



# SLOVENSKI STANDARD

## SIST EN 50632-2-6:2015

01-december-2015

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### Elektromotorna orodja - Postopek meritve prahu - 2-6. del: Posebne zahteve za kladiva

Electric motor-operated tools - dust measurement procedure - Part 2-6: Particular requirements for hammers

Motorbetriebene Elektrowerkzeuge - Staubmessverfahren - Teil 2-6: Besondere Anforderungen für Hämmer

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EUROPEAN STANDARD

**EN 50632-2-6**

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2015

ICS 25.140.20

English Version

**Electric motor-operated tools - dust measurement procedure -  
Part 2-6: Particular requirements for hammers**

To be completed

Motorbetriebene Elektrowerkzeuge - Staubmessverfahren -  
Teil 2-6: Besondere Anforderungen für Hämmer

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## Contents

European foreword.....	3
<b>1 Scope.....</b>	<b>4</b>
<b>2 Normative references.....</b>	<b>4</b>
<b>3 Terms and definitions .....</b>	<b>4</b>
<b>4 Test procedure .....</b>	<b>4</b>
<b>5 Instrumentation .....</b>	<b>7</b>
<b>6 Information to be reported .....</b>	<b>7</b>
<b>Figures</b>	
Figure 101 – A-support.....	8
Figure 102 – Working position with rebar in concrete block.....	9
<b>Tables</b>	
Table 101 — Operating conditions for rotary hammers .....	5
Table 102 — Concrete formulation (per cubic metre).....	5
Table 103 — Drilling specification .....	6
Table 104 — Operating conditions for hammers without rotary action .....	7

## European foreword

This document (EN 50632-2-6:2015) was prepared by CLC/TC 116 "Safety of motor-operated electric tools".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-08-17
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2017-08-17

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

This European Standard is divided into three parts:

Part 1: General requirements for the dust measurement which are common to electric motor-operated tools (for the purpose of this standard referred to simply as tools);

Part 2 or 3: Requirements for the dust measurement for particular types of tools, which either supplement or modify the requirements given in Part 1 to account for the particular characteristics of these specific tools.

This Part 2 is to be used in conjunction with EN 50632-1:2015.  
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This Part 2 supplements or modifies the corresponding clauses in EN 50632-1:2015.

This Part 2 was developed to set out requirements for the measurement of the concentration for inhalable and respirable dust emitted by hammers.

Where a particular subclause of Part 1 is not mentioned in this Part 2, that subclause applies as far as reasonable. When this standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

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

The following print types are used:

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

The terms defined in Clause 3 are printed in **bold typeface**.

**EN 50632-2-6:2015 (E)****1 Scope**

This clause of Part 1 is applicable except as follows:

*Addition:*

This part of EN 50632 applies to hammers.

**2 Normative references**

This clause of Part 1 is applicable except as follows:

*Addition:*

EN 10080:2005, *Steel for the reinforcement of concrete – Weldable reinforcing steel – General*

**3 Terms and definitions**

This clause of Part 1 is applicable except as follows:

*Addition:*

**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 has the capability of rotational motion

**4 Test procedure**

This clause of Part 1 is applicable except as follows:

**4.3 Operating conditions**

*Addition:*

**Rotary hammers** are tested under load observing the conditions shown in Table 101.

Table 101 — Operating conditions for rotary hammers

<b>Material and set-up</b>	Concrete block without a reinforcement having the formulation specified in Table 102 and having the minimum dimensions 500 mm x 500 mm and 200 mm in height.  After the 28 days as specified in Table 102, the concrete block shall be stored for another three weeks under dry conditions.  The block is placed on a A-support, see Figure 101, with 15° inclination with the lower workpiece support being (1 000 ± 50) mm above the floor.
<b>Orientation and operation</b>	Drilling holes into the concrete block rectangular to its surface of the 500 mm x 500 mm area. The holes shall have a depth in accordance with Table 103.  The distance between the holes and the distance of the holes to the edge of the block shall be large enough so that the dust collection device of the hammer does not cover any adjacent holes or overhang the edge of the block.
<b>Tool bit/settings</b>	New drill bit as specified by the manufacturer for drilling into concrete at the beginning of each of the three tests.  Speed setting devices, if any, shall be adjusted to the setting specified for the drill bit size and for drilling into concrete.
<b>Feed force</b>	The feed force applied to the tool shall be sufficient to ensure stable operation with good performance.
<b>Test</b>	During each test cycle of 10 min, a number of holes as specified in Table 103 is performed equally distributed over the test cycle.  If the above cannot be achieved within 10 min, the time is extended to allow the required number of holes to be drilled.

