



# TEST REPORT



1. NO : CT26-018831E
2. Client
  - Name : Tornex Co., Ltd.
  - Address : 4F, Hwail Bldg, 16-22, Gangnam-daero 18-gil, Seocho-gu, Seoul, Republic of Korea
3. Date of Test : 2026.02.25 ~ 2026.03.09
4. Use of Report : Quality management
5. Test Sample : Tornex PET Sound Absorbing Panel (12T)
6. Test Method
  - (1) KS F 2805:2014

Affirmation	Tested By Name : Soyoung Kim <i>kinsoyang</i>	Technical Manager Name : Cho, Young Keun <i>cho</i>
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This report is related with KOLAS and KS Q ISO/IEC 17025. Our report apply only to the standards or procedures identified and to the sample(s) tested unless otherwise specified. The test results are not indicative of representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products. The results of using only a portion of this report cannot be guaranteed. The authenticity of this test report can be checked on KCL website([www.kcl.re.kr](http://www.kcl.re.kr)).

The above test report provides test result(s) under the scope accredited by Korea Laboratory Accreditation Scheme (KOLAS), which signed the ILAC-MRA.

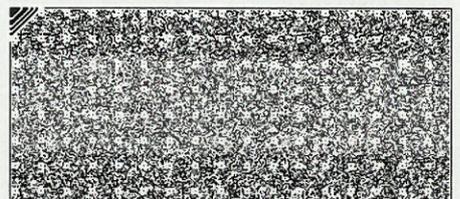
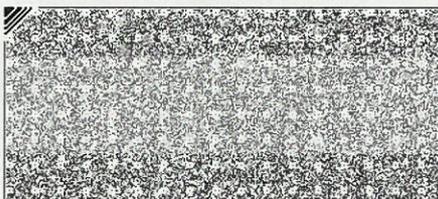
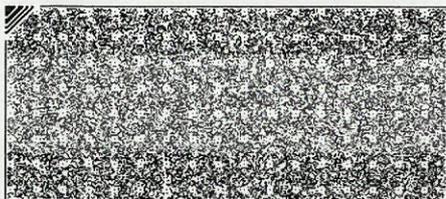
2026.03.09

**Korea Conformity Laboratories**

Accredited by KOLAS, Republic of KOREA



Result Inquiry : 73, Yangcheong 3-gil, Ochang-eup, Cheongwon-gu, Cheongju-si, Chungbuk, Korea 82-43-210-8978



# TEST REPORT



No : CT26-018831E

## 7. Test Results

### 1) Tornex PET Sound Absorbing Panel (12T)

Test Item(s)	Unit	Test Method	Test Results	Remark	Loc.
Sound absorption coefficient [ 1/3 octave band center frequency 100 Hz ]	-	(1)	0.09	(17 ± 1) °C, (40 ± 5) % R.H.	A
Sound absorption coefficient [ 1/3 octave band center frequency 125 Hz ]	-	(1)	0.11		
Sound absorption coefficient [ 1/3 octave band center frequency 160 Hz ]	-	(1)	0.14		
Sound absorption coefficient [ 1/3 octave band center frequency 200 Hz ]	-	(1)	0.32		
Sound absorption coefficient [ 1/3 octave band center frequency 250 Hz ]	-	(1)	0.39		
Sound absorption coefficient [ 1/3 octave band center frequency 315 Hz ]	-	(1)	0.52		
Sound absorption coefficient [ 1/3 octave band center frequency 400 Hz ]	-	(1)	0.64		
Sound absorption coefficient [ 1/3 octave band center frequency 500 Hz ]	-	(1)	0.82		
Sound absorption coefficient [ 1/3 octave band center frequency 630 Hz ]	-	(1)	0.96		
Sound absorption coefficient [ 1/3 octave band center frequency 800 Hz ]	-	(1)	1.06		
Sound absorption coefficient [ 1/3 octave band center frequency 1 000 Hz ]	-	(1)	1.10		
Sound absorption coefficient [ 1/3 octave band center frequency 1 250 Hz ]	-	(1)	1.14		
Sound absorption coefficient [ 1/3 octave band center frequency 1 600 Hz ]	-	(1)	1.10		
Sound absorption coefficient [ 1/3 octave band center frequency 2 000 Hz ]	-	(1)	1.05		
Sound absorption coefficient [ 1/3 octave band center frequency 2 500 Hz ]	-	(1)	0.97		
Sound absorption coefficient [ 1/3 octave band center frequency 3 150 Hz ]	-	(1)	1.04		
Sound absorption coefficient [ 1/3 octave band center frequency 4 000 Hz ]	-	(1)	1.16		
Sound absorption coefficient [ 1/3 octave band center frequency 5 000 Hz ]	-	(1)	1.19		

\* Test environmental condition (empty room) : air temperature (18 ± 2) °C, humidity (39 ± 6) % R.H.

