

Acoustics - Test code for drywall systems of
plasterboard with steel studs - Airborne sound
insulation

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

**Acoustics - Test code for drywall systems of plasterboard
with steel studs - Airborne sound insulation**

Acoustique - Code d'essai pour systèmes de cloisons
sèches en plaques de plâtre avec montants en acier -
Mesure de l'affaiblissement aérien

Akustik - Prüfvorschrift für Trockenwandsysteme aus
Metallständerwänden mit Gipsplattenbeplankung -
Messung der Luftschalldämmung

This European Standard was approved by CEN on 8 August 2015.

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European foreword

This document (EN 16703:2015) 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of an identical text or by endorsement, at the latest by March 2016, and conflicting national standards shall be withdrawn at the latest by March 2016.

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 standard is a complement to the European Standard EN ISO 10140-1 and is not intended to replace it. The complement includes more stringent rules, narrower tolerances and new, additional requirements.

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

Product standard EN 520:2004+A1:2009 “Gypsum plasterboards – Definitions, requirements and test methods” specifies requirements and test methods and establishes how to declare characteristics and to affix the CE marking of products accordingly. In EN 520:2004+A1:2009, when a drywall partition with plasterboard and steel studs has an airborne sound insulation performance property, its sound reduction should be determined in accordance with EN ISO 140-3, now replaced by EN ISO 10140-2. The measured sound reductions are calculated into sound reduction index R , in third octave bands and into single number indexes, in accordance with EN ISO 717-1. Those single number ratings are used for the CE marking.

Measurement of sound reduction according to EN ISO 10140-2 was known through earlier inter laboratory tests (ILT), to generate large spread in results from different laboratories. This was not suitable, either from a competition point of view or from an end-user perspective. Therefore, CEN/TC 126 “Acoustic properties of building elements and of buildings” decided to set up a working group, WG 9 “Test Code for drywall partition with plasterboard and steel studs”, with the scope to improve reproducibility by developing a Test Code complementary to the EN ISO 10140-1. One part of this work was to organize ILT for sound reduction measurements, to assess the uncertainty of acoustic quantities (Annex D). This was used by the working group to prepare this test code for drywall systems, including guidelines of testing installation and validation of laboratory, to decrease the level of uncertainty.

1 Scope

This European Standard specifies information additional to EN ISO 10140-1 necessary to carry out efficiently and under standardized conditions the determination of the sound reduction index of drywall systems of plasterboard with steel studs according to EN ISO 10140-2 "Acoustics — Laboratory measurement of sound insulation of building elements — Part 2: Measurement of airborne sound insulation". Observe that all demands in EN ISO 10140-2 should still be fulfilled. In order to decrease the uncertainty, it specifies:

- additional guidelines for testing drywall systems of plasterboard with steel studs;

and

- a method to validate laboratory by using two reference test partitions.

The results obtained are used to convert frequency-dependent sound reduction index into single number ratings, according to EN ISO 717-1. These performances can be used to compare different products, or, and to express a requirement, or, and as input into estimation methods, such as EN 12354-1.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 520:2004+A1:2009, *Gypsum plasterboards — Definitions, requirements and test methods*

EN 13162, *Thermal insulation products for buildings — Factory made Mineral wool (MW) products — Specification*

EN 13963, *Jointing materials for gypsum boards — Definitions, requirements and test methods*

EN 14195, *Metal framing components for gypsum board systems — Definitions, requirements and test methods*

EN 14566, *Mechanical fasteners for gypsum plasterboard systems — Definitions, requirements and test methods*

EN ISO 10140 (all parts), *Acoustics — Laboratory measurement of sound insulation of building elements (ISO 10140, all parts)*

3 Terms and definitions

For the purposes of this document, the following term and definition apply.

3.1

drywall system of plasterboard with steel studs

partition comprising a non load bearing metal frame partition enclosed by plasterboards