

SIA "Stali"
Kingas, Priekulu pagasts,
Priekulu novads
LV-4126
Latvia

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

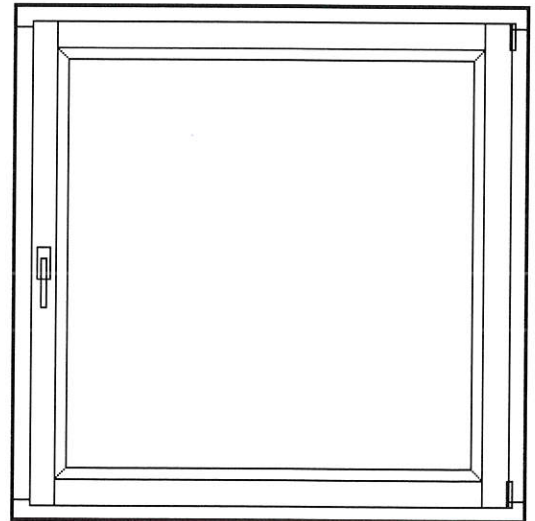
(2 appendices)

Test object

(See attached figures, description and drawings in appendices)

Manufacturer: SIA "Stali"
Type: IV 90/90, Climatrend composite,
tilt and turn inwards opening window
Size: 1180 x 1180 mm
Condition at arrival: No visible damage
Date of arrival: 2015-06-17
Date of testing: 2015-06-26
SP's serial number: 1882

The test object was chosen and supplied by the client and mounted in the test rig by SP.



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

No leakage.

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

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

Deflection test up to 1200 Pa

Pressure, Pa	Deflection, mm	
	Upper horizontal casement member, (measuring length = 1080 mm)	Hinge side vertical casement member, (measuring length = 1080 mm)
0	-0.1	-0.3
1200 positive pressure	0.1	0.5
1200 negative pressure	-0.3	0.5

The maximum relative frontal deflection was 0.18 per mille (requirement: <3.3 per mille according to SS-EN 12210 class C)

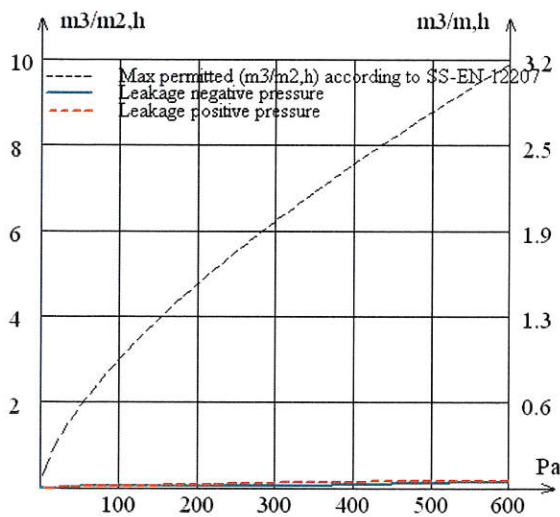
Repeated pressure test up to 600 Pa and storm safety test up to 1800 Pa

No damage noted.

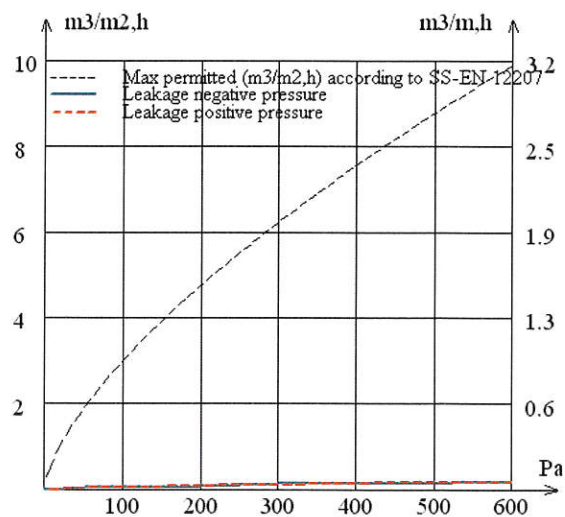
The window meets the requirements for class C3 according to SS-EN 12210.

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

Before wind load:



After wind load:



The window meets the requirements for class 4 according to SS-EN 12207 both before and after wind load

Operating forces according to SS-EN 12046-1

Opening torque (mean value of three measurements) = 3.3 Nm

Closing torque (mean value of three measurements) = 3.7 Nm

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

(opening and closing torques shall be maximum 10 Nm).

Conditions of test

The test results refer only to the tested object.

Equipment used:	Test rig invnr 900912 and measuring equipment invnr 200746
Air tightening against the test rig:	On the test objects inside face.
Estimated error margin:	Air pressure difference ± 2 Pa and air flow ± 5 %
Test climate:	Air temperature 20,5 °C, RH 42 %, air pressure 994 hPa
Water temperature:	According to the standard
Conditioning:	Laboratory climate after arrival to SP

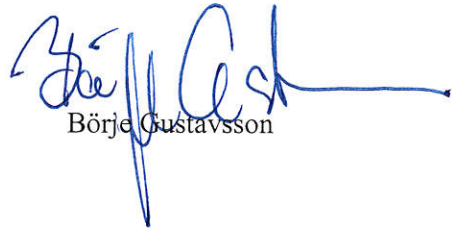
SP Technical Research Institute of Sweden Sustainable Built Environment - Building Physics and Indoor Environment

Performed by



Richard Dawson

Examined by



Börje Gustavsson

Appendices

Appendix 1: Figures of the test object.

Appendix 2: Description, drawings and material technical information of the test object.