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TECHNICAL REPORT

Pineapple Contracts Westmead Aylesford Maidstone Kent ME20 6XJ United Kingdom	SATRA reference:	FUR9132Y9C1	
		2351	1
	Report ID/Issue number:	35635/1	
	Your reference:	LLNPD07122023	
	Date samples received:	19/12/2023	
	Date(s) work carried out:	21/12/2023 to 09/01/2024	
	Date of report:	09/01/2024	

Testing Requirements

Testing of 2 seat cushions described by the customer as 'Seat cushion 1 - 25mm lilac foam and purple fabric' and 'Seat cushion 2 - 25mm grey foam and grey fabric' to SATRA TP28:2015

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Report Signed by:

Johnny Worthington

Report Signatory

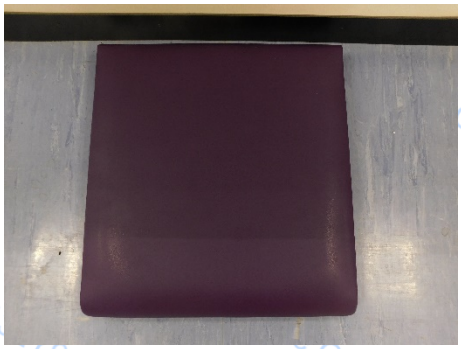
HARDNESS TESTING OF 2 SEAT CUSHIONS BEFORE AND AFTER 'POUNDING'

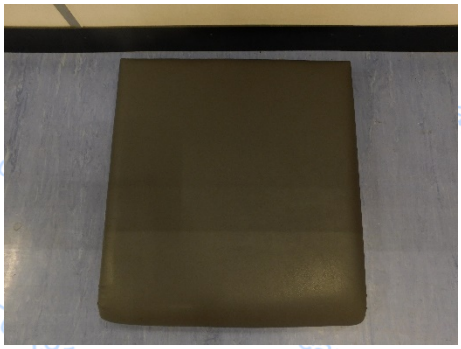
As requested by Pineapple Contracts, SATRA have assessed two similar seat cushions submitted as detailed below.

Samples Submitted

Sample references: Seat cushion 1 – 25mm lilac foam and purple fabric and
Seat cushion 2 – 25mm grey foam and grey fabric

Testing conducted by: P. Green





Test methods and standards used:

EN 1957:2012 Furniture. Beds and mattresses. Test methods for the determination of functional characteristics and assessment criteria.
This standard defines a method for measuring the hardness of a mattress using an indentometer. This method can also be used to test a large cushion.

EN 12520:2010 Strength, durability and safety – Requirements for domestic seating.
In clause 5.4.1 this standard defines a 'pounding' or 'fatigue' test for complete chairs. In this work, the fatigue test was used on the seat cushion on its own. The number of fatigue cycles was extended from 25,000 to 80,000 cycles.

The test method used is refered to 'SATRA TP28:2015'.

Conditioning

The samples were placed into a conditioned atmosphere of 23ºC ± 2ºC and 50 % RH ± 5% RH, for > 7 days (minimum required is 7 days) before the initial measurements. In addition, the samples were conditioned for 1 day (minimum required is 5 hours) before the final measurements.

RESULTS

'SEAT CUSHION 1 – 25MM LILAC FOAM AND PURPLE FABRIC'

Hardness testing based on EN 1957:2012: Durability test (Clause 7.2)

Test Step	Stage	Unit height (mm)	Height change (mm)	Hardness value H (N/mm)	Hardness change (N/mm)	Firmness rating H_s	Firmness rating change
1	Initial measurement	94.8		13.2		1.6	
2	Pounding (80,000 cycles)						
3	Final measurement	94.7	0.1	9.9	3.3	2.9	1.3

'SEAT CUSHION 2 – 25MM GREY FOAM AND GREY FABRIC'

Hardness testing based on EN 1957:2012: Durability test (Clause 7.2)

Test Step	Stage	Unit height (mm)	Height change (mm)	Hardness value H (N/mm)	Hardness change (N/mm)	Firmness rating H_s	Firmness rating change
1	Initial measurement	98.7		14.2		1.4	
2	Pounding (80,000 cycles)						
3	Final measurement	98.0	0.7	11.2	3.0	2.2	0.8

The hardness value H, and the firmness rating H_s, were calculated by analysing the load/height curves obtained using an indentometer.

Note that a firmness rating of 1 is firm, and a firmness rating of 10 is soft.

Visual Inspection

See photos below. There was no obvious change in appearance after the pounding.

