Heating boilers - Test regulations for airborne noise emissions from heat generators - Part 1: Airborne noise emissions from heat generators

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EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN 15036-1:2006 sisaldab Euroopa standardi EN 15036-1:2006 ingliskeelset teksti. Käesolev dokument on jõustatud 24.11.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 15036-1:2006 consists of the English text of the European standard EN 15036-1:2006. This document is endorsed on 24.11.2006 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This European Standard specifies test methods for airborne noise emissions from heat generators in a test laboratory or at the place of installation. The test methods described in this European Standard, however, may be used for measuring the airborne noise emissions of the appliances and functions listed below.	**Scope:** This European Standard specifies test methods for airborne noise emissions from heat generators in a test laboratory or at the place of installation. The test methods described in this European Standard, however, may be used for measuring the airborne noise emissions of the appliances and functions listed below.

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Heating boilers - Test regulations for airborne noise emissions from heat generators - Part 1: Airborne noise emissions from heat generators

Chaudières de chauffage - Règles d´essais des émissions de bruit aérien des générateurs de chaleur - Partie 1 : Émissions du bruit aérien des générateurs de chaleur

Heizkessel - Prüfverfahren für Luftschallemissionen von Wärmeerzeugern - Teil 1: Luftschallemissionen von Wärmeerzeugern

This European Standard was approved by CEN on 14 August 2006.

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, 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.

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Foreword

This document (EN 15036-1:2006) has been prepared by Technical Committee CEN/TC 57 “Central heating boilers”, the secretariat of which is held by DIN.

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 2007, and conflicting national standards shall be withdrawn at the latest by March 2007.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard : Austria, Belgium, 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

Generally speaking, determining the airborne noise emissions is only part of a comprehensive testing programme which takes into account many different viewpoints relating to the characteristics and behaviour in using a heat generator. It is therefore important that the requirements for noise tests, such as the measuring equipment and the environment in which it is used should always be considered within the prescribed context.

It is also important whatever the ultimate purpose may be, to lay down procedures within a defined degree of accuracy, so that the measuring results obtained from various different laboratories can be compared with one another. These conditions have been taken into account as far as possible in preparing these test methods. All test procedures defined in EN ISO 3741, EN ISO 3743, EN ISO 3744, EN ISO 3746 and EN ISO 9614 are permissible methods.

It should be emphasised that these test methods only apply to airborne noise. In many cases, however, structure-borne noise, such as can be transmitted into a neighbouring room, can also be of significance. It is envisaged that airborne noise emissions through the flue gas path will be dealt with in a separate part of this standard.

All the basic and noise measurement standards of accuracy categories 1 to 3 are permissible under this testing standard.

Sound values declared by the manufacturer can be measured according to these three categories, but in any case, the used category has to be stated.

This European Standard sets out various methods for testing to approximate the airborne noise emitted by heat generators into the room of installation.

1 Scope

This European Standard specifies test methods for airborne noise emissions from heat generators in a test laboratory or at the place of installation.

The test methods described in this European Standard, however, may be used for measuring the airborne noise emissions of the appliances and functions listed below.

This European Standard applies to following appliances regardless of their heat output and the fuel used:

— wall-mounted and floor-standing heating appliances;

— forced-draught burners;

— boilers/forced-draught burner units;

— boilers with freely allocated forced-draught burners;

— pellet burners.

According to this European Standard the manufacturer is allowed to choose an appropriate category of testing for the measured appliance.

This European Standard does not apply to:

— appliances used exclusively for heating drinking-water;

— function of heating drinking-water in so-called combined water-heaters;

— heat generators which work with air as the heat transfer medium;

— electrical heating appliances;

— structure-borne noise;

— sound transmission along the flue gas path.

2 Normative references

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.

EN 267, *Forced draught oil burners — Definitions, requirements, testing, marking*

EN 437, *Test gases — Test pressures — Appliance categories*

EN 676, *Automatic forced draught burners for gaseous fuels*

EN ISO 3741, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Precision methods for reverberation rooms (ISO 3741:1999).*

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 3743-2:1996, *Acoustics - Determination of sound power levels of noise sources using sound pressure - Engineering methods for small, movable sources in reverberant fields - Part 2: Methods for special reverberation test rooms (ISO 3743-2:1994)*

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 3745, *Acoustics - Determination of sound power levels of noise sources using sound pressure - Precision methods for anechoic and semi-anechoic rooms (ISO 3745:2003)*

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)*

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

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

EN ISO 9614-3:2002, *Acoustics — Determination of the sound power levels of noise sources using sound intensity — Part 3: Precision method for measurement by scanning (ISO 9614-3:2002)*

3 Terms and definitions

For the purposes of this standard, the terms and definitions given in EN ISO 3743-1:1995, EN ISO 3743-2:1996, EN ISO 3744:1995, EN ISO 3746:1995, EN ISO 9614-1:1995, EN ISO 9614-2:1996 and EN ISO 9614-3:2002 and the following apply.

3.1
heat generator
device suitable for the combustion of liquid, gaseous and solid fuels

4 Determining sound power levels

4.1 General data

The sound power W, of a noise source is the total sound energy radiated by that source per second, expressed in Watts (W). The sound power W, is customarily related to a reference sound power W_0 and expressed as a sound power level L_W in decibels (dB) according to equation (1):

$$L_W = 10 \cdot \log \frac{W}{W_0} \quad (1)$$

where

W_0 is the reference sound power level of 1 pW (= 10^{-12} W).