

Tested For: Mr. Onur Gumus
BRN Sleep Products LLC.
3771 Cameron Road
Orangeburg, SC 29115
USA

Phone:
Fax:
Mobile:
PO#:
Email: ogumus@brnbed.com

Received: 6/3/2021
Completed: 6/11/2021
Code: X
Test Report: 3-43977-0

Key Test: CFR 16 Part 1633 3 Sets

930

Client's Identification:

Style: KLS12GH. Identification #: Klaussner 12" Gel Hybrid Mattress. (see continuation)

Category: Mattress set, open flame test (CPSC) LE 2018; V 03/20 PC: 48H CODE: 310/620/930 bb

TEST PERFORMED: CFR Title 16 Part 1633 - Standard for the Flammability (Open Flame) of Mattress Sets

CLIENT'S IDENTIFICATION (Continuation):

Mattress:

Type: Smooth; Tufted; Quilted; Other: _____

Specimen Composite:

Covering Material (Ticking): Knitted Fabric

Fire Blocking Layer (Interliner): Cotton Wadding

Filling Material(s): INSBC

Insulator Pad: Non-Woven

Core: Pocket Coil + Foam Layer

Foundation: Not supplied; Supplied

Identification #: _____

Specimen Composite:

Covering Material (Ticking): _____

Fire Blocking Layer (Interliner): _____

Other Material(s): _____

INSBC = Information not supplied by client

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TEST CATEGORY REQUESTED:

- Qualified Prototype (3 mattress sets)
- Confirming Prototype (1 mattress set)
- Production Quality Assurance (1 mattress set)
- Experimental
- Subordinate Prototype (1 mattress set):
 - Ticking Substitution
 - Other Component Substitution (explain): _____
 - Manufacturer Specification Change (explain): _____
- Objective Data Prototype (explain): _____

Note: As defined by CFR Title 16 Part 1633, a "mattress set" can either be a mattress without a foundation or a mattress with a foundation. The sale of mattresses tested without foundations might be limited to that configuration.

TEST ROOM (CONFIGURATION):

Dimensions: 10 ft. x 12 ft. x 8 ft. high

<u>Conditions:</u>	<u>Set #1</u>	<u>Set #2</u>	<u>Set #3</u>
Temperature (°F): (Specified: >59 °F and <80.6 °F)	73	73	71
Humidity (% RH): (Specified <75% RH)	46	48	49
Time lag between conditioning room and test start (minutes): (Specified: 20 min max)	8	6	6

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BRIEF DESCRIPTION OF TEST: A mattress set is placed on a support system. Flames from a multi-hole propane burner impinge on the side of the mattress set for a period of 50 seconds, and flames from a second multi-hole burner impinge on the top of the mattress set for a period of 70 seconds. The recording instrumentation in the exhaust duct evaluates the combustion product and a formula calculates the highest heat release value recorded during the test period. It also records the total heat released during the entire test. The test continues until failure occurs or 30 minutes have elapsed.

TEST CATEGORIES:

Qualified Prototype:

Three mattress sets must demonstrate compliance with the Acceptance Criteria.

Confirmed Prototype:

One mattress set must demonstrate compliance with the Acceptance Criteria, and the manufacturing specifications (construction and components) of the mattress set must be the same as the manufacturing specifications for an existing Qualified Prototype mattress set.

Subordinate Prototype:

A mattress set that is based on a Qualified Prototype or Confirmed Prototype. There is no requirement for a Subordinate Prototype to be tested. This test exemption is qualified by section 1633.4, which comments upon the use of different tickings; different components; different materials; different designs; or different methods of assembly. The qualification to permit these changes states that a reasonable basis should be offered to indicate that such changes would not cause the test criteria to be exceeded. Therefore, it is assumed that a test conducted on one set of a Subordinate Prototype would support the reasonable basis theory.

Production Quality Control:

This test is an ongoing quality control test to determine if one or more actual production mattress sets conform to the Qualified Prototype.

