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Varnost električnih ročnih orodij – 2-13.del: Posebne zahteve za verižne žage

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

ICS 25.140.20; 65.060.80

Referenčna številka
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COMMITTEE DRAFT FOR VOTE (CDV)
PROJET DE COMITÉ POUR VOTE (CDV)

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Also of interest to the following committees Intéresse également les comités suivants	Supersedes document Remplace le document 61F/495/CD and 61F/514B/CC	
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Titre :

Title : IEC 60745-2-13 Ed 2.0: Safety of hand-held motor-operated electric tools - Part 2-13: Particular requirements for chain saws.

Note d'introduction

Introductory note

** **Exceptionally**, the voting target of 2004-11-05 had to be kept in line with SC 61F CDV documents circulated in parallel with CENELEC last week:

2004-06-04.

ATTENTION	ATTENTION
CDV soumis en parallèle au vote (CEI) et à l'enquête (CENELEC)	**Parallel IEC CDV/CENELEC Enquiry**

HAND-HELD MOTOR-OPERATED ELECTRIC TOOLS - SAFETY

Part 2-13: Particular requirements for chain saws

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1 Scope

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

1.1 *Addition:*

This standard applies to hand-held motor-operated electric chain saws for cutting wood and designed for use by one person. This standard does not cover chain saws designed for use in conjunction with a guide-plate and riving knife or in any other way such as with a support or as a stationary or transportable machine.

This standard does not apply to pole cutters and pruners.

2 Normative references

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

Additions:

ISO 3864	1984	Safety colours and safety signs
ISO 6533	2001	Forestry machinery - Portable chain-saw front hand-guard - Dimensions
ISO 6534	1992	Portable chain saws - Hand-guards - Mechanical strength
ISO 6535	1991	Portable chain saws - Chain brake performance
ISO 7914	1994	Forestry machinery - Portable chain-saws - Minimum handle clearance and sizes
ISO 7915	1991	Forestry machinery - Portable chain-saws - Determination of handle strength
ISO 8334	1985	Forestry machinery - Portable chain-saws - Determination of balance
ISO 9518	1998	Forestry machinery - Portable chain-saws - Kickback test
ISO 10726	1992	Portable chain-saws - Chain catcher - Dimensions and mechanical strength

3 Definitions

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

3.101
chain saw
tool designed to cut with a saw chain and consisting of an integrated unit of handles, motor and cutting attachment, designed to be supported with two hands (see Figure 101)

3.102
chain brake
device for stopping or locking the saw chain activated manually or non-manually when kickback occurs

3.103
chain catcher
device for restraining the saw chain if it breaks or degrooves (see Figure 101)

3.104
drive sprocket
chain drive wheel with teeth

3.105
front handle
support handle located at or towards the front of the motor housing (see Figure 101)

3.106
front hand guard
guard between the front handle and the saw chain for protecting the hand from injuries if the hand slips off the handle (see Figure 101)

3.107
guide bar
part that supports and guides the saw chain (see Figure 101)

3.108
kickback
rapid upward and/or backward motion of the chain saw which can occur when the moving saw chain near the tip of the guide bar contacts an object such as a log or branch

3.109
lock off device
device of the chain saw that prevents the unintentional operation of the main switch (see Figure 101)

3.110
rear hand guard
extension on the lower part of the rear handle for protecting the hand from the saw chain if it breaks or degrooves (see Figure 101)

3.111
rear handle
support handle located on the housing or towards the rear of the motor housing (see Figure 101)

3.112
saw chain
chain, serving as a cutting tool, consisting of drive links, cutters and side links, held together by rivets (see Figure 101)

3.113
spiked bumper
device, fitted in front of the guide bar mounting point, acting as a pivot when in contact with a tree or log (see Figure 101 and Figure 102)

3.114
cutting length
distance from the root of the spiked bumper, along the guide bar axis to the outside edge of the cutting link, or on the inside part of the bar tip guard with the chain tension adjuster set at mid position (see Figure 102)

3.115
run down time
elapsed time from the release of the mains switch until the saw chain stops

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:

5.2 *Addition:*

For the tests of clause 19.112 one additional sample may be provided.

