

TEST REPORT SUMMARY OF RESULTS

Product manufacturer:	Hansen Polska Sp. z o. o. Ul. Lotniskowa 17, 36-060 Głogów Małopolski, Poland		
Product type:	Dual-action window		
Product series/model:	Hansen Millenium		
Primary product designator:	Class CW – PG50 - Size tested 1200 x 3050 mm (47 4/16" x 120 1/16" in)		
Optional Secondary Designator:	Positive ASD design pressure (DP) =	2400Pa	(50,13psf) pass
	Negative ASD design pressure (DP) =	-2400Pa	(-50,13psf) pass
	Positive Structural Test Pressure (STP) =	3600Pa	(75,19psf) pass
	Negative Structural Test Pressure (STP) =	-3600Pa	(-75,19psf) pass
	Water penetration resistance test pressure =	360Pa	(7,52psf) pass
	Air leakage =	±75Pa	(±1.57pfs) pass
Test completion date:	14/08/2024		
Reference must be made to Report No. MLTB-USCA-0153-2024, dated 05/09/2024, for complete test specimen description and detailed test results.			

Mobilne Laboratorium Techniki Budowlanej Sp. z o.o.
(Mobile Laboratory of Construction Technology Sp. z o. o.)

lab manager
Adam Mścichowski



Adam Mścichowski
Laboratory manager



AAMA/WDMA/CSA 101/I.S.2/A440:22**Laboratory test report**

Report Number:	MLTB-USCA-0153-2024
Date of testing:	14.08.2024
Report date:	05.09.2024
Record retention end date:	05.09.2034
Report to:	Hansen Polska Sp. z o. o., Ul. Lotniskowa 17, 36-060 Głogów Małopolski, Poland
Product type:	Dual-action window
Product tested:	Tilt & Turn inward window opening
Product series/model:	Hansen Millenium
Size tested:	1200 x 3050 mm (47 4/16" x 120 1/16" in)
Performance Class:	CW
Performance Grade:	50

In accordance with the customer contract:

Performance Class:		Performance Grade:	
CW		PG 50	
Test Specification:	AAMA/WDMA/CSA 101/I.S.2/A440:22 North American Fenestration Standard/ Specification for windows, doors, and skylights.		
-	Dimensions	procedure	PB-01 issue 1/2020
pt. 8.3.1	Operating Force	standard	E2068 – 00
pt. 8.3.2	Air leakage resistance test	standard	ASTM E283/E283M–19
pt. 8.3.3	Water penetration resistance test	standard	ASTM E547-00/E331-00
pt. 8.3.4	ASD design pressure (DP)	standard	ASTM E330/E330M
pt. 8.3.4	Structural Test Pressure (STP)	standard	ASTM E330/E330M
pt. 8.3.5	Forced entry resistance	standard	ASTM F588
pt. 8.3.6.6	Hardware load test	standard	AAMA/WDMA/CSA 101/I.S.2/A440:22



Table of contents

1	General information	3
2	Test methods	4
3	Test specimen mounting	5
4	Description of the test specimen	6
5	Test results	12
5.1	Operating force	12
5.2	Air leakage resistance test.....	13
5.3	Water penetration resistance test by cyclic static air pressure difference	14
5.4	Water penetration resistance test by uniform static air pressure difference	15
5.5	Uniform load deflection test at design pressure (DP)	16
5.6	Uniform load structural test (STP)	18
5.7	Operating force after uniform load structural test (STP).....	20
5.8	Forced-entry resistance test	21
5.9	Hardware load test.....	22
6	Annexes to the test report	23



1 General information

Conditioning the test object: minimum 24 hours before the test.

The test was carried out on a stand made of a rigid steel frame with movable steel supports, in which test objects of various dimensions can be mounted.

Measurement uncertainty data is available from the MLTB laboratory.

The laboratory confirms compliance with the requirements, i.e. assesses whether the product meets the requirements for a specific class. When making decisions, taking into account the level of risk associated with the adopted rule (wrong choice - acceptance or rejection), the Laboratory applies the binary rule of confirming compliance with the use of the guard band (test result with the specified measurement uncertainty), where the result:

- increased by the expanded uncertainty at the confidence level of 95% will not exceed the limit for a specific class, will be assessed as meeting the requirements,
- increased by the expanded uncertainty at the confidence level of 95% exceeds the limit for the specified class, it will be assessed as non-compliant.

The adopted rule, in accordance with the document ILAC-G8:09/2019, gives us <2.5% probability of incorrectly accepting or rejecting the result.



2 Test methods

AAMA/WDMA/CSA 101/I.S.2/A440:22 - North American Fenestration Standard/ Specification for windows, doors, and skylights.

ASTM E283/E283M-19 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

ASTM E547-00 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference.

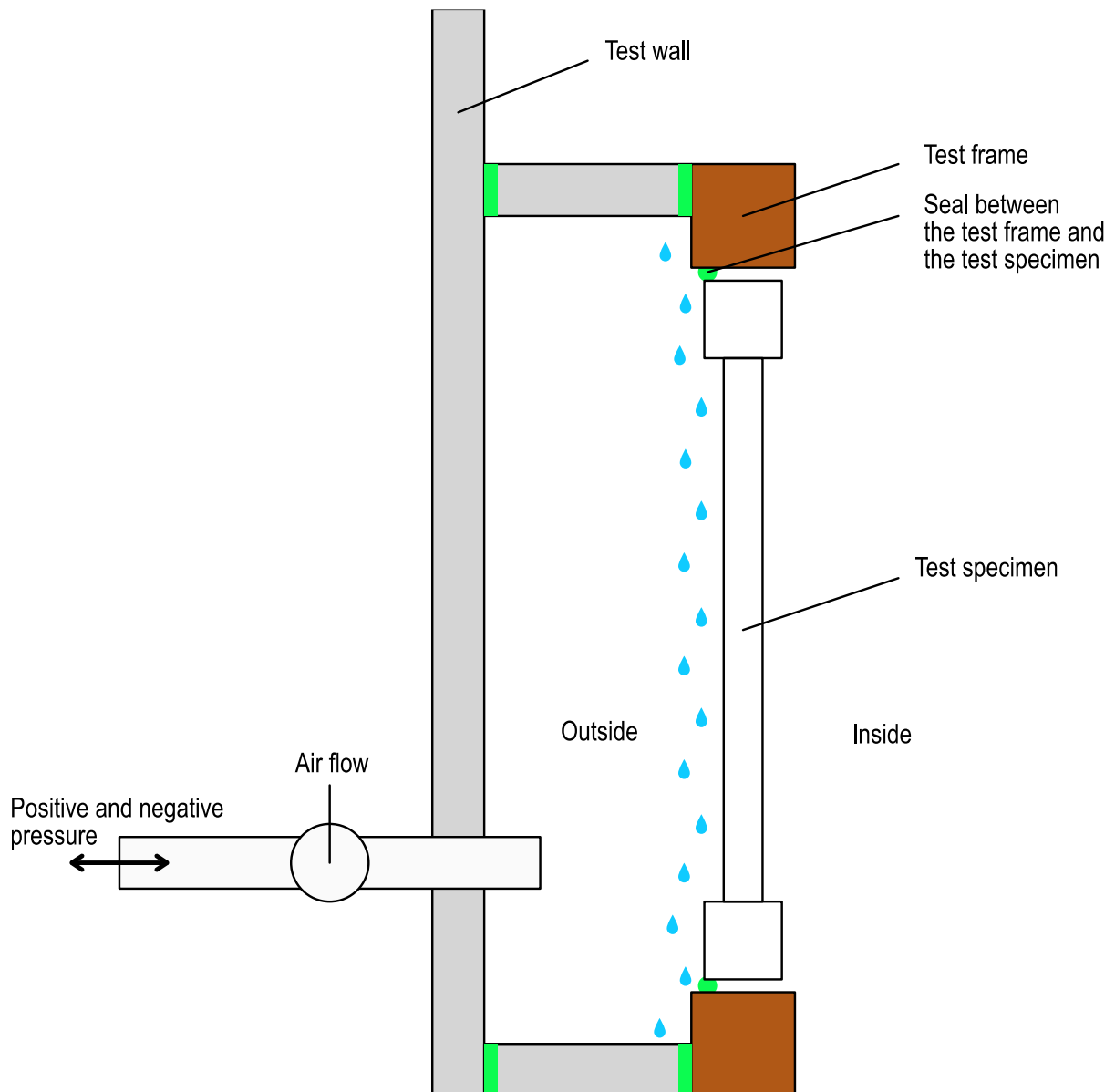
ASTM E331-00 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.

ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

ASTM F588 – 17 - Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact



3 Test specimen mounting



4 Description of the test specimen

Detailed technical drawings can be found in the chapter "Annexes to the test report".

*Note: Information from the customer.

Product type	Dual-action window
Model*	Hansen Millenium
Mode of operation	Tilt & turn inward opening

External dimensions

Name	Width [mm]	Height [mm]
Frame window	1200	3050
Window area	3,66 m ²	
Sash window	1183	3017
Sash area	3,57 m ²	
Glazing sash window	1125	2960

External dimensions: measurement from the inside of the test object.

Drainage system	Sum of holes	Dimension [mm]
Frame window-outside	5	6x35
Frame window-inside	5	6x35
Sash window	n/a	n/a

Decompression system	Sum of holes	Dimension [mm]
Frame window-outside	n/a	n/a
Frame window-inside	n/a	n/a
Sash window	n/a	n/a

Components

System profiles name*	Hansen Millenium
-----------------------	------------------

Type	Material*	No. catalogue*	Reinforcing profile*	No. catalogue*
Frame	aluminum with polyamide thermal break	421793	n/a	n/a
Threshold	aluminum with polyamide thermal break	432413	n/a	n/a
Sash	aluminum with polyamide thermal break	423153	n/a	n/a
Surface finish	raw aluminum			

Type	Connection method
Frame	aluminum sections cut at an angle of 45°, glued, screwed – screw stainless steel A2 4,8 x 32 mm;
Sash	aluminum sections cut at an angle of 45°, glued, screwed – screw stainless steel A2 4,8 x 32 mm;
Threshold	aluminum sections cut at an angle of 45°, glued, screwed – screw stainless steel A2 4,8 x 32 mm;



Type	Material*	No. catalogue*	Installation*
Frame external gaskets	EPDM	162531 + 161771	pulled manually
Frame/threshold central gaskets	EPDM	162571	pulled manually
Frame internal gaskets	n/a	n/a	n/a
Sash external gaskets	n/a	n/a	n/a
Sash central gaskets	n/a	n/a	n/a
Sash internal gaskets	EPDM	160171	pulled manually
Mullion external gaskets	n/a	n/a	n/a
Mullion central gaskets	n/a	n/a	n/a
Mullion internal gaskets	n/a	n/a	n/a
Glazing gaskets (under the glass)	EPDM	162781	pulled manually
Glazing internal gaskets	Northon dystans tape + structural silicone DC 776	n/a	pulled manually

Building hardware Producer*	Winkhaus activPilot Select
Opening function	Tilt & turn inward opening
Mechanism & Locking points	Central locking system. 15 pcs. locking points
Locking pressure	neutral

Glazing Producer*	Pilkington IGP Sp. z o. o.
Glazing composition*	External plane: 8mm tempered glass Gap width: 26mm Alu Spacer Internal plane: 44.2mm float glass
Glazing method*	plastic pads

Conditions during in the testing location

Temperature		Humidity	Atmospheric pressure
[°C]	[°F]	[%]	[hPa]
24	75,2	50	-----



Photographic documentation

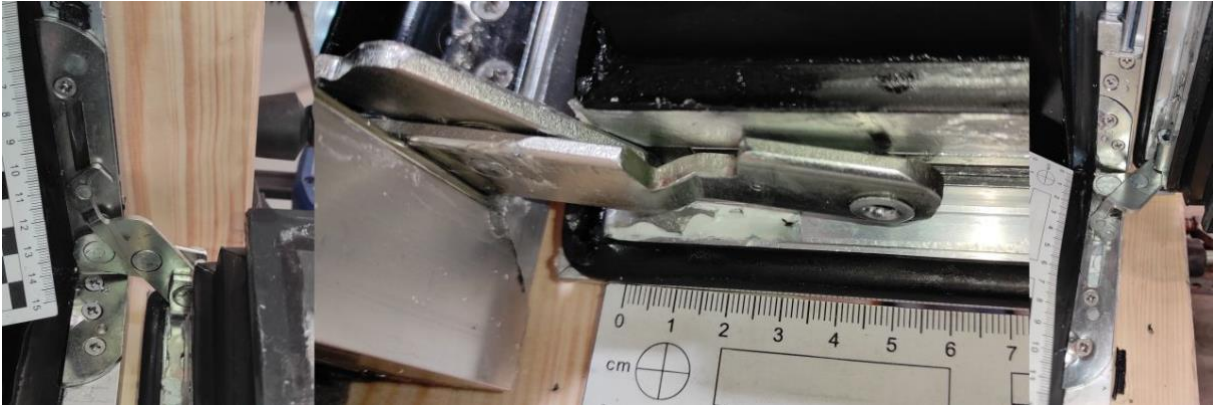


Interior view of the tested object mounted on the test stand.





Locking components in frame and sash.



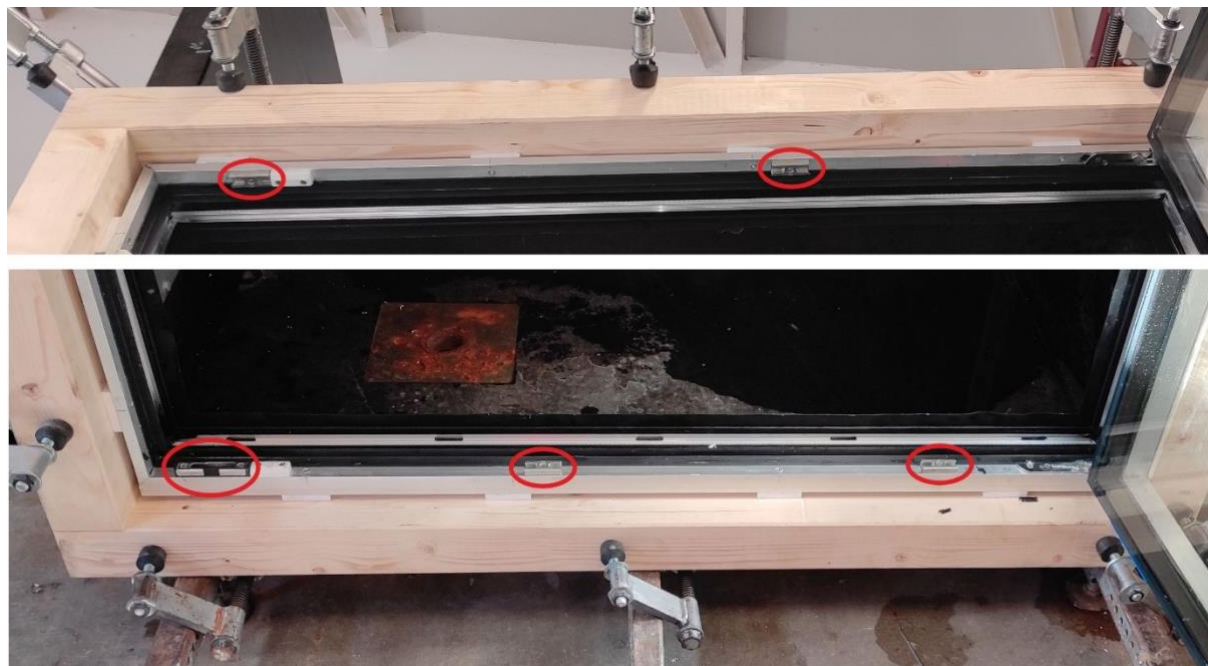
Hinnges.





Locking points in the window (left, right side).





Locking points in the window (upper, bottom section).



5 Test results

5.1 Operating force

The test was carried out on a stand made of a rigid steel frame with movable steel supports, in which test objects of various dimensions can be mounted.

