

TEST REPORT No.: SDFTS25000933R01_EN Date: Mar 06,2025 Page: 1 of 5

NANTONG MACH'S COMPOSITE MATERIAL CO.,LTD.

NO.288, HUANGHAI ROAD, NANTONG CITY, JIANGSU PROVINCE, P.R.CHINA

Sample Description : FRP GRATING
Product Spec. : 38×38×38mm
Other : SAMPLE 1

The above sample(s) data and 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 arising therefrom. Results apply to the sample as received.

SGS Ref. No. : SUZIN2412003487PL01
Sample Receiving Date : Feb 24,2025
Testing Period : Feb 24,2025 to Mar 06,2025
Test Required : To determine the flame spread index (FSI) and smoke-developed index (SDI) of the sample's surface burning characteristics when it is subjected to the conditions of specified in ASTM E84-24 "Standard Test Method for Surface Burning Characteristics of Building Materials"
Test result(s) : See attached sheet

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Shunde Branch

Ada

Ada Liu
Approved signatory



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

1-2/F, Building 1, European Industrial Park, No.1, Shunhe South Road, Wusha, Daliang, Shunde District, Foshan, Guangdong, China 528300 t (86-757) 22805888 www.sgs.com.cn
中国·广东·佛山市顺德区大良街道办事处五沙社区居民委员会顺和南路1号欧洲工业园一厂房首层、二层 邮编: 528300 t (86-757) 22805888 sgs.china@sgs.com

TEST REPORT No. : SDFTS25000933R01_EN Date: Mar 06,2025 Page: 2 of 5

I. Test Conducted

This test was conducted in accordance with ASTM E84-24 Standard Test Method for Surface Burning Characteristics of Building Materials.

II. Introduction

The method, designated as ASTM E84-24, "Standard Method of Test for Surface Burning Characteristics of Building Materials", is designed to determine the relative surface burning characteristics of materials under specific test conditions. Results are expressed in terms of flame spread index (FSI) and smoke developed index (SDI).

The purpose of this test method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame spread and smoke developed index are reported. However, there is not necessarily a relationship between these two measurements.

III. Test Procedure

The tunnel is preheated to 65.6°C(150°F), as measured by the floor-embedded thermocouple located 7.09m (23.25 ft) downstream of the burner ports, and allowed to cool to 40.6°C(105°F), as measured by the floor-embedded thermocouple located 3.96m (13 ft) from the burners. At this time the tunnel lid is raised and the test sample is placed along the ledges of the tunnel so as to form a continuous ceiling 7.32m (24 ft) long, 304.8mm (12 in) above the floor. The lid is then lowered into place.

Upon ignition of the gas burners, the flame spread distance is observed and recorded every 30 seconds. Flame spread distance versus time is plotted ignoring any flame front recessions. If the area under the curve (A) is less than or equal to 97.5 ft*min, FSI = 0.515·A; if greater, FSI = 4900/(195-A).

The test results for smoke shall be plotted and the area under the curve shall be divided by the area under the curve for heptane, multiplied by 100, and rounded to the nearest multiple of five to establish a numerical smoke-developed index (SDI).

IV. Conditioning

Prior to testing, the sample was conditioned to a constant weight at a temperature of (23±2.8)°C (73.4±5)°F and at a relative humidity of (50±5)%.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

1-2/F, Building 1, European Industrial Park, No.1, Shunhe South Road, Wusha, Daliang, Shunde District, Foshan, Guangdong, China 528300
中国·广东·佛山市顺德区大良街道办事处五沙社区居民委员会顺和南路1号欧洲工业园一厂房首层、二层 邮编: 528300

t (86-757) 22805888 www.sgs.com.cn
t (86-757) 22805888 sgs.china@sgs.com

TEST REPORT No. : SDFTS25000933R01_EN Date: Mar 06,2025 Page: 3 of 5

Sample Details

Sample description	FRP GRATING
Sample size	3650mmx610mm
Thickness	38mm

Exposed face: Particle surface

Mounting methods:

The test specimen consisted of a total of 2 sections of material. The sections were butted together during testing to form the required specimen length. The specimen was self-supporting on the ledges of the test chamber.

