SLOVENSKI STANDARD
SIST EN 60745-2-11:2010

01-september-2010

Nadomešča:
SIST EN 60745-2-11:2003
SIST EN 60745-2-11:2003/A1:2009
SIST EN 60745-2-11:2003/A11:2007
SIST EN 60745-2-11:2003/A12:2010

Električna ročna orodja - Varnost - 2-11. del: Posebne zahteve za povratne žage (vbodne in sabljaste žage) (IEC 60745-2-11:2003, spremenjen + A1:2008)

Hand-held motor-operated electric tools - Safety - Part 2-11: Particular requirements for reciprocating saws (jig and sabre saws) (IEC 60745-2-11:2003, modified + A1:2008)

Handgeführte motorbetriebene Elektrowerkzeuge - Sicherheit - Teil 2-11: Besondere Anforderungen für Sägen mit hin- und hergehendem Sägeblatt (Stichsägen und Säbelsägen) (IEC 60745-2-11:2003, modifiziert + A1:2008)

Outils électroportatifs à moteur - Sécurité - Partie 2-11: Règles particulières pour les scies alternatives (scies sauteuses et scies sabres) (CEI 60745-2-11:2003, modifiée + A1:2008)

Ta slovenski standard je istoveten z: **EN 60745-2-11:2010**

ICS:

25.080.60	Strojne žage	Sawing machines
25.140.20	Električna orodja	Electric tools

SIST EN 60745-2-11:2010 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60745-2-11

March 2010

ICS 25.140.20

Supersedes EN 60745-2-11:2003 + A1:2009 + A11:2007 + A12:2009

English version

Hand-held motor-operated electric tools - Safety - Part 2-11: Particular requirements for reciprocating saws (jig and sabre saws)

(IEC 60745-2-11:2003, modified + A1:2008)

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This European Standard was approved by CENELEC on 2010-02-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard 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 European Standard 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, Croatia, 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: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 60745-2-11:2010 E

Foreword

The text of the International Standard IEC 60745-2-11:2003, prepared by SC 61F (transformed into IEC TC 116, Safety of hand-held motor-operated electric tools), together with the common modifications prepared by the Technical Committee CENELEC TC 61F (transformed into TC 116) was submitted to the formal vote and was approved by CENELEC as EN 60745-2-11 on 2003-02-01.

A number of amendments to EN 60745-2-11 have since been voted on and published as amendments A11, A1 and A12.

A further draft amendment (FprAD) including improvements to the vibration test code was submitted to the Unique Acceptance Procedure.

The combined texts were approved by CENELEC as a new edition of EN 60745-2-11 on 2010-02-01.

This European Standard supersedes EN 60745-2-11:2003 + A11:2007 + A1:2009 + A12:2009.

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

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2011-02-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2013-02-01

This standard is divided into two parts:

Part 1: General requirements which are common to most hand-held electric motor-operated tools (for the purpose of this standard referred to simply as tools) which could come within the scope of this standard;

Part 2: Requirements for particular types of tools which either supplement or modify the requirements given in Part 1 to account for the particular hazards and characteristics of these specific tools.

This European Standard has been prepared under a mandate given to CEN and CENELEC by the European Commission and the European Free Trade Association and supports the essential health and safety requirements of the Machinery Directive 2006/42/EC. See Annex ZZ.

Compliance with the clauses of Part 1 together with this Part 2 provides one means of conforming with the essential health and safety requirements of the Directive concerned.

CEN/TC 255 is producing standards for non-electric reciprocating saws (EN 792-12).

Warning: Other requirements and other EC Directives can be applicable to the products falling within the scope of this standard.

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

This Part 2-11 is to be used in conjunction with EN 60745-1:2009. When this European Standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

Subclauses and figures which are additional to those in Part 1 are numbered starting from 101.

Annexes, subclauses, tables and figures which are additional to those in IEC 60745-2-11 are prefixed “Z”.

