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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety – Part 3-13: Particular requirements for transportable drills

Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses – Sécurité – Partie 3-13: Exigences particulières pour les perceuses transportables

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY –

Part 3-13: Particular requirements for transportable drills

FOREWORD

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International Standard IEC 62841-3-13 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools.

The text of this standard is based on the following documents:

FDIS	Report on voting
116/309/FDIS	116/315/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This Part 3-13 is to be used in conjunction with the first edition of IEC 62841-1 (2014).

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This Part 3-13 supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC Standard: Particular requirements for transportable drills.

Where a particular subclause of Part 1 is not mentioned in this Part 3-13, that subclause applies as far as relevant. Where this standard states “addition”, “modification” or “replacement”, the relevant text in Part 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 and figures which are additional to those in Part 1 are numbered starting from 101.

A list of all parts of the IEC 62841 series, under the general title: *Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety*, can be found on the IEC website.

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may 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.

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ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY –

Part 3-13: Particular requirements for transportable drills

1 Scope

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

Addition:

This part of IEC 62841 applies to transportable **drills**, with manually fed axial movement of the spindle, having a maximum chuck capacity of 13 mm.

NOTE 101 Transportable **drills** are also known as bench **drills** or drill presses.

This part of IEC 62841 does not apply to stationary drilling machines.

This part of IEC 62841 does not apply to radial arm drills.

This part of IEC 62841 does not apply to magnetic drill stands and drill motors.

NOTE 102 Magnetic drill stands and drill motors will be covered by a future part of IEC 62841-3.

NOTE 103 In Europe (EN 62841-3-13), the following conditions apply:

Radial arm drills and stationary drilling machines are covered by EN 12717.

2 Normative references

This clause of Part 1 is applicable.

3 Terms and definitions

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

3.2
accessory

Addition:

Note 1 to entry: Typical **accessories** for **drills** are bits for drilling and deburring.

3.101
drill
tool equipped with a typical three jaw chuck specifically designed to bore holes in various materials such as metal, plastics, wood, etc., consisting of a **drill unit** and a **drill stand**, see Figure 101

Note 1 to entry: The **drill unit** or the chuck is manually moved up and down by a means such as a hand wheel or lever.

3.102
drill unit
device consisting of a motor and the chuck

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3.103
drill stand
device for supporting the **drill unit** in its operating position, consisting of a base plate, a **workpiece support** and a vertical column to which the **drill unit** is mounted

3.104
rest position
position of a **drill unit** on the column of the **drill stand** from where it is moved downwards onto the workpiece

Note 1 to entry: Some **drill units** have an adjustable **rest position**.

3.105
workpiece support
device for supporting the workpiece during drilling that is typically mounted to the column and typically adjustable in height

Note 1 to entry: For some **drills**, the base plate is used as a **workpiece support**.

4 General requirements

This clause of Part 1 is applicable.

5 General conditions for the tests

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

5.17 *Addition:*

*The mass of the tool shall include the **drill unit** including the drill chuck, even if removable, and the **drill stand** including the **workpiece support**. A fence or a workpiece vice, if any, is not included in the mass of the tool.*

6 Radiation, toxicity and similar hazards

This clause of Part 1 is applicable.

7 Classification

This clause of Part 1 is applicable.

8 Marking and instructions

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

8.1 *Addition:*

Drills shall be marked with the **rated no-load speed** of the output spindle.

NOTE 101 The **rated no-load speed** is checked by 19.6.

In addition, tools designed for operation at more than one speed setting shall be marked in such a way that it is clear which typical speed corresponds with each of the settings. For variable speed settings, marking of the typical minimum and maximum speed is sufficient.

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NOTE 102 The above additional speed markings are not considered to be markings of the **rated no-load speed**.

8.1.1 This subclause is not applicable for speed markings as required by 8.1.

8.3 *Addition:*

Chucks of **drills** shall be marked with the maximum capacity of the chuck.

8.14.1 *Addition:*

The additional safety instructions as specified in 8.14.1.101 shall be given. This part may be printed separately from the "General Power Tool Safety Warnings".

8.14.1.101 Safety instructions for transportable drills

Drill safety warnings

a) **The drill must be secured.** *A drill that is not properly secured may move or tip over and may result in personal injury.*

b) **The workpiece must be clamped or secured to the workpiece support. Do not drill pieces that are too small to be clamped securely.** *Holding the workpiece by hand during operation may result in personal injury.*

c) **Do not wear gloves.** *Gloves may be entangled by the rotating parts or chips leading to personal injury.*

d) **Keep your hands out of the drilling area while the tool is running.** *Contact with rotating parts or chips may result in personal injury.*

e) **Make sure the accessory is rotating before feeding into the workpiece.** *Otherwise the accessory may become jammed in the workpiece causing unexpected movement of the workpiece and personal injury.*

f) **When the accessory is jammed, stop applying downward pressure and switch off the tool. Investigate and take corrective actions to eliminate the cause of the jam.** *Jamming can cause unexpected movement of the workpiece and personal injury.*

g) **Avoid generating long chips by regularly interrupting downward pressure.** *Sharp metal chips may cause entanglement and personal injuries.*

h) **Never remove chips from the drilling area while the tool is running. To remove chips, move the accessory away from the workpiece, switch off the tool and wait for the accessory to stop moving. Use tools such as a brush or hook to remove chips.** *Contact with rotating parts or chips may result in personal injury.*

i) **Accessories with speed ratings must be rated at least equal to the maximum speed marked on the power tool.** *Accessories running faster than their rated speed can break and fly apart.*

8.14.2 b) *Addition:*

101) Information about which **drill** chucks may be used with the tool and instruction on how to fit it;

102) Instruction on how to change speed settings;

103) Instruction how to secure the workpiece, including additional supports for overhanging workpieces.

