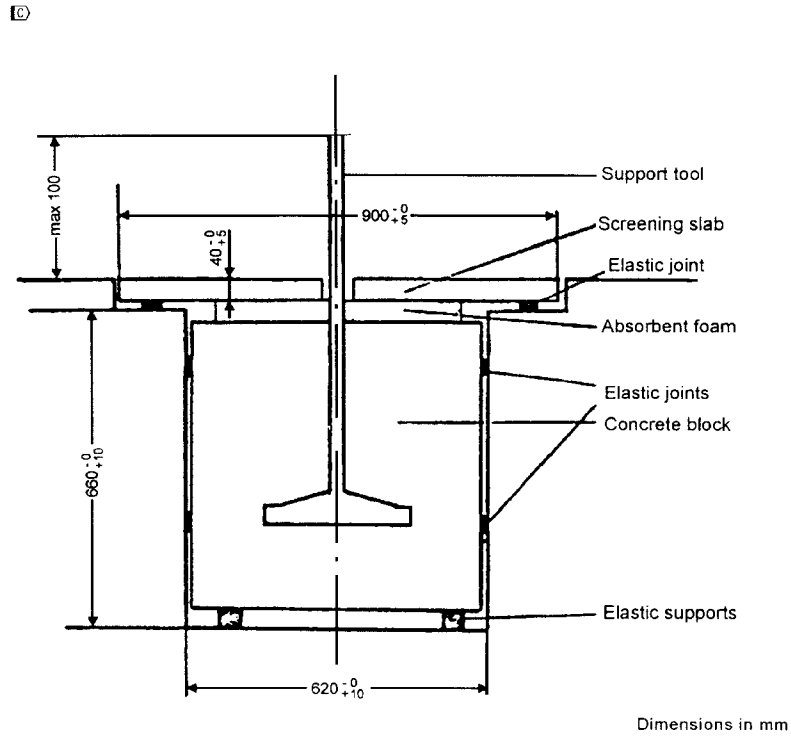
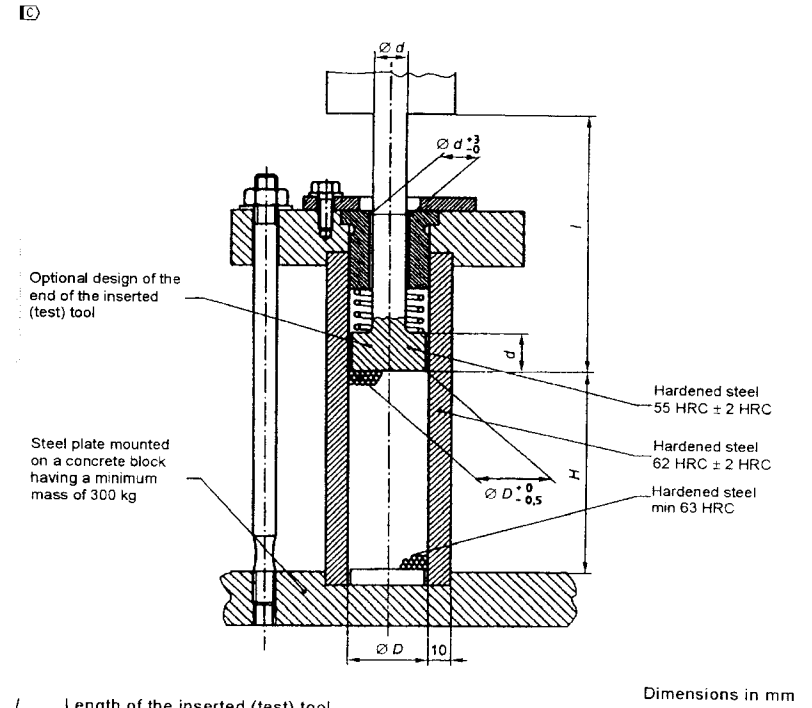


