SLOVENSKI STANDARD
SIST EN 12549:2000+A1:2008

01-november-2008

Akustika - Postopek merjenja hrupa orodij za pritrjevanje/zabijanje - Inženirska metoda

Acoustics - Noise test code for fastener driving tools - Engineering method

Akustik - Geräuschmessverfahren für Eintreibgeräte - Verfahren der Genauigkeitsklasse 2

Acoustique - Code d'essai acoustique pour les machines à enfoncer les fixations - Méthode d'expertise

Ta slovenski standard je istoveten z: **EN 12549:1999+A1:2008**

ICS:

17.140.20	Emisija hrupa naprav in opreme	Noise emitted by machines and equipment
25.140.99	Druga roļ na orodja	Other hand-held tools

SIST EN 12549:2000+A1:2008 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12549:1999+A1

September 2008

ICS 17.140.20; 25.140.99

Supersedes EN 12549:1999

English Version

Acoustics - Noise test code for fastener driving tools - Engineering method

Acoustique - Code d'essai acoustique pour les machines à enfoncer les fixations - Méthode d'expertise

Akustik - Geräuschmessverfahren für Eintreibgeräte - Verfahren der Genauigkeitsklasse 2

This European Standard was approved by CEN on 30 October 1998 and includes Amendment 1 approved by CEN on 26 July 2008.

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.

CEN members are the national standards bodies of 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.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 12549:1999+A1:2008: E

Contents

Page

Foreword

This document (EN 12549:1999+A1:2008) has been prepared by Technical Committee CEN/TC 255 "Hand-held, non-electric power tools - Safety", the secretariat of which is held by SIS.

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 March 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document includes Amendment 1, approved by CEN on 2008-07-26.

This document supersedes EN 12549:1999.

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1] 〈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).

[A1] For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. 〈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.

Introduction

This noise test code describes methods for determining and presenting the acoustical characteristics of fastener driving tools.

The EC Machinery Directive prescribes that noise emission values for the machines in a defined process shall be stated. The manufacturer of fastener driving tools must indicate the operating conditions during the noise measurement and what methods have been used for the measurement.

1 Scope

This standard applies to fastener driving tools. The noise created by fastener driving tools directly affecting the surrounding environment (noise emission) should calculated in a uniform procedure enabling comparison of the final results. This standard contains provisions concerning the execution of the measurement of airborne noise in the vicinity of fastener driving tools and the measurement of emission sound pressure levels at the work station under defined operating conditions.

The determination of the noise emission levels of fastener driving tools in accordance with this standard is valid for all actuating systems in accordance with EN 792-13.

The results can be used to compare the noise emissions of different fastener driving tools.

NOTE The special conditions at the work place (e.g. shape and foundation of the workpiece, quantity and frequency of the driving processes) can influence the noise emission to an important degree.

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 references, subsequent amendments to or revisions 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 publication referred to applies.

EN 292-2, *Safety of machinery – Basic concepts, general principles for design – Part 2: Technical principles and specifications*

EN 792-13, *Handheld non-electric power tools - Safety requirements – Part 13: Fastener driving tools*

EN 60651, *Sound level meters*

EN 60804, *Integrating-averaging sound level meters*

EN ISO 3744, *Acoustics - Determination of sound power levels of noise sources using sound pressure - Engineering method in an essentially free field over a reflecting plane*

EN ISO 4871, *Acoustics - Declaration and verification of noise emission values of machinery and equipment*

EN ISO 11201, *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*

3 Definitions

For the purposes of this standard, the following definitions apply:

3.1 A-weighted single-event emission sound pressure level, $L_{pA,1s}$ in dB:

A-weighted and time-integrated emission sound pressure level of an isolated single sound event of specified duration T (or specified measurement time T), related to T_0 = 1 s; it is given by the following equation:

$$L_{pA,1\,s} = 10\ \lg\left[\frac{1}{T_0}\int_0^T \frac{p^2(t)}{p_0^2}\,\mathrm{d}t\right]\ \mathrm{dB} = L_{pAeq,T} + 10\ \lg\left(\frac{T}{T_0}\right)\ \mathrm{dB} \qquad \ldots(1)$$

The reference sound pressure is p_0 = 20 µPa.

