

Summary

of the results from
Test Report 105 25763 e*)
 dated October 29, 2002



Client **ALUMIL –Aluminium Systems
 ALUMINIUM INDUSTRY S.A.**

**Industrial Area
 GR-61100 Kilkis**

Product **Windows and casement doors, opening types:
 hinged, turn-tilt, fixed, double-leaf, with opening
 centre section, Aluminium profiles**

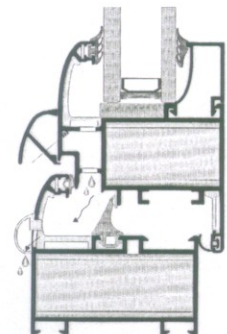
Designation **M 15000 Prestige**

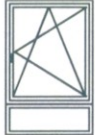
Material **Aluminum**

Foundation

prEN 12046-1 : 1996-11
 EN 1026 : 2000-09
 EN 1027 : 2000 - 09
 EN 12211 : 2000- 12
 prEN 947-1 : 1999
 prEN 948-1 : 1999
 EN 1191 : 2000-08
 EN 13115 : 2001-11
 EN 12207 : 2002-06
 EN 12208 : 2000- 06
 EN 12210 : 2000- 06
 EN 12210 : 2000-06
 DIN 18055 : 1981-10
 prEN 12400 : 1996-07

Schematic illustration



			
Window size	2190 x 1210	2190 x 1012	2190 x 1565
 Air permeability	Class 4	Class 4	Class 4
 Water-tightness	E1050	E750	7A
 Resistance to wind load	C 5	C 5	C 5
 Operating forces	Class 1	Class 1	Class 1
 Mechanical endurance	Class 2	Class 2	Class 2
 Mechanical strength	Class 4	Class 4	Class 4

Instructions for use

Test report 105 25763 e serves to prove the characteristics for windows as specified in prEN 14351.

Validity

The data and results refer solely to the test specimens that have been tested and described. Transfer is possible according to prEN 14351 Table E.1 if the format is similar and the leaf weight is the same. Weathering and ageing phenomena were not taken into consideration.

Notes on publication

The ift Notice "Notes on the use of ift Test Reports" applies. The cover sheet can be used as a summary.

Contents

The test report covers

1 Problem	
2 Object	
3 Implementation	
4 Results	
5 Notes on the use of ift test reports	
Appendix 1	15 pages
Appendix 2	10 pages

*) This test report is a translation of test report 105 25763, dated October 15, 2002.

ift Rosenheim
 October 29, 2002

Dr. Helmut Hohenstein
 Institute Director

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Test Report

No. 105 25763 e *)



Report date

October 29, 2002

Client

ALUMIL – Aluminium Systems
ALUMINIUM INDUSTRY S.A.

Industrial Area

GR- 61100 Kilkis

Instructions

Suitability testing of a window system

Object

Window system „M 15000 Prestige“
Frame material Aluminum

Contents

- 1 Definition of the problem
- 2 Object
- 3 Methods
- 4 Results
- 5 Notes on the use of **ift** test reports

Appendix 1 Description of the test specimens and results
of the tests (15 pages)

Appendix 2 Extract from the system description
(10 pages)

*) This test report is a translation of test report 105 25763,
dated October 15, 2002.

1 Definition of the problem

ALUMIL - MILONAS, GR- 61100 Kilkis, instructed **ift** Rosenheim to carry out a suitability test according to European Standards on the window system „**M 15000 Prestige**“.

2 Object

Test specimen 1	Window element with turn-tilt opening and fixed glazing in the sill wall area Panel frame ext. dimensions 1210 mm x 2190 mm
Test specimen 2	Single-leaf turn-tilt casement door Panel frame ext. dimensions 1012 mm x 2190 mm
Test specimen 3	Double-leaf turn/turn-tilt casement door with opening center section Panel frame ext. dimensions 1565 mm x 2190 mm

Details of the test specimens (e.g. profiles, seals, glazing drainage and ventilation possibilities) are given in the sectional drawings in Appendix 1.