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Table 102 — Concrete formulation (per cubic metre)

Cement	Water	Aggregate <sup>b</sup>	
330 kg <sup>a</sup>	183 l <sup>a</sup>	1 844 kg	
		Particle size	Fraction %
		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> .			
<sup>a</sup> The water/cement mass ratio shall be 0,55 ± 0,02 (the mass tolerance of cement and water is + 10 % to enable the concrete manufacturer to ensure compressive strength with local cement).			
<sup>b</sup> Very hard aggregates as flint or granite and very soft aggregates as limestone shall not be used.			

Table 103 — Drilling specification

Tool mass kg	Diameter of drill bit mm	Number of holes per test cycle	Depth of hole mm
≤ 3,5	10	24	50
> 3,5 ≤ 5	16	24	
> 5 ≤ 7	20	12	100
> 7 ≤ 10	25	12	
> 10 ≤ 18	32	12	
> 18	40	12	

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**Percussion hammers** are tested under load observing the conditions shown in Table 104.

**Table 104 — Operating conditions for hammers without rotary action**

<b>Material and set-up</b>	<p>Reinforced concrete block(s) having the formulation specified in Table 102 and having the minimum dimensions 500 mm x 800 mm and 200 mm in height. The concrete block shall be reinforced with 2 layers of 6 rebars each, Ø 12 mm, B500B regarding to EN 10080:2005 longitudinally (direction 800 mm). The distance from rebar to rebar and rebar to block edge shall be <math>(70 \pm 30)</math> mm.</p> <p>After the 28 days as specified in Table 102, the concrete block shall be stored for another three weeks under dry conditions.</p> <p>For <b>percussion hammers</b> with a mass less than or equal to 5 kg, the concrete block(s) is (are) placed on a A-support, see Figure 101, with 15° inclination, the lower workpiece support being <math>(1\ 000 \pm 50)</math> mm above the floor. To prevent damage to the A-support, additional supporting material such as plywood or fibreboard may be used between the block(s) and the A-support.</p> <p>For <b>percussion hammers</b> with a mass above 5 kg, a sufficient number of concrete blocks is placed side by side on the floor. The blocks may be supported by pallets or the like.</p>
<b>Orientation and operation</b>	<p>Chisel on concrete blocks.</p> <p>For <b>percussion hammers</b> with a mass less than or equal to 5 kg, the work starts on either side of the block, working from top to bottom of the block.</p> <p>For <b>percussion hammers</b> with a mass above 5 kg, chisel on concrete blocks vertically downwards.</p> <p>The concrete block shall be destroyed in length direction as shown in Figure 102. The work process is finished when all rebars have been separated.</p>
<b>Tool bit/settings</b>	<p>New or re-sharpened pointed chisel as specified by the manufacturer for chiselling concrete.</p> <p>Speed setting devices, if any, shall be adjusted to the setting specified by the manufacturer for chiselling concrete.</p>
<b>Feed force</b>	<p>The forces applied to the tool shall be sufficient to chisel with good performance without overloading the tool.</p>
<b>Test</b>	<p>One test consists of four test cycles of 10 min working time and 5 min rest time each.</p> <p>For <b>percussion hammers</b> with a mass of less than or equal to 5 kg, each test cycle is started on a new half of a block.</p> <p>For <b>percussion hammers</b> with a mass above 5 kg, the work is started on the first block, and after destroying one block, is continued on a new block.</p>

The mass is measured without accessories and flexible cable or cord, but including an auxiliary handle, if provided with the tool.

## 5 Instrumentation

This clause of Part 1 is applicable.

## 6 Information to be reported

This clause of Part 1 is applicable except as follows:

### k) *Modification:*

The mean value for the concentration of the respirable dust is also required.