SLOVENSKI STANDARD
SIST EN ISO 140-1:1998/A1:2005

01-junij-2005

Akustika - Merjenje zvočne izolirnosti v zgradbah in zvočne izolirnosti gradbenih elementov - 1. del: Zahteve za laboratorije z majhnim bočnim prenosom - Dopolnilo 1: Posebne zahteve za okvir preskusne odprtine za lahke dvokrilne predelitve (ISO 140-1:1997/AM 1:2004)

Acoustics - Measurement of sound insulation in buildings and of building elements - Part 1: Requirements for laboratory test facilities with suppressed flanking transmission - Amendment 1: Specific requirements on the frame of the test opening for lightweight twin leaf partitions (ISO 140-1:1997/AM 1:2004)

Akustik - Messung der Schalldämmung in Gebäuden und von Bauteilen - Teil 1: Anforderungen an Prüfstände mit unterdrückter Flankenübertragung - Änderung 1: Besondere Anforderungen an den Rahmen der Prüföffnung für zweischalige Leichtbau-Trennwände (ISO 140-1:1997/AM 1:2004)

Acoustique - Mesurage de l'isolement acoustique des immeubles et des éléments de construction - Partie 1: Spécifications relatives aux laboratoires sans transmissions latérales - Amendement 1: Exigences particulieres applicables au cadre de l'ouverture d'essai pour cloisons a doubles parements légers (ISO 140-1:1997/AM 1:2004)

Ta slovenski standard je istoveten z: **EN ISO 140-1:1997/A1:2004**

ICS:

17.140.01	Akustična merjenja in blaženje hrupa na splošno	Acoustic measurements and noise abatement in general
91.120.20	Akustika v stavbah. Zvočna izolacija	Acoustics in building. Sound insulation

SIST EN ISO 140-1:1998/A1:2005 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 140-1:1997/A1

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English version

Acoustics - Measurement of sound insulation in buildings and of building elements - Part 1: Requirements for laboratory test facilities with suppressed flanking transmission - Amendment 1: Specific requirements on the frame of the test opening for lightweight twin leaf partitions (ISO 140-1:1997/AM 1:2004)

Acoustique - Mesurage de l'isolement acoustique des immeubles et des éléments de construction - Partie 1: Spécifications relatives aux laboratoires sans transmissions latérales - Amendement 1: Exigences particulières applicables au cadre de l'ouverture d'essai pour cloisons à doubles parements légers (ISO 140-1:1997/AM 1:2004)

Akustik - Messung der Schalldämmung in Gebäuden und von Bauteilen - Teil 1: Anforderungen an Prüfstände mit unterdrückter Flankenübertragung - Änderung 1: Besondere Anforderungen an den Rahmen der Prüföffnung für zweischalige Leichtbau-Trennwände (ISO 140-1:1997/AM 1:2004)

This amendment A1 modifies the European Standard EN ISO 140-1:1997; it was approved by CEN on 8 August 2004.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant 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 amendment 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, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

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Ref. No. EN ISO 140-1:1997/A1:2004: E

Foreword

This document (EN ISO 140-1:1997/A1:2004) 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, in collaboration with Technical Committee ISO/TC 43 “Acoustics”.

This Amendment to the European Standard EN ISO 140-1:1997 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2005, and conflicting national standards shall be withdrawn at the latest by June 2005.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

Evaluation of the results of a European Inter Laboratory Test in 1998 showed that the requirements given in EN ISO 140-1 are inadequate for lightweight twin partitions therefore the following annex is added.

Annex D
(normative)

Specific requirements on the frame of the test opening for lightweight twin leaf partitions

With lightweight twin leaf partitions, the sound reduction index is affected by vibration transmission between the wall leaves across the frame(s) of the test opening (see Figure D.1). This is influenced by the mounting conditions in the laboratory test opening and by the material properties and dimensions of the frame(s). Vibration transmission between the coupled structures of the wall itself (e.g. common or coupled studs) relates to the specific wall construction. This vibration transmission is not handled in this document.

In order to improve the reproducibility of the sound reduction index between laboratories, the mass per unit area of the frame(s) shall be much larger than the mass per unit area of the heaviest leaf of the twin leaf partition. The ratio of the mass per unit area of the heaviest leaf of the double partition to that of the frame of the test opening shall be at least 1:6. The minimum thickness and depth of the frame should be 100 mm and 200 mm respectively. The frame shall have a density of at least 2 000 kg/m^3. The cross sectional surface mass shall be greater than 450 kg/m^2. In addition, the frame(s) shall consist of a homogeneous, massive construction such as dense concrete or masonry. Wood or metal frames connecting the two leaves shall not be used.