The test was performed in accordance with the E2068-00 standard without any changes to the procedure.

Measurements were made using method B using a dynamometer.

The test object has not been modified in a way that affects the test results.

Reference document / Test specification: AAMA/WDMA/CSA 101/I.S.2/A440:22, pt. 8.3.1.

Measurement results

Measurement no	Sash opening [N]			Sash closing [N]		
	unlocking the fittings	breakaway force	in-motion operating force	breakaway force	in-motion operating force	locking the fittings
1	31,4	33,7	21,7	8,50	12,8	48,8
2	32,3	36,5	24,2	7,85	13,2	48,1
3	31,2	37,9	23,2	12,0	12,5	46,2
4	31,2	37,2	15,9	10,7	12,8	45,1
5	32,4	35,5	23,6	9,10	14,1	46,5
6	32,2	33,7	14,2	9,90	11,5	44,9
7	32,2	36,0	17,8	8,55	11,9	46,0
8	32,0	38,9	18,9	10,3	12,5	44,3
9	32,4	35,8	20,2	10,1	13,9	45,1
10	32,3	32,1	23,8	8,35	12,9	44,2
Average [N]	32,0	35,8	20,6	9,43	12,8	45,8
Maximum allowable operating force 155N						

Conditions during in the testing location

Temperature		Humidity	Atmospheric pressure
[°C]	[°F]	[%]	[hPa]
24	75,2	50	----



5.2 Air leakage resistance test

Reference document/Test specification: AAMA/WDMA/CSA 101/I.S.2/A440:22, pt. 8.3.2.

Standard: ASTM E283/E283M – 19. Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

The test object was tightly attached to the test chamber with its outer side.

The test object has not been modified in a way that affects the test results.

The test was performed in accordance with ASTM E283/E283M - 19 without any changes to the procedure.

Air leak measurement results

Surface of the tested object	Air pressure difference		Total air leakage through the object		Air leakage relative to the surface		Allowed air leakage
	[m ²]	[Pa]	[psf]	[m ³ /h]	[l/s]	[m ³ /h m ²]	
3,66	+75	+1,57	0,00	0,00	0,000	0,000	1,0
	-75	-1,57	0,00	0,00	0,000	0,000	1,0
	+300	+6,27	1,00	0,28	0,273	0,076	n/a
	-300	-6,27	0,00	0,00	0,000	0,000	n/a

Conditions during in the testing location

Temperature		Humidity	Atmospheric pressure
[°C]	[°F]	[%]	[hPa]
25	77	47	970



5.3 Water penetration resistance test by cyclic static air pressure difference

Reference document/Test specification: AAMA/WDMA/CSA 101/I.S.2/A440:22, pt. 8.3.3.

Standard: ASTM E547-00 (2016). Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference.

The test object was tightly attached to the test chamber with its outer side.

The test object has not been modified in a way that affects the test results.

Sprinkling water on the test object was carried out from its external side.

The test was performed in accordance with ASTM E547-00 (2016) without any changes to the procedure.

Water penetration test and observations

Cycle No.	Pressure difference		Cycle time	Observations, result
	[Pa]	[psf]	[s]	
1	360	7,52	300	no visible leaks
	0	0,0	90	no visible leaks
2	360	7,52	300	no visible leaks
	0	0,0	90	no visible leaks
3	360	7,52	300	no visible leaks
	0	0,0	90	no visible leaks
4	360	7,52	300	no visible leaks
	0	0,0	90	no visible leaks

Note: pressurized water spray time 0Pa/0psf = 60s.
The test object was sprinkled with water in the amount of min. 3.4l/min/m² (5.0gph/sqft).

Conditions during in the testing location

Temperature		Humidity	Atmospheric pressure
[°C]	[°F]	[%]	[hPa]
25	77	47	970



5.4 Water penetration resistance test by uniform static air pressure difference

Reference document/Test specification: AAMA/WDMA/CSA 101/I.S.2/A440:22, pt. 8.3.3.

Standard: ASTM E331-00 (2016). Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.

The test object was tightly attached to the test chamber with its outer side.

The test object has not been modified in a way that affects the test results.

Sprinkling water on the test object was carried out from its external side.

The test was performed in accordance with ASTM E331-00 (2016) without any changes to the procedure.

Water penetration test and observations

Pressure difference		Test time	Observations, result
[Pa]	[psf]	[s]	
360	7,52	900	no visible leaks
The test object was sprinkled with water in the amount of min. 3.4l/min/m ² (5.0gph/sqft).			
Note: the test was performed at the client's request.			

Conditions during in the testing location

Temperature		Humidity	Atmospheric pressure
[°C]	[°F]	[%]	[hPa]
25	77	45	970



5.5 Uniform load deflection test at design pressure (DP)

Reference document/Test specification: AAMA/WDMA/CSA 101/I.S.2/A440:22, pt. 8.3.4.

Standard: ASTM E330/E330M – 14. Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

The test object was tightly attached to the test chamber with its outer side.

A positive test pressure was created in the test chamber, followed by a negative test pressure.

The test was performed in accordance with ASTM E330/E330M - 14 (Procedure A) without any changes to the procedure.

No conclusions should be drawn from the performed test regarding the adequacy or inadequacy of the glass in the tested object.

To create the test pressures, it was not necessary to seal against air leakage through the tested object in the form of sticking tapes or foil.

Positive test pressure

Test pressure / Design Pressure (DP)		+2400Pa		+50,13psf		
Pre-load = 50% DP, maintenance by 10s. Removing the pressure difference, stabilization 5min., resetting the measurement sensors.						
Test pressure = 100% DP. Maintenance by 10s, deflection registration. Stabilization 5min., deformation registration.						
Window frame: A, C - L = 3050 mm, L/175 = 17,43 mm B - L = 1200 mm, L/175 = 6,86 mm						
Test pressure		Measurement points				
Pa	psf	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
+2400	+50,13	3,09	1,46	4,13	n/a	n/a
Removing the pressure difference, stabilization 5min., deformation registration.						
0	0,00	0,17	0,16	0,15	n/a	n/a
Note: No damage or impact on the functionality of the test sample was observed during the test.						



Negative test pressure

Test pressure / Design Pressure (DP)		-2400Pa		-50,13psf		
Pre-load = 50% DP, maintenance by 10s. Removing the pressure difference, stabilization 5min., resetting the measurement sensors.						
Test pressure = 100% DP. Maintenance by 10s, deflection registration. Stabilization 5min., deformation registration.						
Window frame: A, C - L = 3050 mm, L/175 = 17,43 mm B - L = 1200 mm, L/175 = 6,86 mm						
Test pressure		Measurement points				
Pa	psf	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
-2400	-50,13	-3,83	-2,84	-4,05	n/a	n/a
Removing the pressure difference, stabilization 5min., deformation registration.						
0	0,00	-0,38	-0,20	-0,33	n/a	n/a
Note: No damage or impact on the functionality of the test sample was observed during the test.						

Conditions during in the testing location

Temperature		Humidity	Atmospheric pressure
[°C]	[°F]	[%]	[hPa]
25	77	45	970



Spacing of measurement points.



5.6 Uniform load structural test (STP)

The test object was tightly attached to the test chamber with its outer side.

A positive test pressure was created in the test chamber, followed by a negative test pressure.

The test was performed in accordance with ASTM E330/E330M - 14 (Procedure A) without any changes to the procedure.

No conclusions should be drawn from the performed test regarding the adequacy or inadequacy of the glass in the tested object.

To create the test pressures, it was not necessary to seal against air leakage through the tested object in the form of sticking tapes or foil.

Reference document/Test specification: AAMA/WDMA/CSA 101/I.S.2/A440:22, pt. 8.3.4.

Positive test pressure

Test pressure / Structural Test Pressure (STP) = 150% DP		+3600Pa	+75,19 psf		
Pre-load = 50% STP, maintenance by 10s. Removing the pressure difference, stabilization 5min., resetting the measurement sensors.					
Test pressure = 150% DP. Maintenance by 10s, deflection registration. Stabilization 5min., deformation registration					
Allowed permanent deformation		0,3% x 3050 mm = 9,15 mm; 0,3% x 1200 mm = 3,60 mm			
Test pressure		Measurement points			
Pa	psf	A [mm]	B [mm]	C [mm]	
+3600	+75,19	4,70	2,45	6,78	
Removing the pressure difference, stabilization 5min., deformation registration.					
0	0,00	0,29	0,24	0,25	
Note: No damage or impact on the functionality of the test sample was observed during the test.					
Test result:		positive			

Negative test pressure

Test pressure / Structural Test Pressure (STP) = 150% DP		-3600Pa	-75,19 psf		
Pre-load = 50% STP, maintenance by 10s. Removing the pressure difference, stabilization 5min., resetting the measurement sensors.					
Test pressure = 150% DP. Maintenance by 10s, deflection registration. Stabilization 5min., deformation registration					
Allowed permanent deformation		0,3% x 3050 mm = 9,15 mm; 0,3% x 1200 mm = 3,60 mm			
Test pressure		Measurement points			
Pa	psf	A [mm]	B [mm]	C [mm]	
-3600	-75,19	-4,92	-3,72	-5,58	
Removing the pressure difference, stabilization 5min., deformation registration.					
0	0,00	-0,44	-0,26	-0,37	
Note: No damage or impact on the functionality of the test sample was observed during the test.					
Test result:		Positive			



Conditions during in the testing location

Temperature		Humidity	Atmospheric pressure
[°C]	[°F]	[%]	[hPa]
25	77	44	970



photo. 1 Spacing of measurement points.



5.7 Operating force after uniform load structural test (STP)

The test was carried out on a stand made of a rigid steel frame with movable steel supports, in which test objects of various dimensions can be mounted.

The test was performed in accordance with the E2068-00 standard without any changes to the procedure.

Measurements were made using method B using a dynamometer.

The test object has not been modified in a way that affects the test results.

Reference document / Test specification: AAMA/WDMA/CSA 101/I.S.2/A440:22, pt. 8.3.1 and pt. 8.3.4.3.

Measurement results after STP tests

Measurement no	Sash opening [N]			Sash closing [N]		
	unlocking the fittings	breakaway force	in-motion operating force	breakaway force	in-motion operating force	locking the fittings
1	32,9	41,0	23,9	9,50	14,1	53,7
2	34,7	39,6	25,4	10,1	13,9	52,5
3	34,3	40,7	26,0	11,3	13,2	51,0
4	34,4	42,3	21,0	9,60	13,6	50,0
5	34,9	39,8	24,7	10,9	12,3	51,5
6	34,5	41,5	19,8	12,2	12,8	50,6
7	35,4	39,3	22,8	11,5	11,2	54,2
8	34,0	41,3	22,0	10,1	14,3	50,0
9	33,6	38,9	25,3	11,7	13,1	48,5
10	34,1	35,7	22,1	13,1	13,4	53,3
Average [N]	34,3	40,3	23,4	10,9	13,3	51,6
Maximum allowable operating force 155N						

Conditions during in the testing location

Temperature		Humidity	Atmospheric pressure
[°C]	[°F]	[%]	[hPa]
25	77	45	-----



5.8 Forced-entry resistance test

The test object was tightly attached to a testing stand made of a rigid metal frame.

The test was performed in accordance with ASTM F588 – 17 without any changes to the procedure.

No conclusions should be drawn from the study as to the suitability or inadequacy of glass in the facility being tested. Reference document/Test specification: AAMA/WDMA/CSA 101/I.S.2/A440:22, pt. 8.3.5.

Type window	Type B
Performance level	Grade 40

Casement window

Test	Time/Load	Result
Disassembly Test	5 min.; Tools: spatula, straight head screwdriver, standard slot-type pliers	All locking devices remain engaged and entry cannot be gained; Pass
Assembly test B1. Sash (as casement)	30 s. L2 + L2 – 667N	All locking devices remain engaged and entry cannot be gained; Pass
Assembly test B2. Sash (as casement)	30 s. L2 + L2 – 667N, L1 – 1334N	All locking devices remain engaged and entry cannot be gained; Pass
Assembly test B3. Sash (as casement)	30 s. L2 + L2 – 667N, L1 – 1334N	All locking devices remain engaged and entry cannot be gained; Pass
Lock Hardware Manipulation Test	10 min.; Tools: spatula, a piece of black annealed 16 gauge straight	All locking devices remain engaged and entry cannot be gained; Pass
Sash Manipulation Test	10 min.; Manipulation by hand: push, pull	All locking devices remain engaged and entry cannot be gained; Pass

Conditions during in the testing location

Temperature		Humidity	Atmospheric pressure
[°C]	[°F]	[%]	[hPa]
26	78,8	55	-----



5.9 Hardware load test

The test was performed without any changes to the procedure.

Reference document/Test specification: AAMA/WDMA/CSA 101/I.S.2/A440:22, pt. 8.3.6.6.

Load sash

Specimen	Load	Deflection limit	Result
Sash	140N	38.3 x sash area = 136,7 mm	103.5 mm; Pass

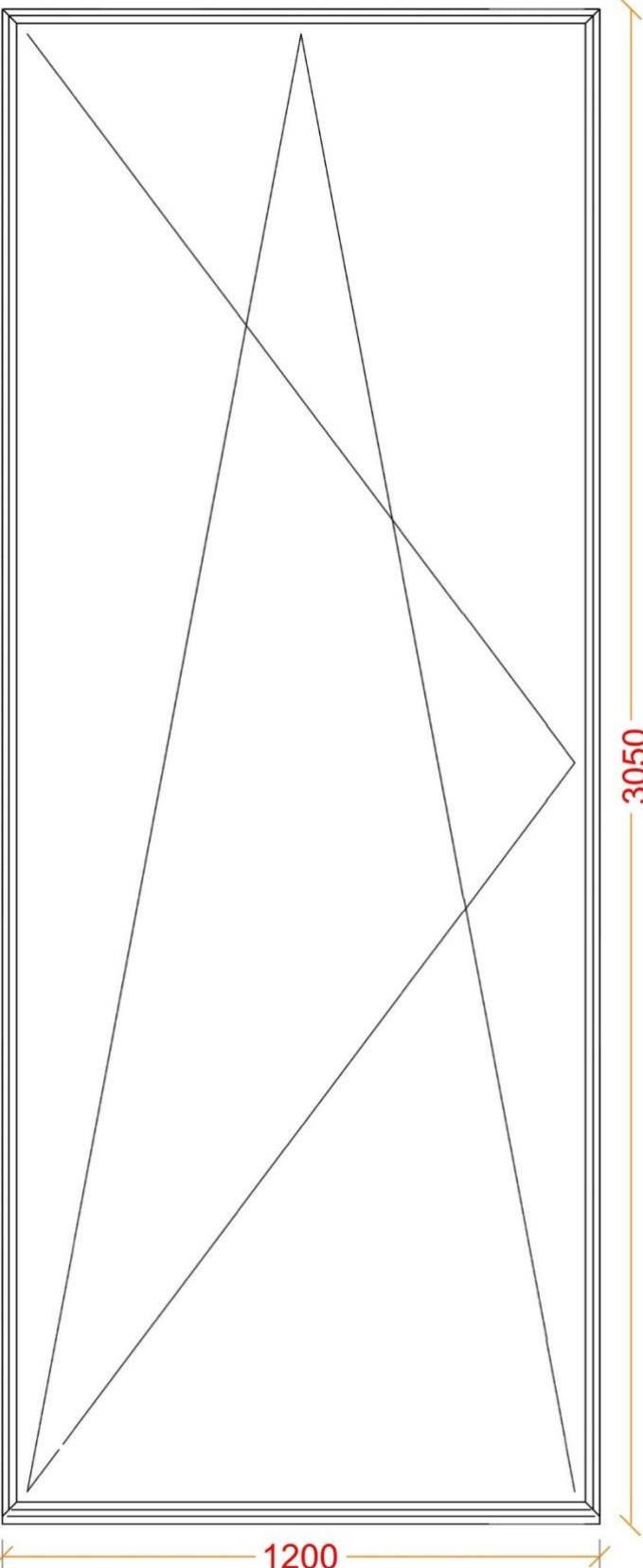
Conditions during in the testing location