3 Methods

The standards applicable for the tests are:

prEN 12046-1 : 1996-11	Window operating forces – Test procedures,
EN 1026 : 2000-09	Windows and doors – Air permeability – Test procedures,
EN 1027 : 2000-09	Windows and doors – Water tightness – Test procedures,
EN 12211 : 2000-12	Windows and doors – Resistance to wind load– Test procedures,
prEN 947-1:1999	Windows, vertical loading,
prEN 948-1:1999	Windows, torsion,
EN 1191 : 2000-08	Windows and doors, Continuous function testing – Test procedures

The standards applicable for classification are:

EN 13115 : 2001-11	Windows – Classification of mechanical properties – Displacement, torsion and operating forces
EN 12207 : 2000-06	Windows and doors – Air permeability – Classification,
EN 12208 : 2000-06	Windows and doors – Water tightness – Classification,
EN 12210 : 2000-06	Windows and doors – Resistance to wind load – Classification,

prEN 12400 : 1996-07 Windows and doors – Mechanical loading – Requirements and classifications
 DIN 18055 : 1981-10 Windows; Joint permeability, Water tightness and mechanical loading; Requirements and testing

The test equipment used comply with the above-mentioned standards.

Test period 22.06.02 to 05.08.02

Room temperature approx. (20 ±3) °C

4 Results

1 Initial test	Test specimen 1	Test specimen 2	Test specimen 3
Operating force	< 10 Nm	< 10 Nm	< 10 Nm
Air permeability, classification			
in relation to joint length	4	4	4
in relation to surface of test specimen	4	4	4
Overall classification	4	4	4
Water tightness, classification	9A	9A	9A
2 Resistance to wind load	Test specimen 1	Test specimen 2	Test specimen 3
Measurement of deflection with p_1^*)	5	5	5
Classification			
Behavior in gusty winds with p_2	5	5	5
Classification			
3 Mechanical tests*)	Test specimen 1	Test specimen 2	Test specimen 3
Resistance to vertical loading, classification	4	4	4
Resistance to torsion, classification	4	4	4
After 10 000 operating processes, classification	2	2	2
4 Final testing *)	Test specimen 1	Test specimen 2	Test specimen 3
Air permeability, classification			
in relation to joint length	4	4	4
in relation to surface of test specimen	4	4	4
Overall classification	4	4	4
Water tightness, classification	E1050	E750	7A

*) for detailed test results, see Appendix 1

5 Resistance to wind load	Test specimen 1	Test specimen 2	Test specimen 3
Safety test with p3 Classification	± 3000 Pa	± 3000 Pa	± 3000 Pa
Overall classification of wind load (from 2. and 5.)	C5	C5	C5
6 Classification according to DIN 18055	Test specimen 1	Test specimen 2	Test specimen 3
Load group	C	C	B

4.1 Validity of test results

The values listed in this test report relate solely to the items tested that are described in Appendix 1.

4.2 Transferability of test results

The tests were carried out on new windows. No further ageing or time status tests were carried out. The test results may only be transferred to the listed deviations and those listed in prEN 14351 Table E.1 if

- the design and closure type remains the same and
- suitable monitoring measures are taken to ensure a consistent quality of workmanship and
- the materials used and the method of execution are as described in this test report.

5 Notes on the use of ift test reports

The enclosed ift Notice "Notes on the use of ift test reports for advertising purposes and on the publication of their content" contains the regulations on the use of the test reports.

This test report is a translation of test report 105 25763, dated October 15, 2002.

ift Rosenheim
 October 29, 2002



Dr. Helmut Hohenstein
 Institute Director



Florian Sewald
 Head of the Windows and Facades Test Area

Test specimen 1 Window element with turn-tilt opening and fixed glazing below it

Project no.	105 25763
System provider	Alumil
Profile series	M 15000 Prestige
Tester	Mr. Sewald
Goods intake no.	12060/1
Intake date	19.06.02
Test date	21.06.02 to 05.08.02

Description of test specimen

Frame

Frame material	Aluminum
Panel frame	
External dimensions	1210 mm x 2190 mm
Leaf frame	
External dimensions	1150 mm x 1440 mm

Rebate design

Rebate seal	see Appendix
Inside	adjoining mitre
Middle	corner shaped pieces
Outside	laid touching
Rebate drainage	3 slits 35 mm x 10 mm

