5290-1709-1747-5415

TEST REPORT

No. : CT22-086981E

1. Client
   - Name : SEOHAN ANTAMIN
   - Address : 51st 622 Angogae-ro, Namdong-gu, Incheon
   - Date of Receipt : 2022.09.14
2. Specimen
   - Specimen Name : Extertior Surface Materials1(UV film 0.1 mm + Calcium silicate board 6.2 mm)
   - Model Name : -
   - Product Number : -
3. Test Standard : MOLIT(Ministry of Land, Infrastructure and Transport) Notification No. 2022-84
4. Use of Report : Quality Control
5. Test Period : 2022.09.14 ~ 2022.10.14
6. Test Condition : Refer to the next page
7. Test Results :

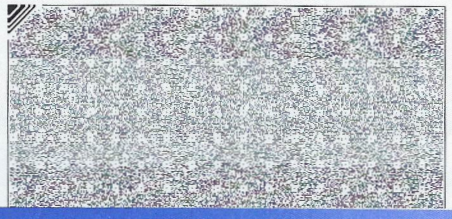
The tested specimen complies with the criteria stipulated in MOLIT(Ministry of Land, Infrastructure and Transport) Notification No. 2022-84, Article 24, Subparagraph 1, on Heat release rate(concalorimeter method) test
The tested specimen complies with the criteria stipulated in MOLIT(Ministry of Land, Infrastructure and Transport) Notification No. 2022-84, Article 24, Subparagraph 2, on Gas-toxicity test

Confirmation	Tested by Name	OH DONGUK	Technical Officer Name	CHOI, Joung Yoon

Issue Date : 2022.10.14

Korea Conformity Laboratories President Jo, Yung Tae

※ This test report is valid for 3 year from the date of issue.





TEST REPORT

No. : CT22-086981E

7. Test Results

Test item		Unit	Test results 1st	Test results 2nd	Test results 3rd	Criteria	Test method	Location
Heat Release Test	Total heat released	MJ/㎡	5.0	4.8	5.5	Below 8		A
	Duration of consecutive HRR exceeding 200 kW/㎡	s	0	0	0	Under 10	(1)	
	Occurrence(Y/N) of hazard when setting fire on the specimen	-	No	No	No	Non		
Gas Toxicity Test	Average time of laboratory mouse stopped moving	min:sec	14:14	12:55	-	Over 9:00	(2)	

※ The tested specimen complies with the criteria stipulated in MOLIT(Ministry of Land, Infrastructure and Transport) Notification No. 2022-84, Article 24, Subparagraph 1, on Heat release rate(cone calorimeter method) test

※ The tested specimen complies with the criteria stipulated in MOLIT(Ministry of Land, Infrastructure and Transport) Notification No. 2022-84, Article 24, Subparagraph 2, on Gas-toxicity test

※ According to Article 29, Clause 4 of MOLIT Notification No. 2022-84 , this test report is valid for 3 year from the date of issue.

※ Test method

(1) Article 24, Subparagraph 1 of the MOLIT(Ministry of Land, Infrastructure and Transport) Notification No. 2022-84

(2) Article 24, Subparagraph 2 of the MOLIT(Ministry of Land, Infrastructure and Transport) Notification No. 2022-84

※ Location

A. 73, Yangcheong 3-gil, Ochang-eup, Cheongwon-Gu, Cheongju-Si, Chungbuk, Korea

※ Note

This report is accredited by KOLAS.

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).

※ The above test certificate is the accredited test results by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA.

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TEST REPORT

No. : CT22-086981E

■ Heat Release Test Conditions

Test date	Oct. 11, 2022

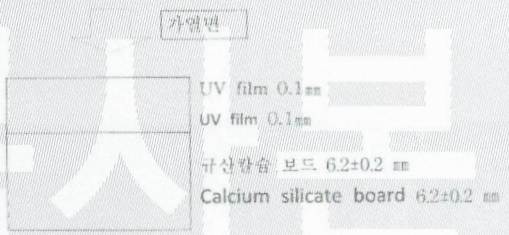
Heating side of specimen (requested by client)	Heated surface is specified
Test condition	Temp. (24.4 ~ 24.4) ℃, Humidity (36 ~ 36) % R.H.
Test duration (min)	10
C-factor ($m^{1/2} \cdot g^{1/2} \cdot K^{1/2}$)	0.042 771
External heat flux (kW/㎡)	50
Flow rate of exhaust system (㎥/s)	0.024

