

BS EN 50632-2-22:2015



BSI Standards Publication

# Electric motor-operated tools — Dust measurement procedure

Part 2-22: Particular requirements for cut-off machines and wall chasers

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**National foreword**

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The UK participation in its preparation was entrusted to Technical Committee CPL/116, Safety of motor-operated electric tools.

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

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ISBN 978 0 580 87169 6

ICS 25.140.20

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 September 2015.

**Amendments issued since publication**

Date	Text affected
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EUROPEAN STANDARD

**EN 50632-2-22**

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2015

ICS 25.140.20

English Version

## Electric motor-operated tools - Dust measurement procedure - Part 2-22: Particular requirements for cut-off machines and wall chasers

Outils électriques à moteur - Procédure de mesure de la  
poussière - Partie 2-22: Exigences particulières pour les  
tronçonneuses

Motorbetriebene Elektrowerkzeuge - Staubmessverfahren -  
Teil 2-22: Besondere Anforderungen für  
Trennschleifmaschinen und Wandschlitzfräsen

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Europäisches Komitee für Elektrotechnische Normung

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

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## European foreword

This document (EN 50632-2-22:2015) has been 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) 2016-08-03
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2017-08-03

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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.

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 cut-off machines and wall chasers.

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, 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**.

## 1 Scope

This clause of Part 1 is applicable except as follows:

*Addition:*

This part of EN 50632 applies to **cut-off machines** and **wall chasers**.

## 2 Normative references

This clause of Part 1 is applicable except as follows:

*Addition:*

EN 1339:2003, *Concrete paving flags - Requirements and test methods*

## 3 Terms and definitions

This clause of Part 1 is applicable except as follows:

### 3.101

#### **cut-off machine**

tool driving a rotating spindle, with a guide plate or guide roller or similar means, on which a bonded reinforced wheel or diamond wheel is mounted and used for peripheral grinding

### 3.102

#### **wall chaser**

tool driving a rotating spindle, with a guide plate or guide roller or similar means, on which one or more diamond wheels are mounted and used for non-through cutting operations by peripheral grinding

## 4 Test procedure

This clause of Part 1 is applicable except as follows:

### 4.3 Operating conditions

*Addition:*

**Cut-off machines** intended to cut materials such as concrete, brick and masonry are tested under load observing the conditions shown in Table 101.

**Table 101 — Operating conditions for cut-off machines**

<b>Material and set-up</b>	<p>Concrete slabs with minimum dimensions of 400 mm x 400 mm, maximum dimensions of 600 mm x 600 mm and a thickness of (50 ± 5) mm according to EN 1339:2003. The concrete slabs shall be stored for at least six weeks with the last three weeks under dry conditions. During storing, the distance between the slabs shall be at least one slab thickness. The slabs shall have the following specifications in accordance with the following clauses of EN 1339:2003: Class 3 (5.3.3.2), Class 4 (5.3.4.2), Class 70 (5.3.6.2) for 400 mm x 400 mm, Class 45 (5.3.6.2) for 400 mm x 600 mm and 600 mm x 600 mm.</p> <p>Concrete slabs are placed horizontally on a table with a suitable working height (approximately 900 mm). The slabs are arranged without any gaps as to achieve a plane area with a total length of approximately 2,4 m.</p> <p>See Figure 101.</p>
<b>Orientation and operation</b>	<p>Make slots in the concrete slab with a depth as follows:</p> <ul style="list-style-type: none"> <li>– rated capacity ≤ 180 mm: 20 mm;</li> <li>– rated capacity &gt; 180 mm: 40 mm.</li> </ul> <p>The slots are made along the approximate 2,4 m length.</p> <p>The distance between the slots shall be large enough so that the guard does not cover the previous cutting zone. For each slot, the tool shall enter the slabs from the side without plunging. The cut stops inside the material after 2,3 m. During cutting the entire surface of the guide plate or all guide rollers shall be in contact with the concrete slab.</p> <p>The tool shall be switched off at the end of the cut while it is in contact with the material.</p>
<b>Tool bit/settings</b>	<p>New or re-sharpened diamond wheel as specified by the manufacturer for cutting concrete at the beginning of each of the three tests.</p> <p>Speed setting devices, if any, shall be adjusted to the setting specified for cutting-off concrete.</p>
<b>Feed force</b>	<p>The forces applied to the tool shall be to achieve an average power consumption during the test of 70 % - 90 % of the rated input of the tool.</p>
<b>Test</b>	<p>During the entire test a minimum total length of 18,4 m of cutting (8 cuts) shall be performed for tools with a rated capacity ≤ 180 mm and a minimum total length of 13,8 m of cutting (6 cuts) shall be performed for tools with a rated capacity &gt; 180 mm.</p> <p>The rest time of each test cycle may be used for re-sharpening the wheel, if necessary. This shall be done outside the test room.</p>

