



भारतीय मानक ब्यूरो

(उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, भारत सरकार)

BUREAU OF INDIAN STANDARDS

(Ministry of Consumer Affairs, Food & Public Distribution, Govt. of India)

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व्यापक परिचालन मसौदा

हमारा संदर्भ: सीईडी 12/टी-35

27 मार्च 2024

तकनीकी समिति: भवनों में कार्यात्मक अपेक्षा विषय समिति, सीईडी 12

प्राप्तकर्ता:

- सिविल अभियांत्रिकी विभाग परिषद, सीईडीसी के सभी सदस्य
- भवनों में कार्यात्मक अपेक्षा विषय समिति, सीईडी 12 के सभी सदस्य
- रुचि रखने वाले अन्य निकाय।

महोदय/महोदया,

निम्नलिखित मानक का मसौदा संलग्न है:

प्रलेख संख्या	शीर्षक
सीईडी 12 (25128) WC	ध्वनिकी — प्रतिबाधा ट्यूबों में ध्वनिक गुणों का निर्धारण — भाग 2: सामान्य ध्वनि अवशोषण गुणांक और सामान्य सतह प्रतिबाधा के लिए दो-माइक्रोफोन तकनीक (आईएसओ ISO 10534-2: 2023 का अधिग्रहण) (आई सी एस नंबर : 17.140.01)

कृपया इस मसौदे का अवलोकन करें और अपनी सम्मतियाँ यह बताते हुए भेजे कि यह मसौदा प्रकाशित हो तो इस पर अमल करने में आपको व्यवसाय अथवा कारोबार में क्या कठिनाइयाँ आ सकती हैं।

सम्मतियाँ भेजने की अंतिम तिथि: 27 अप्रैल 2024

सम्मति यदि कोई हो तो कृपया अधोहस्ताक्षरी को ई-मेल द्वारा ced12@bis.gov.in पर या उपरलिखित पते पर, संलग्न फॉर्मेट में भेजें। सम्मतियाँ बीआईएस ई-गवर्नेंस पोर्टल, www.manakonline.in के माध्यम से ऑनलाइन भी भेजी जा सकती हैं।

यदि कोई सम्मति प्राप्त नहीं होती है अथवा सम्मति में केवल भाषा संबंधी त्रुटि हुई तो उपरोक्त प्रलेख को यथावत अंतिम रूप दे दिया जाएगा। यदि सम्मति तकनीकी प्रकृति की हुई तो विषय समिति के अध्यक्ष के परामर्श से अथवा उनकी इच्छा पर आगे की कार्यवाही के लिए विषय समिति को भेजे जाने के बाद प्रलेख को अंतिम रूप दे दिया जाएगा।

यह प्रलेख भारतीय मानक ब्यूरो की वेबसाइट www.bis.gov.in पर भी उपलब्ध है।

धन्यवाद।

भवदीय

ह/-

द्वैपायन भद्र

(वैज्ञानिक 'ई' एवं प्रमुख)

(सिविल अभियांत्रिकी विभाग)

संलग्न: ऊपरलिखित



भारतीय मानक ब्यूरो

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WIDE CIRCULATION DRAFT

Our Reference: CED 12/T-35

27 March 2024

Functional Requirements in Buildings Sectional Committee, CED 12

ADDRESSED TO:

1. All Members of Civil Engineering Division Council, CEDC
2. All Members of the Functional Requirements in Buildings Sectional Committee, CED 12
3. All others interested

Dear Sir/Madam,

Please find enclosed the following draft:

Doc No.	Title
CED 12 (25128) WC	Acoustics — Determination of acoustic properties in impedance tubes — Part 2: Two-microphone technique for normal sound absorption coefficient and normal surface impedance (Adoption of ISO 10534-2: 2023) (ICS No. 17.140.01)

Kindly examine the attached draft and forward your views stating any difficulties which you are likely to experience in your business or profession, if this is finally adopted as National Standard.

Last Date for comments: 28 April 2024

Comments if any, may please be made in the enclosed format and emailed at ced12@bis.gov.in or sent at the above address. Additionally, comments may be sent online through the BIS e-governance portal, www.manakonline.in.

In case no comments are received, or comments received are of editorial nature, kindly permit us to presume your approval for the above document as finalized. However, in case comments, technical in nature are received, then it may be finalized either in consultation with the Chairman, Sectional Committee or referred to the Sectional Committee for further necessary action if so desired by the Chairman, Sectional Committee.