Experimental:

Experimental mattress set to evaluate manufacturing specifications.

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RESULTS:

Categories		Set #1	Set #2	Set #3
Rate of Heat Release	Peak (kW):	32.5	32.9	31.8
	Time Peak Rate occurred (seconds):	51	56	43
	Total Heat Release (MJ) at 10 minutes [or test end, if sooner than 10 minutes]:	3.2	3.4	4.1
Test End	Time (mm:ss):	30:00	30:00	30:00
	Code:	(2)	(2)	(2)

CODES EXPLAINED:

- (1) Extinguished by technician when maximum criteria values were exceeded.
- (2) Maximum test period (30 minutes).

ABBREVIATIONS WHICH MAY BE USED:

- NT = Not tested, as noncompliance was found with a previous set
- NA = Not available
- NR = Not required to be tested

ACCEPTANCE CRITERIA: For each mattress set --

Peak Rate of Heat Release 200 kW maximum	Total Heat Release at 10 minutes 15 MJ maximum
--	--

CONCLUSION: Based on the reported Results and cited Acceptance Criteria:

3 Mattress set/s demonstrate/s COMPLIANCE with the Acceptance Criteria
 0 Mattress set/s demonstrate/s NONCOMPLIANCE with the Acceptance Criteria

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REMARKS: None.

OBSERVATIONS (all observations are stated in relationship to flame impingement point):

<u>Set #</u>	<u>Time (mm:ss)</u>	<u>Observations</u>
1	00:07	Cover material ignited
	01:10	Burner removed; fire burning on top and front side of mattress
	03:30	Light fire burning on top and front side of cover
	10:00	Light fire continues to burn on front side of mattress
	15:00	No visible smoke or fire
	30:00	End of test
2	00:07	Cover material ignited
	01:10	Burner removed; fire burning on top and front side of mattress
	04:00	Light fire on front and top of mattress cover
	09:00	Light smoke from front side of mattress
	15:00	Fire burning towards front corner
	20:30	No visible smoke or fire
30:00	End of test	
3	00:07	Cover material ignited
	01:10	Burner removed; fire burning on top and front side of mattress
	03:30	Light fire burning on top and front sides
	10:00	Fire burning on front side in both directions
	16:00	Fire burning at corner of mattress
	22:00	Fire burning at both sides of mattress
30:00	End of test	

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CERTIFICATION: I certify that the above results were obtained after testing specimens in accordance with the procedures and equipment specified above.


 AUTHORIZED SIGNATURE
 SGS NORTH AMERICA
 /jab /al

Jillian Guillem

Test Technician: Vincent Timmons

JUN 28 2021

Enclosures: Graph (Rate of Heat Release vs. Time)
 Summary
 Video

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Test # 1

Program: (Version 0.4.0)

Test Specification : CFR 1633
Report # : 3-43977-0-
Client : BRN SLEEP PRODUCTS LLC
Mattress ID # : KLS12GH KLAUSSNER 12" GEL HYBRID MATTRESS
Test Date : 6/11/2021
Test Time : 10:06 AM
Operator : Vinny Timmons

Initial Room Conditions

Temperature : 73 °F
Humidity : 46 %

Results

Peak Rate of Heat Release : 32.5 kW Peak Time : 51 seconds
Total Heat Release at 10 minutes : 3.2 MJ

Failure Criteria

- Peak rate of heat release exceeds 200 kW
- Total heat release at 10 minutes exceeds 15MJ
- Test terminated early by operator

Conclusion : Based on the above results, the item tested:

Passes Fails

CERTIFICATION : I certify that the above results were obtained after testing the specimens in accordance with the procedures and equipment specified by 16 CFR 1633

