



सी एस आई आर - राष्ट्रीय भौतिक प्रयोगशाला
CSIR-NATIONAL PHYSICAL LABORATORY

(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्)

(Council of Scientific and Industrial Research)

राष्ट्रीय मापिकी संस्थान (एनएमआई), सदस्य बीआईपीएम एवं हस्ताक्षरकर्ता सीआईपीएम - एमआरए
(National Metrology Institute (NMI), Member BIPM and Signatory CIPM - MRA)

डॉ. के. एस. कृष्णन मार्ग, नई दिल्ली-110012, भारत

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परीक्षण रिपोर्ट
TEST REPORT

Sound Absorbing Material

दिनांक/Date	रिपोर्ट संख्या/Report No.	पृष्ठ /Page	पृष्ठों की संख्या /No. of Pages
19-04-2022	22031571/D1.07/T-015	1	2

1. Tested for : M/S Senses Akustik,
Plot # 102, New GIDC,
Gundlav,
Valsad (Gujarat) - 396035
Customer Ref. No.: NIL
Dated 14/03/2022
2. Description and Identification of Items : Arc Stick – Felt, Foam and Birch ply
(Sample size: 2700mm x 150mm x 35mm) x 39 pieces
3. Environmental Conditions : Room Temperature: 23.0 ± 5.0 °C
Relative Humidity: 50.0 ± 20.0 %RH
4. Standards used and Associated Uncertainty : Dual channel Acoustic Analyzer with Working Standard Microphone
: ±0.4 dB to 0.6 dB
5. Traceability of Standard Used : The standards used for testing are traceable to National Standards which realize the units of quantities according to the International System of Units (SI).
6. Principle/Methodology of Testing and Test Procedure No. : Sound absorbing coefficient by diffuse field method: IS: 8225-1987 "Measurement of Sound Absorption Coefficient in Reverberation Room" (Equivalent to ISO: 354-2003, ASTM C-423 09a and ASTM 423-90) Sub-Div # 1.07/Doc. 3/ TP # 01

7. Results:

As requested by the party, the material was tested only for its sound absorption coefficient by reverberation method as per IS:8225 – 1987 under existing environmental conditions in a reverberation chamber of volume 271 m³, surface area 240 m² and average reverberation time of 6 sec. The chamber was of irregular shape and adequate diffusion was obtained by using suspended stationary diffusers.

परीक्षणकर्ता:

Tested by: (Dr. Chitra Gattam)

जाँचकर्ता:

Checked by: (Dr. Naveen Garg)

प्रभारी वैज्ञानिक:

Scientist-in-charge: (Dr. Naveen Garg)

जारीकर्ता:

Issued by:



डॉ० श्रीनिवास राव रांगम
Dr. Srinivasa Rao Ragam



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A loudspeaker with uniform spherical radiation was used as the source of sound suspended at a height of 2.5 m above the floor in one corner while the microphone was kept in different locations near the other corners of the room and at least 1 m away from any surface. The material was kept on **Rigid backing** so as to get an exposed sample area of 12.0 m².

Measurements were made by using 1/3-octave bands of random noise and several decay rates were determined for each of the microphone and loudspeaker positions. The sound absorption coefficient was calculated and the correction for boundary absorption was applied. The results were:

Frequency (Hz)	Sound Absorption Coefficient (α)	NRC
125	0.08	0.66
250	0.30	
500	0.58	
1000	0.77	
2000	0.96	
4000	0.96	

The evaluated uncertainty in measurement is $\pm 5\%$ which is at a coverage factor $k=2$ and which corresponds to a coverage probability of approximately 95% for normal distribution.

8. Date of Testing : 19-04-2022

9. Remarks : NIL

परीक्षणकर्ता:
Tested by :
(Dr. Chitra Gautam)

जाँचकर्ता:
Checked by :
(Dr. Naveen Garg)

प्रमारी वैज्ञानिक:
Scientist-in-charge:
(Dr. Naveen Garg)

जारीकर्ता:
Issued by:
डॉ० श्रीनिवास राव रागम
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नोट

1. यह रिपोर्ट सी एस आई आर-राष्ट्रीय भौतिक प्रयोगशाला, भारत द्वारा जारी किया गया है जो कि विज्ञान एवं प्रौद्योगिकी मंत्रालय, भारत सरकार के अधीन वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद् की संघटक इकाई है एवम् भारत का राष्ट्रीय मापिकी संस्थान (NMI) भी है।
2. यह रिपोर्ट केवल परिक्षण हेतु जमा किए गए मापिकी हेतु संदर्भित है।
3. इस रिपोर्ट की प्रतिलिपी, पूर्ण रिपोर्ट के अतिरिक्त, तैयार नहीं की जा सकती है, जब तक कि निदेशक, सी एस आई आर, राष्ट्रीय भौतिक प्रयोगशाला, नई दिल्ली से अनुमोदित सार के प्रकाशन हेतु लिखित अनुमति प्राप्त नहीं की गयी हो।
4. इस रिपोर्ट में प्रतिवेदित परिक्षण परिणाम केवल मापन की वर्णित परिस्थितियों एवं समय हेतु मान्य है।



NOTE

1. This report is issued by CSIR-National Physical Laboratory of India (NPLI) which is a constituent unit of the Council of Scientific & Industrial Research, under the Ministry of Science and Technology, Government of India and is also the National Metrology Institute (NMI) of India.
2. This report refers only to the particular item(s) submitted for testing.
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4. The test results reported in this report are valid at the time and under the stated conditions of measurement.