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OC 014

TEST REPORT

No. 34 / 19.12.2016

Client:	**TESTER AL d.o.o**
T.I.N:	**107430795**
Order no/date:	**38 / 01.09.2016**
Sampling Report:	**1 / 22.09.2016**
Product:	**Casement door with two sash**
Profile system / Material	**Elvial 4600 / Aluminium with thermal break**
Overall dimensions L x I (mm):	**1400mm x 2100mm**

Performances evaluated based on type tests, according to EN 14351-1+A2:2016 :

- ***Air permeability*** - according to EN 1026 : 2016 and EN 12207 : 1999

  Class 2

- ***Watertightness*** - according to EN 1027 : 2016 and EN 12208 : 1999

  Class 1A

- ***Resistance to wind load*** - according to EN 12211 : 2016 and EN 12210 : 2016

  Class C 1

- ***Load bearing capacity of safety devices*:** – according to EN 14351-1 + A2:2016 item 4.8

  Requirement fulfilled

Note:

- The data and results refer solely to the tested and described sample.
- Classes / levels of performance set out above, remains valid as long as the product and standards / classification remain unchanged.
- The results can be extrapolated under the manufacturer's own liability, subject to observance of the relevant specifications set out by the applicable product standard stipulated on EN 14351-1+A2:2016
- This Test Report with Annex contains 18 pages.

General Manager
Mihaela Cristea

Head of Testing Department
Georgeta Neagu

Operating Testing Officer
Florică Bălănică

Bucharest / 19.12.2016

1. **Description of test specimen**

Product	Casement door with two sash
Manufacturer	Testeral d.o.o.
Sampling report no.	1 / 22.09.2016
Date of manufacture	September 2016
Profile system	Elvial 4600
Type of opening / Opening direction	Active casement: Tilt and turn, inward opening Inactive casement : Turn, inward opening
Material	Aluminium profiles with thermal break
Overall frame dimensions (WxH)	1400mm x 2100mm
Overall casement dimensions (WxH)	Active casement 670mm x 2046mm Inactive casement: 670mm x 2046mm
Casement weight (Kg)	80
Frame member	
Profil number	EL 4627
Frame connection	Mitre cut and crimped
Material	Aluminium profiles with thermal break
Casement member	
Profil number	EL 4688
Frame connection	Mitre cut and crimped
Material	Aluminium profiles with thermal break
Others	Mitre cut using two corners and sealed with sealant
Additional profile sections	
Type	Double casement profile
Material	Aluminium profiles with thermal break
Profil number	EL 4604
Frame connection with additional profile	sealed with elastic sealant
Additional profile sections	
Type	Weather bar
Material	Aluminium
Profil number	EL 2007
Frame connection with additional profile	screwed
Rebate design	
Rebate drainage	2 slots 6mm x 35mm without cover caps
Rebate seal	
External gasket (material, article number, manufacturer, corner configuration)	lip seal, EPDM No EL-LP-46-5500RP-46-E BMP, Greece, Bonded with preformed corner pieces
Centre gasket (material, article number, manufacturer, corner configuration)	EPDM, No EL-LK-46-4600-46-E BMP, Greece, four sides - Bonded with preformed corner pieces
Internal gasket (material, article number, manufacturer, corner configuration)	lip seal, EPDM No EL-LP-46-5500RP-46-E BMP, Greece, Bonded with preformed corner pieces

Pressure equalisation	without
Infill	Insulating glass unit (IGU) 4 / 16 / 4
Instalation of infills	
Glazing seal gasket	
External gasket (material, article number, manufacturer, corner configuration)	EPDM, No EL-LT-46-1121-46-E, BMP, Greece, Bonded with preformed corner pieces
Internal gasket (material, article number, manufacturer, corner configuration)	Mitre cut with glazing bead EL 2005B, EPDM, No EL-LT-46-1064-46-E, BMP, Greece,
Vapore pressure equalisation	At the top and at the bottom 2 slots 5mm x 30mm
Hardware	
Type	Tilt and turn hardware, manufacturer Ni Maco doo Nis
Hinges	Active casement :1 tilt mechanism pivot 1 corner pivot Inactive casement :2 turn mechanism pivot Manufacturer Fapim SpA, Italy
Number of lockings	Active casement: at top 1, on hinge side 2 Lock front : 3 Inactive casement: at bottom 1, at top 1, on hinge side 1
Max. locking distance	1000mm
Position of locking	Neutral

2 Sampling
Sampling by: Tester Al d.o.o..
Date: 22.09.2016
Sampling report / SRAC entry number: 1 / 22.09.2016 / 95 / 24.11.2016

3. Test method

EN 1026:2016
Windows and doors. Air permeability. Test method
EN 1027:2016
Windows and doors. Watertightness. Test method
EN 12046:-1:2003
Operating forces. Test method. Part-1: Windows
EN 12211:2016
Windows and doors. Resistance to wind load – Test method
EN 14531-1 + A2 : 2016 pct 4.8
Windows and doors – Load bering capacity of safety devices

