



CONFIDENTIAL

**TEST REPORT ON DETERMINATION OF
RANDOM INCIDENCE SOUND ABSORPTION COEFFICIENT OF
AKOSTIKA ROCKWOOL ACOUSTIC PANEL OF 25 MM THICKNESS**

ULR-TC508522050000266F

NVH/3100014176/2022-23/0266

27th September 2022

- 1.0 CUSTOMER NAME :** GYPTECH SYSTEMS PRIVATE LIMITED
C-17, Miraj Apartment,
NR Natubhai Circle Race Course
Vadodara - 390007
Gujarat
- 2.0 LETTER REF. :** E-mail dated 10th September 2022
- 3.0 TEST COMPONENT DETAILS :** Test sample details given by customer is as follows:
- 3.1 Sample Description :** Rockwool Acoustic Ceiling/ Wall Panel consist of Glass Fiber Tissue of 80 GSM + Rockwool slab of 108 kg/m³ density + Glass Fiber Tissue of 80 GSM
- 3.2 Density and Thickness :** total 120 kg/m³ density and 25 mm thickness
(Actual measured 20 mm thickness)
- 3.3 Type of mounting :** Type E-300 mounting
- 4.0 TEST REQUIREMENTS :**
Measurement of random incidence sound absorption coefficient on above mentioned test sample as per ASTM C-423 / ISO 354 in reverberation chamber.

- 5.0 TEST PROCEDURE :**
The random incidence sound absorption coefficient measurement was carried out on above mentioned test sample as per ASTM C-423 / ISO 354 in reverberation chamber. The test sample of size 2.4 m x 2.4 m was directly placed on the floor with type E- 300 mounting (with 300 mm airgap below the tiles). Please refer figure 1 for test set up and test component details. The random incidence sound absorption test was carried out three times on same sample in reverberation chamber and average value reported. The measurement was carried out at temperature 25°C ±1°C, humidity 58 % and barometric pressure 935 mbar.

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6.0 DATE OF EVALUATION :

The random incidence sound absorption coefficient measurement was carried out on above mentioned test samples on 26th September 2022.

7.0 INSTRUMENTATION :

Sr. No	Instrument Name	Type / Model No	Make	Calibrated on	Calibration due on
1	Multi-channel Data Acquisition System	3560 D	Bruel & Kjaer, Denmark	11-Aug-22	11-Aug-23
2	½" Random Incidence Microphone	378C20	PCB, USA	11-Aug-22	11-Aug-23
3	Power Amplifier	2716	Bruel & Kjaer, Denmark	Does not require separate calibration as it is driven by data acquisition system	
4	Omni directionnel sound source	Omni power 4296	Bruel & Kjaer, Denmark		
5	Reverberation room	80 m ³ and 110 m ³	-	-	-

8.0 TEST RESULTS :

Table 1 and figure 2 shows the average values and plot for random incidence sound absorption coefficient of Akostika Rockwool Acoustic Ceiling/ Wall Panel consist of Glass Fiber Tissue of 80 GSM + Rockwool slab of 108 kg/m³ density + Glass Fiber Tissue of 80 GSM of total 120 kg/m³ density and 25 mm (measured 20 mm) thickness along with 300 mm air gap in the frequency range of 100 Hz to 5000 Hz.

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9.0 CONCLUSIONS :

- 9.1 The Noise Reduction Coefficient (NRC) is given by the average value of sound absorption coefficient at 250 Hz, 500 Hz, 1000 Hz and 2000 Hz is calculated as per ASTM C- 423.
- 9.2 The weighted sound absorption coefficient (α_w) and sound absorption class are calculated as per ISO 11654 are given below.

