



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

(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्)

(Council of Scientific and Industrial Research)

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

डॉ. के. एस. कृष्णन् मार्ग, नई दिल्ली-110012, भारत
Dr. K. S. Krishnan Marg, New Delhi-110012 INDIA

दूरभाष/Phone : +91-11-4560, 8441, 8610, 9447, फैक्स/Fax : 91-11-4560 8448

ई-मेल/E-mail : cfct@nplindia.org, वेबसाइट/Website : www.nplindia.org



परीक्षण रिपोर्ट
TEST REPORT

Sound Transmission Loss

दिनांक/ Date	रिपोर्ट संख्या / Report No.	पृष्ठ / Page	पृष्ठों की संख्या / No. of Pages
11-06-2025	25050210/D1.07/T-018	1	2

1. **Tested for** : M/s 4Mann Industries Pvt. Ltd.,
EPIP, Kartholi, Bari Brahmana,
Jammu-181133
Customer Ref. No.: NIL;
Dated: 26/05/2025
2. **Description and identification of items** : 4 mm thick Aluminium Composite Panel – 4FR-B1
Comprises of front aluminium panel coated with 0.50 mm with PVDF coating and back aluminium panel coated with 0.50 mm with PE coating; infilled with Mineral core
(Sample size - 930 mm x 630 mm)
3. **Environmental conditions** : Temperature : $(23.0 \pm 5.0) ^\circ\text{C}$
Relative Humidity : $(50.0 \pm 20.0) \%$
4. **Standards used with associated measurement uncertainty** : Dual channel Acoustic Analyzer with Working Standard Microphone
: $\pm 0.4 \text{ dB to } 0.6 \text{ dB } (k = 2)$
5. **Metrological traceability of standards used** : The standards used for test are traceable to National Standards which realize the units of quantities according to the International System of Units (SI).
6. **Principle/Methodology of test and test procedure number** : IS 9901-3: 2019 / DIN 52210: 1984 / ISO 140- 3: 1995 (AMD2004) / ISO 140- 4: 1998 / ISO 16283-1: 2014 / ISO 10140-2:2010 / ISO 717- 1 / ASTM E90-23 / ASTM E413-22, "Measurement of Sound Insulation in Building and of Building Elements", Part III: Laboratory Measurements of Airborne Sound Insulation in Building and of Building Elements
Sub-Div # 1.07/Doc. 3/ TP # 02
7. **Results:**
As requested by the party, the acoustical material was tested for its airborne sound insulation by using two reverberation chambers under existing environmental conditions. The sample was fixed in the common opening between the two chambers. The volume of the source room was 273 m^3 and that of the receiver room was 257 m^3 . Adequate diffusion excited in both the chambers.

परीक्षणकर्ता:

Tested by:

(Dr. Chitra Gautam)

जाँचकर्ता:

Checked by:

(Dr. Naveen Garg)

प्रभारी वैज्ञानिक:

Scientist-in-charge:

(Dr. Naveen Garg)

जारीकर्ता:

Issued by:

डॉ. श्रीनिवास राव रागम
Dr. Srinivasa Rao Ragam



RSA



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. कृष्णन् मार्ग, नई दिल्ली-110012, भारत
Dr. K. S. Krishnan Marg, New Delhi-110012 INDIA

दूरभाष/Phone : +91-11-4560, 8441, 8610, 9447, फैक्स/Fax : 91-11-4560 8448

ई-मेल/E-mail : cfct@nplindia.org, वेबसाइट/Website : www.nplindia.org



परीक्षण रिपोर्ट
TEST REPORT

Sound Transmission Loss

दिनांक/ Date	रिपोर्ट संख्या / Report No.	पृष्ठ / Page	पृष्ठों की संख्या / No. of Pages
11-06-2025	25050210/D1.07/T-018	2	2

Using filtered noise in 1/3-octave band, the airborne sound insulation index was evaluated by measuring the average sound pressure levels generated in the source room and the receiver room and by measuring the equivalent absorption in the receiver room. The results are given below:

1/3-Octave Band Center Frequency (Hz)	Airborne Sound Insulation Index (dB)
100	15
125	15
160	9
200	15
250	18
315	19
400	21
500	22
630	24
800	23
1000	26
1250	27
1600	25
2000	24
2500	29
3150	31
4000	30

Using the standard reference curve, the weighted sound reduction index was found to be 25.

The reported uncertainty in measurement is ± 1.6 dB in frequency range 100 Hz to 500 Hz and is ± 1.4 dB in frequency range 500 Hz to 4 kHz, 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 : 11-06-2025

9. Remarks : NIL

परीक्षणकर्ता:

Tested by:

(Dr. Chitra Gautam)

जांचकर्ता:

Checked by:

(Dr. Naveen Garg)

प्रभारी वैज्ञानिक:

Scientist-in-charge:

(Dr. Naveen Garg)

जारीकर्ता:

Issued by:

डॉ. श्रीनिवास राव रागम
Dr. Srinivasa Rao Ragam



RSR