Temperature		Humidity	Atmospheric pressure
[°C]	[°F]	[%]	[hPa]
25	77	57	----

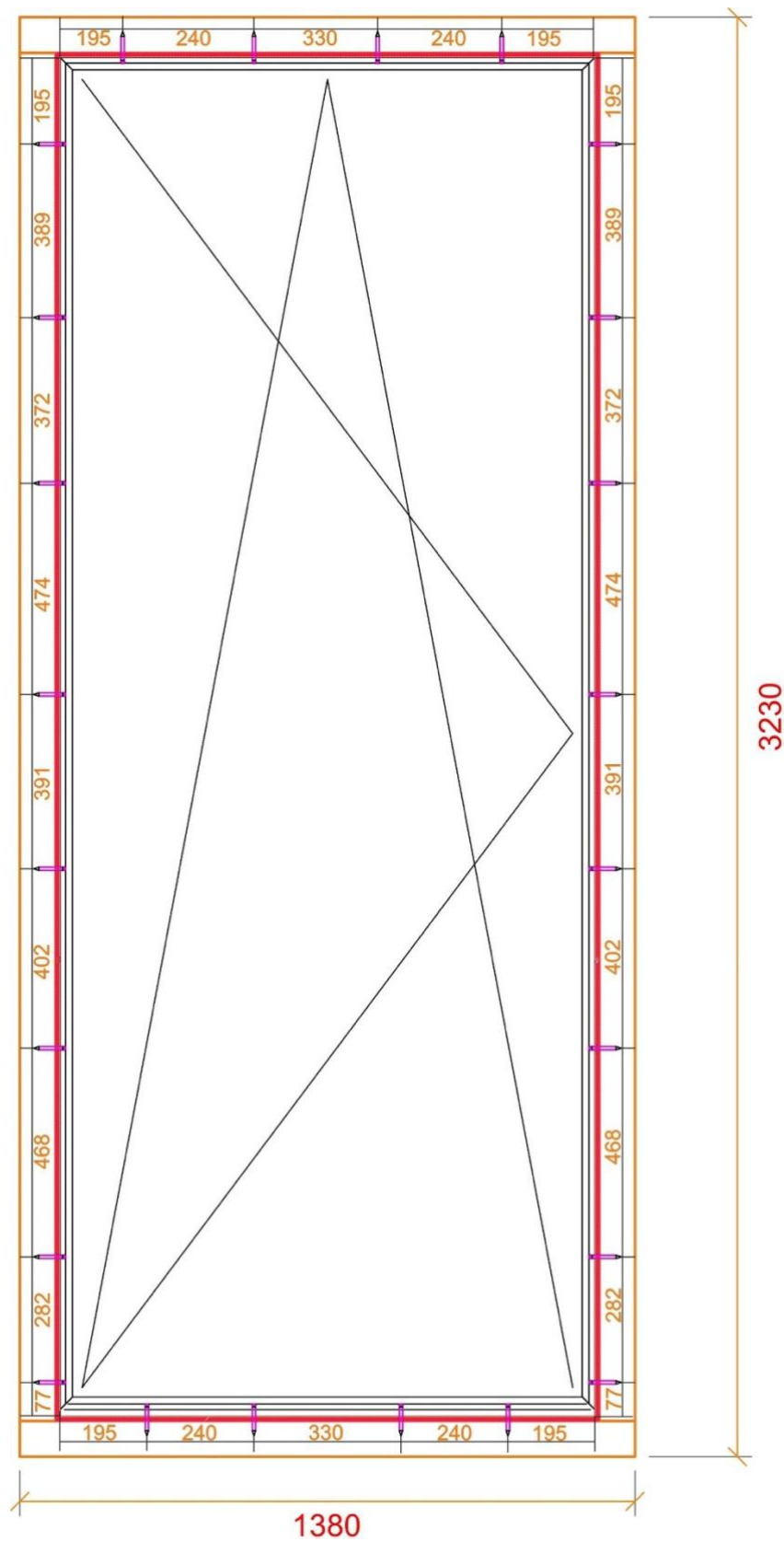


6 Annexes to the test report

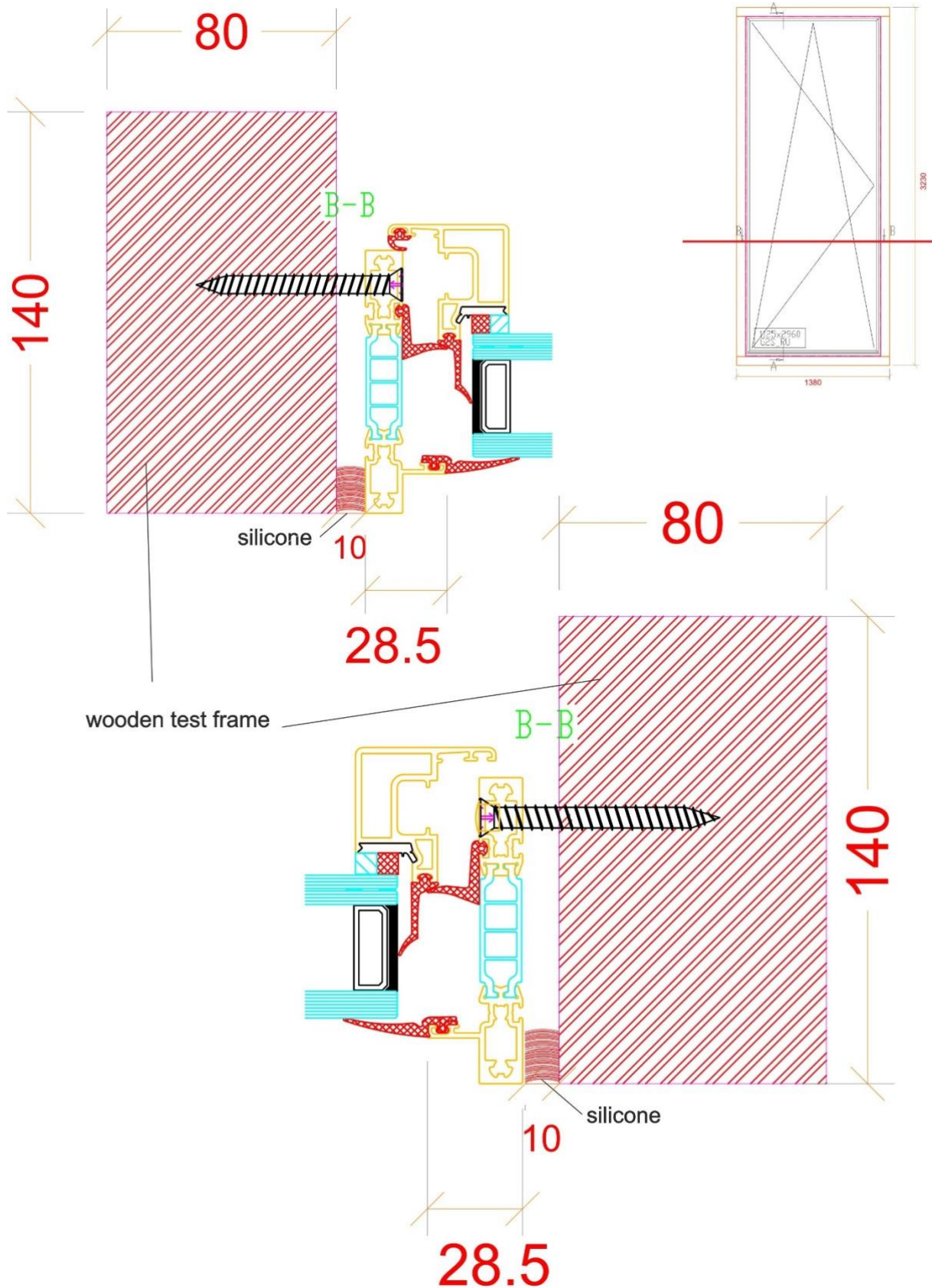
External dimensions.

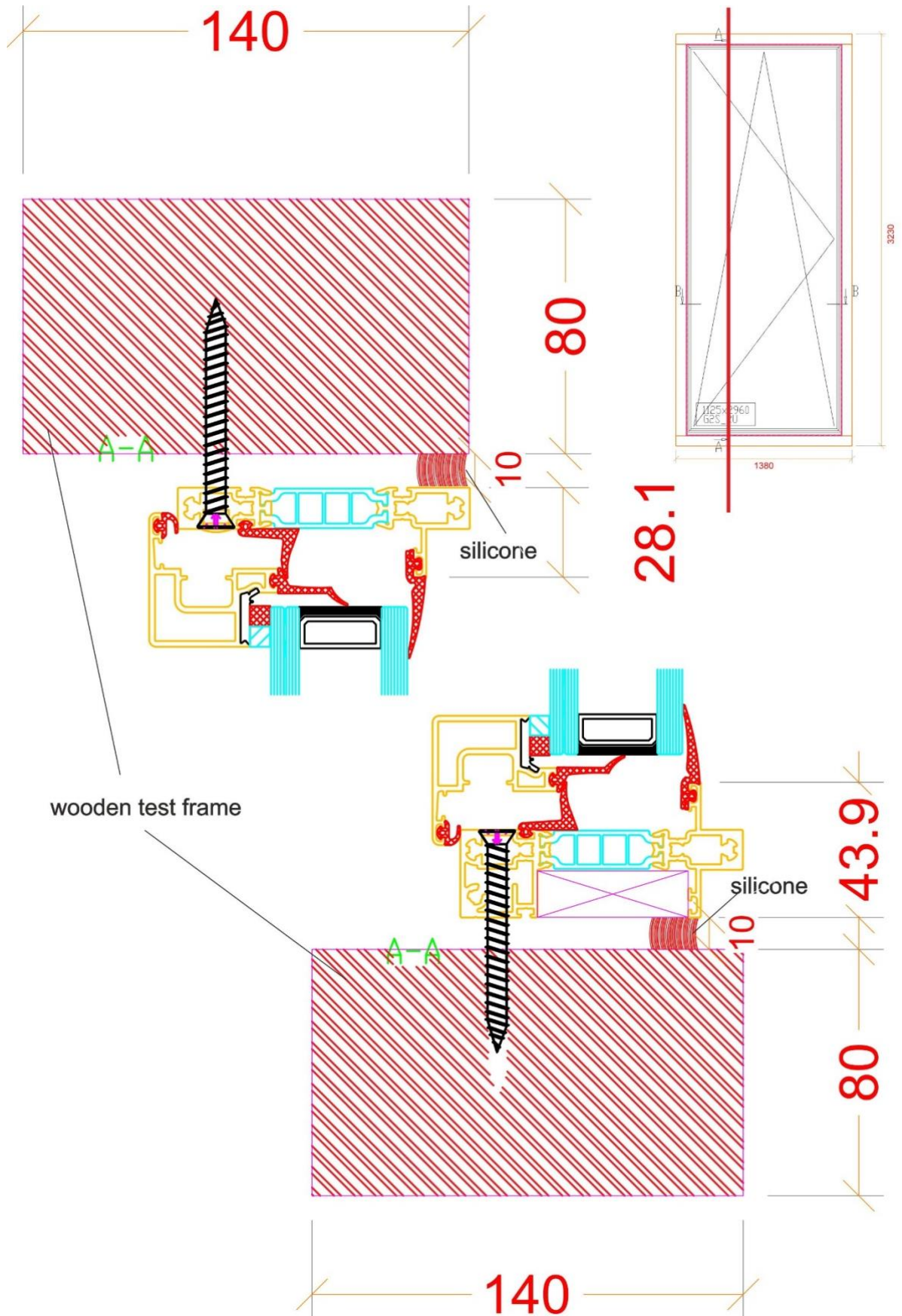


Mounting the test frame to the window frame - place of the installation.

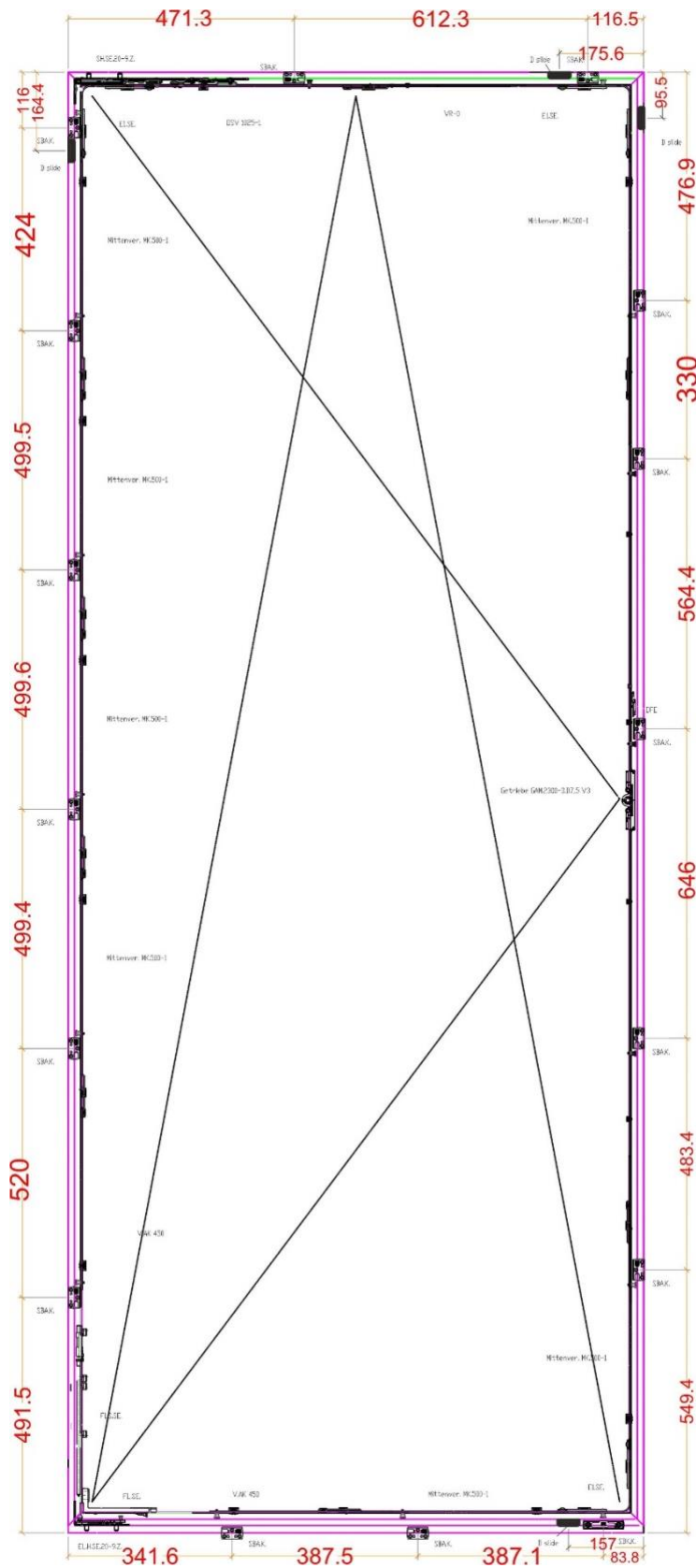


Cross - section of profiles with the test frame.