■ Test Specimen Specification

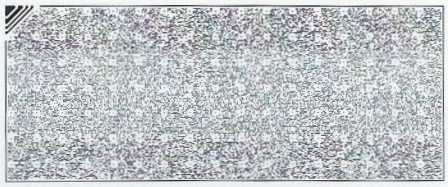
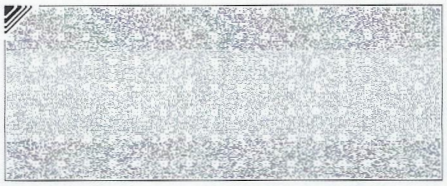
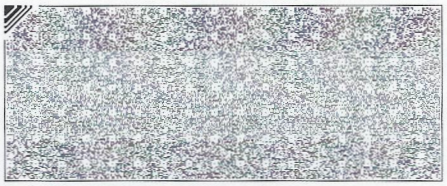
Width (mm)	Specimen 1	98.6	Specimen 2	98.6	Specimen 3	98.7
Length (mm)		98.7		98.7		98.6
Thickness (mm)		6.4		6.4		6.3
Mass (g)		54.8		54.7		55.1
Density (kg/㎥)		879.8		878.2		898.7
Density of core material (kg/㎥)		-		-		-
Pretreatment	Temp. (23 ± 2) ℃, Humidity (50 ± 5) % R.H.					

■ Test Specimen Configuration and Photograph

Composition	Material	Manufacturer	Model Name	Thickness
Surface Materials	UV film	Rohm	-	0.1 mm
Base Plate	Calcium silicate board	TNN	-	(6.2±0.2) mm

Configuration	Photograph
	

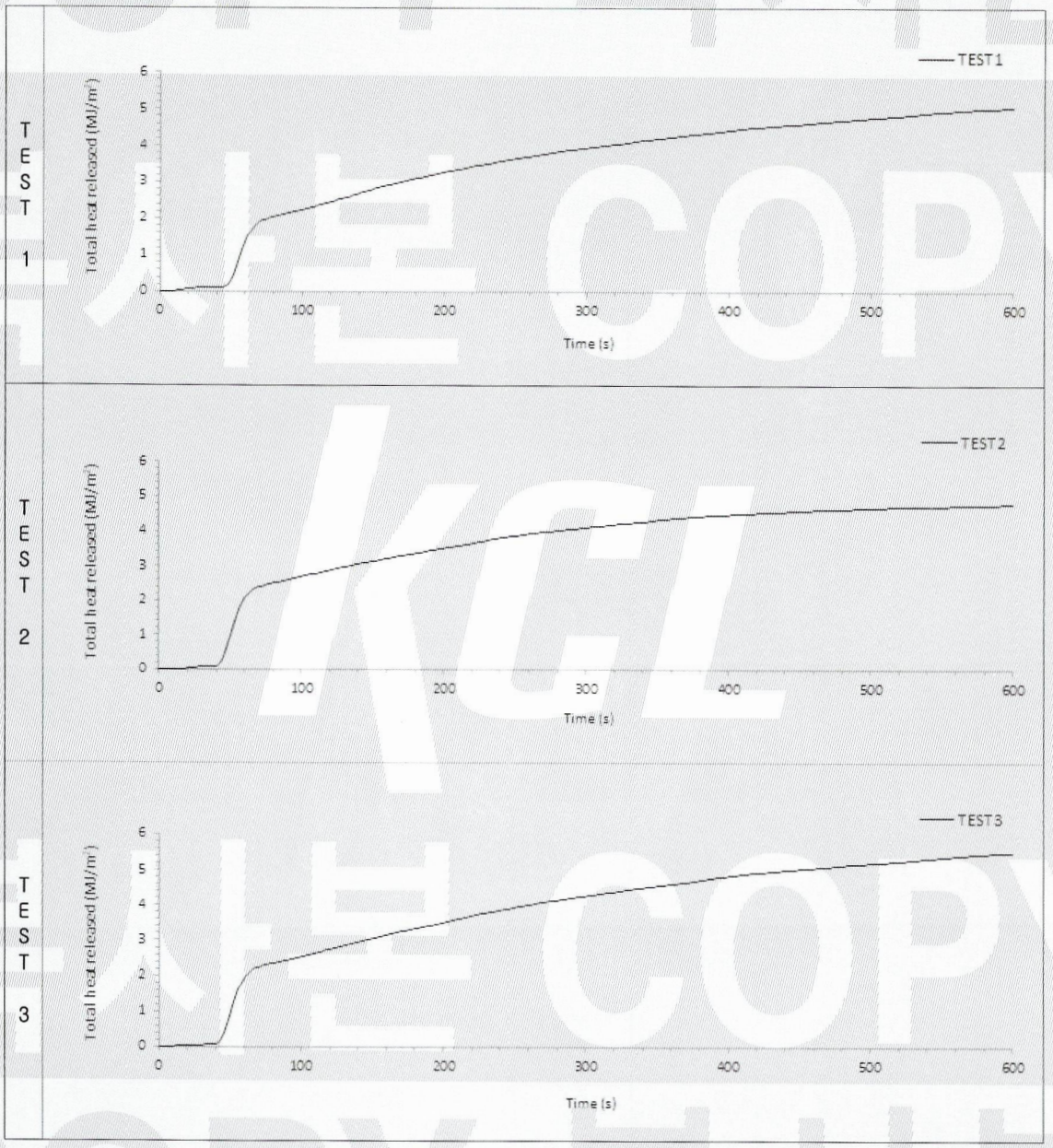
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TEST REPORT