Photo 1: Showing 'Seat cushion 1 – 25mm lilac foam and purple fabric' at 0 cycles

Photo 2: Showing 'Seat cushion 1 – 25mm lilac foam and purple fabric' at 80,000 cycles

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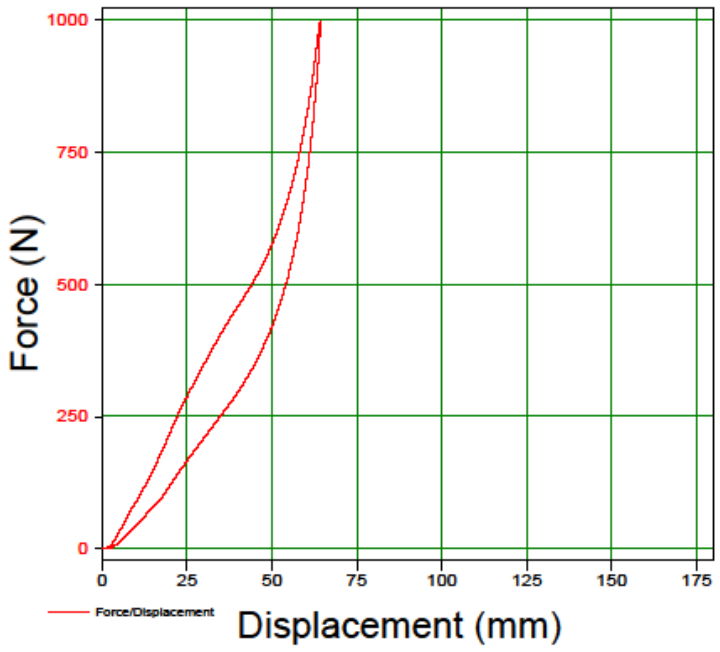
Furniture - Beds and mattresses
Test methods for the determination of functional characteristics and assessment criteria

BS EN 1957:2012

Customer: Pineapple contracts
Job Number: FUR9132Y9C1
Sample: Seat cushion 1 - 25mm lilac foam and purple fabric
Technician: PG
Date: 03/01/2024 10:45:33

C1	14.725
C2	12.781
C3	12.082
H	13.196
A	8279.4
Hs	1.64



Graph 1: Showing 'Seat cushion 1 – 25mm lilac foam and purple fabric' at 0 cycles

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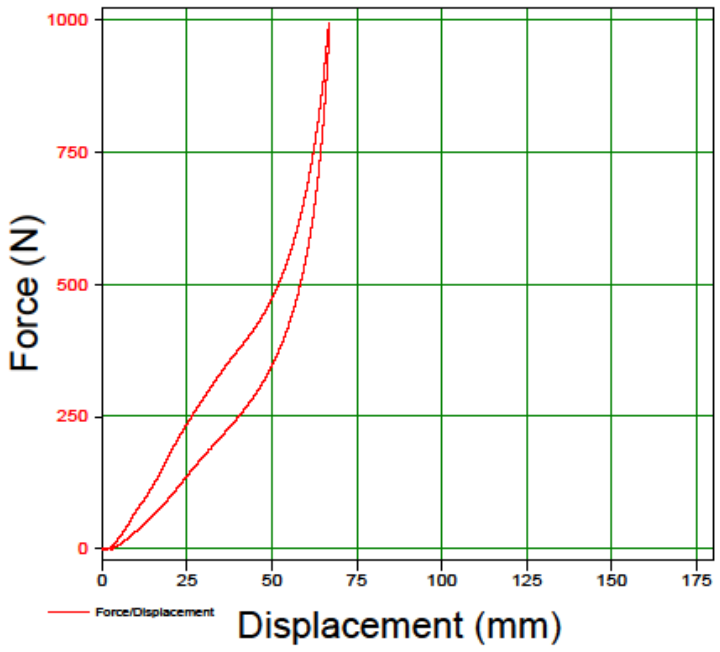
Furniture - Beds and mattresses
Test methods for the determination of functional characteristics and assessment criteria

BS EN 1957:2012

Customer: Pineapple
Job Number: FUR9132Y9C1
Sample: Seat cushion 1 - 25mm lilac foam and purple fabric
Technician: PG
Date: 09/01/2024 09:57:07

C1	11.178
C2	9.688
C3	8.697
H	9.854
A	10366.4
Hs	2.89



Graph 2: Showing 'Seat cushion 1 – 25mm lilac foam and purple fabric' at 80,000 cycles

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Photo 3: Showing 'Seat cushion 2 – 25mm grey foam and grey fabric' at 0 cycles

Photo 4: Showing 'Seat cushion 2 – 25mm grey foam and grey fabric' at 80,000 cycles

