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**Test Report**

Report No.: AJFS2308007976FF

Date: SEP.05, 2023

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**LANGFANG LIUTAI FURNITURE CO., LTD**

1009-1-6 BUILDING, SIJIHUAYU, ANCI DISTRICT, LANGFANG CITY, HEBEI PROVINCE

**Sample Description:** MATTRESS

**SGS Ref No.:** TJHL2308006568FT

**Style/Item No.:** LTM-21

**P.O. / Ref No.:** WHS-58938-31975544

**Supplier:** BAZHOU BOTAI FURNITURE CO, LTD

**Buyer:** WAYFAIR/AMAZON

**Manufacturer:** BAZHOU BOTAI FURNITURE CO, LTD

**Agent:** LANGFANG LIUTAI FURNITURE CO, LTD

**Country of Origin:** CHINA

**Country of Destination:** UK

The above 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 arising therefrom. Test results apply to the sample as received.

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**Test Requested:**

BS 7177:2008 + A1:2011 Specification for resistance to ignition of mattresses, mattress pads, divans and bed bases, Low Hazard (domestic use).

**Test Results:** -- See attached sheet --

**Test Period:**

Sample Receiving Date : AUG.30 2023

Test Performing Date : AUG.30, 2023 TO SEP.05, 2023

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

Echo Li  
Approved Signatory

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**Test conducted:** BS 7177:2008 + A1:2011 Specification for resistance to ignition of mattresses, mattress pads, divans and bed bases, Low hazard (domestic use).

Clause	Principle /requirement	Result
4	<u>Performance requirements for resistance to ignition</u>	
	<u>4.1 Ignitability</u>	
	<u>4.1.1 Composite test</u> 1) Smoldering cigarette test of BS EN 597-1:1995. 2) Match flame equivalent test of BS EN 597-2:1995.	See Annex I Pass Pass
	<u>4.1.2 Filling material test</u> All filling materials, including those used in mattress pads, shall pass the relevant test contained in the annexes given in Table 2.	See Annex II Pass
4.2	<u>Durability of treatment</u> All outer covers and inner covers intended for high or very high hazard categories in Table 1 that have been chemically treated to reduce their ignitability shall be subjected to the water soaking and drying procedure specified in BS 5852:2006, Annex E prior to being conditioned.	NA
5	<u>Sampling and frequency of testing</u> A sample of each mattress, mattress pad, divan or bed base specification (ignoring differing spring types) shall be tested at the frequency specified in Table 3. Retesting shall be carried out where there is any major basic alteration to a specification	NC
6	<u>Labeling and Identification</u> Each mattress, upholstered mattress pad, divan or bed base shall carry a permanently attached and clearly readable label. The size of the graphic part of the label shall be not less than 50 mm x 50 mm. The base colour of the label shall be white with a blue border. The word "RESISTANT" shall appear on the border and shall be white and of minimum height 5 mm. A smoldering cigarette symbol, flame symbol and the ignition source number(s) shall appear in the central white area and shall be black. Information defining additional tests shall be included on the label for very high hazard mattresses and upholstered mattress pads. The following wording shall appear on the label: "Conforms to BS 7177:2008 for domestic use (low hazard)".	NP

Remark: NA - Not applicable; NC - Not conducted; NP - Not provided



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**Test Specimen:**

Description / Color	Mattress / White and Black
Both surfaces are	[ <input checked="" type="checkbox"/> ] Different; [ <input type="checkbox"/> ] Identical
Size of sample	1890 mm x 910 mm x 250 mm
Sample type	[ <input type="checkbox"/> ] Small scale; [ <input checked="" type="checkbox"/> ] Full size

**Conditioning**

Prior to testing, the specimens were conditioned at least 72 h in indoor ambient conditions and then immediately before the test for at least 16 h in an atmosphere having a temperature of 23±2°C and a relative humidity of 50±5%.

**Annex I: Composite test**

These tests are conducted in accordance with low hazard of BS 7177:2008 + A1:2011, and the test methods are based on BS EN 597-1 & 2:1995.

**Test Results:**

The following test results relate only to the ignitability of the sample or combination of materials under the particular condition of test. They are not intended as a means of assessing the full potential fire hazard of the materials or products in use.

- 1) BS EN 597-1:1995 Furniture – Assessment of the ignitability of mattresses and upholstered bed bases Part 1, Ignition source: smouldering cigarette.