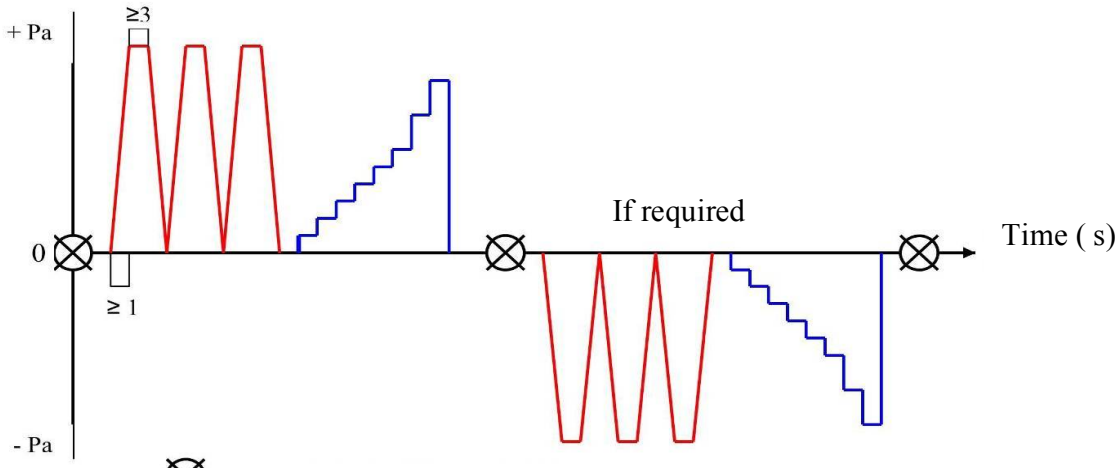
Classification / Evaluation

EN 12207:1999
Windows and doors – Air permeability – Classification
EN 12208:1999
Windows and doors – Watertightness – Classification
EN 12210:2016
Windows and doors – Resistance to wind load – Classification

Brief description of procedures

Air permeability – EN 1026

This standard defines the convetional method to be used to determine the air permeability of completely assembled windows and doors of any material, when submitted of a defined series of test positive and negative pressures and at each test pressure measurement of the air permeability with a suitable device.

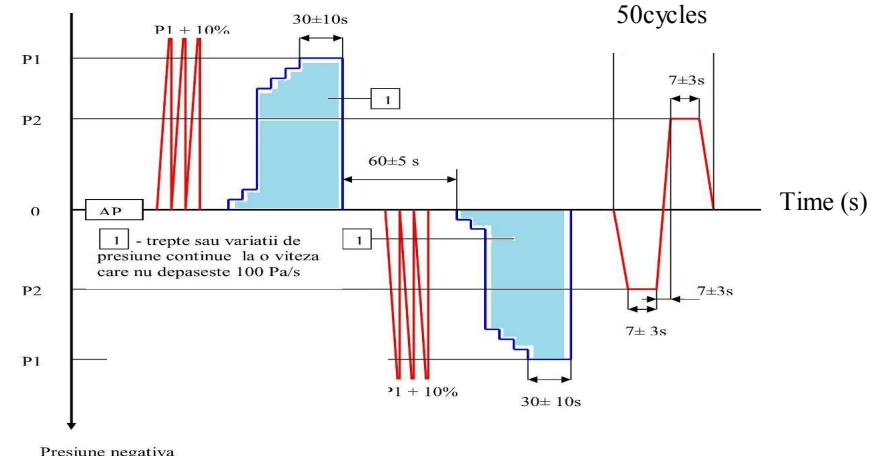


Test pressure sequence for air permeability

Resistance to wind load – EN 12211

This European Standard defines the method of test to determine the resistance to wind load for completely assembled windows and doors of any materials when submitted of a defined series of positive and negative test pressures at which measurements and inspections are made to assess relative frontal deflection and resistance to damage from wind loads.

Positive pressure



Negative pressure

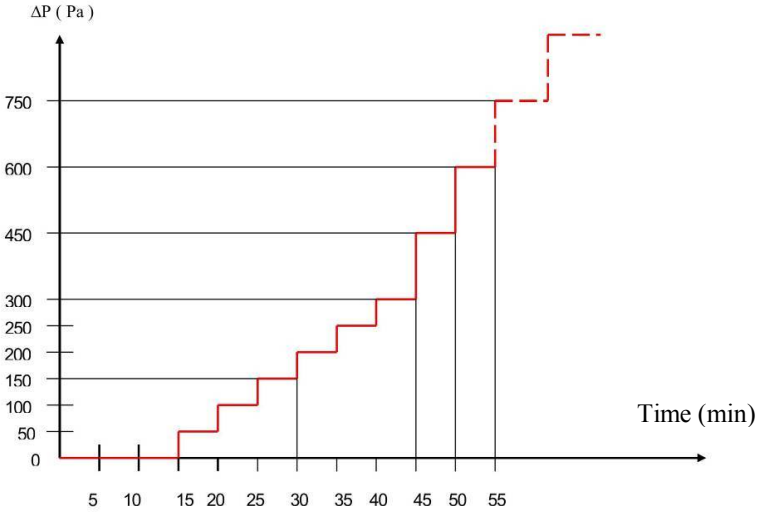
Test pressure sequence for resistance to wind load

