





## TEST PROTOCOL

№ 05-K /09.02.2024

|   |  |
|---|--|
| <b>Designation of the product:</b>  | PVC window Profilink, Veltra system                    |
| <b>Producer:</b>  | „Teolino Plast“ LTD - Plovdiv str. Nestor Abadzhiev 45 |
| <b>Client:</b>  | „Profilink“LTD - Plovdiv str. Nestor Abadzhiev " 55    |
| <b>Assigning document:</b>  | Contract: № 03 /26.04.2021                             |
| <b>System of assessment for conformity:</b>   | System “3”   |
| <b>Standard:</b>  | BDS EN 14351-1:2006+A2:2016                            |
| <b>Essential requirements:</b>  |  |
|  | 3. Watertightness                                      |
|  | 4. Resistant to wind load                              |
|   | 6.3. Air permeability                                  |
| <b>Test sample:</b>   | 1 piece sample – request of 26.04.2021                 |
| <b>Period for conducting the testing:</b>   | 09.02.2024   |

НОТИФИЦИРАНА ИЗПИТВАТЕЛНА ЛАБОРАТОРИЯ  
към Солар Проджект ООД  
Разрешение № CPR 04 - NB 2145/25.09.14



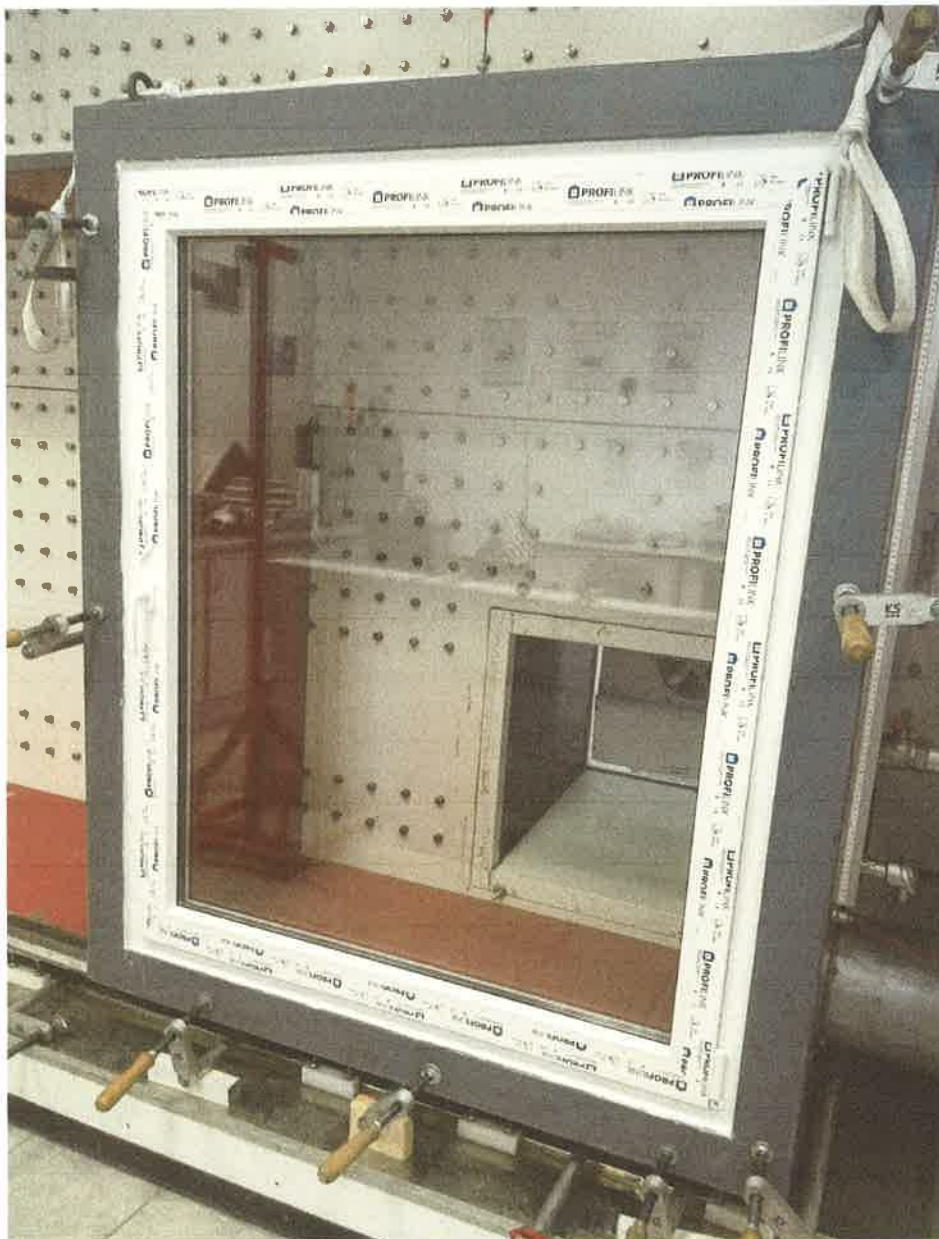
SOLAR PROJECT

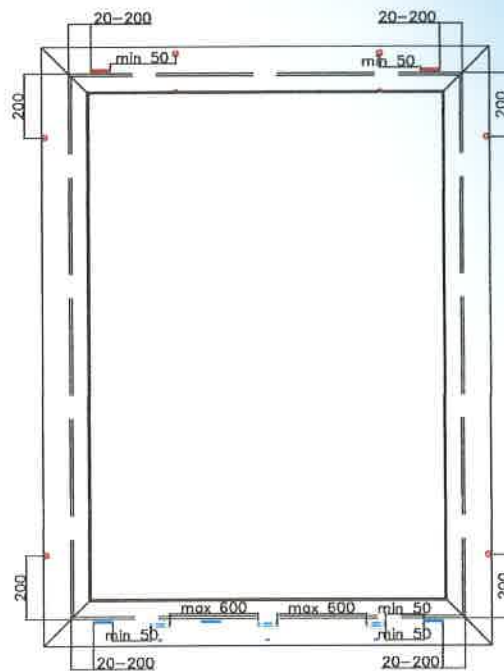
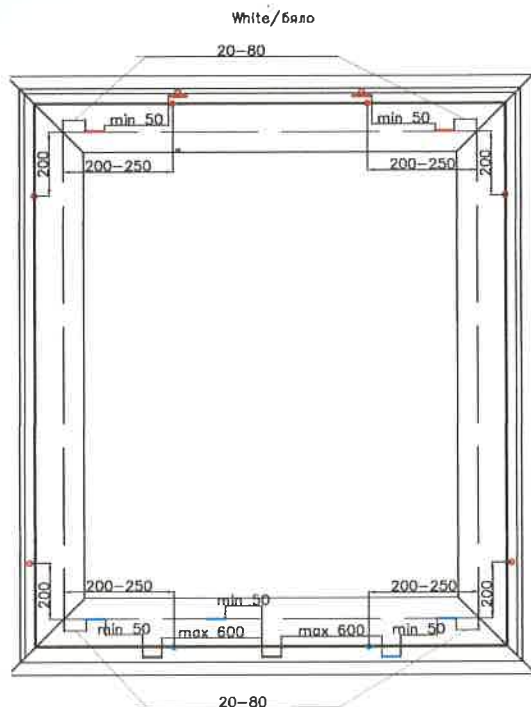
София 1220, ул. Илленско шосе\*8  
тел.: 02/8109 127 02/8109 155  
e-mail: laboratory@solarproject.bg  
www.labsp.bg

NOTIFIED TESTING LABORATORY  
AT SOLAR PROJECT LTD  
Permit № CPR 04 - NB 2145/ 25.09.14

Sofia 1220, 8 "Illyensko shose" str.  
tel.: +3592/8109 127 +3592/8109 155  
e-mail: laboratory@solarproject.bg  
www.labsp.bg

### Description of the product tested:





Overall dimension: 1230 mm x 1480 mm

Frame: 1230 mm x 1480 mm

Sash: 1162 mm x 1412 mm

Glass bead: 1152 mm x 1302 mm

Opening type: Tilt and Turn

Sealing: EPDM

Hardware: WH

Locking: 8

Hinges: 2

Drainage: 3

Type of glass:

24mm / white + white /

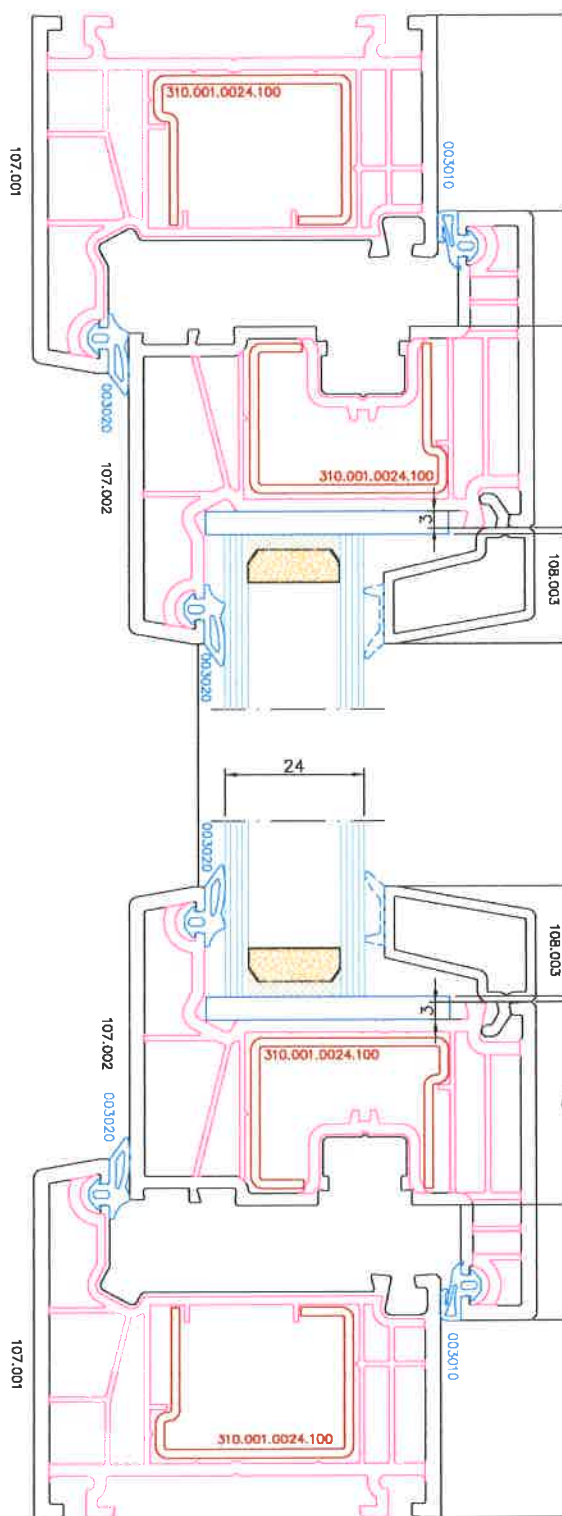
Glass dimension:

