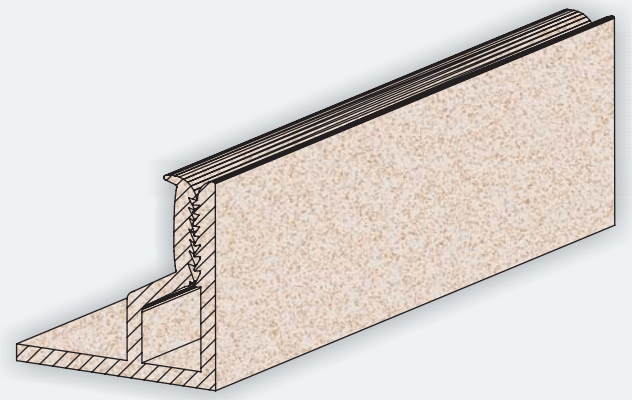
FABRIWALL®

A Unique Fabric Stretch System

Introduction

FABRIWALL fabric stretch system is a site built acoustic solution on Wall and Ceiling. The framework is comprised of fire-retardant rigid plastic locking channels on which almost all fabrics can be fixed to achieve the desirable finish.

FABRIWALL can be applied over virtually any surfaces with minimum wall preparation.Since the system is customised, design changes can be made on site and thus give the greatest design flexibility. Fabrics could be replaced in future for maintenance purpose.



Product Features

One track suit for all purposes.
Provides high-end acoustic performance.
Built on site, not require precise site measurements and minimize the damage during shipping.
Install quickly on wall and ceiling.
Flexibility on-site coordination.
Easy maintenance.
Any configuration or shape is possible.

Product Specification

Product	Thickness	Core
LF	25 - 50mm	Polyester Fibreglass

Flammability Performance

Fabric	Test Method	Description
Cara	BS 476 Part 7 Class 1 BS EN 1021-1:2006 (Cigarette)	Flammability

FABRIWALL Wall/Ceiling Treatment System

The system shall consist the following components:
1. Rigid plastic locking channels (Type LF);
2. High performance open-cell absorptive substrate core;
3. Acoustic transparent fabric.

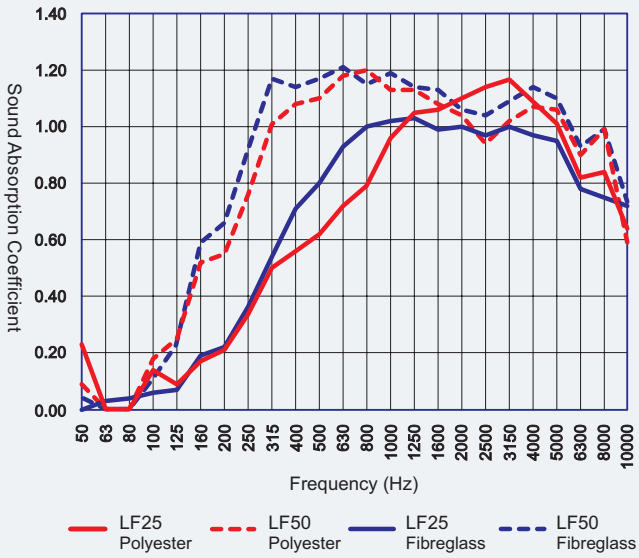
Select from NOISESTOP's series or Lucia or Cara colour ranges. Customer's own fabric choice upon review and approval.

Windsor Cinema, Hong Kong

Acoustics Performance

Testing in accordance with ASTM C423-09a Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.

