REPORT
issued by an Accredited Testing Laboratory

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Accred. No. 1002
Testing
ISO/IEC 17025

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# Testing of storage furniture according to EN 16121:2013

(3 appendices)

| | |
|---|---|
| **Customer:** | Sweop AB |
| **Test object/ID:** | Cloakroom storage/BST |
| **Test methods:** | EN 16121:2013 Non-domestic storage furniture – Requirements for safety, strength, durability and stability, test severity 1 |
| **Test environment:** | 23 ± 2ºC and 50 ± 5% relative humidity |
| **Scope:** | Complete test |
| **Date of test:** | 2017-03-01 – 2017-03-14 |
| **Test result:** | The tested object passed the test |
| **Reservation:** | The test results in this report apply solely to the specimen tested |
| **Additional information:** | Note. Seat bench ST-070305 is tested in accordance with parts of EN 16139:2013 Furniture - Strength, durability and safety - Requirements for non-domestic seating. Test level 1<br>See table 5 in appendix 1 |

## SP Technical Research Institute of Sweden
### Building Technology - Wood Technological Assessment

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**Appendices**

1. Test result (5 pages)
2. Description of test object (1 page)
3. Pictures (2 pages)

## Test result

Abbreviations: N/A = Not applicable
N/T = Not tested

**Table 1**

| 1. | General requirements EN 16121 clause 5.2 – 5.5 | Result |
|---|---|---|
| 1.1 | Accessible edges and corners shall be free from burrs and rounded or chamfered. There shall be no open ended tubes.<br>All moveable parts accessible during normal use shall have safety distances in any position during movement of ≤ 8 mm or ≥ 25 mm. This applies to any two elements moving relatively to each other, with the exception of doors, flaps and extension elements. The safety distance also applies to the distance between handles and other parts.<br>Adjustable parts shall be such as to prevent in advertent operation or release.<br>Vertically sliding roll fronts shall not close by themselves from any position higher than 200 mm measured from the closed position.<br>Extension elements shall have effective open stops. They shall resist being pulled out of the carcass once by a horizontal force of 200 N applied to the handle of the loaded extension element.<br>Load bearing parts of the storage unit shall not come loose unintentionally.<br>Safe height for vertically moving units shall be at least 100 mm from the floor.<br>Horizontal lids that are 1 000 mm or less from the floor and weigh 0,25 kg or more, that are hinged, shall be provided with lid-support mechanisms.<br>Any external, vertical glass component which is less than 900 mm above the floor , shall not break or become detached, when impacted once in accordance with EN 14072:2003, Clause 5, with a drop height of 70 mm | Pass |

**Table 2**

| 2. | Stability test | EN 16121 | Loading | Result |
|---|---|---|---|---|
| 2.1 | Doors, extension elements and flaps closed, all storage units unloaded - Units that are, or can be, adjusted to a height of 1000 mm or less | 5.6.1 | Vertical 750 N | N/A |
| 2.2 | Doors, extension elements and flaps closed, all storage units unloaded - Units that are, or can be, adjusted to a height of more than 1 000 mm | 5.6.2 | Vertical 350 N Outward 50 N | Pass (55N) |
| 2.3 | All storage areas unloaded and all doors, extension elements and flaps open | 5.6.3 | | N/A |
| 2.4 | All storage areas unloaded with overturning load | 5.6.4 | Vertical 100 N | N/A |
| 2.5 | All storage areas loaded with overturning load | 5.6.5 | Vertical Max. 300N | N/A |
| 2.6 | Doors, extension elements and flaps closed and locked | 5.6.6 | Outward 100N | N/A |
| 2.7 | Dynamic stability test for units with castors | 5.6.7 | | N/A |

**Table 3**

| 3. | Structural safety tests | EN 16121 | Cycles | Loading | Result |
|---|---|---|---|---|---|
| 3.1 | Static load test for tops and bottoms<br>- Top<br>- Bottom | 5.7.1.1 | 10 | 750 N | <br>N/A<br>N/A |
| 3.2 | Shelf retention test – horizontal outward | 5.7.1.2 | 1 | 50 % of unloaded shelf weight | N/A |
| 3.3 | Shelf retention test – vertical downward | 5.7.1.3 | 1 | 100 N | N/A |
| 3.4 | Strength of shelf supports | 5.7.1.4 | 10 | 0.65kg/dm$^2$ Impact plate 2.5 Kg | N/A |
| 3.5 | Vertical load on pivoted doors<br>Note. This test is only applicable to doors with a total mass > 10 kg or door with a potential energy > 65 Nm | 5.7.1.5 | 10 | 30 kg | N/A |
| 3.6 | Horizontal load on pivoted doors<br>Note. This test is only applicable to doors having a maximum opening angle of 135° or less | 5.7.1.6 | 10 | 60 N | N/A |
| 3.7 | Strength of bottom-hinged flaps | 5.7.1.7 | 10 | 200 N | N/A |
| 3.8 | Strength of extension elements | 5.7.1.8 | 10 | 200 N | N/A |
| 3.9 | Slam shut and open of extension elements | 5.7.1.9 | 1 | Annex A EN 16122 | N/A |
| 3.10 | Interlock test | 5.7.1.10 | 10 | 200 N | N/A |
| 3.11 | Test for structure and underframes | 5.7.1.11 | 10 | 350 N | Pass |
| 3.12 | Test for unit with castors or wheels | 5.7.1.12 | 2 000 | Table 1 EN 16121 | N/A |
| 3.13 | Overload test<br>Note. This test is only applicable for units not supported by the floor | 5.7.1.13 | 1 | 2,5/dm$^2$ | Pass [1] (116 kg) |
| 3.14 | Dislodgement test<br>Note. This test is only applicable for units not supported by the floor | 5.7.1.14 | 1 | 100 N | Pass [2] |
| 3.15 | Horizontal outwards static load test<br>Note. This test is only applicable for units mounted to the building or other structure and supported by the floor | 5.7.1.15 | 1 | 200 N | N/A |

