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English Version

Building products - Treatment of acoustics in product technical specifications

Bauprodukte - Behandlung der Akustik in technischen Produktspezifikationen

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Foreword

This Technical Report (CEN/TR 15226:2006) has been prepared by Technical Committee CEN/TC 126 "Acoustic properties of building products and of buildings", the secretariat of which is held by AFNOR.

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.

In addition to using this document, it is recommended that product Technical Committees contact CEN/TC 126 for advice on acoustic issues relating to the treatment of acoustics in technical specifications.

1 Scope

This document specifies the technical requirements relating to acoustics for a product standard, European Technical Approval Guidelines (ETAG) or European Technical Approval (ETA) for a specific building product or equipment, or a family of building products or equipment. In particular, it gives advice on how to write requirements in response to the mandated characteristics on acoustics under the Construction Products Directive.

NOTE 1 In the remainder of this document, the terms used relate to CEN and product standards. The concepts are, however, equally applicable to the European Organisation for Technical Approvals (EOTA).

The purpose of this document is to assist the product Technical Committees in preparing acoustic clauses to ensure that such product standards:

- are as homogeneous as possible, with each individual product standard having the same basic structure;
- are in full accordance with the standards for the measurement of acoustic properties;
- reflect the latest technical knowledge of methods of determining the acoustical properties from the specific family of building products or equipment under consideration.

NOTE 2 Clause 2 lists the European and International Standards to be used in the drafting of acoustic provisions standard. Annex A contains an outline of a typical acoustic product standard summarizing the information that is required. Annex B contains guidance on choosing appropriate properties. Annex C describes the relevant measured acoustic properties for common products.

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.

2.1 Standards for the measurement of acoustic properties

EN 20140-9, *Acoustics – Measurement of sound insulation in buildings and of building elements – Part 9: Laboratory measurements of room-to-room airborne sound insulation of a suspended ceiling with a plenum above it* (ISO 140-9:1985)

EN 29052-1, *Acoustics – Determination of dynamic stiffness – Part 1: Materials used under floating floors in dwellings* (ISO 9052-1:1989)

EN 29053, *Acoustics – Materials for acoustical applications – Determination of airflow resistance* (ISO 9053:1991)

EN ISO 140-3, *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 140-6, *Acoustics – Measurement of sound insulation in buildings and of building elements – Part 6: Laboratory measurements of impact sound insulation of floors* (ISO 140-6:1998)

EN ISO 140-8, *Acoustics – Measurement of sound insulation in buildings and of building elements – Part 8: Laboratory measurements of the reduction of transmitted impact noise by floor coverings on a heavyweight standard floor* (ISO 140-8:1997)

EN ISO 140-12, *Acoustics – Measurement of sound insulation in buildings and of building elements – Part 12: Laboratory measurements of room-to-room airborne and impact sound insulation of an access floor* (ISO 140-12:2000)

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

EN ISO 717-1, *Acoustics – Rating the sound insulation in buildings and of building elements – Part 1: Airborne sound insulation* (ISO 717-1:1996)

EN ISO 717-2, *Acoustics – Rating the sound insulation in buildings and of building elements – Part 2: Impact sound insulation* (ISO 717-2:1996)

EN ISO 11654, *Acoustics – Sound absorbers for use in buildings – Rating of sound absorption* (ISO 11654:1997)

EN ISO 15186-1, *Acoustics – Measurement of sound insulation in buildings and of building elements using sound intensity – Part 1: Laboratory measurements* (ISO 15186-1:2000)

ISO 15186-3, *Acoustics – Measurement of sound insulation in buildings and of building elements using sound intensity – Part 3: Laboratory measurements at low frequencies*

ISO/PAS 16940, *Glass in building – Glazing and airborne sound insulation – Measurement of the mechanical impedance of laminated glass*

2.2 Standards for the estimation of acoustic properties

EN 12354-1, *Building Acoustics – Estimation of acoustic performance of buildings from the performance of elements – Part 1: Airborne sound insulation between rooms*

EN 12354-2:2000, *Building Acoustics – Estimation of acoustic performance of buildings from the performance of elements – Part 2: Impact sound insulation between rooms*

EN 12354-6:2003, *Building acoustics – Estimation of acoustic performance of buildings from the performance of elements – Part 6: Sound absorption in enclosed spaces*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in the standards listed in Clause 2 and the following apply.

3.1

general

3.1.1

equivalent continuous sound pressure level, $L_{eq,T}$ (dB)

value of the sound pressure level in decibels of a continuous, steady sound, that within a specified time interval, T , has the same mean squared sound pressure as the sound under consideration that varies with time

3.1.2

octave band

band of frequencies in which the upper limit of the band is twice the frequency of the lower limit