TEST REPORT

Your Ref:

Date: 28 Apr 2006

Our Ref: 54S062383/A/EMK

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SUBJECT:

Laboratory measurement of airborne sound transmission loss of fixed glass window system submitted by Sermat Co., Ltd on 14 Apr 2006.

TESTED FOR:

Sermat Co., Ltd
5/5-6 Soi Sailom
Phaholyothin Road
Bangkok 10400

Attn: Mr Apirat Wisetwongsa

DATE OF TEST:

19 Apr 2006

DESCRIPTION OF SAMPLE:

A fixed solid wood glass window system, STC 37 was installed onto the sample carrier by Sermat Co., Ltd.

The dimensions of the test sample including the test frame was 840mm (width) x 2760mm (height) x 205mm (thick). The weight of the glass window system was 153kg.

The fixed solid wood glass window consists of a 6mm thick glass, 27mm thick air-gap and 6mm thick glass.

The technical specification of the window system layout was shown in Appendix 1.

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ISO 9001 JQA-QMA 10040

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LA-2001-0212-A
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LA-2001-0216-G
LA-2001-0217-G

The results reported herein have been performed in accordance with the laboratory's terms of accreditation under the Singapore Accreditation Council - Singapore Laboratory Accreditation Scheme

METHOD OF TEST:

The test was conducted in accordance with ASTM E90 - 97 “Standard test method for laboratory measurement of airborne sound transmission loss of building partitions and elements”

Area of opening: 2.24m^2
Air temperature in both source room and receiving room : 25°C
Relative air humidity in both source room and receiving room : 65%
Source room volume: 73m^3
Receiving room volume: 84m^3
Location of the test: Acoustics Lab of PSB Corporation Pte Ltd

TEST EQUIPMENT:

The following instruments were used for the test.

1) A dual-channel real-time frequency analyser (B&K Type 2133)

2) An Omni-loudspeaker (B&K Type 4296)

3) Two sets of ½” condenser microphones (B&K Type 4190)

4) Two sets of microphone preamplifers (B&K Type 2669)

5) A sound pressure level calibrator (Norsonic Type 1251)

6) A sound source amplifier (Crown model CE 1000)

7) Two sets of rotating microphone booms (B&K Type 3923)

TEST PROCEDURES:

1) Instrumentation was set up according to ASTM E90.

2) Measurement system was calibrated using a sound level calibrator Norsonic Type 1251.

3) Background noise level for both source room and receiving room were measured.

4) Sound source system was switched on and maintained at constant level. The sound pressure level in the receiving room was ensured to be 15dB higher than the background noise level.

5) Recording time for both rotating microphone booms was set to 64s which equals to the time taken by the booms to complete two revolutions.

6) Sound pressure level difference between the source room and the receiving room was measured with a dual – channel acoustic analyser (B&K 2133), and the measurement was repeated 3 times.

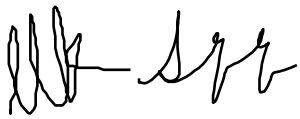
7) Step 6 was repeated after the loudspeaker was moved to new position.

8) Reverberation time (RT) of the receiving room was measured from two different loudspeaker positions. Each loudspeaker position was measured 2 times.

9) The mean values of the six readings for sound pressure level difference and four readings for RT values were calculated.

10) Values of sound transmission loss were determined for each 1/3 octave frequency band from 100Hz to 5kHz based on the mean values of step 9.

11) Sound transmission class was determined at the frequency of 500Hz of the shifted reference curve according to ASTM E 413.



RESULTS:

Values of sound transmission loss (TL) of the sample tested were tabulated in Table 1. Sound insulation rating was computed according to ASTM E413 - 87 (Reapproved 1999) "Classification for rating sound insulation".

Table 1 : Measured values of TL and values of the shifted reference curve for STC = 37

One-third Octave Band Frequency (Hz)	TL (dB)	STC = 37 (dB)	Deficiency
100	24	18	0
125	22	21	0
160	22	24	2
200	26	27	1
250	34	30	0
315	36	33	0
400	35	36	1
500	36	37	1
630	37	38	1
800	38	39	1
1000	40	40	0
1250	41	41	0
1600	36	41	5
2000	36	41	5
2500	36	41	5
3150	40	41	1
4000	41	41	0
5000	44	41	0
		Total deficiency (125Hz – 4000Hz) :	23

The values in Table 1 were plotted as shown in Figure 1.

