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EVALUATION CENTER

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Shanghai 201206

PRODUCT EVALUATED

Mineral Fiber Acoustic Board
(Model: Saiko-Semi-star2)

EVALUATION PROPERTY

Sound absorption, Sound insulation, Light reflectance

Report of Mineral Fiber Acoustic Board for compliance with the applicable requirements of the following criteria: **Clause 4.7.2, Clause 4.7.3 and Clause 4.9.3 of BS EN 13964:2004+A1:2006 Suspended ceiling – Requirements and test methods.**

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2 Introduction

Intertek has conducted testing for NRC, CAC, Lightreflection on Mineral Fiber Acoustic Board (Model: Saiko-Semi-star2), to evaluate some physical properties, including Sound absorption, Sound insulation, Light reflectance. Testing was conducted in accordance with Clause 4.7.2, Clause 4.7.3 and Clause 4.9.3 of BS EN 13964:2004+A1:2006 Suspended ceiling – Requirements and test methods. This evaluation began December 22, 2009 and was completed January 29, 2010.

3 Test Samples

3.1. SAMPLE SELECTION

Samples were submitted to Intertek directly from the client. Samples were not independently selected for testing. Samples were received at the Evaluation Center on December 22, 2009.

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

Product:	Mineral Fiber Acoustic Board
Trade Name (Brand):	Saiko Acoustic Board Ceiling
Model:	Saiko-Semi-star2
Nominal Dimension:	595 mm x 595 mm x 14 mm
Manufacturer:	Tongda Decorative Material Co., Ltd.

4 Testing and Evaluation Methods

4.1. SOUND ABSORPTION

Where the suspended ceiling has a sound absorption property, its sound absorption coefficients shall be established by testing according to EN ISO 354. The sound absorption coefficients shall be calculated as practical sound absorption coefficient α_p , expressed in a diagram or a table in octave bands, and into a single value α_w with shape indicator in accordance with EN ISO11654.

4.2. SOUND INSULATION

If required, a suspended ceiling system shall assist structural floors in reducing the vertical transmission of airborne and impact sound through the floor (vertical transmission).

The laboratory measurement of vertical sound reduction of airborne sound shall be in accordance with EN ISO 140-3, expressed, and rated in accordance with EN ISO 717-1.

4.3. LIGHT REFLECTANCE

The light reflectance value of suspended ceiling components shall be measured using a computerized measuring device, operating according to the CIE-lab method in ISO 7724-2 and ISO 7724-3.

5 Testing and Evaluation Results

5.1. RESULTS AND OBSERVATIONS

5.1.1 SOUND ABSORPTION

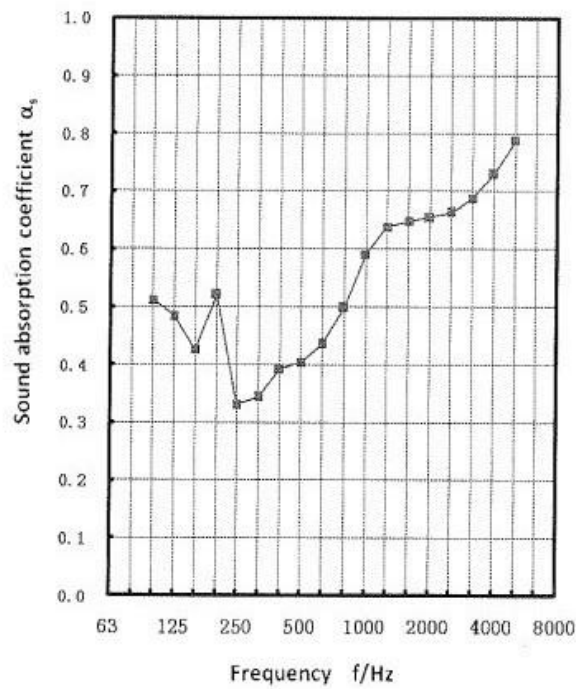
The area of the test specimen $S=10.60\text{m}^2$, Type E-200 mounting according to Annex B of ISO 354. The specimens were located in the middle of the reverberation room.

