

TEST REPORT

REPORT NO.: 2012CB7868

PAGE : 1 OF 4

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Applicant. : ALAM-CON SDN BHD
 9521-A (Lot 209),
 Jalan PBR 25,
 Kawasan Perindustrian Bukit Rambai,
 75250 Bukit Rambai, Melaka.

Manufacturer : ALAM-CON SDN BHD

Product : Autoclaved Aerated Concrete Masonry Unit (Block)

Reference Standard/
 Method of Test : ISO 140-3:1995 (Acoustics-Measurement of Sound Insulation in Buildings and Of Building Elements
 Part 3: Laboratory Measurements of Airborne Sound Insulation of Building Elements

Description of Sample : Autoclaved Aerated Concrete Masonry Unit (Block) with size of 600 mm x 200 mm x 150 mm was installed to the test opening by the applicant. The installation covered the whole of test opening with the dimension of 3.60 meter in height x 2.80 meter in width. Both sides of the wall were plastered with skim coat with thickness of 5 mm.

Brand : ACON
 Model : 600mm x 200 mm x 150 mm
 Density : 530 ± 50 kg/m³

Date Received : 26th December 2012

Job No / Ref No. : J2012126 7868/ SQAS / CCST / T.REC / BPL / 17

Issued Date : 21 JAN 2013

Approved Signatories


 (FAIZ MOHD YUSUF)
 Senior Technical Executive




 M RAJA NOR SIHA RAJA ABD. HANAN)
 Head
 Civil & Construction Section
 Testing Services Department

TEST REPORT

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PAGE : 2 OF 4

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Test Method : ISO 140-3:1995
Acoustics-Measurement of Sound Insulation in Buildings and Of Building Elements
Part 3 : Laboratory Measurements of Airborne Sound Insulation of Building Elements

Reverberation Room : The test laboratory consists of two interconnected reverberant chambers.
The source room (Chamber 1) has a volume of 202.2 m³ and a total surface area of 209 m². Receiving room (chamber 2) has a normal volume of 268 m³ and total surface area of 253 m².

Instrumentation : 1) B&K Sound Source Type 4224
2) B&K Rotating Microphone Boom Type 3923
3) DELL Latitude with Pulse Software
4) B&K Type 3560C Front-end
5) B&K Acoustic Calibrator Type 4231

Test Procedure : The test has been conducted in general conformance with the ISO 140-3:1995 Acoustics-Measurement of sound insulation in buildings and of building elements. Part 3: Laboratory measurements of airborne sound insulation of building elements. ISO 717-1:1996 Acoustics-Rating of sound insulation in buildings and of building elements. Part 1: Airborne sound insulation.

The test specimen was installed in the opening between two reverberation rooms. An approximate diffuse sound field had been produced and measured in one room designated as the source room or transmitting room.

The sound reduction index (in dB) had been calculated in accordance with ISO 140-3: 1995 Section 3.2 Equation (5) at one-third octave centre frequency from 100 Hz to 5000 Hz. The calculated sound reduction index data was compared with the standard reference contour to obtain a single number weighted sound reduction index (R_w).

$$R = L1 - L2 + 10 \log (S/A)$$

Where,

L1 = Average sound pressure level in source chamber

L2 = Average sound pressure level in receiving chamber

S = Area of test specimen

A = Sound absorption coefficient

Test Opening : The dimension of the completed test opening for the measurement of sound transmission loss in compliance with ISO 140 Part 3, with 3.60 meter height and 2.80 meter width. The maximum test area, based on measured dimension is 10 m².




