

Essem Design AB
Nennesmovägen 9
334 33 ANDERSTORP
SWEDEN

Testing of storage furniture according to EN 16121:2013+A1:2018

(3 appendices)

Customer:	Essem Design AB
Test object/ID:	Hat shelf/Sara
Test methods:	EN 16121:2013+A1:2018 Non-domestic storage furniture – Requirements for safety, strength, durability and stability, test severity 1
Test environment:	23 ± 2°C and 50 ± 5% relative humidity
Scope:	Complete test
Date of test:	2022-10-14 – 2022-10-28
Test result:	The tested object passed the test
Reservation:	The test results in this report apply solely to the specimen tested
Measurement uncertainty:	Decision rule according to EN ISO IEC 17025:2018 clause 3.7 No account is taken of measurement uncertainty when reporting numerical results

RISE Research Institutes of Sweden AB Department Building and Real Estate - Technical Wood Assessment

Performed by

Examined by

Lukas Andersson

Lukas Andersson

Bengt-Åke Andersson

Bengt-Åke Andersson

Appendices

1. Test result (4 pages)
2. Test object (1 page)
3. Pictures (1 pages)

RISE Research Institutes of Sweden AB

Postal address

Box 857
501 15 BORÅS
SWEDEN

Office location

Brinellgatan 4
504 62 Borås
SWEDEN

Phone / Fax / E-mail

+46 10-516 50 00
+46 33-13 55 02
info@ri.se

This report may not be reproduced other than in full, except
with the prior written approval of the issuing laboratory.



Accred. No. 1002
Testing
ISO/IEC 17025

Appendix 1

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. 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, except for doors, flaps and extension elements. The safety distance also applies to the distance between handles and other parts. Adjustable parts shall be such as to prevent in advertent operation or release. Vertically sliding roll fronts shall not close by themselves from any position higher than 200 mm measured from the closed position. 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. Load bearing parts of the storage unit shall not come loose unintentionally. Safe height for vertically moving units shall be at least 100 mm from the floor. 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. 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

Appendix 1

Note. Stability tests are not applicable for units attached to the building

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	N/A
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 = 20% of total mass ¹ (max 300 N)	5.6.5	Vertical	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	Speed of 0.5 m/s towards a stop	N/A

¹ Total mass = The weight of the unit + total load according to table 2 in EN 16121:2013+A1:2018

Appendix 1

Table 3

3.	Structural safety tests	EN 16121	Cycles	Loading	Result
3.1	Static load test for tops and bottoms - Top - Bottom	5.7.1.1	10	750 N	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 1.7 Kg	N/A
3.5	Vertical load on pivoted doors 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 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	N/A
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 Note. This test is only applicable for units not supported by the floor	5.7.1.13	1	2.5 kg/dm ²	Pass 65 kg
3.14	Dislodgement test Note. This test is only applicable for units not supported by the floor	5.7.1.14	1	100 N	N/A
3.15	Horizontal outwards static load test 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

Appendix 1

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
4.2	Strength of coat hooks	6.1.2	10	40 N / hook	Pass
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 item's 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 item's 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
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

Appendix 2

Test object

Test object/ID: Hat shelf/Sara

Dimensions ¹

Width: 1200 mm

Depth: 335 mm

Height: 325 mm

Mass: 6.4 kg

Components

Frame: Metal, 20 x 21 mm

Shelves: Wooden slats, 20 x 20 mm

Clothes rail: Metal, Ø 19 mm

Hooks: Aluminium

Sampling: The test object was selected by the customer

Date of arrival at 2022-10-05

RISE test laboratory:

Observed defects before testing: No defects

¹ The dimensions are only intended to unambiguously identify the test object and do not claim to be metrologically accurate

Appendix 3

Pictures



Figure 1 The image is taken from the manufacturer's website



Figure 2

Verification

Transaction 09222115557484162362

Document

1148536B Essem Sara Hat shelf

Main document

7 pages

Initiated on 2022-12-28 13:56:37 CET (+0100) by Bengt-

Åke Andersson (BA)

Finalised on 2022-12-28 13:58:18 CET (+0100)

Signing parties

Bengt-Åke Andersson (BA)

RISE Research Institutes of Sweden AB

Company reg. no. 556464-6874

bengt-ake.andersson@ri.se



Signed 2022-12-28 13:57:05 CET (+0100)

Lukas Andersson (LA)

Research Institutes of Sweden AB

Company reg. no. 556464-6874

lukas.andersson@ri.se



Signed 2022-12-28 13:58:18 CET (+0100)

This verification was issued by Scrive. Information in italics has been safely verified by Scrive. For more information/evidence about this document see the concealed attachments. Use a PDF-reader such as Adobe Reader that can show concealed attachments to view the attachments. Please observe that if the document is printed, the integrity of such printed copy cannot be verified as per the below and that a basic print-out lacks the contents of the concealed attachments. The digital signature (electronic seal) ensures that the integrity of this document, including the concealed attachments, can be proven mathematically and independently of Scrive. For your convenience Scrive also provides a service that enables you to automatically verify the document's integrity at: <https://scrive.com/verify>

