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INTERNATIONAL STANDARD

Electric motor-operated tools – Dust measurement procedure –
Part 2-17: Particular requirements for hand-held routers and trimmers

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FOREWORD

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IEC 63241-2-17 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting
116/775/CDV	116/847A/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

This document is to be used in conjunction with the first edition of IEC 63241-1:2023.

This document supplements or modifies the corresponding clauses in IEC 63241-1, so as to convert it into the IEC Standard: *Particular requirements for hand-held routers and trimmers*.

Where a particular subclause of IEC 63241-1 is not mentioned in this document, that subclause applies as far as reasonable. Where this document states "addition", "modification" or "replacement", the relevant text in IEC 63241-1 is to be adapted accordingly.

The following print types are used:

– requirements: in roman type;

– *test specifications: in italic type;*

– notes: in small roman type.

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

Subclauses, notes, tables and figures which are additional to those in IEC 63241-1 are numbered starting from 101.

A list of all parts of the IEC 63241 series, under the general title: *Electric motor-operated tools – Dust measurement procedure*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations can need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 36 months from the date of publication.

ELECTRIC MOTOR-OPERATED TOOLS – DUST MEASUREMENT PROCEDURE –

Part 2-17: Particular requirements for hand-held routers and trimmers

1 Scope

IEC 63241-1:2023, Clause 1 is applicable, except as follows:

Addition:

This part of IEC 63241 applies to **routers** and **trimmers**.

2 Normative references

IEC 63241-1:2023, Clause 2 is applicable, except as follows:

Addition:

IEC 63241-1:2023, *Electric motor-operated tools – Dust measurement procedure – Part 1: General requirements*

3 Terms and definitions

IEC 63241-1:2023, Clause 3 is applicable, except as follows:

Addition:

3.101
router
tool with a base and a collet, designed to be fitted with a rotary cutting bit intended for cutting slots into or shaping the edge of various materials

3.102
trimmer
tool with a base and collet designed to be fitted with a rotary cutting bit intended for trimming the edge of laminate sheet or similar materials

4 Test procedure

IEC 63241-1:2023, Clause 4 is applicable, except as follows:

4.3 Operating conditions

Addition:

***Routers** intended for cutting wood are tested under load observing the conditions shown in Table 101.*

Table 101 – Operating conditions for routers intended to cut wood

Material and set-up	Particleboard with the following specifications: • Density: 610 kg/m^3; • Bending strength (MOR): 11,0 N/mm^2; • Modules of elasticity (MOE): 1 600 N/mm^2; • Internal bond strength: 0,35 N/mm^2 with ±10 % tolerance and dimensions of (19 ± 1) mm thick, (400 ± 2) mm width and any length a (see Figure 101). NOTE 1 Particleboard according to EN 312 P2, ISO 16893 P-FN REG or ANSI A208.1 Grade M-S fulfil these requirements. The particleboard is mounted horizontally on a bench with a working height matching the requirement for the vertical distance between the upper surface of the workpiece and the intake openings of the **dust samplers** as specified in IEC 63241-1:2023, 4.2. NOTE 2 Particleboard is also known as chipboard.
Orientation and operation	Milling of slots by means of a guide rail or rip fence, across the width of 400 mm, alternately in both directions. During the test, the operator and the workpiece shall be positioned as illustrated in Figure 101.
Tool bit/settings	Slotting cutter with a diameter as follows: • for **routers** with a rated input up to and including 1 200 W and for battery operated **routers**: 8 mm; • for **routers** with a rated input above 1 200 W: 12 mm. New cutter at the beginning of each of the three tests. Cutting depth = $8\ ^{+1}_{-0}$ mm. Distance between the slots = 10 mm. Speed setting devices, if any, shall be adjusted to the maximum setting specified by the manufacturer for cutting particleboard with the required bit diameter.
Feed force	The feed force applied to the tool shall be sufficient to ensure stable operation with good performance.
Test	During the working time of one test cycle, 15 slots as specified above are performed equally distributed over the working time. If the above cannot be achieved within 10 min, the time is extended to allow the required number of slots to be cut.

Trimmers *intended for cutting wood are tested under load observing the conditions shown in Table 102.*

Table 102 – Operating conditions for trimmers intended to cut wood

Material and set-up	Beech: (400 ± 2) mm × (400 ± 2) mm, thickness approximately 10 mm. At the beginning of the test, the wood shall have a humidity of maximum 14 %. The workpiece is mounted horizontally on a bench with a working height matching the requirement for the vertical distance between the upper surface of the workpiece and the intake openings of the **dust samplers** as specified in IEC 63241-1:2023, 4.2.
Orientation and operation	Trimming all 400 mm edges (four of each side) of the workpiece with chamfers. The workpiece thereby is rotated on each side and turned upside down for processing the second side. During the test, the operator and the workpiece shall be positioned as illustrated in Figure 102.
Tool bit/settings	Cutter for 45° chamfer cuts. New cutter at the beginning of each of the three tests. Chamfer = 3 mm × 45°. Speed setting devices, if any, shall be adjusted to the maximum setting specified by the manufacturer for cutting beech with the required bit diameter.
Feed force	The feed force applied to the tool shall be sufficient to ensure stable operation with good performance.
Test	During the working time of one test cycle, 16 chamfers, as specified above, with a length of 400 mm each are performed equally distributed over the working time. If the above cannot be achieved within 10 min, the time is extended to allow the required number of chamfers to be cut.

