

Test report
No. 101 24993/1Rev1e*)



Date of report 17 May 2004

Customer **GEALAN Werk**
Fickenscher GmbH
Hofer Strasse 80
95145 Oberkotzau

Object Window system „S 8000 IQ“
Frame material: PVC-U/ white

Order System test to obtain the RAL quality mark

Basis of testing and assessment Quality and test regulations for plastic windows
RAL GZ 716/1: 2000-1

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– Description and section of test specimen	
– Measured and specific results of partial testing	

*) The present test report is a translation of the test report No. 101 24993/1Rev.1 of 17 May2004.



4 Validity

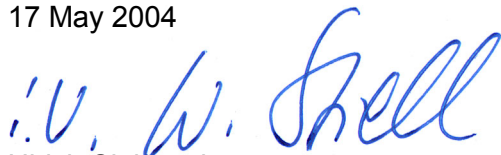
The test values given in the present test report refer exclusively to the test specimen tested and described in Encl 2.

The test results can be applied to the dimensions specified in the system description only if

- design and type of hinge remain unchanged,
- appropriate control measures are taken to ensure unchanged quality of workmanship,
- materials used and workmanship applied will meet the description of the present test report.

The present test report is a translation of the test report No. 101 24993/1Rev.1 of 17 May2004.

ift Rosenheim
17 May 2004



Ulrich Sieberath
Director



Markus Egli
System Testing Department

Special guidance for the use of the ift test reports

As specified by RAL-GZ 716/1, Section III, use of the test report for the award of the RAL-quality mark is limited to a maximum period of 5 years, i.e. until 16 May 2008, provided that the system has not been modified in the meantime.

The approval of the RAL quality assurance system can be extended by a maximum of up to 5 years upon request and examination of any possible system modifications.

The Guide enclosed "Conditions and notes for the use of ift test documents" specifies the rules for using such test reports.

Test certificate
No. 101 24993/1Rev1e*)



Order Testing a plastic window system according to RAL-GZ 716/1, Section III : 2000-01

Customer **GEALAN Werk**
Fickenscher GmbH
Hofer Straße 80
95145 Oberkotzau

System „S 8000 IQ“
Frame material PVC-U/ white
Opening type Parallel sliding tilting

System description Verified version of February 2002

Result


Based on the tests specified in the test report 101 24993/1 of 16 May 2003, this is to certify that the window system „S 8000 IQ“ meets the requirements of Section III of the quality and test regulations for plastic windows RAL GZ 716/1 : 2000-01.

Validity

The present test certificate shall be valid until modification of the system, at most for a maximum period of 5 years until 16 May 2008.

The present test report is a translation of the test report No. 101 24993/1Rev.1 of 17 May 2004.

ift Rosenheim
17 May 2004


Ulrich Sieberath
Director


Markus Egli
System Testing Department

Guidance for the use of the ift-test reports

The Guide enclosed “Conditions and notes for the use of ift test documents” specifies the rules for using such test reports.



Applicable standards and guidelines

The procedure and extent of testing are specified by the quality and test regulations for plastic windows RAL GZ 716/1, Section III: 2000-01.

The relevant test standards are as follows:

prEN 12046-1 : 1982-06	Windows - Operating forces – Test method,
DIN EN 1026 : 2000-09	Windows and Doors – Air permeability – Test method,
DIN EN 1027 : 2000-09	Windows and Doors – Water tightness – Test method,
DIN EN 12211 : 2000 -12	Windows and Doors – Resistance to wind load – Test method,
prEN 947-1:1999	Windows – Resistance to vertical load,
prEN 948-1:1999	Windows – Resistance to static torsion,
DIN EN 1191 : 2000-08	Windows and Doors – Resistance to repeated opening and closing – Test method

The relevant classification standards are as follows:

prEN 13115 : 2000-11	Windows – Classification of mechanical properties - Racking, torsion and operating forces,
DIN EN 12207 : 2000-06	Windows and Doors – Air permeability – Classification,
DIN EN 12208 : 2000-06	Windows and Doors – Water tightness – Classification,
DIN EN 12210 : 2000-06	Windows and Doors – Resistance to wind load – Classification,
DIN 18055 : 1981-10	Windows - Air permeability, water tightness and mechanical strain; requirements and testing

Test specimen 1 Parallel sliding tilting door

Project-No. 101 24993
System owner GEALAN WERK Fickenscher GmbH
Profile series S 8000 IQ
Inspectors Mr. Skora, Mr. Hannover, Mr. Eder
Ref. No. of goods received 11366
Date of receipt 13-01-03
Test period 16-01-03 to 15-04-03