LF25 and LF50 Sound Absorption Coefficient



FABRIWALL®

A Unique Fabric Stretch System

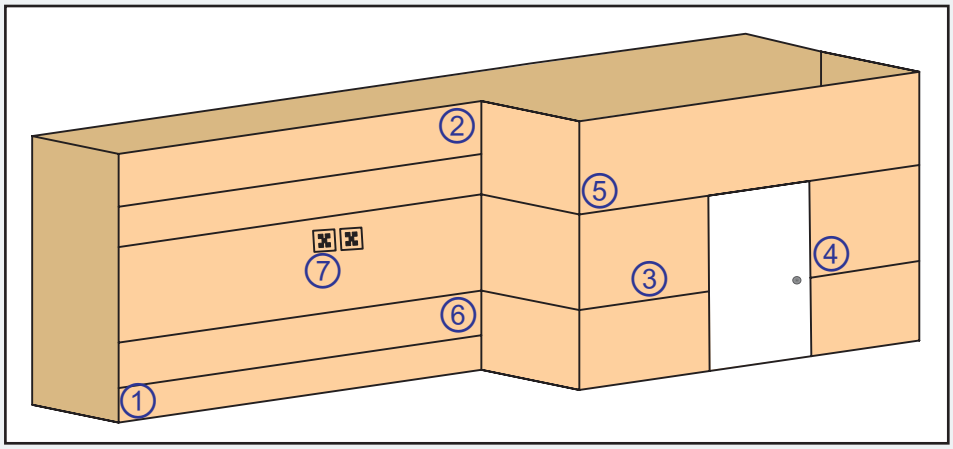
Acoustics Performance

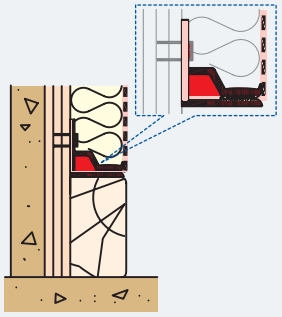
LF25 and LF50 Sound Absorption Coefficient

1/3 Octave Band and 1/1 Octave Band Sound Absorption Coefficient																				
Core	Hz / Thk	100	**125**	160	200	**250**	315	400	**500**	630	800	**1000**	1250	1600	**2000**	2500	3150	**4000**	5000	**NRC**
Polyester Infill	25 mm	0.09	0.08	0.18	0.23	0.38	0.55	0.65	0.69	0.84	0.39	1.02	1.08	1.12	1.11	1.04	1.12	1.08	1.02	**0.80**
			0.12			**0.39**			**0.73**			**0.83**			**1.09**			**1.07**		
	50 mm	0.11	0.23	0.59	0.66	0.92	1.17	1.14	1.17	1.21	1.15	1.19	1.14	1.13	1.06	1.04	1.09	1.14	1.10	**1.10**
			0.31			**0.92**			**1.17**			**1.01**			**1.07**			**1.07**		
Fibreglass Infill	25 mm	0.09	0.12	1.14	0.30	0.55	0.61	0.66	0.84	0.99	0.95	1.07	1.00	1.05	1.06	1.10	1.07	1.07	1.06	**0.90**
			0.45			**0.49**			**0.83**			**1.16**			**1.08**			**1.11**		
	50 mm	0.18	0.25	0.52	0.55	0.76	1.01	1.08	1.10	1.18	1.20	1.13	1.13	1.08	1.04	0.94	1.02	1.07	1.06	**1.00**
			0.32			**0.77**			**1.12**			**1.15**			**1.02**			**1.05**		

