



**CONFIDENTIAL**

**TEST REPORT ON DETERMINATION OF  
RANDOM INCIDENCE SOUND ABSORPTION COEFFICIENT OF  
AKOSTIKA WALL OF 40 MM THICKNESS**

**ULR-TC508522050000296F**  
**NVH/3100014730/2022-23/0296**

**22<sup>nd</sup> November 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 9<sup>th</sup> November 2022
- 3.0 TEST COMPONENT DETAILS :** Test sample details given by customer is as follows
- 3.1 Sample Description :** Akostika Wall
- 3.2 Material Description :** Rockwool Acoustic Wall
- 3.3 Layer-wise details :** Front layer- Glass Fiber Tissue - 220 GSM (Painted)  
Core - Rock wool Slab of 108 kg /m<sup>3</sup> and 40 mm  
Back layer - Glass Fiber Tissue - 80 GSM
- 3.4 Size and weight of one sample :** 595 mm x 1195 mm and 3.5 kg
- 3.5 Total Density :** Actual measured 120 kg/m<sup>3</sup>
- 3.6 Sample Thickness :** 40 mm
- 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 A mounting. Total 6 samples used with white coating side facing source. Please refer figure 1 for test set up and test component details. The random incidence sound absorption coefficient test was carried out three times on same sample in reverberation chamber and average value reported. The measurement was carried out at temperature 25<sup>o</sup>C ± 1<sup>o</sup>C, humidity 50% and barometric pressure 935 mbar.
- 6.0 DATE OF EVALUATION :**  
The random incidence sound absorption coefficient measurement was carried out on above mentioned test samples on 21<sup>st</sup> November 2022.

**Page 1 of 4**

An ISO 9001, ISO 14001, ISO 45001 and ISO/IEC 27001 Certified Organization

ULR-TC508522050000296F  
NVH/3100014730/2022-23/0296

22<sup>nd</sup> November 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 m³ and 110 m³ | -                      | -                                                                                | -                  |

## 8.0 TEST RESULTS

Table 1 and figure 2 shows the average values and plot for random incidence sound absorption coefficient of Akostika Wall consist of Glass fiber tissue painted of 220 GSM + Rockwool slab of 108 kg/m³ and 40 mm + Glass fiber tissue of 80GSM, total measured 120 kg/m³ density and 40 mm thickness in the frequency range of 100 Hz to 5000 Hz.

## 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 ( $\alpha_w$ ) and sound absorption class are calculated as per ISO 11654 are given below.

|                                                                                                                                                                                                  |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>Akostika Wall consist of Glass fiber tissue painted of 220 GSM + Rockwool slab of 108 kg/m³ and 40 mm + Glass fiber tissue of 80GSM, total measured 120 kg/m³ density and 40 mm thickness</b> |         |
| Noise Reduction Coefficient (NRC)                                                                                                                                                                | 0.90    |
| Weighted Sound Absorption Coefficient ( $\alpha_w$ )                                                                                                                                             | 0.90    |
| Sound Absorption Class                                                                                                                                                                           | Class A |

**Tested and Report**

**Prepared By:**

*[Signature]*

**P.P. Kamble**  
**Dy. Manager**

**Reviewed By:**

*[Signature]*

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

**Reviewed By:**

*[Signature]*

**S. K. Jain**  
**General Manager**

**Approved By:**

*[Signature]*

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

This test report pertains only to the samples actually tested at ARAI in the presented condition. The issuing of this test report does not indicate any measure of approval, certification, supervision, control of quality surveillance by ARAI of any product. No extract, abridgement or abstraction from this test report be published or used to advertise the product without the written consent of the Director, ARAI, who reserves the absolute right to agree or reject all or any of the details of any items of publicity for which consent may be sought.



