SIST

SLOVENSKI STANDARD
SIST EN IEC 62841-2-6:2020

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SIST EN 60745-2-6:2010

Elektromotorna ročna orodja, prenosna orodja ter stroji za trato in vrt - Varnost - 2-6. del: Posebne zahteve za ročna kladiva (IEC 62841-2-6:2020)

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 2-6: Particular requirements for hand-held hammers (IEC 62841-2-6:2020)

Elektrische motorbetriebene handgeführte Werkzeuge, transportable Werkzeuge und Rasen- und Gartenmaschinen - Sicherheit - Teil 2-6: Besondere Anforderungen für handgeführte Hämmer (IEC 62841-2-6:2020)

Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses - Sécurité - Partie 2-6 : Exigences particulières pour les marteaux portatifs (IEC 62841-2-6:2020)

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25.140.30	Orodja za ročno uporabo	Hand-operated tools

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62841-2-6

October 2020

ICS 25.140.20

Supersedes EN 60745-2-6:2010 and all of its amendments and corrigenda (if any)

English Version

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 2-6: Particular requirements for hand-held hammers (IEC 62841-2-6:2020)

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CENELEC

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

The text of document 116/459/FDIS, future edition 1 of IEC 62841-2-6, prepared by IEC/TC 116 “Safety of motor-operated electric tools” was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62841-2-6:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-05-10
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-08-10

This document supersedes EN 60745-2-6:2010 and all of its amendments and corrigenda (if any).

This Part 2-6 is to be used in conjunction with EN 62841-1:2015 and its amendments.

This Part 2-6 supplements or modifies the corresponding clauses in EN 62841-1:2015, so as to convert it into the European Standard: Particular requirements for hand-held hammers.

Where a particular subclause of Part 1 is not mentioned in this Part 2-6, that subclause applies as far as relevant. When this standard states “addition”, “modification” or “replacement”, the relevant text in Part 1 is to be adapted accordingly.

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

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

Endorsement notice

The text of the International Standard IEC 62841-2-6:2020 was approved by CENELEC as a European Standard without any modification.

IEC 62841-2-6

Edition 1.0 2020-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety – Part 2-6: Particular requirements for hand-held hammers

Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses – Sécurité – Partie 2-6: Exigences particulières pour les marteaux portatifs

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 2-6: Particular requirements for hand-held hammers

FOREWORD

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International Standard IEC 62841-2-6 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools

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

FDIS	Report on voting
116/459/FDIS	116/466/RVD

Full information on the voting for the approval of this International 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 2-6 is to be used in conjunction with IEC 62841-1:2014.

This Part 2-6 supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC Standard: Particular requirements for hand-held hammers.

Where a particular subclause of Part 1 is not mentioned in this Part 2-6, 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 in 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 web site 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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

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

Part 2-6: Particular requirements for hand-held hammers

1 Scope

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

Addition:

This part of IEC 62841 applies to hand-held hammers.

Tools covered by this document include **percussion hammers** and **rotary hammers**, including **rotary hammers** with the capability to rotate only with the percussion system disengaged (drill only mode).

This document does not apply to drills and impact drills.

NOTE 101 Drills and impact drills are covered by IEC 62841-2-1.

This document does not apply to tools that are designed exclusively for driving fasteners, such as palm nailers.

2 Normative references

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

Addition:

EN 206:2013, *Concrete. Specification, performance, production and conformity*
EN 206:2013/AMD1:2016

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 where the impact energy is not dependent on the feed force applied by the operator and has no capability of rotational motion

Note 1 to entry: **Percussion hammers** are also known as chisel hammers, hammers, breakers, concrete breakers and picks.

3.102
rotary hammer
tool capable of rotational motion and equipped with a built-in percussion system where the impact energy is not dependent on the feed force applied by the operator (**rotary hammer** mode) and additionally, may have one or more of the following modes:

a) with rotational motion disengaged (percussion only mode)

b) with the percussion system disengaged (drill only mode)

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 includes the auxiliary handle and all parts of an integrated (i.e. non-detachable) dust extraction device, if any. A detachable dust extraction device 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:

8.14.1 *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 Hammer safety warnings

1) Safety instructions for all operations

a) **Wear ear protectors**. *Exposure to noise can cause hearing loss*.

b) **Use auxiliary handle(s), if supplied with the tool.** *Loss of control can cause personal injury.*

c) **Brace the tool properly before use.** *This tool produces a high output torque and without properly bracing the tool during operation, loss of control may occur resulting in personal injury.*

NOTE 101 The above warning applies only for **rotary hammers** with a maximum output torque greater than 100 Nm measured in accordance with 19.102.

d) **Hold the power tool by insulated gripping surfaces, when performing an operation where the cutting accessory may contact hidden wiring or its own cord.** *Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.*

NOTE 102 For **rotary hammers** that can also be used as screwdrivers, the words "or fasteners" are added after "cutting accessory".

2) Safety instructions when using long drill bits with rotary hammers

NOTE 103 The warnings in this section apply only to **rotary hammers**.

a) **Always start drilling at low speed and with the bit tip in contact with the workpiece.** *At higher speeds, the bit is likely to bend if allowed to rotate freely without contacting the workpiece, resulting in personal injury.*

b) **Apply pressure only in direct line with the bit and do not apply excessive pressure.** *Bits can bend, causing breakage or loss of control, resulting in personal injury.*

8.14.2 a) *Addition:*

101) For tools with a maximum output torque greater than 100 Nm measured in accordance with 19.102: instructions on how to brace the tool;

102) Instructions for assembling any **attachments** that are supplied with the tool;

103) For tools provided with a dust extraction device: instruction on how to collect the dust;

104) For tools with detachable dust collection device: information on which dust collection device may be used.