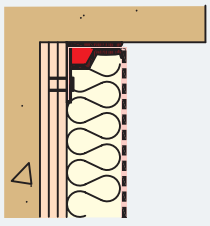
Typical Details

LF25 Square Edge System

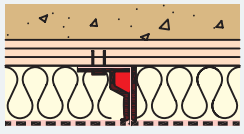




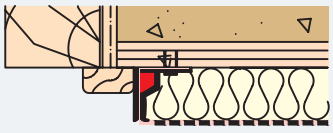
1 Edge @ Wood Skirting



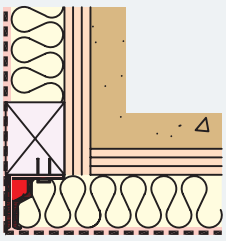
2 Edge @ Ceiling



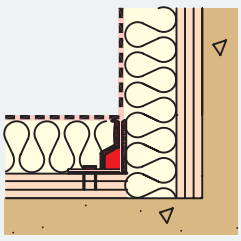
3 Joints



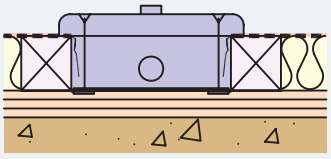
4 Edge @ Door Jamb



5 Outside Corner



6 Inside Corner



7 Electric Socket

Spray
EJ033

Ronay
EJ189

Dolphin
EJ105

Carron
EJ015

Galilee
EJ125

Inverness
EJ175

Fair Isle
EJ186

Adriatic
EJ154

Staffa
EJ185

Easdale
EJ188

Lossie
EJ197

Tummel
EJ038

Lora
EJ187

Cluanie
EJ180

Walten
EJ011

Pitlochry
EJ076

Vit
EJ184

Glass
EJ004

Hillswick
EJ190

Lomond
EJ192

Shetland
EJ191

Beltane
EJ193

Chaucer
EJ172

Clan
EJ169

Austen
EJ173

Maree
EJ195

Portland
EJ016

Denny
EJ196

Lerwick
EJ194

Merrick
EJ048

Lead
EJ104

Black
EJ138

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HOKLAS 173 TEST

Test Report for Laboratory Measurement of Sound Absorption Coefficient

TEST REPORT REFERENCE NUMBER:	**ATS14-101-RP001**
DATE OF REPORT:	**06 January 2015**
TESTED FOR:	**Architectural Acoustics (Holdings) Ltd.** **2/F., Po Cheong Comm. Bldg.,** **29 Prat Avenue,** **T.S.T., Hong Kong**
ATTENTION:	**Ms. Polly Ip**
UNIT UNDER TEST:	**50mm thick FABRIWALL® (快拆樂) Stretch System**
TEST STANDARD:	**ASTM C423 – 09a**
TESTED AT:	**Jiangmen Laboratory of ATSL** **No. 1, 1st Industrial Area, Lile, Wusha,** **Jianghai District, Jiangmen,** **Guangdong Province, P.R.China**

Approved by: _____

Mr. LEUNG Yuen Tat / Technical Manager
MIOA, MHKIOA

HKAS has accredited Acoustic Testing Services Limited (Reg. No.: 173 - TEST) under HOKLAS for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories.

1. METHOD OF TEST

The measurements were carried out according to ASTM C 423 – 09a "Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method" in the reverberation chamber in Acoustic Testing Services Limited. The measurements were conducted at 1/3 octave band centre frequencies from 100 Hz to 5000 Hz.

2. INSTRUMENTATION

Description:	Serial Number:
Bruel & Kjaer Type 2270 Real Time Frequency Analyzer	2679277
Bruel & Kjaer Type 4189 ½" Microphone	2339313
Ultragraph Pro Equalizer	N0292084088
Power Amplifier Bruel & Kjaer Type 2716	2461258
Bruel & Kjaer Type 4292 OmniPower Sound Source	013004
Bruel & Kjaer Type 4231 Sound Level Calibrator	2052566

The measuring equipment has been calibrated by an external recognized accredit laboratory, and is in current calibration.

3. PRINCIPLE OF TEST

A band of random noise is used as a test signal and turned on long enough for the sound pressure level in the room to reach a steady state. When the signal is turned off, the sound pressure level will decrease and the rate of decay may be determined from measurements of the average time for the sound pressure level in a specified frequency band to decay through a certain range. The absorption of the room and its contents is calculated, based on the assumptions that the incident sound field is diffuse before and during decay and that no additional energy enters the reverberation chamber during decay, from the Sabine equation:

$$A = 0.9210\frac{Vd}{c}$$

where,

A = sound absorption, m^2;
V = volume of reverberation room, m^3;
c = $20.047\sqrt{273.15+T}$, speed of sound, m/s;
T = temperature, $°C$;
d = decay rate, dB/s.

Absorption added to the room by the test specimen is calculated by:

$$A = A_2 - A_1$$

where,

A is the absorption area of the specimen, m^2;
A_1 is the absorption area of the empty reverberation room, m^2; and
A_2 is the absorption area of the room with the specimen brought in, m^2.

The increase in absorption divided by the area of the test specimen is the Sound Absorption Coefficient of the test specimen, which is calculated for each frequency as follows:

$$\alpha = \left[\left(A_2 - A_1 \right) / S \right]$$

where,

α is the Sound Absorption Coefficient of each test specimen, m^2 per unit;
S is the area of test specimen, m^2.

Sound Absorption Average (SAA) – a single number rating, the average, rounded off to the nearest 0.01, of the Sound Absorption Coefficients of a material for the twelve one-third octave bands from 200 through 2500 Hz.

Noise Reduction Coefficient (NRC) – a single number rating, round the average of the sound absorption coefficients for 250, 500, 1000 and 2000 Hz to the nearest multiple of 0.05

4. RESULTS APPLICATION

Measurement of the sound absorption of a room is part of the procedure for other acoustical measurements, such as determining the sound power level of a noise source or the sound transmission loss of a partition. It is also used in certain calculations such as predicting the sound pressure level in a room when the sound power level of a noise source in the room is known.

The results obtained by this test method should be used with caution because not only are the areas encountered in practical usage usually larger than the test specimen, but also the sound field is rarely diffuse.

