CONFIDENTIAL

TEST REPORT ON DETERMINATION OF AIRBORNE SOUND TRANSMISSION LOSS OF MAGICLITE-100MM THICKNESS

NVH/3100008719/2020-21/1471 **15th January 2021**

1.0 CUSTOMER NAME : Magicrete Building Solution Pvt Ltd
101, Ritz Square,
Near Narmad Liabrary
Ghod Dod Road, Surat
Surat-395007
Gujarat

2.0 LETTER REF. : E-mail dated 1st January 2021

3.0 TEST COMPONENT : MagicLite-100mm thickness Wall Panel with following details given by customer:

MagicLite-100mm thickness wall system consists of ALC Wall Panel of 550-650 kg/m^3 density and 100 mm thickness. All joints, gaps & screw heads were sealed with Magicrete Block Joining morter and Magicrete putty plus.). The periphery of partition system was sealed with Mccoy PU foam, Dowsil selicon sealant and Backer rod 15 mm. Dimensions of the test sample were 2.368 m (Wide) x 2.368 m (Height) x 100 mm (thick

4.0 TEST REQUIREMENTS :

Measurement of sound transmission loss of above mentioned test system as per ISO 10140-2 / ASTM E-90 and determination of sound transmission class (STC) as per ASTM E- 413 and weighted sound reduction index R_w (C; C_{tr}) with spectrum adaptation terms as per ISO 717-1.

5.0 TEST PROCEDURE :

The above mentioned test system of size 2.368 m x 2.368 m was installed in the wall between two reverberation chambers and sealed all around at edges. Please refer figure 1 for test set up and mounting of system. The airborne sound transmission loss test was carried out three times on same system in a reverberation chambers as per ISO 10140-2 / ASTM E-90 standard at temperature 24°C ± 1°C and humidity 64 %.

6.0 DATE OF EVALUATION :

Test was carried out on above mentioned test system on 14th January 2021 at NVH laboratory, ARAI-Pune.

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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	05-Aug-20	05-Aug-21
2	½" Random Incidence Microphone	378B20	PCB, USA	05-Aug-20	05-Aug-21
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 Chambers	80 m^3 and 110 m^3	-	-	-

8.0 TEST RESULTS :

8.1 Table 1 and Figure 2 shows the values and plot of airborne sound transmission loss of MagicLite-100mm thickness wall system consists of ALC Wall Panel of 550-650 kg/m^3 density and 100 mm thickness in the one-third octave frequency bands of 100 Hz to 8000 Hz, STC (sound transmission class) and R_w ($C_{100-5000}$; $C_{tr100-5000}$) (weighted sound reduction index and spectrum adaptation terms).

9.0 CONCLUSIONS :

The sound transmission class (STC) is calculated as per ASTM E- 413 and weighted sound reduction index with spectrum adaptation terms R_w ($C_{100-5000}$;$C_{tr100-5000}$) is calculated as per ISO 717-1 for MagicLite-100mm thickness wall system consists of ALC Wall Panel of 550-650 kg/m^3 density and 100 mm thickness	
Sound transmission class (STC)	43 dB
Weighted sound reduction index with spectrum adaptation terms R_w ($C_{100-5000}$;$C_{tr100-5000}$)	43(0;-3)dB

Report Prepared By:	Reviewed By:	Approved By:
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Engineer	Dy. General Manager	General Manager

