

Zenfeel France

TEST REPORT

SCOPE OF WORK

Polyester Fiber Acoustic Panel

REPORT NUMBER

240424016SHF-001

TEST DATE(S)

2024-04-24 - 2024-06-05

ORIGINAL ISSUE DATE

2024-06-05

PAGES

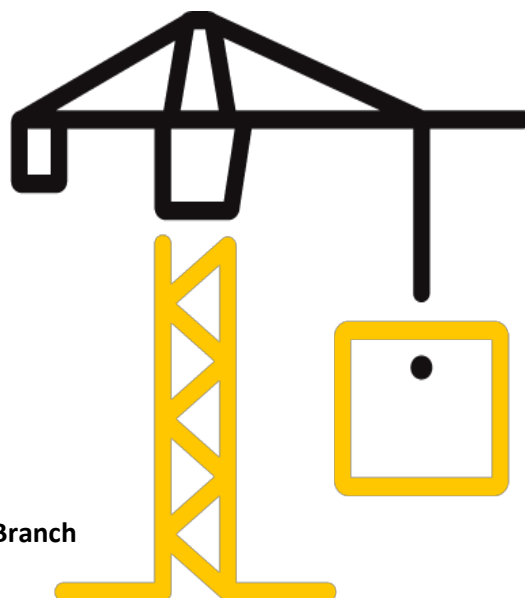
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DOCUMENT CONTROL NUMBER

LFT-APAC-SHF-OP-10k(February 1, 2024)

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Intertek Testing Services Shenzhen Ltd. Shanghai Fengxian Branch



Test Report

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Test Report

Original Issue Date: 2024-06-05

Intertek Report No. 240424016SHF-001

Applicant: Zenfeel France

Address: 5 rue du Val, 35520 MELESSE, FRANCE

Attn: Pierrick RENOU

Manufacturer: Zenfeel France

Address: 5 rue du Val, 35520 MELESSE, FRANCE

Test Type: Performance test, samples provided by the applicant.

Product Information

Product Name	Model	Specification	Brand
Polyester Fiber Acoustic Panel	Standard Panel	Standard Panel	ZENFEEL
Sample ID	Sample Amount	Sample Received Date	
S240424016SHF.001	4pcs	2024-04-16	
Sample Description			
Thickness: 9mm			

Test Methods And Standards

Test Standard	With reference to ISO 16000-3:2022; ISO 16000-6:2021; ISO 16000-9:2006; ISO 16000-11:2006
Specification Standard	French VOC labelling regulation
Test Conclusion	The samples were tested according to the above standards, and the results are shown in the following page.

Note:

1.This report does not involve sampling. The report only reflects conformity of the tested items of the samples provided by the testing applicant. Representativeness and authenticity of the submitted samples are responsibilities of the testing applicant.

Report Authorized


Name: Flora Fan Name: Tinasy Zheng
Title: Reviewer Title: Project Engineer

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Original Issue Date: 2024-06-05

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Test Items, Method and Results:

Test Item: Volatile organic compounds content analysis

Test Method: With reference to

ISO 16000-3:2022 Indoor air - Part 3: Determination of formaldehyde and other carbonyl compounds in indoor and test chamber air - Active sampling method;

ISO 16000-6:2021 Indoor air - Part 6: Determination of organic compounds(VVOC, VOC, SVOC) in indoor and test chamber air by active sampling on sorbent tubes, thermal desorption and gas chromatography using MS or MS/FID;

ISO 16000-9:2006 Indoor air - Part 9: Determination of the emission of volatile organic compounds from building products and furnishing - Emission test chamber method;

ISO 16000-11:2006 Indoor air - Part 11: Determination of the emission of volatile organic compounds from building products and furnishing - Sampling, storage of samples and preparation of test specimens.

Test Procedure:

The sample was tested in the emission test chamber. After 28 days, chamber air samples were collected. Samples analyzed for individual VOCs and TVOC were collected on sorbent tubes Tenax TA, and were detected by Automatic Thermal Desorption-Gas Chromatography/Mass Spectrometric (ATD-GC/MS). Samples analyzed for aldehydes were collected on DNPH cartridge, and were detected by High Performance Liquid Chromatography-Diode-Array Detector (HPLC-DAD).