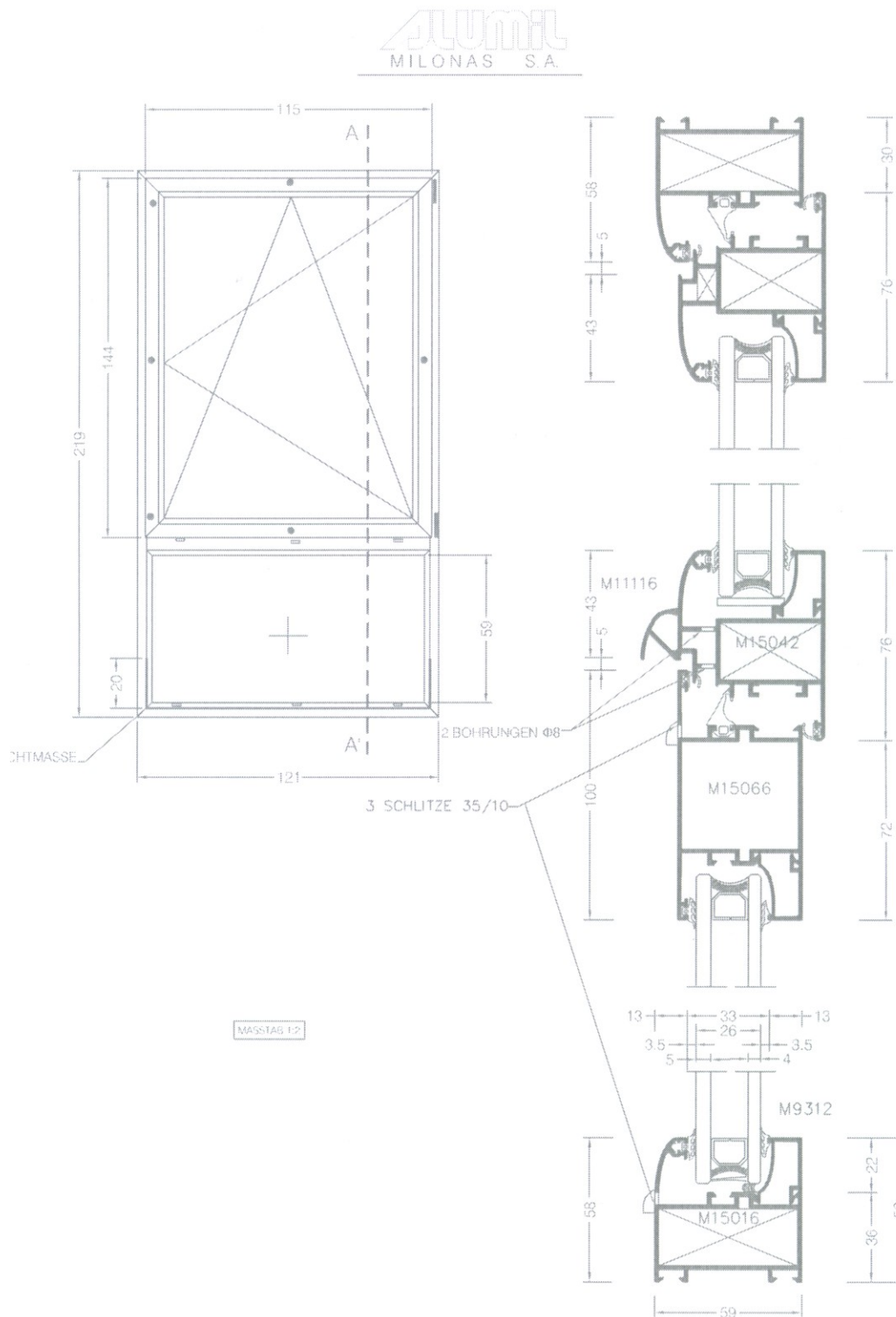
Hardware

Type of opening	Turn-tilt
Make	ROTO Alu 200 DK
Number of hinges/bearings	
Locks	1 bottom, 1 top, 1 hinge side, 3 closure side
Operating forces	<10 Nm

Infill

Glazing	Multipane insulation glass
Pane construction	<u>5/17/4</u> , total thickness 26 mm
Glass seal	
Inside	continuous
Outside	to mitre, with additional elastic mass
Steam pressure release	2 openings, ø 8 mm