Akostika Rockwool Acoustic Ceiling/ Wall Panel consist of Glass Fiber Tissue of 80 GSM + Rockwool slab of 108 kg/m³ density + Glass Fiber Tissue of 80 GSM of total 120 kg/m³ density and 25 mm (measured 20 mm) thickness along with 300 mm air gap	
Noise Reduction Coefficient (NRC)	0.80
Weighted Sound Absorption Coefficient (α_w)	0.85
Sound Absorption Class	Class B

**Tested and Report
Prepared By:**



**P.P. Kamble
Engineer**

Reviewed By:



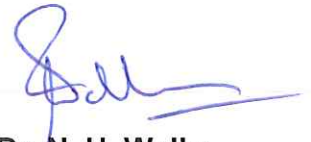
**M. P. Joshi
Dy. General Manager**

Reviewed By:



**S.K. Jain
General Manager**

Approved By:



**Dr. N. H. Walke
Deputy Director**

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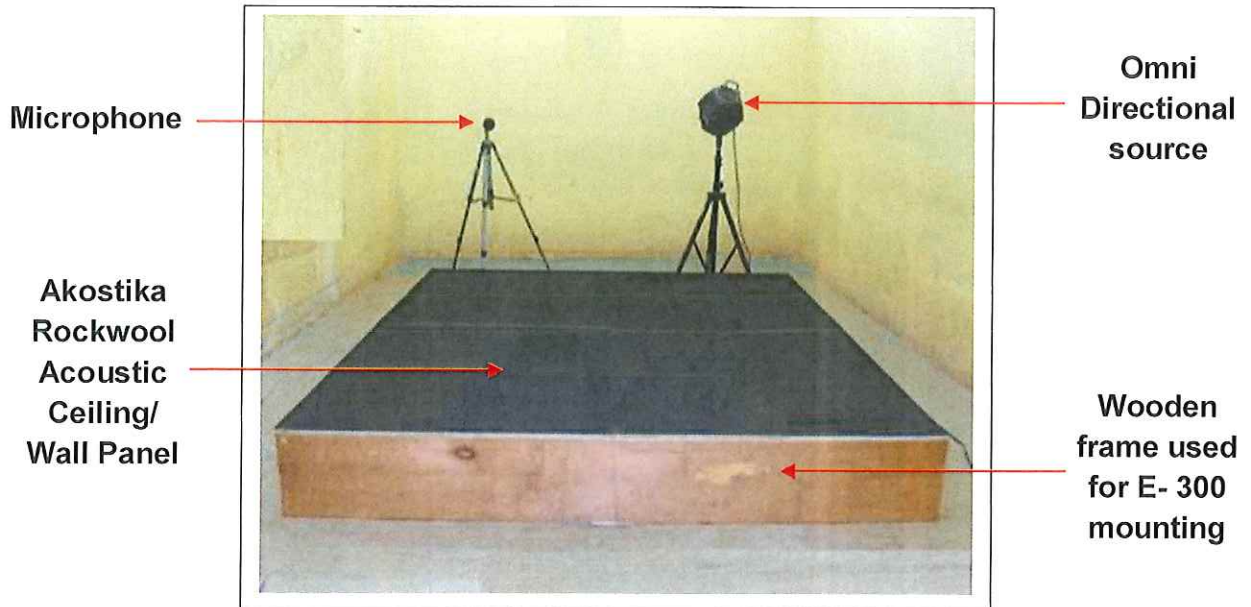


Figure 1: Test set up for mounting and testing of Akostika Rockwool Acoustic Ceiling/ Wall Panel consist of Glass Fiber Tissue of 80 GSM + Rockwool slab of 108 kg/m³ density + Glass Fiber Tissue of 80 GSM of total 120 kg/m³ density and 25 mm (measured 20 mm) thickness along with 300 mm air gap in reverberation chamber

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Table 1 and Figure 2: Values and plot for random incidence sound absorption coefficient of Akostika Rockwool Acoustic Ceiling/ Wall Panel consist of Glass Fiber Tissue of 80 GSM + Rockwool slab of 108 kg/m³ density + Glass Fiber Tissue of 80 GSM of total 120 kg/m³ density and 25 mm (measured 20 mm) thickness along with 300 mm air gap at one third octave frequencies

One third octave frequency, Hz	Random Incidence Sound Absorption Coefficient	Standard Deviation
100	0.25	0.05
125	0.37	0.05
160	0.61	0.01
200	0.74	0.07
250	0.72	0.02
315	0.83	0.05
400	0.83	0.04
500	0.76	0.03
630	0.71	0.03
800	0.80	0.03
1000	0.86	0.03
1250	0.86	0.02
1600	0.91	0.01
2000	0.88	0.02
2500	0.88	0.02
3150	0.86	0.01
4000	0.87	0.02
5000	0.87	0.04