NOTE In this standard, the following print types are used:
- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in smaller roman type.

Endorsement notice

The text of the International Standard IEC 60745-2-11:2003 + A1:2008 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

2 Normative references

Replace the text by:

This clause of Part 1 is applicable except as follows:

Addition:

EN 312:2003, Particleboards - Specification

6 Void

Replace by:

6 Environmental requirements

This clause of Part 1 is applicable except as follows:

6.1.2.4 *Modification:*

Reciprocating saws are suspended in such a way as to correspond to normal use.

6.1.2.5 *Modification:*

Reciprocating saws are tested at no-load.

6.2.4.2 Location of the measurement

Addition:

Figures Z101 and Z102 show the positions for different saws.

6.2.6.3 Operating conditions

Modification:

Reciprocating saws are tested under load according to the conditions shown in Tables Z101, Z102 and Z103.

Jig saws are tested sawing both board and sheet metal. Sabre saws are tested cutting board and wooden beams.

Sabre and jig saws with speed setting devices shall be adjusted to the settings to cut the work piece material required in the test.

Table Z101 - Test conditions for sabre and jig saws cutting board

Orientation	For jig saws: Cutting a horizontal piece of chipboard (P2 in accordance with EN 312) 38 mm thick with a minimum length of 500 mm and a width of 600 mm. The board shall be supported on resilient material and fixed by screws, clamps, air cylinders or the like to a test rig. For sabre saws: Cutting a vertical piece of chipboard (P2 in accordance with EN 312) 38 mm thick with a minimum length of 500 mm and a width of 600 mm. The board shall be supported on resilient material and fixed vertically by screws, clamps, air cylinders or the like to a test rig. In all cases, the board excess end shall be 250 mm from the clamp and shall be readjusted at the beginning of each series of tests, which consists of five test cycles.
Tool bit/settings	New saw blade as specified for sawing chipboard. Pendulum systems, if any, being set at maximum. For sabre saws, the guide plate shall be fitted.
Feed force	For jig saws: The horizontal feed force (force in direction of the cut) applied to the tool shall be 35 N ± 5 N. Excessive gripping force shall be avoided. The guide plate shall be in contact with the work piece during the cut applying a force just great enough to ensure this. NOTE 1 Methods to determine the feed force are e.g. using a scale, applying a weight on a string parallel to the workpiece surface via a pulley. NOTE 2 Usually, the downward force in addition to the weight of the tool to keep the guide plate of a jig saw in contact with the workpiece is between 50 N and 100 N. For sabre saws: The vertical feed force (force in direction of the cut) applied to the tool in addition to its weight shall be 40 N ± 5 N. The feed force shall be determined e.g. by means of a scale and shall be recorded. Excessive gripping force shall be avoided. The guide plate shall be in contact with the work piece during the cut applying a force just great enough to ensure this. NOTE 3 Usually, the horizontal force to keep the guide plate of a sabre saw in contact with the workpiece is between 50 N and 100 N.
Test cycle	Cutting a 30 mm wide strip across the 600 mm width of the chipboard. Measurement starts when the saw blade enters the chipboard and stops when the saw blade leaves the chipboard.

Table Z102 — Test conditions for jig saws cutting sheet metal

Orientation	Cutting a horizontal piece of sheet mild steel with the minimum length of 300 mm, a width of 100 mm and a thickness of 3 mm. The work piece shall be supported on resilient material and fixed by screws, clamps, air cylinders or the like to a test rig. The metal sheet excess shall be 80 mm from the clamped area and shall be readjusted at the beginning of each series of tests, which consists of five test cycles.
Tool bit/settings	New saw blade as specified for sawing mild steel. The pendulum system, if any, shall be in the “off” position.
Feed force	The horizontal feed force (force in direction of the cut) applied to the tool shall be 35 N ± 5 N. Excessive gripping force shall be avoided. The guide plate shall be in contact with the work piece during the cut applying a force just great enough to ensure this. NOTE 1 Methods to determine the feed force are e.g. using a scale, applying a weight on a string parallel to the workpiece surface via a pulley. NOTE 2 Usually, the downward force in addition to the weight of the tool to keep the guide plate of a jig saw in contact with the workpiece is between 50 N and 100 N.
Test cycle	Cutting off an approximately 8 mm wide strip across the 100 mm width of the metal sheet. Measurement starts when the saw blade enters the metal sheet and stops when the saw blade leaves the metal sheet.