The document is also hosted on BIS website www.bis.gov.in.

Thanking you,

Yours faithfully,
Sd/-

(Dwaipayan Bhadra)
Scientist 'E' / Director & Head
(Civil Engineering Department)

Encl: As above

FORMAT FOR SENDING COMMENTS ON THE DOCUMENT

[Please use A4 size sheet of paper only and type within fields indicated. Comments on each clause/sub-clause/ table/figure, etc, be stated on a fresh row. Information/comments should include reasons for comments, technical references and suggestions for modified wordings of the clause. Comments through e-mail to ced12@bis.gov.in shall be appreciated.

Doc. No.: CED 12 (25128) WC

BIS Letter Ref: CED 12/T-35

Title: Acoustics — Determination of acoustic properties in impedance tubes
Part 2: Two-microphone technique for normal sound absorption coefficient and normal surface impedance (ICS No. 17.140.01)

Last date of comments: **28 April 2024**

Name of the Commentator/ Organization: _____

Clause/ Para/ Table/ Figure No. commented	Comments/Modified Wordings	Justification of Proposed Change

NOTE- Kindly insert more rows as necessary for each clause/table, etc

BUREAU OF INDIAN STANDARDS

DRAFT FOR COMMENTS ONLY

(Not to be reproduced without the permission of BIS or used as a Standard)

Draft Indian Standard

Acoustics — Determination of acoustic properties in impedance tubes
Part 2: Two-microphone technique for normal sound absorption coefficient
and normal surface impedance
(Adoption of ISO 10534-2: 2023)

ICS No. 17.140.01

Functional Requirements in Buildings
Sectional Committee, CED 12

Last Date for Comments:
28 April 2024

NATIONAL FOREWORD

This Indian Standard which is identical with ISO 10534 Part 2: 2023 ‘Acoustics — Determination of acoustic properties in impedance tubes — Part 2: Two-microphone technique for normal sound absorption coefficient and normal surface impedance’ issued by the International Organization for Standardization (ISO) is proposed to be adopted by the Bureau of Indian Standards on the recommendations of the Functional Requirements in Buildings Sectional Committee and approval of the Civil Engineering Division Council.

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions and terminologies are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words ‘International Standard’ appear referring to this standard, they should be read as ‘Indian Standard’.
- b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, no reference appears to any International Standard.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 :2022 ‘Rules for rounding off numerical values (second revision)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Abstract

This test method covers the use of an impedance tube, two microphone locations and a frequency analysis system for the determination of the sound absorption coefficient of sound absorbing materials for normal incidence sound incidence. It can also be applied for the determination of the acoustical surface impedance or surface admittance of sound absorbing materials. As an extension, it can also be used to assess intrinsic properties of homogeneous acoustical materials such as their characteristic impedance, characteristic wavenumber, dynamic mass density and dynamic bulk modulus.

The test method is similar to the test method specified in ISO 10534-1 in that it uses an impedance tube with a sound source connected to one end and the test sample mounted in the tube at the other end. However, the measurement technique is different. In this test method, plane waves are generated in a tube by a sound source, and the decomposition of the interference field is achieved by the measurement of acoustic pressures at two fixed locations using wall-mounted microphones or an in-tube traversing microphone, and subsequent calculation of the complex acoustic transfer function and quantities reported in the previous paragraph. The test method is intended to provide an alternative, and generally much faster, measurement technique than that of ISO 10534-1.

Normal incidence absorption coefficients coming from impedance tube measurements are not comparable with random incidence absorption coefficients measured in reverberation rooms according to ISO 354. The reverberation room method will (under ideal conditions) determine the sound absorption coefficient for diffuse sound incidence. However, the reverberation room method requires test specimens which are rather large. The impedance tube method is limited to studies at normal and plane incidence and requires samples of the test object which are of the same size as the cross-section of the impedance tube. For materials that are locally reacting only, diffuse incidence sound absorption coefficients can be estimated from measurement results obtained by the impedance tube method (see Annex E).

'FOR COMPLETE TEXT OF THE DOCUMENT, KINDLY REFER ISO 10534 Part 2:
2023

Note: For obtaining the hard copy of the complete document, please contact:

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