Class A ASTM E84-05 Fire Rating

textile / tyvek® products

molo design, Itd

1470 Venables Street Vancouver, B.C. Canada V5L 2G7

t +1 604 685 0340 f +1 604 685 0342

info@molodesign.com www.molodesign.com





No. AJFS2005003574FF Date: JUN.01, 2020 P

Page 1 of 6

DUPONT (CHINA) RESEARCH & DEVELOPMENT AND MANAGEMENT CO. LTD

NO.600 CAILUN ROAD PUDONG DISTRICT SHANGHAI 201203 P.R.C

The following sample(s) 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 to the sample as received.

Sample Name: 1070D SGS Ref No.: 15080292

Style/Item No.: /

Test Requested:

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 E84-2019b "Standard Test Method for Surface Burning Characteristics of Building Materials"

Test Results: -- See attached sheet --

Test Period:

Sample Receiving Date: MAY 13, 2020Test Performing Date: MAY 13, 2020 TO MAY 27, 2020

Signed for and on behalf of SGS-CSTC Co., Ltd. Anji Branch

Allen Zou Lab Manager





Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Sarvice printed overleed, available on request to accessible at http://www.sps.com/en/ferms.and-Conditions.supp and, for electronic Documents, subject to Terms and Conditions for accessible at http://www.sps.com/en/ferms.and-Conditions/ferms-e-Document.sep. subject to Terms and Conditions for Electronic Documents at http://www.sps.com/en/ferms.and-Conditions/ferms-e-Document.sep. advised that information contained hereon reflect the Contain and juriad/clion issues defined therein. Any holder of this forwards transaction from exercising all their rights and obligations under the transaction focuments. This document is parties to a except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or faisification of the onteent or appearance of this document is unleavil and offication regions and such astroney or faisification of the defined the schedule of the interview stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are related for 30 days only. Alteration for object the schedule (26-26) section regions of exception regions to exception regions in the tester (26-26) section of the sample(s) tested at accept(s) are related for 30 days only.



No. AJFS2005003574FF

Date: JUN.01, 2020 Page 2 of 6

I. TEST CONDUCTED

This test was conducted in accordance with ASTM E84-2019b Standard Test Method for Surface Burning Characteristics of Building Materials.

II. INTRODUCTION

The method, designated as ASTM E84-2019b, "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 $65.6^{\circ}C(150^{\circ}F)$, as measured by the floor-embedded thermocouple located 7.09m (23.25 ft) downstream of the burner ports, and allowed to cool to $40.6^{\circ}C(105^{\circ}F)$, 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 15 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 $97.5 \text{ min} \cdot \text{ft}$, FSI = $0.515 \cdot \text{A}$; 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%.

To be continued....



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overlest, available on requestor accessible at http://www.sps.com/enflemm-and-Conditions.agreet and the company is the service printed overlest, available on requestor accessible at http://www.sps.com/enflemm-and-Conditions.agreet and the company is the service and conditional forme-accessible at http://www.sps.com/enflemm-and-Conditions.agreet and company is the service and company is the service and the servite and the service and the service and the service and the ser

中國·浙江·安吉县和光工业間二区阳光大道301号 邮编:313300 t (26-572) 503825 f (26-572) 503825 e sep.chine@egs.com



No. AJFS2005003574FF

Date: JUN.01, 2020 Pa

Page 3 of 6

Sample details

Sample Description	Flexible sheet
Color	White
Area density	68 g/m ²

Exposed face:

One surface

Mounting methods:

The 20-gage, 2-in. (51-mm) hexagonal galvanized steel netting should span the width of the tunnel, then the specimen shall be placed on the netting.

The specimen consisted of 1 piece of 600mm wide×7320mm long.

Test results:

FSI	SDI
25	45

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 NFPA 255, 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 E 84 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:

Service

5	Class A	Class B	Class C
Flame Spread Index	0-25	26-75	76-200
Smoke-developed Index	0-450	0-450	0-450

Since the tested sample received a Flame Spread Index 25 and a Smoke-developed Index 45, it would meet the requirements of Class A interior Wall & Ceiling Finish Category.

To be continued....