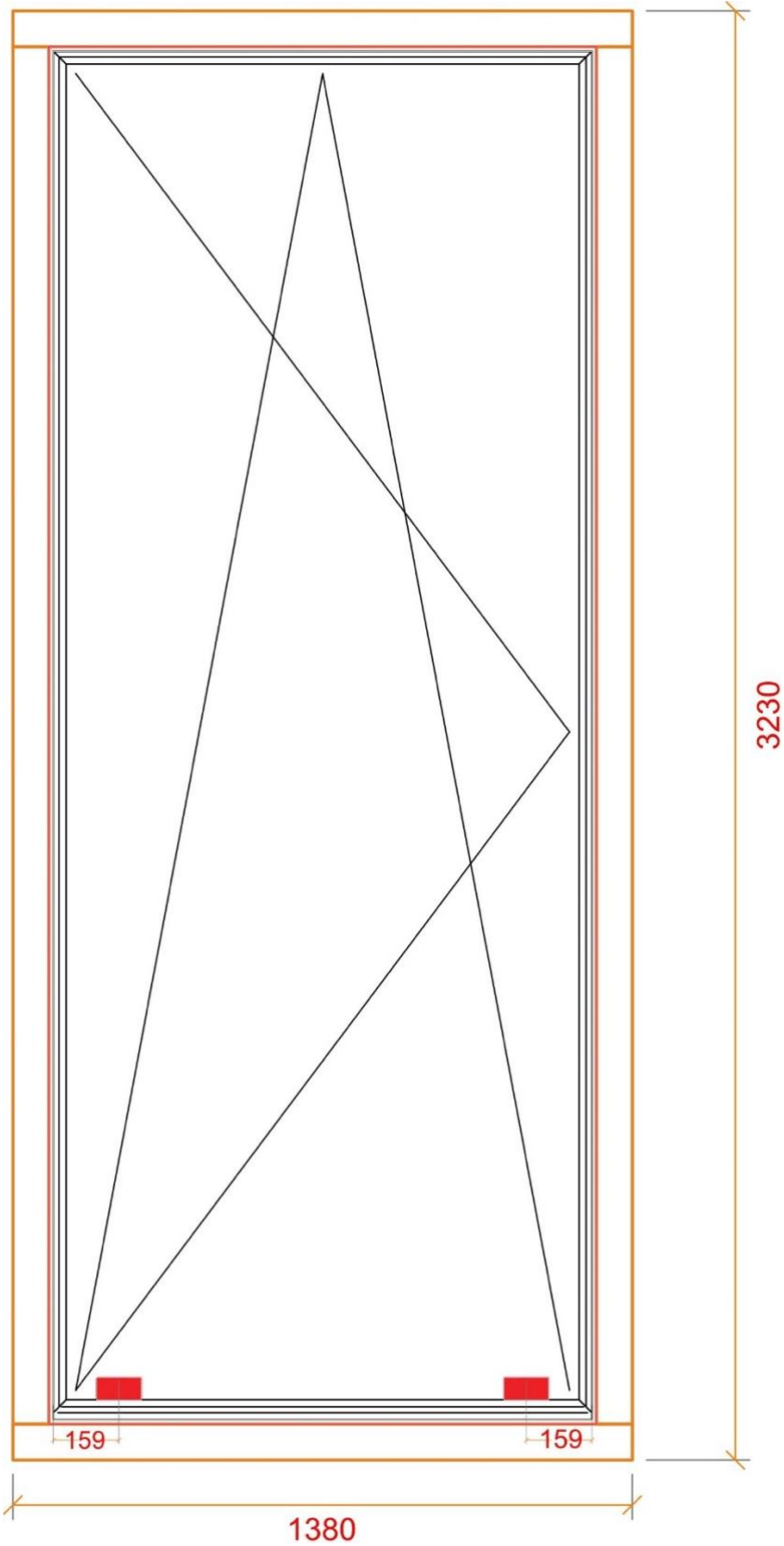




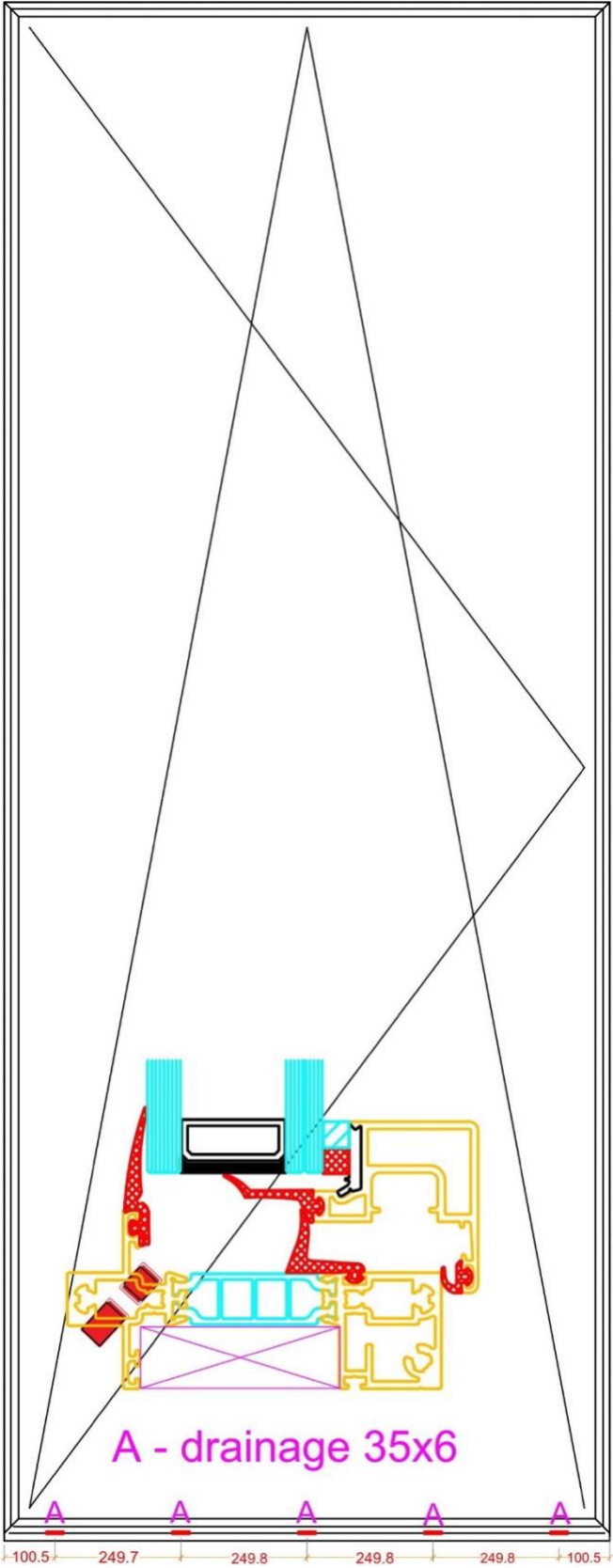
Placement of the fittings.



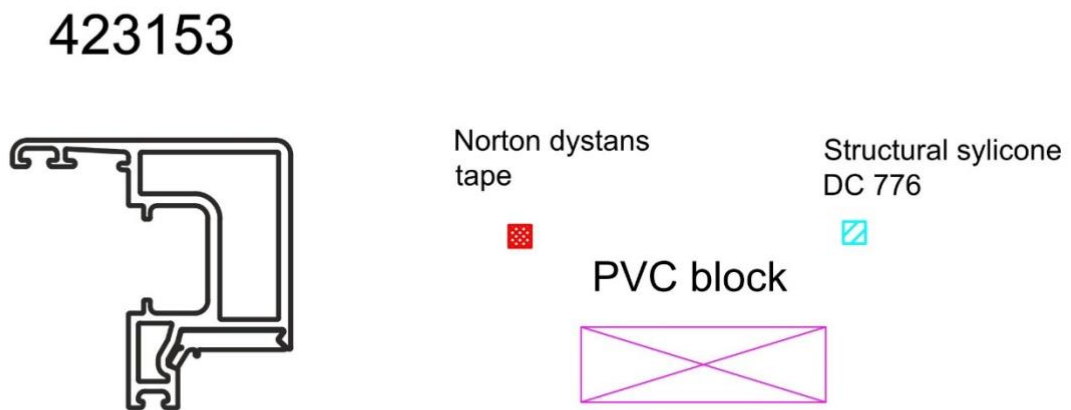
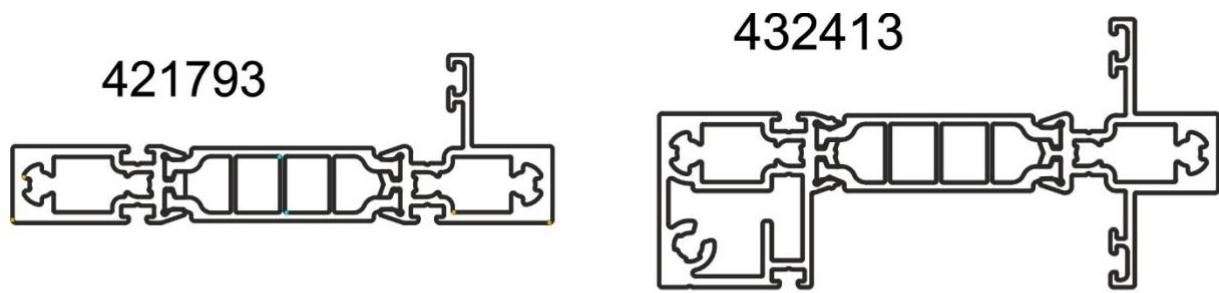
Placement of the pads under the glass.



Decompression and drainage elements.

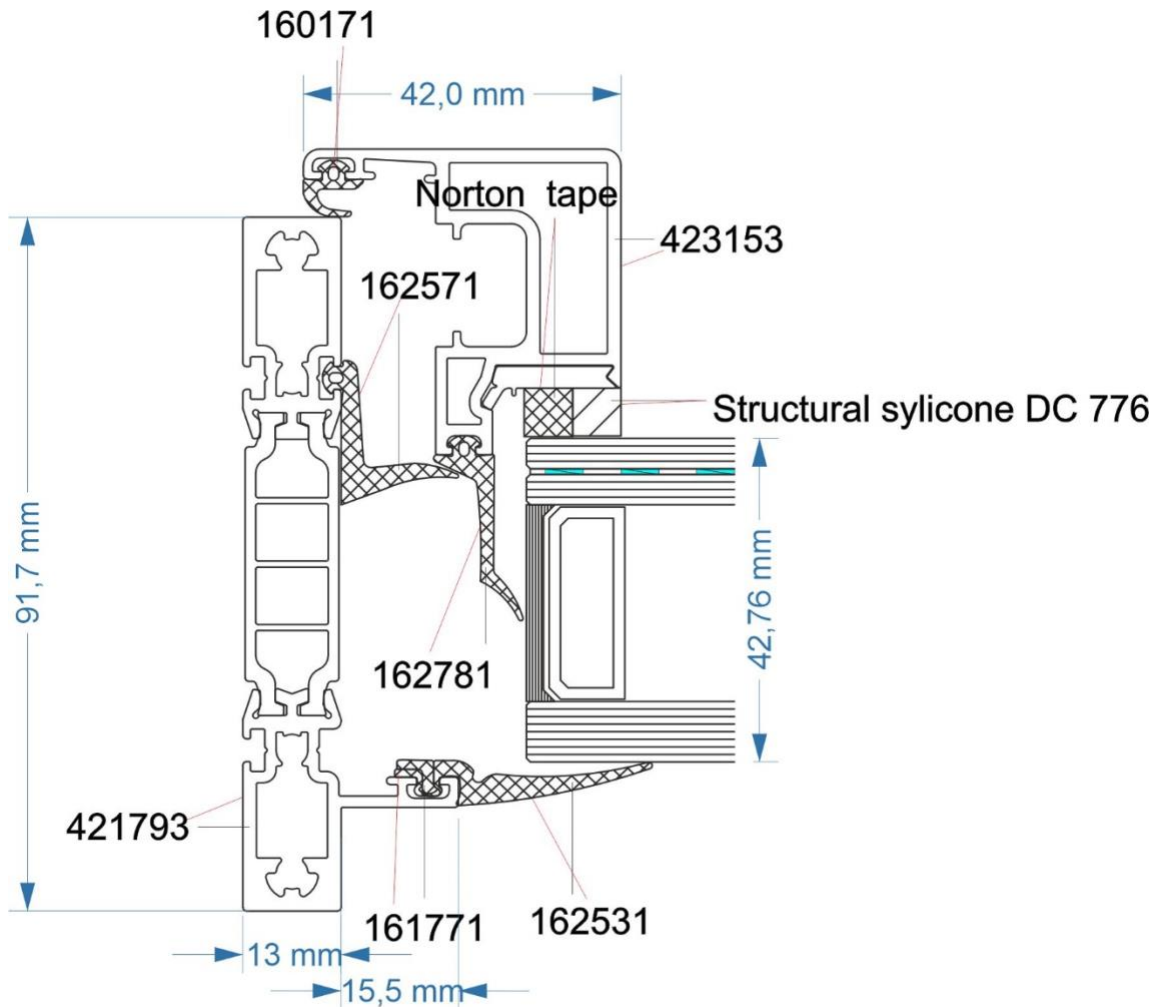


Cross - sections of profiles - elements.



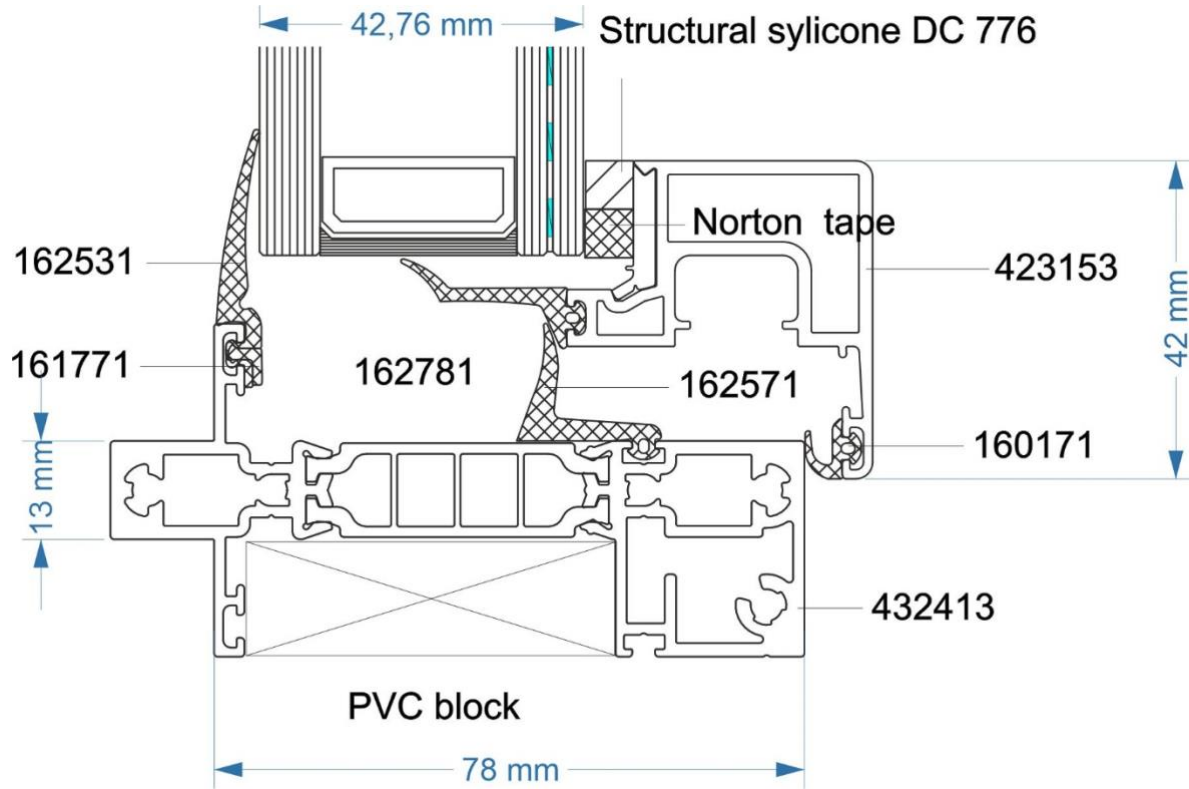
Cross - sections of profiles:

Frame 421793 – sash 423153 – upper and side sections.



Threshold 432413 – sash 423153.





Technical documentation for the components used.