No. : CT22-086981E

■ Total Heat Release Curve



TEST REPORT

No. : CT22-086981E

■ Gas Toxicity Test Results

Test date			Oct. 12, 2022
Test item	Unit	Test results	Test method
		1st / 2nd	
Average time of laboratory mouse stopped moving	min:sec	14:14 / 12:55	(2)

■ Gas Toxicity Test Conditions

Heating condition	The heating time is a total 6 minutes. Heat up with the auxiliary heat source first. 3 minutes later, additionally heat up with the main heat source while maintaining the auxiliary heat. The heating completes after 6 minutes. (Auxiliary heat source heating time: 6 minutes, main heat source heating time: 3 minutes)					
Heating side of specimen (requested by client)	Heated surface is specified					
Test condition	Temp. (19.8 ~ 20.4) ℃, Humidity (59 ~ 60) % R.H.					
Test duration (min)	15					
Laboratory mouse	Type	ICR group female	Age	5 weeks	Weight	(18 ~ 22) g

■ Test Specimen Specification

Width (mm)	Specimen 1	219.1	Specimen 2	218.8
Length (mm)		218.8		219.0
Thickness (mm)		6.5		6.4
Mass (g)		268.2		269.1
Density (kg/㎥)		860.7		877.5
Pretreatment	Temp. (23 ± 2) ℃, Humidity (50 ± 5) % R.H.			