[1] Test performed on hat rack BST-040305
[2] The device is secured with a dislodgement protection, see figure 5 in appendix 3

**Table 4**

| | Strength & durability tests | EN 16121 | Cycles | Loading | Result |
|---|---|---|---|---|---|
| 4.1 | Strength of clothes rail supports | 6.1.1 | 1 h | 4 kg/dm | Pass (40 kg) |
| 4.2 | Strength of coat hooks | 6.1.2 | 10 | 40 N / hook | Pass (80 kg) |
| 4.3 | Durability of pivoted doors | 6.1.3 | 40 000 | 2x1 kg | N/A |
| 4.4 | Slam shut test of pivoted doors | 6.1.4 | 10 | 3 kg | N/A |
| 4.5 | Slam shut/open of sliding doors and horizontal roll fronts | 6.1.5 | 10 | 4 kg | N/A |
| 4.6 | Durability of sliding doors horizontal roll fronts | 6.1.6 | 20 000 | - | N/A |
| 4.7 | Durability of horizontal roll fronts | 6.1.6 | 10 000 | - | N/A |
| 4.8 | Durability of flaps | 6.1.7 | 10 000 | - | N/A |
| 4.9 | Durability of vertical roll fronts | 6.1.8 | 10 000 | - | N/A |
| 4.10 | Durability of extension elements | 6.1.9 | 40 000 | 0.2 kg/dm$^3$ | N/A |
| 4.11 | Slam shut and open of extension elements | 6.1.10 | 1 | 1.3 m/s | N/A |
| 4.12 | Displacement of extension element bottoms | 6.1.11 | 10 | 60 N | N/A |
| 4.13 | Strength test for locking and latching mechanisms for extension elements | 6.1.12 | 10 | 200 N | N/A |
| 4.14 | Strength test for locking and latching mechanisms for doors, flaps and roll fronts | 6.1.13 | 10 | 200 N | N/A |
| 4.15 | Deflection of shelves Requirement max 0.5% of the items length | 6.1.15 | 1 week | 1.5 kg/dm$^2$ | N/A |
| 4.16 | Deflection of shelves made of metal, glass and stone Requirement max 0.5% of the items length | 6.1.15 | 1 h | 1.5 kg/dm$^2$ | N/A |
| 4.17 | Dislodgement of clothes rails | 6.1.16 | 1 week | 5 kg/dm | N/A |
| 4.18 | Dislodgement of clothes rails made of metal | 6.1.16 | 1 h | 5 kg/dm | Pass (50 kg) |
| 4.19 | Drop test for trays | 6.1.17 | 10 | 350 mm | N/A |
| 4.20 | Sustained load test for trays | 6.1.18 | 1 week | 0.65 kg/dm$^3$ | N/A |

Additional tests on seat bench BST-070305

**Table 5**

| **5.** | **Strength, durability** | **Reference EN 1728** | **Cycles** | **EN 16139 level 1** | **Result** |
|---|---|---|---|---|---|
| 5.1 | Seat static load test<br>Centre position | 6.4 | 10 | Seat: 1600 N | Pass |
| 5.2 | Seat static load test<br>Corner position | 6.4 | 10 | Seat: 1600 N | Pass |
| 5.3 | Vertical seat impact test | 6.24 | 10x2 | 240 mm | Pass |
| 5.4 | Horizontal seat impact test | 6.25 | 10 | 210 mm/38° | Pass |

Appendix 2

## Description of test object

| | |
|---|---|
| Test object/ID: | Cloakroom storage/BST |

**Dimensions**

| | |
|---|---|
| Width: | 1000 mm |
| Depth: | 640 mm |
| Height: | 2000 mm |
| Mass: | 37.3 kg (complete system) |

**Components**

| | |
|---|---|
| Base/frame BST-DG2000: | Square metal tube 45x25 mm |
| Hat rack BST-040305: | Sheet metal, coat hooks in plastic |
| Rail with coat hooks BST-080105: | Sheet metal, coat hooks is metal |
| Combined seat bench with shoe rack BST-070305: | Shoe rack in sheet metal<br>Seat bench in laminated particleboard 26 mm |

| | |
|---|---|
| Sampling: | The test object was selected by the customer |
| Date of arrival at SP test laboratory: | 2017-01-27 |
| Observed defects before testing: | No defects |

Appendix 3

**Pictures**

**Figure 1 BST cloakroom storage**

Appendix 3

**Figure 2 Seat bench with shoe rack**

**Figure 3 Rail with coat hooks**

**Figure4 Hat rack with clothes rails and hooks**

**Figure 5 Dislodgement protection**