Sound source: Pink noise

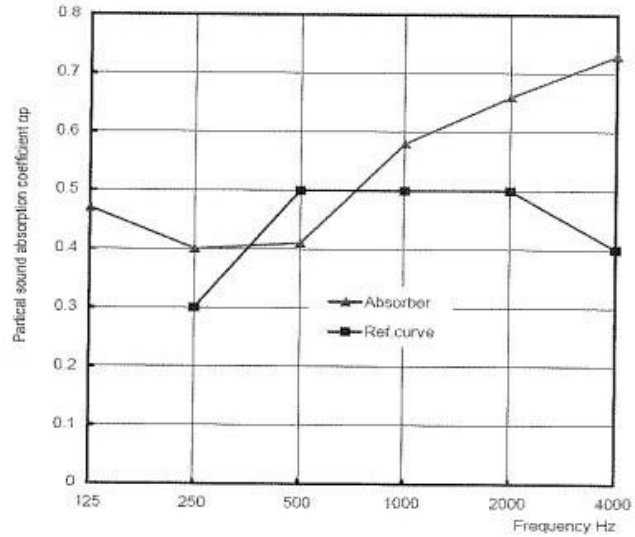
The volume of the reverberation room is 273m^3

During the test, the temperature in the test room is $10\text{ }^\circ\text{C}$

Frequency, Hz	α_s
100	0.51
125	0.48
160	0.42
200	0.52
250	0.33
315	0.34
400	0.39
500	0.40
630	0.43
800	0.50
1000	0.59
1250	0.64
1600	0.65
2000	0.66
2500	0.66
3150	0.69
4000	0.73
5000	0.79



Freq.	Ref. curve	Absorber
125		0.50
250	0.30	0.40
500	0.50	0.40
1000	0.50	0.60
2000	0.50	0.65
4000	0.40	0.75



Weighted sound absorption coefficient α_w	0.50(H)
Sound absorption class	D

5.1.2 SOUND INSULATION

The floor/ceiling assembly system consisted of a 140mm concrete floor (Mass per area: 360 kg/m²) with a drop ceiling below forming the horizontal separation between two rooms, one directly above the other. The single-number rating R_w is 51 dB for the floor without ceiling sample. The distance between the drop ceiling and the concrete floor is 350 mm (Depth of construction). The area of the test specimen $S=17.28\text{m}^2$.

Sound source: Pink noise;