Figure Z103 - Testing device ©



*l* Length of the inserted (test) tool  
Loading device parameters

Dimension <i>d</i> mm	Steel tube diameter <i>D</i> mm	Steel ball diameter mm	Ball column height <i>H</i> mm
≤ 23	40	4	100
> 23	60	4	150

Figure Z104 - Loading device for percussion hammers ©

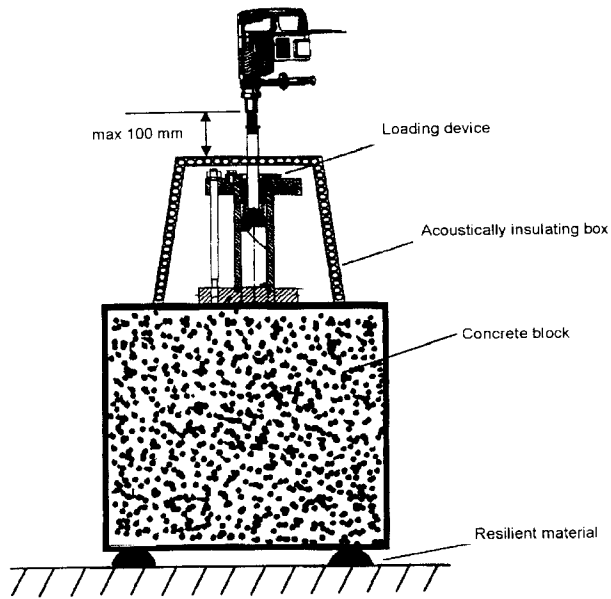


Figure Z105 - Noise measurement of chiselling hammers

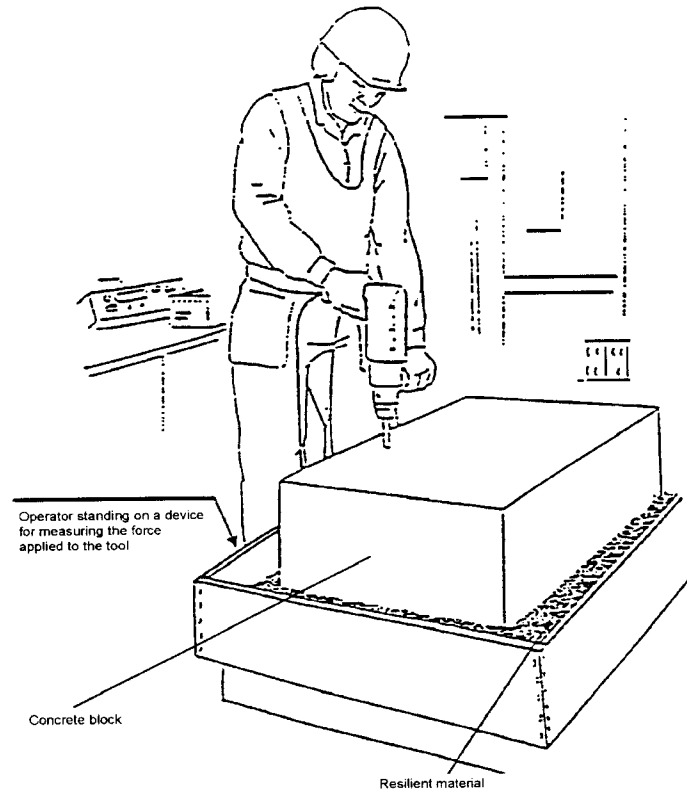


Figure Z106 — Application of load



## 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 until the temperature stabilises or for 30 cycles, whichever is achieved first, each cycle comprising a period of operation of 30 s and a rest period of 90 s with the tool switched off. During the periods of operation the tool is loaded by means of a brake adjusted so as to attain rated input or rated current, the hammer mechanism being disengaged or removed. At the manufacturer's option, the tool may also be operated continuously until thermal stabilisation. The temperature-rise limit specified for the external enclosure does not apply to the enclosure of the hammer mechanism.*