The Sound Absorption Coefficient of a surface is a property of the material composing the surface. The test results obtained relate only to the specimen tested.

5. DETAILS OF TEST

Date of receipt of Unit Under Test:	08 April 2014
Date of test:	08 April 2014
Unit Under Test:	50mm thick FABRIWALL® (快拆樂) Stretch System
Sample I. D.:	ATS14-101-TS007
Manufacturer:	Architectural Acoustics (Holdings) Ltd.
Installed by:	Architectural Acoustics (Holdings) Ltd.
Additional Description:	50mm thick FABRIWALL® (快拆樂) Stretch System with 48kg/cu.m. fibreglass and open weave fabric weight 220g/sq.m.

The details of the Unit Under Test are referring to the drawings given in Appendix 1, if applied.

The information of the Unit Under Test shown on the drawing is provided by the Client and is not verified by the laboratory.

Acoustic Testing Services Limited

6. TEST RESULTS

Room Volume

Volume: 208 m^3

Specimen Dimension:

Width: 2430 mm

Length: 3000 mm

Type of Mounting:

Type A mounting as per ASTM E795

Empty Room Measurement:

Temperature: 21 °C

Humidity: 70 %

Measurement with Specimen:

Temperature: 21 °C

Humidity: 70 %

Sound Absorption Coefficient:

Freq. (Hz)	Sound Absorption Coefficient
100	0.11
125	0.23
160	0.59
200	0.66
250	0.92
315	1.17
400	1.14
500	1.17
630	1.21
800	1.15
1000	1.19
1250	1.14
1600	1.13
2000	1.06
2500	1.04
3150	1.09
4000	1.14
5000	1.10