1142 mm x 1292 mm



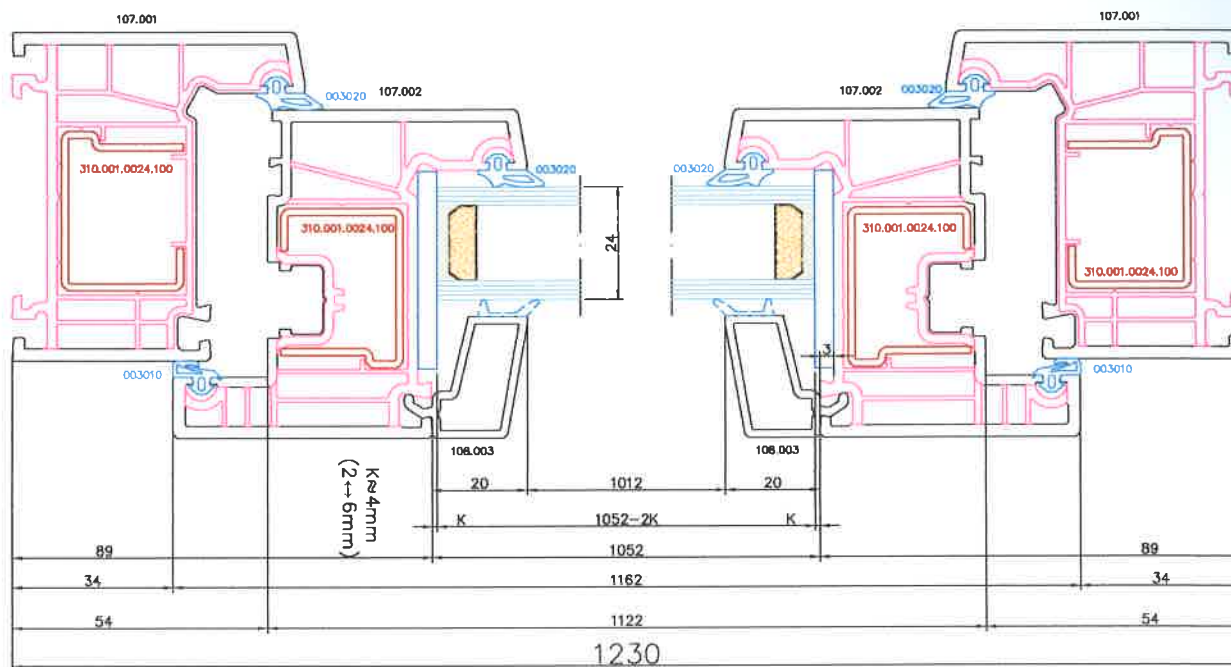
Сечение: А—А

OUT



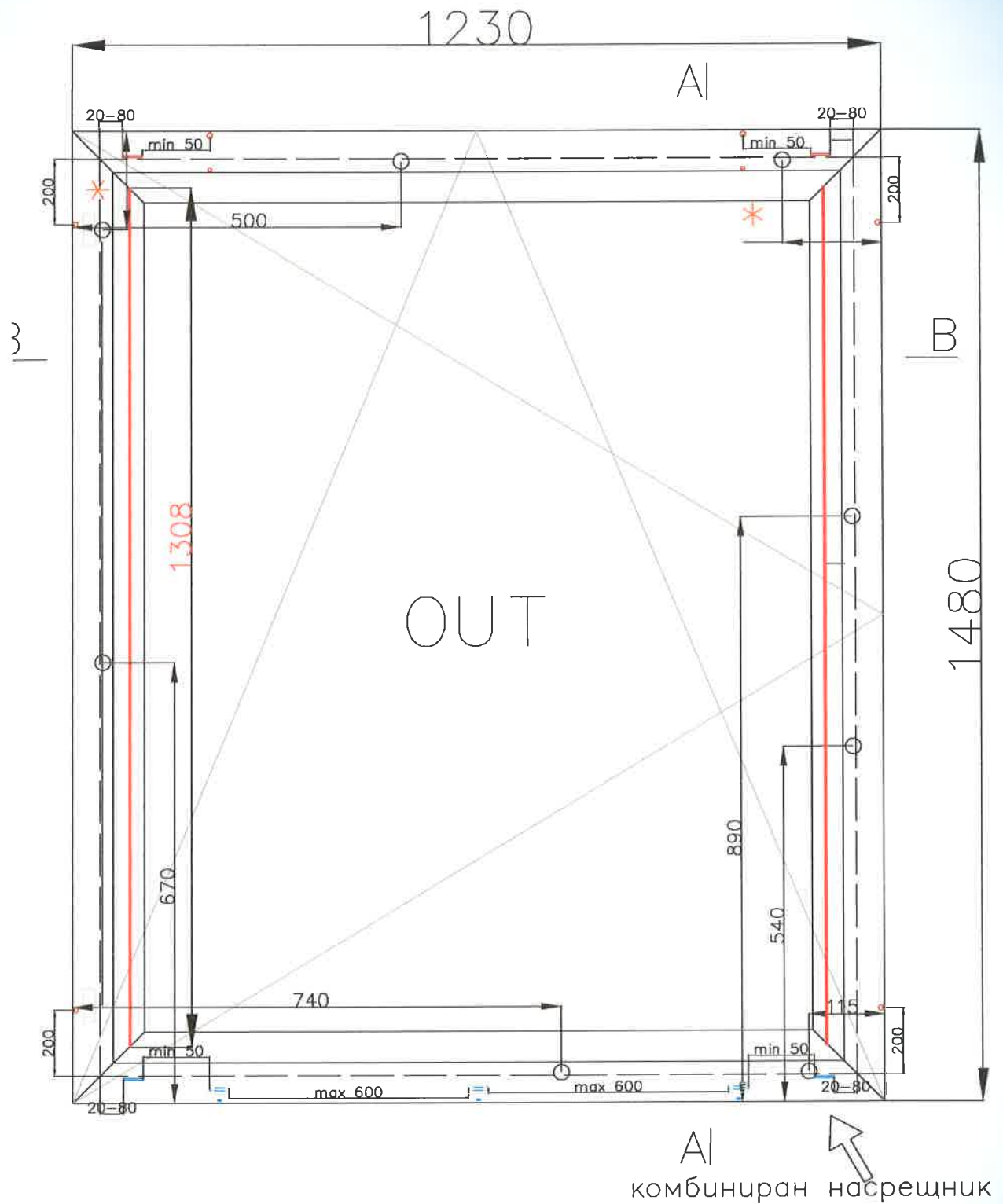


Сечение: В-В



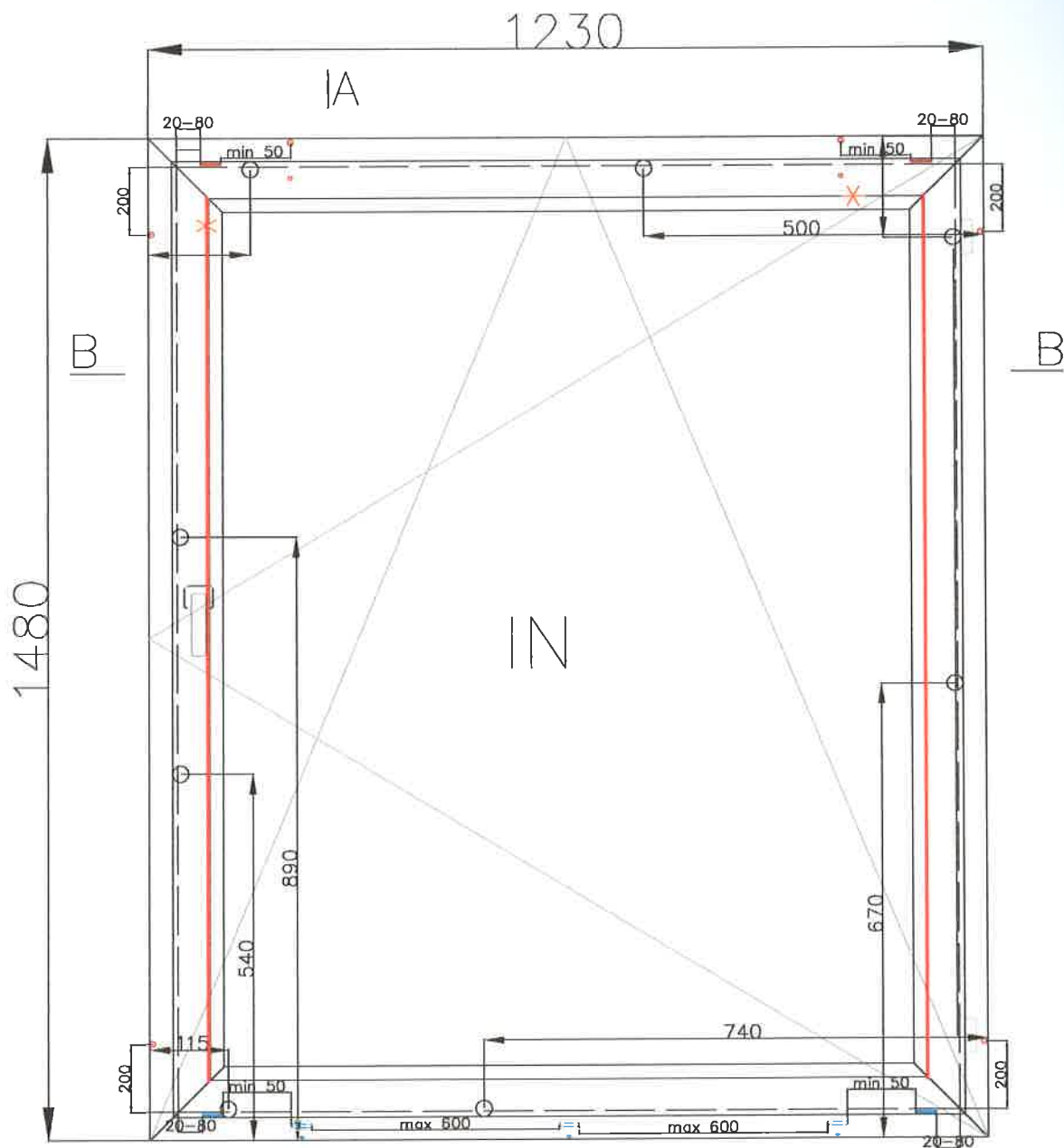


поглед отвън





поглед отвътре



омбиниран насрещник

насрещник за образца

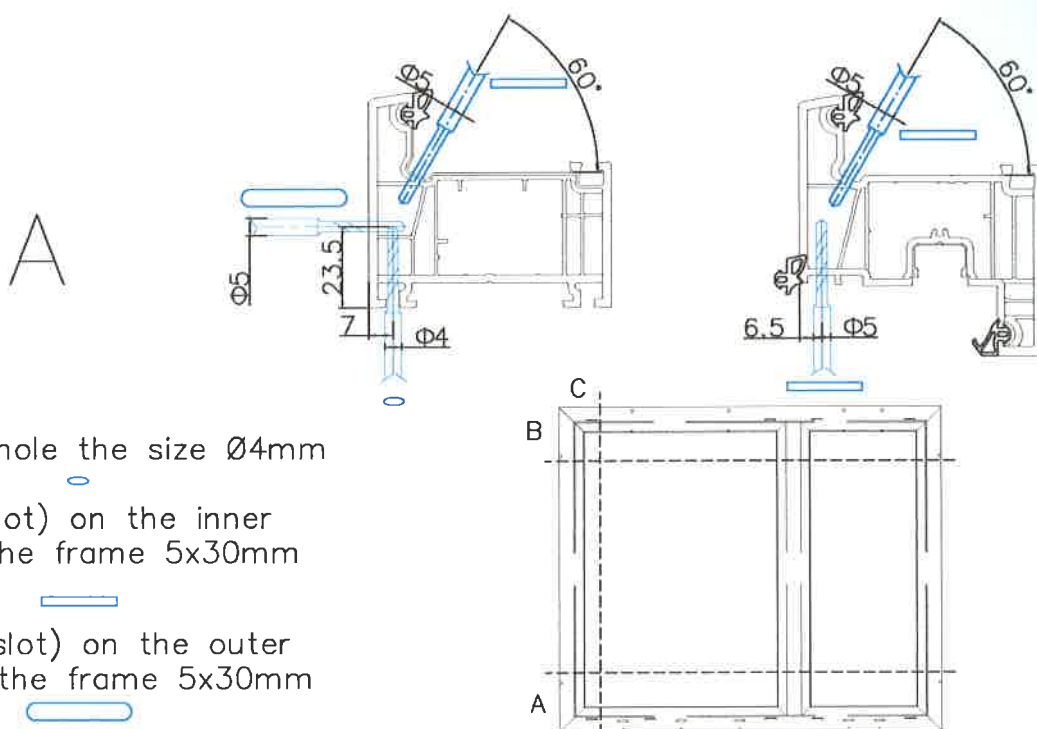
+5 SBA.K.152

шаблон за разпробиване –  
стандартно пробиване

- панта
  - заключване
  - отводняване
  - вентилиране
- шина 45x3

\* вариращ размер

Основни насоки при отводняване и проветряване (вентилация).  
Main directions for draining and ventilation regulations.