Test results:

Flame Spread Index, FSI	Smoke-developed Index, SDI
10	160

Rating:

The National Fire Protection Association Life Safety Code 101, Chapter 10, Section 10.2.3 “Interior Wall and Ceiling Finish Classification”, has a means of classifying materials with respect to Flame Spread and Smoke Developed when tested in accordance with ASTM E84, UL 723 “Method of Test of Surface Burning Characteristics of Building Materials”.

International Building Code, Chapter 8, Interior Finishes, Section 803 “Wall and Ceiling Finishes”, was classified in accordance with ASTM E84 or UL 723. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.

The classifications are as follows:

Classification	Flame Spread Index, FSI	Smoke-developed Index, SDI
Class A	0-25	0-450
Class B	26-75	0-450
Class C	76-200	0-450

Since the tested sample received a Flame Spread Index 10 and a Smoke-developed Index 160, it **would meet** the requirements of **Class A** interior Wall & Ceiling Finish Category.



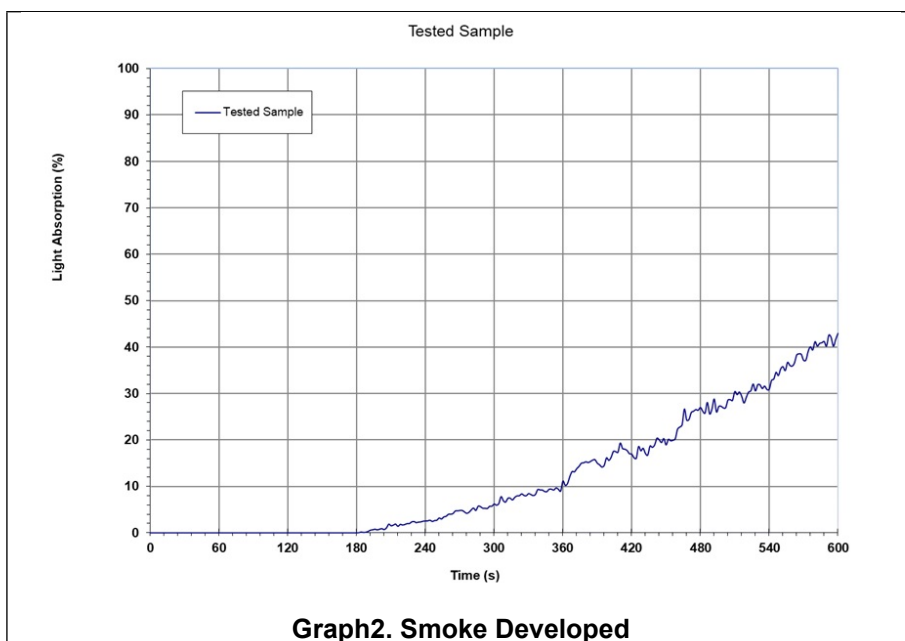
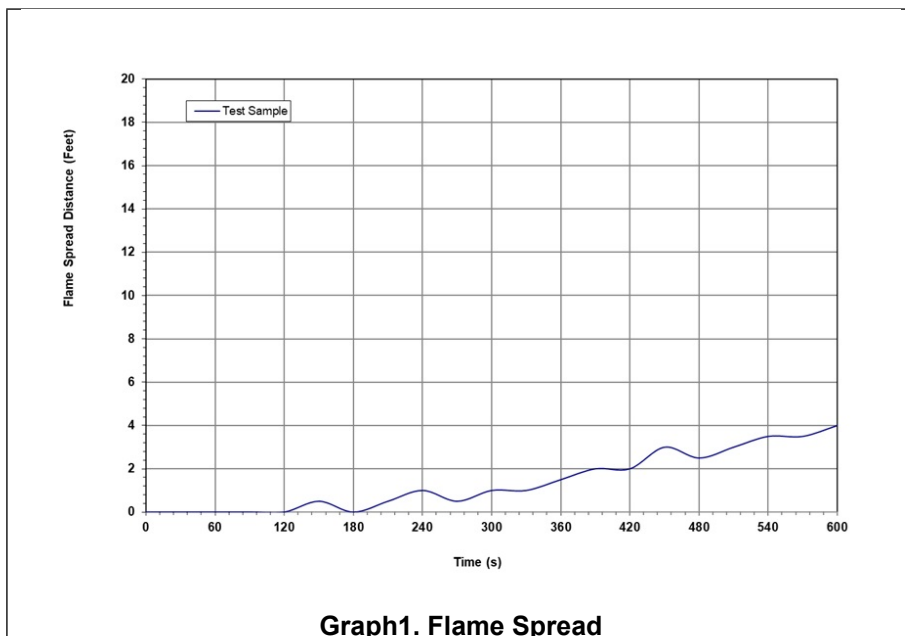
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