Test condition:

Chamber type: 0.060 m³ stainless steel chamber

Climatic conditions: 23°C, 50% R.H

Air exchange: 0.5 h⁻¹

Loading factor: 1 m²/m³

Sampling: Tenax TA & DNPH cartridge

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Test result:

1. Volatile Organic Compounds (VOC) Emission

The emission of the substances was classified according to a scale with 4 classes of Exposure Concentrations ranging from A⁺ to C. A⁺ indicating a very low emission level and C is a high level emission. The results of the tested sample after 28 days are shown in Table 1.

Table 1 Results of VOC Emission of target chemicals after 28 days

Testing compound	CAS No.	Limit values of emission classes ⁽¹⁾ (µg/m ³)				Chamber concentration (µg/m ³)	Predicted concentration (µg/m ³) ⁽²⁾	Emission classes
		A ⁺	A	B	C			
Formaldehyde# ⁽³⁾	50-00-0	<10	<60	<120	>120	ND ⁽⁴⁾	< 5.2 ⁽⁵⁾	A ⁺
Acetaldehyde# ⁽³⁾	75-07-0	<200	<300	<400	>400	ND ⁽⁴⁾	< 5.2 ⁽⁵⁾	A ⁺
Toluene	108-88-3	<300	<450	<600	>600	ND ⁽⁴⁾	< 2.1 ⁽⁵⁾	A ⁺
Tetrachloroethyl- ene	127-18-4	<250	<350	<500	>500	ND ⁽⁴⁾	< 2.1 ⁽⁵⁾	A ⁺
Xylene	1330-20-7	<200	<300	<400	>400	ND ⁽⁴⁾	< 2.1 ⁽⁵⁾	A ⁺
1,2,4- trimethylbenzene	95-63-6	<1000	<1500	<2000	>2000	ND ⁽⁴⁾	< 2.1 ⁽⁵⁾	A ⁺
1,4-dichlorobenzene	106-46-7	<60	<90	<120	>120	ND ⁽⁴⁾	< 2.1 ⁽⁵⁾	A ⁺
Ethylbenzene	100-41-4	<750	<1000	<1500	>1500	ND ⁽⁴⁾	< 2.1 ⁽⁵⁾	A ⁺
2-butoxyethanol	111-76-2	<1000	<1500	<2000	>2000	ND ⁽⁴⁾	< 2.1 ⁽⁵⁾	A ⁺
Styrene	100-42-5	<250	<350	<500	>500	ND ⁽⁴⁾	< 2.1 ⁽⁵⁾	A ⁺
TVOC* ⁽³⁾	—	<1000	<1500	<2000	>2000	ND ⁽⁴⁾	< 20.9 ⁽⁵⁾	A ⁺

Note:

(1) Limited values were specified by French VOC labelling regulation.

(2) Predicted concentration was calculated from the emission rate obtained from chamber concentration by model room (volume 30 m³, wall surface area 31.4 m², air exchange rate 0.5 h⁻¹) specified by French VOC labelling regulation.

(3) # = indicates aldehydes identified and quantified by DNPH derivatization and HPLC/DAD analysis.

* = TVOC means sum of the concentrations of all identified and unidentified VOCs between and including n-hexane through n-Hexadecane (i.e., C₆-C₁₆) as measured by the GC/MS TIC method and expressed as a toluene equivalent value.