Declaration of Performance

CE DoP 13/427050/1

- Product
1. Pilkington **Optifloat™** Clear, Toughened, 8 mm
Argon (90%) 26mm
Pilkington **Optilam™** Clear, Laminated, 8.8 mm (44.2)
 2. Intended use
In buildings and construction works when installed in accordance with the installation instructions contained in the product documentation
 3. Harmonised standard
EN 1279-5: 2018
 4. Manufacturer Pilkington IGP Sp. z o.o.; Sandomierz, ul. Portowa 24
 5. System of assessment and verification of constancy of performance (AVCP) - system 3
 6. Initial Type Tests done by Notified Body no 0757, 1004, 0074
 7. Declaration of Performance

Essential Characteristics	Performance
Resistance to Fire	NPD
Reaction to Fire	NPD
External Fire Performance	NPD
Bullet Resistance	NPD
Explosion Resistance	NPD
Burglar Resistance	NPD+P2A
Pendulum Body Impact Resistance	1(C)2+1(B)1
Resistance Against Sudden Temperature Changes and Temperature Differentials	200+40 K
Wind, Snow, Permanent and Imposed Load Resistance	120+45/45 MPa
Direct Airborne Sound Insulation	37 (-3; -7) dB
Thermal Properties	2.6 W/m ² K
Radiation Properties	
Light Transmittance / Reflectance	0.80/0.14/0.15
Solar Transmittance / Reflectance	0.63/0.12/0.12
g Value	0.72
Durability	Pass

8. The performance of the product identified in point 1 is in conformity with the declare performance in point 7
This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4
Signed for and on behalf of the manufacturer by:

Krzysztof Skarbinski
Quality Director Pilkington IGP
03/12/2021





High-Strength, Polyurethane Foam Spacer For Structural Glazing

The Thermalbond® V2100 series is specially designed to provide the following benefits:

- Open-cell structure allows air and moisture to reach the silicone for optimum curing of the silicone
- Semi-rigid polyurethane foam is compatible with all silicone tested
- Low thermal conductivity improves the performance of the wall and can support LEED points
- Excellent resistance to temperature variations, fungi and oxidation

The Thermalbond V2100G272 configuration offers the same benefits as the standard configuration with addition of:

- Gray foam core with UV stable gray pigmented adhesive coatings

The Thermalbond Xpress™ (TBX1) configuration offers the same benefits as the standard configuration with addition of:

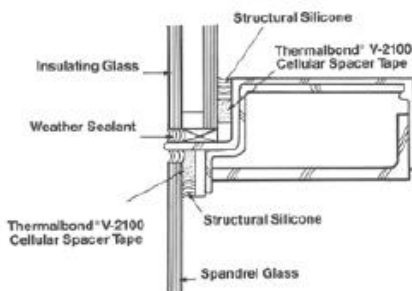
- Standard Thermalbond grade adhesive on one side ensuring an aggressive bond to aluminum profiles
- Low friction coating eliminates trapped air pockets and makes alignment of the glass simple and easy
- Adhesive will unwind from the specially treated top side of the foam which eliminates the need to have a separate liner to remove and recycle

Available Sizes

Standard thickness: .125, .187, .250, .312, .375 and .500 in. (3.2, 4.8, 6.4, 7.9, 9.5 and 12.7 mm)

Master roll size: 56 in. (1422 mm) width. Slit rolls also available.

Standard roll length varies with thickness.



Applications

- Spacer for two- and four- sided structural glazing systems



Thermalbond® V2100 Series – Properties

Performance tests are run using standard test procedures. The values presented are typical values and should not be used for specification purposes.

Property	Test Method	Value or Rating
Density: lbs./cu. ft. (kg/m ³)	ASTM D1667	31 (497)
Hardness: Shore A	ASTM D2240	35
Force to Compress 10%: psi (kPa)	ASTM D1667	31 (214)
Dynamic Tensile Adhesion: psi (kPa)* (15 min. dwell)	NTP-11	55 (379)
Dynamic Shear Adhesion: psi (kPa)* (15 min. dwell)	NTP-5	40 (276)
Static Shear Adhesion: Hours 1 psi load*	NTP-57	2000+
Tensile Strength: psi (kPa)	ASTM D412	180 (1241)
Elongation of Foam: %	ASTM D412	125%
Thermal Conductivity K factor: BTU-in./hr.-ft. ² .°F (w/m-°C)	ASTM C518	.55 (.08)
Migratory Staining of Acrylic Enamel: 200 hours of ultraviolet at 140°F	ASTM D925	No Staining

NTP- Norton Test Procedure

* Adhesive properties do not apply for Thermalbond® XPress™

Thermalbond® V2100 Series – Standard Configurations

Black A2S	Gray A2S	Black A1S	Thickness in. (mm)	Length ft. (m)
V2104	V2104G272	TBX104	.125 (3.2)	50 (15.2)
V2106	V2106G272	TBX106	.1875 (4.8)	50 (15.2)
V2108	V2108G272	TBX108	.250 (6.4)	50 (15.2)
V2110	V2110G272	–	.3125 (7.9)	25 (7.6)
V2112	V2112G272	–	.375 (9.5)	25 (7.6)
V2116	–	–	.500 (12.7)	20 (6.1)

3 in. I.D. cardboard cores standard

Liners

Liner: Easy release branded blue polyethylene liner is standard on V2100 and V2100G272.

Important Instructions

- Refer to silicone manufacturer to confirm compatibility information. Due to the numerous variables involved in a structural glazing system, each project should be individually lab tested by the silicone manufacturer for compatibility between Thermalbond®, the structural silicone and all other adjacent components.
- Surfaces must be clean and free of oil, grease, moisture, dust and dirt. Isopropyl alcohol is good for cleaning the surface.
- Apply a uniform pressure of 15 psi (103 kPa) to promote good contact between the material to be bonded and the tape. The application temperature should be between 60°F and 125°F (16°C to 52°C). It is not recommended to apply these tapes at temperatures below 60°F (16°C), as the adhesive does not flow in this condition and can result in poor bonding.
- Recommended service temperature is between -40°F to 180°F (-40°C to 82°C).

Shelf Life

12 months after the date of sale when stored in original packaging at temperatures up to 70°F (21°C) and 50% relative humidity.

Thermalbond® is a registered trademark of Saint-Gobain Performance Plastics.

Thermal Xpress™ is a trademark of Saint-Gobain Performance Plastics.



The data and details in this document were correct and up-to-date at the time of printing and are intended to provide information on our products and their possible applications. It is the user's responsibility to obtain the latest version of the product data sheet. This data sheet is not a specification and does not assure specific product characteristics or make reference to individual application conditions. The application, use and conversion of this product are the user's responsibility. Because Saint-Gobain cannot anticipate or control every application, we strongly recommend testing of this product under individual application conditions.

Limited Warranty: For a period of 6 months from the date of first sale, Saint-Gobain Performance Plastics warrants this product(s) to be free from defects in manufacturing. Our only obligation will be to provide replacement product for any portion proving defective, or at our option, to refund the purchase price thereof. User assumes all other risks, if any, including the risk of injury, loss or damage, whether direct or consequential, arising out of the use, misuse, or inability to use this product(s).

SAINT-GOBAIN PERFORMANCE PLASTICS DISCLAIMS ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

NOTE: Saint-Gobain Performance Plastics Corporation does not assume any responsibility or liability for any advice furnished by it, or for the performance or results of any installation or use of the product(s) or of any final product into which the product(s) may be incorporated by the purchaser and/or user. The purchaser and/or user should perform its own tests to determine the suitability and fitness of the product(s) for the particular purpose desired in any given situation.

SPE-5270-0115-SGCS

©2015 Saint-Gobain Performance Plastics

Saint-Gobain Performance Plastics

Europe

Avenue du Parc 18
4650 Chaineux, Belgium
Tel: (32) 87.32.20.11
Fax: (32) 87.32.20.51

13 Earlstrees Road
NN17 4NP Corby, Northants
Great Britain
Tel: (44)1536.276.000
Fax: (44)1536.203.427

North & South America

One Sealants Park
Granville, New York 12832, USA
Tel: (800) 724.0883
Fax: (1) 518.642.2793

R.Antonio Matheus Sobrino, 120
Vinhedo-SP Brazil
CEP:13.280-000
Tel: (55) 19.2127.8532/8530
Fax: (55) 19.2127.8540

Asia

6th Fl, Fuchu South Building
1-40 Miyamachi, Fuchu-city
Tokyo 183-0023
Japan
Tel: (81) 42.352.2104
Fax: (81) 42.358.2887

13th Fl Dongshin Building
141-28 Samsung-Dong
Gangam-Gu, Seoul 135-090, Korea
Tel: (82) 2.508.8200
Fax: (82) 2.554.1550

3F-147 Jianguo North Road, Section 2
Taipei 10477, Taiwan
Tel: (886) 2.2503.4201
Fax: (886) 2.2503.4202

1468 Kun Yang Road
Minhang Economical & Technological
Development Zone
Shanghai, China 200245
Tel: (86) 21.5472.1568
Fax: (86) 21.5472.2378

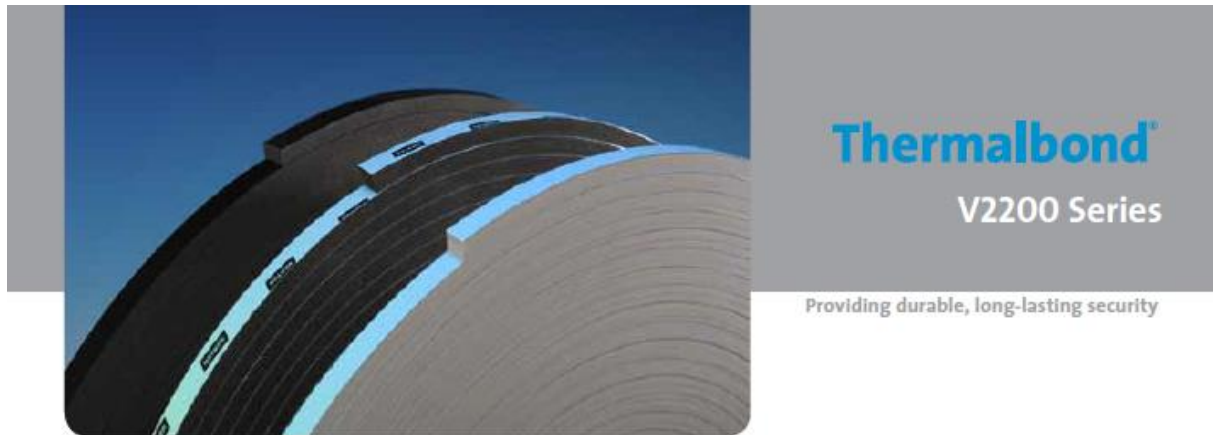
64/8 Moo 4 Eastern Seaboard
Ind. Estate T. Pluakdaen, A.
Pluakdaeng, Rayong 21140
Thailand
Tel: (66) 3.866.7800
Fax: (66) 3.866.7892

Devanahalli Road,
Via Old Madras Road
Bangalore 560 049
India
Tel: (91) 80.2847.2900
Fax: (91) 80.2847.2616



Mobile Laboratorium Techniki Budowlanej Sp. z o.o.
Address of stationary technical activity: ul. Wroclawska 142 b, 58-306 Walbrzych, Poland

lab manager
Adam Mścichowski



Thermalbond® V2200 Series

Providing durable, long-lasting security

High-Strength, Polyurethane Foam Spacer For Structural Glazing

The Thermalbond® V2200 series is specially designed to provide the following features:

- Open-cell structure allows air and moisture to reach the silicone for optimum curing of the silicone
- Semi-rigid polyurethane foam is compatible with all silicone tested
- Low thermal conductivity improves the performance of the wall and can support LEED points
- Excellent resistance to temperature variations, fungi and oxidation

The Thermalbond V2200G272 configuration offers the same benefits as the standard configuration with addition of:

- Gray foam core with UV stable gray pigmented adhesive coatings

The Thermalbond Xpress™ (TBX2) configuration offers the same benefits as the standard configuration with addition of:

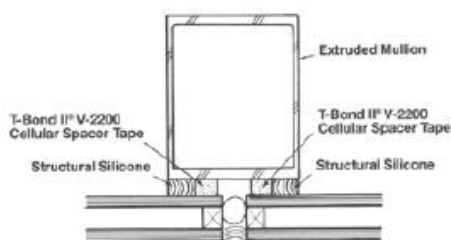
- Standard Thermalbond grade adhesive on one side ensuring an aggressive bond to aluminum profiles
- Low friction coating eliminates trapped air pockets and makes alignment of the glass simple and easy
- Adhesive will unwind from the specially treated top side of the foam which eliminates the need to have a separate liner to remove and recycle

Available Sizes

Standard thickness: .125, .187, .250, .312, .375 and .500 in. (3.2, 4.8, 6.4, 7.9, 9.5 and 12.7 mm)

Master roll size: 56 in. (1422 mm) width. Slit rolls also available.

Standard roll length varies with thickness.



Applications

- Spacer for two- and four-sided structural glazing systems


SAINT-GOBAIN



Mobilne Laboratorium Techniki Budowlanej Sp. z o.o.
Address of stationary technical activity: ul. Wrocławska 142 b, 58-306 Wałbrzych, Poland

lab manager
Adam Mścichowski

Thermalbond® V2200 Series – Properties

Performance tests are run using standard test procedures. The values presented are typical values and should not be used for specification purposes.

Property	Test Method	Value or Rating
Density: lbs./cu. ft. (kg/m ³)	ASTM D1667	22 (352)
Hardness: Shore A	ASTM D2240	30
Force to Compress 10%: psi (kPa)	ASTM D1667	16 (110)
Dynamic Tensile Adhesion: psi (kPa)* (15 min. dwell)	NTP-11	45 (310)
Dynamic Shear Adhesion: psi (kPa)* (15 min. dwell)	NTP-5	30 (206)
Static Shear Adhesion: Hours 1 psi load*	NTP-57	2000+
Tensile Strength: psi (kPa)	ASTM D412	130 (896)
Elongation of Foam: %	ASTM D412	105%
Thermal Conductivity K factor: BTU-in./hr.-ft. ² °F (w/m ² °C)	ASTM C518	.55 (.08)
Migratory Staining of Acrylic Enamel: 200 hours of ultraviolet at 140°F	ASTM D925	No Staining

NTP- Norton Test Procedure

* Adhesive properties do not apply for Thermalbond® XPress™

Thermalbond® V2200 Series– Standard Configurations

Black A25	Gray A25	Black A15	Thickness in. (mm)	Length ft. (m)
V2204	–	TBX204	.125 (3.2)	50 (15.2)
V2206	V2206G272	TBX206	.1875 (4.8)	50 (15.2)
V2208	V2208G272	TBX208	.250 (6.4)	50 (15.2)
V2210	V2210G272	TBX210	.3125 (7.9)	25 (7.6)
V2212	V2212G272	TBX212	.375 (9.5)	25 (7.6)

3 in. I.D. cardboard cores standard

Liners

Liner: Easy release branded blue polyethylene liner is standard on V2200 and V2200G272.

Important Instructions

- Refer to silicone manufacturer to confirm compatibility information. Due to the numerous variables involved in a structural glazing system, each project should be individually lab tested by the silicone manufacturer for compatibility between Thermalbond®, the structural silicone and all other adjacent components.
- Surfaces must be clean and free of oil, grease, moisture, dust and dirt. Isopropyl alcohol is good for cleaning the surface.
- Apply a uniform pressure of 15 psi (103 kPa) to promote good contact between the material to be bonded and the tape. The application temperature should be between 60°F and 125°F (16°C to 52°C). It is not recommended to apply these tapes at temperatures below 60°F (16°C), as the adhesive does not flow in this condition and can result in poor bonding.
- Recommended service temperature is between -40°F to 180°F (-40°C to 82°C).

Shelf Life

12 months after the date of sale when stored in original packaging at temperatures up to 70°F (21°C) and 50% relative humidity.

Thermalbond® is a registered trademark of Saint-Gobain Performance Plastics.
Thermal Xpress™ is a trademark of Saint-Gobain Performance Plastics.



