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TESTING
CNAS L0599

Test Report

NO.: SHFS2307000545FF-01

Date: Jul. 20, 2023

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Radial Engineering LTD

1845 Kingsway Ave, Suite 1165 Port Coquitlam, British Columbia, Canada V3C 0H3

Sample Description : ECOScapes Panel (24mm pet)
 Material and Mark : PET
 Buyer : Radial Engineering LTD
 Product specification : 2440*1220*24mm
 Density : 3800gsm Thickness : 24mm
 Color : White Material components : polyester fiber
 End use application : For walls and ceilings

The above sample(s) and data/information was / were submitted and identified on behalf of the client. SGS is not responsible for the authenticity, integrity and results of the data and information and / or the validity of the conclusion. Results apply only to the sample as received.

SGS Ref. NO. : SHIN2307000857CM01
Sample Receiving Date : Jul. 3, 2023
Test Performing Date : Jul. 10, 2023 TO Jul. 12, 2023

Test Requested:

EN 13501-1:2018 Fire classification of construction products and building elements - Part 1: Classification using test data from reaction to fire tests.

Classes of reaction to fire performance for construction products excluding floorings and linear pipe thermal insulation products, Class B.

Test Results: -- See attached sheet --

Conclusion: According to the test result, Combustion properties identified as: B-s2,d0

Statement: The evaluation is based only on the actual value of laboratory activities, and the effect of uncertainty of laboratory activities is not included.

Signed for and on behalf of

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Alex MAO
Approved signatory



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I. Test Conducted

This test was conducted in accordance with EN 13501-1:2018 Fire classification of construction products and building elements - Part 1: Classification using test data from reaction to fire tests. And the test methods as following:

- 1) EN 13823:2020 Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item.
- 2) EN ISO 11925-2:2020 Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test.

II. Sample Details

| | |
|----------------|--|
| Specimens Size | EN 13823: 1500x1000mm & 1500x495mm EN ISO 11925-2: 250x90mm |
|----------------|--|

EN13823 Installation and Fixation of Specimens:

| | | | |
|---------------------|---|---------------|------------------|
| Substrate | Fire cement board | Fixing method | Fix mechanically |
| Splicing method | None | Tested Face | Front side |
| Mounting and fixing | Fire cement board, with its density approximate 1800kg/m ³ , thickness approximate 9mm, is as the substrate. The Test specimens are fixed mechanically to the substrate. No joint in the long and short wings of the specimen. | | |

III. Test Results

| Test method | Parameter | Number of tests | Results |
|---|---|-----------------|---------|
| EN 13823:2020 | FIGRA _{0.2MJ} (W/s) | 3 | 63.6 |
| | FIGRA _{0.4MJ} (W/s) | | 63.6 |
| | LFS < edge of specimen | | Yes |
| | THR _{600s} (MJ) | | 7.2 |
| | SMOGRAM(m ² /s ²) | | 18.7 |
| | TSP _{600s} (m ²) | | 193.1 |
| | Flaming particles or droplets within 600s (Yes/No); Combustion time, if any burning time: (≤ 10s / >10s) | | No |
| EN ISO 11925-2:2020 ¹ Exposure = 30 s | F _s ≤ 150 mm within 60s | 12 | Yes |
| | Ignition of the filter paper within 60s | | No |



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Testing Center Fire Technology Service Laboratory.

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IV. Classification and field of application

a) Reference of classification

This classification has been carried out in accordance with EN 13501-1:2018. The classes with their corresponding fire performance are given in annex A.

b) Classification

The product, in relation to its reaction to fire behaviour is classified:

| | |
|----------------|-----------------|
| MEET | Class B |
| Classification | B—s2, d0 |

c) Field of application

This classification is valid for the following end use applications:

- With all substrates classified A1 and A2
- Fix mechanically
- No joint

This classification is valid for the following product parameters:

- Characteristics as described in section II of this test reports.

