

Testing the surface and edge of a furniture door in accordance with SFS 4969 requirements

Determination of resistance to humidity of a furniture door in accordance with VTT method M/250/08

1 Customer: Kensapuu Oy

---

**Customer** KensapuuOy  
Timo Mäkelä  
Targantie 9  
68100 HIMANKA

**Order** Email 12 January 2012, T. Mäkelä

**Contact person** **VTT Expert Services Oy**  
Technical expert Ilpo Saarinen  
Kemistintie 3, Espoo  
PL 1001, 02044 VTT  
Tel. 020 722 5568  
Fax 020 722 7003  
Email ilpo.saarinen@vtt.fi

---

**Assignment** **Testing the surface and edge of a furniture door in accordance with SFS 4969 requirements.**

**Determination of resistance to humidity of a furniture door in accordance with VTT method M/250/08.**

**Samples** Doors supplied by the customer on 9 January 2012.

**Date and place of testing**

The furniture doors were tested on 10-20 January 2012 at the premises of VTT Expert Services Oy.

**Structures tested** Material information notified by the customer.

Product name: Aaria  
Door size: 16 mm x 396 mm x 704 mm  
Panel: MDF, Kronospan, density 780 kg/m<sup>3</sup>  
Coating: Glossy white PVC foil (made by Bonlex), backing melamine paper 100kg/m<sup>3</sup>  
Adhesive used: Kiilto Akvapur 2000 + hardener C 5%  
Pressing method: Membrane pressing (pre-heating, vacuum, pressing)

**Testing**

The surface tests were conducted on the cabinet door in accordance with the SFS 4969 testing methods and requirements mentioned in Table 1. In addition, resistance of the edge to heat at 85°C.

Resistance to humidity was tested in accordance with method M/250/08 and the results were examined in accordance with the requirements of the method.

---

The test results are valid only for the samples tested.

---

**Test results**

Table 1 shows the surface testing results.

Table 2 shows the resistance to humidity results.

Table 1. Door panel surface test results. VTT-ES No. 506-4 and 506-11.

Property	Test method	Requirement	Result
Resistance to water	SFS 3756	6 h	5
Resistance to grease	SFS 3756	6 h	5
Resistance to coffee	SFS 3756	1 h	5
Resistance to alcohol	SFS 3756	1 h	5
Resistance to detergent	SFS 3756	1 h	5
Resistance to blackcurrant juice	SFS 3756	1 h	5
Resistance of edge to humidity	SS 839120	1 h	5
Resistance to scratches 3N	SIS 839117	0.5 mm	No trace
Resistance of surface to impact	SS 839123	50 mm	ø 3.2 mm (4)
Resistance of edge to impact	SS 839123	25 mm	ø 2.8 mm (3)
Resistance of edge to heat at 85°C	NS 8061	Not for doors	0.02mm (5)

Table 2. Biggest swelling changes in the doors after different rounds of sprinkling. Measuring point in parentheses.

Door	1 <sup>st</sup> sprinkling Change (mm)	2 <sup>nd</sup> sprinkling Change (mm)	3 <sup>rd</sup> sprinkling Change (mm)	4 <sup>th</sup> sprinkling Change (mm)	5 <sup>th</sup> sprinkling Change (mm)
1(D)	0.00	0.01	0.01	0.01	0.01
2(A)	0.00	0.00	0.00	0.01	0.01
3(A)	0.00	0.00	0.00	0.01	0.02

**Examination of results** Under SFS 4969, the acceptable result for liquids is 4 and 5.

Under SFS 4969, the acceptable width for resistance to scratching is 0.5 mm.

Under SFS 4969, no requirement has been given for resistance of the door edge to heat. (The requirement for a table leaf is 4 or 5 at a temperature of 80°C/1 h.).

Under SFS 4969 the acceptable result in resistance to the impact test is  $\delta \leq 4$  mm for the surface and  $\delta \leq 5$  mm for the edge.

The figure in parentheses is the assessment of impact traces in accordance with the instructions under standard SS839123.

The doors comply with the requirements of SFS 4969 with regard to the properties tested.

Under method M/250/08, damage is considered as being a swelling of more than 0.25 mm or a visible structural change.

Measurement: Six measuring points were marked on the test samples so that four measuring points (A-D) are 2 mm from the bottom edge of a consistently thick area and two (A and D) of these four measuring points are in the corners of the sample and the two others at regular intervals along the bottom edge or at the most critical points on the edge. Two other points (E and F) are above the bottom edge of the sample, one on each side edge. The thickness of the samples was measured at these points before the test and after each sprinkling/drying period.

In Table 2, the measuring point A-F is indicated in parentheses after the door number.

The result is the number of sprinklings the side withstood without damage. Under the method, the maximum number of sprinklings is five, which is the requirement for wet room furniture.

The doors withstood sprinkling five times without damage. The results are valid only for the samples tested.

Espoo, 25 January 2012

Max Johansson  
Team manager



Ilpo Saarinen  
Technical expert

**Distribution**

Customer  
Archive

Original  
Original

---