

Test Report

No. SDFS2405002996FF

Date: Jun.05, 2024

Page 1 of 10

FLEXINDUSTRIAL RESOURCES

78,PEKELILING DATARAN KLEDANG KAW.PERINDUSTRIAN CHANDAN RAYA 31450 MENGLEMBUPERAK
MALAYSIA

Sample Description : SPRING MATTRESS

Other Info : MH31-12T,MH31-12TXL,MH31-12F,MH31-12Q,MH31-12K,MH31-12CK

The above 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.

Sample Receiving Date : May 06, 2024

Test Performing Date : May 06, 2024 to Jun.05, 2024

Test Result Summary

No.	Test(s) Requested	Result(s)	Comments
1	16 CFR Part 1633-Standard for the flammability (open flame) of Mattress sets.	PASS	Prototype Test
2	16 CFR Part 1632—Standard for the Flammability of Mattresses and Mattress Pads to Combustion Which May Result from A Smoldering Cigarette	PASS	/

For further details, please refer to the following page(s)

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

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

1-2F, Building 1, European Industrial Park, No.1, Shunhe South Road, Wusha, Dailang, 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

Test Report

No. SDFS2405002996FF

Date: Jun.05, 2024

Page 2 of 10

Sample Information

The following 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. results apply to the sample as received:

Model Name : MH31
Prototype Identification : MH31-12T
Insulation : Polyester
Construction Type : Spring mattresses
Foam Padding : 1.Pop 2. Ppg 3.Tdi
Barrier / Interliner : Flame retardant viscose
Overall Size : (99*190*30)cm
Mattress Ticking : Polyester
Foundation : Without Foundation

Test 1

Test Conducted:

16 CFR Part 1633 Standard for the flammability (open flame) of mattress set.

Conditioning

Prior to testing, the sample was conditioned at 65°F ~77°F and a relative humidity less 55% for at least 48 hours.

At time of testing: Temperature greater than 59 °F and less than 80.6 °F, and a relative humidity less than 75%.

Test Procedure and Results

PROCEDURE:

The mattress was placed on a metal test frame and catch surface under the center of an open hood. The open hood and open calorimeter test room were configured in accordance with open calorimeter layout Option A as specified in 16 CFR Part 1633.

The ignition source was the NIST Dual Burner System constructed of stainless steel tubing. The fuel used was commercial propane delivered at a rate of 12.9 l/min to the top burner for a total time of 70 seconds and a rate of 6.6 l/min to the side burner for a total time of 50 seconds.

After ignition of the burner, we monitored recorded certain properties of the test procedure. These properties are Heat Release Rate and Total heat release.

Photos and video were taken of the specimen during the procedure. Please reference PHOTOS 1 through 2 for photos of representative samples before and after testing to this standard. Sampling was monitored throughout the test at a rate of 1 second. Heat Release equipment meets and exceeds requirements by ASTM E1590 for accuracy.

The test was conducted by Donnie Huang at the following address:

SGS-CSTC Standards Technical Services Co., Ltd Shunde Branch

1st Floor, Building 1 of European Industrial Park, No.1 Shunhenan Road, Wusha Section, Daliang Town, Shunde of Foshan, Guangdong Province, China (CPSC Identification Number:1621)



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

Test Report

No. SDFS2405002996FF

Date: Jun.05, 2024

Page 3 of 10

RESULTS:

Specimen 1:

Test Date: May 31, 2024

Data:

<u>Measurement Type</u>	<u>Maximum Value</u>	<u>Time Occurred</u>	<u>Allowed Value</u>	<u>Pass / Fail</u>
Heat Release Rate (kW)	37.9	00:00:53	200	PASS
Total Heat Release – First 10 Min (MJ)	2.5	---	15.0	PASS
Total heat release (Entire Test, MJ)	2.5			
Test duration	[√] 30 minutes			
Please reference Figure 1 and 2 for graphical representation of Heat Release Rate and Total Heat Release.				