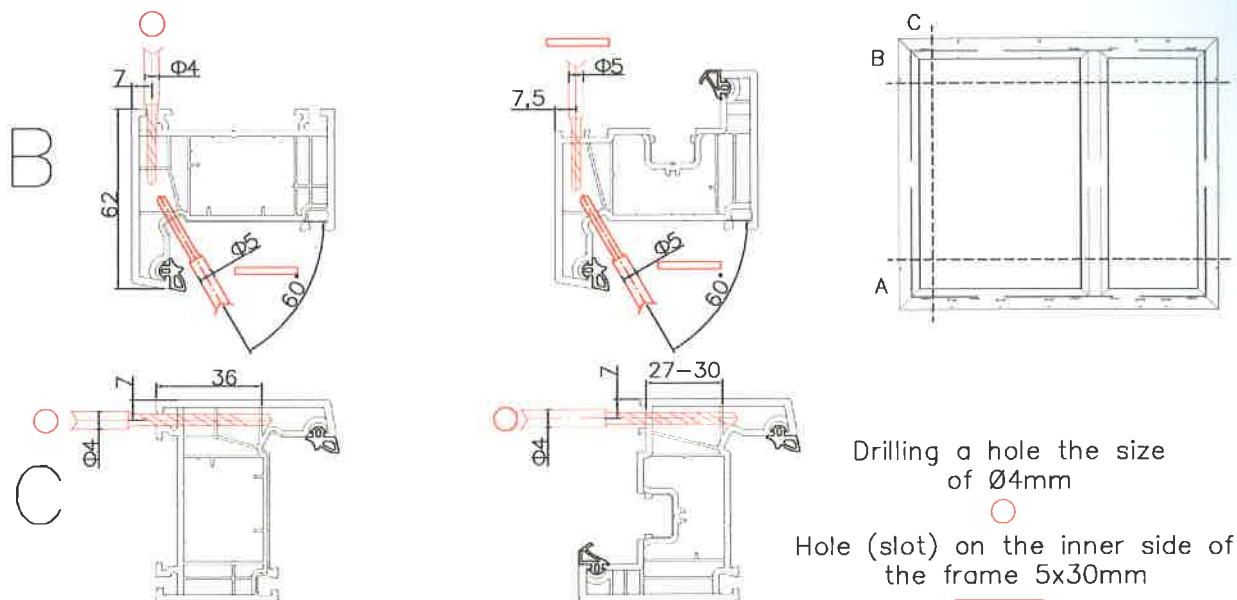
Drilling a hole the size  $\text{Ø}4\text{mm}$

Hole (slot) on the inner side of the frame 5x30mm

Hole (slot) on the outer wall of the frame 5x30mm



Пробиване на отвори за изравняване на налягането на профилите.  
Making slots for equalizing the pressure of the profiles.





### Results from testing

| № in order | Essential characteristics | Measure unit | Testing method | Performance | Harmonised technical specification |
|------------|---------------------------|--------------|----------------|-------------|------------------------------------|
| 1          | 2                         | 3            | 4              | 5           | 6                                  |
| 1.         | Watertightness            | -            | BDS EN 1027    | Class A9    | BDS EN 14351-1+A2                  |
| 2.         | Resistant to wind load    | -            | BDS EN 12211   | Class 5C    | BDS EN 14351-1+A2                  |
| 3.         | Air permeability          | -            | BDS EN 1026    | Class 4     | BDS EN14351-1+A2                   |

### Technical devices used:

Indications of moving 1, 2, 3, 4, 5, 6 type 8712-50 – Certificate of calibration № 1457A-D-21/13.05.2021 г, № 1458A-D-21/13.05.2021 г., № 1459A-D-21/13.05.2021 г, № 1460A-D-21/13.05.2021 г, № 1461A-D-21/13.05.2021 г, № 1462A-D-21/13.05.2021 г "Metrologiya Holding";

Shtrih measure to the U-shaped manometer, Type: Pa / UI-γ 0,88, ID № 1695 calibration certificate №1453A-D-22 от 08.04.2022 , "Mertologia Holding";

Flowmeter type: "Aqua metro" sensor type water: JMD / IFMA 0035, № Id 4628833 - calibration certificate № 02-OP-02/14.02.2022 "Kalibra-Bulgaria" LTD;

Mini Air 60 - Macro - 40 m / s Anemometer pressure - Inspection report № 30499 // 09.06.2022 - K.Schulten;

Pressure sensor PU +/- 4000 Pa - Inspection report: № 30495 / 09.06.2022 Serial № 9002.1998.KF25545 +/- 4000Pa - K.Schulten;

Meter speed air type: Testo 415 Idn № 02512879, certificate of calibration from : № 18047 от 31.03.2022 "Total-Test" LTD;



**TECHNICAL DOCUMENTATION USED:** (list of technical specifications with requirements and methods for testing, rules and regulations etc. documents related with a performance evaluation.).

**BDS EN 14351-1:2006+A2:2016**– Windows and doors - Product standard, performance characteristics - Part 1: Windows and external pedestrian doorsets;

**BDS EN 1026:2016** - Windows and doors - Air permeability - Test method;

**BDS EN 1027:2016** – Windows and doors - Watertightness - Test method;

**BDS EN 12211:2016** - Windows and doors - Resistance to wind load - Test method;

**BDS EN 12210:2016** - Windows and doors - Resistance to wind load – Classification;

**BDS EN 12208:2003** - Windows and doors - Watertightness – Classification;

**BDS EN 12207:2017**- Windows and doors - Air permeability – Classification;



## Applications:

### 3. Watertightness

**BDS EN 1027 – Windows and doors - Watertightness - Test method.**

#### Watertightness: EN 12208 -

Spaying method A      Number of nozzles: 3      Vol. Water: 360.0 litre/hour  
Spaying angle: 24 Degree      ;      6.0 litre/minute  
Add. spraying pipe      Number of nozzles: 0      Vol. Water: 0.0 litre/hour  
( 1.0 litre/nozzle )      ;      0.0 litre/minute

#### 1. Watertightness pressure

| Pressure Pa |      | Time     | Remark |
|-------------|------|----------|--------|
| Nominal     | Real |          |        |
| 0           | 0    | 00:15:00 | OK     |
| 50          | 51   | 00:05:00 | OK     |
| 100         | 100  | 00:05:00 | OK     |
| 150         | 151  | 00:05:00 | OK     |
| 200         | 201  | 00:05:00 | OK     |
| 250         | 250  | 00:05:00 | OK     |
| 300         | 301  | 00:05:00 | OK     |
| 450         | 450  | 00:05:00 | OK     |
| 600         | 603  | 00:05:00 | OK     |