SAA	=	**1.08**
NRC	=	**1.10**

Sound Absorption Average, SAA is equal to 1.08

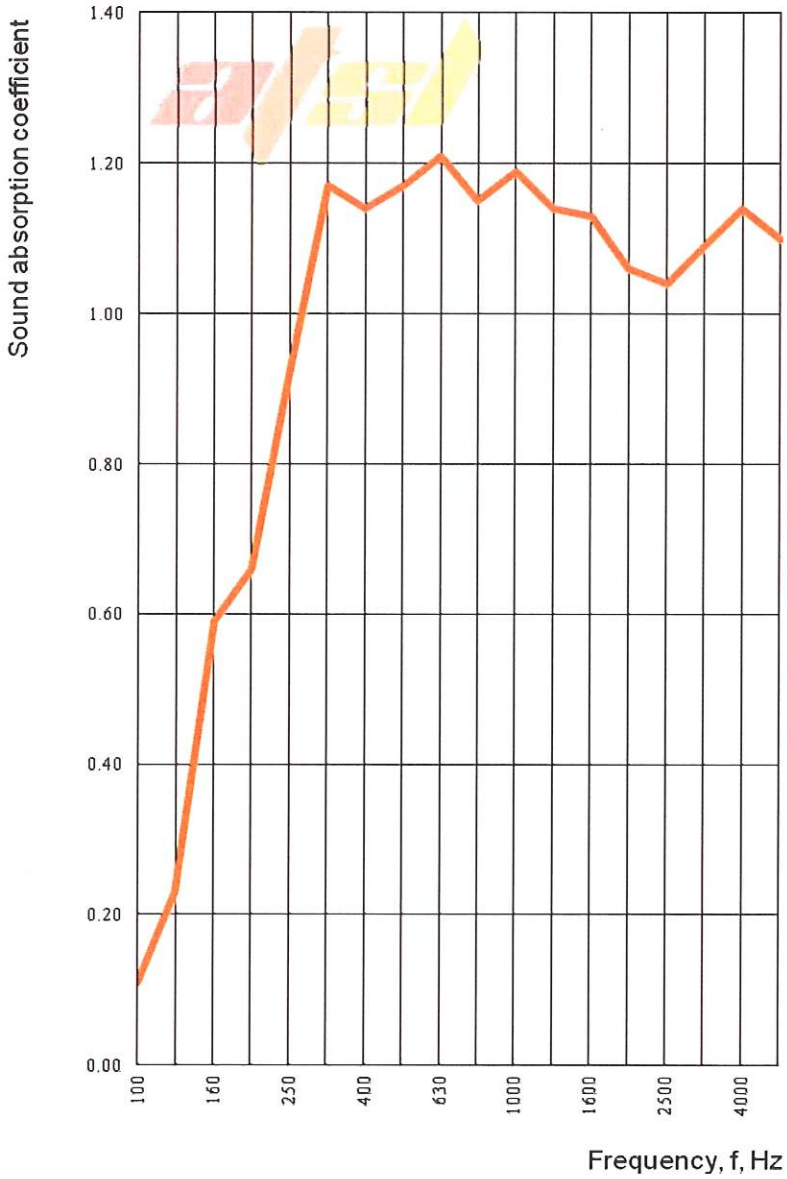


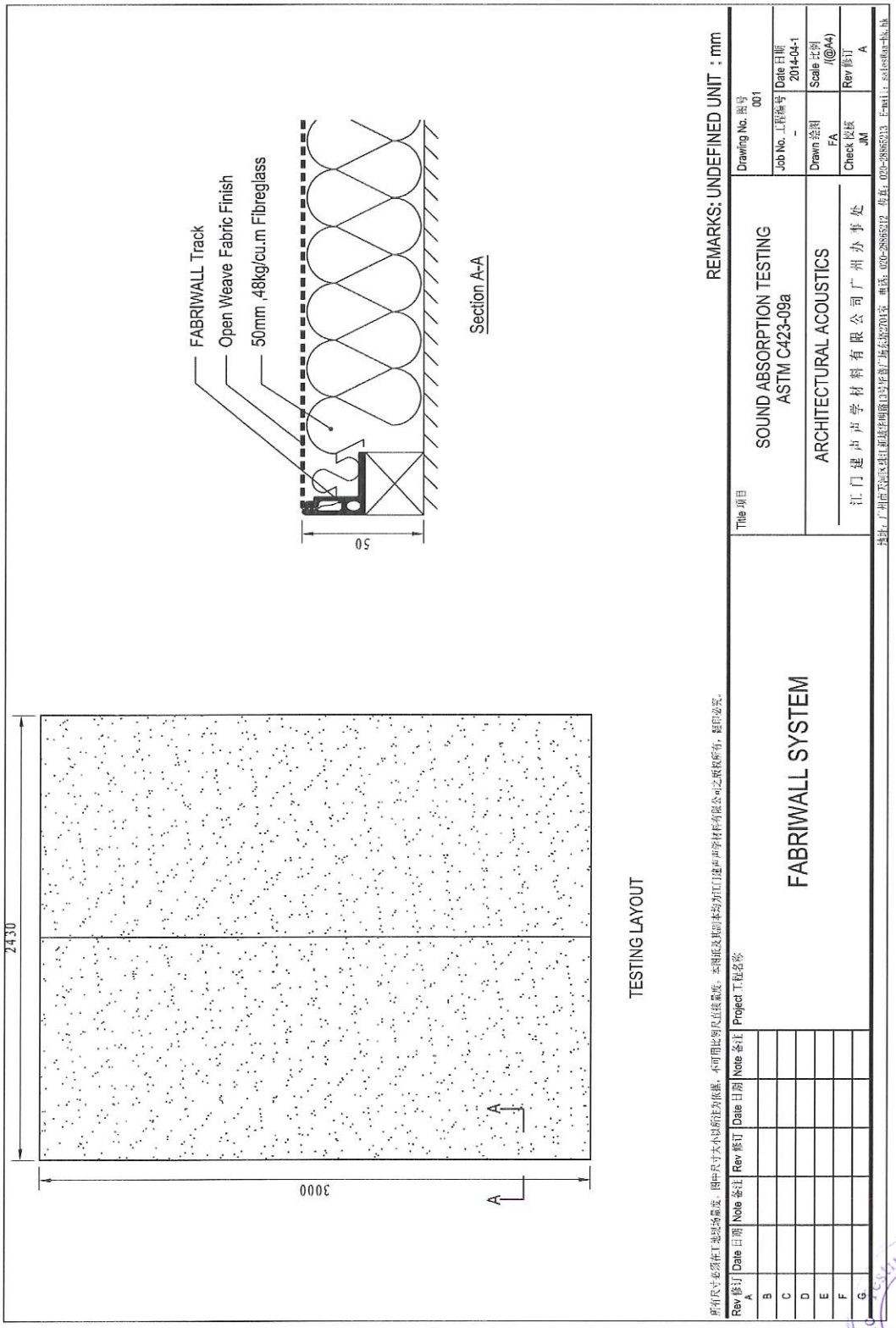
Figure 1. Sound Absorption Coefficient against Frequency