## 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, except as follows:

### 17.2 Replacement:

*Rotary hammers with "drill only mode" are operated at no-load with the impact mechanism disengaged for 12 h at a voltage equal to 1,1 times the rated voltage, and then for 12 h at a voltage equal to 0,9 times rated voltage.*

*Each cycle of operation comprises an "on" period of 100 s and an "off" period of 20 s, the "off" periods being included in the specified operating time.*

*During the test, the tool is placed in three different positions, the operating time, at each voltage, being approximately 4 h for each position.*

NOTE The change of position is made to prevent abnormal accumulation of carbon dust in any particular place. Examples for the three positions are horizontal, vertically up and vertically down.

*All hammers, including hammers with drill only mode, are mounted vertically in a test apparatus as shown in Figure 103 and are operated at rated voltage or at the mean value of the rated voltage range, for four periods of 6 h each, the interval between these periods being at least 30 min.*

*During these tests, hammers are operated intermittently, each cycle comprising a period of operation of 30 s and a rest period of 90 s during which the tool remains switched off.*

*During the tests, an axial force to ensure steady operation of the impact mechanism is applied to the hammer through a resilient medium.*

*If the temperature rise of any part of the tool exceeds the temperature rise determined during the test of 12.1, forced cooling or rest periods are applied, the rest periods being excluded from the specified operating time.*

*During these tests, overload protection devices shall not operate.*

*The tool may be switched on and off by means of a switch other than that incorporated in the tool.*

*During these tests, replacement of the carbon brushes is allowed, and the tool is oiled and greased as in normal use.*

*If the impact mechanism fails mechanically during the test without causing an accessible part to become live it may be replaced by a new one.*

## 18 Abnormal operation

This clause of Part 1 is applicable.

## 19 Mechanical hazards

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

*Additional subclauses:*

**19.101** Chuck keys shall be so designed that they drop easily out of position when released.

This requirement does not exclude the provision of clips for holding the key in place when not in use; metal clips fixed to the flexible cable or cord are not allowed.

Compliance is checked by inspection and manual test.

The key is inserted in the chuck and, without tightening, the tool is turned such that the key is facing down. The key shall fall out.

**19.102** The force on the hand due to the static stalling torque shall not be excessive.

Compliance is checked by the following test

Static stalling torque or slip torque of a clutch is measured on the locked output spindle of the tool in the cold condition ( $M_{sl}$ ).

The tool is connected to rated voltage. The mechanical gears are adjusted to the lowest speed. Electronic regulators are adjusted to their maximum speed setting. The tool switch is to be in the full "on" position. The mean value of the torque measured shall not exceed the relevant maximum value ( $M_{Rmax}$ ) in Figure 101 and Figure 102.

## 20 Mechanical strength

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

### 20.3 Replacement:

Hammers exceeding 10 kg are subjected to three impacts that result from the tool being tipped over to strike a concrete surface. The tool is tipped with the longest accessory recommended by the manufacturer except when the recommended accessory is longer than 1 m. In this case, the tools are tested with a 1 m accessory.

## 21 Construction

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

### 21.18 Addition:

A switch lock-on device, if any, shall be located outside the grasping area, or so designed that it is not likely to be unintentionally locked on by the user's hand during intended left- or right-handed operation.

Compliance is checked by inspection or by a manual test.

For a switch with a lock-on button in a recess within the grasping area, the lock-on button shall not be actuated by a straight-edged utensil when the utensil is made to pass back and forth across the device in any direction. The straight-edged utensil may be of any convenient length sufficient to bridge the surface of the lock-on device and any surface adjacent to the lock-on device.

## 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, except as follows:

### 24.4 Modification:

Instead of the first paragraph, the following applies:

Supply cords shall be not lighter than heavy polychloroprene sheathed flexible cable (60245 IEC 66) or equivalent.

