

ONMUSE INDUSTRIAL LIMITED  
ROOM D, 10/F., TOWER A, BILLION CENTRE, 1 WANG KWONG ROAD, KOWLOON BAY, KOWLOON,  
HONGKONG

Sample Description : MOVABLE SILENCE BOOTH / MOVABLE SILENCE CABINET  
Country of Origin : CHINA

As above test item and its relevant information regarding to the submission are provided and confirmed by the applicant. SGS is not liable to either the test item or its relevant information, in terms of the accuracy, suitability, reliability or/and integrity accordingly.

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Ref No. : 230316-2  
Test Performing Date : Mar 10, 2023  
Test project : Speech Level Reduction  
Test Result(s) : For further details, please refer to the following page(s)

Signed for and on behalf of  
SGS-CSTC Standards Technical Services Co., Ltd. Shunde Branch

Marco Leung  
Authorized Signatory

scan to see the report



SDHL2304006349FT



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中国·广东·佛山市顺德区大良街道办事处五沙顺和南路1号欧洲工业园一号楼首层 邮编: 528333 t (86-757)22805888 f (86-757)22805858 e sgs.china@sgs.com

1. Test Condition

- 1) Volume of reverberation room:200m<sup>3</sup>;
- 2) Specifications:size W1000×D1000×H2200;
- 3) Temperature:21°C, Relative humidity:65%;

2. Method of Measurement

The measurements were carried out according to 'Acoustics — Measurement of speech level reduction of furniture ensembles and enclosures —Part 1: Laboratory method (ISO 23351-1:2020(E)' in the acoustic laboratory of South China University of Technology. **The level reduction of the test specimen  $D_i$**  shall be calculated by the following formula:

$$D_i = L_{w,p,1,i} - L_{w,p,2,i} \tag{1}$$

Where

$L_{w,p,1,i}$  is the sound power level [dB re 1 pW] radiated by the reference box without the test specimen when the sound source is on; dB;

$L_{w,p,2,i}$  is the sound power level [dB re 1 pW] radiated by the reference box with the test specimen when the sound source is on; dB;

The calculation of  $D_{S,A}$  is based on a mathematical transformation where the sound power level  $L_{w,p,1,i}$  is replaced by the standardized sound power level of speech,  $L_{w,s,1,i}$  given in Table 1. In this case, the sound power level radiated by the test specimen,  $L_{w,s,2,i}$  is determined by the following formula:

$$L_{w,s,2,i} = L_{w,s,1,i} - D_i \tag{2}$$

Where

$L_{w,s,1,i}$  is the standardized sound power level of speech, given in Table 1; dB;

$L_{w,s,2,i}$  is determined by Formula (2); dB;

The A-weighted sound power level  $L_{w,s,A,2}$  radiated by the test specimen within the frequency range from 125 Hz to 8 000 Hz is determined by the following formula:

$$L_{w,s,A,2} = 10 \log_{10} \left( \sum_{i=1}^7 10^{(L_{w,s,2,i} + A_i)/10} \right) \tag{3}$$

where

$A_i$  is the A-weighting for 1/1-octave frequency band i.

The speech level reduction  $D_{S,A}$  is determined by the following formula:

$$D_{S,A} = L_{w,s,A,1} - L_{w,s,A,2} \tag{4}$$

where

$L_{w,s,A,1} = 68.4$  dBA is the A-weighted sound power level of standardized speech within the entire frequency range from 125 Hz to 8000 Hz.



Table 1 — Unweighted sound power level of genderless speech

	1/1-octave frequency band f Hz						
	125	250	500	1000	2000	4000	8000
$L_{w,s,l}$ [dB re 1 pW]	60.9	65.3	69.0	63.0	55.8	49.8	44.5

Table 2 — Classification of enclosures according to speech level reduction,  $D_{S,A}$

Class	A+	A	B	C	D	Unclassified
$D_{S,A}$ [dB]	>33	>30	>25	>20	>15	≤ 15

3. Instrumentation

B&K 2270 Investigation

Power amplifier B&K 2716

Omni directional speaker B&K 4292

Microphone B&K 4189 and accessories.



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**4. Test Results**

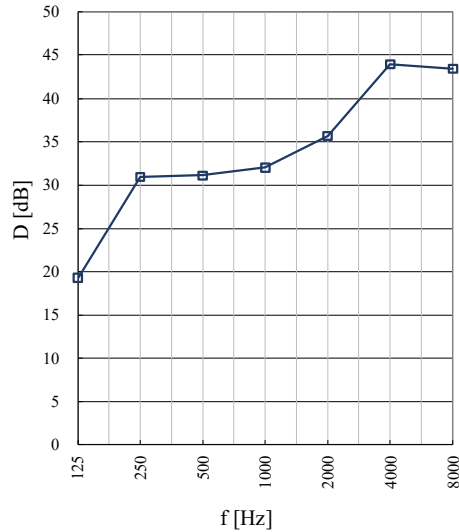
Test Specimen	MOVABLE SILENCE BOOTH/MOVABLE SILENCE CABINET
Specifications	W1000×D1000×H2200
Additional Description	MOVABLE SILENCE BOOTH/MOVABLE SILENCE CABINET was placed in the middle of the floor of the reverberation room.

**Test Results**

Index i	1/1-octave frequency band	Unweighted values		$D_i$ dB	Unweighted values		$A_i$ dB	A-weighted values dB	
		$L_{w,p,1,i}$	$L_{w,p,2,i}$		$L_{w,s,1,i}$	$L_{w,s,2,i}$		$L_{w,s,A,1,i}$	$L_{w,s,A,2,i}$
1	125	101.6	82.3	19.3	60.9	41.6	-16.1	44.8	25.5
2	250	102.5	71.6	30.9	65.3	34.4	-8.6	56.7	25.8
3	500	99.2	68.1	31.1	69.0	37.9	-3.2	65.8	34.7
4	1000	96.1	64.1	32.0	63.0	31.0	0.0	63.0	31.0
5	2000	96.9	61.2	35.7	55.8	20.1	1.2	57.0	21.3
6	4000	93.9	49.9	44.0	49.8	5.8	1.0	50.8	6.8
7	8000	85.0	41.6	43.4	44.5	1.1	-1.1	43.4	0.0

Frequency (Hz)	Speech level reduction D (dB)
125	19.3
250	30.9
500	31.1
1000	32.0
2000	35.7
4000	44.0
8000	43.4
<b><math>D_{S,A}</math></b>	<b>31.4</b>

Figure 1. Speech level reduction D against 1/1 Oct Frequency



f 1/1-octave frequency band, in Hz    D level reduction, in dB  
 $D_{S,A}$  speech level reduction, in dB

**Classification of enclosures according to Speech level reduction ( $D_{S,A}$ ) =A**



### 5. Photographic Records



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**Remark:**

1. This test was subcontracted to Subtropical Architecture Institute, South China University of Technology.
2. This test report is issued based on the modification of the original No. SDHL2303004062FT test report issued on Mar 21, 2023. And the original report is still valid. According to applicant's requirements, following changes are included:
  - a. Change of applicant's name.
  - b. Change of applicant's address.

\*\*\*End of Report\*\*\*



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