Air permeability – Repeat test – EN 1026

Subsequent to the test of resistance to wind load by application of test pressures p1 and p2, the upper limit of the achieved air permeability class must not be exceeded by more than 20% as set out by EN 12207.

Watertightness - EN 1027

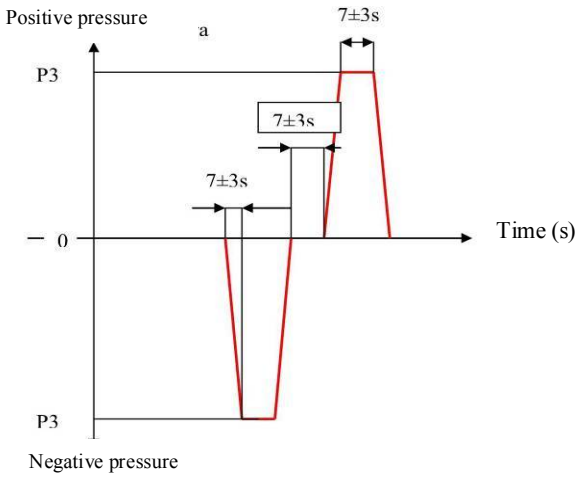
This standard defines the conventional method to be used to determine the watertightness of completely assembled windows and doors of any materials and consist to spraying of a specified quantity of water onto external surface of the test specimen while increments of positive test pressure are applied at regular intervals during wich details are recorded of test pressure and location of water penetration.



Test sequence for watertightness

Resistance to wind load – Safety test according to EN 12211

After the safety test, the test specimen must to remains closed and recorded all damage and breakdowns that occur, such as handling difficulties.