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TEST REPORT

No. : CT22-086981E

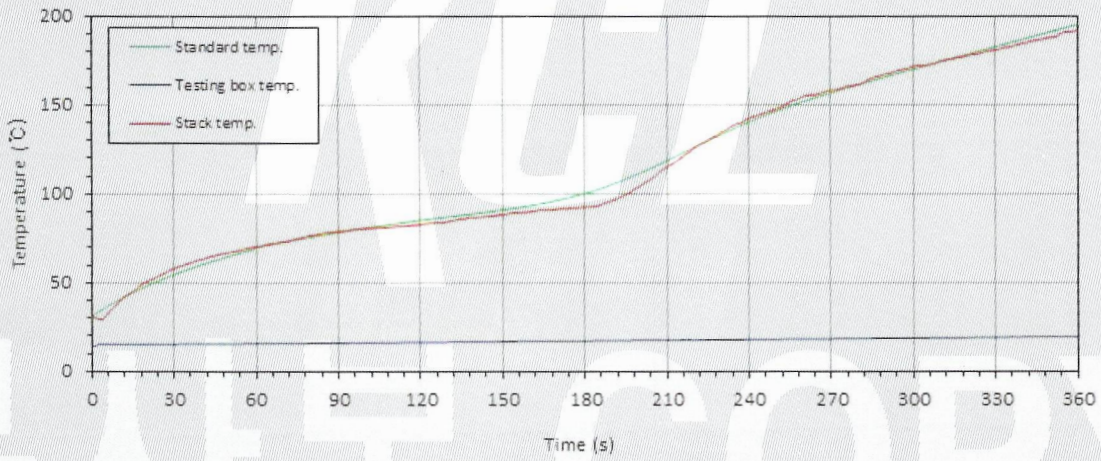
■ Standard Sample Test

- Specimen: Fiber-reinforced calcium silicate board

< Exhaust Temperature >

Elapsed Time (s)	Standard Temp. (℃)	Measured Temp. (℃)	Temp. Deviation (℃)
0.0	30.0	30.2	0.2
60.0	70.0	70.3	0.3
120.0	85.0	82.6	-2.4
180.0	100.0	92.0	-8.0
240.0	140.0	141.9	1.9
300.0	170.0	171.4	1.4
360.0	195.0	191.4	-3.6

< Exhaust Temperature Curve >



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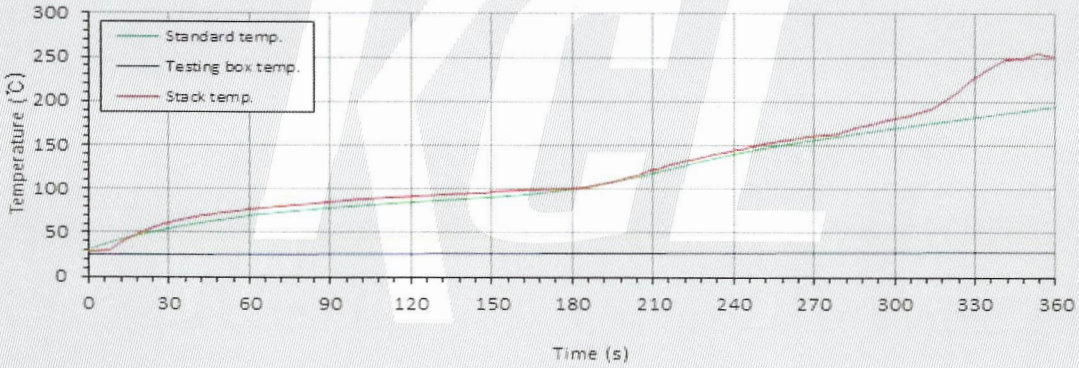
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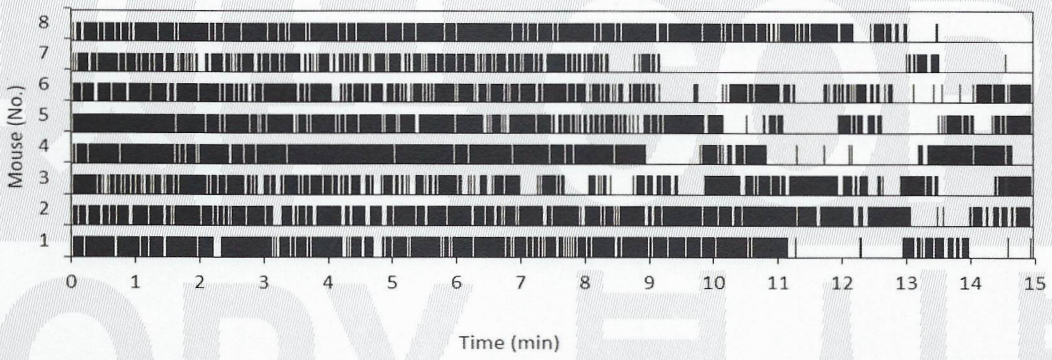
No. : CT22-086981E

■ Gas Toxicity Test Results (Specimen 1)

Elapsed time (s)	Measured temp. (℃)
0	28.6
60	76.9
120	91.7
180	100.5
240	143.7
300	180.3
360	251.0