Description of test specimen

Frame

Frame material PVC-U/ white
Frame profile No. 8011 00, mullion: 8037 00, lesene 2249 00
 Exterior dimensions 3252 x 2406 mm
Casement profile No. 8081 00
 Exterior dimensions 1560 mm x 2300 mm

Rebate configuration

Rebate seal inline seals
 Inside Art. No. 2149 00, circumferential, miter/glued
 Outside Art. No. 2149 00, circumferential, miter/glued
Rebate drainage in rebate 3 slots 5 mm x 28 mm and to outside without
 cover cap
 5 slots 5 mm x 28 mm
Pressure equalization Compression seal at top, approx. 100 mm notched at
 center

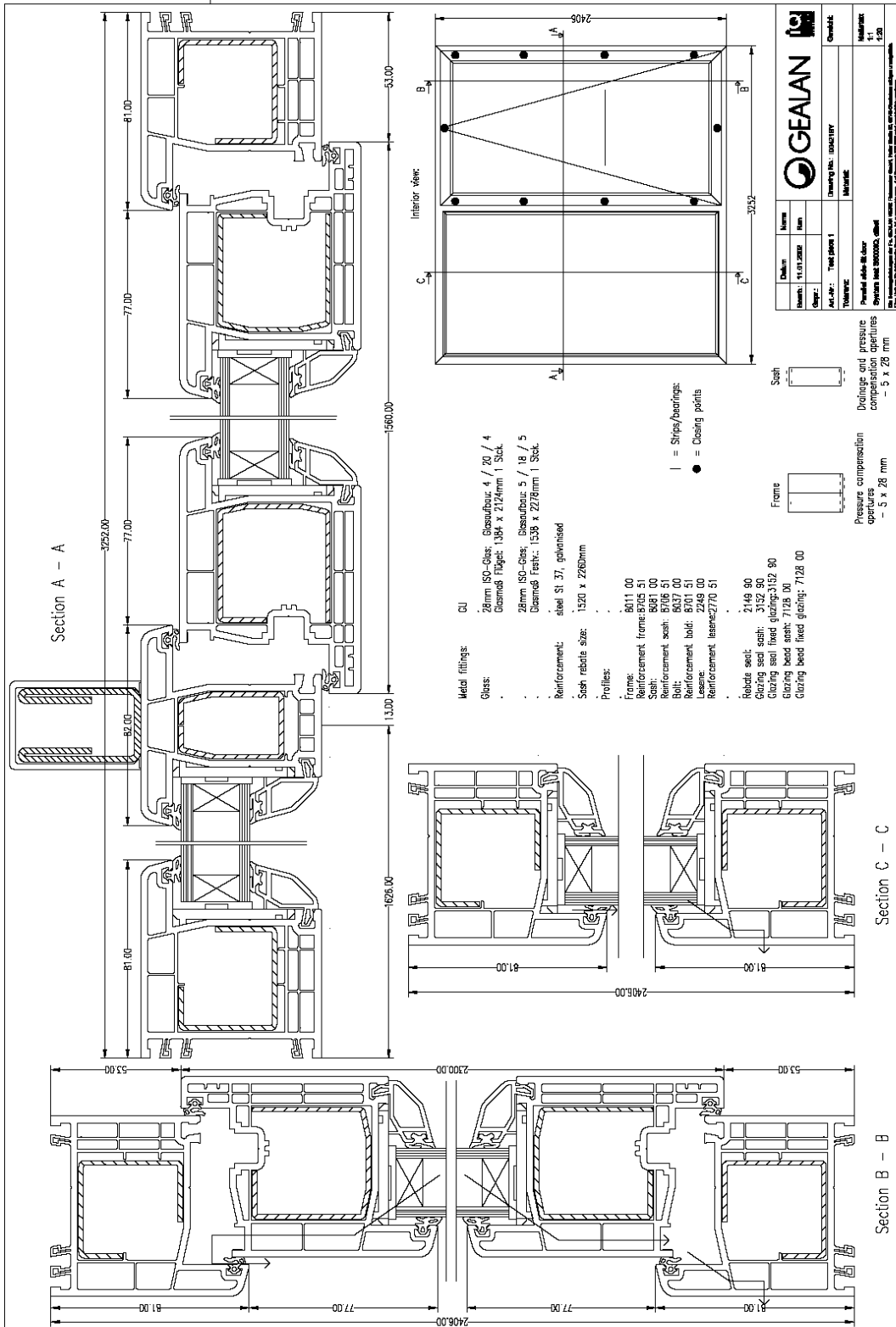
Hardware

Opening type parallel sliding tilting
Make GU 966mZ
Number of hinges 2 per casement
Locks top: 1, bottom: 3, side 4 each
 on side of hinges: side-hung 2, turn-and-tilt 1
Operating forces 5 Nm
Max. spacing of locks 95 cm