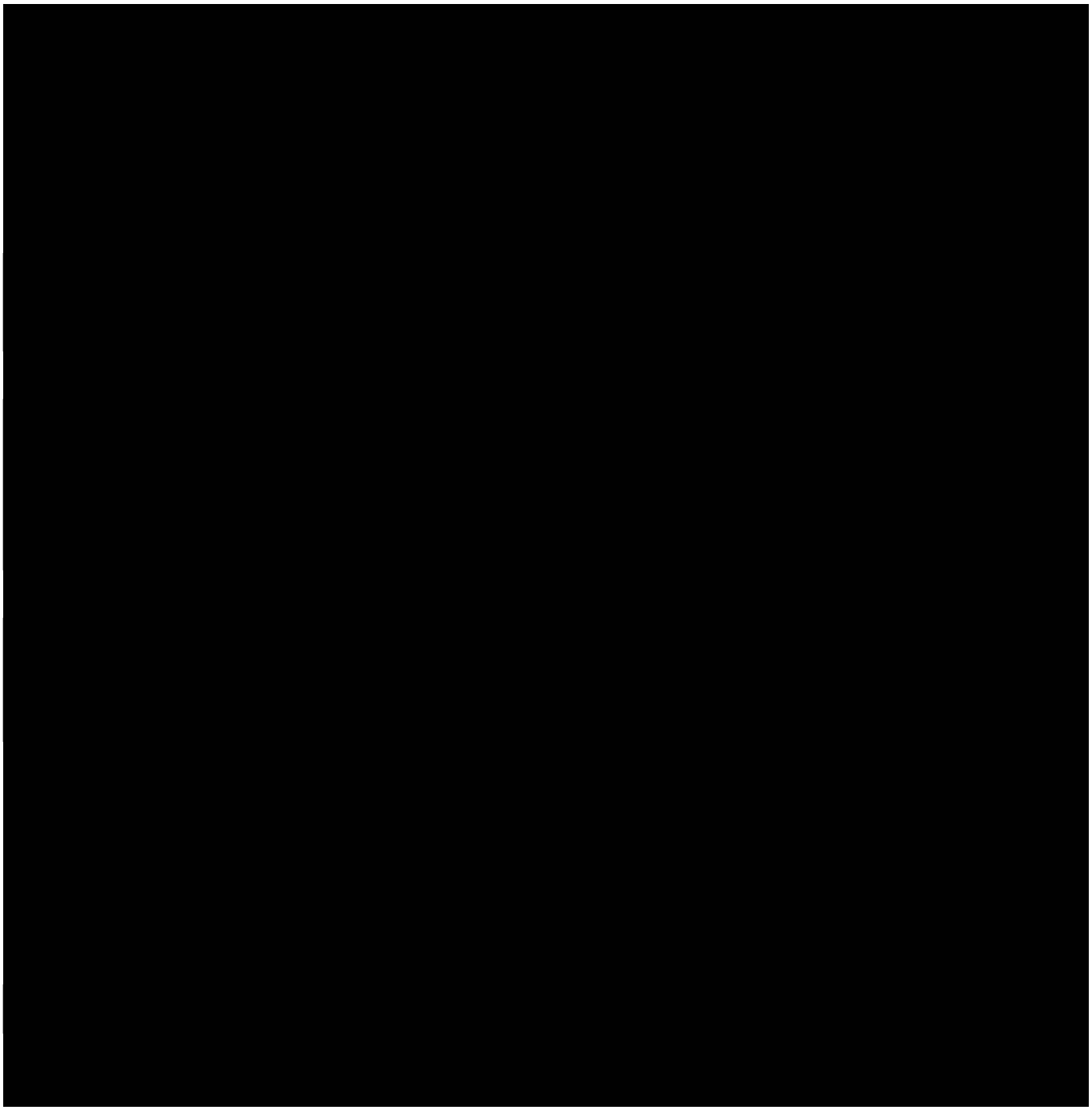


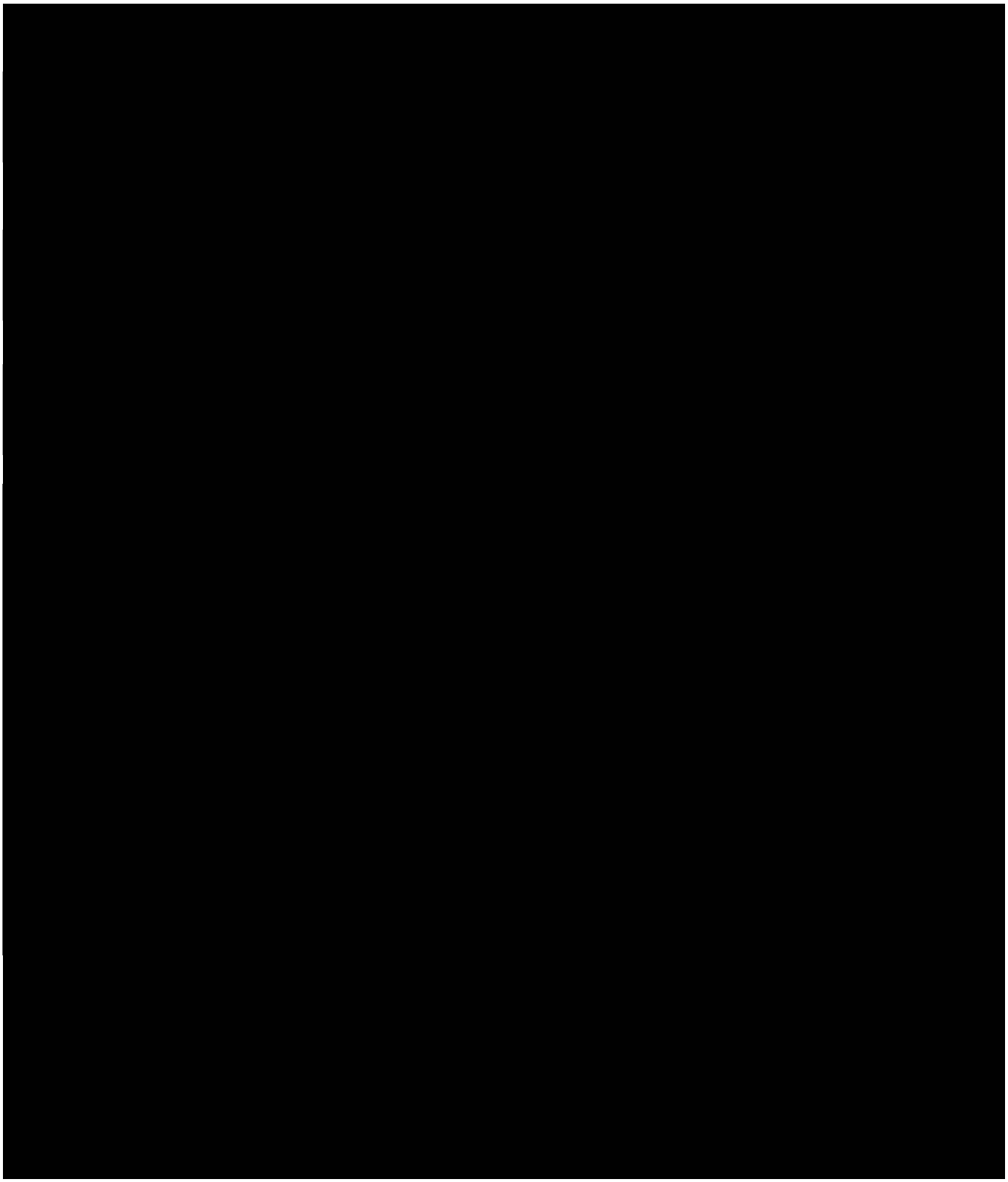
Test sequence for safety test

Load bearing capacity of safety devices according to EN 14351-1 item 4.8.