**Wall chasers** are tested under load observing the conditions shown in Table 102.

**Table 102 — Operating conditions for wall chasers**

<b>Material and set-up</b>	<p>Blocks from calcium silicate with a density between 1 800 kg/m<sup>3</sup> and 2 000 kg/m<sup>3</sup> with a thickness of at least 100 mm and a compressive strength of at least 20 N/mm<sup>2</sup>.</p> <p>NOTE Typical material are blocks from calcium silicate made by UNIKA Kalksandsteinwerk Nordbayern GmbH and Co. KG., Breitengüßbach, Germany. <sup>1)</sup></p> <p>The material shall be stored in a dry environment for at least 3 weeks prior to testing. During that time, the blocks shall be stored with a distance of at least one block thickness between each of them.</p> <p>Blocks are placed on a A-support, see Figure 103, with 15° inclination with the lower workpiece support being (500 ± 50) mm above the floor. The blocks are arranged without gaps to achieve an area of approximately 4 m length and 1,3 m height, see Figure 102.</p>
<b>Orientation and operation</b>	<p>Make slots in the blocks, the tool being set to 90 % of the maximum depth of cut. The distance between the two slots shall be either equal to the cutting depth of the slots or be the maximum possible distance, whichever is less.</p> <p>The distance between the slots shall be large enough so that the guard does not cover the previous cutting zone.</p> <p>For each slot, the tool shall enter the blocks from the side/top without plunging. The cut stops inside the material. 2/3 of the total length of cuts shall be done in horizontal direction (length of slot 2,4 m), 1/3 of the total length cuts in vertical direction downwards (length of channel 1,2 m), see Figure 102.</p> <p>During cutting the entire surface of the guide plate or all guide rollers shall be in contact with the blocks.</p> <p>The tool shall be switched off at the end of the cut while it is in contact with the material.</p>
<b>Tool bit/settings</b>	<p>New or re-sharpened diamond wheel as specified by the manufacturer for cutting calcium silicate at the beginning of each of the three tests.</p> <p>Speed setting devices, if any, shall be adjusted to the setting specified for cutting calcium silicate.</p>
<b>Feed force</b>	<p>The forces applied to the tool shall be to achieve an average power consumption during the test of 70 % - 90 % of the rated input of the tool.</p>
<b>Test</b>	<p>During the entire test, a total length of slots to be cut shall be 40 m for tools with a maximum depth of cut ≤ 30 mm, and a total length of slots to be cut shall be 35 m for tools with a maximum depth of cut &gt; 30 mm.</p> <p>The rest time of the test cycles may be used for re-sharpening the wheels, if necessary. This shall be done outside the test room.</p>

1) This information is given for the convenience of users of this European Standard and does not constitute an endorsement by CENELEC of the product named.



## 5 Instrumentation

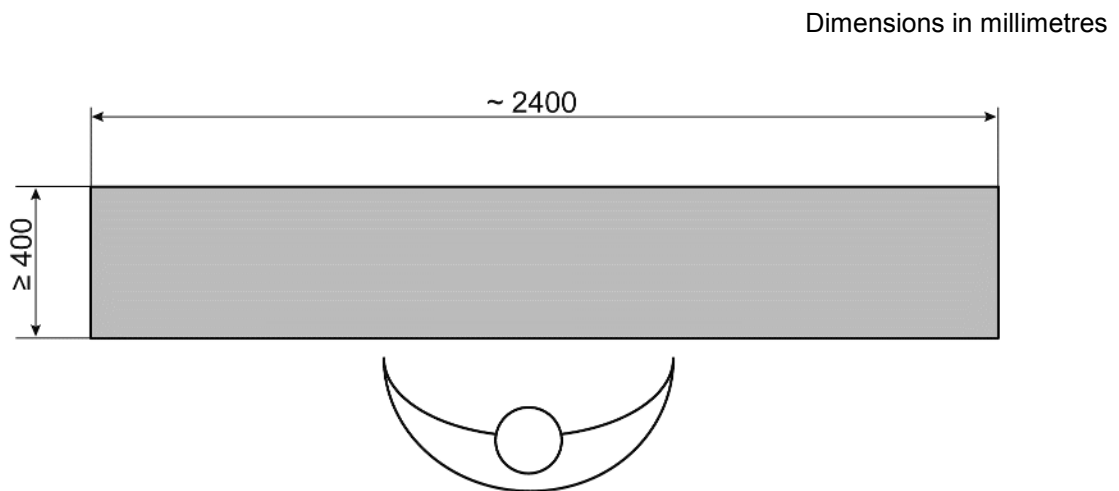
This clause of Part 1 is applicable.