Clause 3.1 Progressive smouldering ignition	1 <sup>st</sup>	2 <sup>nd</sup>
For the purpose of this standard, all the following types of behaviour are considered to be progressive smouldering ignition		
3.1 a) Any test specimen that displays escalating combustion behaviour is observed so it is unsafe to continue the test and active extinction is necessary;	No	No
3.1 b) Any test specimen that smoulders until it is essentially consumed within the test duration.	No	No
3.1 c) Any test specimen that smoulders to its full thickness within the duration of the test.	No	No
3.1 d) Any test specimen that smoulders for more than one hour.	No	No
3.1 e) On final examination (9.3), show evidence of charring more than 50mm in any horizontal direction from the nearest point of the original position of the source.	No	No
Clause 3.2 Flaming ignition	1 <sup>st</sup>	2 <sup>nd</sup>
A flaming ignition is considered to be the occurrence of any flames initiated by a progressive smouldering source	No	No



**Test Details:**

Test No.		1 <sup>st</sup>			2 <sup>nd</sup>		
Top Surface / Testing position		a	b	c	a	b	c
Progressive smouldering (PS) or Flaming (F)		No	No	No	No	No	No
Duration of	Ignition source (min, s)	20min15s	19min27s	20min34s	19min45s	20min02s	20min17s
	Flames (min, s)	0s	0s	0s	0s	0s	0s
	Smoke (min, s)	20min21s	19min35s	20min42s	19min52s	20min10s	20min24s
Extent of damage	Width (mm)	12	10	10	13	12	11
	Length (mm)	67	68	66	67	69	69
	Depth (mm)	5	6	5	6	5	5
Final examination of progressive smouldering (9.3)		No	No	No	No	No	No
Comments & observations		No	No	No	No	No	No
Result (NI-Non-ignition/I-Ignition)		NI	NI	NI	NI	NI	NI

**Sub-conclusion:** [  ] Non-ignition; [  ] Smouldering ignition; [  ] Flaming ignition.



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- 2) BS EN 597-2 :1995 Furniture – Assessment of the ignitability of mattresses and upholstered bed bases  
Part 2 Ignition source: match flame equivalent (15±1s)

Clause 3.1 Progressive Smouldering ignition	1 <sup>st</sup>	2 <sup>nd</sup>
For the purpose of this standard, all the following types of behaviour are considered to be progressive smouldering ignition		
3.1 a) Any test specimen that displays escalating combustion behaviour is observed so it is unsafe to continue the test and active extinction is necessary.	No	No
3.1 b) Any test specimen smoulders until it is essentially consumed within the test duration.	No	No
3.1 c) Any test specimen that smoulders to its full thickness within the duration of the test.	No	No
3.1 d) Any test specimen that smoulders for more than one hour.	No	No
3.1 e) If charring more than 50mm in any horizontal direction.	No	No
Clause 3.2 Flaming ignition	1 <sup>st</sup>	2 <sup>nd</sup>
For the purpose of this standard, all the following types of behaviour are considered to be flaming ignition		
3.2 a) Any test specimen that escalating combustion behaviour is observed so it is unsafe to continue the test and active extinction is necessary.	No	No
3.2 b) Any test specimen that burns until it is essentially consumed within the test duration.	No	No
3.2 c) Any test specimen on which any flame front reaches its extremities or pass through its full thickness within the duration of the test.	No	No
3.2 d) Any test specimen that flaming continues to more than 120s after removal of the burner tube.	No	No



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**Test Details:**

Test No.		1 <sup>st</sup>			2 <sup>nd</sup>		
Top Surface / Testing position		a	b	c	a	b	c
Progressive smouldering (PS) or Flaming (F)		No	No	No	No	No	No
Duration of	Ignition source (min, s)	15s	15s	15s	15s	15s	15s
	Flames (min, s)	0s	0s	0s	0s	0s	0s
	Smoke (min, s)	19s	22s	20s	21s	22s	20s
Extent of damage	Width (mm)	25	21	24	24	24	27
	Length (mm)	27	32	30	25	30	33
	Depth (mm)	8	6	8	7	7	8
Final examination of progressive smouldering (9.3)		No	No	No	No	No	No
Comments & observations		No	No	No	No	No	No
Result (NI-Non-ignition/I-Ignition)		NI	NI	NI	NI	NI	NI

**Sub-conclusion:** [  ] Non-ignition; [  ] Smouldering ignition; [  ] Flaming ignition.

**Remark:** a - flat portion of upper surface; b - junction between the seat and back; c - quilted line

At the request of the client, only the top surface of specimen was tested.



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**Annex II: Filling material test**

Test conducted: Filling material test is as per BS 5852 Part 2: 1982

The Furniture and Furnishings (Fire) (Safety) Regulations 1988 S.I. No. 1324 (amended 1989,1993 and 2010), Schedule 1 Part I.

Crib 5 test (Ignition Source 5) of BS 5852 Part 2:1982.