\* Composition of the test specimen

o Installation area : 10.78 m<sup>2</sup> (width 3 000 mm × length 3 592 mm)

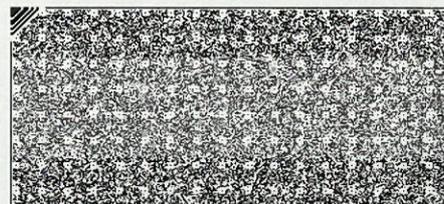
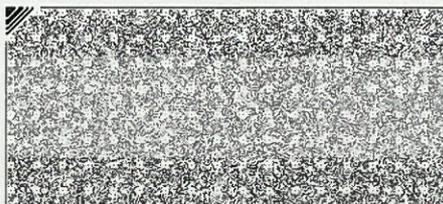
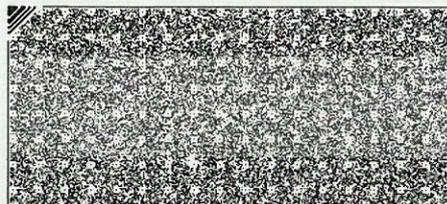
o Unit specimen size : width 1 220 mm × length 1 440 mm × apparent thickness 12 mm

o Installation of specimen of apparent thickness 12 mm and apparent density 190 kg/m<sup>3</sup> (polyester board) with backing air space of thickness 56 mm (using wood frame), edge finished by acrylic. (Type E mounting according to KS F 2805 Annex B, E-70), for the details of specimen refer to attached pictures.

\* The composition of the test specimen was presented by client. And it may be different from information of specimen.

\* Location

A : #C, Yangcheong3gil 73, Ochang, Cheongwon, Cheongju, Chungbuk, South Korea

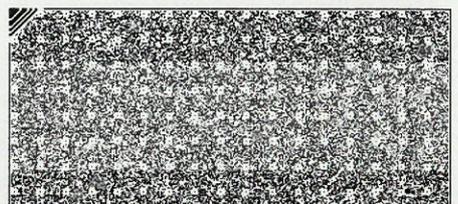
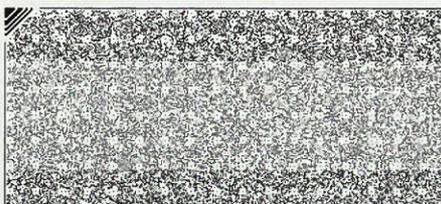
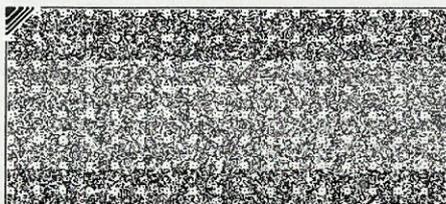


# TEST REPORT



No : CT26-018831E

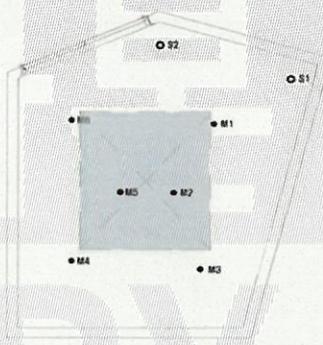
Descriptions		Contents				
Date of test		2026-03-04				
Overview		This test measured sound absorption coefficient of <Tornex PET Sound Absorbing Panel (12T)> of Tornex Co., Ltd. in accordance with KS F 2805:2014 (Measurement of sound absorption in a reverberation room), and the measured frequency range was 100 Hz to 5 000 Hz in 1/3 octave bands.				
Composition of the test specimen		<ul style="list-style-type: none"> <li>o Installation area : 10.78 m<sup>2</sup> (width 3 000 mm × length 3 592 mm)</li> <li>o Unit specimen size : width 1 220 mm × length 1 440 mm × apparent thickness 12 mm</li> <li>o Installation of specimen of apparent thickness 12 mm and apparent density 190 kg/m<sup>3</sup> (polyester board) with backing air space of thickness 56 mm (using wood frame), edge finished by acrylic. (Type E mounting according to KS F 2805 Annex B, E-70), for the details of specimen refer to attached pictures.</li> </ul> <p>※ The composition of the test specimen was presented by client. And it may be different from information of specimen.</p>				
Test location		#C, Yangcheong3gil 73, Ochang, Cheongwon, Cheongju, Chungbuk, South Korea				
Test environmental condition	Air temperature	Empty room	(18 ± 2) °C	Humidity	Empty room	(39 ± 6) % R.H.
		Room with specimen	(17 ± 1) °C		Room with specimen	(40 ± 5) % R.H.
Measuring device	Reverberation room		Structure : Reinforced concrete (wall thickness : 300 mm) Shape : Atypical heptahedron Volume : 209.7 m <sup>3</sup> Surface area : 203.9 m <sup>2</sup> Diffuser : Suspended ceiling diffuser (15 m <sup>2</sup> )			
	Real Time Analyzer		PAK MK II, MÜLLER-BBM, Germany			
	1/2" Condenser Microphone		40AE, G.R.A.S., Denmark			
	Sound Level Calibrator		Cal-02, 01dB, France			
	Power Amplifier		CONA V2-5000, Inter-M, Korea			
	Loudspeaker		DO12, Falm, Germany			
	Control PC		Workstation Xeon 4, HP, U.S.A.			
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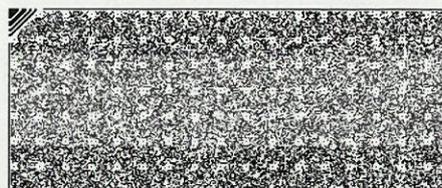
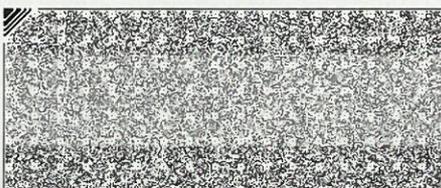
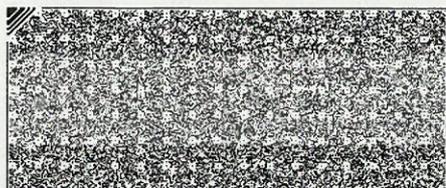
# TEST REPORT