## 6 Information to be reported

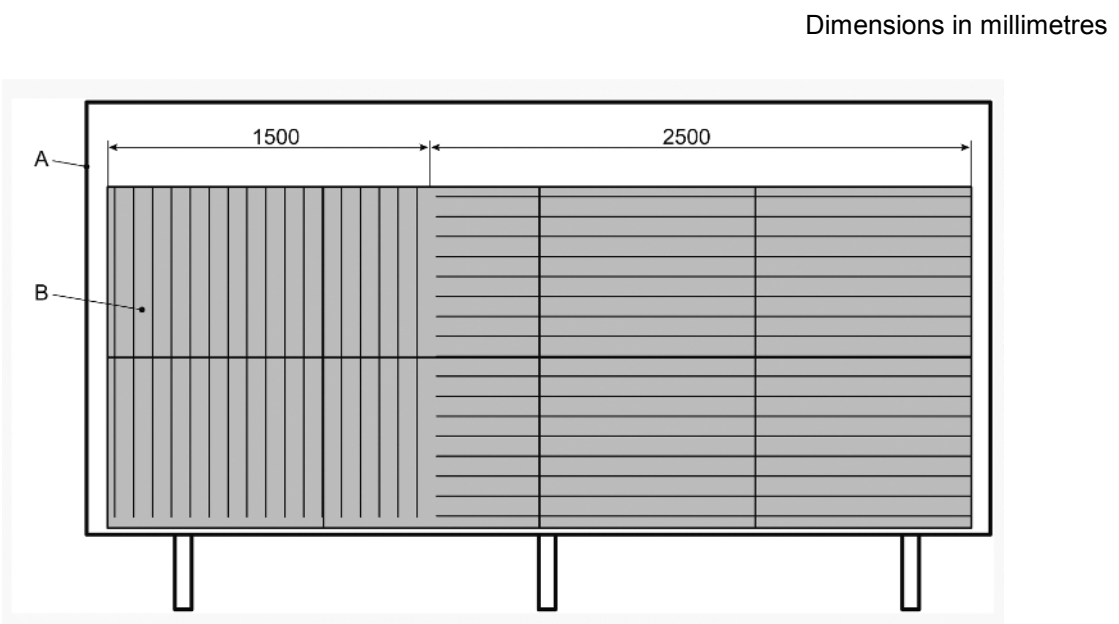
This clause of Part 1 is applicable except as follows:

k) *Modification:*

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



**Figure 101 – Test set-up for cut-off machines**

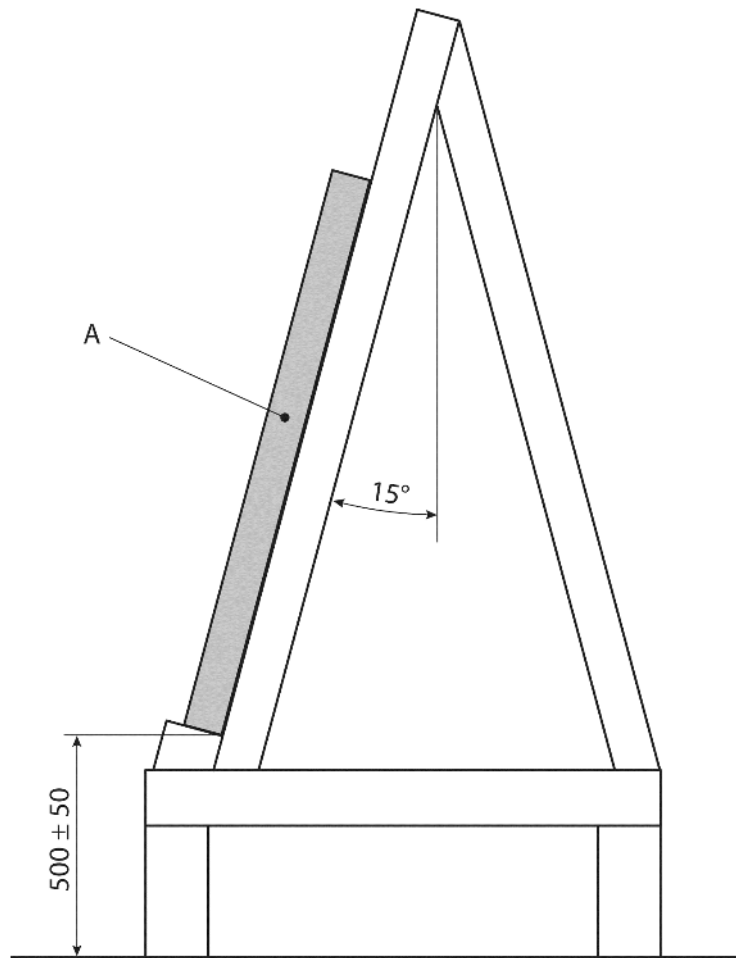


**Key**

- A A-support
- B workpiece (calcium silicate blocks)

**Figure 102 – Test set-up for wall chasers**

Dimensions in millimetres



**Key**

A workpiece

**Figure 103 – A-support**



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