Cross section of test specimen 1

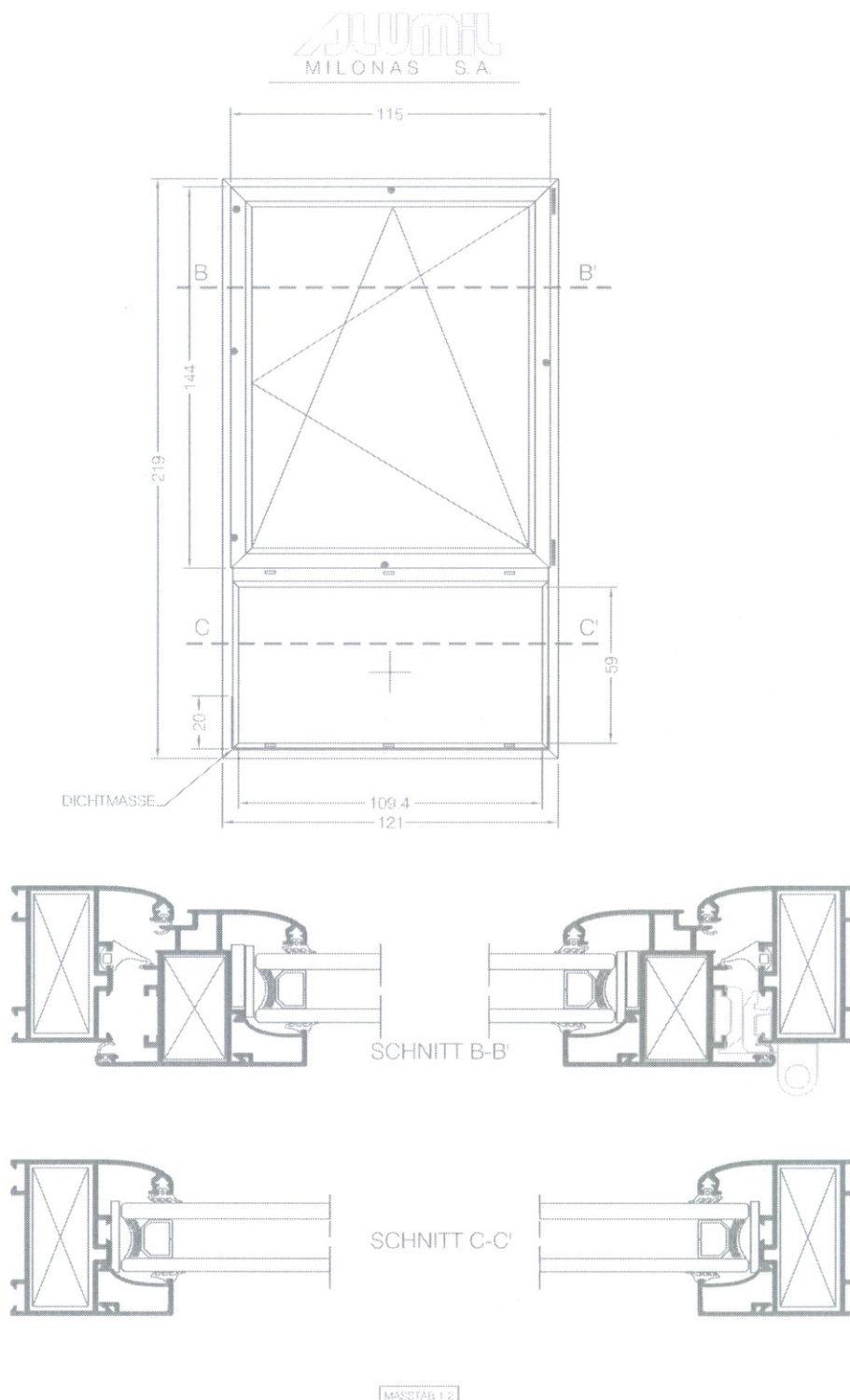


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Note

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Cross section of test specimen 1