No : CT26-018831E

Descriptions	Contents
Test method	<p>Absorption coefficient was derived as following equations by measuring reverberation time before and after installation of the test specimen inside reverberation room in accordance with KS F 2805:2014 (Measurement of sound absorption in a reverberation room).</p> <p><b>A. Measurement of reverberation time</b>                      Reverberation time was measured for two different sound sources at 6 omnidirectional microphones. Spacing between microphones was more than 1.5 m, and spacing between each microphone and each sound source was more than 2 m. All microphones were more than 1 m apart from the test specimen surfaces.</p> <p><b>B. Calculation of absorption coefficient (<math>\alpha_s</math>)</b></p> $\alpha_s = \frac{A_T}{S}$ <p>where <math>S</math> is area covered by test specimen, in <math>m^2</math>,  <math>A_T</math> is equivalent absorption area of test specimen, in <math>m^2</math>.</p> $A_T = A_2 - A_1 = 55.3V \left( \frac{1}{c_2 T_2} - \frac{1}{c_1 T_1} \right) - 4V(m_2 - m_1)$ <p>where <math>A_2</math> is equivalent absorption area of reverberation room including test specimen, in <math>m^2</math>,  <math>A_1</math> is equivalent absorption area of empty reverberation room, in <math>m^2</math>,  <math>V</math> is volume of empty reverberation room, in <math>m^3</math>,  <math>c_2</math> is speed of sound after installation of test specimen in m/s,  <math>c = (331 + 0.6t/^\circ C)</math> in m/s; <math>t</math> is air temperature, in <math>^\circ C</math>  <math>c_1</math> is speed of sound in empty reverberation room, in m/s,  <math>T_2</math> is reverberation time after installation of test specimen, in s,  <math>T_1</math> is reverberation time in empty reverberation room, in s,  <math>m_2</math> is sound attenuation coefficient after installation of test specimen in <math>m^{-1}</math>,  <math>m_1</math> is sound attenuation coefficient in empty reverberation room, in <math>m^{-1}</math>.</p>
Positions of test specimen and source-and-receivers	 <ul style="list-style-type: none"> <li>※ M1 ~ M6 is receiver positions</li> <li>※ S1, S2 is sound source positions</li> <li>※ <span style="display: inline-block; width: 10px; height: 10px; background-color: #cccccc; border: 1px solid black;"></span> is position of the test specimen installed</li> </ul>