OBSERVATIONS:

- 09:00 – Specimen was removed from conditioning room.
- 09:05 – Test was started.
- 09:07 – After the ignition source extinguished, the specimen was ignited and flame was small and spread on the side and upper surface.
- 09:08 – Flame was self-extinguished.
- 09:35 – Test was stopped.

GRAPHICAL RESULTS:

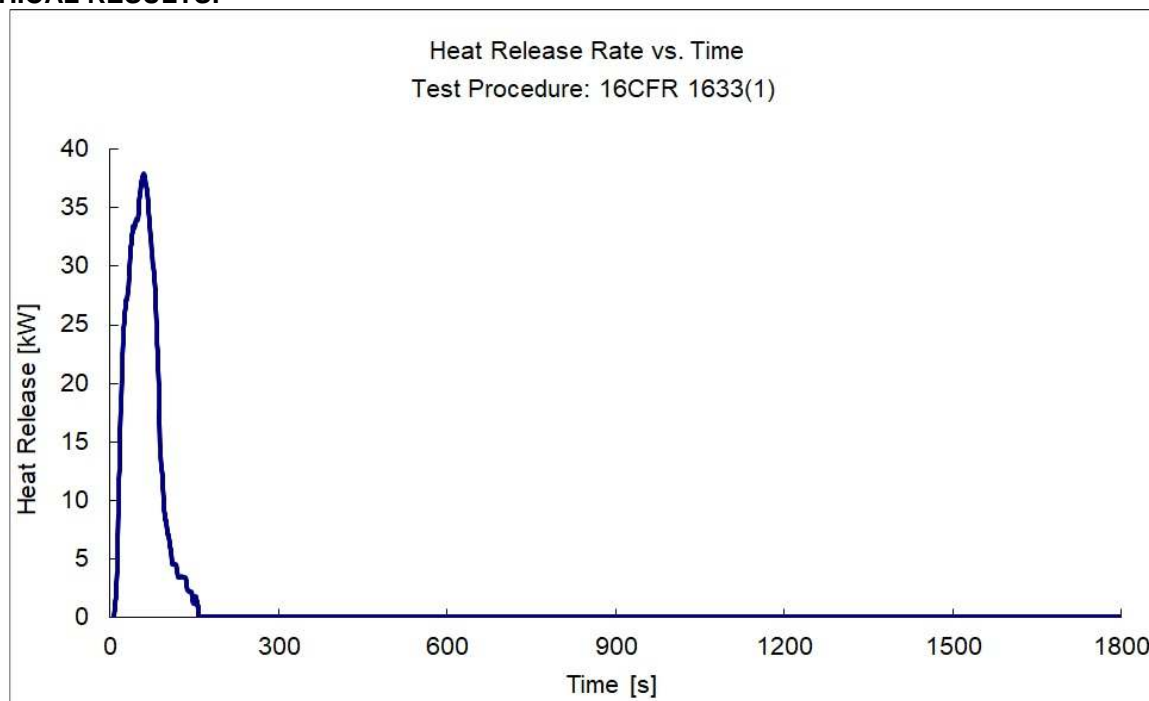


Figure 1. Heat Release Rate vs. Time Graph



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号欧洲工业园一号厂房首层、二层 邮编: 528300

t (86-757) 22805888

sgs.china@sgs.com

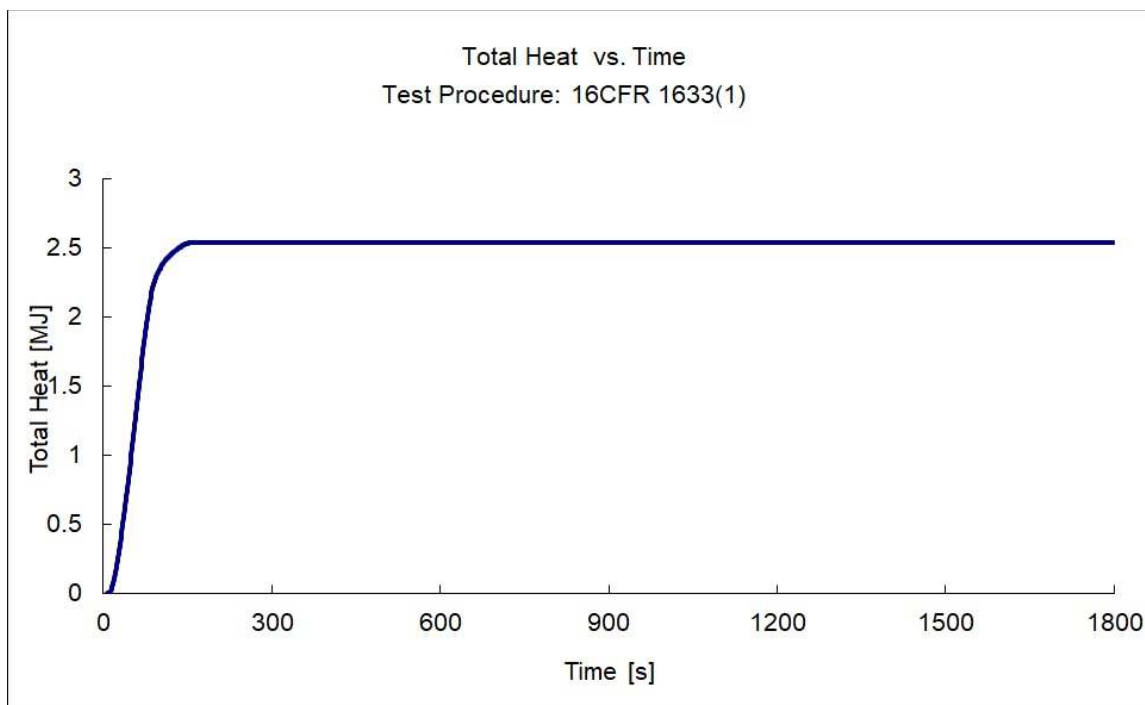


Figure 2. Total Heat Release vs. Time Graph

Specimen 2:

Test Date: May 31, 2024

Data:

<u>Measurement Type</u>	<u>Maximum Value</u>	<u>Time Occurred</u>	<u>Allowed Value</u>	<u>Pass / Fail</u>
Heat Release Rate (kW)	35.5	00:00:49	200	PASS
Total Heat Release – First 10 Min (MJ)	2.5	---	15.0	PASS
Total heat release (Entire Test, MJ)	2.5			
Test duration	[√] 30 minutes			
Please reference Figure 3 and 4 for graphical representation of Heat Release Rate and Total Heat Release.				

OBSERVATIONS:

- 10:00 – Specimen was removed from conditioning room.
- 10:05 – Test was started.
- 10:07 – After the ignition source extinguished, the specimen was ignited and flame was small and spread on the side and upper surface.
- 10:09 – Flame was self-extinguished.
- 10:35 – Test was stopped.



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, Dailing, 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

GRAPHICAL RESULTS:

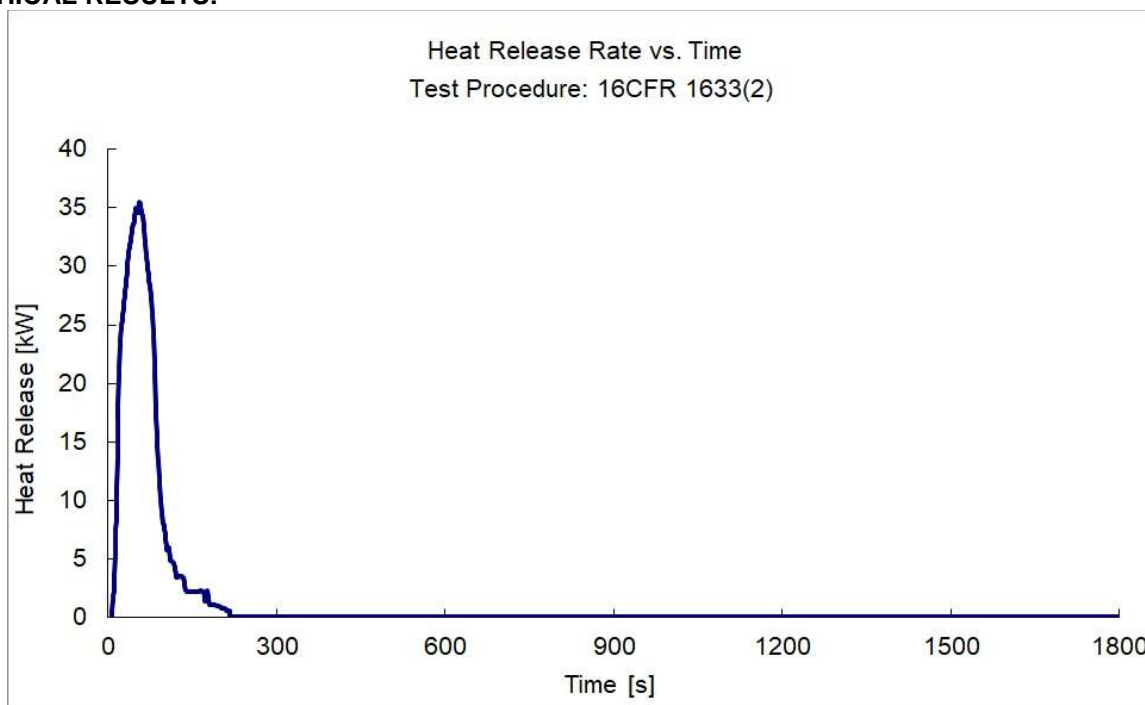


Figure 3. Heat Release Rate vs. Time Graph

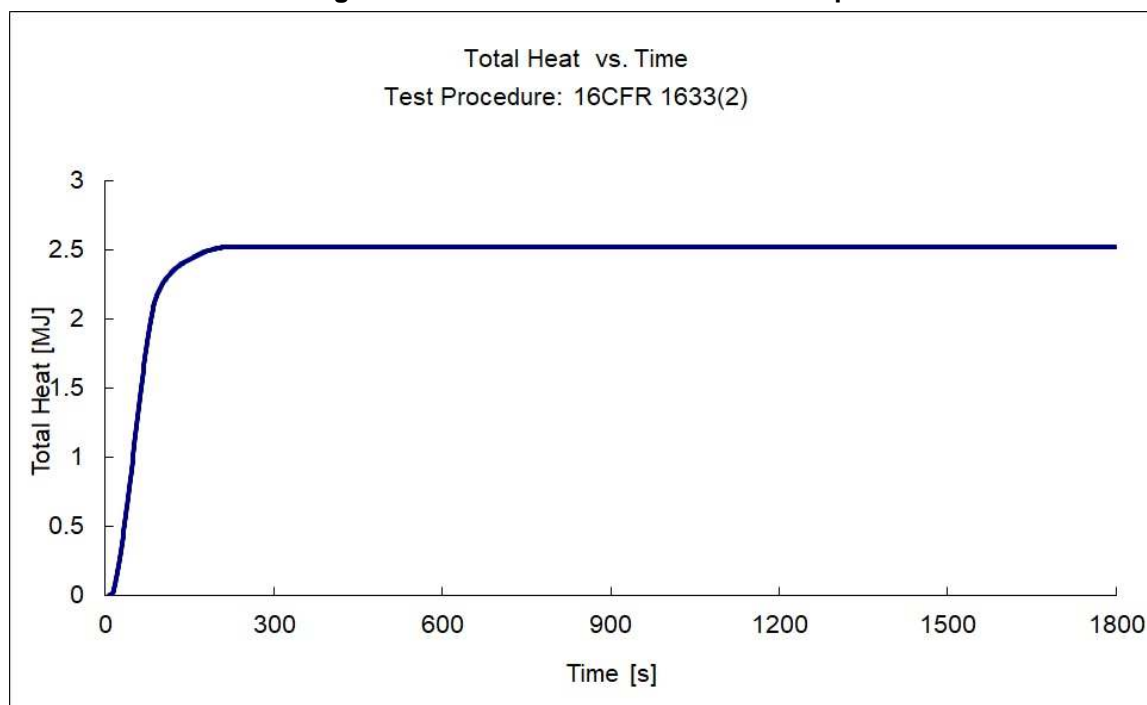


Figure 4. Total Heat Release vs. Time Graph



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, Dailing, 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