5.14 *Addition:*

For tests carried out at normal load, the saw chain and the guide bar may be removed and the drive sprocket of the chain saw loaded by means of a brake.

6 Void

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:*

Chain saws shall be marked with the following:

- maximum length of the guide bar in mm;
- identification of the direction of rotation of the saw chain by a legible and durable mark.

In addition, chain saws shall be marked with safety recommendations and warnings of the following substance which shall be written in one of the official languages of the country in which the tool is to be sold. Alternatively they shall be marked with symbols of the type specified in Annex AA.

- Wear eye and ear protection.
- Read the instructions.
- Do not expose to rain.

For chain saws with a degree of protection of at least IPX4 this warning need not be marked on the tool itself.

- Remove plug from the mains immediately if the cable is damaged or cut.

  This warning is only required for mains supplied tools.

If other symbols are used they shall be in accordance with ISO 3767-1 and ISO 3767-3.

Colours shall be in accordance with ISO 3864 unless the symbols are cast, embossed or stamped.

8.12.1 *Addition:*

Chain Saw Safety Warnings:

- **Keep all parts of the body away from the saw chain when the motor is operating. Before you start the saw, make sure the saw chain is not contacting anything.** *A moment of inattention while operating chain saws may cause entanglement of your clothing or body with the saw chain.*
- **Do not operate a chain saw in a tree unless specifically trained to do so.** *Improper operation of a chain saw in a tree, may result in personal injury.*
- **When cutting a limb that is under tension be alert for spring back**. *When the tension in the wood fibres is released the spring loaded limb may strike the operator and/or throw the chain saw out of control.*
- **Use extreme caution when cutting brush and saplings**. *The slender material may catch the saw chain and be whipped toward you or pull you off balance.*
- **Carry the chain saw by the front handle with the saw chain stopped and the guide bar pointing to the rear. When transporting or storing the chain saw always fit the guide bar cover.** *Proper handling of the chain saw will reduce the likelihood of accidental contact with the moving saw chain.*
- **Follow instructions for lubricating, chain tensioning and changing accessories.** *Improperly tensioned or lubricated chain may either break or increase the chance for kickback.*
- **Keep handles dry, clean, and free from oil and grease.** *Greasy, oily handles are slippery causing loss of control.*
- **Cut wood only. Don't use chain saw for purposes not intended – for example – Don't use chain saw for cutting plastic, masonry or non-wood building materials.** *Use of the chain saw for operations different then intended could result in a hazardous situation.*

Causes and Operator Prevention of Kickback:

- KICKBACK may occur when the nose or tip of the guide bar touches an object, or when the wood closes in and pinches the saw chain in the cut.

- Tip contact in some cases may cause a sudden reverse reaction, kicking the guide bar up and back towards the operator.

- Pinching the saw chain along the top of the guide bar may push the guide bar rapidly back towards the operator.

- Either of these reactions may cause you to lose control of the saw which could result in serious personal injury. Do not rely exclusively upon the safety devices built into your saw. As a chain saw user, you should take several steps to keep your cutting jobs free from accident or injury.

Kickback is the result of tool misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below:

- **Maintain a firm grip, with thumbs and fingers encircling the chain saw handles, with both hands on the saw and position your body and arm to allow you to resist kickback forces.** *Kickback forces can be controlled by the operator, if proper precautions are taken. Do not let go of the chain saw.*

NOTE A possible illustration for this warning is given in Figure 103.