Safety devices if provided and engaged in accordance with the manufacturer's published instructions, shall be able to hold the leaf, casement or sash in place for 60s when 350 N are applied to the leaf, casement or sash in the most unfavourable way. This threshold strength shall be demonstrated by means of tests carried out as described in EN 14351-1+A2:2016 item 4.8.

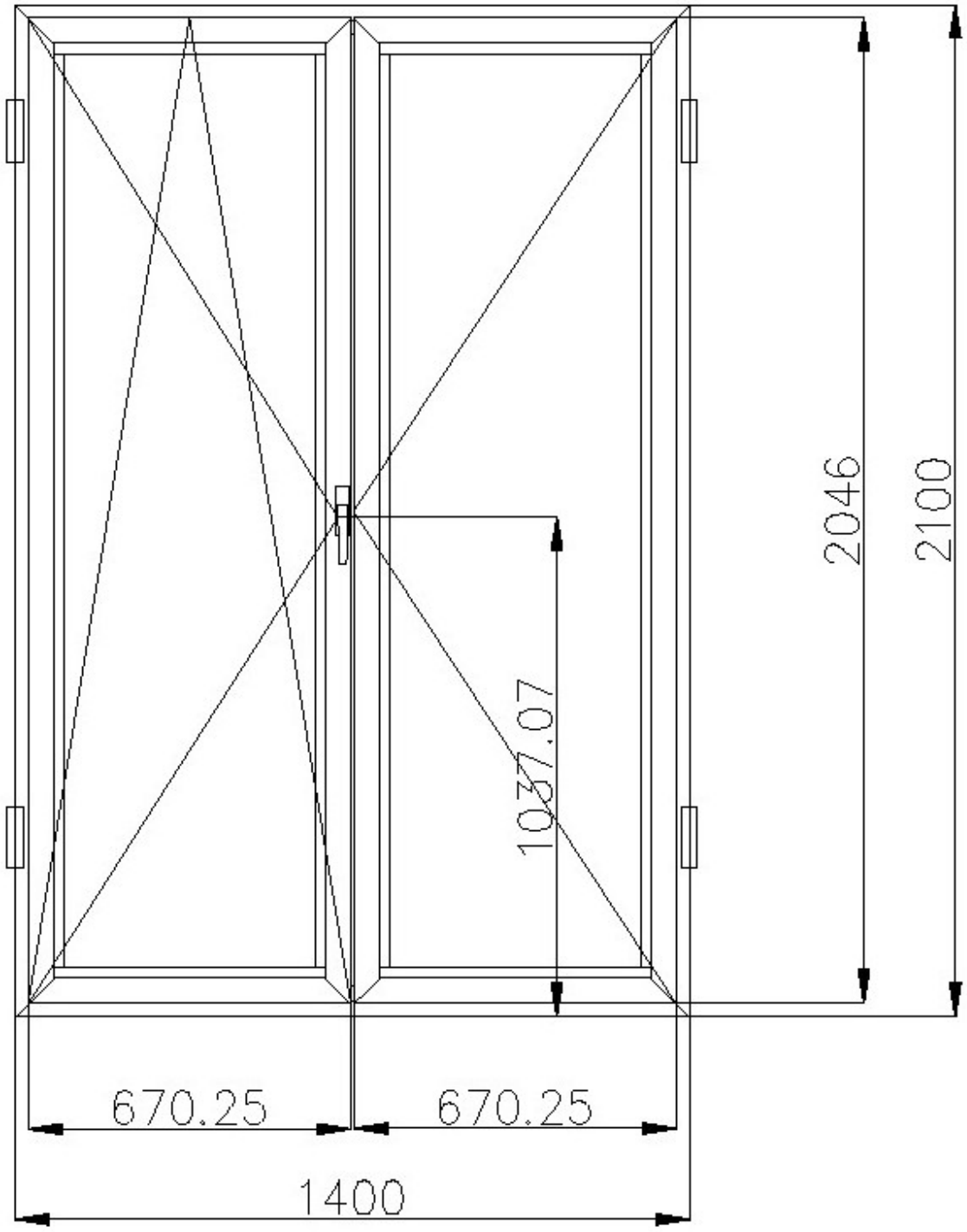
4. Protocol



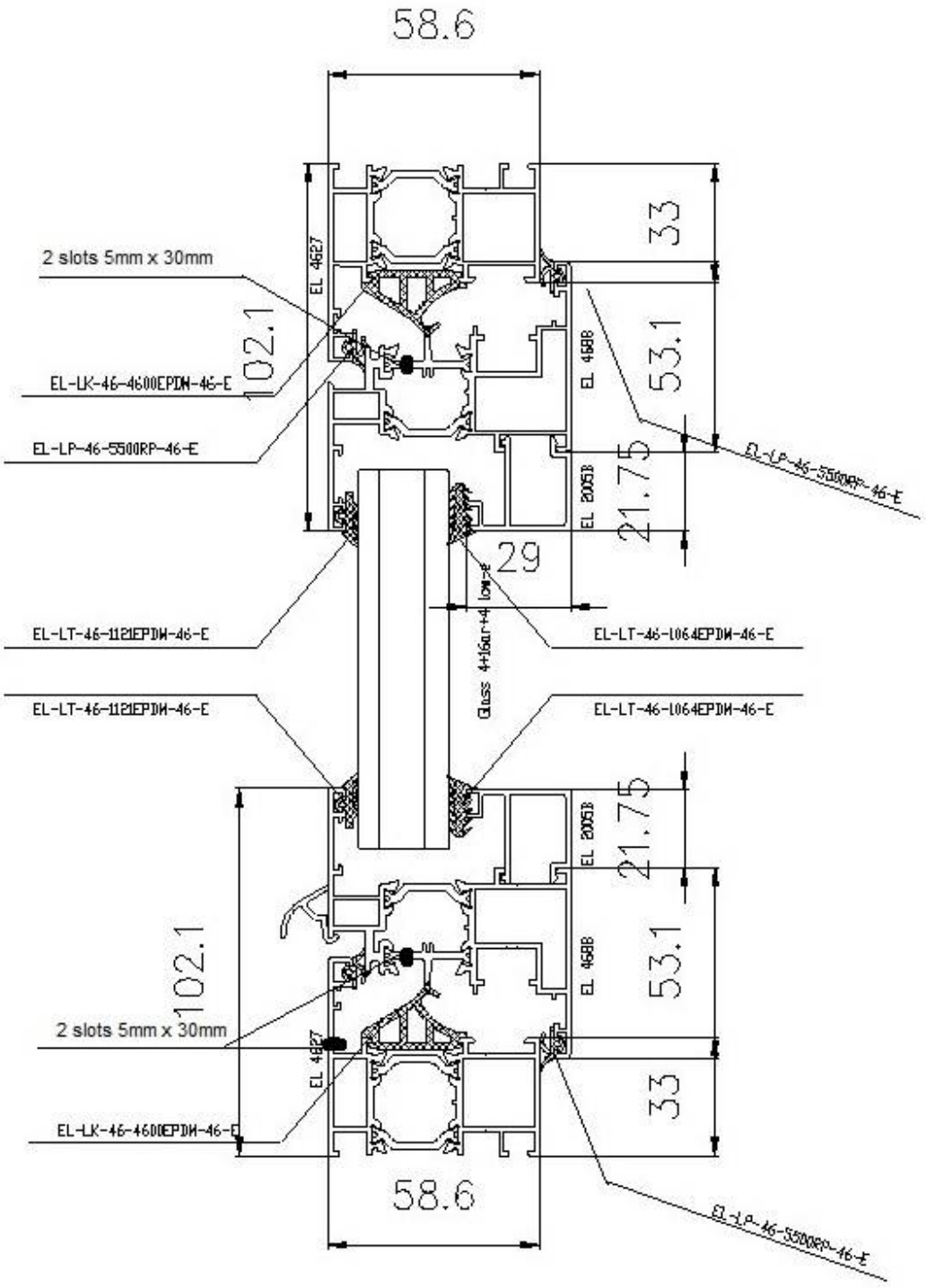


5. Drawings

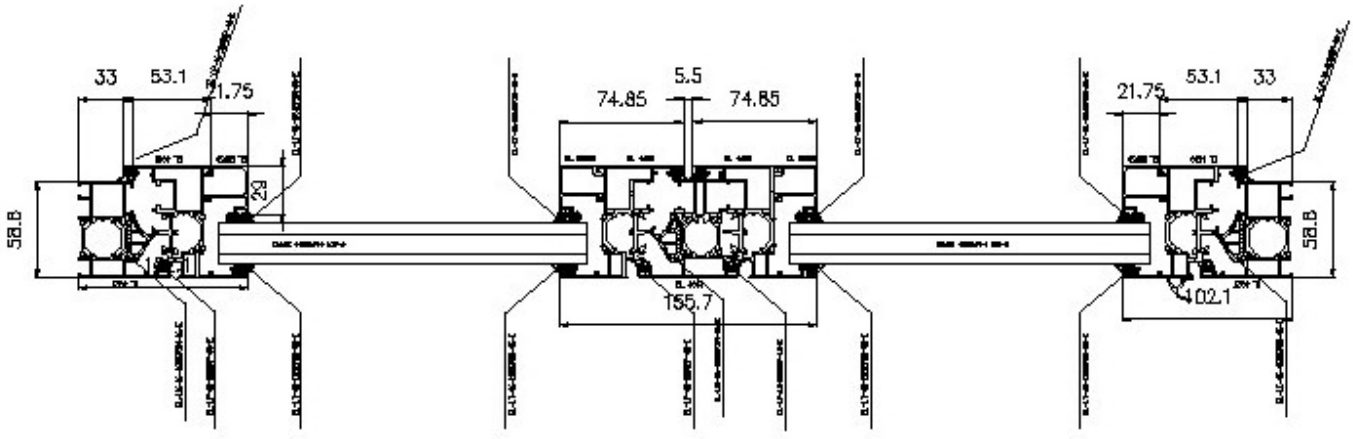
5.1 Drawing of test specimen



5.2 Vertical section



5.2 Horizontal section

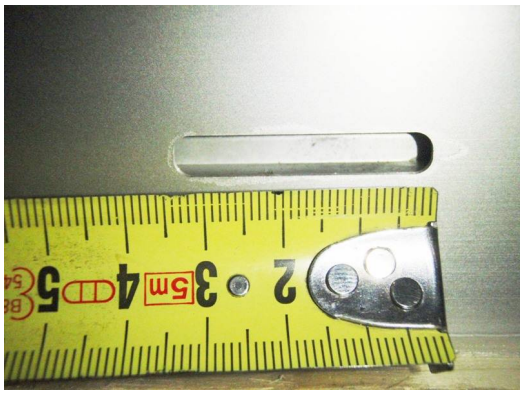


6. Pictures

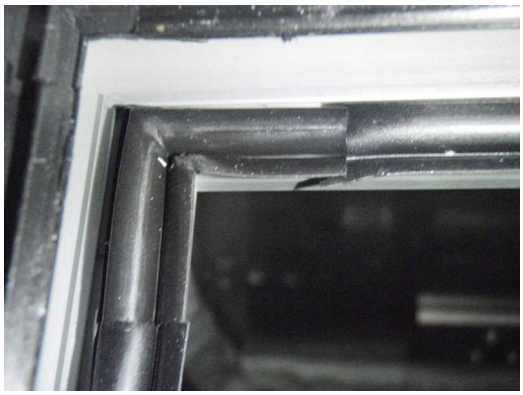