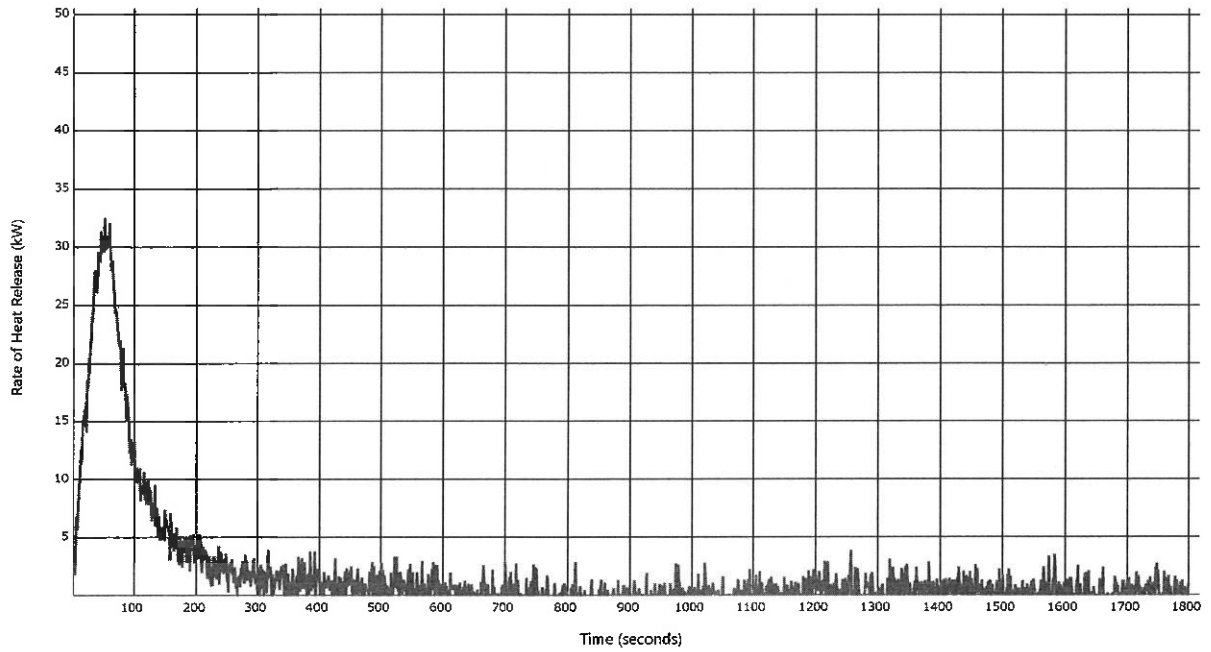
Vinny Timmons

AUTHORIZED SIGNATURE

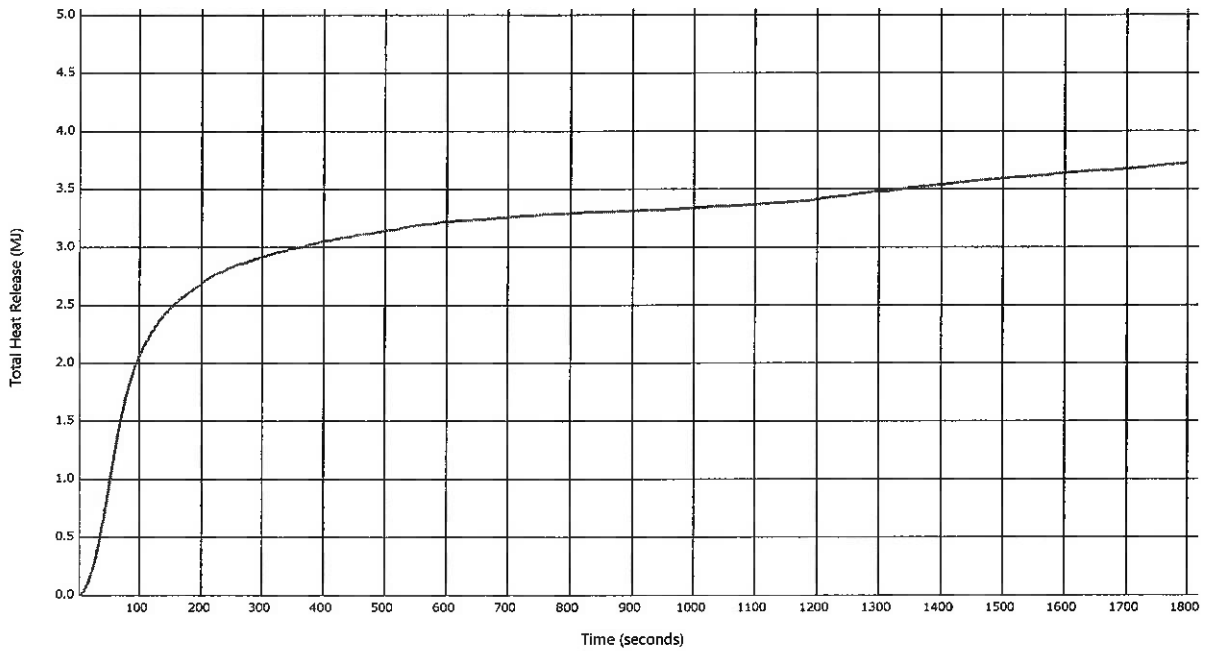
Test Method
Test Report #

: CFR 1633
: 3-43977-0-

Rate of Heat Release vs Time



Total Heat Release vs Time





Test Specification : CFR 1633
Report # : 3-43977-0--
Client : BRN SLEEP PRODUCTS LLC
Mattress ID # : KLS12GH KLAUSSNER 12" GEL HYBID MATTRESS
Test Date : 6/11/2021
Test Time : 11:05 AM
Operator : Vinny Timmons

Initial Room Conditions

Temperature : 73 °F
Humidity : 48 %

Results

Peak Rate of Heat Release : 32.9 kW Peak Time : 56 seconds
Total Heat Release at 10 minutes : 3.4 MJ

Failure Criteria

- Peak rate of heat release exceeds 200 kW
- Total heat release at 10 minutes exceeds 15MJ
- Test terminated early by operator

Conclusion : Based on the above results, the item tested:

Passes Fails

CERTIFICATION : I certify that the above results were obtained after testing the specimens in accordance with the procedures and equipment specified by 16 CFR 1633

