

<b>STN</b>	<b>Laboratórne meranie hluku z inštalácií odpadových vôd</b>	<b>STN EN 14366+A1</b>  73 0538
------------	--	---

Laboratory measurement of noise from waste water installations

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/20

Obsahuje: EN 14366:2004+A1:2019

Oznámením tejto normy sa ruší  
STN EN 14366 (73 0538) z júna 2005

**130216**

EUROPEAN STANDARD

**EN 14366:2004+A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2019

ICS 17.140.20; 91.140.80

Supersedes EN 14366:2004

English Version

## Laboratory measurement of noise from waste water installations

Mesurage en laboratoire du bruit émis par les installations d'évacuation des eaux usées

Messung der Geräusche von Abwasserinstallationen im Prüfstand

This European Standard was approved by CEN on 23 September 2004 and includes Amendment 1 approved by CEN on 28 July 2019.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

## EN 14366:2004+A1:2019 (E)

<b>Contents</b>	<b>Page</b>
European foreword.....	3
Introduction .....	4
1 Scope .....	5
2 Normative references.....	5
3 Terms and definitions .....	5
4 Notations .....	7
5 Principle of the test method .....	8
5.1 Structure-borne sound measurements (index s) .....	8
5.2 Airborne sound measurement (index a) .....	8
6 Equipment .....	8
6.1 Requirements for the frequency range of measurement .....	8
6.2 Requirements for the acoustic equipment .....	8
6.3 Requirements for the hydraulic equipment.....	8
6.4 Requirements for the wall structural sensitivity measuring equipment.....	8
7 Test facilities.....	9
7.1 Construction requirements .....	9
7.2 Acoustic requirements.....	9
8 Test specimen.....	9
8.1 Geometry.....	9
8.2 Mounting of the specimen.....	11
9 Test procedure and evaluation .....	12
9.1 Wall structural sensitivity measurement.....	12
9.2 Flow rate.....	13
9.3 Measurements.....	13
9.4 Correction for background noise .....	13
9.5 Normalisation.....	14
9.6 Calculation of structure-borne sound level $L_{sn}$ and normalisation with respect to the acoustic properties of the wall.....	14
9.7 Calculation of the airborne level $L_{an}$ .....	15
10 Calculation of single number quantities.....	15
10.1 Single number descriptor for structure-borne sound.....	15
10.2 Single number descriptor for airborne sound.....	15
11 Precision.....	15
11.1 Repeatability.....	15
11.2 Reproducibility .....	15
12 Expression of results.....	15
13 Test report.....	16
Annex A (normative) Wall structural sensitivity measurement.....	17
Annex B (informative) Background ; application of reciprocity for calibrating the test wall.....	18
Bibliography.....	20

## European foreword

This document (EN 14366:2004+A1:2019) has been prepared by Technical Committee CEN/TC 126 “Acoustic properties of building elements and of buildings”, the secretariat of which is held by AFNOR.

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 April 2020 and conflicting national standards shall be withdrawn at the latest by April 2020.

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

This document includes Amendment 1 approved by CEN on 28 July 2019.

This document supersedes EN 14366:2004.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** and **A1**.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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

**EN 14366:2004+A1:2019 (E)****Introduction**

Noise from wastewater installations is generated by the flow and fall of water in the piping system. There are many different ways to install such systems in buildings, depending on national building codes. They may be firmly cemented into walls and floors, fixed by clips in walls and covered slabs, or hung exposed in the plenum above a suspended ceiling. It seems advisable, therefore, to define measuring methods for both structure-borne and airborne sound.

Important noise sources are bends after vertical sections, but also discontinuities, e.g. inlets, couplings and sleeves. Apart from that the noise impact on the inhabitants of a building strongly depends on the material properties of the pipes, on the methods used in joining and fastening them and on the local building practice.

## 1 Scope

This document:

- specifies methods for the measurement of airborne and structure-borne sound produced in waste water and rain water installations under laboratory conditions;
- defines the expression of the results.

It is applicable to waste water piping systems and parts thereof, but not to the actual sources of the wastewater, e.g. lavatories, toilets and bathtubs or any active units. It applies to pipes with natural ventilation and made of any common material in commonly used diameters (up to 150 mm).

**A1** The test results can be used for the comparison of products and materials, but cannot be used as values obtained in buildings in situ; in situ values can be predicted using the procedure described in EN 12354-5:2009, 5.5, which transfers laboratory data to field data, assuming the in-situ installation is exactly the same as the one described in the test report. **A1**

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 61672-1, *Electroacoustics - Sound level meters - Part 1: Specifications (IEC 61672-1:2002)*

EN ISO 140-3:1995, *Acoustics – Measurement of sound insulation in buildings and of building elements – Part 3: Laboratory measurements of airborne sound insulation of building elements (ISO 140-3:1995)*

EN ISO 354, *Acoustics – Measurement of sound absorption in a reverberation room (ISO 354:2003)*

EN ISO 6926, *Acoustics – Requirements for the performance and calibration of reference sound sources used for the determination of sound power levels (ISO 6926:2000)*

ISO 5348, *Mechanical vibration and shock – Mechanical mounting of accelerometers*

ISO 16063-21, *Methods for the calibration of vibration and shock transducers – Part 21: Vibration calibration by comparison to a reference transducer*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**