

**SLOVENSKI STANDARD**  
**SIST EN 12545:2000+A1:2009**

01-julij-2009

Glavni namen: Yj`Yj ži gbYb] ]nXY\_cj ]b`]nXY\_cj ]ni a YtbY[ Ui gbU!  
 A Yf Yb Y\ fi dU! Gd`cybYnU hYj Y

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

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**Ta slovenski standard je istoveten z: EN 12545:2000+A1:2009**

**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	Šivalne stroje in druga oprema za izdelavo oblačil	Sewing machines and other equipment for the clothing industry

**SIST EN 12545:2000+A1:2009** en,fr

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EUROPEAN STANDARD

**EN 12545:2000+A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2009

ICS 17.140.20; 59.140.40; 61.060

Supersedes EN 12545:2000

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 and includes Amendment 1 approved by CEN on 17 April 2009.

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 CEN Management Centre 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 CEN Management Centre has the same status as the official versions.

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COMITÉ EUROPÉEN DE NORMALISATION  
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## Foreword

This document (EN 12545:2000+A1:2009) 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 November 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document includes Amendment 1, approved by CEN on 2009-04-17.

This document supersedes EN 12545:2000.

The start and finish of text introduced or altered by amendment is indicated in the text by tags  $\square_{A1}$   $\square_{A1}$ .

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).

$\square_{A1}$  For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document.  $\square_{A1}$

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

**EN 12545:2000+A1:2009 (E)****Introduction**

**A1** This document is a type C standard as stated in EN ISO 12100.

The machinery concerned and the extent to which hazards, hazardous situations and hazardous events are covered are indicated in the scope of this document.

When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of the other standards, for machines that have been designed and built according to the provisions of this type C standard. **A1**

**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:

**A1** - Cutting and punching machines (EN 12044);

- Roughing, scouring, polishing and trimming machines (EN 930);
- Footwear moulding machines (EN 1845);
- Lasting machines (EN 931);
- Nailing machines (EN 12653);
- Modular shoe repair equipment (EN 12387);
- Shoe and leather presses (EN 12203);
- Splitting, skiving, cutting, cementing and cement drying machines (EN 13457). **A1**

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

**A1** The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. **A1**

**A1** EN ISO 3743-1 **A1**, *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)*

**A1** EN ISO 3744 **A1**, *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)*

**A1** EN ISO 3746 **A1**, *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)*

**A1** EN ISO 3747, *Acoustics – Determination of sound power levels of noise sources using sound pressure – Comparison method for use in situ (ISO 3747:2000)* **A1**

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

**A1** EN ISO 9614-1 **A1**, *Acoustics – Determination of sound power levels of noise sources using sound intensity – Part 1: Measurement at discrete points (ISO 9614-1:1993)*

**A1** EN ISO 9614-2 **A1**, *Acoustics – Determination of sound power levels of noise sources using sound intensity – Part 2: Measurement by scanning (ISO 9614-2:1996)*

**A1** EN ISO 11201 **A1**, *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)*

**A1** EN ISO 11202 **A1**, *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)*

**A1** EN ISO 11204 **A1**, *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 **A1** Terms and definitions **A1**

**A1** For the purposes of this document the terms and definitions contained in the reference ISO standards apply. **A1**

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).

**EN 12545:2000+A1:2009 (E)****4 Description of machinery families**

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

**Cutting and punching machines** (A1) EN 12044 (A1), 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.

(A1) **Roughing, scouring, polishing and trimming machines** (EN 930) (A1)

(A1) **Footwear moulding machines** (A1) (A1) EN 1845 (A1), which include direct-on-sole, unit sole and footwear component, full shoe and boot moulding machines.

(A1) *deleted text* (A1)

(A1) **Lasting machines** (EN 931), which include tack / staple side lasting machines.

**Nailing machines** (EN 12653) which include heel attaching, heel nailing and gang nailing machines.

**Modular shoe repair equipment** (EN 12387) which include finishing machines, orthopaedic finishing machines and combined heel and sole presses.

**Shoe and leather presses** (EN 12203) which include sole attaching presses, sole and insole moulding machines, back part moulding machines, backer, lining and toe puff attaching presses, ironing presses, marking, stamping labelling and embossing machines, stitch marking machines, upper preforming machines, premoulding machines for thermoplastic counter, counter forming machines, folding presses, activating presses, relasting and last slipping machines, top piece attaching presses, leather button covering machines, automatic presses and integrated shoe and leather pressing manufacturing systems.

**Splitting, skiving cutting, cementing and cement drying machines** (EN 13457) (A1)

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**5 Sound power level determination**

**5.1** A-weighted time-averaged sound power levels (LWA 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 (A1) EN ISO 3743-1, EN ISO 3744, EN ISO 3746, EN ISO 3747, EN ISO 9614-1, EN ISO 9614-2, EN ISO 11201, EN ISO 11202 and EN ISO 11204 (A1) 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

**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)