



SLOVENSKI STANDARD

SIST EN 12545:2000

01-december-2000

Glavni namen tega standarda je določiti zahtevane pogoje za izdelavo strojev za izdelavo obutve iz naravnega in umetnega usnja in krzna. Standard določa tudi splošne zahteve za stroje, ki se uporabljajo v proizvodnji usnja in krzna.

Footwear, leather and imitation leather goods manufacturing machines - Noise test code - Common requirements

Maschinen zur Herstellung von Leder- und Kunstlederwaren und Schuhwerk - Geräuschmessung - Allgemeine Anforderungen

Machines de fabrication de chaussures et d'articles en cuir et en matériaux similaires - Code d'essai acoustique - Exigences générales

Ta slovenski standard je istoveten z: EN 12545:2000

ICS:

17.140.20	Emisija hrupa naprav in opreme	Noise emitted by machines and equipment
59.140.40	Stroji in oprema za proizvodnjo usnja in krzna	Machines and equipment for leather and fur production
61.080	Šivalni stroji in druga oprema za izdelavo obutve	Sewing machines and other equipment for the clothing industry

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EUROPEAN STANDARD

EN 12545

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2000

ICS 17.140.20; 59.140.40; 61.080

English version

Footwear, leather and imitation leather goods manufacturing machines - Noise test code - Common requirements

Machines de fabrication de chaussures et d'articles en cuir
et en matériaux similaires - Code d'essai acoustique -
Exigences générales

Maschinen zur Herstellung von Leder- und
Kunstlederwaren und Schuhwerk - Geräuschmessung -
Allgemeine Anforderungen

This European Standard was approved by CEN on 18 February 2000.

CEN 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 CEN 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 CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 201 "Leather and imitation leather goods and footwear manufacturing machinery - Safety", the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2000, and conflicting national standards shall be withdrawn at the latest by September 2000.

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

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

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

This European Standard is a type C standard as stated in EN 1070.

The machinery concerned are indicated in the scope of this standard.

1 Scope

1.1 This noise test code specifies common requirements necessary to carry out efficiently and under standardised conditions the determination, declaration and verification of the noise emission characteristics of the following leather and imitation leather goods and footwear manufacturing machinery:

- Roughing, scouring and trimming machines (see EN 930:1997);
- Lasting machines (see EN 931:1997);
- Cutting and punching machines (see prEN 12044:1998);
- Moulding machines (see EN 1845:1998);
- Nailing machines (see EN 12653:1999).

Common requirements given in this standard are complemented by specific requirements on noise given in the above mentioned C-type standards.

1.2 Noise emission characteristics include emission sound pressure levels at workstations and the sound power level.

The determination of these quantities is necessary e.g. for:

- manufacturers to declare the noise emitted;
- comparing the noise emitted by machines in the family concerned;
- purposes of noise control at source at the design stage.

1.3 The use of this noise test code and of the specific requirements on noise given in the relevant C-type standard ensures the reproducibility of the determination of the noise emission characteristics within specified limits determined by the grade of accuracy of the basic noise measurement standards used. Preferred noise measurement standards are those of engineering grade of accuracy (grade 2):

2 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated reference, subsequent amendments to or revision of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publications referred to applies.

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EN ISO 3743-1:1995 Acoustics – Determination of sound power levels of noise sources – Engineering methods for small movable sources in reverberant fields – Part 1: Comparison method for hard-walled test rooms (ISO 3743-1:1994)

EN ISO 3744:1995 Acoustics – Determination of sound power levels of noise sources using sound pressure – Engineering method in an essentially free field over a reflecting plane (ISO 3744:1994)

EN ISO 3746:1995 Acoustics – Determination of sound power levels of noise sources using sound pressure – Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746:1995)

prEN ISO 3747:1998 Acoustics – Determination of sound power levels of noise sources using sound pressure – Comparison method for use in situ (ISO/DIS 3747:1998)

EN ISO 4871:1996 Acoustics – Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)

EN ISO 9614-1:1995 Acoustics – Determination of sound power levels of noise sources using sound intensity – Part 1: Measurement at discrete points (ISO 9614-1:1993)

EN ISO 9614-2:1996 Acoustics – Determination of sound power levels of noise sources using sound intensity – Part 2: Measurement by scanning (ISO 9614-2:1996)

EN ISO 11201:1995 Acoustics – Noise emitted by machinery and equipment – Measurement of emission sound pressure levels at a work station and at other specified positions – Engineering method in an essentially free field over a reflecting plane (ISO 11201:1995)

EN ISO 11202:1995 Acoustics – Noise emitted by machinery and equipment – Measurement of emission sound pressure levels at a work station and at other specified positions – Survey method in situ (ISO 11202:1995)

EN ISO 11204:1995 Acoustics – Noise emitted by machinery and equipment – Measurement of emission sound pressure levels at a work station and at other specified positions – Method requiring environmental corrections (ISO 11204:1995)

3 Definitions

For the purposes of this Standard, the definitions contained in the reference ISO standards apply.

The definitions of machine types are contained in the Standards mentioned in the scope.

Definitions specific to the testing of particular machine sub-families are contained in the relevant noise test code annexes (see clause 4).