Table Z103 — Test conditions for sabre saws cutting wooden beams

Orientation	Cutting a horizontal beam of construction wood such as fir with a cross section of 100 mm x 100 mm and minimum length of 500 mm. The beam shall be supported on resilient material and fixed by screws, clamps, air cylinders or the like to a test rig. In all cases, the beam excess end shall be 250 mm from the clamp and shall be readjusted at the beginning of each series of tests, which consists of five test cycles.
Tool bit/settings	New saw blade as specified for sawing large wooden beams. The pendulum system, if any, being set at maximum.
Feed force	The vertical feed force (force in direction of the cut) applied to the tool in addition to its weight shall be 40 N ± 5 N. The feed force shall be determined e.g. by means of a scale and shall be recorded. Excessive gripping force shall be avoided. The guide plate shall be in contact with the work piece during the cut applying a force just great enough to ensure this. NOTE Usually, the horizontal force to keep the guide plate of a sabre saw in contact with the workpiece is between 50 N and 100 N.
Test cycle	Cutting off a 30 mm thick slice. Measurement starts when the saw blade enters the wood and stops when the saw blade leaves the wood.

6.2.7.1 Reported vibration value

Addition:

For jig saws, the results a_h for two operation modes shall be reported:

– $a_{h,B}$ = mean vibration “cutting board” in accordance with Table Z101.
– $a_{h,M}$ = mean vibration “cutting sheet metal” in accordance Table Z102.

For sabre saws, the results a_h for two operation modes shall be reported:

– $a_{h,B}$ = mean vibration “cutting board” in accordance with Table Z101
– $a_{h,WB}$ = mean vibration “cutting wooden beam” in accordance Table Z103.

6.2.7.2 Declaration of the vibration total value

Addition:

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

– for jig saws
the value of $a_{h,B}$, with the work mode description “cutting boards” and
the value of $a_{h,M}$, with the work mode description “cutting sheet metal”;
– for sabre saws
the value of $a_{h,B}$, with the work mode description “cutting boards” and
the value of $a_{h,WB}$, with the work mode description “cutting wooden beams”;

8 Marking and instructions

Replace by:

This clause of Part 1 is applicable except as follows:

8.12.2 a) *Addition:*

Z101) Information on the correct use of the dust collection system, if any

Z102) Advice to wear a dust mask

21 Construction

Replace by:

This clause of Part 1 is applicable except as follows:

21.Z1 This subclause of Part 1 is not applicable.

