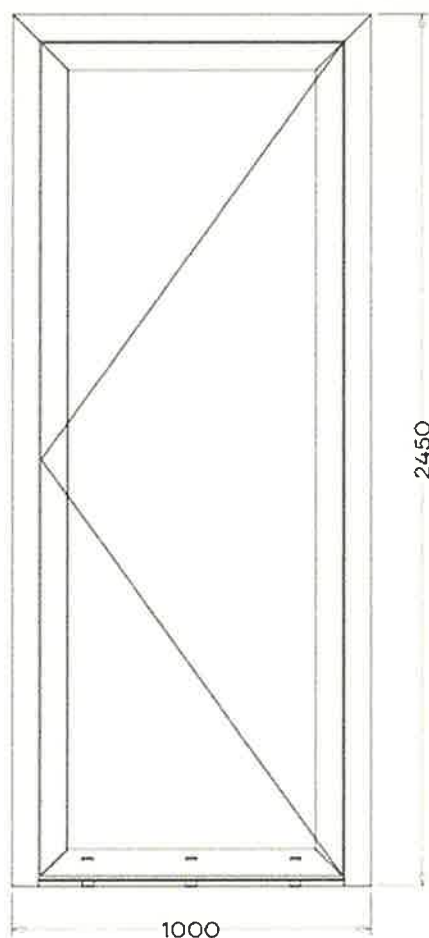


TEST PROTOCOL

№ 12 / 11.07.2025

Designation of the product:	Door KD71
Producer:	KÖMMERLING SEE, Sofia, Slavyanska Street 5
Client:	KÖMMERLING SEE, Sofia, Slavyanska Street 5
Assigning document:	Contract: № 08/10.06.2025
System of assessment for conformity:	System "3"
Standard:	EN 14351-1:2006+A2:2016
Essential requirements:	
	3. Watertightness
	4. Resistant to wind load
	6.3. Air permeability
Test sample:	1 piece sample – request of 10.06.2025
Period for conducting the testing:	27.06.2025 - 09.07.2025

Description of the product tested:



Overall dimension: 1000 mm x 2450 mm

Frame: 210000

Sash: 210002

Glass bead: 390005

Opening type: Inward

Sealing: EPDM

Hardware: Winkhaus

Locking point: 3

Hinges: 4

Drainage: 3

Type of glazing: 28 mm (6/16/6) / white + white /



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Results from testing

№ in order	Essential characteristics	Measure unit	Testing method	Performance	Harmonised technical specification
1	2	3	4	5	6
1.	Watertightness	-	EN 1027	Class A3	EN 14351-1+A2
2.	Resistant to wind load	-	EN 12211	Class 5C	EN 14351-1+A2
3.	Air permeability	-	EN 1026	Class 3	EN 14351-1+A2

Technical devices used:

Indications of moving 1, 2, 3, 4, 5, 6 type 8712-50 - Certificate of calibration № 1985A-D-24/13.05.2024, № 1986A-D-24/13.05.2024, № 1987A-D-24/13.05.2024, № 1988A-D-24/13.05.2024, № 1989A-D-24/13.05.2024, № 1990A-D-24/13.05.2024 "Metrologiya Holding";

Shtrih measure to the U-shaped manometer, Type: Pa / UI-γ 0,88, ID № 1695 calibration certificate № 1566A-Д-25/04.04.2025, "Mertologia Holding";

Flowmeter type: "Aqua metro" sensor type water: JMD / IFMA 0035, № ID 4628833 - calibration certificate № 02-OP-04/14.02.2025 "Kalibra-Bulgaria" LTD;

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

Mini Air 60 -Macro - 40 m / s Vacuum anemometer - Inspection report № 30500 / 09.06.2022 Serial № 16311/001 - K.Schulten;

Mini Air 60 - Mini; 40 m / s Anemometer pressure - Inspection report № 30498 / 09.06.2022 Serial № 67080 - K.Schulten;

Mini Air 60 - Mini; 40 m / s Vacuum anemometer - Inspection report: № 30497 / 09.06.2022 Serial № 67080 - K.Schulten

Vacuum sensor PU +/- 4000 Pa - Inspection report: № 30496 / 09.06.2022 Serial № 9002.1998.KF25545 +/- 4000Pa - 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: № 21129/ 28.01.2025 "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.).

