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Glass in building - Glazing and airborne sound insulation - Validation procedure for calculation tools

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

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English Version

Glass in building - Glazing and airborne sound insulation - Validation procedure for calculation tools

Verre dans la construction - Vitrages et isolation
acoustique - Procédure de validation des outils de
calcul

Glas im Bauwesen - Glas und Luftschalldämmung -
Validierungsverfahren für Berechnungsprogramme

This European Standard was approved by CEN on 14 August 2023.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 17839:2023) has been prepared by Technical Committee CEN/TC 129 “Glass in building”, the secretariat of which is held by NBN.

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of an identical text or by endorsement, at the latest by May 2024, and conflicting national standards shall be withdrawn at the latest by May 2024.

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EN 17839:2023 (E)

Introduction

The standards EN ISO 10140-1 and EN ISO 10140-2 specify test requirements for building elements and products, including glazing units. EN 12758:2019 outlines a test procedure for the measurement in laboratory of sound insulation for a range of glass configurations.

Considering the number of possible glazing configurations, it is impractical to measure the acoustic characteristics for all of them.

The last few years have seen the development of acoustic calculation tools based on simulation and/or interpolation. The aim of this document is to provide a methodology and reference values for the assessment of such calculation tools.

As there is neither a reference calculation tool nor a standardized calculation method, the goal of this document is to compare calculated results (irrespective of the method) with measured results, to ensure that they do not exceed measured results.

NOTE Calculated results lower than measurement results do not lead to failure of the validation

The validation is undertaken first by a comparison with reference values selected from EN 12758:2019. These values have been calculated on the basis of data collected from several European laboratories. The assessment is completed by a comparison of the calculated values for other glass compositions with measurements already performed by the validator according to EN ISO 10140-1 or another possible validator.

1 Scope

This document specifies a procedure to validate a calculation tool based on simulation, analytical calculation and/or interpolation of airborne sound insulation characteristics of glass products.

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 12758:2019, *Glass in building — Glazing and airborne sound insulation — Product descriptions, determination of properties and extension rules*

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

EN ISO 10140-1, *Acoustics — Laboratory measurement of sound insulation of building elements — Part 1: Application rules for specific products (ISO 10140-1)*

EN ISO 10140-2:2021, *Acoustics — Laboratory measurement of sound insulation of building elements — Part 2: Measurement of airborne sound insulation (ISO 10140-2:2021)*

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