9 Protection against access to live parts

This clause of Part 1 is applicable.

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:

12.2.1 *Replacement:*

*The tool is operated intermittently for 30 cycles or until thermal equilibrium is reached, whichever is achieved first, each cycle comprising a period of continuous operation of 30 s and a rest period of 90 s with the tool switched off, the tool loaded during the periods of operation by means of a brake adjusted so as to attain **rated input** or **rated current**.*

During the test, the hammer mechanism is disengaged or removed.

12.5 *Addition:*

The temperature-rise limit specified for the external enclosure does not apply to the enclosure of the impact mechanism.

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, except as follows:

17.2 *Replacement:*

***Rotary hammers** with drill only mode are operated intermittently at no-load with the impact mechanism disengaged for 12 h at a supply voltage equal to 1,1 times the highest **rated voltage** or 1,1 times the upper limit of the **rated voltage range**, and then for 12 h at a supply voltage equal to 0,9 times the lowest **rated voltage** or 0,9 times the lower limit of the **rated voltage range**. The 12 h of operation need not be continuous. The speed is adjusted to the highest value of the highest range.*

Each cycle of operation comprises an "on" period of 100 s and an "off" period of 20 s, the "off" periods being included in the specified operating time.

During the test, the tool is placed in three different positions, the operating time, at each voltage, being approximately 4 h for each position.

NOTE 1 The change of position is made to prevent abnormal accumulation of carbon dust in any particular place. Examples of the three positions are horizontal, vertically up and vertically down.

*Following the above test (if applicable), all hammers, including **rotary hammers** with drill only mode, are mounted vertically down in a test apparatus designed to apply an axial force ensuring steady operation of the impact mechanism to the hammer through a resilient medium. An example of a test apparatus is shown in Figure 101.*

*The hammers are then operated at **rated voltage**, for four periods of 6 h each, the interval between these periods being at least 30 min. For **rotary hammers** with drill only mode, the impact mechanism is engaged.*

The tool is operated intermittently, each cycle comprising a period of operation of 30 s and a rest period of 90 s during which the tool remains switched off.

The tool may be switched on and off by means of a switch other than that incorporated in the tool.

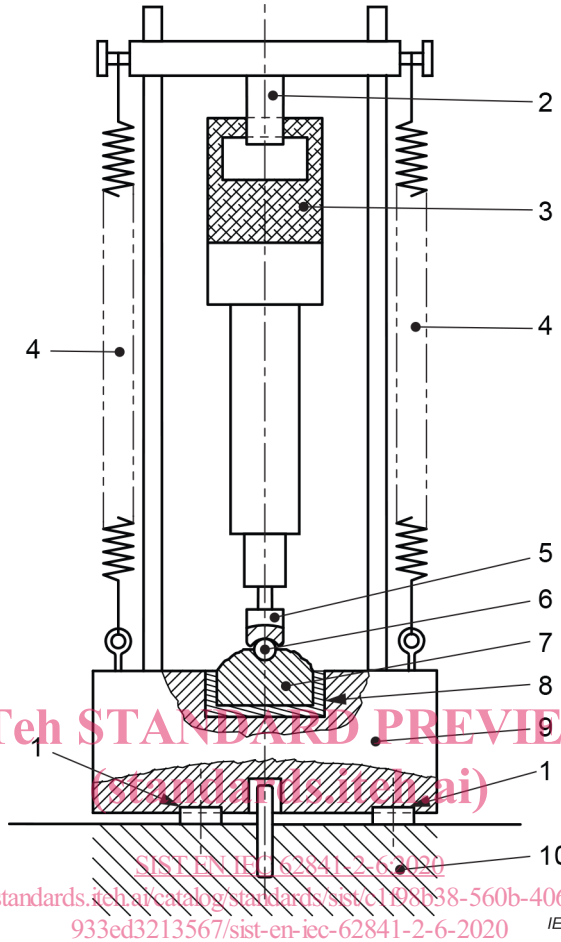
During these tests, replacement of the carbon brushes is allowed, and the tool is oiled and greased as in ***normal use****. If the impact mechanism fails mechanically during the test without causing an* ***accessible part*** *to become live, it may be replaced by a new one.*

If the temperature rise of any part of the tool exceeds the temperature rise determined during the test of 12.1, forced cooling or rest periods may be applied, the rest periods being excluded from the specified operating time. If forced cooling is applied, it shall not alter the air flow of the tool or redistribute carbon deposits.

During these tests, overload protection devices incorporated in the tool shall not activate.

NOTE 2 Monitoring of external temperatures will help avoid mechanical failures.

Dimensions in millimetres



Key

1 resilient material to absorb vibration and prevent resonance
2 yoke, adapted to suit the grip of the tool
3 sample
4 mechanical or pneumatical springs applying a force to the sample
5 punch
6 hardened steel ball with diameter 38 mm
7 hardened steel transfer plate of mass M_2 and diameter D
8 synthetic rubber disk or material having similar properties, Shore hardness 70° to 80°, thickness 6 mm to 7 mm, fitting closely in cavity
9 steel base at mass M_1, with circular cavity having a diameter 1 mm greater than that of the transfer plate
10 ground support such as a concrete block being large and solid enough to ensure the stability of the test apparatus during the test

Rated input of tool W	***D*** **Diameter of transfer plate** mm	M_1 **Minimum mass of steel base** kg	M_2 **Mass of transfer plate** kg	M_3 **Total mass of punch and shank** kg
Up to and including 700	100	90	1,0 to 1,25	0,7
Over 700 up to and including 1 200	140	180	2,25 to 2,81	1,4
Over 1 200 up to and including 1 800	180	270	3,8 to 4,75	2,3
Over 1 800 up to and including 2 500	220	360	6,0 to 7,5	3,4

Figure 101 – Example of a testing apparatus