



SOLAR PROJECT

PROTOCOL OF INITIAL TYPE TEST



№ ITT- 06 /11.04.2014

The testing was performed in compliance with the requirements of Part Two of Regulation for the essential requirements towards construction projects and assessment for conformity of the construction products (RERCPACCP), initiated by Construction Projects Directive (CPD) 89/106/EEC of the European Community and Regulation (EC) № 305/2011.

Designation of the product:	PVC - window 3 chamber system WP 3000
Producer:	„Weiss Profil” LTD, Sofia 1220, 8 Iliensko shose str.
Client:	„Weiss Profil” LTD Sofia 1220, 8 Iliensko shose str.
Assigning document:	Contract № 07 / 07.04.2014
System of assessment for conformity:	System “3” as in Annex ZA of EN 14351-1+1A:2010
Essential requirements:	
	3. Dangerous substance and water penetration
	4. Safe operation (resistance to wind load)
	5. Noise protection
	6. Power and heat saving (power efficiency) air permeability
Test sample:	1 piece sample – request of 07.04.2014
Period for conducting the testing:	From 07.04.2014 to 11.04.2014

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към Солар Проджект ООД
Разрешение № CPR 04 - NB 2145/ от 25.09.14
Валидност до 01.09.2019
от регистъра на Европейската комисия
ФК 510.01

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AT SOLAR PROJECT LTD
Permit № CPR 04 - NB 2145/ from 25.09.14
with validity 01.09.2019
FK 510.01-2



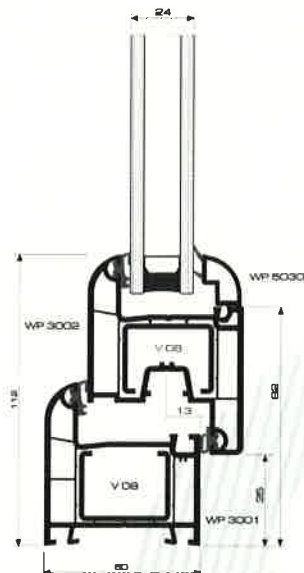
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Description of the product tested:



Overall dimension: 1230 mm x 1480 mm

Hardware: TGP

Frame: WP 3001

Locking: 6 in number

Sash: WP 3002

Hinges: 2 in number

Mullion: WP 3003

Drainage: 2 in number

Glass bead: WP 5030

Type of glass: White + Low emission

Opening type: Normal opening

Glass dimension: 24 mm (4/16/4/)

Sealing: Extrusion

Filling: Argon



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Results from testing

3. Dangerous substance and water penetration

No in order	Indicator	Measure unit	Testing method	Test results	Requirements as in technical specification
1	2	3	4	5	6
1.	Watertightness	-	BDS EN 1027	Class A8	BDS EN 14351-1+1A

4. Safe operation (resistance to wind load)

No in order	Indicator	Measure unit	Testing method	Test results	Requirements as in technical specification
1	2	3	4	5	6
1.	Resistant to wind load	-	BDS EN 12211	Class 5A/5B	BDS EN 14351-1+1A

5. Sound insulation

No in order	Indicator	Measure unit	Testing method	Test results	Requirements as in technical specification
1	2	3	4	5	6
1.	Sound insulation	dB	BDS EN ISO 10140-2	35	BDS EN 14351-1+1A

6. Power and heat saving (power efficiency) air permeability

No in order	Indicator	Measure unit	Testing method	Test results	Requirements as in technical specification
1	2	3	4	5	6
1.	Thermal transmittance	W/m ² K	BDS EN ISO 12567-1	1.2	BDS EN 14351-1+1A
2.	Air permeability	-	BDS EN 1026	Class 4	BDS EN 14351-1+1A

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TECHNICAL DOCUMENTATION USED: (list of technical specifications with requirements and methods for testing, rules and regulations etc. documents related to initial type testing)

BDS EN 14351-1+1A – Windows and doors - Product standard, performance characteristics - Part 1: Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics

BDS EN ISO 12567-1 – Thermal performance of windows and doors - Determination of thermal transmittance by the hot-box method - Part 1: Complete windows and doors (ISO 12567-1:2010)