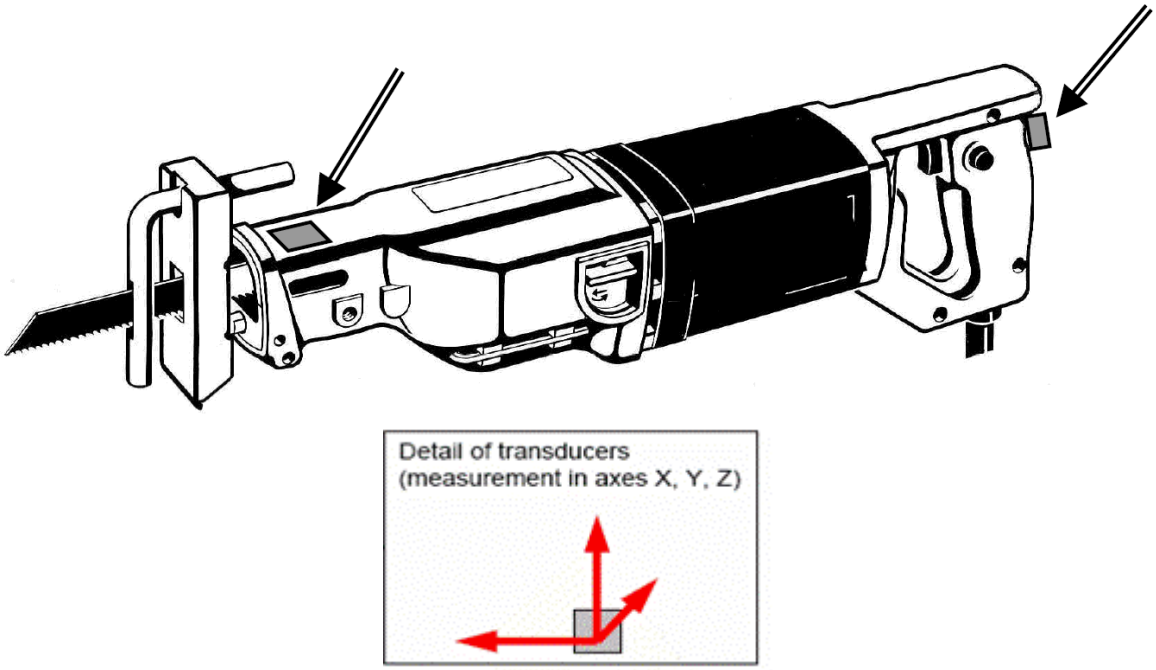

Figure Z101 - Positions of transducers for sabre saws

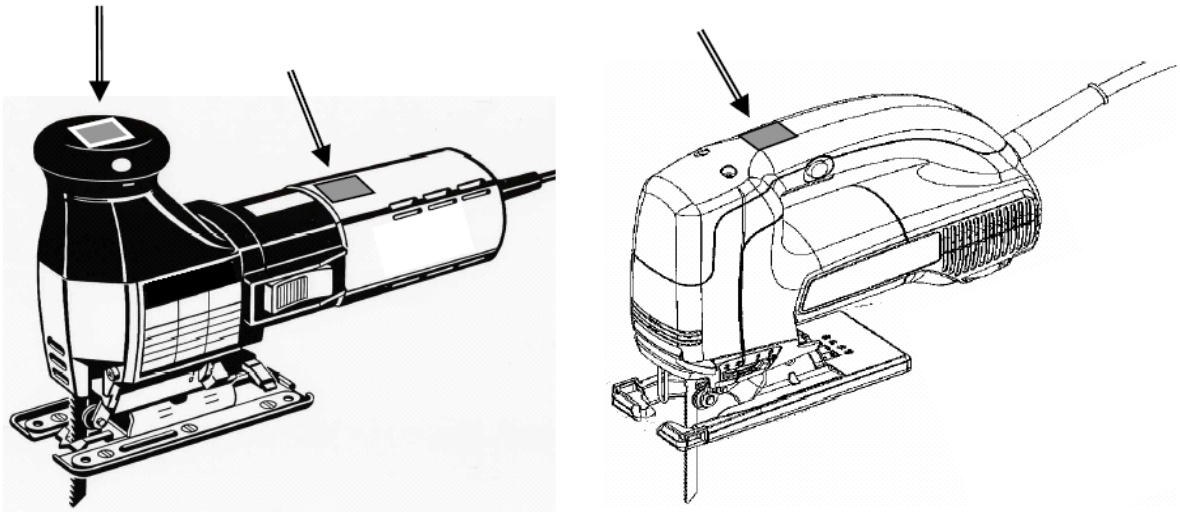

Figure Z102 - Positions of transducers for jig saws

Annex ZZ
(informative)

Coverage of Essential Requirements of Directive 2006/42/EC

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant Essential Requirements as given in EC Directive 2006/42/EC (Machinery Directive).

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directive concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.