**Sample Details:**

Sample description / Color	Foam / White
Density (kg/m <sup>3</sup> )	41.6 kg/m <sup>3</sup>

**(A) Progressive smouldering**

Criteria of failure (Clause 4.1 of BS 5852 part 2:1982)	1 <sup>st</sup>	2 <sup>nd</sup>
4.1 b) – Any composite that product externally detectable amounts of smoke, heat or glow 60 min after ignition of the crib.	No	No
4.1 c) – Any composite that displays escalating combustion behaviour so that it is unsafe to continue the test and requires forcible extinction.	No	No
4.1 d) – Any composite that smoulders until it is essentially consumed within the test duration relevant to the source	No	No
4.1 e) – Any composite that smoulders to the extremities of the specimen viz. upper or lower margins, either side or to its full thickness, within the duration of the test.	No	No
4.1 f) – Any composite that, on the final examination, shows evidence of charring other than discolouration, more than 100 mm in any direction apart from upwards from the nearest part of the original position of the source.	No	No

**(B) Flaming**

Criteria of failure (Clause 4.2 of BS 5852 part 2:1982)	1 <sup>st</sup>	2 <sup>nd</sup>
4.2 b) – Any composite that continues to flame for more than 10 minutes after the ignition of the crib.	No	No
4.2 d) – Any composite that displays escalating combustion behaviour so that it is unsafe to continue the test and forcible extinction is required.	No	No
4.2 e) – Any composite that burns until it is essentially consumed within the test duration relevant to the source.	No	No
4.2 f) – Any composite on which any flame front reaches the lower margin, either side or passes through the full thickness of the specimen within the duration of the test.	No	No

**(C) Mass Loss**

Criteria (Clause 5 in Schedule 1 of UK Regulations)	1 <sup>st</sup>	2 <sup>nd</sup>
If failure against the criteria of clause 4 of BS 5852:Part 2 has occurred but only by way of damage exceeding the limits defined in clause 4.1(e), 4.1(f) and 4.2(f) and provided that the resultant mass loss is less than 60g the foam passes the ignitability test.	19 g	16 g



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**Test Details:**

Test No.		1 <sup>st</sup>	2 <sup>nd</sup>
Progressive smouldering (PS) or Flaming (F)		No	No
Duration of	Ignition source (min, s)	2 min 15 s	2 min 17 s
	Flames (min, s)	3 min 20 s	3 min 03 s
	Smoke (min, s)	4 min 27 s	4 min 02 s
Extent of damage of horizontal component	Foam - Width (mm)	111	104
	Foam - Length (mm)	135	129
	Foam - Depth (mm)	41	40
Extent of damage of vertical component	Foam - Width (mm)	97	105
	Foam - Depth (mm)	20	17
Damage exceeds limits of clauses 4.1(e), 4.1(f) or 4.2(f)		No	No
Initial weight before test (g)		6283	6277
Final weight after test (g)		6164	6261
Resultant mass loss (g)		19	16
Reason for failure (Ref to failure code)		---	---
Final examination of progressive smouldering (9.4)		No	No
Comments & observations		No	No
Overall result		Pass	Pass

**Sub-conclusion:** [  ] Pass, [  ] Fail

**Statement:**

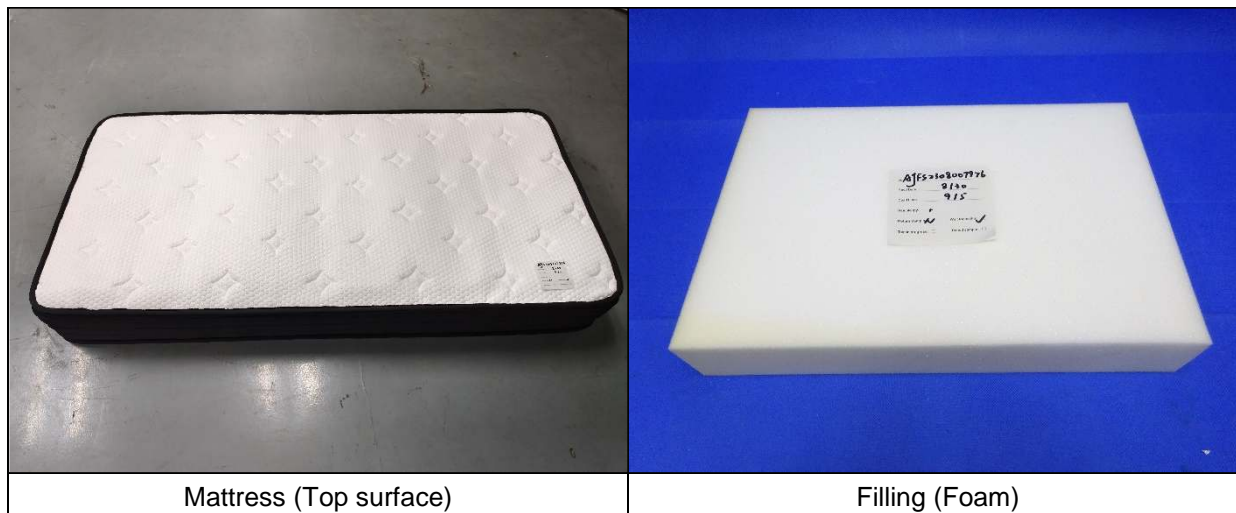
The decision rules for statements of conformity (Pass/Fail) have been applied to any results that results in a numerical value and are based on the probability conformance of 95% (UKAS LAB 48) agreed with the customer at the contract review stage.



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Photo Appendix:



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