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Order no. 686328-14
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# Test Report

Material: Model: Palissade Dining Bench – also covers Palissade Ottoman and Palissade Stool

| | | | | | |
|---|---|---|---|---|---|
| Type: | Chair | | | | |
| Length: | 1095 mm | Width: | 412 mm | Height: | 450 mm |
| Weight: | 9,90 mm | | | | |
| Materials: | Metal profiles | | | | |

Sampling: The test material was sampled by the client and received at the Danish Technological Institute 31-05-2016.

Method: **EN 581-2:2009** Outdoor furniture – Seating and tables for camping, domestic and contract use – Part 2: mechanical safety requirements and test methods for seating. Clauses: 6.1.2, 6.2, 6.2.1, 6.2.2, 6.2.3, 7, 7.1

**EN 1022:2005** Domestic furniture - Seating - Determination of stability.
**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 31-05-2016 to 25-07-2016.

Result: Model Palissade Bench fulfils the requirements in EN 581-2:2009, EN 1022:2005 and EN 16139:2013. Loading according to Test severity L2. Individual results appear from Appendices 1 and 2.

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

Terms: The test has been performed according to the attached conditions, which are according to the guidelines laid down by DANAK (The Danish Accreditation). The testing is only valid for the tested specimen. The test report may only be extracted, if the laboratory has approved the extract

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25-07-2016 Danish Technological Institute, Wood Technology, Taastrup

Lars Jeffers-Hansen
Test responsible

Per A. Nielsen
Co-reader

# Test of model: Palissade Bench

## EN 581-2 Test sequences and test parameters

| Test | Reference | Test parameters | Contract | Result |
|---|---|---|---|---|
| Seat and back static load test [a] | EN 1728:2000, 6.2.1 | Seat force N<br>10×10 s (±2s) + 1×30 min (±10s)<br>Back force, N<br>10×10 (±2s) + 1×30 min (±10s) | 2.000<br><br>560 max | Passed |
| Seat front edge static load test | EN 1728:2000, 6.2.2 | Force N<br>10×10 s (±2s) + 1×30 min (±10s) | 1300 | Passed |
| Seat and back fatigue test for seating [a] | EN 1728:2000, 6.7 | Cycles<br>Seat, force, N<br>Back: bending moment, Nm | 50.000<br>1.000<br>100 max | Passed |
| Fatigue test on back rest mechanism | See Annex A | Cycles<br>Seat load, kg<br>Force, N<br>Back: bending moment Nm | 20.000<br>100<br>250<br>100 | N/A |
| Arm downwards static load test | EN 1728:2000, 6.6 | Vertical force, N | 900[b] | N/A |
| Arm fatigue test | EN 1728:2000, 6.10 | Cycles<br>Force, N | 30.000<br>400 | N/A |
| Leg forward static load test | EN 1728:2000, 6.12 | Seat load, kg<br>Horizontal force, N | 100<br>400 | Passed |
| Leg sideways static load test | EN 1728:2000, 6.13 | Seat load, kg<br>Horizontal force, N | 100<br>300 | Passed |
| Seat impact test [c] | EN 1728:2000, 6.15 | Drop height, mm<br>10 times | 180 | Passed |
| Foot rail static test for high seating | EN 1728:2000, 6.4 | Vertical force, N | 1.200 | N/A |
| Forward stability [d e] | EN 1022 | | | Passed |
| Rearward stability [d] | EN 1022 | | | Passed |
| Sideways stability [d e] | EN 1022 | | | Passed |

| | |
|---|---|
| a | If seat and back are of one piece of flexible material (e.g. textile), only the tests on seat shall be carried out. |
| b | If arm rest is less than 15 mm wide, carry out test with 700 N for contract use |
| c | The application point shall be at least 100 mm from the front edge. This test shall not be carried out on seating with a seat height > 600 mm |
| d | In the case of seating, which might not fulfil the stability requirements before carrying out any tests, the applicable stability tests may be carried out before starting the sequence of tests specified in this table. |
| e | This test is not applicable for seating with a seat height <200 mm and a mass <5 kg. The height shall be determined by measuring from the floor to the upper seating area on the geometrical centre of the unloaded seat |

# Test of model: Palissade Bench

| | Result |
|---|---|
| **6.2 Requirements**<br><br>**6.2.1 General safety requirements**<br>The general safety requirements specified in EN 581-1 shall be fulfilled. | Passed |
| **6.2.2. Stability requirements**<br>The stability requirements specified in EN 1022 shall be fulfilled. | Passed |
| **6.2.3 Mechanical safety requirements**<br>The requirements are fulfilled during and after testing in accordance with Table 1 when:<br><br>a) There are no fractures of any point, member or component<br>b) There is no loosening of joints intended to be rigid<br>c) The seating fulfils its function after removal of the test loads | Passed |
| **7. Instruction for use**<br><br>**7.1. General**<br>Instruction for use shall be provided in the language(s) of the country where the tables are sold. These instructions shall be headed "IMPORTANT, RETAIN FOR FUTURE REFERENCE: READ CAREFULLY" in letters no less than 5 mm high.<br><br>These instructions shall include at least the following:<br><br>a) Name and address of the producer (manufacturer or supplier)<br>b) Information regarding maintenance<br>c) Conditions for use of the product (camping, domestic or contract) | N/A |

# Test of model: Palissade Bench

## EN 16139 - 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 | | | 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<br>10 | Seat: 2000 N<br>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<br>Seat: 1800 N | N/A |
| 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<br>200000 | Seat: 1000 N<br>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)<br>(Seat: 1800 N) | Passed |
| 6.1.13 Legs sideways static load test | EN 1728:2012, 6.16 | 10 | Edge: 760 N)<br>(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 | | | 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 |

# Test of model: Palissade Bench

## Photo

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The general conditions pertaining to assignments accepted by Danish Technological Institute shall apply in full to the technical testing or calibration at Danish Technological Institute and to the completion of test reports or calibration certificates within the relevant field.

**Danish Accreditation (DANAK):**
DANAK is the national accreditation body in Denmark in compliance with EU regulation No. 765/2008.

DANAK participates in the multilateral agreements for testing and calibration under European co-operation for Accreditation (EA) and under International Laboratory Accreditation Cooperation (ILAC) based on peer evaluation. Accredited test reports and calibration certificates issued by laboratories accredited by DANAK are recognized cross border by members of EA and ILAC equal to test reports and calibration certificates issued by these members' accredited laboratories.

The use of the accreditation mark on test reports and calibration certificates or reference to accreditation, documents that the service is provided as an accredited service under the company's DANAK accreditation according to EN ISO IEC 17025.

**Construction Product Directive:**
The Danish Technological Institute guarantees that employees carrying out tests to be used together with harmonized standards under notification no. 1235 according to EU regulation 305/2011, article 43, satisfy all the requirements made for capability, integrity and impartiality. You find the CPR here:
http://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/construction-products/index_en.htm

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