

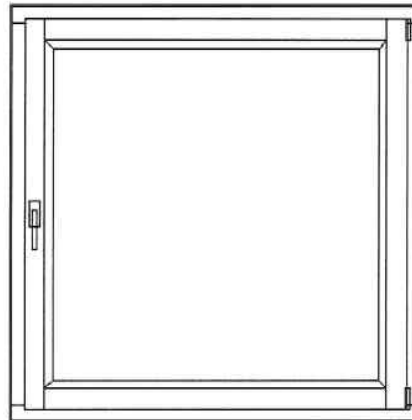
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SIA "Stali"
Priekule pagasts
LV-4126 CESU RAJ
Lettland

Determination of air permeability, watertightness, resistance to wind load and operating forces

Test object

Manufacturer: SIA "Stali"
Type: IV 68 (see attached data sheet)
Size: 1180 x 1180 mm
Condition at arrival: No visible damage
Date of arrival: 2009-11-16
Date of testing: 2009-11-19
SP's serial number: 1123



Watertightness according to SS-EN 1027 method A up to 900 Pa

No leakage

The window meets the requirements for class E900 according to EN 12208.

Resistance to wind load according to SS-EN 12211 class 3

Deflection test up to 1200 Pa

Pressure, Pa	Deflection, mm	
	Upper casement member (measuring length = 1066 mm)	Lower casement member (measuring length= 1066 mm)
0	-0,1	0,2
1200 positive pressure	0,3	0,5
1200 negative pressure	-0,4	-0,2

The maximum relative frontal deflection was 0,35 per mille (requirement: <3,3 per mille according to EN 12210 class C)

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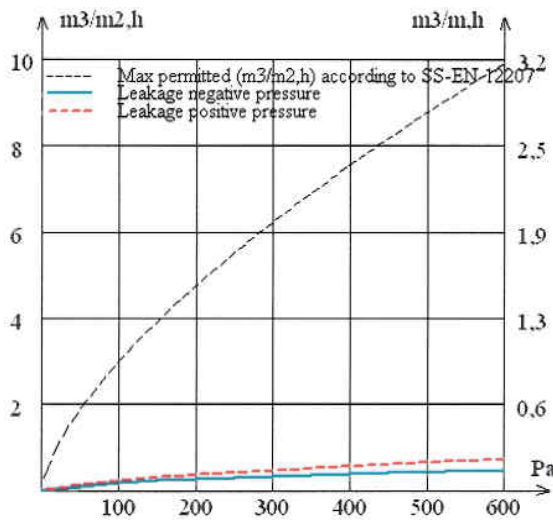
Repeated pressure test up to 600 Pa and safety test up to 1800 Pa

No damage noted.

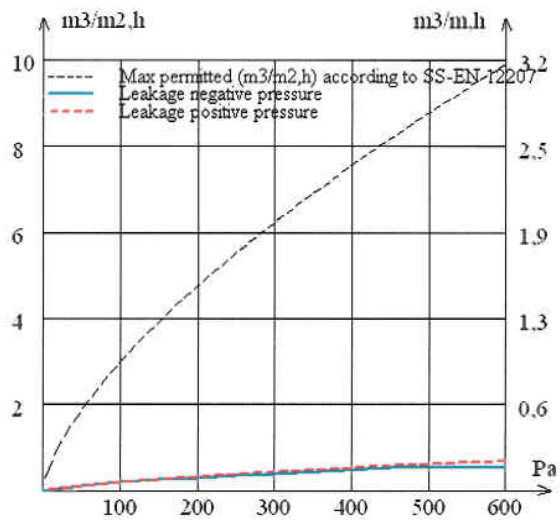
The window meets the requirements for class 3 according to EN 12210.

Air permeability: Testing according to SS-EN 1026 up to 600 Pa

Before windloading



After windloading



The window meets the requirements for class 4 according to EN 12207

Operating forces according to SS-EN 12046-1

Opening force = 26 N

Closing force = 48 N

The window meets the requirements for class 1 according to EN 13115.

Conditions of test

The test results refer only to the tested object.

Equipment used:	Test rig invnr 202206 and measuring equipment invnr 200746
Estimated error margin:	Air pressure difference ± 2 Pa, air flow ± 5 %, deformation (wind load) $\pm 0,1$ mm and manoeuvrability ± 10 %
Test climate:	Air temperature 20 °C, RH 40 %, air pressure 980 hPa
Water temperature:	According to the standard
Conditioning:	Laboratory climate after arrival to SP

SP Technical Research Institute of Sweden
Energy Technology – Building Physics and Indoor Environment


 Börje Gustavsson
 Technical Manager


 Richard Dawson
 Technical Officer


TILT & TURN WINDOW
Wood:

Glued pinewood (fingerjointed/engineered). Glued together lengthwise and through thickness .

Dimensions:

Frame: 68 mm x 82 mm

1V 68

Casement: 68 mm x 82 mm

Minimal and maximal Sizes:

Max width: 1500mm to heigh 1500mm

Min width:410mm

Max heigh:2400mm to width 1000mm

Min heigh :450mm

Description:

Pilkington 2-glass bundle , with Thermix TX.N. spacer, product code 4-16Ar-S(3)4 (total depth 24mm); U value 1.1 W/m2K. Sound reduction Rw(C;Ctr)dB 29(-1;-4)

Painting

Impregnation: Induline GL-350

Prime coating: ZW-400

Colour: DW 690

Fittings:

Hinges : Roto NT

Sealing materials: DEVENTER

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Adrese:

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Reģ. Nr. LV49503004934



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Sia „Stali”
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LV-4126
Lettland

Determination of thermal transmittance using the guarded hot-box method in accordance with EN ISO 12567

(3 appendices)

Test specimen

The test specimen was a wooden window, tilt and turn IV68, with outer dimensions 1.185 m x 1.185 m (see appendix 1 and 3) The window arrived undamaged at SP, ETi in November 16, 2009.

Test procedure

The window was mounted in a 150 mm thick wall made of expanded polystyrene flush with the warm face. Natural convection was used in the metering box, and forced convection on the cold side. See appendix 2.

Results

The thermal transmittance for the window was found to be:

$$U = 1.3 \text{ W}/(\text{m}^2 \text{ K})$$

The results which only refer to the tested product are shown in greater detail in appendix 3.

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