The surface mass per unit area is calculated from the density, ρ, and the thickness, t, of the elements as shown in Figure D.2 using the following equations :

$$m'_L = \rho_L \, t_L \qquad \text{(D.1)}$$

where

m'_L surface mass per unit area of the test facility wall

ρ_L density of the test facility wall

t_L thickness of the test facility wall

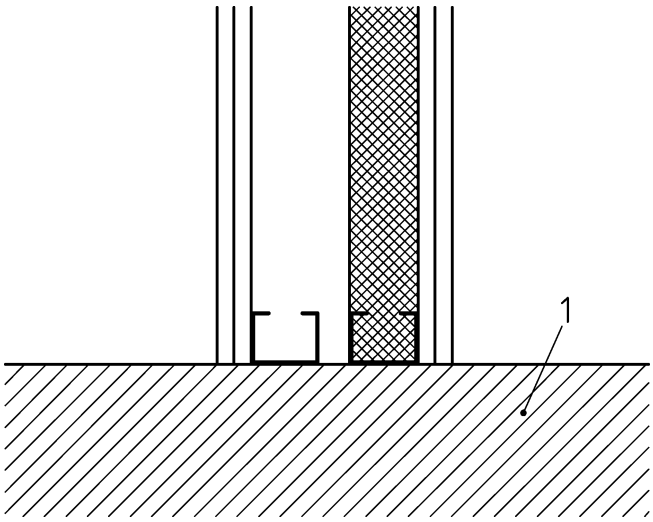
$$m'_e = \rho_e \, t_e \qquad \text{(D.2)}$$

where

m'_e surface mass per unit area of the specimen

ρ_e density of the specimen

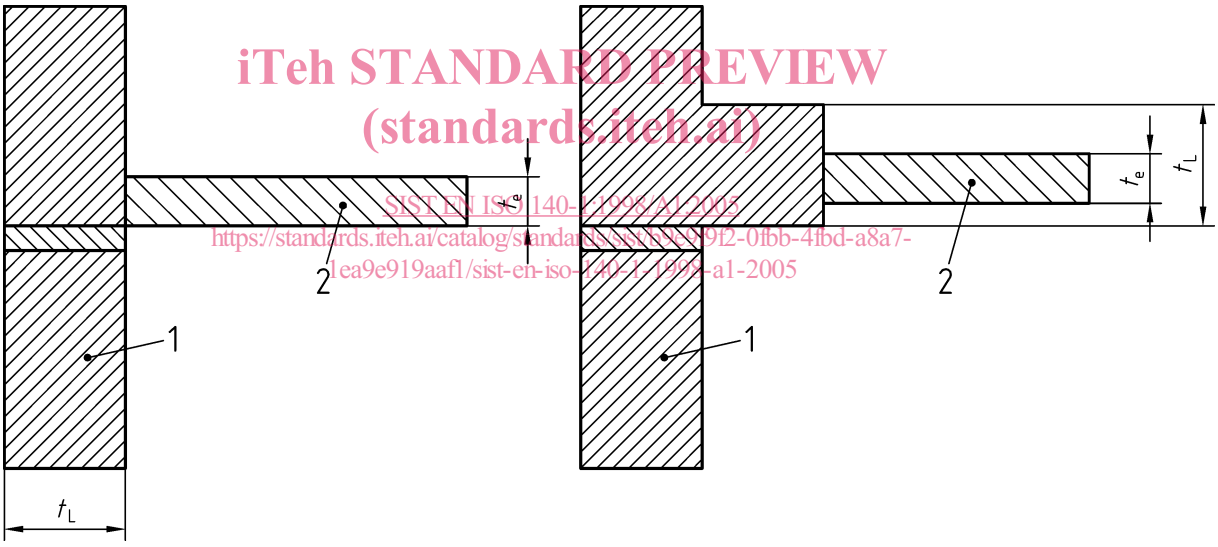
t_e thickness of the specimen



Key

1 frame of the test opening

Figure D.1 — Vibration transmission across the frame of the test opening



Key

1 test facility wall
2 specimen under test
t_L thickness of the test facility wall
t_e thickness of the specimen

Figure D.2 — Calculation of the mass per unit area of the elements

Bibliography

[1] R. Pompoli, University of Ferrara, Italy, R. S. Smith, I. E. N. Galileo Ferraris, Italy, *Possible reasons for the discrepancy in the reproducibility — Results of the inter-comparison of laboratory measurements of airborne sound insulation of walls*, March 1998.

[2] R. Pompoli, *Intercomparison of laboratory measurements of airborne sound insulation of walls*, Final report, 1990-1994, Contract No. MAT1-CT-940054.