The data and details in this document were correct and up-to-date at the time of printing and are intended to provide information on our products and their possible applications. It is the user's responsibility to obtain the latest version of the product data sheet. This data sheet is not a specification and does not assure specific product characteristics or make reference to the suitability of the product for a specific application. Because Saint-Gobain cannot anticipate or control every application, we strongly recommend testing of this product under individual application conditions. The application, use and conversion of this product are the user's responsibility.

Limited Warranty: For a period of 6 months from the date of first sale, Saint-Gobain Performance Plastics warrants this product(s) to be free from defects in manufacturing. Our only obligation will be to provide replacement product for any portion proving defective, or at our option, to refund the purchase price thereof. User assumes all other risks, if any, including the risk of injury, loss or damage, whether direct or consequential, arising out of the use, misuse, or inability to use this product(s).

SAINT-GOBAIN PERFORMANCE PLASTICS DISCLAIMS ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

NOTE: Saint-Gobain Performance Plastics Corporation does not assume any responsibility or liability for any advice furnished by it, or for the performance or results of any installation or use of the product(s) or of any final product into which the product(s) may be incorporated by the purchaser and/or user. The purchaser and/or user should perform its own tests to determine the suitability and fitness of the product(s) for the particular purpose desired in any given situation.

SPE-5271-0115-SGCS

©2015 Saint-Gobain Performance Plastics

Saint-Gobain Performance Plastics

Europe

Avenue du Parc 18
4650 Chaineux, Belgium
Tel: (32) 87.32.20.11
Fax: (32) 87.32.20.51

13 Earlstrees Road
NN17 4NP Corby, Northants
Great Britain
Tel: (44)1536.276.000
Fax: (44)1536.203.427

North & South America

One Sealants Park
Granville, New York 12832, USA
Tel: (800) 724.0883
Fax: (1) 518.642.2793

R.Antonio Matheus Sobrino, 120
Vinhedo-SP Brazil
CEP:13.280-000
Tel: (55) 19.2127.8532/8530
Fax: (55) 19.2127.8540

Asia

6th Fl, Fuchu South Building
1-40 Miyamachi, Fuchu-city
Tokyo 183-0023
Japan
Tel: (81) 42.352.2104
Fax: (81) 42.358.2887

13th Fl Dongshin Building
141-28 Samsung-Dong
Gangnam-Gu, Seoul 135-090, Korea
Tel: (82) 2.508.8200
Fax: (82) 2.554.1550

3F-147 Jianguo North Road, Section 2
Taipei 10477, Taiwan
Tel: (886) 2.2503.4201
Fax: (886) 2.2503.4202

1468 Kun Yang Road
Minhang Economical & Technological
Development Zone
Shanghai, China 200245
Tel: (86) 21.5472.1568
Fax: (86) 21.5472.2378

64/8 Moo 4 Eastern Seaboard
Ind. Estate T. Pluakdaen, A.
Pluakdaeng, Rayong 21140
Thailand
Tel: (66) 3.866.7800
Fax: (66) 3.866.7892

Devanahalli Road,
Via Old Madras Road
Bangalore 560 049
India
Tel: (91) 80.2847.2900
Fax: (91) 80.2847.2616



Mobile Laboratorium Techniki Budowlanej Sp. z o.o.
Address of stationary technical activity: ul. Wroclawska 142 b, 58-306 Walbrzych, Poland

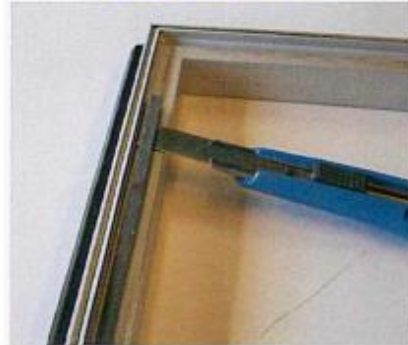
lab manager
Adam Mścichowski

Replacing the glass of hidden vent.

1.
Cut loose with
special cutter or
knife.



2.
Clean with knife.
(beware of eloxeret)
Do not damage.



3.
Clean the frame
with: R 40 cleaner



4.
Clean the glass
with: Isopropyl alcohol



5.
Priming of frame:
Painted: Prime - C
Eloxeret: Prime 1200 OS



Dry prime
Min. 30 min.
Max. 120 min.



Hansen Millennium®
DOORS & WINDOWS (42)
Replacing the glass in hidden vent (s. 1/3)
TECHNICAL INFORMATION

hansenConcepts

SCALE: ~
DRAW,DATE: 19-11-2014 BRKJ
REV,DATE:
DRAW,NO.: 42 713 08

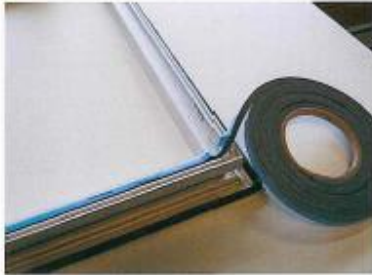


Mobilne Laboratorium Techniki Budowlanej Sp. z o.o.
Address of stationary technical activity: ul. Wroclawska 142 b, 58-306 Walbrzych, Poland

lab manager
Adam Mścichowski

Replacing the glass of hidden vent.

6.
Fixing the Norton
tape 6,4 x 6,4 mm.



7.
Inserting of carrier and support
glazing brick.

8.
Inserting of glass.
!Remember
Cross dimension control
before and after fixing glass.



<p>Hansen Millennium® DOORS & WINDOWS (42) Replacing the glass of hidden vent (s.2/3) TECHNICAL INFORMATION</p> <p><small>hansenConcepts</small></p>	<p>SCALE: — DRAW,DATE: 19-11-2014 BRKJ REV,DATE: DRAW,NO.: 42 714 08</p>
--	--



A handwritten signature in blue ink, corresponding to the name Adam Mścichowski.

Replacing the glass of hidden vent.

9.
Leaf with glass fixed in
frame. Then close



10.
The window is sealed with:
Ultra Glaze SSG4000 / DC895



11.
The window is polished and
sign with user intructions and
date for comissioning:
14 days after bonding.



Hansen Millennium®
DOORS & WINDOWS (42)
Replacing the glass of hidden vent, (s.3/3)
TECHNICAL INFORMATION

hansenConcepts

SCALE: ~
DRAW,DATE: 19-11-2014 BRKJ
REV,DATE:
DRAW,NO.: 42 715 08



Mobilne Laboratorium Techniki Budowlanej Sp. z o.o.
Address of stationary technical activity: ul. Wroclawska 142 b, 58-306 Walbrzych, Poland

lab manager
Adam Mścichowski



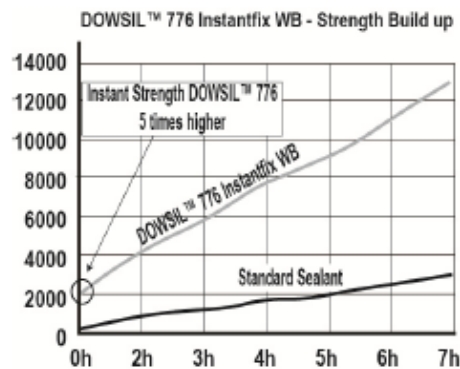
Technical Data Sheet

DOWSIL™ 776 Instantfix WB

Instant strength neutral cure silicone for window & door assembly

Features & Benefits

- Easy-to-use one-part silicone
- Low squeeze-out
- Provides instant Green Strength
- UV- and weather -resistant
- Primerless adhesion to a wide range of substrates such as PVC, coated wood, glass, etc.
- Neutral cure
- Low odor
- Suitable for automated assembly applications
- Elastic bonding silicone
- Structural capability for window bonding applications similar to Dow construction two-part silicones
- Temperature stability over a wide range: -50°C to +150°C
- Fast strength build up supports productivity enhancements due to fast handling of bonded units (see Figure 1)
- Saves time as no buffer for strength build up required
- For factory glazing and on-site application

**Figure 1**

*™Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow
 DOWSIL™ 776 Instantfix WB
 © 2017–2020 The Dow Chemical Company. All rights reserved.



Applications

- DOWSIL™ 776 Instantfix WB is a one-part silicone sealant specifically designed for window & door bonding application that require immediate handling and processing of the units. It provides immediate strength directly after application, enhancing productivity. DOWSIL™ 776 Instantfix WB is a silicone which shows primerless adhesion to a variety of substrates typical for windows and doors. As a one-part silicone it is suitable for manual and automated processes and provides excellent long-term durability.

Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Test ¹	Property	Unit	Result
As supplied – uncured state			
CTM 97B	Specific gravity	g/ml	1.58
ASTM D2202	Flow (sag or slump)	mm	0
ASTM C 679	Tack-free time (23°C, 50% R.H.)	minutes	30
CTM 663A	Curing time (23°C, 50% R.H.)		
	After 24 hours	mm	2
	After 72 hours	mm	4
CTM 1430	Immediate strength	Pa	1500
As cured after 7 days at +23°C 2 mm sheet (ISO 37)			
CTM 99A	Durometer hardness, Shore A	points	47
CTM 137A	Modulus at 100% elongation	MPa	1.0
CTM 137A	Tensile strength at break	MPa	1.8
CTM 137A	Elongation at break	%	500
Properties after 28 days cure at 50% RH and +23°C (73°F) 12 mm x 12 mm x 50 mm H-Piece (ISO 8339)			
ISO 8339	Elongation at break	%	> 100
ISO 8339	Tensile strength	MPa	1.2
	Service temperature range	°C	-50 to +150

1. CTM: Corporate Test Method, copies of CTM's are available on request.
ASTM: American Society for Testing and Materials.
ISO: International Standardization Organization.

Description

DOWSIL™ 776 Instantfix WB is a one-part, neutral curing alkoxy silicone sealant designed specifically for window bonding application.

Neutral alkoxy silicones cure at room temperature on exposure to water vapor in the air, giving off a small amount of alcohol.



Technical Specifications and Standards

Regulation or protocol	Conclusion	Version of regulation or protocol
French VOC regulations	A+	Regulation of March and May 2011 (DEVL1101903D and DEVL1104875A)
French CMR components	Pass	Regulation of April and May 2009 (DEVP0908633A and DEVP0910046A)
Italian CAM Edilizia	Pass	Decree 11 January 2017 (GU n.23 del 28-1-2017)
AgBB/ABG	Pass	Anforderungen an bauliche Anlagen bezoglich des Gesundheitsschutzes (ABG), Entwurf 31.08.2017/August 2018 (AgBB)
Belgian Regulation	Pass	Royal decree of May 2014 (C-2014/24239)
EMICODE	EC 1	April 2019
Indoor Air Comfort	Pass	Indoor Air Comfort 6.0 of February 2017
Blue Angel (DE-UZ 123)	Pass	DE-UZ 123 for "Low-Emission Sealants for Interior Use", (January 2019)
BREEAM International	Exemplary IV	BREEAM International New Construction v2.0 (2016)
BREEAM Norway	Pass	BREEAM-NOR New Construction v1.2 (2019)
CDPH	Pass	

Green Strength

DOWSIL™ 776 Instantfix WB provides immediate Green Strength. Once applied and substrates assembled together, DOWSIL™ 776 Instantfix WB is able to withstand certain dynamic and constant loads.

This property is unique and can eliminate the usage of tapes for pre-fixing. It is therefore able to enhance productivity, can save time and labor cost. The immediate Green Strength is about 5 times higher than any other standard sealant which typically allows to move freshly bonded window units and window components immediately.¹

¹Please refer to Figure 1 (see end of this document).

How to Use

DOWSIL™ 776 Instantfix WB is a ready to use silicone sealant. It provides excellent strength and adheres to a wide range of most common window materials such as PVC, coated wood, metal and glass. DOWSIL™ 776 Instantfix WB can be used for fully automated robotized applications and is also suitable for manual applications.

It has good workability and ease of use properties, low string and a good resistance compression. There is far less squeeze out as seen with standard sealants.

As it is a moisture curing sealant, the reaction starts at the surface exposed to moisture and cures in depth. The deeper the joint is, the longer it takes the sealant to cure completely. Moisture has to migrate further to the already cured skin and as this skin becomes thicker, the reaction slows further down.

For bonding application, the joint depth in general should not be deeper than 10 mm to achieve reasonable cure times. However, the ultimate joint depth must not exceed 14–15 mm.



Bonding Application

DOWSIL™ 776 Instantfix WB offers good adhesion to most common window substrates such as PVC, coated wood, glass and metal. The sealant is compatible with most commonly used glazing components. It is compatible to DOWSIL™ neutral curing construction sealants and DOWSIL™ neutral curing insulating glass sealants.

It is important when selecting components within window bonding application to ensure adhesion and compatibility by carrying out tests.

As a one-part neutral curing system, moisture vapor/humidity is required for cure. Substrates have to be put together within the above stated open time before skin formation. High humidity level and higher temperatures accelerate the cure process.

Green Strength is continuously building up during cure. Adhesion to the substrates is developed at the same time as product cure. Although the strength build up is quite fast, the sealant will develop its final properties once completely cured. Therefore windows should not be installed before complete cure.

A further requisite for a high quality bonding application consists in an appropriate joint dimension. Depending on parameters such as glass weight, window sizes, but also frame materials and temperatures, joint dimensions may vary. Typical joint dimensions are in a range of 4 mm x 8 mm / 4 mm x 10 mm, but strongly depend on the specific parameters of the window system and the conditions it is exposed to after installation. More specific information about bonding are available in the Technical Manual for Bonded Windows. For each bonding project separately and depending on customer requirements, your local construction industry technical service will provide a tailor-made solution.

For further information please contact your local technical service engineer, who can help determining the required joint dimensions.

Cleaning

Substrates must be clean prior to application to ensure adhesion durability. All surfaces must be clean from contaminants and residues such as grease, oil, dust, water, frost, surface dirt, old sealants or glazing compounds and protective coatings. Metal, glass and plastic surfaces should be cleaned by solvent procedures. Solvent should be wiped on and off with clean, oil- and lint-free cloths. DOWSIL™ R-40 Cleaner is recommended for cleaning. The ventilation time at room temperature should be at least 1 minute. Please contact your local technical service engineer for more information.

Priming

For each project separately, it is essential that adhesion to all concerned surfaces should be tested before application. If adhesion requires priming, a primer such as DOWSIL™ 1200 OS Primer is in general recommended. When priming, the ventilation time at room temperature should be at least 1 minute.

Priming should be done within 4 hours after cleaning. If there is a greater time delay, cleaning process has to be repeated again. Project specific priming regulation needs to be discussed and approved by your local technical department. Please contact your local technical service engineer for further assistance.

Masking and Tooling

Areas adjacent to joints may be masked to ensure a neat sealant line. Do not allow masking tape to touch clean surfaces to which the silicone sealant is to adhere. Tooling should be completed in one continuous stroke before skin building. Masking tape should be removed immediately after tooling.

*™Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow
DOWSIL™ 776 Instantfix WB

© 2017–2020 The Dow Chemical Company. All rights reserved.