**Sachin Kumar Jain**

Digitally signed  
by Sachin  
Kumar Jain  
Date:  
2022.12.07  
18:01:40 +05'30'

ULR-TC508522050000296F  
NVH/3100014730/2022-23/0296

22<sup>nd</sup> November 2022

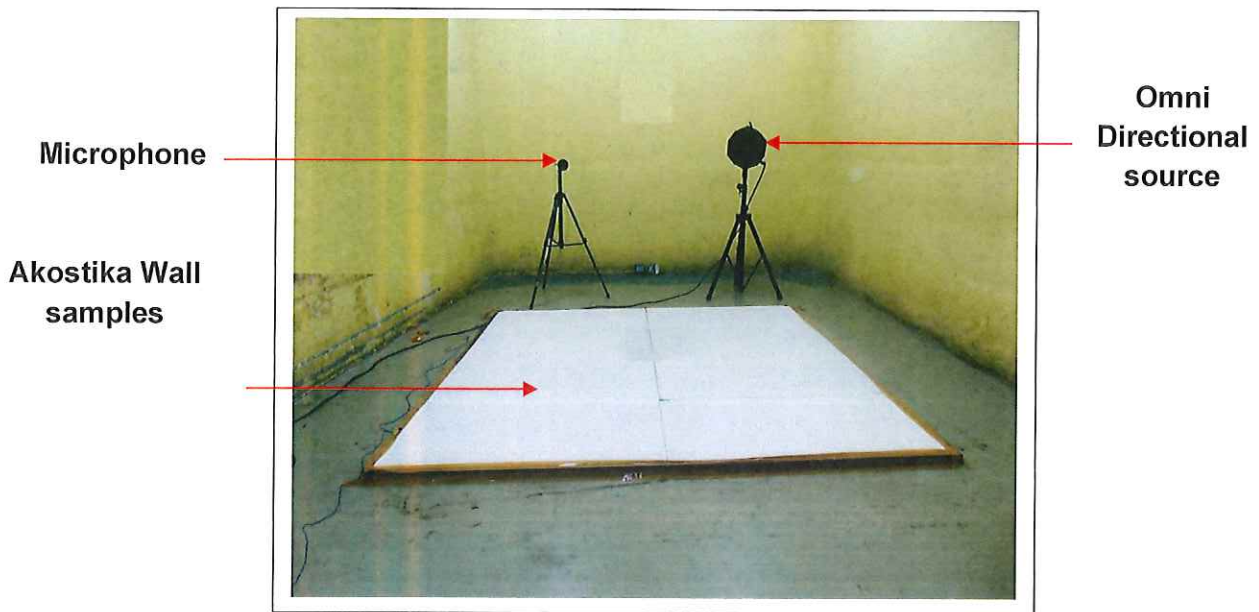


Figure 1: Test set up for mounting and testing of Akostika Wall consist of Glass fiber tissue painted of 220 GSM + Rockwool slab of 108 kg/m<sup>3</sup> and 40 mm + Glass fiber tissue of 80GSM, total measured 120 kg/m<sup>3</sup> density and 40 mm thickness

Total 6 no. samples with each panel size 595 mm X 1195 mm size and 3.5 kg weight used in mounting

Table 1 and Figure 2: Values and plot for random incidence sound absorption coefficient of Akostika Wall consist of Glass fiber tissue painted of 220 GSM + Rockwool slab of 108 kg/m<sup>3</sup> and 40 mm + Glass fiber tissue of 80GSM, total measured 120 kg/m<sup>3</sup> and 40 mm thickness at one third octave frequencies

Total 6 no. samples with each panel size 595 mm X 1195 mm size and 3.5 kg weight used for testing

| One third octave frequency, Hz | Random Incidence Sound Absorption Coefficient | Standard Deviation |
|--------------------------------|-----------------------------------------------|--------------------|
| 100                            | 0.13                                          | 0.01               |
| 125                            | 0.25                                          | 0.02               |
| 160                            | 0.52                                          | 0.02               |
| 200                            | 0.61                                          | 0.01               |
| 250                            | 0.81                                          | 0.01               |
| 315                            | 0.85                                          | 0.01               |
| 400                            | 0.90                                          | 0.01               |
| 500                            | 0.96                                          | 0.01               |
| 630                            | 0.92                                          | 0.03               |
| 800                            | 0.94                                          | 0.02               |
| 1000                           | 0.94                                          | 0.01               |
| 1250                           | 0.92                                          | 0.02               |
| 1600                           | 0.90                                          | 0.01               |
| 2000                           | 0.87                                          | 0.01               |
| 2500                           | 0.82                                          | 0.02               |
| 3150                           | 0.79                                          | 0.00               |
| 4000                           | 0.76                                          | 0.01               |
| 5000                           | 0.71                                          | 0.01               |