Infills

Glazing insulating glass unit
Glazing configuration 4/ 20/ 4 total thickness 28 mm
Weatherproofing
 Inside inline extruded seal, mitered to glazing beads
 Outside Art. No. 3152 90, circumferential
Vapor pressure equalization 2 top and bottom slots each of 5 mm x 28 mm per
 casement

Sectional view of test specimen

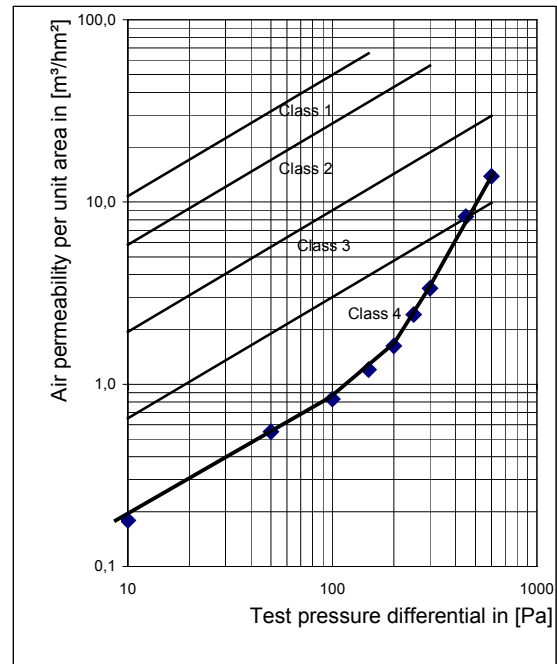
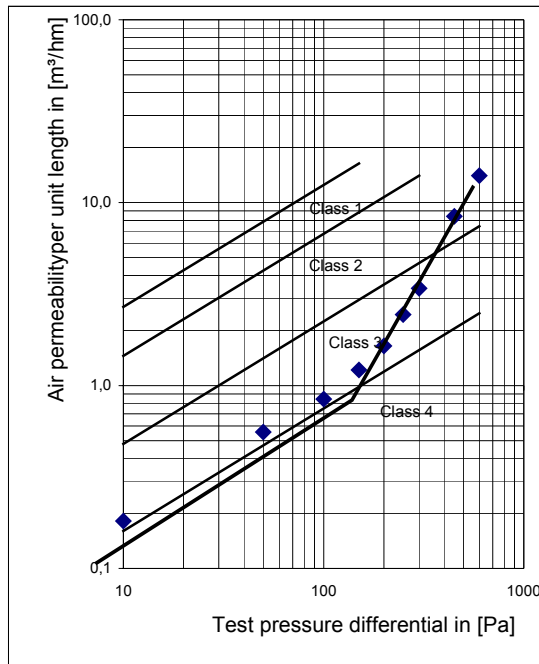


Note
 This enclosure is based on documentation provided by the customer and was not examined in its entirety for technical correctness.

1. Initial type test

1.1 Air permeability test according to DIN EN 1026

Pressure differential	10	50	100	150	200	250	300	450	600
Measured values m ³ /h	1,4	4,3	6,5	9,4	12,7	18,9	26,3	65,0	108,3
m ³ /hm	0,18	0,56	0,84	1,22	1,65	2,45	3,41	8,42	14,03
m ³ /hm ²	0,18	0,55	0,83	1,20	1,62	2,42	3,36	8,31	13,84



Classification according to DIN 12207
Based on joint length
Based on surface area of test specimen

Reference air permeability
 $Q_{100} = 0,84 \text{ m}^3/\text{hm}$
 $Q_{100} = 0,83 \text{ m}^3/\text{hm}^2$

Classification
Class 2
Class 3

Total classification of air permeability according to 12207

Class 3

1.2 Water tightness test according to DIN EN 1027

No water penetration up to test pressure differential of 300 Pa

Classification of water tightness according to DIN EN 12208

Class 7A

1.3 Resistance to wind load

1.3.1 Deflection according to DIN EN 12211

Frontal deflection was measured at the opening center piece at a test pressure differential of up to 1800 Pa.

Maximum deflection ($l/300$) at an effective span of 2300 mm is 7,67 mm.