Unless otherwise spreed in writing, the document is issued by the Company subject to its General Conditions of Sarvice printed oversies, available on request or accessible at http://www.sag.com/en/isma.sagy and. for electronic format documents subject to Terms and Conditions for Electronic Documents at http://www.sag.com/en/isma.sagy and. for electronic format documents Attention is drawn to be limitation or the bibling, indemunification and jurisdiction issues defined therein. Any holder of this document is a strain of the company's explain the Company's findings at the time of its intervention only and within the limits of Limasofton form expressing all their indicts and print the Company's findings at the time of its intervention only and within the limits of Limasofton from expressing all their indicts and print the Company's findings at the time of its intervention only and within the limits of appearance of the document is unlawful and offenders may be proseculed to the huliest accinent for gray of filsification of the company. Any unauthorized document for law of the there are a strained for a strained being of the company, any unauthorized document of the content or results shown in this test report refer only to the sample(s) lested and such ample(s) are related for 30 days only. Attastion: To check the suffer the suffer the importion report & continues accurately and the document (se inlawful and offenders). (14.3, or emsilt Ch.Occcheck@gs.com





No. AJFS2005003574FF

Date: JUN.01, 2020

Page 4 of 6

GRAPHICAL RESULTS:



To be continued....

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overled; available on requestor accessible at http://www.soc.com/en/lems-and-Conditions.acp and for electronic Documents, attention is drawn to the limitation of labelity, indemnification and university defined therm. Any holder are this document is advised that information contained hereon reflects the Company's findings at the time of its interval of any and write a provide and the limit of a second the limit of the limit of the limit of the second the second the limit of a second the limit of the second limit of the second limit of the second limit of the limit of the limit of the second limit of second limit of a second limit of the second limit of the second limit of second limit of a second limit of the second limit of the second limit of second limit of a second limit of the second limit of the second limit of second limit of a second limit of a second limit of the second limit of the second limit of second limit of the second limit of second limit of a second limit of the second limit of the second limit of the second limit of the second limit of second limit of a second limit of the se

No. 301, Santgat Road, 280ad, Santgat Industry Zona, Ang County, Zhajiang Province, Chima. 313300 t (85-572) 5038825 f (85-572) 5038829 www.sgsgroup.com.co 中間 - 浙江 - 安吉希用光工业前一区用光大道301号 - 峰端1:313300 t (85-572) 5038825 f (85-572) 5038829 e ags.chima@aga.com

North Control Control



No. AJFS2005003574FF

Date: JUN.01, 2020

Page 5 of 6

OBSERVATIONS

Time to ignition (sec)	16
Time to Max. FS (sec)	162
Maximum FS (feet)	6
Observations	Flaming Dripping

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.

To be continued....



Unless otherwise agreed in writing, this document is iasued by the Company subject to its General Conditions of Service printed subject to Terms and Conditions for Electronic Documents at http://www.sps.con/writer/terms-and-Conditions/Terms--Document.au subject to Terms and Conditions for Electronic Documents at http://www.sps.con/writer/terms-and-Conditions/Terms--Document.au subject to Terms and Conditions for Electronic Documents at http://www.sps.con/writer/terms-and-Conditions/Terms--Document.agu Advised the information companies of http://www.sps.con/writer/terms-and-Conditions/Terms--Document.agu Terms-Conditions/Terms--Document.agu Clearts instructions, if any. The Company's sola responsibility is indirup at the time of its Interview is except in the instruction of the advised the interview is the advised the interview in the accept in the interview of the interview of

No. 301, Sunight Read, 2 Block, Sunight Industry Zone, Angl County, Zongiang Province, Chine 313300 t (26-572) 5018825 f (26-572) 501885 f (26-572) 501885 f (26-572) 501885 f (26-572) 501885 f (26-572) 5018825 f (26-572) 5018825 f (26-572) 501885 f (26-578) 50



No. AJFS2005003574FF

Date: JUN.01, 2020

Page 6 of 6

Photo Appendix:



SGS authenticate the photo on original report only ***End of Report***



Any Brench Fire Technology Service

ovariest, available on request or accessible at <u>http://www.ass.com/en/famis-and-Conditions.ass</u> and. for electronic format documenta, subject to Terms and Conditions for Electronic Documents at <u>http://www.ast.com/en/lerms-and-Conditions.ass</u> and for electronic format documenta Attention is drawn to the limitation of liability, indemnitication 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, it any. The Company's sole responsibility is to its Client and this document does not sconerate parties to a transaction from exercising all their rights and obligations under the transaction focument. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alleration, forgery or faisification of the content or appearance or this document is unleaved and offenders may be proceedued to the fulles exceed at the results scient of the is written scient or a results shown in this test report reterionly to the sample(s) tested and such exercise(a restaund of to 30 days on). Attention: To check the authenticity of the sample(s) tested and such exercise(a restaund for 30 days on).