EN ISO 10140-2 – Acoustics - Laboratory measurement of sound insulation of building elements - Part 2: Measurement of airborne sound insulation (ISO 10140-2:2010)

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

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

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



Applications essential requirement:

3. Dangerous substance and water penetration

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
(0.0 litre/nozzle) : 0.0 litre/minute

1. Watertightness pressure

Pressure Pa		Time	Remark
Nominal	Real		
0	0	00:15:00	OK
50	49	00:05:00	OK
100	100	00:05:00	OK
150	151	00:05:00	OK
200	201	00:05:00	OK
250	252	00:05:00	OK
300	299	00:05:00	OK
450	454	00:05:00	OK
600	603	00:05:00	trickling:00:02:12

Watertightness Class: A8

Point of water ingress :

Probable cause of leakage :



4. Safe operation (resistance to wind load)

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

Wind resistance: EN 12210

Test Sequence	Pressure in Pa	
P1 for deflection	2000	-2000
P2 for cycles	1000	-1000
P3 for safety test	0	0

Deflection

Distance between the way transducers

a01 <-> c03 = 1300 mm

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

Wind resistance P1 pressure

3 Pressure pulses 2200 Pa implemented

Pressure		Distortion				Distortion	Distortion			
Nominal	Estimated	Absolute				Relative	%			
2000	2005	a01=	-6.01	b02=	-15.35	c03=	-10.10	f01=	-7.30	1 / 178
0	0	a01=	0.01	b02=	-0.04	c03=	-0.05	f01=	-0.02	1 / 0

Class: 5A

Wind resistance P1 suction

3 Pressure pulses -2200 Pa implemented

Pressure		Distortion			Distortion	Distortion				
Nominal	Estimated	Absolute			Relative	%				
-2000	-2008	a01=	6.35	b02=	14.53	c03=	9.88	f01=	6.41	1 / 202
0	0	a01=	0.07	b02=	0.04	c03=	0.04	f01=	-0.02	1 / 0

Class: 5B

Pressure pulses

50 Cycles 1000 Pa / -1000 Pa implemented

Remark :



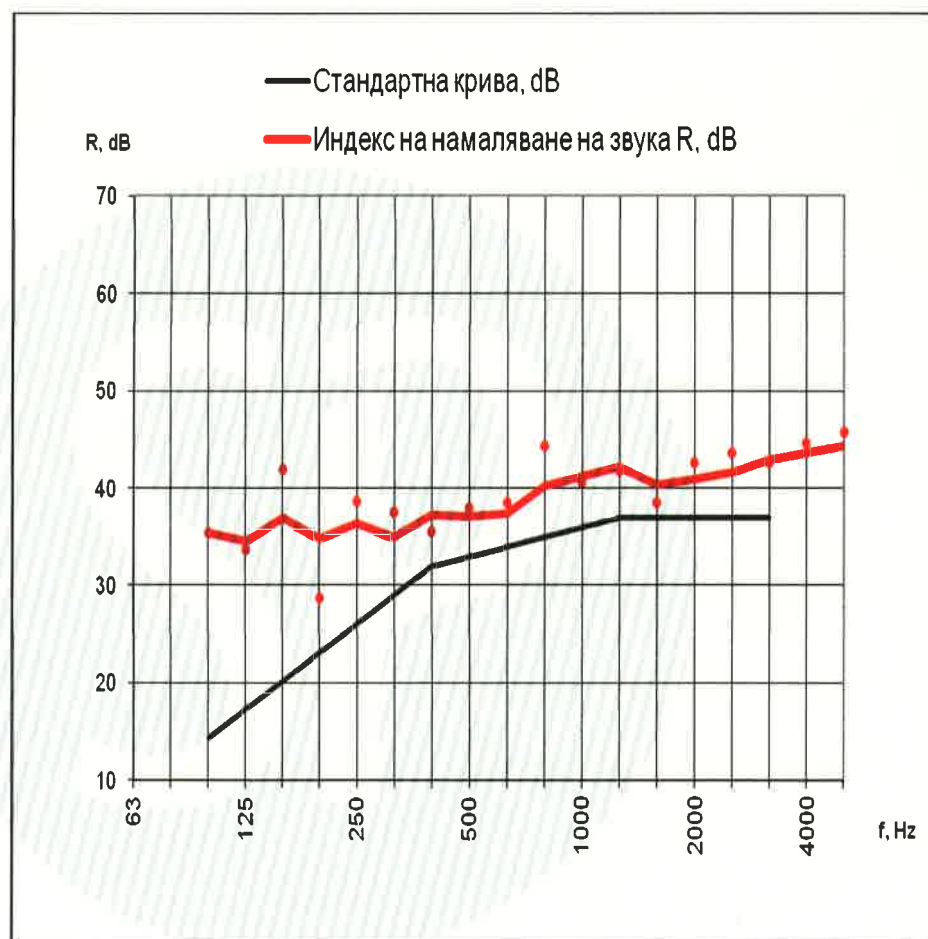
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5. Sound insulation