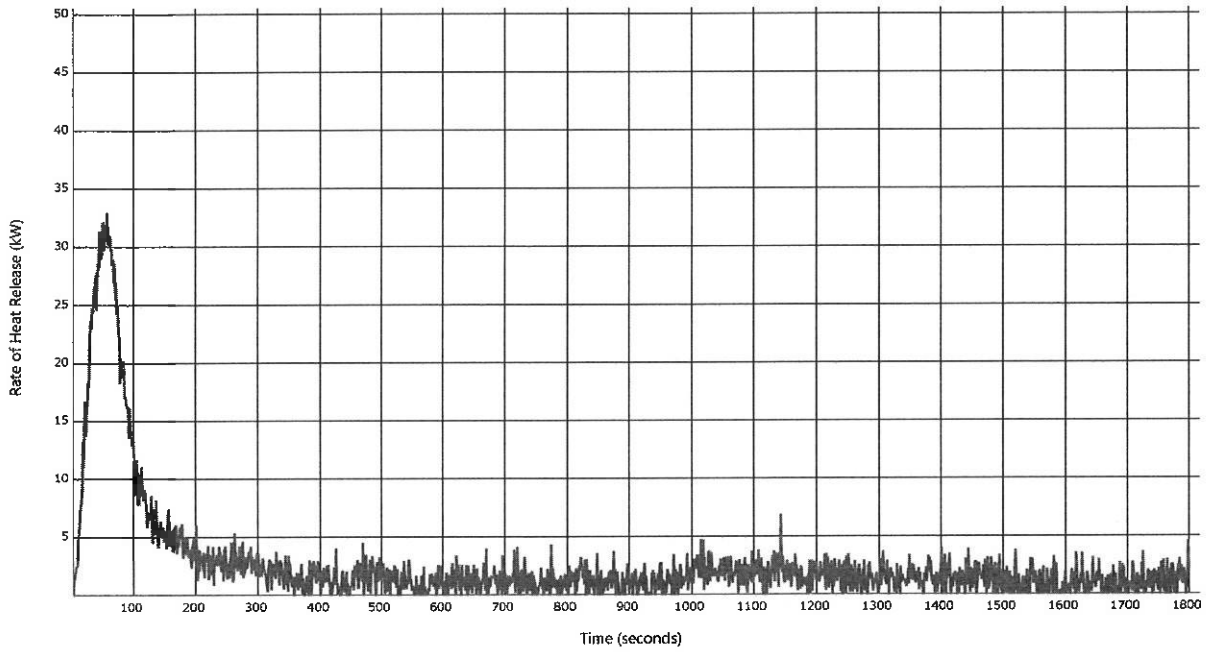
Vinny Timmons

AUTHORIZED SIGNATURE

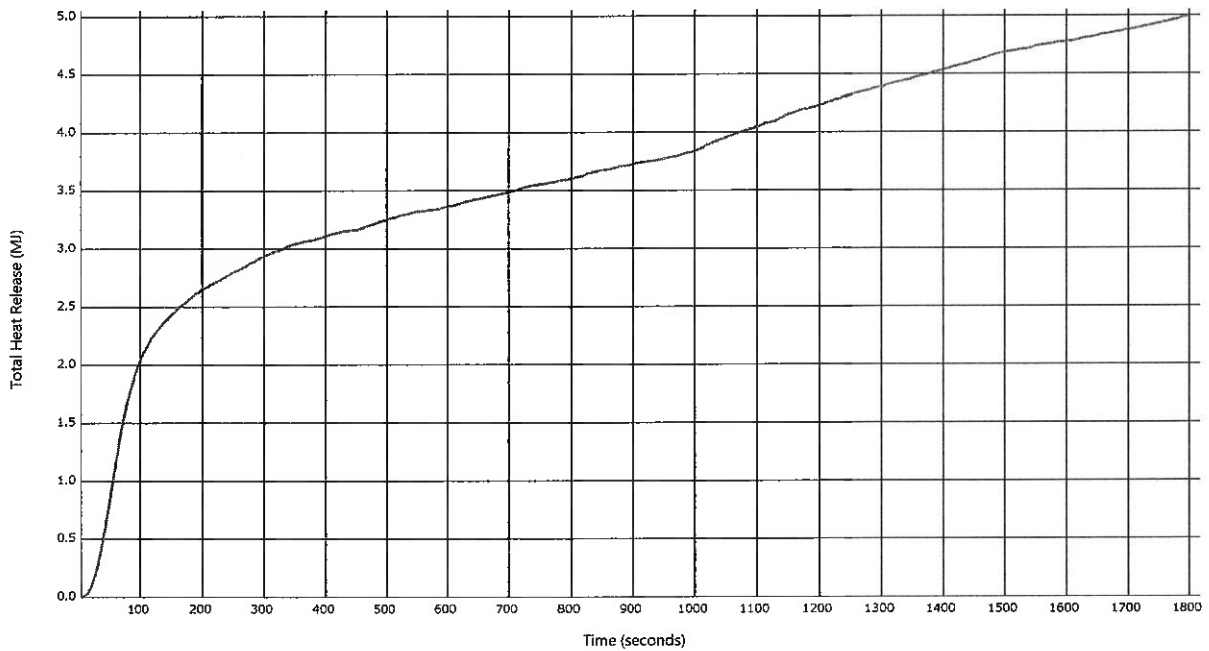


Test Method : CFR 1633
Test Report # : 3-43977-0--

Rate of Heat Release vs Time



Total Heat Release vs Time





Test # 3

Program: (Version 0.4.0)