APPENDIX LIST

APPENDIX 1	Details of Unit Under Test
APPENDIX 2	Photographic Records

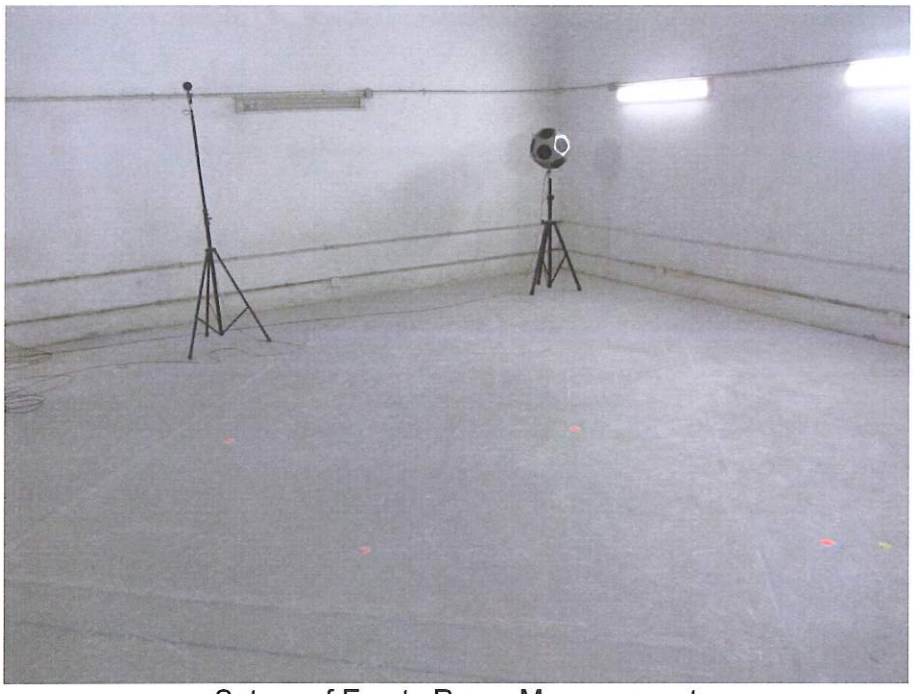
APPENDIX 1

Details of Unit Under Test

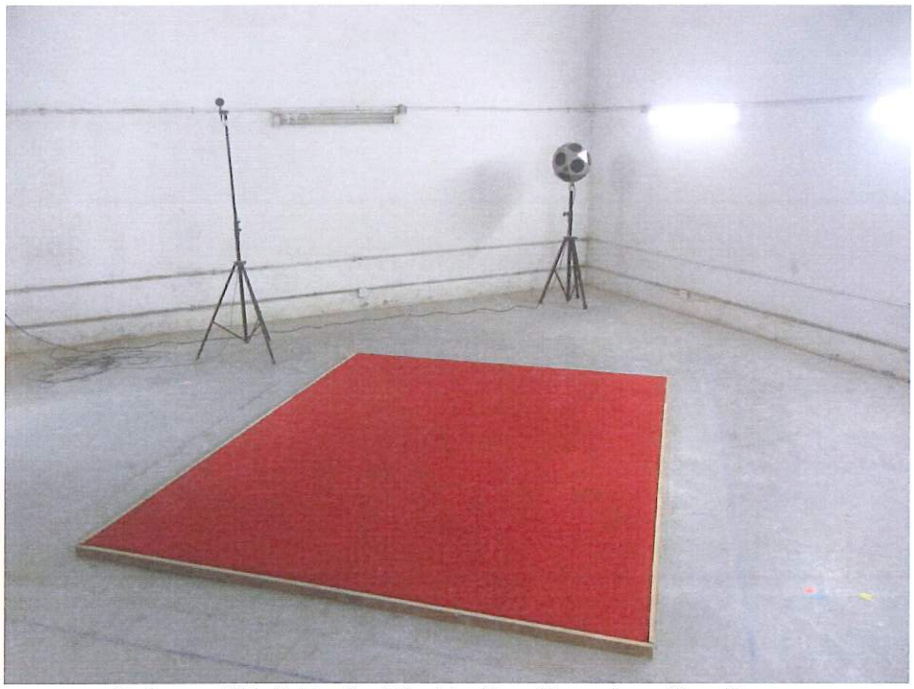


APPENDIX 2

Photographic Records



Set-up of Empty Room Measurement



Set-up of Unit Under Test in the Reverberation Room

End of Report