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

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

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

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

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

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

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

Applications:

3. Watertightness

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
(0.0 litre/nozzle)		: 0.0 litre/minute

1. Watertightness pressure

Pressure Pa		Time	Remark
Nominal	Real		
0	0	00:15:00	OK
50	50	00:05:00	OK
100	100	00:05:00	OK
150	0	00:05:00	trickling: 00:00:36
200	0	00:05:00	-
250	0	00:05:00	-
300	0	00:05:00	-
450	0	00:05:00	-
600	0	00:05:00	-

Watertightness Class: A3

Point of water ingress :

Probable cause of leakage :



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Permit № CPR 04 - NB 2145/25.09.14

4. Resistant to wind load

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

Wind Resistance: EN 12210

Temperature: 20 Celsius Humidity: 45 % 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 = 2440 mm a04 <-> c06 = 2440 mm

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

Wind Resistance P1 pressure

3 Pressure pulses 2200 Pa implemented

Pressure Desired	Actual	Distortion Absolute			Distortion Relative		Distortion class
2000	2006	a01= -1.39	b02= -2.10	c03= -1.02	f01= -0.89		C (1/ 797)
2000	2006	a04= -3.38	b05= -5.56	c06= -1.62	f02= -3.06		C (1/ 797)
0	0	a01= 0.01	b02= 0.00	c03= 0.01	f01= -0.01		
0	0	a04= 0.00	b05= -0.02	c06= -0.02	f02= -0.01		

Class: 5

Wind Resistance P1 suction

3 Pressure pulses -2200 Pa implemented

Pressure Desired	Actual	Distortion Absolute			Distortion Relative		Distortion class
-2000	-2010	a01= 1.14	b02= 1.63	c03= 0.57	f01= 0.78		C (1/>999)
-2000	-2010	a04= 2.22	b05= 4.09	c06= 2.75	f02= 1.61		C (1/>999)
0	0	a01= 0.01	b02= 0.00	c03= 0.01	f01= -0.01		
0	0	a04= -0.02	b05= -0.02	c06= -0.04	f02= 0.01		

Class: 5

Rolling shutter box

Roll shutter box P1 pressure

3 Pressure pulses 2200 Pa implemented

Pressure Desired	Actual	Distortion Absolute			Distortion Relative		Distortion %
2000	2010	a01= -1.48	b02= -2.19	c03= -1.04	f01= -0.93		1 / 1075
2000	2010	a04= -3.57	b05= -5.64	c06= -1.62	f02= -3.04		1 / 328
0	0	a01= 0.00	b02= -0.01	c03= -0.01	f01= 0.00		1 / 0
0	0	a04= -0.01	b05= 0.00	c06= -0.01	f02= 0.01		1 / -310