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Annex A

Classes of reaction to fire performance for construction products excluding floorings and linear pipe thermal insulation products

| Class | Test method(s) | Classification criteria | Additional classification |
|-------|---|---|---|
| A1 | EN ISO 1182 ^a and | $\Delta T \leq 30^\circ\text{C}$, and $\Delta m \leq 50\%$, and $t_f = 0$ (i.e. no sustained flaming) | - |
| | EN ISO 1716 | $\text{PCS} \leq 2.0\text{MJ/kg}$ ^a and $\text{PCS} \leq 2.0\text{MJ/kg}$ ^{b c} and $\text{PCS} \leq 1.4\text{MJ/m}^2$ ^d and $\text{PCS} \leq 2.0\text{MJ/kg}$ ^e | - |
| A2 | EN ISO 1182 ^a or | and $\Delta T \leq 50^\circ\text{C}$, and $\Delta m \leq 50\%$, and $t_f \leq 20\text{ s}$ | - |
| | EN ISO 1716 | | - |
| | EN 13823 | $\text{FIGRA}_{0,2} \text{ MJ} \leq 120\text{W/s}$ and $\text{LFS} < \text{edge of specimen}$ and $\text{THR}_{600\text{s}} \leq 7.5\text{MJ}$ | Smoke production ^f and Flaming droplets/particles ^g |
| B | EN 13823 and | $\text{FIGRA}_{0,2} \text{ MJ} \leq 120\text{W/s}$ and $\text{LFS} < \text{edge of specimen}$ and $\text{THR}_{600\text{s}} \leq 7.5\text{MJ}$ | Smoke production ^f and Flaming droplets/particles ^g |
| | EN ISO 11925-2 ⁱ Exposure = 30s | within 60s $F_s \leq 150\text{mm}$ | |
| C | EN 13823 and | $\text{FIGRA}_{0,4} \text{ MJ} \leq 250\text{W/s}$ and $\text{LFS} < \text{edge of specimen}$ and $\text{THR}_{600\text{s}} \leq 15\text{MJ}$ | Smoke production ^f and Flaming droplets/particles ^g |
| | EN ISO 11925-2 ⁱ Exposure = 30s | $F_s \leq 150\text{mm}$ within 60 s | |
| D | EN 13823 and | $\text{FIGRA}_{0,4} \text{ MJ} \leq 750\text{W/s}$ | Smoke production ^f and Flaming droplets/particles ^g |
| | EN ISO 11925-2 ⁱ Exposure = 30s | $F_s \leq 150\text{mm}$ within 60 s | |

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| Class | Test method(s) | Classification criteria | Additional classification |
|-------|---|-------------------------|---|
| E | EN ISO 11925-2 ⁱ Exposure =15s | Fs≤150mm within 20 s | Flaming droplets/particles ^h |
| F | EN ISO 11925-2 ⁱ Exposure = 15s | Fs>150mm within 20 s | |

^a For homogeneous products and substantial components of non-homogeneous products.
^b For any external non-substantial component of non-homogeneous products.
^c Alternatively, any external non-substantial component having a PCS ≤ 2,0 MJ/m², provided that the product satisfies the following criteria of EN 13823: FIGRA ≤ 20 W/s, and LFS < edge of specimen, and THR_{600s} ≤ 4,0 MJ, and s1, and d0.
^d For any internal non-substantial component of non-homogeneous products.
^e For the product as a whole.
^f s1 = SMOGRA ≤ 30m²/s² and TSP_{600s} ≤ 50m²; s2 = SMOGRA ≤ 180m²/s² and TSP_{600s} ≤ 200m²; s3 = not s1 or s2
^g d0 = No flaming droplets/ particles in EN 13823 within 600 s;
d1 = no flaming droplets/ particles persisting longer than 10 s in EN 13823 within 600 s;
d2 = not d0 or d1.
Ignition of the paper in EN ISO 11925-2 results in a d2 classification.
^h Pass = no ignition of the paper (no classification);
Fail = ignition of the paper (d2 classification).
ⁱ Under conditions of surface flame attack and, if appropriate to the end-use application of the product, edge flame attack.

Statement:

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

This report supersedes the report NO.SHFS2307000545FF issued on Jul. 14, 2023, the original report is invalid.



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Photo Appendix:



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End of Report



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