1-2/F, Building 1, European Industrial Park, No.1, Shunhe South Road, Wusha, Daliang, Shunde District, Foshan, Guangdong, China 528300
中国·广东·佛山市顺德区大良街道办事处五沙社区居民委员会顺和南路1号欧洲工业园一号厂房首层、二层 邮编: 528300

t (86-757) 22805888 www.sgsgroup.com.cn
t (86-757) 22805888 sgs.china@sgs.com

Graphical Results:



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

1-2F, Building 1, European Industrial Park, No.1, Shunhe South Road, Wusha, Daliang, Shunde District, Foshan, Guangdong, China 528300

t (86-757) 22805888

www.sgsgroup.com.cn

中国·广东·佛山市顺德区大良街道办事处五沙社区居民委员会顺和南路1号欧洲工业园一厂房首层、二层 邮编: 528300

t (86-757) 22805888

sgs.china@sgs.com

TEST REPORT No. : SDFTS25000933R01_EN Date: Mar 06,2025 Page: 5 of 5

Observations

Time to ignition (sec)	150
Time to Max. FS (sec)	590
Maximum FS (feet)	4.0
Observations	None

Warning:

The use of supporting materials on the underside of the test specimen has the ability to lower the flame spread index from those which might be obtained if the specimen could be tested without such support. These test results do not necessarily relate to indices obtained by testing materials without such support.

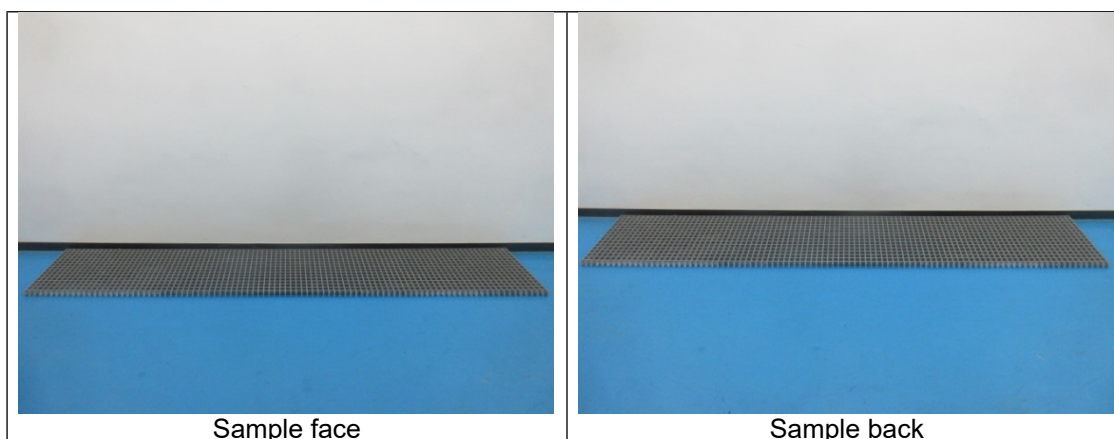
Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread indices that do not relate directly to indices obtained by testing materials that remain in place.

The test results relate only to the specimens of the product in the form in which were tested. Small differences in the composition or thickness of the product may significantly affect the performance during the test and may therefore invalidate the test results. Care should be taken to ensure that any product, which is supplied or used, is fully represented by the specimens, which were tested.

Statement:

This declaration of conformity is only based on the result of this laboratory activity, the impact of the uncertainty of the results was not included.

Photo Appendix:



SGS authenticate the photo on original report only

End of Report



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

1-2/F, Building 1, European Industrial Park, No.1, Shunhe South Road, Wusha, Daliang, Shunde District, Foshan, Guangdong, China 528300

t (86-757) 22805888

www.sgsgroup.com.cn

中国·广东·佛山市顺德区大良街道办事处五沙社区居民委员会顺和南路1号欧洲工业园一号厂房首层、二层 邮编: 528300

t (86-757) 22805888

sgs.china@sgs.com