Deflection OK



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6.3. Air permeability

EN 1026 - Windows and doors - Air permeability - Test method

Air Permeability: EN 12207 in accordance with BS EN 1026

Window surface: 2.450 m² Seal length: 6.480 m

1. Air Permeability pressure / Air Permeability suction

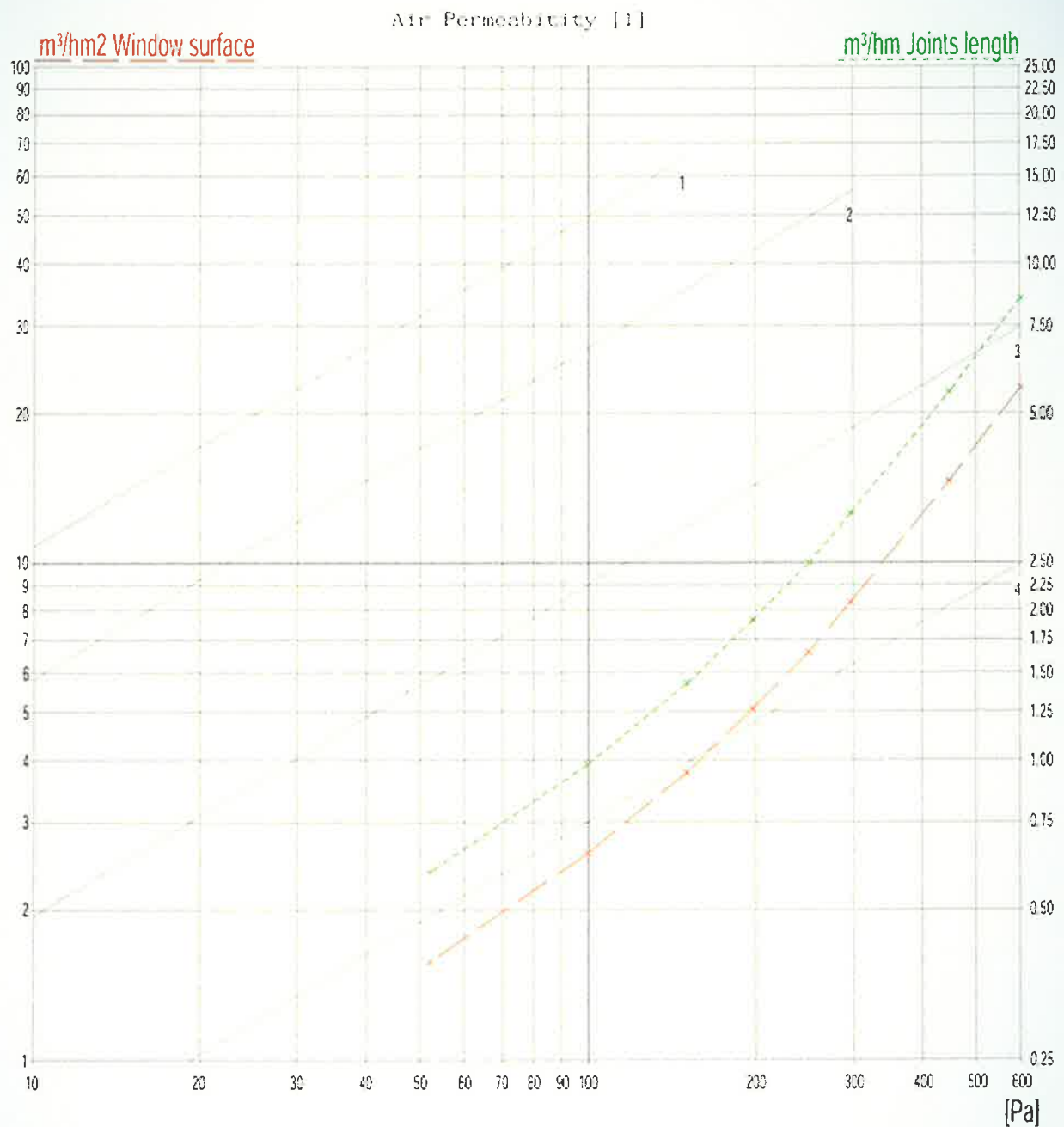
Pressure Nominal	Pa Real	Qc mih	Qtc mih	Window surface m ² /h/m ²	class	Joints m ² /h/m	length class
+							
50	52	0.00	3.85	1.57	4	0.59	3
100	100	0.00	6.34	2.59	4	0.97	3
150	151	0.00	9.23	3.76	4	1.42	3
200	198	0.00	12.39	5.05	3	1.91	3
250	250	0.00	16.13	6.58	3	2.49	3
300	297	0.00	20.32	8.29	3	3.13	3
450	447	0.00	35.63	14.54	3	5.49	3
600	601	0.00	55.04	22.46	3	8.49	2
-							
-50	-48	0.00	2.11	0.86	4	0.32	4
-100	-101	0.00	3.39	1.38	4	0.52	4
-150	-150	0.00	4.44	1.81	4	0.68	4
-200	-201	0.00	5.30	2.16	4	0.81	4
-250	-251	0.00	6.08	2.48	4	0.93	4
-300	-302	0.00	6.81	2.78	4	1.05	4
-450	-449	0.00	8.57	3.49	4	1.32	4
-600	-601	0.00	9.87	4.03	4	1.52	4
Average							
50	50	0.00	2.98	1.21	4	0.46	4
100	100	0.00	4.87	1.98	4	0.75	4
150	150	0.00	6.83	2.79	4	1.05	3
200	199	0.00	8.85	3.61	4	1.36	3
250	250	0.00	11.11	4.53	4	1.71	3
300	299	0.00	13.56	5.53	4	2.09	3
450	448	0.00	22.10	9.02	3	3.41	3
600	601	0.00	32.46	13.25	3	5.00	3