Watertightness Class: A9

Point of water ingress :

Probable cause of leakage :



#### 4. Resistant to wind load

### BDS EN 12211 - Windows and doors - Resistance to wind load - Test method.

#### Wind Resistance: EN 12210

Temperature: 20 Celsius Humidity: 75 % Air pressure: 1013.0 HPa

| Wind Resistance: EN 12210 |       |       |
|---------------------------|-------|-------|
| P1 for deflection         | 2000  | -2000 |
| P2 for cycles             | -1000 | 1000  |
| P3 for safety test        | -3000 | 3000  |

Deflection:

Distance between the way transducers

a01 <-> c03 = 1470 mm a04 <-> c06 = 1470 mm

A = 1/150 B = 1/200 C = 1/300

Wind Resistance P1 pressure

3 Pressure pulses 2200 Pa implemented

| Pressure Desired | Pressure Actual | Distortion Absolute |            |            | Distortion Relative |  | Distortion class |
|------------------|-----------------|---------------------|------------|------------|---------------------|--|------------------|
| 2000             | 2011            | a01= -3.08          | b02= -2.71 | c03= -1.29 | f01= -0.53          |  | C (1/>999)       |
| 2000             | 2011            | a04= -1.17          | b05= -2.36 | c06= -2.25 | f02= -0.65          |  | C (1/>999)       |
| 0                | 0               | a01= 0.01           | b02= 0.02  | c03= 0.02  | f01= 0.00           |  |                  |
| 0                | 0               | a04= 0.00           | b05= 0.01  | c06= 0.02  | f02= 0.00           |  |                  |

Class: 5

Wind Resistance P1 suction

3 Pressure pulses -2200 Pa implemented

| Pressure Desired | Pressure Actual | Distortion Absolute |            |           | Distortion Relative |  | Distortion class |
|------------------|-----------------|---------------------|------------|-----------|---------------------|--|------------------|
| -2000            | -2007           | a01= 1.61           | b02= 1.91  | c03= 1.05 | f01= 0.58           |  | C (1/>999)       |
| -2000            | -2007           | a04= 1.66           | b05= 2.44  | c06= 1.94 | f02= 0.64           |  | C (1/>999)       |
| 0                | 0               | a01= 0.01           | b02= 0.00  | c03= 0.01 | f01= -0.01          |  |                  |
| 0                | 0               | a04= 0.00           | b05= -0.01 | c06= 0.00 | f02= -0.01          |  |                  |

Class: 5

Rolling shutter box

Roll shutter box P1 pressure

3 Pressure pulses 2200 Pa implemented

| Pressure Desired | Pressure Actual | Distortion Absolute |            |            | Distortion Relative |  | Distortion % |
|------------------|-----------------|---------------------|------------|------------|---------------------|--|--------------|
| 2000             | 2009            | a01= -2.97          | b02= -2.58 | c03= -1.29 | f01= -0.45          |  | 1 / 2733     |
| 2000             | 2009            | a04= -1.19          | b05= -2.38 | c06= -2.28 | f02= -0.65          |  | 1 / 1892     |
| 0                | 0               | a01= 0.01           | b02= 0.01  | c03= 0.00  | f01= 0.00           |  | 1 / 0        |
| 0                | 0               | a04= 0.00           | b05= 0.01  | c06= 0.01  | f02= 0.00           |  | 1 / 0        |

Deflection OK



### 6.3 Air permeability

#### BDS EN 1026 - Windows and doors - Air permeability - Test method.

#### Air Permeability: EN 12207 in accordance with BS EN 1026

Window surface: 1.820 m<sup>2</sup> Seal length: 5.142 m

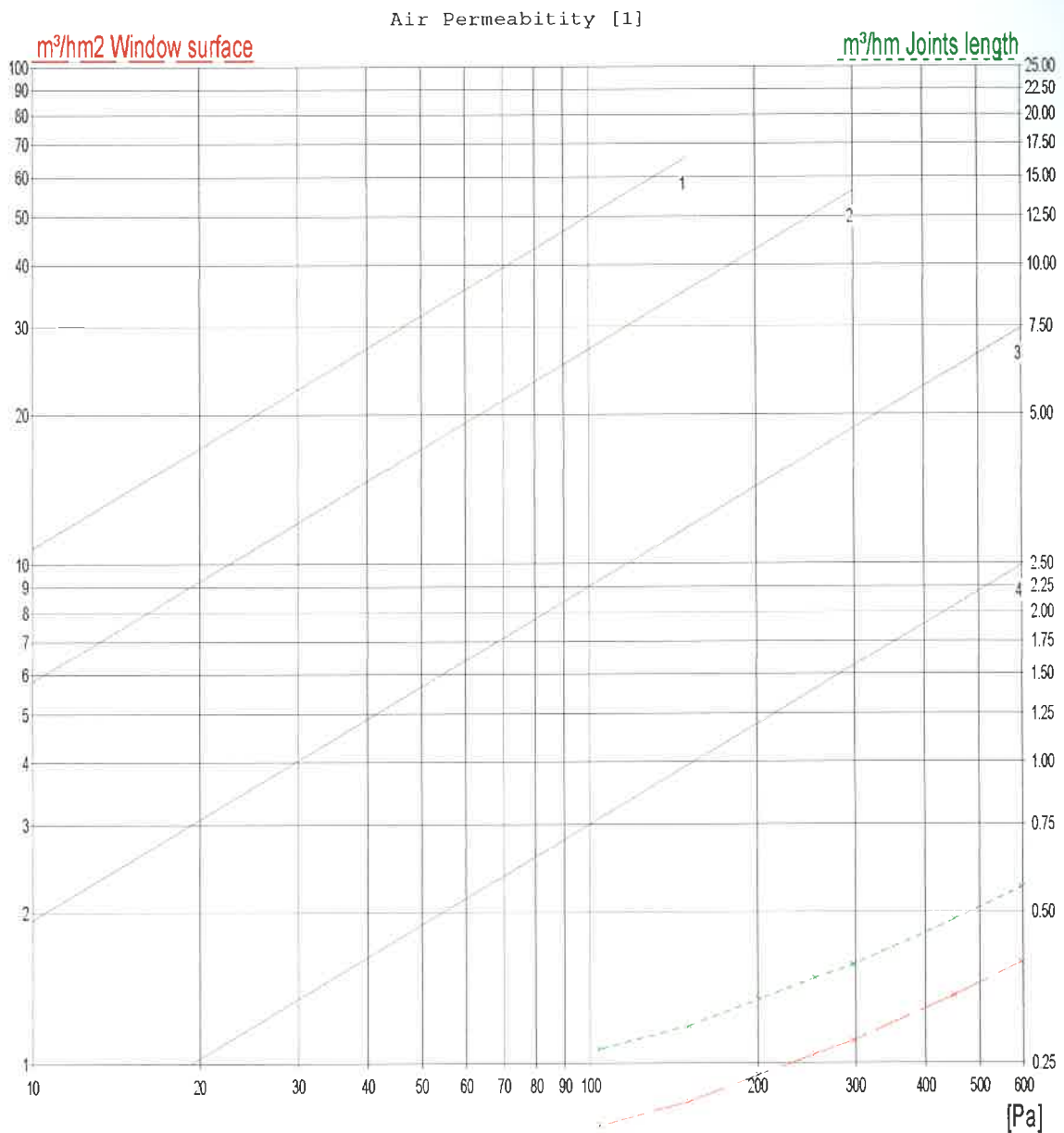
##### 1. Air Permeability pressure / Air Permeability suction

