



Test Report

Report No: 936656-9

Assignor: Hay ApS
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DK-8700 Horsens

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Jju/jha/hbs
Order no.: 936656
No. of appendices: 4

Item: Model: Palissade – the test covers the combinations shown in Appendix 4

Type:	Chair
Materials:	Painted metal

Sampling: The test material was sampled by the client and received at the Danish Technological Institute 16-09-2020.

Method: **EN 581-1:2017** Outdoor furniture – Seating and tables for camping, domestic and contract use – Part 1: General safety requirements

EN 581-2:2015/AC:2016 Outdoor furniture – seating and tables for camping, domestic and contract use – Part 2: Mechanical safety requirements and test methods for seating

EN 16139:2013 Furniture - Strength, durability and safety - Requirements for non-domestic seating.

Clauses 4.1, 4.2.3, 4.3.3, 5, 6.1.1, 6.1.2, 6.1.3, 6.1.5, 6.1.6, 6.1.8, 6.1.9, 6.1.10, 6.1.12, 6.1.13, 6.1.14, 6.1.15, 6.1.16.

L2: Extreme use: E.g. in night-clubs, police stations, transport terminals, sport changing rooms, prisons, barracks (non-controlled areas).

Period: The testing was carried out from 16-09-2020 to 19-10-2020.

Result: Model Palissade fulfils the requirements in EN 581-1:2017, EN 581-2:2015/AC:2016, and EN 16139:2013

Individual results appear from Appendices 1, 2 and 3.

Storage: The test material will be destroyed after 1 month, unless otherwise agreed.

Terms: Accredited testing was carried out in compliance with international requirements (EN/ISO/IEC 17025:2005) and in compliance with Danish Technological Institute's General Terms and Conditions regarding Commissioned Work accepted by Danish Technological Institute. The test results apply to the tested products only. This report may be quoted in extract only if the laboratory has granted its written consent.

Date/place: 19-10-2020, Danish Technological Institute, Wood and Biomaterials, Taastrup

Signature: Test responsible

Co-signatory



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 Appendix 1
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EN 581-1:2017

Test	Safety Requirements	Result
5.1	General	Passed
5.2	Tubular components	Passed
5.3	Shear and squeeze points	
5.3.1	Shear and squeeze points when erecting, adjusting and folding away	N/A
5.3.2	Shear and squeeze points under the influence of powered mechanisms	N/A
5.3.3	Shear and squeeze points during use	Passed

Reference is made to annexes A + B in EN 581-1:2017.

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EN 581-2:2015 - Test sequences and test parameters for other than loungers

Table 2

	Test	Reference	Test parameters	Camping	Domestic	Contract	Result
7	Safety, strength and durability requirements for other seating						
7.1	General						
7.2	Stability, strength and durability						
7.2.1	Test sequence and parameters:						
1	Seat static and back static load test ^a	Passed	Passed	1100 750 - - 10 1	1600 750 410 360 10 1	2000 750 560 500 10 1	Passed
2	Seat front edge static load	Passed	Passed	1100 750 10	1300 750 10	1300 750 10	Passed
3	Combined seat and back durability test	Passed	Passed	1000 750 250 220 12500	1000 750 333 300 25000	1000 750 333 300 50000	Passed
4	Durability test on seating with a multi-position back rest	N/A	N/A	750 190 5000	750 250 10000	750 250 20000	N/A
5	Arm rest static load test	N/A	N/A	- 10	700 10	900 10	N/A
6	Arm rest durability test	N/A	N/A	400 5000	400 10000	400 30000	N/A
7	Leg forward static load test	Passed	Passed	750 250 150 10	1000 300 175 10	1000 400 250 10	Passed

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	Test	Reference	Test parameters	Camping	Domestic	Contract	Result
8	Leg sideways static load test	Passed	Passed	750 200 150 10	1000 300 175 10	1000 300 200 10	Passed
9	Seat impact test	Passed	Passed	140 10	180 10	240 10	Passed
10	Footrest static test	N/A	N/A	- 10	1000 10	1200 10	N/A
11	Forward stability	Passed					Passed
12	Rearward stability	Passed					Passed
13	Sideways stability	Passed					Passed
7.2.2	Requirements The safety, strength and durability requirements are fulfilled after testing in accordance with Table 2 when: <ul style="list-style-type: none"> a) There are no fractures of any joint, member or component b) There is no loosening of joints intended to be rigid c) The seating fulfils its function after removal of the test loads d) The seating fulfils the safety requirements e) The product shall not overturn when subjected to the stability tests 						Passed
8.	Instructions for use						N/A
8.2	Marking						N/A

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Loading according to Test severity L2.

Test	Test Method	Cycles	Load	Result
4.1 General	EN 16139, 4.1			Passed
4.2.2 Shear and squeeze points under influence of powered mechanisms	EN 16139, 4.2.2			N/A
4.2.3 Shear and squeeze points during use	EN 16139, 4.2.3			Passed
4.3.2 Swivelling chairs	EN 1022/EN 1335			N/A
4.3.3 Non-swivelling chairs	EN 1022			Passed
4.4 Rolling resistance of the unloaded chair	EN 16139, 4.4			N/A
5 Strength and durability requirements	EN 16139, 5			Passed
6.1.1 Seat static load and back static load test	EN 1728:2012, 6.4	10 10	Seat: 2000 N Back: 700 N	Passed
6.1.2 Seat front edge static load	EN 1728:2012, 6.5	10	Seat: 1600 N	Passed
6.1.3 Vertical load on back rests	EN 1728:2012, 6.6	10	Back: 900 N Seat: 1800 N	Passed
6.1.4 Foot rest static load test	EN 1728:2012, 6.8			N/A
6.1.4 Leg rest static load test	EN 1728:2012, 6.9			N/A
6.1.5 Arm rest sideways static load test	EN 1728:2012, 6.10	10	900 N	N/A
6.1.6 Arm rest downwards static load test	EN 1728:2012, 6.11	5	900 N	N/A
6.1.7 Vertical upwards static load on arm rests	EN 1728:2012, 6.13			N/A
6.1.8 Combined seat and back durability test	EN 1728:2012, 6.17	200000 200000	Seat: 1000 N Back: 300 N	Passed
6.1.9 Seat front edge durability test	EN 1728:2012, 6.18	100000	800 N	Passed
6.1.10 Arm rest durability test	EN 1728:2012, 6.20	60000	400 N	N/A
6.1.11 Foot rest durability test	EN 1728:2012, 6.21			N/A
6.1.12 Leg forward static load test	EN 1728:2012, 6.15	10	Edge: 620 N) (Seat: 1800 N)	Passed
6.1.13 Legs sideways static load test	EN 1728:2012, 6.16	10	Edge: 760 N) (Seat: 1800 N)	Passed
6.1.14 Seat impact test	EN 1728:2012, 6.24	10	300 mm	Passed
6.1.15 Back impact test	EN 1728:2012, 6.25	10	330 mm / 48°	Passed
6.1.16 Arm Impact Test	EN 1728:2012, 6.26	10	330 mm / 48°	N/A
6.1.17 Drop test (multiple seating)	EN 1728:2012, 6.27.1	2x5	449 mm	Passed
6.1.18 Auxiliary writing surface static load test	EN 1728:2012, 6.14			N/A
6.1.19 Auxiliary writing surface durability test	EN 1728:2012, 6.22			N/A
7 Information for use	EN 16139, 7			N/A

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Photos