Remark:

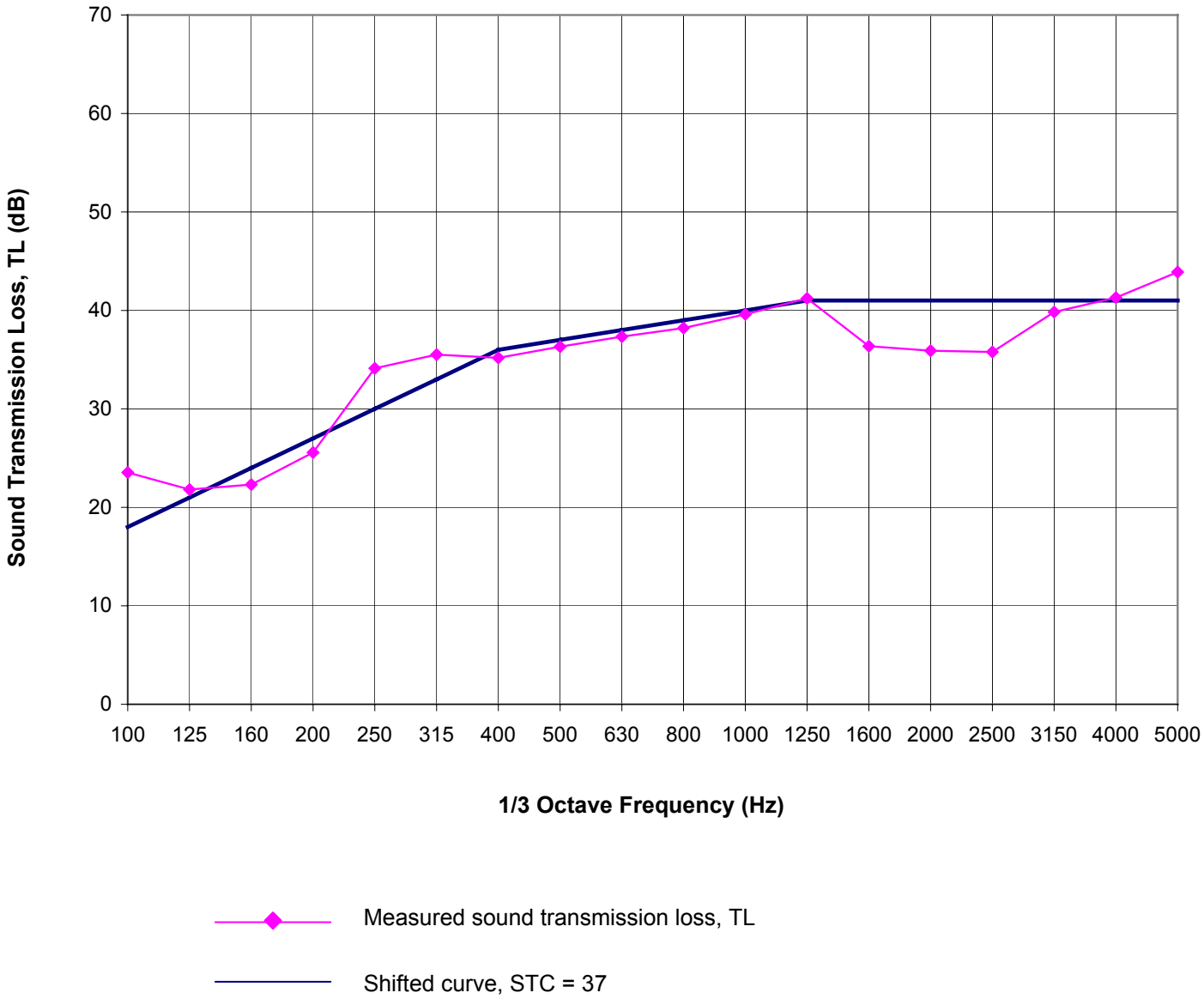
The tested sample has a sound transmission class, STC = 37

Ee Min Kuen
Testing Officer

Dr Sun Qiqing
Assistant Vice President
Acoustic & Vibration/Packaging
Testing Group

RESULTS: (cont'd)

Figure 1: Sound insulation performance of fixed solid wood glass window system, STC 37



RESULTS: (cont'd)

Figure 2 : Test set up of test sample in the reverberation rooms.

