

Hand-held motor-operated electric tools - Safety -- Part 2-1: Particular requirements for drills and impact drills

Handgeführte motorbetriebene Elektrowerkzeuge - Sicherheit -- Teil 2-1: Besondere Anforderungen für Bohrmaschinen und Schlagbohrmaschinen

Outils électroportatifs à moteurs - Sécurité -- Partie 2-1: Règles particulières pour les perceuses

Ta slovenski standard je istoveten z: EN 60745-2-1:2003/A11:2007

ICS:

25.080.40	Vrtalniki	Drilling machines
25.140.20	Ò\ dā } æ\ [åæ	Electric tools

SIST EN 60745-2-1:2003/A11:2007 en,fr

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60745-2-1/A11

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ICS 25.140.20; 25.140.30

English version

**Hand-held motor-operated electric tools -
Safety -
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Outils électroportatifs à moteurs -
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Handgeführte motorbetriebene
Elektrowerkzeuge -
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Teil 2-1: Besondere Anforderungen
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SIST EN 60745-2-1:2003/A11:2007

This amendment A11, modifies the European Standard EN 60745-2-1:2003; it was approved by CENELEC on 2006-07-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

This amendment to the European Standard EN 60745-2-1:2003 was prepared by the Technical Committee CENELEC TC 61F, Safety of hand-held and transportable motor-operated electric tools. The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as amendment A11 to EN 607445-2-1:2003 on 2006-07-01.

This amendment was prepared to align Subclause 6.2 with the new Subclause 6.2 in EN 60745-1:2006. Moreover, vibration values determined with the new 6.2 are complying with the requirements of the Physical Agents Directive Vibration 2002/44/EC.

The following dates were fixed:

- latest date by which the amendment has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2007-07-01
- latest date by which the national standards conflicting
with the amendment have to be withdrawn (dow) 2007-07-01

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Foreword

Replace the 7th paragraph by:

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive 98/37/EC (Machinery Directive), amended by Directive 98/79/EC. See Annex ZZ.

Replace the 11th and 12th paragraphs by:

This standard follows the overall requirements of EN ISO 12100-1 and EN ISO 12100-2.

This Part 2-1 is to be used in conjunction with EN 60745-1:2006. When this standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

3 Definitions

Add the following new definition:

3.101.Z1

diamond core drill

drill designed to be equipped with a diamond core drill bit with or without water supply to drill with or without percussion into materials such as concrete or brick

6 Environmental requirements

6.1.2.5

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Replace the existing Table Z102 by the following:

Table Z102 — Noise test conditions for impact drills

Orientation	Drilling vertically down into a concrete block having the formulation specified in Table Z101 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	8 mm drill bit for drilling in concrete with a usable length of approximately 100 mm
Feed force	150 N ± 30 N in addition to the weight of the drill
Test cycle	Measurement starts when the drill bit has reached a depth of approximately 10 mm and stops when the depth has reached approximately 80 mm

Replace the existing Subclause 6.2.2.4 by the following:

6.2.4.2 Location of measurement

Addition:

Figures Z102 and Z103 show the position for different types of tools.

6.2.6.3 Operating conditions

Addition:

Drills with an impact mechanism that can be switched off to have a rotary function only are tested as described under 6.2.6.3.101 and 6.2.6.3.102.

Diamond core drills are tested as described under 6.2.6.3.103.

6.2.6.3.101 Drills

Drills without impact action shall be equipped with a 6 mm bit to drill through 8 mm thick mild steel. Drills shall be set at the correct speed for the drill bit and material as selected above.

Measurements are conducted drilling into mild steel downwards with a feed force of $200 \text{ N} \pm 30 \text{ N}$ in addition to the weight of the machine. The workpiece shall be clamped or adequately fixed on a wooden board.

The measurement starts, when the drill bit has contact to the steel plate and stops when the hole is completed.

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NOTE This test is also representative for drilling into other materials without impact.

6.2.6.3.102 Impact drills

For impact drills the speed setting shall be that recommended by the manufacturer for an 8 mm bit for drilling into concrete.

Impact drills are tested under load as shown in Figure Z101 drilling into a concrete block in accordance with Table Z101 and with the conditions shown in Table Z103.

Table Z103 — Vibration test conditions for impact drills

Orientation	Drilling vertically down into a concrete block having the minimum dimensions 500 mm x 500 mm and 200 mm in height and supported on resilient material
Tool bit	8 mm drill bit for drilling in concrete with a usable length of approximately 100 mm
Feed force	$150 \text{ N} \pm 30 \text{ N}$ in addition to the weight of the drill
Test cycle	Measurement starts when the drill bit has contact to the concrete block and stops at a drilling depth of 80 mm before the drill bit is removed from the hole

6.2.6.3.103 Diamond core drills

Diamond core drills provided with impact function shall also be tested as an impact drill.

Diamond core drills are tested equipped with a diamond core drill bit which is in the middle of the rated capacity range. The machine settings (speed, water supply, impact etc) shall be correctly adjusted for drilling into the material specified for the test and for the type and diameter of the drill bit specified above.

If the tool is suitable to drill into concrete with water supply, the test shall be conducted drilling downwards into a concrete block in accordance with Table Z101. The water collection device, if any, shall be in place during the operation of the tool.