3.2 A-weighted single-event sound power level, $L_{WA,1s}$ in dB:

A-weighted sound power level determined from measurements of the single-event sound pressure level.

3.3 C-weighted peak emission sound pressure level, $L_{pC,peak}$ in dB:

The C-weighted peak emission sound pressure level of a test object, determined in accordance with EN ISO 11201 at the work station.

3.4 Fastener driving tool

See EN 792-13.

4 Description of fastener driving tools

Fastener driving tools are handheld power tools in which energy is applied in a linear movement to inserted fasteners for the purpose of driving. The design of these fastener driving tools is such that in normal circumstances they may be carried by one person and are handheld during the driving process.

NOTE Fastener driving tools are named e.g. nailers, staplers, tackers, pinners.

The energy required for the driving process can be drawn e.g. from compressed air, electrical current, combustible gases, tension springs. Fasteners may be e.g. nails, staples, pins, brads, corrugated fasteners and screws used as nails.

The frequency of the driving processes with a fastener driving tool varies in time according to the operation purpose (e.g. 500 driving processes per day may be carried out with a big fastener driving tool against 20 per second with a small one).

The time duration of one driving process is normally in a range of 0,1 s or shorter.

5 Sound power level determination

5.1 Basic International Standards to be used

If it is required to determine the sound power level, basic sound power measurement standards shall be used, such as EN ISO 3744.

The sound power level shall be given as A-weighted sound power level in dB. The reference sound power is 1pW (1 pW = 10^{-12} W).

5.2 Measurement procedure

5.2.1 Measurement surface

The measurement surface is a hypothetical cube on which the measurement positions are located and which envelops the fastener driving tool (see figure 1).

Exception: Position O for measuring the A-weighted single-event emission sound pressure level at work station.

The measurement surface ends at floor level, which is to be regarded as a sound reflecting periphery. The height of the centre point of the fastener driving tool above the ground shall be (1,00 ± 0,10) m. The centre point is located on the driving axis at half of the height of the fastener driving tool.

NOTE Because a fastener driving tool is of small size the centre point of a fastener driving tool is used instead of the surface.

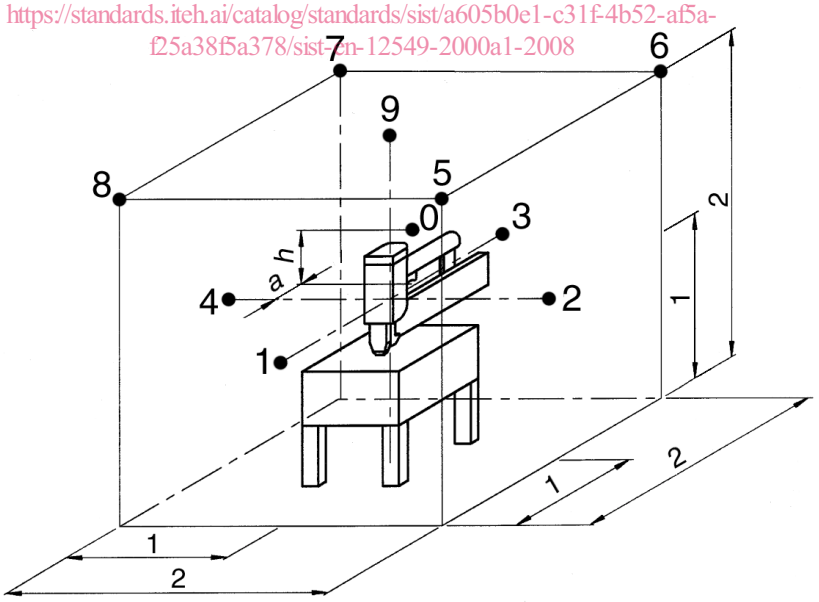
5.2.2 Measurement distance

The measurement distance shall be 1,00 m from the centre point of the fastener driving tool (see figure 1).

5.2.3 Measurement positions

The location of the nine measurement positions i = 1, 2, ..., 9 shall be that of figure 1.

Dimensions in metres



● Measurement positions

0 Measurement position at the work station (near the operator's ear)

Figure 1 — Location of the measurement positions for fastener driving tools