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Safety of hand-held motor-operated electric tools - Part 2-13: Particular requirements for chain saws

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Will supersede EN 50144-2-13:2002

English version

Safety of hand-held motor-operated electric tools Part 2-13: Particular requirements for chain saws

(to be completed) (to be completed)

This draft amendment prAA, if approved, will modify the draft European Standard prEN 60745-2-13:2004; it is submitted to CENELEC members for CENELEC enquiry.
Deadline for CENELEC: 2004-11-05

It has been drawn up by Technical Committee CENELEC TC 61F.

If this draft becomes a European Standard, 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.

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Foreword

This draft amendment to the draft European Standard prEN 60745-2-13 was prepared by the Technical Committee CENELEC TC 61F, Safety of hand-held and transportable motor-operated electric tools. It contains common modifications to IEC 61F/568/CDV (future 60745-2-13), which are proposed to bring the European Standard in line with the essential health and safety requirements of the Machinery Directive.

This draft European Standard will supersede EN 50144-2-13:2002.

Other standards referred to in this European standard are listed in Clause 2. Clause 2 lists the valid edition of those documents at the time of issue of this EN.

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.

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 144 is producing standards for non-electric chain saws (EN 608).

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 292-1 and EN 292-2.

This Part 2-13 is to be used in conjunction with EN 60745-1:2003. When this 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.

Subclauses, tables and figures which are additional to those in IEC 60745-2-13 are prefixed “Z”.

NOTE In this standard the following print types are used:
- Requirements proper;
- *Test specifications;*
- Explanatory matter.

Text of prAA to prEN 60745-2-13

2 Normative references

Addition:

ISO 9207	1995	Manually portable chain-saws with internal combustion engine – Determination of sound power levels – Engineering method (grade 2)

6 Environmental requirements

This clause of Part 1 is applicable except as follows:

6.1.2.2 *Replacement:*

The sound power level shall be measured according to EN ISO 3744, where the acoustic environment, instrumentation, quantities to be measured, quantities to be determined, and the measurement procedure are specified.

The sound power level shall be given as A-weighted sound power level in dB reference 1 pW. The A-weighted sound pressure levels, from which the sound power is to be determined, shall be measured directly, and not calculated from frequency band data. Measurements shall be made in a free field over a reflecting plane.

The sound power level shall be determined according to 5.2 and 5.3 of ISO 9207, with the test environment, measurement surface and six microphone positions specified there.

The A-weighted sound power level, L_{WA}, shall be calculated, in accordance with 8.6 of EN ISO 3744, as follows :

$$L_{WA} = \overline{L_{pfA}} + 10\lg\left(\frac{S}{S_0}\right), \text{ in dB} \qquad (1)$$

with $\overline{L_{pfA}}$ determined from

$$\overline{L_{pfA}} = 10\lg\left[\frac{1}{6}\sum_{i=1}^{6} 10^{0,1L'_{pA,i}}\right] - K_{1A} - K_{2A}$$

where

$\overline{L_{pfA}}$ is the A-weighted surface sound pressure level according to EN ISO 3744

$L'_{pA,i}$ A-weighted sound pressure level measured at the i-th microphone position, in decibels

K_{1A} Background noise correction, A-weighted

K_{2A} Environmental correction, A-weighted

S Area of the measurement surface, in m^2

S_0 = 1 m^2

If the test environment meets the requirements of 5.3 of ISO 9207, then the environmental correction factor K_{2A} shall be considered as negligible.

For the hemispherical measurement surface, the area S of the measurement surface is calculated as follows:

$$S = 2\pi\, r^2, \text{ in m}^2. \quad (2)$$

where *r*, the radius of the hemisphere, is 4 m as specified in 5.2 of ISO 9207.

6.1.2.4 *Modification:*

The installation and mounting conditions shall be in accordance with 6.1 of ISO 9207, as far as applicable to electric chain saws, the chain saw held by the operator as indicated there.

The ambient conditions shall be as specified in 5.5.3 of ISO 9207.

6.1.2.5 *Modification:*

Chain saws are tested under the two operating conditions “no load” and “load”.

The measurement under “load” shall be in accordance with 6.3 of ISO 9207, with Table 2 of ISO 9207 replaced by the following Table Z101.

Table Z101 – Corresponding values of cutting length and width of log during test

Cutting length *L* m	Width of test beam m
up to 0,50	(75 ± 5) % of *L*
0,50 and above	*L* – 0,1

Four consecutive tests for no-load and four for load , shall be carried out, with each sound power level determined in accordance with the procedure stated in 5.5.1 of ISO 9207. With L_{W1} and L_{W2} being the average sound power levels of the two different modes of operation defined above, the resulting sound power level L_{WA} is calculated by:

$$L_{WA} = 10\,\lg \frac{1}{2}\left[10^{0,1L_{W1}} + 10^{0,1L_{W2}}\right]$$

6.2.2.3 *Replacement:*

Measurements shall be carried out on a new tool additional to that required by other tests.

Measurements shall be made on each handle in three directions as shown in Figure Z101.

If the measurement of 25 mm in Figure Z101 can not be obtained, the accelerometer shall be placed at the right end of that portion of the handle intended to be grasped.

If the measurement of 80 mm in Figure Z101 can not be obtained, the accelerometer shall be placed at the rear end of that portion of the handle intended to be grasped.

6.2.2.4 *Modification:*

Chain saws are tested under load under the conditions shown in Table Z102.

Table Z102 - Test conditions for chain saws

Material	Freshly felled softwood log of local timber, not frozen. Width of the log to be trimmed to 75% of the usable cutting length of the guide bar
Orientation	Log to be rigidly clamped horizontally so that the centre line of the log is at 0,6 m from the ground
Tool bit/cutter/abrasive	Saw chain to be as supplied or recommended by the manufacturer
Feed force	Sufficient force, using the spiked bumper, to achieve rated input ± 10%
Test cycle	Cutting across the width of the log an a part substantially free of knots

6.2.2.5 *Addition:*

The weighted r.m.s. acceleration value for each handle shall be calculated from the following formula:

$$a_{hw} = \sqrt{a_{xhw}^2 + a_{yhw}^2 + a_{zhw}^2}$$

8 Marking and instructions

This clause of Part 1 is applicable except as follows:

8.12.2 Zb) *Addition:*

- recommendation for the use of a residual current device

21 Construction

This clause of Part 1 is applicable except as follows:

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