| Pressure Pa    |      | Qc<br>mih | Qtc<br>mih | Window surface<br>mi/h/mi | class | Joints length |       |
|----------------|------|-----------|------------|---------------------------|-------|---------------|-------|
| Nominal        | Real |           |            |                           |       | mi/h/m        | class |
| <b>+</b>       |      |           |            |                           |       |               |       |
| 50             | 49   | 0.00      | 0.00       | 0.00                      | 4     | 0.00          | 4     |
| 100            | 104  | 0.00      | 1.37       | 0.75                      | 4     | 0.26          | 4     |
| 150            | 151  | 0.00      | 1.52       | 0.83                      | 4     | 0.29          | 4     |
| 200            | 201  | 0.00      | 1.72       | 0.94                      | 4     | 0.33          | 4     |
| 250            | 254  | 0.00      | 1.89       | 1.04                      | 4     | 0.36          | 4     |
| 300            | 297  | 0.00      | 2.01       | 1.10                      | 4     | 0.39          | 4     |
| 450            | 450  | 0.00      | 2.47       | 1.36                      | 4     | 0.48          | 4     |
| 600            | 597  | 0.00      | 2.88       | 1.58                      | 4     | 0.56          | 4     |
| <b>-</b>       |      |           |            |                           |       |               |       |
| -50            | -49  | 0.00      | 0.00       | 0.00                      | 4     | 0.00          | 4     |
| -100           | -100 | 0.00      | 1.32       | 0.73                      | 4     | 0.25          | 4     |
| -150           | -151 | 0.00      | 1.49       | 0.82                      | 4     | 0.29          | 4     |
| -200           | -202 | 0.00      | 1.69       | 0.92                      | 4     | 0.32          | 4     |
| -250           | -250 | 0.00      | 1.88       | 1.03                      | 4     | 0.36          | 4     |
| -300           | -303 | 0.00      | 2.05       | 1.12                      | 4     | 0.39          | 4     |
| -450           | -454 | 0.00      | 2.47       | 1.36                      | 4     | 0.48          | 4     |
| -600           | -598 | 0.00      | 2.83       | 1.55                      | 4     | 0.55          | 4     |
| <b>Average</b> |      |           |            |                           |       |               |       |
| 50             | 49   | 0.00      | 0.00       | 0.00                      | 4     | 0.00          | 4     |
| 100            | 102  | 0.00      | 1.35       | 0.74                      | 4     | 0.26          | 4     |
| 150            | 151  | 0.00      | 1.51       | 0.83                      | 4     | 0.29          | 4     |
| 200            | 201  | 0.00      | 1.70       | 0.93                      | 4     | 0.33          | 4     |
| 250            | 252  | 0.00      | 1.88       | 1.03                      | 4     | 0.36          | 4     |
| 300            | 300  | 0.00      | 2.03       | 1.11                      | 4     | 0.39          | 4     |
| 450            | 452  | 0.00      | 2.47       | 1.36                      | 4     | 0.48          | 4     |
| 600            | 597  | 0.00      | 2.86       | 1.57                      | 4     | 0.55          | 4     |