Form No. 62-1654-01-0920 S2D

Page 4 of 6



Mobilne Laboratorium Techniki Budowlanej Sp. z o.o.
Address of stationary technical activity: ul. Wrocławska 142 b, 58-306 Wałbrzych, Poland

lab manager
Adam Mściłowski

Maintenance	No maintenance is needed once sealant has been properly applied and cured. If glass units need to be replaced or sealant becomes damaged, sealant joint has to be cut back as much as possible. DOWSIL™ 776 Instantfix WB will adhere to cured silicone sealant which exhibits a clean knife-cut or abraded surface.
Equipment Cleaning	Once sealant is used in conjunction with a dispensing equipment, dispensing system needs to be air-tight and moisture tight as otherwise sealant will start to cure over time. Normally there is no specific cleaning required as it is a one-part silicone sealant. Material which stays uncured in the nozzle, will start to cure. To avoid that, nozzle should be covered with a moisture tight material such as metal.
Handling Precautions	PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.
Usable Life and Storage	<p>When stored at or below +30°C in the original unopened containers, DOWSIL™ 776 Instantfix WB has a usable shelf life of 12 months from the date of production.</p> <p>Storage conditions must be respected as higher temperatures will significantly reduce shelf life.</p>
Packaging Information	<p>DOWSIL™ 776 Instantfix WB is available in white and black.</p> <p>For manual application it is provided in 310 ml cartridges and 600 ml sausages as well as in 20 liter pails and 250 kg drums.</p>
Limitations	<p>DOWSIL™ 776 Instantfix WB must not be used for structural glazing applications in façade or as a sealant for insulating glass units.</p> <p>Because of the risk of incompatibility, DOWSIL™ 776 Instantfix WB must not come into contact with, or to be exposed to, sealants that liberate acetic acid.</p> <p>Prior to use DOWSIL™ 776 Instantfix WB in fully automated bonding applications, it is recommended to contact your local construction industry technical service. Each project shall be specifically and separately approved by Dow. Project approval involves the following prerequisites:</p> <ul style="list-style-type: none">• Joint dimensioning and print reviews.• Successful laboratory adhesion and compatibility testing to all relevant building components in direct or indirect contact with the bonding sealant.• Observance of professional sealant application and workmanship standards. <p>This product is neither tested nor represented as suitable for medical or pharmaceutical uses.</p>



Health and Environmental Information

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, dow.com or consult your local Dow representative.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

dow.com

NOTICE: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.



A blue ink signature of Adam Mściłowski, written in a cursive style.



KRAJOWA DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH

Nr WH-12-ALU-2022

1. Nazwa i nazwa handlowa wyrobu budowlanego:
Okucia rozwierano-uchylne, uchylno-rozwierane, rozwierane activPilot Concept, activPilot Select, activPilot Comfort PADK, activPilot Comfort PADM, activPilot Giant, activPilot topStar do okien i drzwi balkonowych z aluminium
2. Oznaczenie typu wyrobu budowlanego:
activPilot A
3. Zamierzone zastosowanie lub zastosowania:
Do okien i drzwi balkonowych jedno- i dwu skrzydłowych z aluminium stosowanych w budynkach mieszkalnych, zamieszkania zbiorowego oraz użyteczności publicznej.
4. Nazwa i adres siedziby producenta oraz miejsce produkcji wyrobu:
a) August Winkhaus GmbH & Co. KG, August Winkhaus Straße 31, 48291 Telgte, Niemcy
b) Winkhaus Polska Beteiligungs Spółka z ograniczoną odpowiedzialnością sp. k., ul. Przemysłowa 1, 64-130 Rydzyna, Polska
5. Nazwa i adres siedziby, upoważnionego przedstawiciela, o ile został ustanowiony: --
6. Krajowy system zastosowany do oceny i weryfikacji stałości właściwości użytkowych: 3
7. Krajowa specyfikacja techniczna:
7a. Polska Norma wyrobu: PN-EN 13126-8:2017
Nazwa akredytowanej jednostki certyfikującej, numer akredytacji i numer krajowego certyfikatu lub nazwa akredytowanego laboratorium/laboratoriów i numer akredytacji: --
7b. Krajowa ocena techniczna: --
Jednostka oceny technicznej/Krajowa jednostka oceny technicznej: --
Nazwa akredytowanej jednostki certyfikującej, numer akredytacji i numer certyfikatu:
Instytut Techniki Budowlanej, AB023
Opinia techniczna: 06004-02/17/R13NZE
Raport z badań: LZE03-06004/17/R13NZE
LZE04-06004/17/R13NZE
8. Deklarowane właściwości użytkowe:

Nazwa handlowa systemu okuć activPilot	Trwałość	Masa	Odporność na korozję	Wymiary skrzydła próbnego
	2	3	6	9
Concept A130	H2	130	5	1300/1200
Concept A130	H2	130	5	900/2300

Winkhaus Polska Beteiligungs spółka z ograniczoną odpowiedzialnością sp.k. (dotychczas Winkhaus Polska Sp. z o.o.), ul. Przemysłowa 1, PL-64-130 Rydzyna, T +48 (0) 65 52 55 700, F +48 (0) 65 52 55 800, www.winkhaus.pl, winkhaus@winkhaus.com.pl; KRS 0000316790; Regon 433013222; NIP 657-00-11-383, NIP UE PL: 8970011183; kapitał zakładowy: 23 000 000 PLN; Konto: BRE Bank SA o/Poznań 79114011240000346846001001 Zarząd: mgr inż. Jacek Budzik, Prezes Zarządu

str. 1



Mobile Laboratory of Building Technology Sp. z o.o.
Address of stationary technical activity: ul. Wrocławska 142 b, 58-306 Wałbrzych, Poland

lab manager
Adam Mścichowski



KRAJOWA DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH

Nr WH-12-ALU-2022

Select A150	H2	150	5	1550/1400
Comfort PADK	H2	100	5	1300/1200
Comfort PADK	H2	100	5	900/2300
Comfort PADM	H2	100	5	1300/1200
Comfort PADM	H2	100	5	900/2300
Giant	H3	200	5	1550/1400
Giant	H2	200	5	900/2300
topStar	H2	130	5	1300/1200
topStar	H2	130	5	900/2300

Pozycja 1 - Trwałość

- klasa H2 (10000 cykli)

- klasa H3 (20000 cykli)

Pozycja 2 - Masa

- wg tabeli [kg]

Pozycja 3 - Odporność na korozję

- klasa 5 (480 h w mgłę solnej)

Pozycja 4 – Wymiary skrzydła próbnego

- szerokość x wysokość mierzona we wrębie okuciowym [mm]

9. Właściwości użytkowe określonego powyżej wyrobu są zgodne z wszystkimi wymienionymi w pkt 8 deklarowanymi właściwościami użytkowymi. Niniejsza krajowa deklaracja właściwości użytkowych wydana zostaje zgodnie z ustawą z dnia 16 kwietnia 2004 r. o wyrobach budowlanych, na wyłączną odpowiedzialność producenta. W imieniu producenta podpisał(-a):

Rydzyzna dnia 29.11.2022

DYREKTOR
ds. Rozwoju Firmy
PROKURANT
MJM
mgr inż. Maciej Matella

Dyrektor ds. Rozwoju Firmy Maciej Matella

Winkhaus Polska Beteiligungs
spółka z ograniczoną odpowiedzialnością sp.k
ul. Przemysłowa 1, PL 64-130 Rydzyna
NIP 697-00-11-183 (13)

Winkhaus Polska Beteiligungs spółka z ograniczoną odpowiedzialnością sp.k. (dawniej) Winkhaus Polska Sp. z o.o.),
ul. Przemysłowa 1, PL 64-130 Rydzyna, T +48 (0) 65 52 55 700, F +48 (0) 65 52 55 800;
www.winkhaus.pl, winkhaus@winkhaus.com.pl; KRS 000016790; Regon 41002322; NIP 697-00-11-183; NIP UE PL: 697001183 Kapitał zakładowy: 29 000 000 PLN;
Konto: BRE Bank SA o/Poznań 73114015340000044844001001 Zakład: mgr inż. Janusz Rodzik, Przesz Zakład

str. 2



Zertifikat / Certyfikat

Zertifikatsnr. / Certyfikat No.: 228-7019950-1-18



Dreh- und Drehkippschläge für Fenster und Fenstertüren

Okucia obrotowe i obrotowo-uchylne dla Okien i drzwi balkonowych

Produkt Produkt	activPilot, proPilot
max. Flügelgewicht Max ciężar skrzydła	200 kg maksimum
Einsatzbereich Obszar zastosowań	Systeme mit entsprechender Beschlagenaufnahmenut Systemy z odpowiednimi rowkami pod okucia
Hersteller Firma	Aug. Winkhaus GmbH & Co. KG August-Winkhaus-Str. 31, DE 48291 Telgte
Produktionsstandort zakłady produkcyjne	Aug. Winkhaus GmbH & Co. KG August-Winkhaus-Str. 31, DE 48291 Telgte



Mit diesem Zertifikat wird bescheinigt, dass das benannte Bauprodukt den Anforderungen des zugrundeliegenden ift-Zertifizierungsprogramms in der aktuellen Fassung entspricht.

- Erstellung von Produktfamilien des aufgeführten Bauproduktes und Typprüfung durch eine akkreditierte Prüfstelle nach EN 13126-8 : 2017 unter Berücksichtigung der Anwendungsdiagramme
- Einführung und Aufrechterhaltung einer werkseigenen Produktionskontrolle durch den Hersteller
- Erstinspektion des Werkes und der werkseigenen Produktionskontrolle durch ift-Zert
- kontinuierliche Fremdüberwachung des Werkes und der werkseigenen Produktionskontrolle durch ift-Zert

Dieses Zertifikat wurde erstmals am 18.11.2008 ausgestellt. Die aktuelle Version gilt bis zum 10.10.2028, wenn sich zwischenzeitlich die Festlegungen in der oben angeführten technischen Spezifikation oder die Herstellbedingungen im Werk oder in der werkseigenen Produktionskontrolle selbst nicht wesentlich verändert haben.

Das Zertifikat darf nur unverändert vervielfältigt werden. Alle Änderungen der Voraussetzungen für die Zertifizierung sind dem ift-Zert mit den erforderlichen Nachweisen unverzüglich schriftlich anzuzeigen.

Das Unternehmen ist berechtigt, das benannte Bauprodukt gemäß der ift-Zeichensatzung mit dem „ift-Zertifiziert“-Zeichen zu kennzeichnen.

Dieses Zertifikat enthält 2 Anlagen.

ift Rosenheim
11.10.2023

Christian Kehr
Leiter der ift-Zertifizierungs- und Überwachungsstelle
Kierownik placówki certyfikacji i nadzorczej ift

Gültig bis /
Ważny do: **10.10.2028**

Vertragsnr. /
Umową No.: **228 7019950**

Niniejszy Certyfikat potwierdza zgodność wymienionego wyrobu budowlanego z aktualnymi wymaganiami programu certyfikacji ift.

- Sporządzenie rodzin produktów podanego wyrobu budowlanego i badanie typu przez akredytowane laboratorium badawcze zgodnie z EN 13126-8 : 2017 po uwzględnieniu wykresów zastosowania
- Wprowadzenie i utrzymanie Zakładowej Kontroli Produkcji przez producenta
- Pierwsza inspekcja zakładu i Zakładowej Kontroli Produkcji przez ift-Zert.
- Stały nadzór zakładu i Zakładowej Kontroli Produkcji przez ift-Zert

Niniejszy certyfikat wystawiono po raz pierwszy dnia 18.11.2008. Aktualna wersja jest ważna do 10.10.2028, pod warunkiem, że w międzyczasie nie zmienia się w znacznym stopniu ustalenia w podanej wyżej specyfikacji technicznej, warunkach produkcji w zakładzie i zasadach zakładowej kontroli produkcji.

*Certyfikat można powielać jedynie bez dokonywania w nim zmian. Wszelkie zmiany warunków certyfikacji należy zgłaszać bezzwłocznie na piśmie do ift-Zert wraz z niezbędnymi dowodami.

Przedsiębiorstwo upoważnione jest do stosowania dla produktów znaku „ift-Zertifiziert“ („certyfikowany przez ift“) zgodnie ze statutem stosowania znaku ift.

Niniejszy certyfikat zawiera 2 załączniki.

Grundlage(n) /
podstawa:

ift-Zertifizierungsprogramm
für Beschläge
programie certyfikacji
Instytutu ift dla okuć
ift-Zertifizierung QM326:2018-01

EN 1191
EN 12400
bis Klasse 3
do klasy 3



Dauerfunktion
Trwałość

EN ISO
9227
EN 1670
bis Klasse 5
do klasy 5



Korrosionsschutz
Ochrona przeciw korozji



Identitäts-Check
Kontrola tożsamości



www.ift-rosenheim.de/
ift-zertifiziert
ID: 634-19288

Ve-Zer-6596-nv / 01.03.2023

ift Rosenheim GmbH
Theodor-Gietl-Str. 7-9
D-89026 Rosenheim

Kontakt
Tel.: +49 8031 261-0
Fax: +49 8031 261-290
www.ift-rosenheim.de

Prüfung und Kalibrierung – EN ISO/IEC 17025
Inspektion – EN ISO/IEC 17020
Zertifizierung Produkte – EN ISO/IEC 17065
Zertifizierung Managementsysteme – EN ISO/IEC 17021

Notified body 0157
PTB-Stelle: BAY 18

DAKKS
Deutsche
Akkreditierungsstelle
0-20-11349-01-08



Mobile Laboratorium Techniki Budowlanej Sp. z o.o.
Address of stationary technical activity: ul. Wroclawska 142 b, 58-306 Walbrzych, Poland

lab manager
Adam Mścichowski

Anlage/Załącznik 1
 Hersteller/Firma:
 Ausgabedatum/Data wydania:

Seite/Arkusz: 1 von/przez 3
 Aug. Winkhaus GmbH & Co. KG
 11.10.2023



Zertifikatsnr. / Certyfikat No.: 228-7019950-1-18

In der Zertifizierung enthaltene Produktfamilien für Fenster- und Fenstertürsysteme mit geeigneter Beschlagsaufnahme.

Objęte certyfikacją rodziny produktów dla systemów okien i porfenetrów z odpowiednimi rowkami pod okucia.

Lfd. Nr. Lp.	Ausführung Bandselle Wykonanie Strona zawieszania	Ausführung Flügelbeschlag Wykonanie Elementy skrzydłowe	Beschreibung der Ausführung der blendrahmenseitigen Beschlagsausführung Skrzydłowe / ramowe elementy nosne				Klassifizierung nach EN 13126-8:2017 Klasyfikacja wg normy EN 13126-8:2017			
			Winkelband/ Rozwórka	Scherenlager/ Zawias rozwórki	Eckband/ Zawias skrzydła	Ecklager/ Zawias ramowy	1 Dauerfunktionsfähigkeit/ Trwałość	2 Masse (in kg) Masa	3 Korrosionsbeständigkeit/ Odporność na korozję	4 Prüfgrößen (in mm) Wymiary skrzydła próbnego
1	activPilot K 100	activPilot K 100	SK2.20-13	SL.KS.3-6	FL.K. 20-6-20	EL.K. 6-3-16	H2	100	5	1300 mm x 1200 mm
2	activPilot K 100	activPilot K 100	SK2.20-13	SL.KS.3-6	FL.K. 20-6-20	EL.K. 6-3-16	H2	100	5	900 mm x 2300 mm
3	activPilot K 130 S	activPilot K 130 S	SK2.20-13	SL.K.3-6.130	FL.K. 20-6-28.130	ESV 6-3-16	H3	100	5	1300 mm x 1200 mm
4	activPilot Comfort PADK 100	activPilot Comfort PADK 100	SK2.PA.20-13	SL.KS.3-6	FLE.FWPA 20-13	ESV 6-3-16	H2	100	5	1300 mm x 1200 mm
5	activPilot Comfort PADK 100	activPilot Comfort PADK 100	SK2.PA.20-13	SL.KS.3-6	FLE.FWPA 20-13	ESV 6-3-16	H2	100	5	900 mm x 2300 mm
6	activPilot Comfort PADM 100	activPilot Comfort PADM 100	SK2.PAD. 20-13	SL.KS.3-6	FLE.FPAD 20-13	ESV 6-3-16	H2	100	5	1300 mm x 1200 mm
7	activPilot Comfort PADM 100	activPilot Comfort PADM 100	SK2.PAD. 20-13	SL.KS.3-6	FLE.FPAD 20-13	ESV 6-3-16	H2	100	5	900 mm x 2300 mm
8	activPilot C 130	activPilot C 130	9C2.20-13	SL.C.3-6	FLC.W. 20-13	EL.CS. 6-3-22	H3	130	5	1400 mm x 1550 mm
9	activPilot K 130	activPilot K 130	SK2.20-13	SL.KB.3-6	FWV 20-13	ESW 6-3-16	H2	130	5	1300 mm x 1200 mm
10	activPilot K 130	activPilot K 130	SK2.20-13	SL.KB.3-6	FWV 20-13	ESW 6-3-16	H2	130	5	900 mm x 2300 mm