EN ISO 10140-2 – Acoustics - Laboratory measurement of sound insulation of building elements - Part 2: Measurement of airborne sound insulation (ISO 10140-2:2010)

Frequency f Hz	L_n one-third octave dB
50	-
63	-
80	-
100	35.4
125	33.7
160	41.9
200	28.7
250	38.7
315	37.5
400	37.5
500	40.4
630	38.5
800	44.3
1000	40.6
1250	41.7
1600	40.4
2000	40.7
2500	41.6
3150	42.6
4000	44.7
5000	45.7



Legend: R-index, volume down, dB
f - frequency, Hz

Classification in accordance with ISO 717-1:

R_w (C; C_{tr}) = 35 (0; -1) dB $C_{50-3150} = (0,0)$ dB; $C_{50-5000} = (-1,0)$ dB; $C_{100-5000} = (-1,0)$ dB

Evaluation based on results from laboratory measurements obtained engineering method:

$C_{tr50-3150} = (-4,0)$ dB; $C_{tr50-5000} = (-5,0)$ dB; $C_{tr100-5000} = (-1,0)$ dB



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6. Power and heat saving (power efficiency) air permeability

6.1. Thermal performance of windows and doors - Determination of thermal transmittance by the hot-box method - Part 1: Complete windows and doors (ISO 12567-1:2010)

Air temperature in hot chamber:	$T_h = 26.5^{\circ}\text{C}$
Air temperature in cold chamber:	$T_c = 6.9^{\circ}\text{C}$
Environment temperature:	$T_o = 26.6^{\circ}\text{C}$
Thermal stream:	$F = 40\text{ W}$
Density of the thermal stream:	$f = 22\text{ W/m}^2$
Total thermal resistance:	$R = 0.90\text{ m}^2\text{K/W}$
Thermal transmittance:	$U = 1.20\text{ W/m}^2\text{K}$
Uncertainty in quantitative testing:	± 0.03



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

Air Permeability: EN 12207 in accordance with BS EN 1026

Window surface: 1.820 m² Seal length: 3.960 m

1. Air Permeability pressure / Air Permeability suction

Pressure Pa		Qc mih	Qtc mih	Window surface		Joints length	
Nominal	Real			mi/h/mi	class	mi/h/m	class
+							
50	49	0.00	1.97	1.08	4	0.49	3
100	100	0.00	2.88	1.58	4	0.72	4
150	151	0.00	3.95	2.17	4	0.99	3
200	201	0.00	4.68	2.57	4	1.18	4
250	252	0.00	5.27	2.89	4	1.33	4
300	303	0.00	5.83	3.20	4	1.47	4
450	454	0.00	7.43	4.08	4	1.87	4
600	599	0.00	8.83	4.85	4	2.23	4
-							
-50	-51	0.00	1.98	1.09	4	0.50	3
-100	-100	0.00	2.98	1.64	4	0.75	3
-150	-151	0.00	3.81	2.09	4	0.96	4
-200	-200	0.00	4.52	2.48	4	1.14	4
-250	-252	0.00	5.19	2.85	4	1.31	4
-300	-303	0.00	5.78	3.17	4	1.46	4
-450	-454	0.00	7.35	4.04	4	1.85	4
-600	-604	0.00	8.62	4.73	4	2.17	4
Average							
50	50	0.00	1.98	1.08	4	0.50	3
100	100	0.00	2.93	1.61	4	0.74	4
150	151	0.00	3.88	2.13	4	0.98	4
200	200	0.00	4.60	2.52	4	1.16	4
250	252	0.00	5.23	2.87	4	1.32	4
300	303	0.00	5.80	3.19	4	1.46	4
450	454	0.00	7.39	4.06	4	1.86	4
600	601	0.00	8.72	4.79	4	2.20	4