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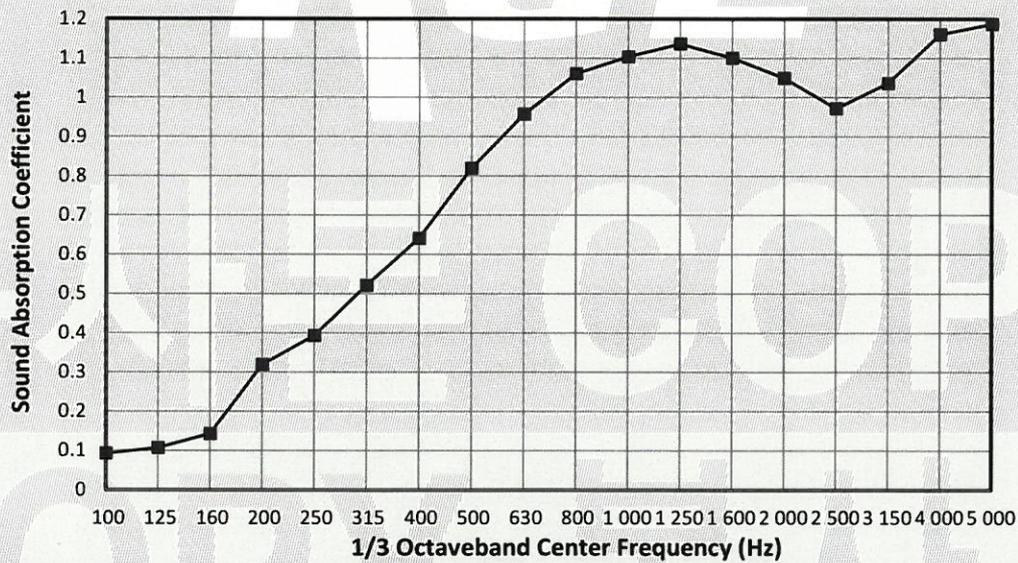
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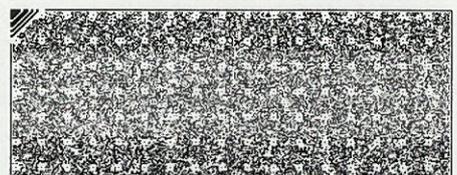
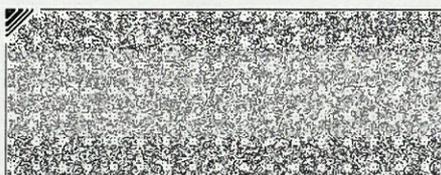
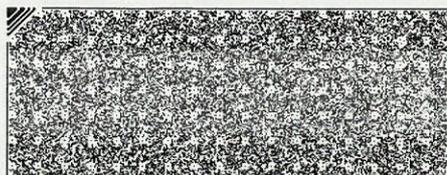
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Test result			
Frequency (Hz)	Reverberation time of empty room, $T_1$ (s)	Reverberation time of room with specimen, $T_2$ (s)	Sound absorption coefficient, $\alpha_s$
100	18.20	11.85	0.09
125	13.00	9.02	0.11
160	12.51	7.99	0.14
200	11.66	5.35	0.32
250	12.51	4.89	0.39
315	10.57	3.85	0.52
400	9.38	3.23	0.64
500	8.20	2.62	0.82
630	7.83	2.32	0.96
800	7.01	2.09	1.06
1 000	6.43	1.98	1.10
1 250	5.36	1.83	1.14
1 600	4.62	1.77	1.10
2 000	3.96	1.71	1.05
2 500	3.15	1.60	0.97
3 150	2.52	1.38	1.04
4 000	2.02	1.16	1.16
5 000	1.50	0.96	1.19
Arithmetic mean of sound absorption coefficient (250, 500, 1 000, 2 000) Hz			0.84

Graph of the test result



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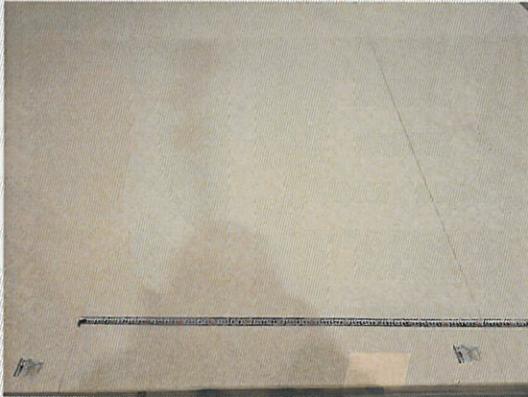


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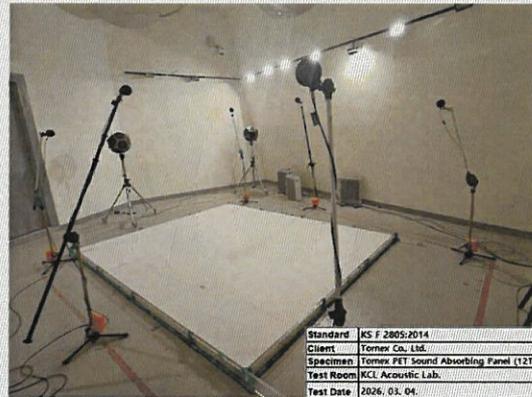


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Pictures of the test specimen



< Figure 1. Unit specimen >



< Figure 2. View of installation of the specimen >

Standard	KS F 2805:2014
Client	Tormex Co., Ltd.
Specimen	Tormex PET Sound Absorbing Panel (12T)
Test Room	KCI Acoustic Lab.
Test Date	2026. 03. 04.



< Figure 3. Details of the method of installation >



< Figure 4. Details of the specimen thickness >

----- End of Report -----