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4 Description of machinery families

Leather products machinery as defined in the scope is subdivided into the following families:

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Cutting and punching machines (a noise test annex to prEN 12044:1998 is in preparation), which include manual swing arms and travelling head cutting presses, powered swing arm cutting presses, beam cutting presses, punching and perforating cutting presses, C – frame presses and automatic presses.

Lasting machines (a noise test code annex to EN 931:1997 is in preparation), which include tack/staple side lasting machines.

Moulding machines (see noise test code annex to EN 1845:1998), which include direct-on-sole, unit sole and footwear component, full shoe and boot moulding machines.

Nailing machines (a noise test annex to EN 12653:1999 is in preparation) which include heel attaching, heel nailing and gang nailing machines.

Roughing and scouring machines (a noise test annex to EN 930:1997 is in preparation) which include trimming machines.

5 Sound power level determination

5.1 A-weighted time-averaged sound power levels (L_{WA} values) for a particular family of machines shall be determined in accordance with one of the basic noise emission measurement standards listed in clause 2 (EN ISO 3743-1:1995, EN ISO 3744:1995, EN ISO 3746:1995, prEN ISO 3747:1998, EN ISO 9614-1:1995, EN ISO 9614-2:1996, EN ISO 11201:1995, EN ISO 11202:1995 and EN ISO 11204:1995) and the relevant noise test code annex for the machinery family or sub-family. This will normally be EN ISO 3744.

NOTE: Only if none of the grade 2 (engineering) methods is applicable should grade 3 (survey) methods be used.

5.2 The standard deviation of reproducibility of measured values is that specified in the basic standard used, unless otherwise stated in the appropriate noise test code annexed to the relevant standard.

6 Emission sound pressure level determination

6.1 Quantities to be measured at the workstation(s) specified in the relevant noise test code annexes for each machinery family or sub-family are A-weighted time-averaged emission sound pressure levels L_{pA} and C-weighted peak emission sound pressure levels $L_{pC,peak}$.

6.2 The emission sound pressure levels referred to in 6.1 shall be determined using Grade 2 (engineering) methods in accordance with one of the basic noise emission measurement standards listed in clause 2 and in the relevant noise test code annex for the machinery family or sub-family. This will normally be EN ISO 11204.

Note: Only if this is not practicable Grade 3 (survey) methods should be used.

6.3 The workstations where emission sound pressure levels are to be measured are specified in the noise test code annexed to the Standard appropriate to each particular machine sub-family.

6.4 Measurement uncertainty depends on the machine sub-family. Unless otherwise stated in the noise test code annexed to the relevant Standard, the standard deviation of reproducibility for A-weighted levels determined using a grade 2 method shall be taken as equal to 1,5 dB.

7 Installation and mounting conditions

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7.1 The installation and mounting conditions shall be strictly the same for determination of both sound power levels and emission sound pressure levels at workstations, and for declaration purposes.

7.2 The machine under test shall be placed on a reflecting (acoustically hard) floor e.g. sealed asphalt or concrete.

7.3 The installation and mounting arrangements for the measurements shall be the same as those indicated by the manufacturer in the Instruction Handbook (see 7.1). Additional installation and mounting arrangements may be specified in relevant noise test code annexes. Any noise reduction features, which are part of the machine under test, shall be in place during the measurement.

7.4 Care shall be taken to ensure that any electrical conduits, piping or air ducts which are connected to the machinery do not radiate significant amounts of sound energy. To achieve this, flexible electric cables and pneumatic hoses shall be used for the machinery under test.

8 Operating conditions

8.1 These shall be those specified in the noise test code annexed to the relevant Standard. If there is no relevant part, the operating conditions shall be reproducible and representative of the noisiest operation in typical usage of the machine. Details of these conditions shall be reported.

8.2 The operating conditions shall be strictly the same for the determination of both sound power levels and emission sound pressure levels at workstations and for declaration purposes.

8.3 The noise emission values shall be determined for a complete work cycle as defined in the noise test code annexed to the relevant Standard.

9 Measurement uncertainties

Measurements uncertainties will occur during noise testing. The method set down in the noise test code annexed to the relevant Standard is designed to keep them to an acceptable minimum. See 5.2 and 6.4.

If no value of uncertainty K is specified in the annex to the relevant standard, recommended values of K (see annex A of EN ISO 4871:1996), for the emission sound pressure level and the sound power level, are $K = 2,5$ dB for engineering methods (grade 2) and $K = 4$ dB for survey methods (grade 3)

10 Information to be recorded

Information to be recorded is that required by the basic standards used.

Note: The information should be recorded using the model data sheet given in the relevant noise test code annex for the machinery family or sub-family.

11 Information to be reported

11.1 The information to be included in the test report shall enable the manufacturer to prepare a noise emission declaration and a third party to verify the declared values. The test report shall be included in the manufacturer's file. It is recommended to report the information using the model data sheet given in the relevant noise test code annex for the machinery family or sub-family which includes reference to the basic noise emission standards used, description of mounting and operating conditions used, location of workstation(s) and the noise emission values obtained. These are:

- the A-weighted time averaged emission sound pressure level;
- the C-weighted peak emission sound pressure level if necessary;
- the A-weighted sound power level, if required.

11.2 The Data Sheet shall be used to confirm that all requirements of this noise test code have been fulfilled or alternatively identify any deviations and list the justification for those necessary deviations.