Test Report

No. SDFS2405002996FF

Date: Jun.05, 2024

Page 6 of 10

Specimen 3:

Test Date: May 31, 2024

Data:

<u>Measurement Type</u>	<u>Maximum Value</u>	<u>Time Occurred</u>	<u>Allowed Value</u>	<u>Pass / Fail</u>
Heat Release Rate (kW)	36.2	00:00:51	200	PASS
Total Heat Release – First 10 Min (MJ)	2.5	---	15.0	PASS
Total heat release (Entire Test, MJ)	2.5			
Test duration	[√] 30 minutes			
Please reference Figure 5 and 6 for graphical representation of Heat Release Rate and Total Heat Release.				

OBSERVATIONS:

- 11:00 – Specimen was removed from conditioning room.
- 11:05 – Test was started.
- 11:07 – After the ignition source extinguished, the specimen was ignited and flame was small and spread on the side and upper surface.
- 11:10 – Flame was self-extinguished.
- 11:35 – Test was stopped.

GRAPHICAL RESULTS:

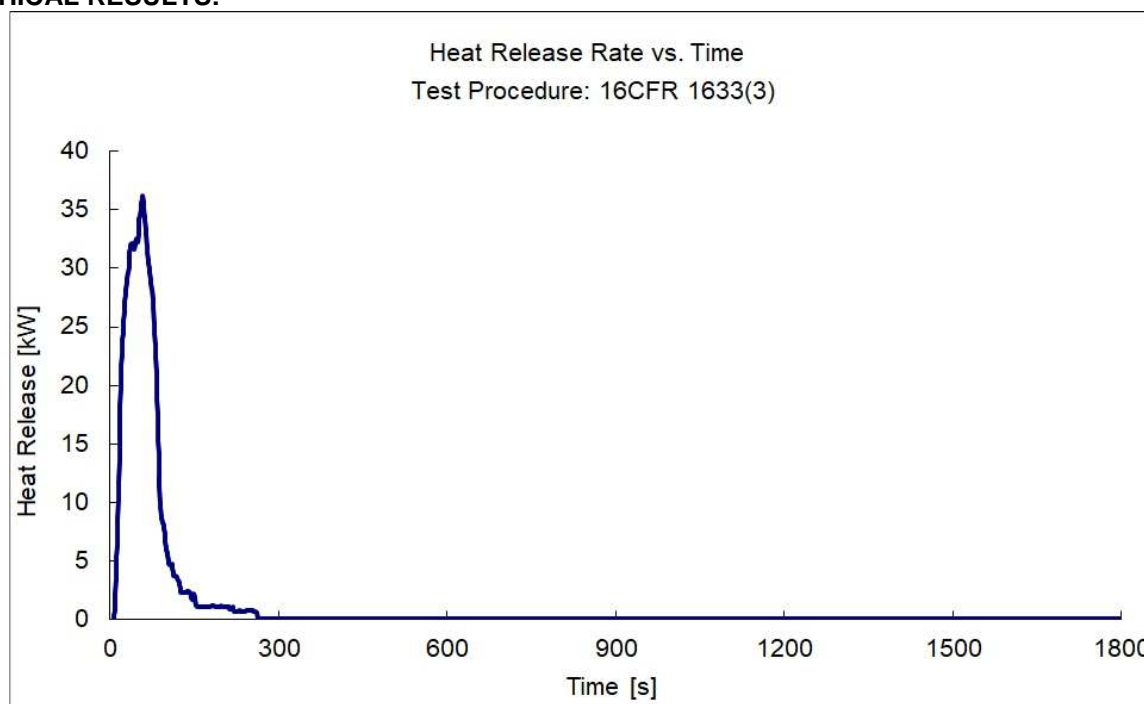


Figure 5. Heat Release Rate vs. Time Graph



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

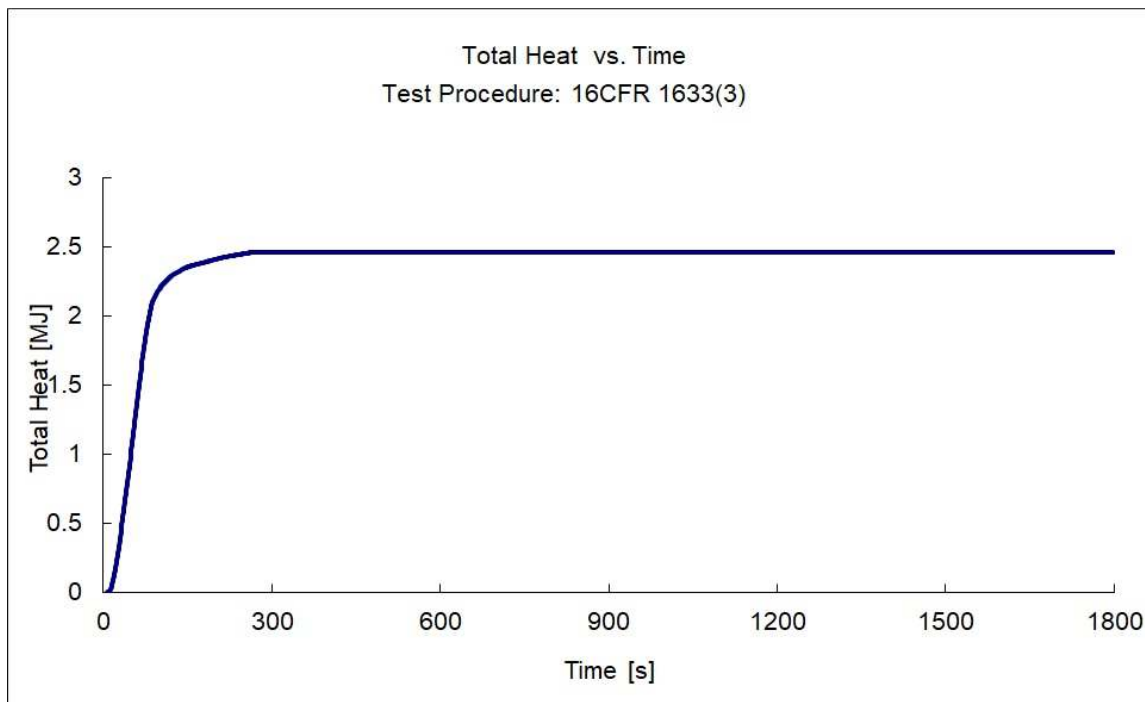


Figure 6. Total Heat Release vs. Time Graph



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, Dailang, 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