## 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.

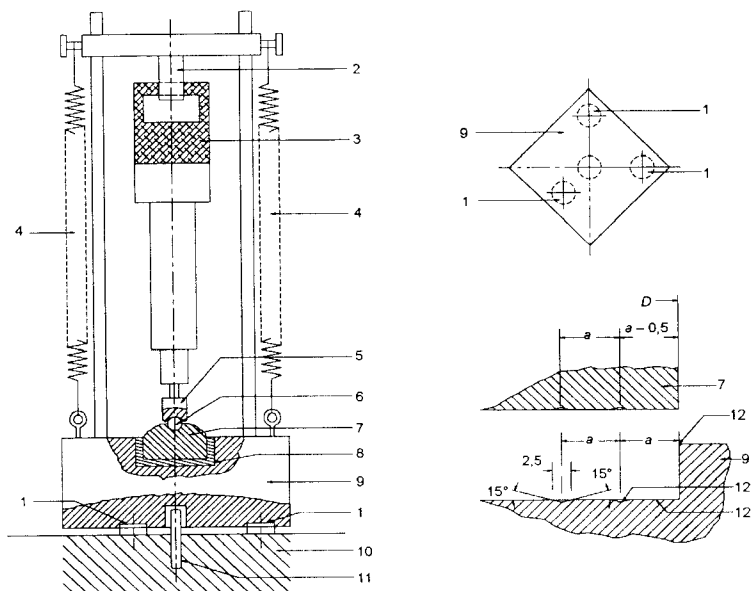
## 30 Resistance to rusting

This clause of Part 1 is applicable.

## 31 Radiation, toxicity and similar hazards

This clause of Part 1 is applicable.





- Key**
- 1 Synthetic rubber disk or material having similar properties, shore hardness 70° to 80°, thickness 10 mm, diameter 75 mm.
  - 2 Polyamide-lined yoke, adapted to suit the grip of the tool.
  - 3 Sample.
  - 4 Mechanical or pneumatical springs applying a force to the sample.
  - 5 Punch.
  - 6 Hardened steel ball with diameter 38 mm.
  - 7 Hardened steel transfer plate of mass  $M_2$  and diameter  $D$ , grooved on underside as shown in detail.
  - 8 Synthetic rubber disk or material having similar properties, shore hardness 70° to 80°, thickness 6 mm to 7 mm and fitting closely in cavity.
  - 9 Steel base at mass  $M_1$ , with circular cavity having a diameter 1 mm greater than that of the transfer plate. Bottom of cavity grooved, as shown in detail.
  - 10 Concrete block supported by compacted ballast of earth.
  - 11 Steel peg to prevent any horizontal movement.
  - 12 Burnished surface and edge.

Dimensions in millimetres

If necessary for the steady operation of the impact mechanism, a suitable punch and shank may be used. The total mass of the punch and the shank shall not exceed that specified in the following table.

Rated input of tool W	D Diameter of transfer plate mm	a Distance between centres of grooves mm	$M_1$ Mass of steel base kg	$M_2$ Mass of transfer plate kg	$M_3$ Total mass of punch and shank kg
Up to and including 700	100	6,5	90	1,0	0,7
Over 700 up to and including 1 200	140	5,75	180	2,25	1,4
Over 1 200 up to and including 1 800	180	5,0	270	3,8	2,3
Over 1 800 up to and including 2 500	220	4,5	360	6,0	3,4

Figure 103 – Testing apparatus for hammers

## Annexes

The annexes of Part 1 are applicable except as follows.

### Annex K (normative)

#### Battery tools and battery packs

##### K.1.1 Addition:

All clauses of this Part 2 apply unless otherwise specified in this annex.

### Annex L (normative)

#### Battery tools and battery packs provided with mains connection or non-isolated sources

##### L.1.1 Addition:

All clauses of this Part 2 apply unless otherwise specified in this annex.

## Bibliography

The bibliography of Part 1 is applicable.

BS EN  
60745-2-6:2003

## BSI — British Standards Institution

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