Akustika. Kompressorite ja vaakumpumpade mürakatsekoodeks. Insenertehniline meetod (kategooria 2)

Acoustics - Noise test code for compressors and vacuum pumps Engineering method (grade 2)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 2151:2008 sisaldab Euroopa standardi EN ISO 2151:2008 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 2151:2008 consists of the English text of the European standard EN ISO 2151:2008.
Standard on kinnitatud Eesti Standardikeskuse 25.09.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 25.09.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 06.08.2008.	Date of Availability of the European standard text 06.08.2008.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

ICS 17.140.20, 23.140

Võtmesõnad:

EUROPEAN STANDARD

NORME EUROPÉENNE

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English Version

Acoustics - Noise test code for compressors and vacuum pumps - Engineering method (Grade 2) (ISO 2151:2004)

Acoustique - Code d'essai acoustique pour les compresseurs et les pompes à vide - Méthode d'expertise (classe de précision 2) (ISO 2151:2004)

Kompressoren und Vakuumpumpen - Bestimmung der Geräuschemission - Verfahren der Genauigkeitsklasse 2 (ISO 2151:2004)

This European Standard was approved by CEN on 18 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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN ISO 2151:2008: E

Foreword

The text of ISO 2151:2004 has been prepared by Technical Committee ISO/TC 118 “Compressors, pneumatic tools and pneumatic machines” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 2151:2008 by Technical Committee CEN/TC 232 “Compressors - 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 February 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 2151:2004.

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

For relationship with EC Directives, see informative Annex ZA and ZB, which are integral part of this document.

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 the United Kingdom.

Endorsement notice

The text of ISO 2151:2004 has been approved by CEN as a EN ISO 2151:2008 without any modification.

Annex ZA
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 98/37 EEC

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirement ESR 1.7.4.f) of the New Approach Directive 98/37 EEC.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

WARNING: Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

Annex ZB
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirement ESR 1.7.4.2 u) and of the New Approach Directive 2006/42/EC on machinery.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of that Directive and associated EFTA regulations.

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

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Introduction

The noise test code presented by this International Standard describes methods for determining and presenting the acoustical characteristics of compressors and vacuum pumps, i.e. the total noise level from the compressor or vacuum pump expressed as sound power level, or the emission sound pressure level at the work station or other specified positions.

Based on current industry practice, this noise test code requires the compressor or vacuum pump under test to be run under conditions representing the noisiest operation in typical usage — full-load for compressors and off-load for vacuum pumps.

It needs to be noted that operators' exposure to noise depends upon the characteristics of individual applications and environmental factors beyond the control of the manufacturers of compressors and vacuum pumps.

This International Standard does not give requirements for octave band analysis, however, where there is an interest this can be undertaken.

Acoustics — Noise test code for compressors and vacuum pumps — Engineering method (Grade 2)

1 Scope

This International Standard specifies methods for the measurement, determination and declaration of the noise emission from portable and stationary compressors and vacuum pumps. It prescribes the mounting, loading and working conditions under which measurements are to be made, and includes measurement or determination of the noise emission expressed as

— the sound power level under specified load conditions,

— the emission sound pressure level at the work station under specified load conditions.

It is applicable to

— compressors for various types of gases,

— oil-lubricated air compressors,

— oil-flooded air compressors,

— water injected air compressors,

— oil-free air compressors,

— compressors for handling hazardous gases (gas compressors),

— compressors for handling oxygen,

— compressors for handling acetylene,

— high-pressure compressors [over 4 Mpa (40 bar)],

— compressors for application at low inlet temperatures, i.e. below 0 °C,

— large compressors (over 1 000 kW input power),

— portable and skid-mounted air compressors, and

— rotary positive displacement blowers and centrifugal blowers and exhausters in applications $\leqslant$ 0,2 MPa ($\leqslant$ 2 bar).

It is not applicable to

— compressors for gases other than acetylene having a maximum allowable working pressure of less than 0,5 bar/0,05 MPa,

— refrigerant compressors used in refrigerating systems or heat pumps,

— hand-held portable compressors.

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.

ISO 3744:1994, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane*

ISO 4871:1996, *Acoustics — Declaration and verification of noise emission values of machinery and equipment*

ISO 9614-1:1993, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 1: Measurement at discrete points*

ISO 9614-2:1996, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 2: Measurement by scanning*

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 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 11203:1995, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions from the sound power level*

IEC 61672-1:2002, *Electroacoustics — Sound level meters — Specifications*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
compressor
machine which compresses air, gases or vapours to a pressure higher than the inlet pressure

NOTE A compressor comprises the bare compressor itself, the prime mover and any component or device supplied with the compressor.

3.2
vacuum pump
device for creating, improving and/or maintaining vacuum

NOTE A vacuum pump comprises the bare pump, the prime mover and any component or device supplied with the vacuum pump.

3.3
emission
airborne sound radiated by a well-defined noise source (e.g. the machine under test) under specified operating and mounting conditions

NOTE 1 Adapted from ISO 11203:1995.

NOTE 2 Noise emission values can be incorporated in a product label and/or published in a product specification. The basic noise emission descriptors are the sound power level of the product itself and the emission sound pressure levels at the work station and at other specified positions in the vicinity of the product (if any).