- **Do not over reach and do not cut above shoulder height.** *This helps prevent unintended tip contact and enables better control of the chain saw in unexpected situations.*
- **Only use replacement bars and chains specified by the manufacturer.** *Incorrect replacement bars and chains may cause chain breakage and/or kickback.*
- **Follow the manufacturer's sharpening and maintenance instructions for the saw chain.** *Decreasing the depth gauge height can lead to increased kickback.*

8.12.2 a) *Addition:*

7) Explanation of symbols used;
8) An explanation of the safety devices that the chain saw incorporates as part of the original equipment safety, or that are recommended by the manufacturer;
9) Instructions for properly installing and adjusting the guide bar and saw chain.

8.12.2 b) *Addition:*

6) Recommendation for the use of a residual current device with a tripping current of 30 mA or less;
7) A statement to position the cord so that it will not be caught on branches and the like, during cutting;
8) A recommendation that the first time user should, as a minimum practice, cutting logs on a saw-horse or cradle;
9) Instructions to explain the proper techniques for making the basic felling, limbing, and cross-cutting. Examples for the required instructions are given in Annex BB, items 1) to 5);
10) If a manual oiler control is provided instructions regarding its use.

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:

12.4 *Replacement:*

The tool is operated at rated input or rated current for 30 min. The temperature rises are measured at the end of the 30 min.

13 Leakage current

This clause of Part 1 is applicable.

14 Moisture resistance

This clause of Part 1 is applicable.

15 Leakage current and electric strength

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 *Addition:*

The saw chain is removed for the endurance test.

18 Abnormal operation

This clause of Part 1 is applicable.

19 Mechanical hazards

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

19.1 *Addition:*

The requirements of this subclause do not apply to those moving parts and guards which are separately covered by 19.102, 19.103 and 19.104.

19.101 Handles

Chain saws shall be fitted with at least two handles to provide safe control. The gripping length of the front handle shall be at least 100 mm.

The handle surfaces shall be so designed and shaped that firm grip may be applied.

Minimal clearances and sizes of the handles shall be in accordance with ISO 7914.

Compliance is checked by inspection and measurement.

19.102 Front hand guard

A guard shall be fitted in the vicinity of the front handle to protect the operator's fingers from injury by contact with the saw chain. The dimensions and clearances of this front hand guard shall comply with ISO 6533.

Compliance is checked by inspection and measurement.

19.103 Rear hand guard

The hand of the operator shall be protected in case the saw chain breaks or derails. A hand guard shall be provided along the length of the bottom of the rear handle. This guard shall extend from the edge of the handle for at least 30 mm at the guide bar side and at least 100 mm lengthwise (see Figure 104).

Compliance is checked by inspection and measurement.

19.104 Guarding of the moving parts

The drive sprocket and the saw chain behind the spiked bumper shall be guarded to prevent access from both sides and from the top and the rear.

Compliance is checked by means of the straight test probe (see Figure 105). It shall not be possible to touch the drive sprocket and the part of the saw chain behind the spiked bumper with the test probe.

There may be openings at the front and below the drive sprocket to allow the ejection of wood chips and to adjust the guide bar and saw chain.

Compliance is checked by inspection.

19.105 Chain catcher

The chain saw shall be fitted with a chain catcher device placed under the saw chain as far to the front as practicable. The chain catcher shall extend sideways at least 5 mm from the centre-plane of the guide bar.

The chain catcher shall have sufficient mechanical strength.

Compliance is checked by inspection and applying Clauses 3 and 4 of ISO 10726. In 4.1 of ISO 10726, a temperature of (-10 ± 3) °C shall apply.

19.106 Spiked bumper

Chain saws shall have a spiked bumper at the front of the machine.

Compliance is checked by inspection.

19.107 Chain brake

If a chain brake is needed as a part of the anti-kickback system and used to meet the requirements of 19.108, then it shall meet the requirements of 19.107.1 and 19.107.2. It shall be possible to activate the chain brake manually by means of the front hand guard.

19.107.1 The chain brake shall stop the saw chain within 0,15 s from the moment of actuation.