Picture 1 View of test specimen on window test rig Window closed

Picture 2 View of test specimen on window test rig Window open

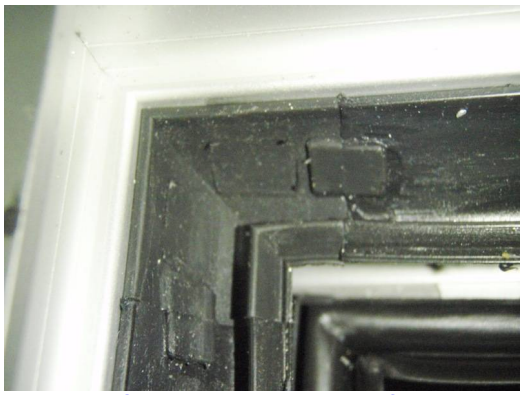
Picture 3 Test setup measurement of deflection



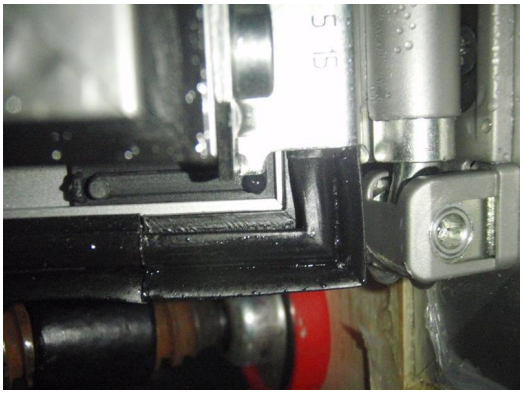
Picture 4 Rebate drainage



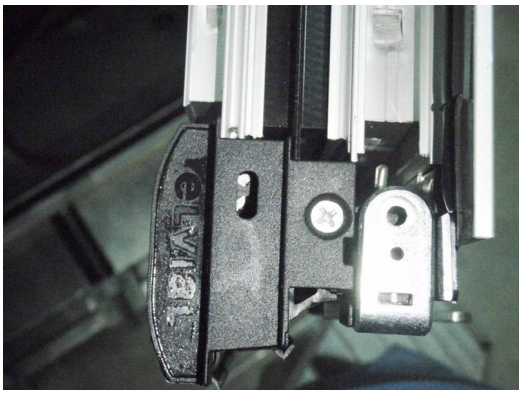
Picture 5 External rebate seal, corner configuration