Pressure: 3 Suction: 4 Average value: 3



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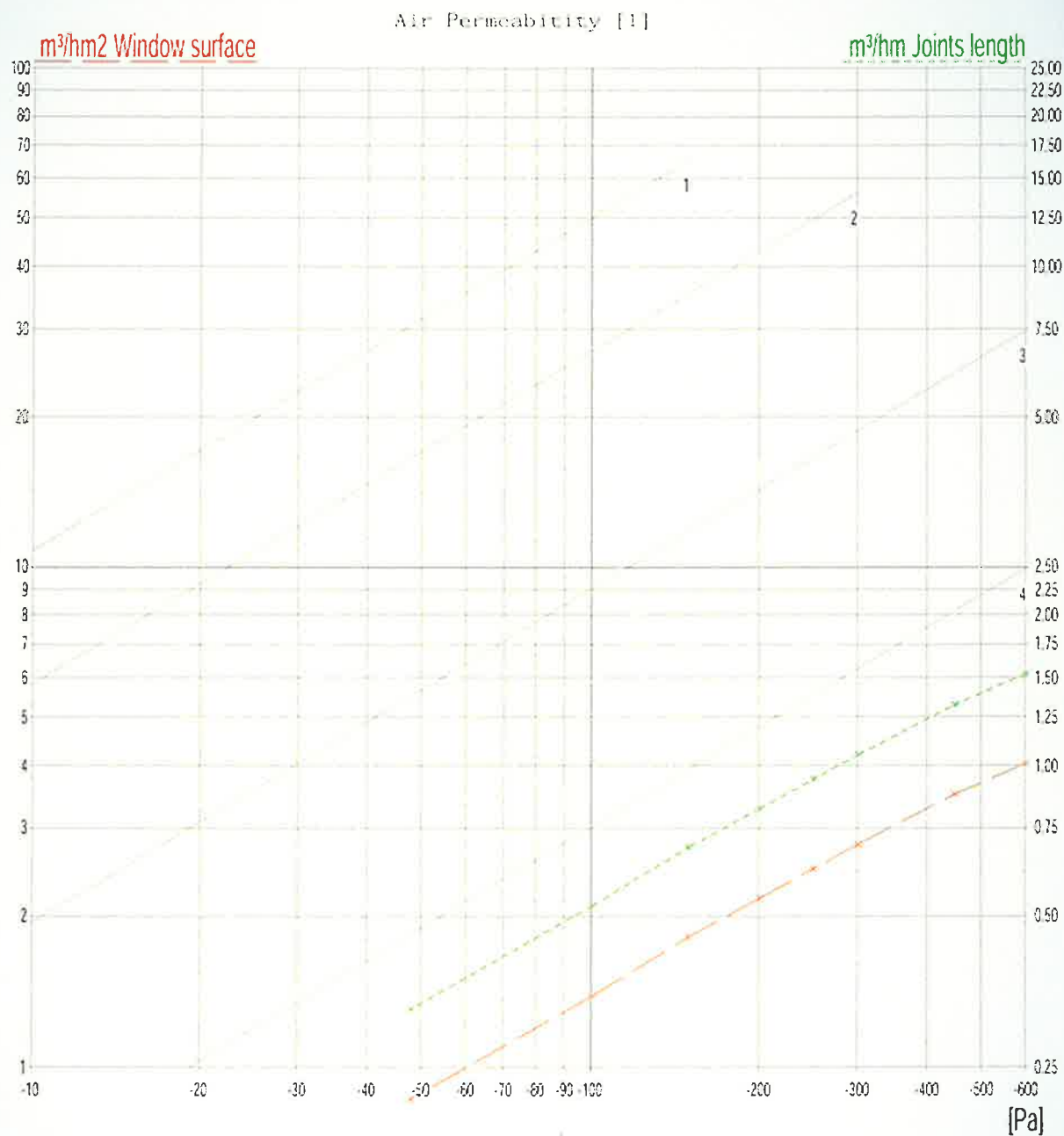
Air Permeability pressure:



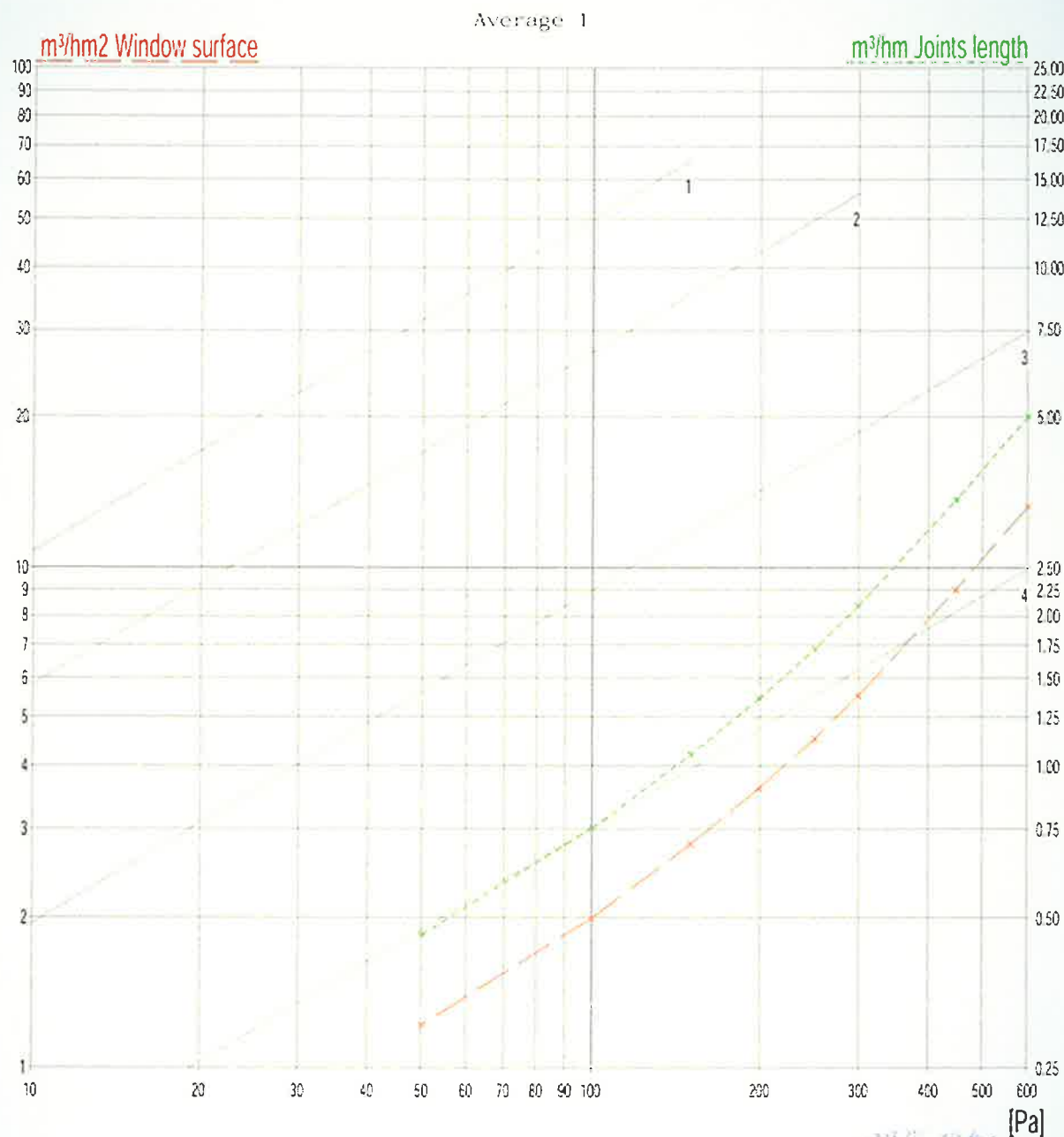


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Air Permeability suction:



Air Permeability Average:



Head of test:

/PhD eng. H.Georgiev/

Head of laboratory:

/PhD eng. H.Georgiev/