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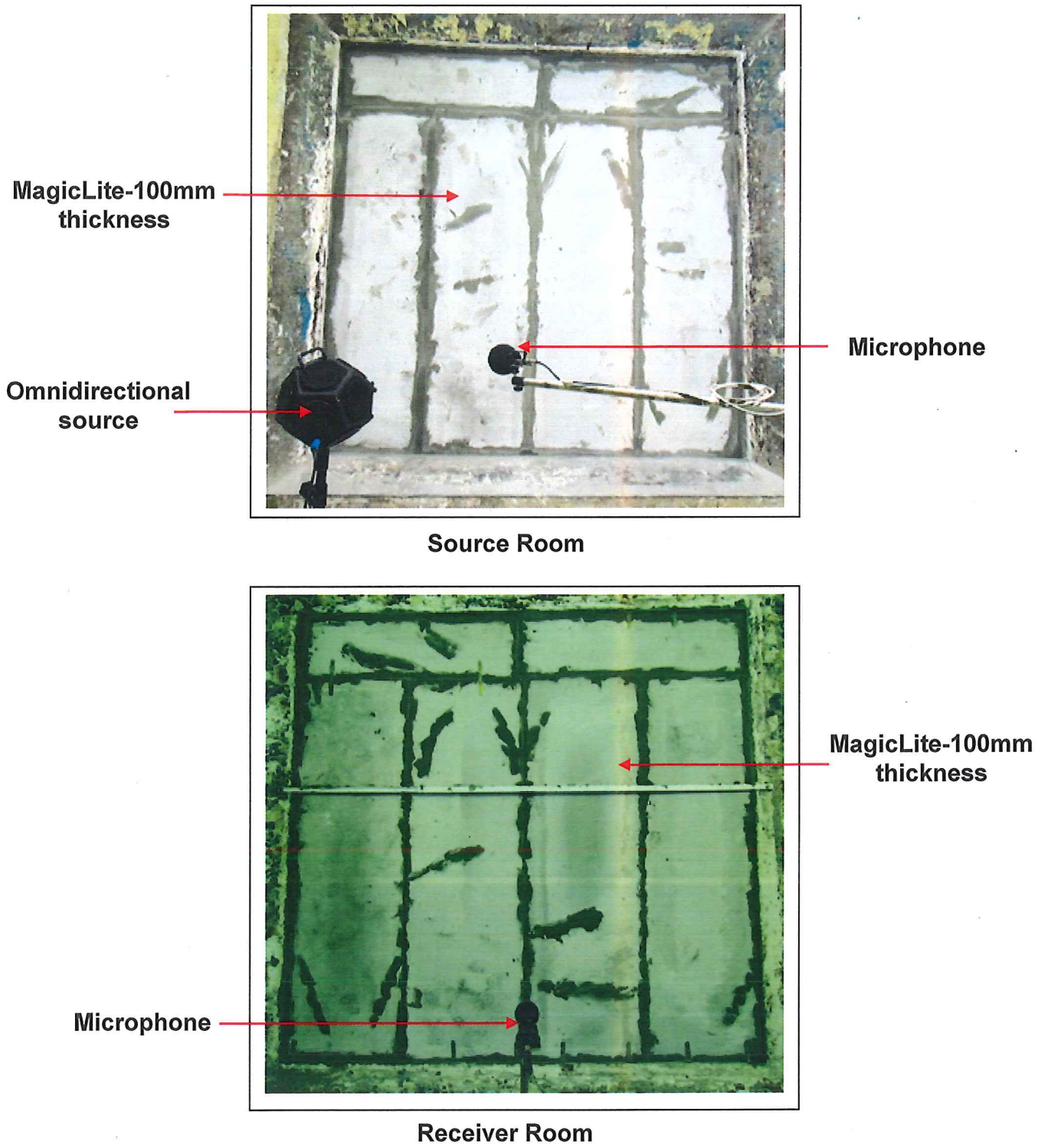


Figure 1: The test set up for mounting of MagicLite-100mm thickness wall system between two reverberation chambers.

Table 1 and Figure 2: Values and plot for Sound Transmission Loss of MagicLite-100mm thickness wall system consists of ALC Wall Panel of 550-650 kg/m3 density and 100 mm thickness at one third octave frequencies

One Third Octave Frequency, Hz	Sound Transmission Loss, dB	STDV
100	31.5	1.5
125	33.8	1.3
160	35.6	1.4
200	35.3	1.4
250	36.7	1.1
315	38.1	1.3
400	38.6	1.8
500	37.7	0.8
630	37.9	1.2
800	40.1	0.9
1000	42.4	0.9
1250	45.0	0.9
1600	48.2	0.6
2000	50.9	0.8
2500	53.5	0.9
3150	54.2	0.9
4000	56.9	0.6
5000	59.3	0.5
6300	61.1	1.2
8000	62.4	0.4