Anlage/Załącznik 1
 Hersteller/Firma:
 Ausgabedatum/Data wydania:
 Seite/Arkusz: 2 von/przez 3
 Aug. Winkhaus GmbH & Co. KG
 11.10.2023

Zertifikatsnr. / Certifycat No.: 228-7019950-1-18

11	actiPilot ALLU 130	actiPilot ALLU 130	SK2.20-13	SLKB.3-6	FWV 20-13	ESVW 6-3-16	H2	130	5	1300 mm x 1200 mm
12	actiPilot ALLU 130	actiPilot ALLU 130	SK2.20-13	SLKB.3-6	FWV 20-13	ESVW 6-3-16	H2	130	5	900 mm x 2300 mm
13	actiPilot K 130 S	actiPilot K 130 S	SK2.20-13	SLK.3-6.130	FLK. 20-6-28.130	ESV 6-3-16	H2	130	5	1300 mm x 1200 mm
14	actiPilot K 130 S	actiPilot K 130 S	SK2.20-13	SLK.3-6.130	FLK. 20-6-28.130	ESV 6-3-16	H2	130	5	900 mm x 2300 mm
15	actiPilot H 130	actiPilot H 130	SH2.T. 18-13-12	SLHT.18-12	FLHT. 18-13-12	ELHT.Z. 18-12	H3	130	5	1300 mm x 1200 mm
16	actiPilot H 150	actiPilot H 150	SH2.T. 18-13-12	SLHT.18-12	FLHT. 18-13-12	ELHT.Z. 18-12	H3	150	5	900 mm x 2300 mm
17	actiPilot Grant	actiPilot Grant	SXL.20-13	SLXL	FLXL	ELXL	H3	200	5	1550 mm x 1400 mm
18	actiPilot Grant	actiPilot Grant	SXL.20-13	SLXL	FLXL	ELXL	H2	200	5	900 mm x 2300 mm
19	actiPilot Select K 100	actiPilot Select K 100	SK.SE	ohne Bez	FL.SE	ELK.SE	H2	100	5	1300 mm x 1200 mm
20	actiPilot Select H 130	actiPilot Select H 130	SH.SE 20-9.Z.	ohne Bez	FL.SE	EL.H.SE. 20-9.Z. mitz FLS.SE	H2	130	5	1300 mm x 1200 mm
21	actiPilot Topstar	actiPilot Topstar	SHIF.24-13	ohne Bez	FLIF	EL.HIF. 24-13	H2	130	5	1300 mm x 1200 mm
22	actiPilot Topstar	actiPilot Topstar	SHIF.24-13	ohne Bez	FLIF	EL.HIF. 24-13	H2	130	5	900 mm x 2300 mm
23	actiPilot Select K 150	actiPilot Select K 150	SK.SE	ohne Bez	FL.SE	ELK.SE mitz FLS.SE	H2	150	5	1550 mm x 1400 mm
24	actiPilot Select K 150	actiPilot Select K 150	SK.SE	ohne Bez	FL.SE	ELK.SE mitz FLS.SE	H2	150	5	900 mm x 2300 mm





Seite/Arkus: 3 von/przez 3
 Aug. Winkhaus GmbH & Co. KG
 11.10.2023

Anlage/Zalacznik 1
 Hersteller/Firma:
 Ausgabedatum/Data wydania:

Zertifikatsnr. / Certificat No.: 228-7019950-1-18

25	actiPilot Select ALU 150	actiPilot Select ALU 150	SK.SE	ohne bez	FL.SE	EL.K.SE mitz FLS.SE	H2	150	5	1550 mm x 1400 mm
26	actiPilot Select H 150	actiPilot Select H 150	SH.SE.29-13	ohne bez	FL.SE	EL.H.SE. 29-13 mitz FLS.SE	H2	150	5	1550 mm x 1400 mm
27	proPilot	proPilot	SK.U.2.20-13	SL.K.U.3-3	FL.K.U.6	EL.K.U.3-3	H2	70	4	1300 mm x 1200 mm
28	proPilot	proPilot	SK.U.2.20-13	SL.K.U.3-3	FL.K.U.6. 100	EL.K.U.3-3	H2	100	4	1300 mm x 1200 mm
29	actiPilot C 150	actiPilot C 150	SC2.20-13	SL.C.3-6	FL.C.W-20-13	EL.CS.6-3-22	H3	150	5	900 mm x 2300 mm
30	actiPilot C 150	actiPilot C 150	SC2.20-13	SL.C.3-6	FL.C.20-6-28	EL.C.6-3-22	H3	150	5	900 mm x 2300 mm
31	actiPilot C 130	actiPilot C 130	SC2.20-13	SL.C.3-6	FL.C.20-6-28	EL.C.6-3-22	H3	130	5	1400 mm 1550 mm

Die Ergebnisse sind auf folgende Ausführenden (Baugruppe) Besichtigungsinhalts, alle zulässigen Größen gemäß Anwendungsdiagramm sowie andere Fabrik- und Profildimensionen. Die technische Dokumentation des Beschäftigten, insbesondere die entsprechenden Anwendungsdiagramme, ist zu beachten. Wyniki można przeliczyć na następujące warunki wykonania: wykonanie okuć lewobraw, wzrastające dopuszczalne wielkości zgodnie z wykresem zastosowania, jak również inne geometrie przylgi / profilu. Należy stosować się do dokumentacji technicznej producenta okuć, szczególnie do odpowiednich schematów użytkowania.



Anlage/Zalacznik 2
 Hersteller/Firma:
 Ausgabedatum/Data wydania:

Seite/Arkusz 1 von/przez 1
 Aug. Winkhaus GmbH & Co. KG
 11.10.2023



Zertifikatsnr. / *Certyfikat No.:* 228-7019950-1-18

Hinweise zur Austauschbarkeit von, nach dem ift-Zertifizierungsprogramm bewerteten,
 Beschlägen in Bauelementen nach EN 14351-1:2006 + A2:2016

Wskazówki dot. wymiennalności okuć ocenianych zgodnie z programem certyfikacji ift w elementach budowlanych wg EN 14351-1:2006 + A2:2016

Nr Lp	Eigenschaft Parametr	Technische Regel Zgodnie z	Austauschbarkeit Wymiennosc
1.	Widerstandfähigkeit gegen Windlast Odporność na obciążenie wiatrem	EN 12211	ja* / tak*
2.	Widerstandfähigkeit gegen Schneelast Odporność na obciążenie śniegiem	-	Nein / nie
3.	Brandverhalten Właściwości ogniowe	EN 13501-1	nein / nie
4.	Schutz gegen Brand von außen Ochrona przed ogniem z zewnątrz	EN 13501-1	nein / nie
5.	Schlagregendichtheit Szczelność przeciwoleczkowa	EN 1027	ja* / tak*
6.	Gefährliche Substanzen Niebezpieczne substancje	-	nein / nie
7.	Stoßfestigkeit Wytrzymałość na udary	EN 13049	ja** / tak**
8.	Tragfähigkeit von Sicherheitsvorrichtungen Zdolność do urządzeń zabezpieczających	EN 14609 oder EN 948	ja** / tak**
9.	Fähigkeit zur Freigabe Zdolność do zwalniania	EN 179, EN 1125, prEN 13633 oder prEN 13637	nein / nie
10.	Schallschutz Izolacyjność dźwiękowa	EN ISO 140-3	ja* unter Berücksichtigung von Nr. 13 tak* przy uwzględnieniu poz. 13
11.	Wärmedurchgangskoeffizient Współczynnik przenikania ciepła	EN ISO 10077 oder EN ISO 12567	ja / tak
12.	Strahlungseigenschaften Właściwości promieniowania	EN 410	ja / tak
13.	Luftdurchlässigkeit Przepuszczalność powietrza	EN 1026	ja* / tak*
14.	Bedienungskräfte Siły potrzebne do obsługi	EN 12046	ja* / tak*
15.	Mechanische Festigkeit Wytrzymałość mechaniczna	EN 14608 und EN 14609	ja / tak
16.	Lüftung Wentylacja	EN 13141-1	ja / tak
17.	Durchschusshemmung Kuloodporność	EN 1522 und EN 1523	nein / nie
18.	Sprengwirkungshemmung Tłumienność siły rozsadzania	EN 13124-1 und EN 13123-1	nein / nie
19.	Dauerfunktion Trwałość	EN 1191	ja*** / tak***
20.	Differenzklimateverhalten Zachowanie się w różnych klimatach	ENV 13420, EN 1121 (für Außentüren)	ja / tak
21.	Einbruchhemmung Technika antywłamaniowa	ENV 1628, ENV 1629 und ENV 1630	nein / nie

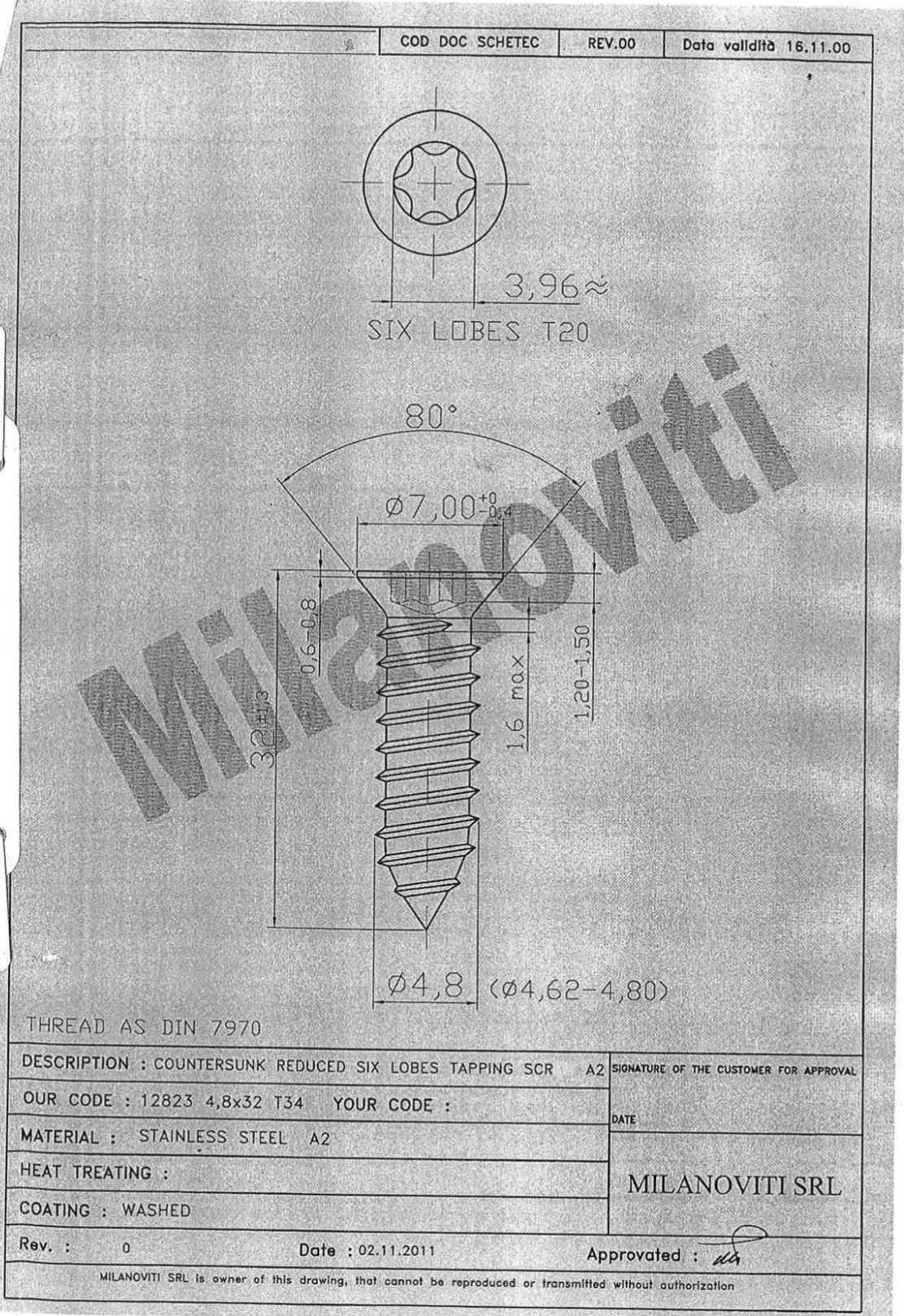
* bei vergleichender Prüfung auf kalibriertem Prüfstand
 ** bei vergleichender Prüfung auf einem Prüfstand
 *** Austauschbarkeit von Beschlägen im Bereich der Dauerfunktion
 Die Beschlagsysteme müssen alle Anforderungen des vorliegenden
 Zertifizierungsprogramms erfüllen.
 Die Beschläge und die Befestigungssysteme müssen technisch vergleichbar sein.
 Die Leistungsmerkmale (zulässiges Füllgewicht und Zyklenzahl) des ersetzenden
 Beschlagsystems müssen mit dem bei der Erstprüfung gemäß EN 14351-1:2006 +
 A2:2016 verwendeten Beschlagsystems mindestens gleichwertig sein.
 Eine Austauschbarkeit von zertifizierten Beschlagsystemen ist bei Einhaltung dieser
 Regeln für Bauelemente nach EN 14351-1:2006 + A2:2016 gegeben, für die bereits ein
 Nachweis nach EN 1191:2012 vorliegt. Trotzdem bleibt die Austauschbarkeit im
 Verantwortungsbereich des Herstellers. Im Rahmen von Shared- oder Cascading-
 Systemen sind, bei Austausch von Beschlägen, die vertraglichen Bedingungen des
 Systemgebers zu beachten.

* Przy porównywalnym badaniu na kalibrowanym stanowisku badawczym
 ** Przy porównywalnym badaniu na stanowisku badawczym
 *** Wymiennosc okuc w zakresie trwałości
 Systemy okuc muszą spełniać wszelkie wymagania przedłożonego programu
 certyfikacji.
 Okucia / systemy zamocowań muszą być technicznie porównywalne.
 Cechy wydajnościowe (dopuszczalny ciężar skrzydła / liczba cykli) zastępującego
 systemu okuc muszą być przynajmniej równoważne z tymi dla pierwszego badania typu
 zgodnie z systemami okuc stosowanymi wg EN 14351-1:2006 + A2:2016.
 Wymiennosc certyfikowanych systemów okuc przy zachowaniu tych zasad już jest dla
 elementów budowlanych wg EN 14351-1:2006 + A2:2016, dla których już jest wykazanie
 wg EN 1191:2012. Mimo to wymiennosc pozostaje w zakresie odpowiedzialności
 producenta. W ramach systemów Shared lub Cascading przy wymianie okuc należy
 przestrzegać umownych warunków właściciela systemu.



Mobile Laboratorium Techniki Budowlanej Sp. z o.o.
 Address of stationary technical activity: ul. Wroclawska 142 b, 58-306 Walbrzych, Poland

lab manager
 Adam Mścichowski



The laboratory declares that the above test results refer only to the tested object.

Without the written consent of the Laboratory, the test report may only be reproduced in its entirety.
"According to the ISO-ILAC-IAF Communication (April 2017)¹ available at www.pca.gov.pl, meeting the requirements of the ISO/IEC 17025 standard by a laboratory means that the laboratory meets both the requirements in terms of technical competence and the management system which are necessary for the consistent provision of technically reliable test and calibration results (...)"

¹April 1, 2017 - amendment of the ISO-ILAC-IAF message.

Mobile Laboratorium Techniki Budowlanej Sp. z o. o.

Tests done by

Senior technician Adam Domański
Assistant technician Karol Mścichowski
Laboratory manager Adam Mścichowski

Report made by

Laboratory manager Adam Mścichowski

Report verified by

Quality manager Wioleta Strzelec

Test authorized and approved by

Laboratory manager Adam Mścichowski

end of test report