Class		1	2	3	4*
Test pressure p_1	Pa	400	800	1200	1600
Point of measurement M1	mm	0,5	1,1	2,0	*
Point of measurement M2	mm	2,0	4,3	7,8	*
Point of measurement M3	mm	0,4	0,8	1,3	*
Effective deflection f	mm	1,54	3,35	6,15	9,30
1/		1494	687	374	247

Classification of deflection according to 12210

Class C3/B4

* In view of the passed safety test, this value was determined by subsequent calculation.



1.3.2 Positive/negative pressure according to DIN EN 12211

The sample was exposed to 50 positive/negative pressure loads at ± 1000 Pa. The negative/positive pressure loads were maintained for 7 seconds each. No visible changes became apparent.

Classification of exposure to positive/negative pressure according to DIN EN 12210

Class 5

2 Mechanical test

2.1 Repeated opening and closing test according to DIN EN 1191

The sample was exposed to 10,000 repeated operating cycles (turn and tilt). The fittings were greased prior to testing.

The sample did not show any functional failures.

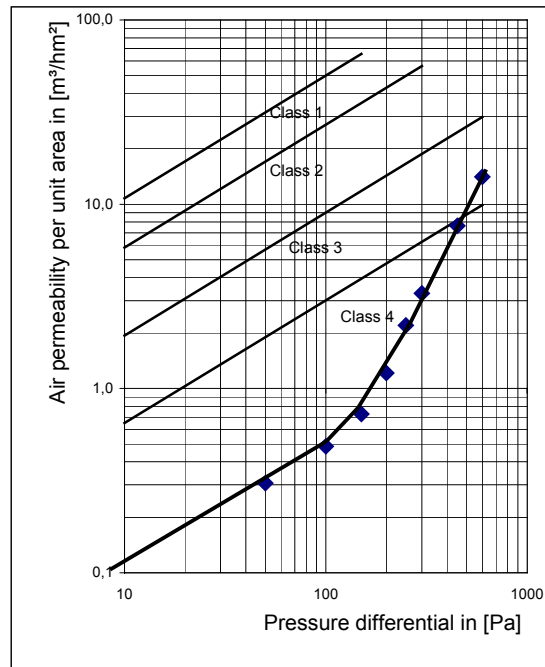
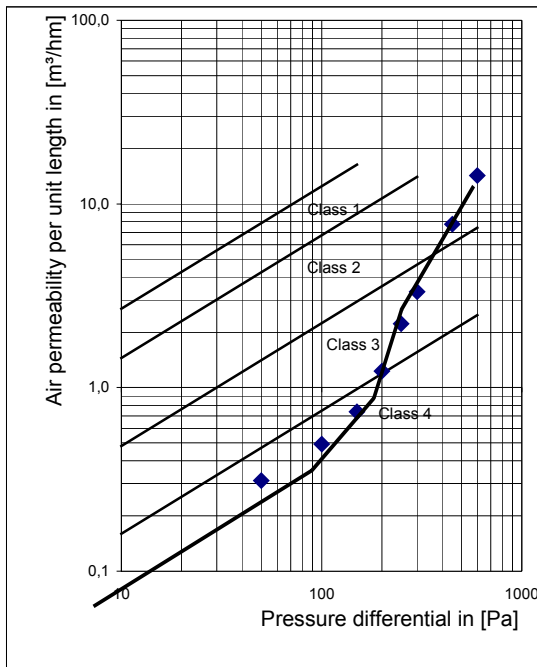
Classification of repeated opening and closing according to prEN 12400

Class 2

3 Final tests

3.1 Air permeability test according to DIN EN 1026

Pressure differential Pa	10	50	100	150	200	250	300	450	600
Measured values m ³ /h	0,6	2,4	3,8	5,7	9,5	17,2	25,7	59,8	110,0
m ³ /hm	0,08	0,31	0,49	0,74	1,23	2,23	3,33	7,75	14,25
m ³ /hm ²	0,08	0,31	0,49	0,73	1,21	2,20	3,28	7,64	14,06



Classification according to DIN 12207
Based on joint length
Based on surface area of test specimen

Reference air permeability
 $Q_{100} = 0,49 \text{ m}^3/\text{hm}$
 $Q_{100} = 0,49 \text{ m}^3/\text{hm}^2$

Classification
Class 2
Class 3

Total classification of air permeability according to 12207

Class 3

3.2 Water tightness test according to DIN EN 1027

No water penetration up to a test pressure differential of 450 Pa

Classification of water tightness according to DIN EN 12208

Class 8A

3.3 Resistance to wind load, safety test according to DIN EN 12211

The test specimen was exposed to a safety test pressure of $\pm 3000 \text{ Pa}$ for a short time. The test specimen did not show any visible changes.

Classification of safety test according to DIN EN 12210

Class 4

Total classification according to DIN EN 12210

Class C3/B4