Test Report

No. SDFS2405002996FF

Date: Jun.05, 2024

Page 8 of 10

PHOTOS:



PHOTO 1. Mattress Before Testing



PHOTO 2. Mattress After Testing

Remark: For testing details, please refer to the enclosed video.



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, Dailang, 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

Test Report

No. SDFS2405002996FF

Date: Jun.05, 2024

Page 9 of 10

Test 2

Test Conducted:

16 CFR Part 1632—Standard for the Flammability of Mattresses and Mattress Pads to Combustion Which May Result from A Smoldering Cigarette

I. Test Condition

Condition		Requirement	Actual
Precondition	Temperature	$\geq 65^{\circ}\text{F}$ (18°C)	$(74\pm 3)^{\circ}\text{F}$ ($23\pm 2)^{\circ}\text{C}$
	Relative humidity	$\leq 55\%$	$(50\pm 5)\%$
	Duration	$\geq 48\text{h}$	48h
Test condition	Temperature	$\geq 65^{\circ}\text{F}$ (18°C)	$(74\pm 3)^{\circ}\text{F}$ ($23\pm 2)^{\circ}\text{C}$
	Relative humidity	$\leq 55\%$	$(50\pm 5)\%$

II. Requirements:

1. Individual cigarette requirement:

a) No obvious flaming combustion occurs.

b) The char length shall not exceed 2 inches in any direction from the nearest point of the cigarette.