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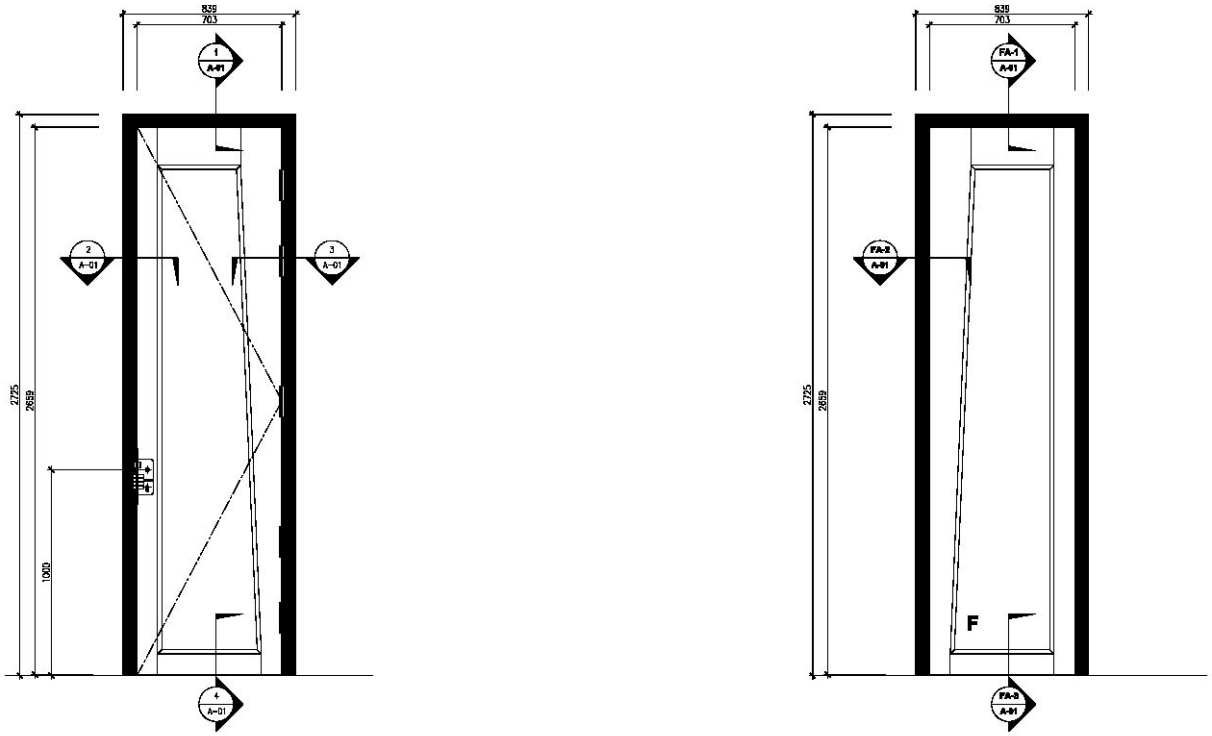
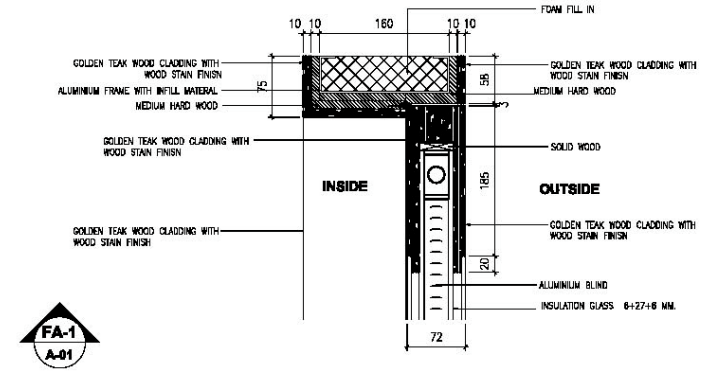


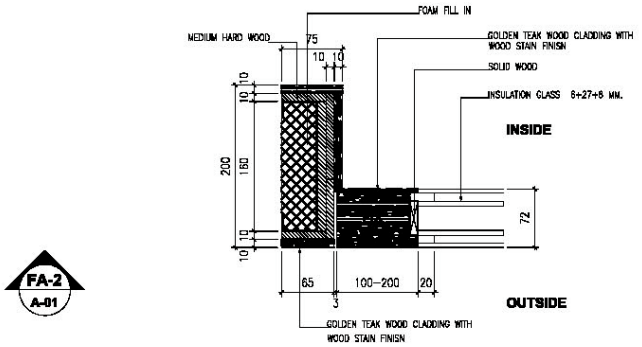
SINGLE SWING

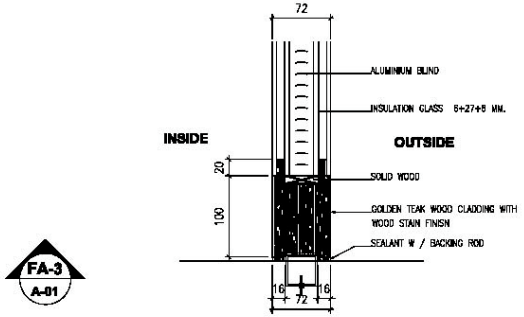
FIXED DOORS

SINGLE SWING / FIXED DOORS	DRAWING TITLE	SINGLE SWING / FIXED DOORS	SHOP DWG. BY	SERMAT CO., LTD.	SHOP DWG.
	PROJECT NAME	SAWAN ESTATES	DATE	10/03/2006	A-001

Appendix 1a : Technical Drawing







DETAIL FIXED DOORS,WINDOW 72 mm. / FA-1,FA-2,FA-3,FA-4	DRAWING TITLE	**DETAIL DOORS&WINDOWS**	SHOP DWG. BY	**SERMAT CO., LTD.**	SHOP DWG. **A-01/3**
	PROJECT NAME	**SAWAN ESTATES**	DATE	**R2 / 24 - 11 - 05**	

Appendix 1b : Technical Drawing

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May 2005