Test Specification : CFR 1633
Report # : 3-43977-0--
Client : BRN SLEEP PRODUCTS LLC
Mattress ID # : KLS12GH KLAUSSNER 12" GEL HYBID MATTRESS
Test Date : 6/11/2021
Test Time : 11:43 AM
Operator : Vinny Timmons

Initial Room Conditions

Temperature : 71 °F
Humidity : 49 %

Results

Peak Rate of Heat Release : 31.8 kW Peak Time : 43 seconds
Total Heat Release at 10 minutes : 4.1 MJ

Failure Criteria

- Peak rate of heat release exceeds 200 kW
- Total heat release at 10 minutes exceeds 15MJ
- Test terminated early by operator

Conclusion : Based on the above results, the item tested:

- Passes Fails

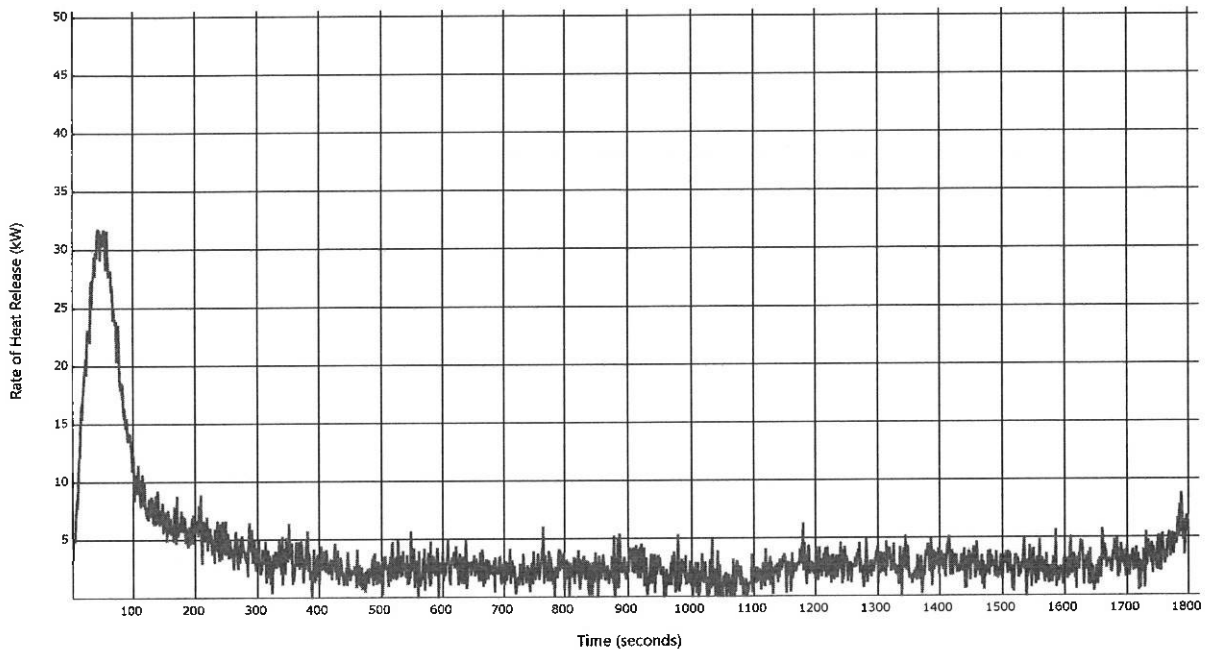
CERTIFICATION : I certify that the above results were obtained after testing the specimens in accordance with the procedures and equipment specified by 16 CFR 1633

Vinny Timmons
AUTHORIZED SIGNATURE

Test Method
Test Report #

: CFR 1633
: 3-43977-0---

Rate of Heat Release vs Time



Total Heat Release vs Time