If the tool is designed to drill without water only, the test is conducted drilling horizontally into a sand-lime-stone brick wall with a thickness of minimum 200 mm. Make sure that the dust is collected.

The feed force applied to the tool shall be determined as follows. Drill with the tool increasing the feed force until either the speed is significantly reduced by the load or a torque limiting device operates. Reduce the feed force slightly until a feed force is reached enabling stable operation. This feed force for the test or 250 N, whichever is less.

The measurement starts when the drill bit has contact to the concrete block or brick wall and stops when either the hole is completed or the maximum drilling depth of the core bit is reached.

6.2.7.1 Reported vibration value

Addition:

If more than one operating mode was measured, the result a_r for each operating mode applicable shall be reported.

$a_{h,ID}$ = mean vibration “impact drilling” in accordance with 6.2.6.3.102

$a_{h,D}$ = mean vibration “drilling” in accordance with 6.2.6.3.101 (representative for steel and other materials)

$a_{h,DD}$ = mean vibration “diamond drilling” in accordance with 6.2.6.3.103

6.2.7.2 Declaration of the vibration emission value

Addition:

The vibration emission values of the handle with the highest emission and the uncertainty K shall be declared:

- for drills without impact mechanism
the value of $a_{h,D}$, with the work mode description “drilling into metal”;
- for impact drills with drill only function
the value of $a_{h,ID}$, with the work mode description “impact drilling into concrete” and
the value of $a_{h,D}$, with the work mode description “drilling into metal”;
- for impact drills without drill only function
the value of $a_{h,ID}$, with the work mode description “impact drilling into concrete”;
- for diamond core drills without impact mechanism
the value of $a_{h,DD}$; with the work mode description “drilling into concrete”;
- for diamond core drills with impact mechanism
the value of $a_{h,ID}$, with the work mode description “impact drilling into concrete” and
the value of $a_{h,DD}$; with the work mode description “drilling into concrete”.

Add the following new figures:

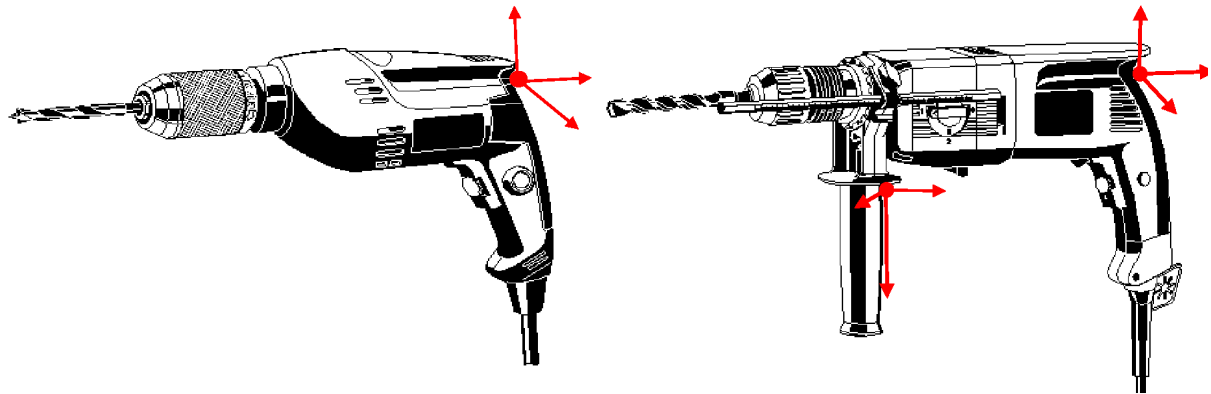


Figure Z102 - Positions of transducers for drills and impact drills

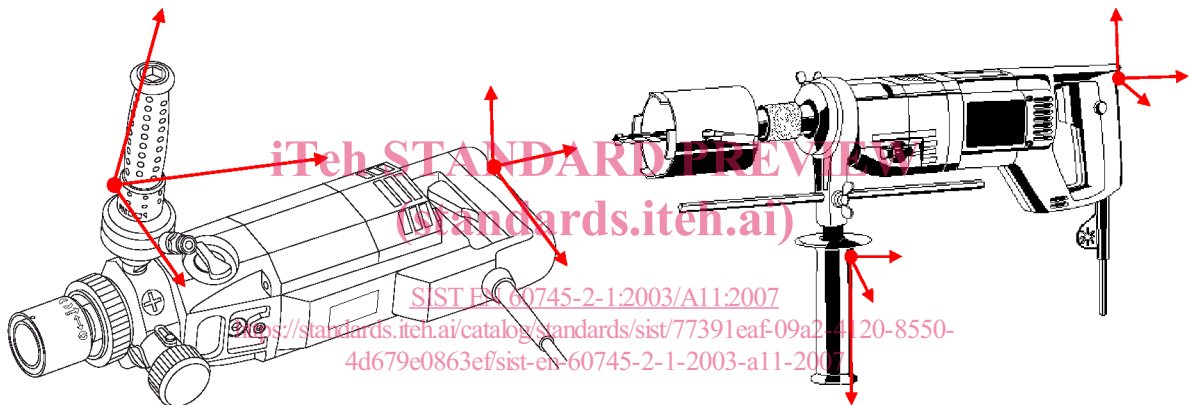


Figure Z103 - Positions of transducers for diamond core drills