(4) Detection limit of chamber concentration:

for # aldehydes = 5.0 µg/m³; for other individual compound = 2.0 µg/m³; for TVOC = 20.0 µg/m³

ND = Not detected (less than the detection limit)

(5) Reporting limit of predicted concentration:

for # aldehydes = 5.0 µg/m³; for other individual compound = 2.0 µg/m³; for TVOC = 20.0 µg/m³

(6) Test location: Central Chemical Lab of Intertek Testing Services Ltd., Wuxi

Address: No. 8, Fubei Road, Xishan Economic Development Zone, Wuxi, China

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Table 2 Results of Emission of CMR substances after 28 days

Testing compound	CAS No.	Limit value ⁽¹⁾ ($\mu\text{g}/\text{m}^3$)	Chamber concentration ($\mu\text{g}/\text{m}^3$)	Predicted concentration ($\mu\text{g}/\text{m}^3$) ⁽²⁾
Trichloroethylene	79-01-6	<1.0	ND ⁽³⁾	<1.1 ⁽⁴⁾
Benzene	71-43-2	<1.0	ND ⁽³⁾	<1.1 ⁽⁴⁾
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	<1.0	ND ⁽³⁾	<1.1 ⁽⁴⁾
Dibutyl phthalate	84-74-2	<1.0	ND ⁽³⁾	<1.1 ⁽⁴⁾

Note:

(1) Limited values were specified by French VOC labelling regulation.

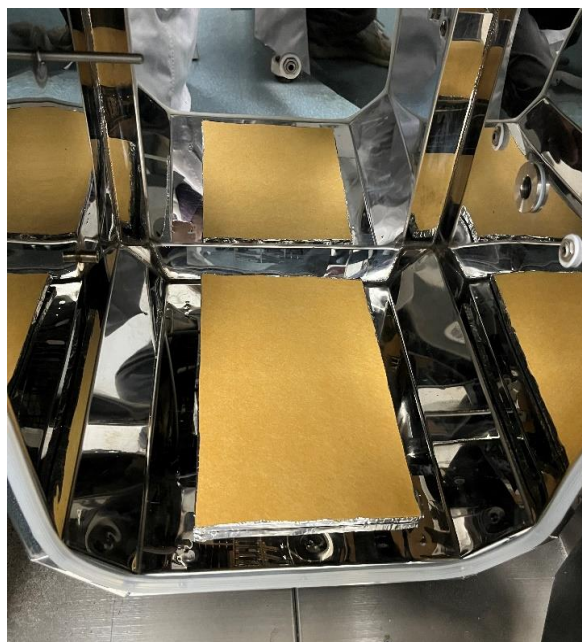
(2) Predicted concentration was calculated from the emission rate obtained from chamber concentration by model room (volume 30 m^3 , wall surface area 31.4 m^2 , air exchange rate 0.5 h^{-1}).

(3) Detection limit of chamber concentration: for individual compound = $1.0 \mu\text{g}/\text{m}^3$

ND = Not detected (less than the detection limit)

(4) Reporting limit of predicted concentration: for individual compound = $1.0 \mu\text{g}/\text{m}^3$

Test photo:



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APPENDIX: French VOC emission class labelling



*** Information sur le niveau d'émission de substances volatiles dans l'air intérieur, présentant un risque de toxicité par inhalation, sur une échelle de classe allant de A+ (très faibles émissions) à C (fortes émissions)**

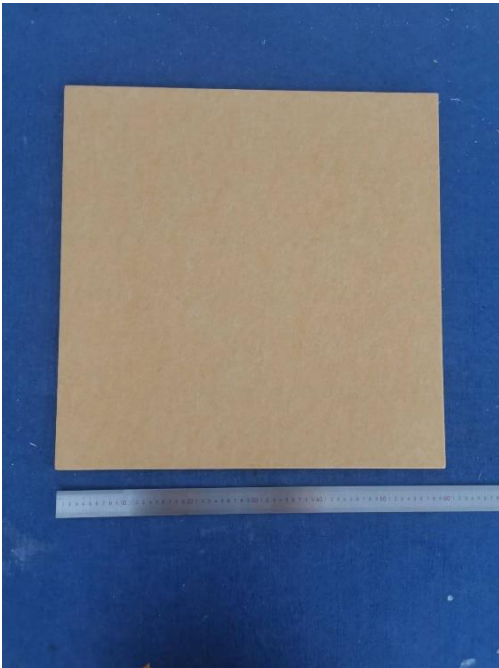
Above labelling is for reference only

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Appendix A: Sample Received Photo



Revision:

NO.	Date	Changes
240424016SHF-001	2024-06-05	First issue