Pressure: 4      Suction: 4      Average value: 4

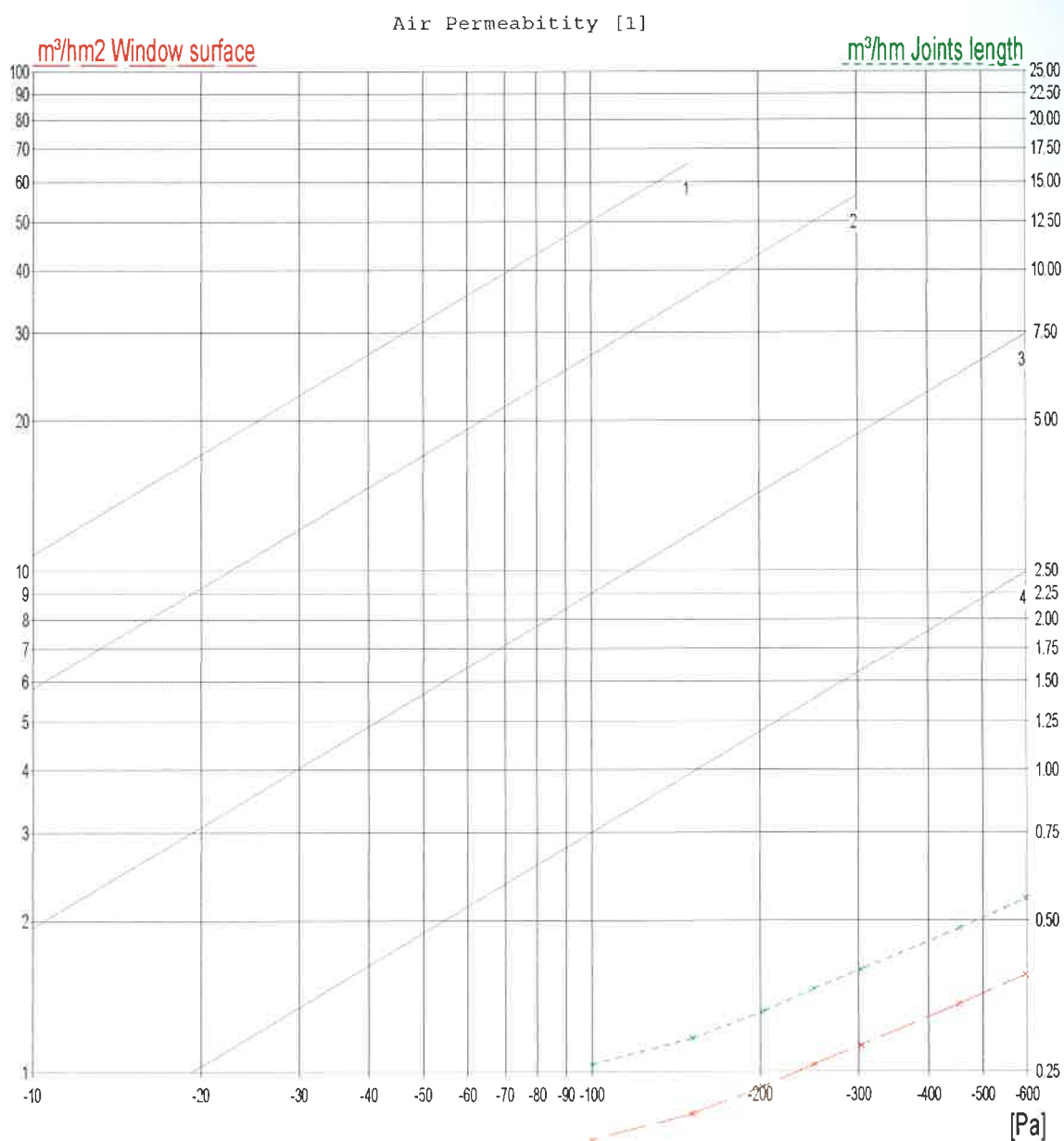


Air Permeability pressure:





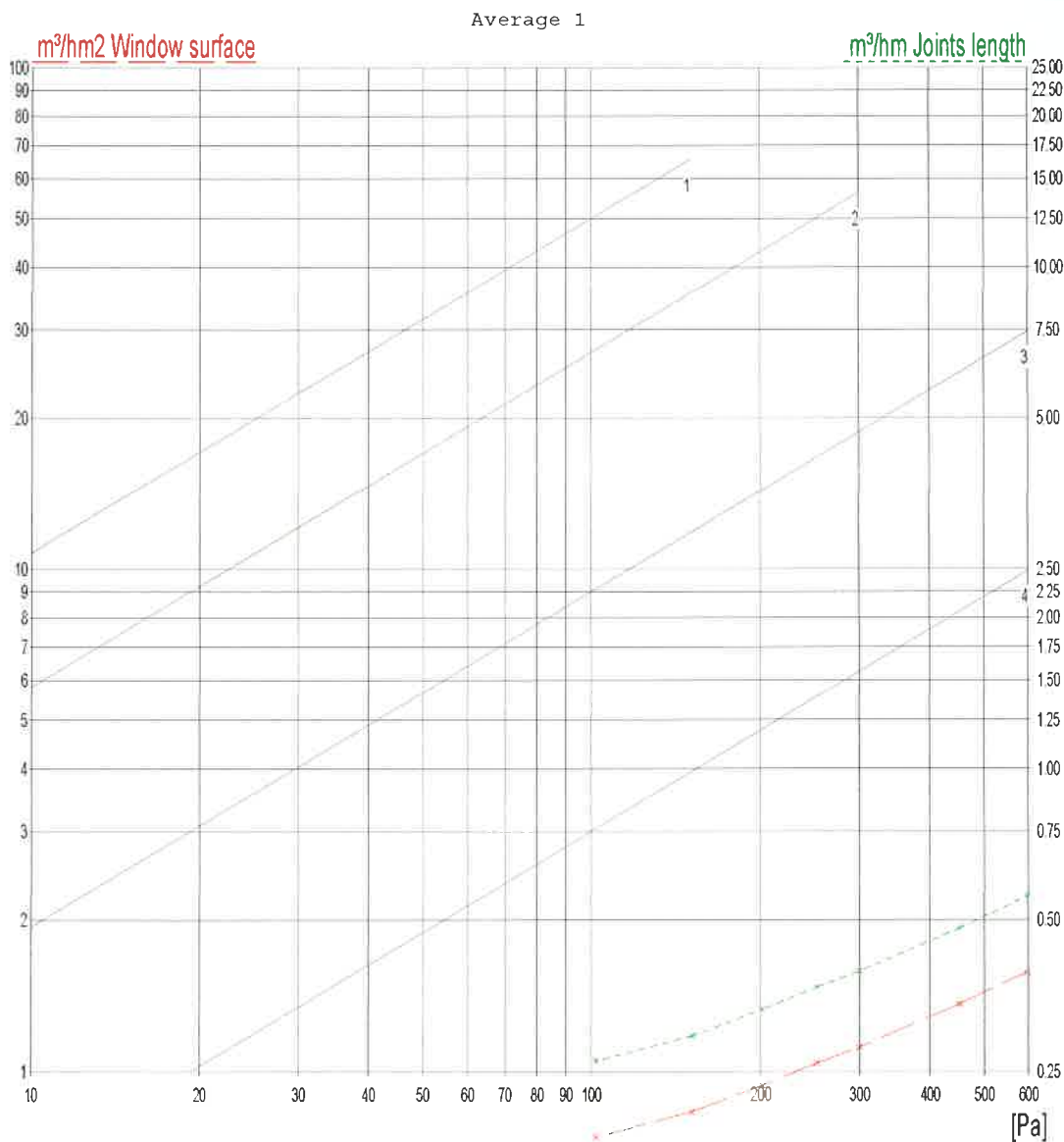
Air Permeability suction:








Air Permeability Average:



Head of test:   
/eng. I. Georgieva/

Head of laboratory:   
/PhD eng. H. Georgiev/