21 JAN 2013

TEST REPORT

REPORT NO.: 2012CB7868

PAGE : 3 OF 4

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Test Setup

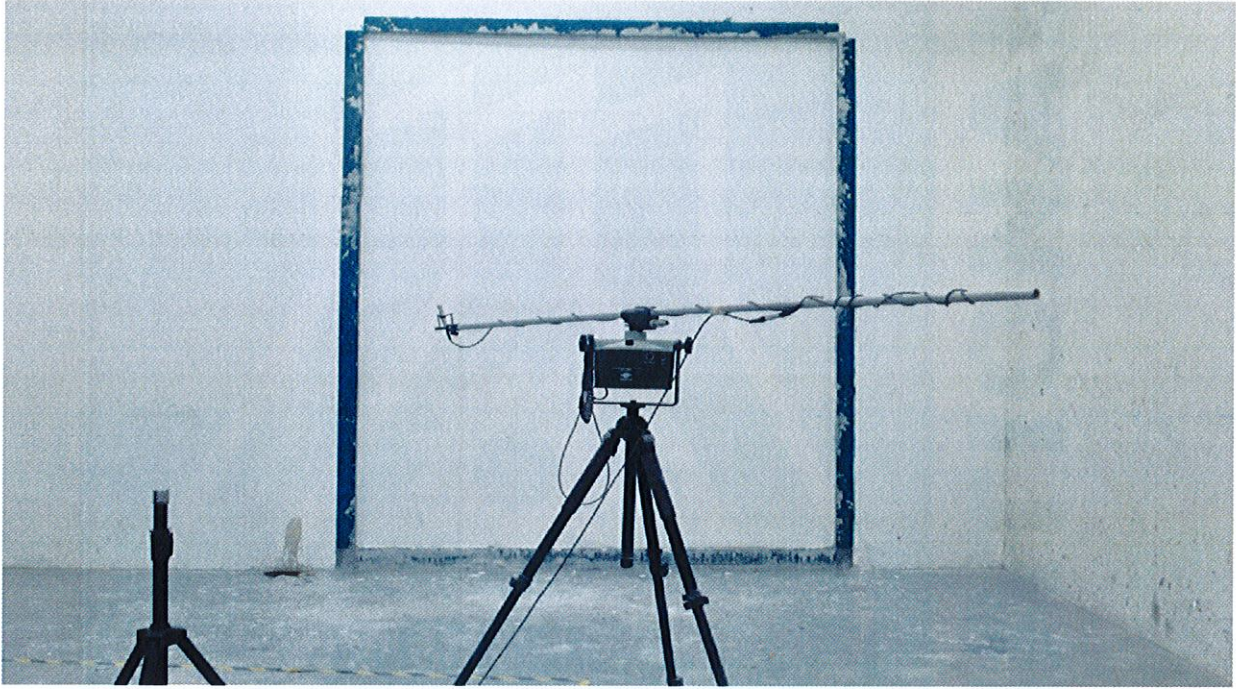


Photo 1: Test setup in Receiving Room



Photo 2: Test setup in Source Room

21 JAN 2013

TEST REPORT

REPORT NO.: 2012CB7868

PAGE : 4 OF 4

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Sample : Autoclaved Aerated Concrete Masonry Unit (Block)
 Brand : ACON
 Model : 600 mm x 200 mm x 150 mm
 Density : $530 \pm 50 \text{ kg/m}^3$

Test Condition : Temperature = 27.2 °C Humidity = 74.0 %

Table 1 : Sound Reduction Index Determination of AAC Masonry Unit (Block)

Frequency (Hz)	Sound Reduction Index (dB)	Reference (dB)
100	30.9	28
125	35.5	30
160	31.6	32
200	33.6	36
250	36.4	39
315	36.8	42
400	37.7	45
500	41.8	46
630	45.4	47
800	46.9	48
1000	50.0	49
1250	51.4	50
1600	53.3	50
2000	56.4	50
2500	57.1	50
3150	59.4	50
4000	61.3	50
5000	63.1	50
R_w	46 dB	

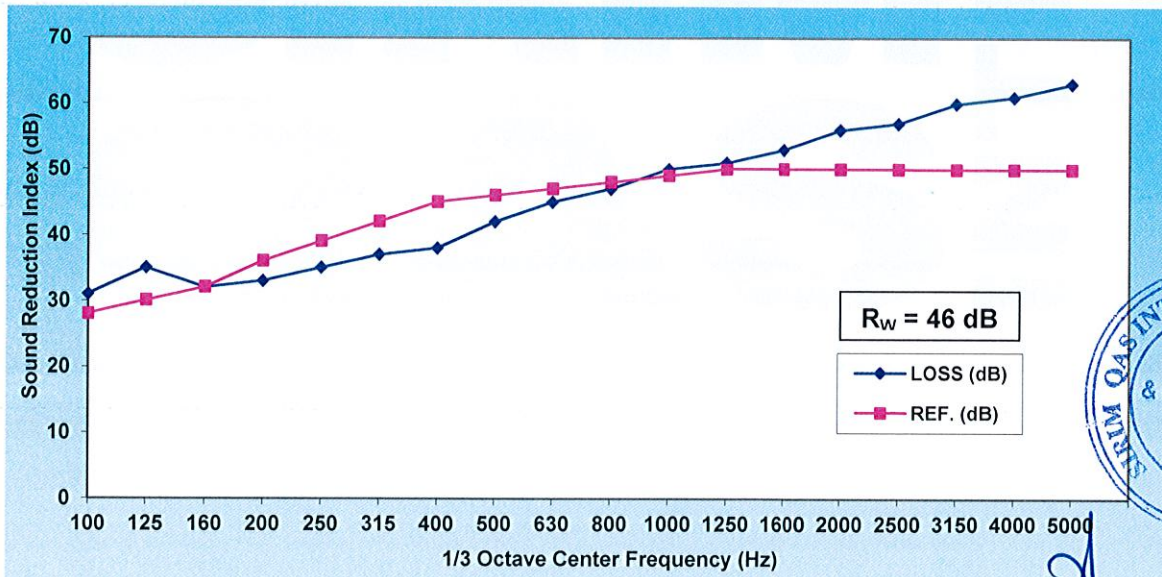


Figure 1: Sound Reduction Index for AAC Masonry Unit (Block)



2
 1 JAN 2013