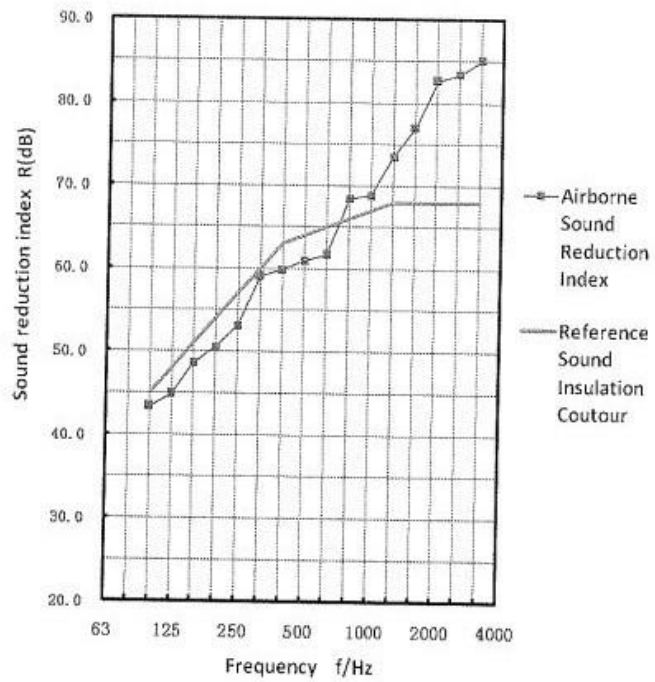
Source room volume: 62m³

Receiving room volume: 99 m³

Air temperature in the test rooms: 9 °C

Air humidity in the test rooms: 54%

Frequency, Hz	α_s
100	43.3
125	44.8
160	48.6
200	50.5
250	53.1
315	59.0
400	59.9
500	60.9
630	61.6
800	68.4
1000	68.8
1250	73.5
1600	77.0
2000	82.6
2500	83.4
3150	85.0
4000	/
5000	/



The single-number rating R_w (dB)	64
(C, C_v) (dB)	(-1, -6)

5.1.3 LIGHT REFLECTANCE

Standard illuminant D 65 was used.
Wavelength range: 380 ~ 780 nm.

Light reflectance value: 88 %

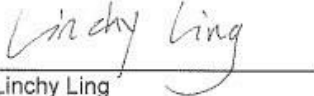
6 Conclusion

The Mineral Fiber Acoustic Board samples (Model: Saiko-Semi-star2) identified and evaluated in this report have been tested in accordance with Clause 4.7.2, Clause 4.7.3 and Clause 4.9.3 of BS EN 13964:2004+A1:2006 Suspended ceiling – Requirements and test methods. The results were presented in Section 5 of this test report.

The conclusions of this test report may not be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

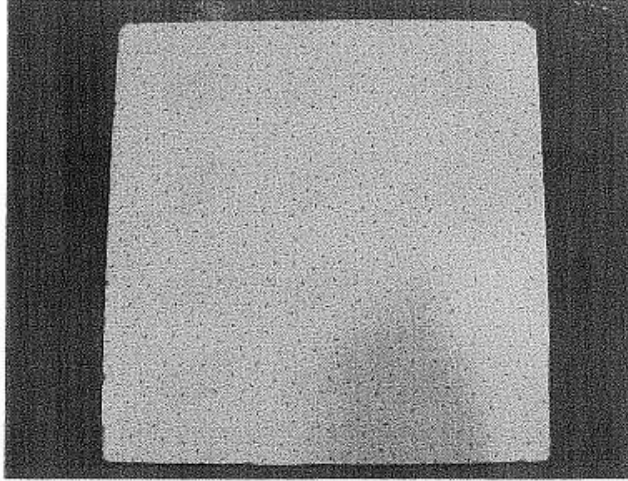
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Reported by: 
Sun Sun
Project Engineer, Building Products

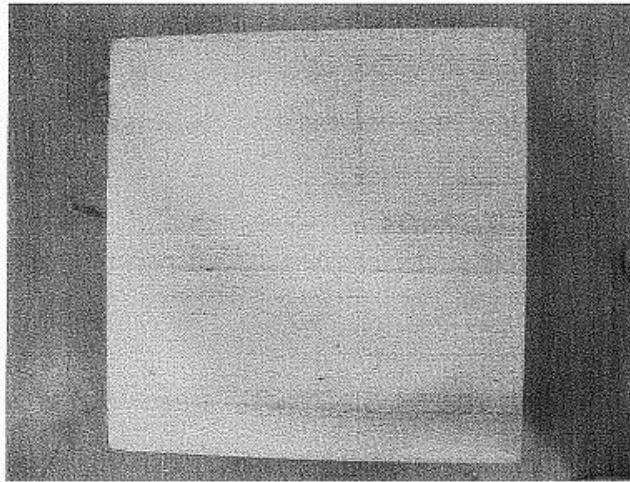
Reviewed by: 
Linchy Ling
Senior Project Engineer, Building Products

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7 Appendix A: Photograph of the Product



Top Surface



Bottom Surface

8 Revision Page

Revision No.	Date	Changes	Author	Reviewer
0	February 5, 2010	First issue	Sun Sun	Linchy Ling

END OF DOCUMENT