Pressure: 4 Suction: 4 Average value: 3

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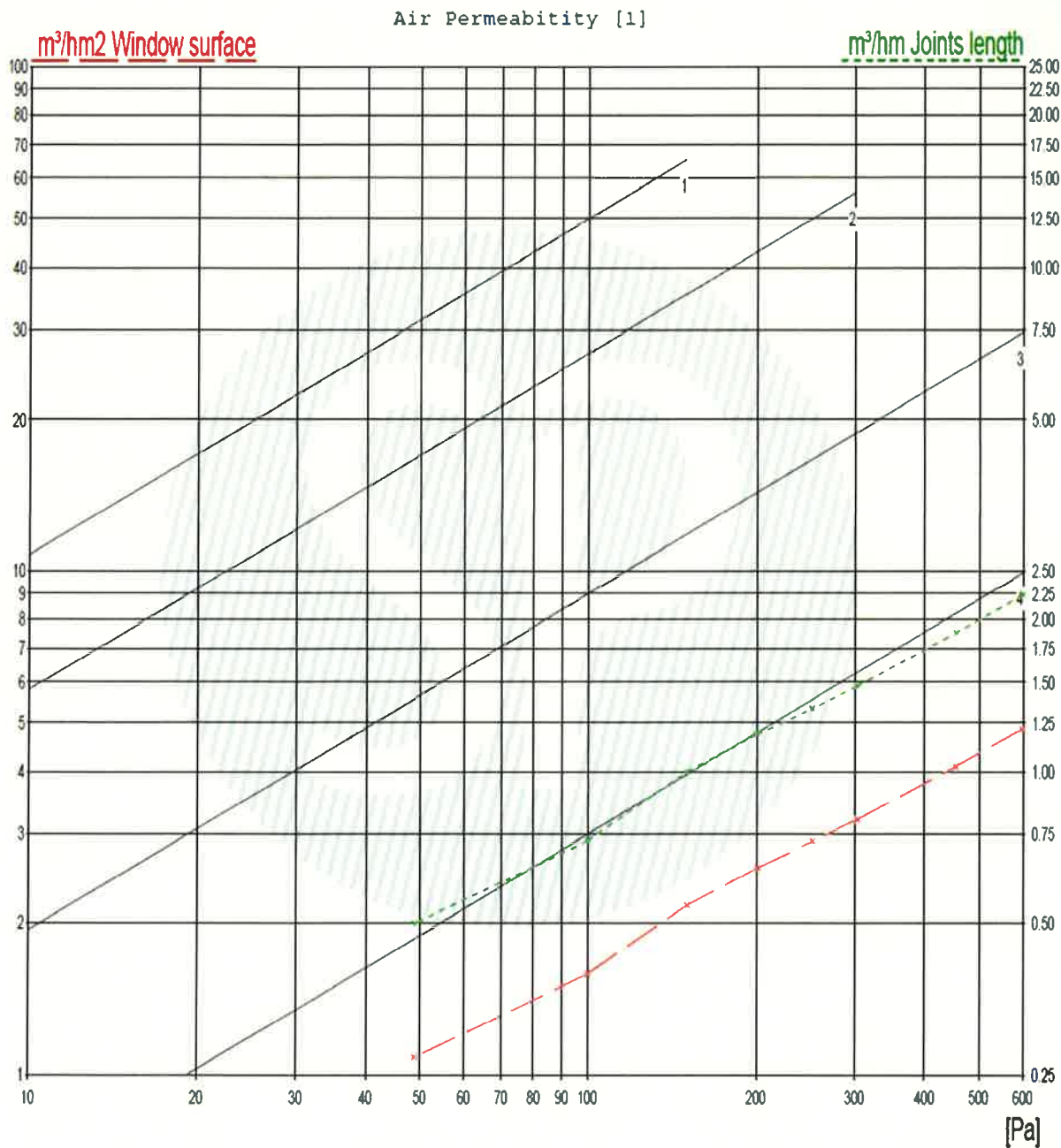
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Air Permeability pressure:



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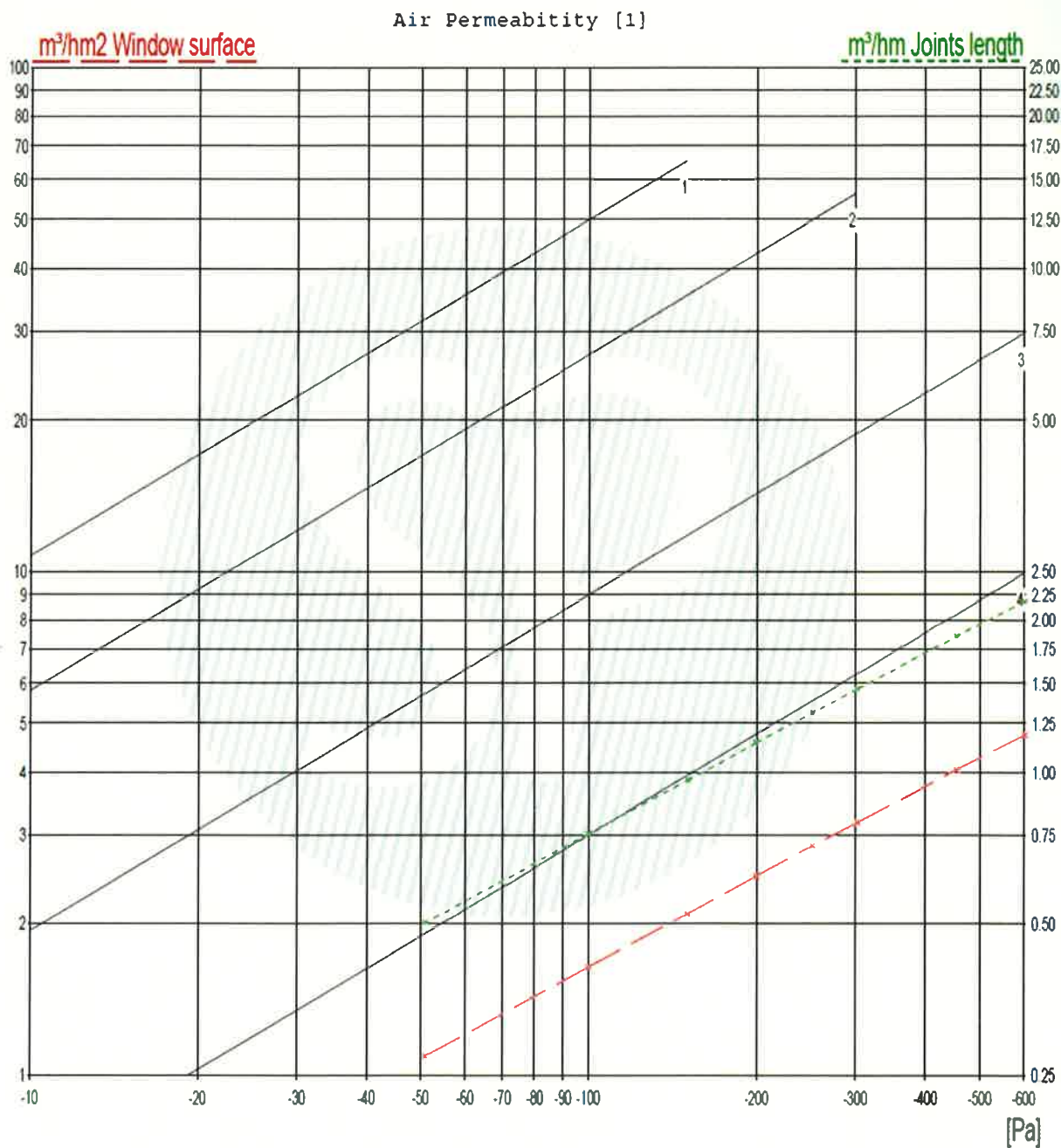
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Air Permeability suction:



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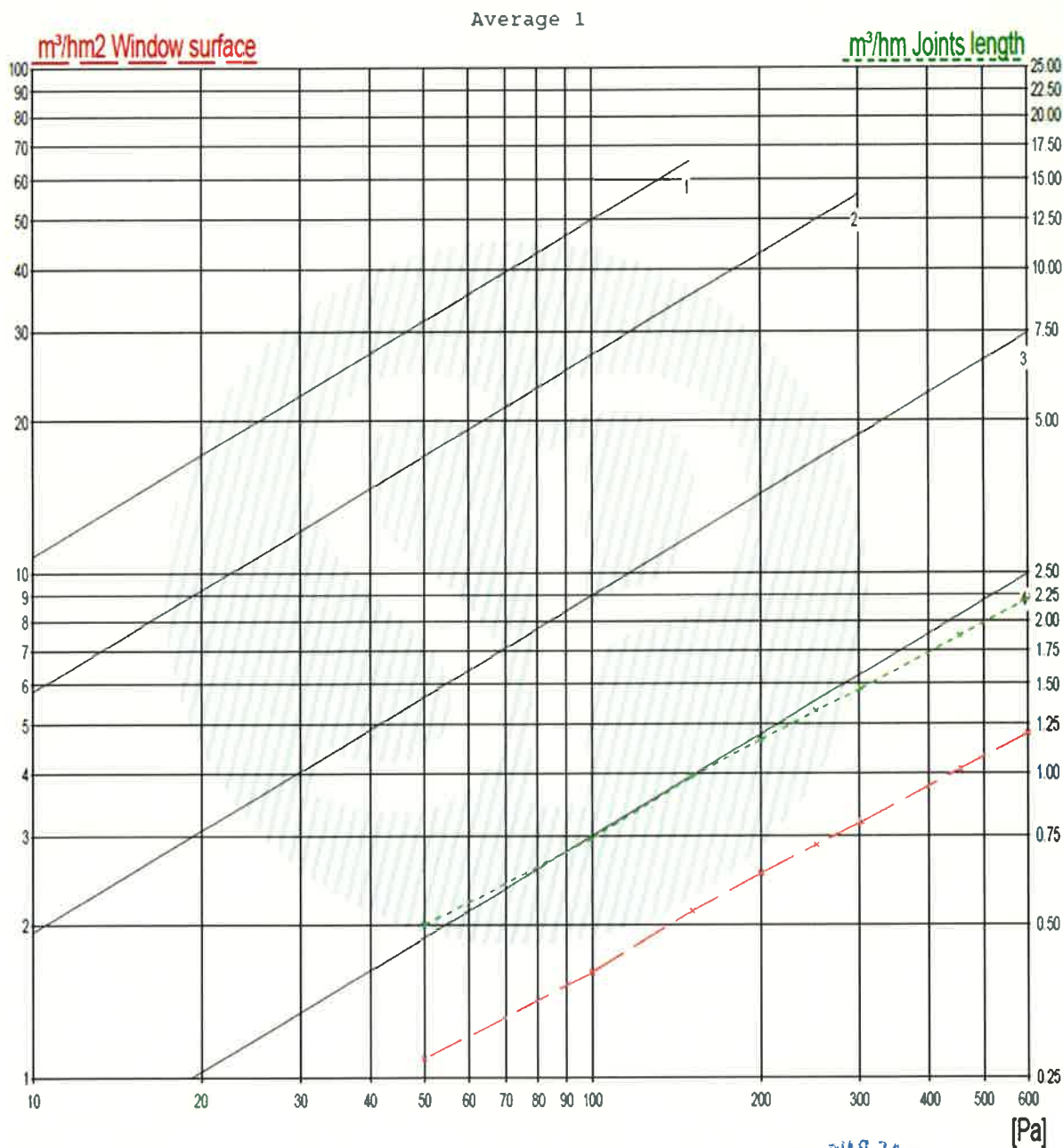
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Air Permeability Average:



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