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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 16731-2023

Replacing GB/T 16731-1997

**Classification of sound absorption property for absorbent
products using in buildings**

建筑吸声产品的吸声性能分级

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Foreword

This document was issued on 17 March 2023 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 October 2023.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

It is classified under ICS 91.120.20, Chinese classification P31.

It replaces GB/T 16731-1997, which is superseded.

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules for Standardization Documents" drafting.

This document replaces GB/T 16731-1997 "Classification of Sound Absorption Performance of Building Sound Absorbing Products". Compared with GB/T 16731-1997, except

Apart from structural adjustments and editorial changes, the main technical changes are as follows.

- a) The term and calculation method of the weighted sound absorption coefficient are added (see 3.4 and 4.2);
- b) Added the terminology and determination method of spectrum characteristics (see 3.5

and 4.3);

c) Changed the sound absorption performance classification parameters of building sound absorption products (see Chapter 6, 4.4 of the.1997 edition);

d) Deleted the detection chapter (see Chapter 5 of the.1997 edition).

This document is modified to adopt ISO 11654.1997 "Sound absorption evaluation of sound-absorbing products for acoustical buildings".

Compared with ISO 11654.1997, this document has more adjustments in structure, and the structure number comparison list between the two documents is shown in the appendix

Record A.

The technical differences between this document and ISO 11654.1997 and their reasons are as follows.

a) Replace ISO 354 with GB/T 20247, which is equivalent to the international standard (see Chapter 1, 5.1);

b) Added the reference to GB/T 3947 (see Chapter 3), which is the terminology of acoustic terms, which can avoid repeated definitions of many acoustic terms;

c) Added the terms and definitions of building sound absorption products, sound absorption coefficient, weighted value, reference value, reference curve, and adverse deviation (see 3.1,

3.2, 3.6~3.9), to express accurately and concisely and conform to Chinese expression;

d) Added a reference to GB/T 8170, and replaced the unclear rounding rules in the original standard with the rounding rules of national standards (see

4.1, 4.2.1);

e) The numerical calculation method of the weighted sound absorption coefficient (see 4.2.1) has been added to adapt to digital development and to provide

convenient;

f) Figure 1 and Figure B.1 in ISO 11654.1997 are deleted, and the ISO standard does not distinguish between reference curves, reference values, and weighted values

points, the expression is not clear, this document adds terms, replaces Figure 1 with Table 1, and replaces Figure B.1 with Table 2;

g) The expression of the weighted sound absorption coefficient $\alpha_{w,f}$ and the low-frequency sound absorption performance (see 5.4) is added to solve the problem that the weighted sound absorption coefficient $\alpha_{w,f}$ does not take into account

Consider the sound absorption performance of the 125Hz octave band;

h) Adjust the content of the informative Appendix B of ISO 11654.1997 to the main text (see Chapter 6) to use the sound absorption performance classification as a specification

sexual element.

The following editorial changes have been made to this document.

a) Change the name of the standard to "Classification of Sound Absorption Performance of Building Sound Absorbing Products";

b) Note 2 is added to the terminology of spectrum characteristic marks, and the symbols of the three marks are explained (see 3.5);

c) The note to 4.1 in ISO 11654.1997 was deleted, and the example was modified according to the numerical rounding rules stipulated in GB/T 8170 (see

4.1);

d) Deleted the note to 5.4 in ISO 11654.1997 (see 5.5), because this note describes the common structural thickness in Europe, Japan and North America;

e) An example of the calculation process of the weighted sound absorption coefficient is added as an informative appendix (see Appendix B);

f) Added a 1/3 octave band sound absorption coefficient alphas result expression chart example as an informative appendix (see Appendix C);

g) Take the original noise reduction coefficient evaluation method as an informative appendix (see Appendix D);

h) References added.

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

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This document was first published in 1997, and this is the first revision.

Introduction

This document adopts the weighted sound absorption coefficient α_{pw} , a new index, to evaluate and classify the sound absorption performance of building sound-absorbing products.

In GB/T 16731-1997, the Noise Reduction Coefficient (NRC) is used as the index value of the sound absorption performance classification of building sound-absorbing products. due to drop

Noise coefficient (NRC) is still widely used at home and abroad, and the noise reduction coefficient (NRC) calculated according to the method stipulated by each country may be used in some cases.

There will be a certain difference. Therefore, in Appendix D of this document, the noise reduction coefficients for evaluating and grading the sound absorption performance of building sound-absorbing products are given.

(NRC) method, which is consistent with the principle of GB/T 16731-1997. The difference is that when calculating the practical sound absorption coefficient α_{paw} , in order to be consistent with this document

The calculation method in the main text is the same, and the calculation results are rounded to 0.5 units with two decimal places according to the method specified in GB/T 8170, and

In the 1997 version, no amendments were mentioned here.