2. If one or more of the cigarette location fail to meet the requirement, the mattress or mattress pad fail the test.

III. Test Results:

Flammability of Mattresses

16 CFR Part 1632.4 (FF4-72, Amended)

Surface 1	Number of Cigarettes					No. of Relights
Bare	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	
Smooth	P	P	P	-	-	0
Tape Edge	P	P	P	-	-	0
Quilted	P	P	P	-	-	0
Tufted Area	-	-	-	-	-	-
Sheeted						
Smooth	P	P	P	-	-	0
Tape Edge	P	P	P	-	-	0
Quilted	P	P	P	-	-	0
Tufted Area	-	-	-	-	-	-
Surface 2	Number of Cigarettes					No. of Relights
Bare	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	
Smooth	P	P	P	-	-	0
Tape Edge	P	P	P	-	-	0
Quilted	P	P	P	-	-	0
Tufted Area	-	-	-	-	-	-
Sheeted						
Smooth	P	P	P	-	-	0
Tape Edge	P	P	P	-	-	0
Quilted	P	P	P	-	-	0
Tufted Area	-	-	-	-	-	-



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, Dailing, Shunde District, Foshan, Guangdong, China 528300

t (86-757) 22805888

www.sgs.com

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

Test Report

No. SDFS2405002996FF

Date: Jun.05, 2024

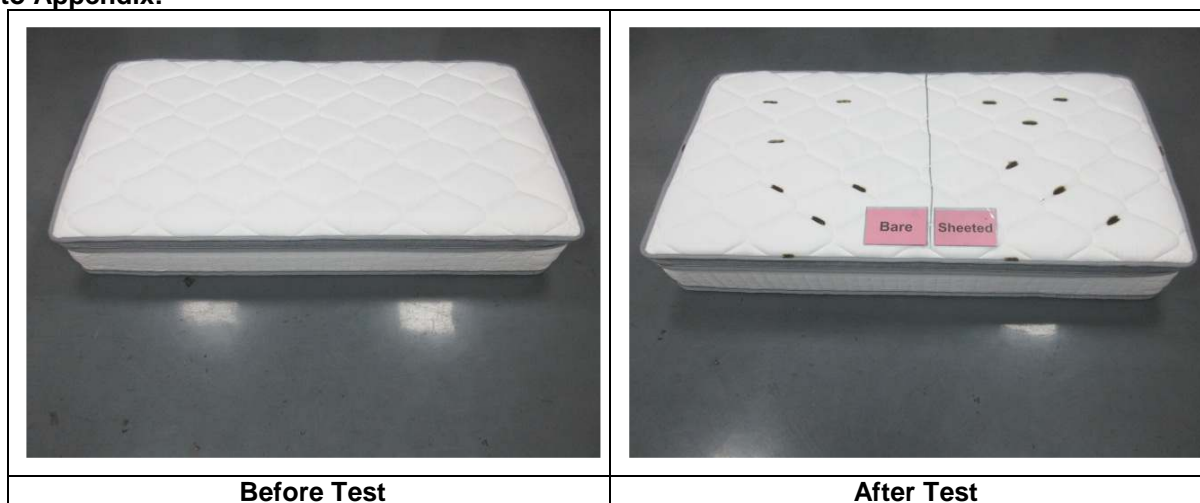
Page 10 of 10

Code Description:	
P:	Pass, Cigarette burned to full length
R:	Pass, Cigarette self-extinguished, replaced with a fresh cigarette which burned to full length or self-extinguished.
F:	Failure

Conclusion: PASS

Note: This document cannot be reproduced except full, without prior written approval of the Company.

Photo Appendix:



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

1-2F, Building 1, European Industrial Park, No.1, Shunhe South Road, Wusha, Dailing, 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