9 Protection against access to live parts

This clause of Part 1 is applicable.

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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:

12.5 *Addition:*

The temperature-rise limit specified for the external enclosure does not apply to external surfaces which are unlikely to be inadvertently contacted during use.

External surfaces are regarded as unlikely to be inadvertently contacted if they are located

– *a minimum of 300 mm from the chuck and the* ***power switch****; and*
– *on the rear of the column of the* ***drill stand*** *in relation to the operator.*

13 Resistance to heat and fire

This clause of Part 1 is applicable.

14 Moisture resistance

This clause of Part 1 is applicable.

15 Resistance to rusting

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.

18 Abnormal operation

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

18.8 *Replacement of Table 4:*

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Table 4 – Required performance levels

Type and purpose of SCF	Minimum performance level (PL)
Power switch – prevent unwanted switch-on	b
Power switch – provide desired switch-off	b
Any electronic control to pass the test of 18.3	a
Prevent output speed from exceeding 130 % of **rated no-load speed** without **accessories** mounted	a
Provide desired direction of rotation	Not an **SCF**
Prevent exceeding thermal limits as in Clause 18	a
Prevent self-resetting as required in 23.3	b
Provide run-down time as required by 19.103	a
Stopping as required by 19.104	a
Restart prevention as required by 19.104	b

NOTE In Europe (EN 62841-3-13), the following additional requirement applies:

Restart prevention as required by 21.18.2.1	a

19 Mechanical hazards

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

19.1 *Replacement of the first paragraph:*

Moving and dangerous parts other than the rotating **drill** chuck and **accessory** shall be so arranged or enclosed that adequate protection against injury is provided. The guarding of the rotating **drill** chuck is covered in 19.101.

19.7.101 **Drills** shall be provided with means to facilitate the fixing of the tool to a bench, e.g. by providing holes in the base plate of the tool.

Compliance is checked by inspection.

19.101 To minimise the risk of entanglement, **drill** chucks shall either be:

– of substantially round shape free of sharp corners, edges and protrusions that are likely to cause injury in the case of accidental contact with the rotating perimeter of the **drill** chuck. Gripping surfaces on the drill chuck such as knurls or grooves and the teeth provided for chuck key adjustment are not regarded as protrusions;

  Compliance is checked by inspection.

  or

– protected with a **fixed guard** or a combination of **fixed guard** and **adjustable guard** to prevent accidental contact with the **drill** chuck at least from the front and from the sides.

  *Compliance is checked by applying the test probe of Figure 102 while the **guard** is adjusted to cover the **drill** chuck. While the **drill unit** is in its **rest position**, the test probe is held horizontally and approached to the **drill** chuck from the front and the sides over a total angle of 180° (see Figure 103) with a force not exceeding 5 N. It shall not be possible to contact the **drill** chuck with the test probe.*

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19.102 The **drill unit**, when released by the operator, shall automatically return to its **rest position**.

Compliance is checked by the following test.

*The **drill unit** is fitted with the largest **drill** chuck available in accordance with 8.14.2 b) 101) and a steel rod with a diameter equal to the maximum capacity of the chuck and a length of either:*

- *15 times the maximum capacity of the chuck; or*
- *0,8 times the maximum length that can be mounted on the **drill unit**,*

whichever is smaller.

***Drill units** with an adjustable **rest position** are adjusted to their uppermost **rest position**.*

*The **drill unit** is moved from its uppermost **rest position** to its fully down position and released. The **drill unit** shall return to the uppermost **rest position** within 10 s.*

19.103 Run-down time

The run-down time of the **drill** spindle shall not exceed 10 s after switching off the motor.

Compliance is checked by inspection and by the following test.

*A steel rod as specified in 19.102 is mounted to the **drill unit**. The tool motor is switched on for a minimum of 30 s, then switched off. The run-down time is measured. The test is conducted ten times. For each test, the run-down time shall not exceed 10 s.*

19.104 Guards that are required to be opened for the purpose of adjusting speed as identified in 8.14.2 b) 102) shall not require the use of a tool and shall remain attached to the main part of the tool when open.

Hazardous moving parts and the **drill** chuck shall stop within 10 s when the **guard** is opened and shall not restart automatically when the **guard** is closed.

Compliance is checked by inspection and by measurement.

19.105 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 by manual test.

The key is inserted in the chuck and then released without tightening. The key shall fall out within 10 s.

20 Mechanical strength

This clause of Part 1 is applicable except as follows:

20.3.2 *Addition:*

*This test is not applicable to the **guard** as required in 19.101.*

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