Treadmill	Time of stop moving
M1	14 min 59 s
M2	14 min 58 s
M3	15 min 00 s
M4	14 min 41 s
M5	15 min 00 s
M6	14 min 59 s
M7	14 min 35 s
M8	13 min 31 s
Average	14 min 43 s
Standard deviation	00 min 29 s
Average time of stop moving	14 min 14 s





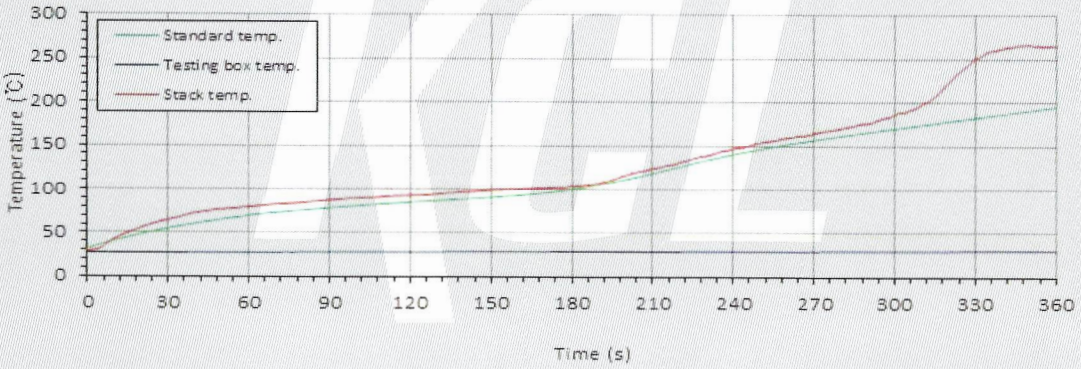
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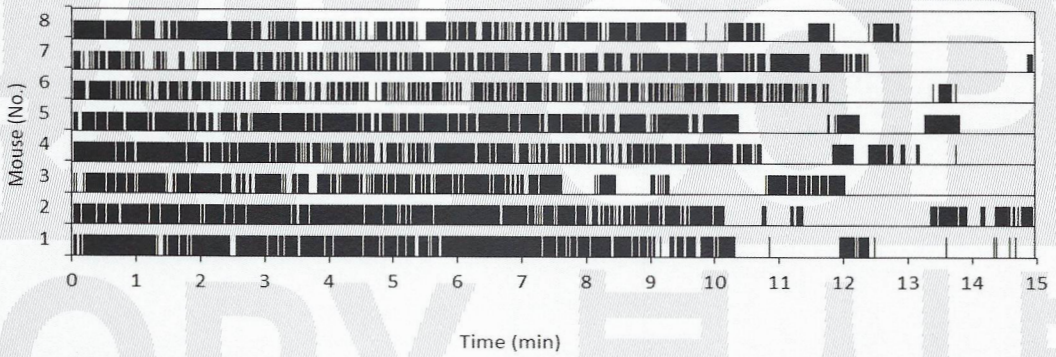
No. : CT22-086981E

■ Gas Toxicity Test Results (Specimen 2)

Elapsed time (s)	Measured temp. (℃)
0	29.4
60	80.4
120	93.4
180	103.7
240	147.4
300	187.9
360	266.1

Treadmill	Time of stop moving
M1	14 min 43 s
M2	15 min 00 s
M3	12 min 03 s
M4	13 min 47 s
M5	13 min 50 s
M6	13 min 47 s
M7	15 min 00 s
M8	12 min 53 s
Average	13 min 53 s
Standard deviation	00 min 58 s
Average time of stop moving	12 min 55 s





TEST REPORT

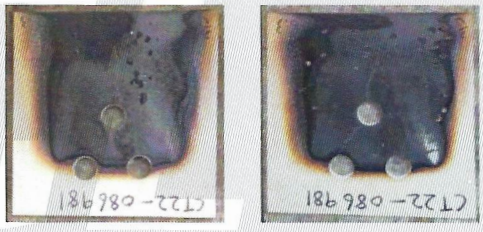
No. : CT22-086981E

■ Photograph of Specimen Before/After Test

< Heat release test >

Photograph of Specimen Before Test	Photograph of Specimen After Test
	

< Gas toxicity test >

Photograph of Specimen Before Test	Photograph of Specimen After Test
	

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

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