

**SLOVENSKI
STANDARD**

SIST EN 50144-1:2000/A1:2002

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september 2002

Varnost električnih ročnih orodij - 1. del: Splošne zahteve

Safety of hand-held electric motor operated tools - Part 1: General requirements

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ICS 25.140.20

Referenčna številka
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EUROPEAN STANDARD

EN 50144-1/A1

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English version

Safety of hand-held electric motor operated tools Part 1: General requirements

Sécurité des outils électroportatifs à
moteur
Partie 1: Règles générales

Sicherheit handgeführter
motorbetriebener Elektrowerkzeuge
Teil 1: Allgemeine Anforderungen

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This amendment A1 modifies the European Standard EN 50144-1:1998; it was approved by CENELEC on 2001-05-01. 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.

[SIST EN 50144-1:2000/A1:2002](#)

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and 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 50144-1 was prepared by the Technical Committee CENELEC TC 61F, Hand-held and transportable electric motor-operated tools.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as amendment A1 to EN 50144-1:1998 on 2001-05-01.

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) 2002-08-01
- latest date by which the national standards conflicting
with the amendment have to be withdrawn (dow) 2004-08-01

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2 Definitions

Add the following definitions:

2.2.35

type X attachment

method of attachment of the supply cord such that it can easily be replaced

NOTE 1 The supply cord may be specially prepared and only available from the manufacturer or its service agent.

NOTE 2 A specially prepared cord may also include a part of the tool.

2.2.36

type Y attachment

method of attachment of the supply cord such that any replacement is intended to be made by the manufacturer, its service agent or similar qualified person

NOTE Type Y attachment may be used either with an ordinary flexible cord or with a special cord.

7 Marking and information for use

7.9 Delete the whole subclause.

7.13 Add the following subclause:

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7.13.3 The instructions shall contain the substance of the following:

- for appliances with type X attachment having a specially prepared cord:
if the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer or its service agent;
- for appliances with type Y attachment:
if the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid hazard.

Compliance is checked by inspection.

11 Heating

Replace in the first row of Table 2 "other material ²⁾" by:

of Class H material	140
of Class 200 material	160
of Class 220 material	180
of Class 250 material	210

In footnote 1:

- under "Class B" materials, **delete** "asbestos",
- under "Class F" materials, **delete** "and asbestos" and ", varnished asbestos".

Delete footnote 2.

13 Environmental requirements

13.2.5 In the formula, under the summation sign, **replace** "j = 1" with "i = 1".

13.2.6 **Read** " L_w is the A weighted sound **power** level, in decibels ..." (not "pressure")

14 Moisture resistance

14.1 **Replace** the 1st, 2nd and 3rd paragraphs by :

The enclosure of splash-proof and watertight tools shall provide the degree of protection against moisture in accordance with the classification of the tool.

Compliance is checked by appropriate treatment as follows.

Tools with type X attachment shall be fitted with the lightest permissible type of flexible cable or cord of the smallest cross-sectional area specified in 24.2 and having an overall diameter equal to the mean value of the upper and lower limits specified in HD 21 or HD 22 for the relevant type of flexible cable or cord; other tools are tested as delivered.

14.2 **Replace** the 1st, 2nd and 3rd paragraphs by :

Tools subject to spillage of liquid in normal use shall be so constructed that spillage does not affect their electrical insulation.

Compliance is checked by the following test.

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Tools provided with an appliance inlet shall be fitted with an appropriate connector or flexible cable or cord of the smallest cross-sectional area specified in 24.2 and having an overall diameter equal to the mean value of the upper and lower limits specified in HD 21 or HD 22 for the relevant type of flexible cable or cord; other tools are tested as delivered.

15 Insulation resistance and electric strength

15.3 In Table 5:

- in item 2 **read** "Between live parts **and the body**",
- realign the columns of the table as follows:

Table 5

Point of application of test voltage		Test voltage V
Class I tools:		
1	Between live parts of different polarity	1 500
2	Between live parts and the body	1 500
3	Between the body and metal foil in contact with the inner surface of insulation barriers and the body	1 500
4	Between the conductors and metal foil in contact with the outer surface of the insulation of internal wiring which is required to be provided with sleeves or the like	1 500
5	Between the inner and outer surfaces of sleeves or the like on internal wiring	1 500
6	Between internal wiring and metal foil in contact with the outer surface of non-removable sleeves of such wiring	3 000
Class II tools:		
7	Between live parts or different polarity	1 500
8	Between live parts and other inaccessible metal parts	1 500
9	Between the conductors and metal foil in contact with the outer surface of the basic insulation of internal wiring	1 500
10	Between inaccessible metal parts and the body	2 500
11	Between the body and metal foil in contact with the inner surface of insulating barriers	2 500
12	Between the body and either metal foil wrapped round the supply flexible cable or cord inside inlet bushings, cord guards, cord anchorages and the like, or a metal rod of the same diameter as the flexible cable or cord, inserted in its place	2 500
13	Between live parts and parts of the body that are separated from live parts by reinforced insulation	4 000
Class III tools:		
14	Between live parts of different polarity	500
15	Between live parts and the body	500

17 Abnormal operation

17.2 In the 4th sentence **read** "During these tests, the tool shall **show** no defects within ...".

20 Construction

20.12 **Replace** the whole subclause by:

20.12 Switches shall be so located that accidental operation is unlikely to occur.

Compliance is checked by inspection and by a test during which the tool is placed in any possible position on a horizontal surface.

Inadvertent operation of the switch shall not then occur.

20.15 Replace the 1st and 2nd paragraphs by:

Components intended by the manufacturer to be replaceable, such as switches and capacitors, shall be fitted so as to facilitate their replacement.

Compliance is checked by inspection and, if necessary, by manual test.

23 Supply connection and external flexible cables and cords**23.2 Add** the following requirement:

Non-detachable flexible cords shall be assembled to the tool by type X attachment.

Type Y attachment is allowed provided the supply cord is so short that it cannot be damaged by the tool operation.

Compliance is checked by inspection and, if necessary, by manual test.

23.6 Replace the whole subclause by :

23.6 Tools provided with a non-detachable flexible cable or cord shall have a cord anchorage such that the conductors are relieved from strain, including twisting, where they are connected to the terminals, and their covering shall be protected against abrasion.

Cord anchorages of Class II tools shall be of insulating material or, if of metal, be insulated from accessible metal parts by insulation complying with the requirements for supplementary insulation.

Cord anchorages of Class I and Class III tools shall be of insulating material or be provided with an insulating lining, if otherwise an insulation fault on the cable or cord could make accessible metal parts live.

This lining shall be fixed to the cord anchorage, unless it is a bushing which forms part of the cord guard specified in 23.7.

For Class I tools, the conductors of the flexible cable or cord shall be so arranged that, when the cord anchorage fails, the earthing conductor is relieved from strain as long as the phase conductors are in contact with their terminals.

Cord anchorages may be part of the mains switch.

Moreover, for tools with type X attachment, the following requirements apply.

The manner in which relief from strain and prevention of twisting is effected shall be easily recognizable.

Methods such as tying the cables or cords into a knot or tying the ends with string, shall not be used.

Cord anchorages shall be so designed or located that

- the cable or cord cannot touch clamping screws of the cord anchorage, if these screws are accessible or electrically connected to accessible metal parts,
- the cable or cord is not clamped by a metal screw which bears directly on the cable or cord,
- the components cannot readily be lost when replacing the cable or cord or at least one part is securely fixed to an integral part of the tool,
- replacement of the flexible cable or cord does not require the use of a tool specially designed for this purpose,
- they are suitable for different types of flexible cable or cord required in 23.2, unless the tool is so designed that only one type of cable or cord can be fitted,
- that replacement of the flexible cable or cord is easily possible.

Screws, if any, of cord anchorages which have to be loosened when replacing the flexible cable or cord shall not serve to fix any other component.

Compliance is checked by inspection and by the following tests.

The tool is fitted with a flexible cable or cord and the conductors are introduced into the terminals, the terminal screws, if any, being tightened just sufficiently to prevent the conductors from easily changing their position.

The cord anchorage is used in the normal way, its screws, if any, being tightened with a torque equal to two thirds of the torque specified in 26.1.

After this preparation, it shall not be possible to push the cable or cord into the tool to such an extent that the cable or cord, or internal parts of the tool, could be damaged.

The cable or cord is then subjected 100 times to a pull of the value shown in the table below. The pulls are applied, at a point 25 cm from the cord guard, in the most unfavourable direction and without jerks, each time for 1 s.

Immediately afterwards, the cable or cord is subjected for 1 min to a torque of the value shown in Table 9.

Table 9

Mass of the tool kg	Pull N	Torque Nm
Up to and including 1	30	0,10
Over 1 up to and including 4	60	0,25
Over 4	100	0,35