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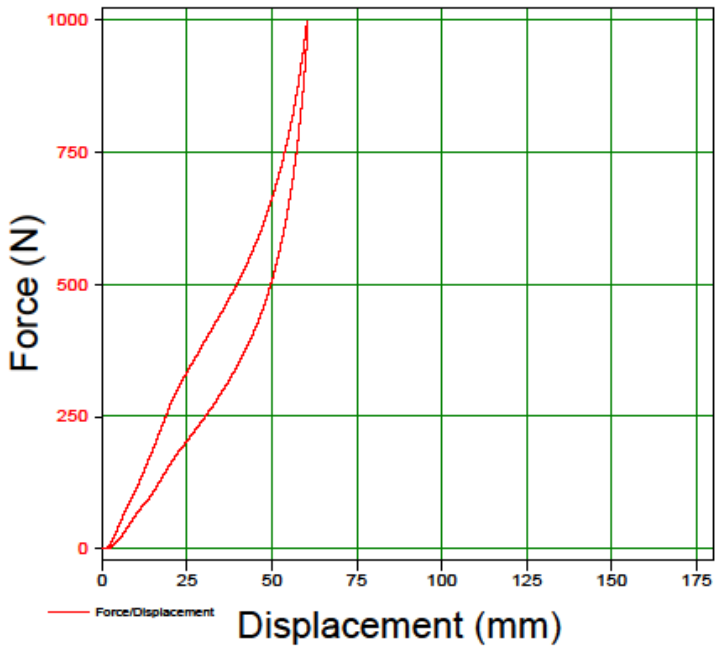
Furniture - Beds and mattresses
Test methods for the determination of functional characteristics and assessment criteria

BS EN 1957:2012

Customer: Pineapple contracts
Job Number: FUR9132Y9C1
Sample: Seat cushion 2 - 25mm grey foam and grey fabric
Technician: PG
Date: 03/01/2024 10:33:18

C1	16.447
C2	15.594
C3	10.668
H	14.236
A	7891.8
Hs	1.44



Graph 3: Showing 'Seat cushion 2 – 25mm grey foam and grey fabric' at 0 cycles

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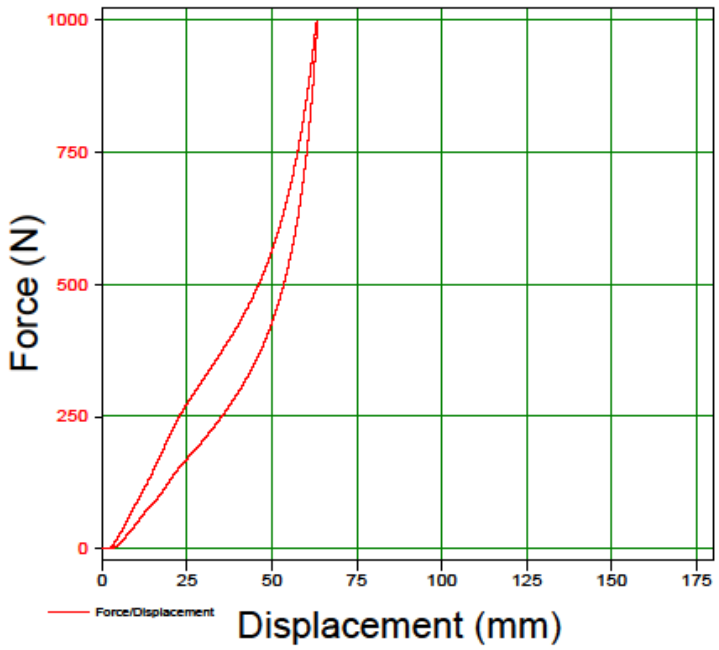
Furniture - Beds and mattresses
Test methods for the determination of functional characteristics and assessment criteria

BS EN 1957:2012

Customer: Pineapple
Job Number: FUR9132Y9C1
Sample: Seat cushion 2 - 25mm grey foam and grey fabric
Technician: PG
Date: 09/01/2024 09:45:04

C1	14.097
C2	9.787
C3	9.672
H	11.185
A	9147.1
Hs	2.20



Graph 4: Showing 'Seat cushion 2 – 25mm grey foam and grey fabric' at 80,000 cycles

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When reporting results against a conformance statement (Pass/Fail or the allocation of a class or level) then uncertainty of measurement is taken into account based on a non-binary acceptance which itself is based on the guard band being equal to the expanded uncertainty.

Where the result corrected for uncertainty falls within the tolerance of the conformance statement then the risk of the conformance statement being a false accept or false reject is up to 2.5% and SATRA will in this instance quote a Pass/Fail, class, or level.

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