5 Instrumentation

IEC 63241-1:2023, Clause 5 is applicable.

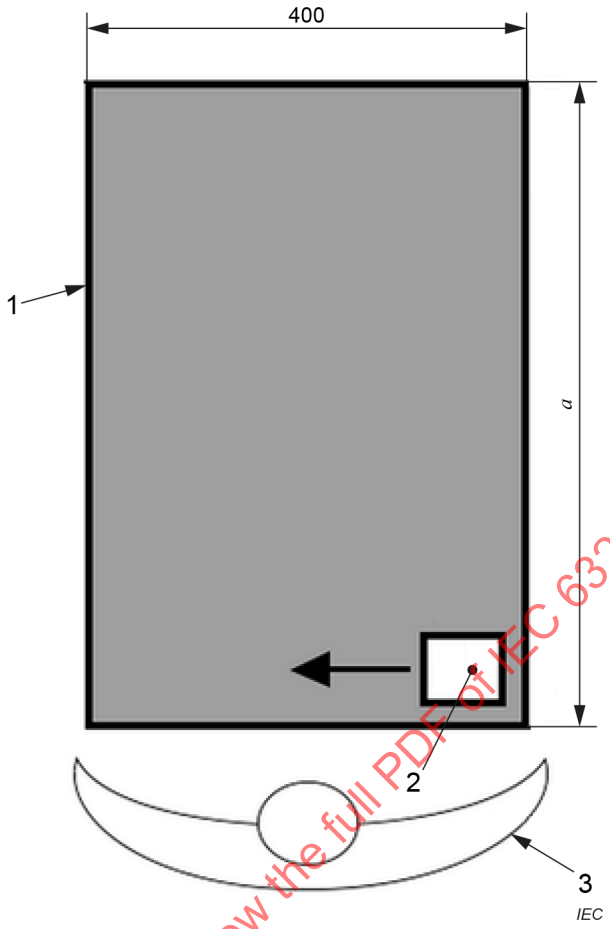
6 Information to be reported

IEC 63241-1:2023, Clause 6 is applicable, except as follows:

Replacement of item o):

o) information about extension of the cycle time in case the required number of operations could not be achieved within 10 min.

Dimensions in millimetres



Key

1 workpiece

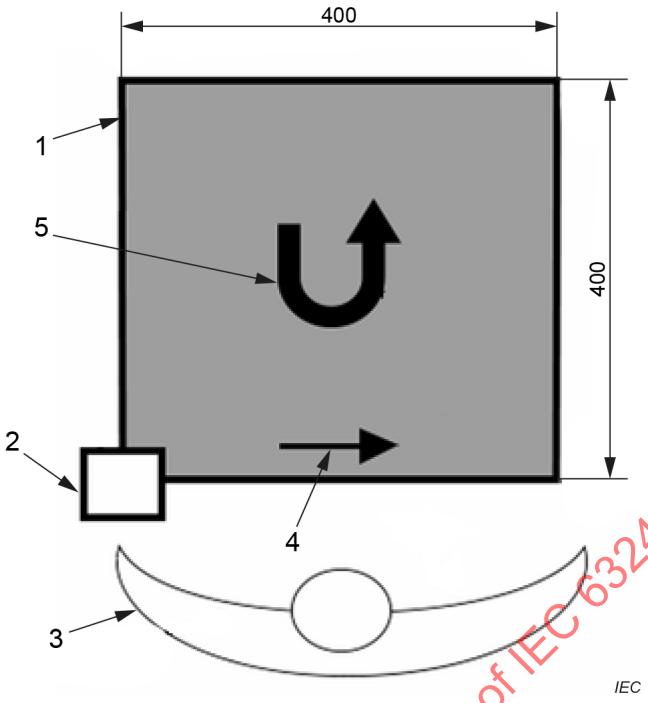
2 tool

3 operator

a length of the workpiece

Figure 101 – Orientation of workpiece, tool and operator during the tests for routers

Dimensions in millimetres



Key

1 workpiece
2 tool
3 operator
4 working direction
5 workpiece rotating direction

Figure 102 – Orientation of workpiece, tool and operator during the tests for trimmers