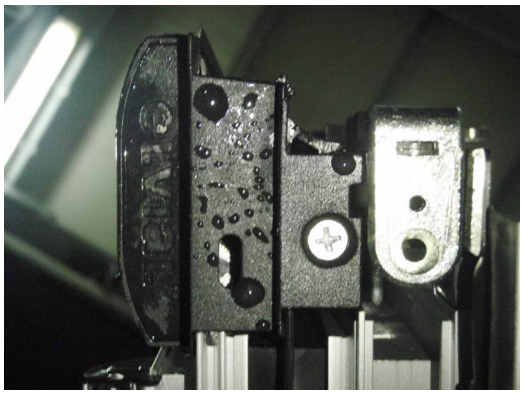
Picture 6 Centre seal, corner configuration



Picture 7 Internal rebate seal, corner configuration



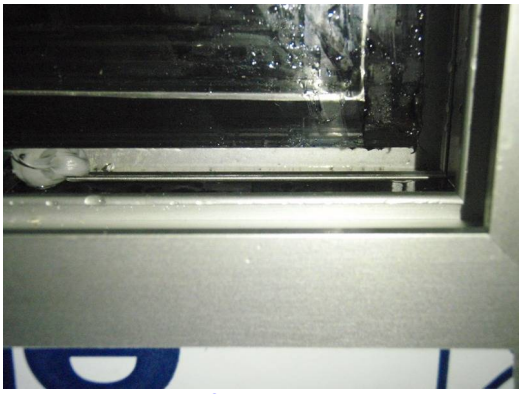
Picture 8 End caps of double casement profile, at top



Picture 9 End caps of double casement profile, at bottom

Picture 10 External glazing seal, corner configuration

Picture 11 Internal glazing seal, corner configuration



Picture 12 View of horizontal glazing rebate

Picture 13 Vapour pressure equalisation

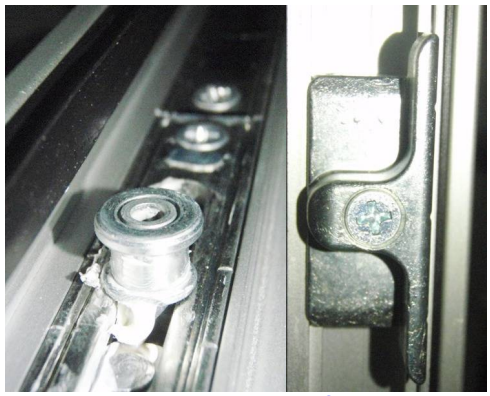
Picture 14 Tilt mechanism pivot, internal view

Picture 15 Tilt mechanism pivot, rebate view

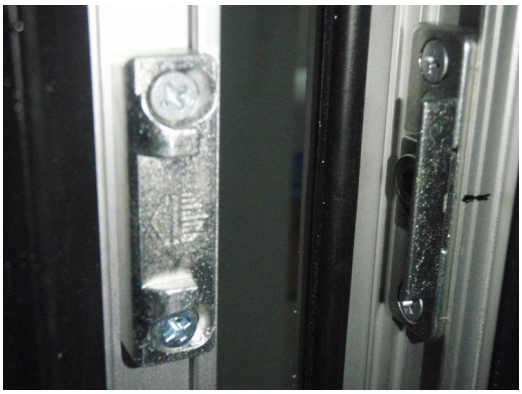
Picture 16 Corner pivot, internal view

Picture 17 Corner pivot, rebate view

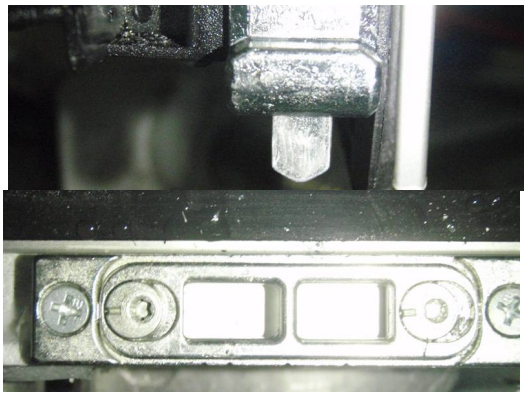
Picture 18 Locking situation, frame member / casement member 1



Picture 19 Locking situation, frame member / casement member 2

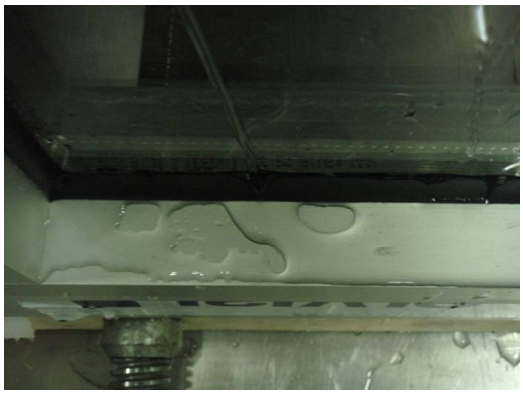


Picture 20 Locking situation, frame member / casement member 3



Picture 21 Locking situation, frame member / casement member 4

Picture 22 Rocker bearing



Picture 23 Water penetration