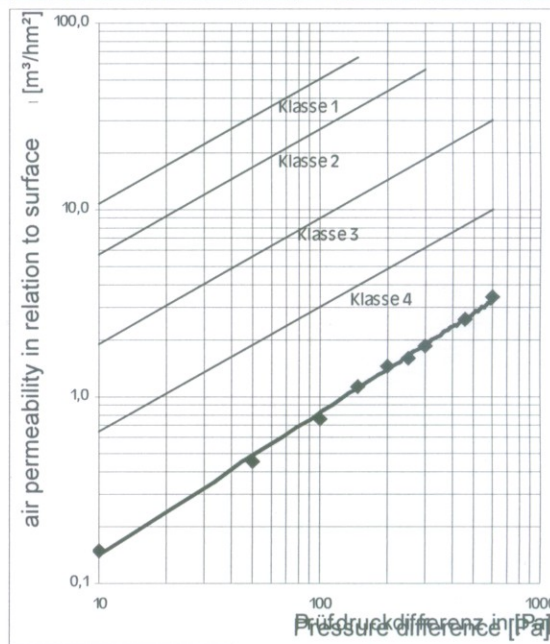
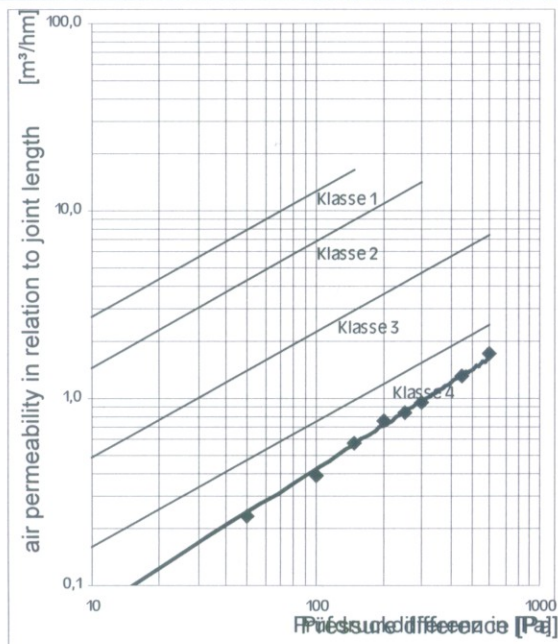
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Test specimen 1: Measurement results

1 Testing the air permeability according to EN 1026

Pressure diff. Pa	10	50	100	150	200	250	300	450	600
Measured values m^3/h	0,4	1,2	2,0	3,0	3,9	4,3	4,9	6,9	9,0
m^3/hm	0,08	0,23	0,39	0,58	0,75	0,83	0,95	1,33	1,74
m^3/hm^2	0,15	0,45	0,75	1,13	1,47	1,62	1,85	2,60	3,40



Classification according to EN 12207
in relation to joint length
in relation to surface of test specimen

Reference air permeability
 $Q_{100} = 0,42 \text{ m}^3/\text{hm}$
 $Q_{100} = 0,82 \text{ m}^3/\text{hm}^2$

Classification
Class 4
Class 4

Overall classification of air permeability according to EN 12207

Class 4

2 Testing the water tightness according to EN 1027

No entry of water up to a test pressure difference of 1050 Pa

Classification of water tightness according to EN 12208

Class E1050

3 Resistance to wind load

3.1 Deflection according to DIN EN 12211

Frontal deflection was measured on the lock case front with a test pressure difference up to 2000 Pa.

The maximum deflection ($l/300$) with a support width of 1100 mm is 3,66mm.

Class		1	2	3	4	5
Test pressure p_1 Pa		400	800	1200	1600	2000
Measurement point M1 mm		0,1	0,3	0,5	0,8	1,0
Measurement point M2 mm		0,3	0,8	1,1	1,7	2,2
Measurement point M3 mm		0,1	0,2	0,4	0,6	0,8
Effective deflection f mm		0,20	0,55	0,65	1,00	1,30
l/l		5500	2000	1692	1100	846

Classification of deflection according to EN 12210

Class 5

3.2 Pressure/suction loading according to EN 12211

The test specimen was loaded with 50 pressure/suction cycles at ± 1000 Pa.
No visible changes were observed.

Classification of pressure/suction loading according to EN 12210

Class 5

3.3 Safety testing according to EN 12211

The test specimen was subjected to a brief safety test pressure of ± 3000 Pa.
No visible changes were observed.

Classification of safety according to EN 12210

Class 5

Overall classification according to EN 12210

Class C5

4 Mechanical tests

3.2 Resistance to vertical loading according to prEN 947-1

The casement leaf was loaded at an opening angle of 90° with 80 kg for 5 minutes.
The test specimen did not show any functional faults.

Classification of vertical loading according to EN 13115

Class 4

3.2 Resistance to torsion according to prEN 948-1

4.4.1 Torsion in turn position

At an opening angle of 90° , the casement leaf was fixed at the lower corner and a load of 35 kg was applied horizontally to the upper corner for 5 minutes.
The test specimen did not show any functional faults.

Classification of torsion according to EN 13115

Class 4

4.4.2 Torsion in tilt position

In the tilt position, the casement leaf was fixed at the hinge-side upper corner of the leaf and a load of 35 kg was applied horizontally to the other upper corner of the leaf for 5 minutes.
The test specimen did not show any functional faults.

Classification of torsion according to EN 13115

Class 4

3.2 Continuous function test according to EN 1191

The test specimen was subjected to a continuous function test with 10,000 operating processes (turning and tilting). The hardware was greased before the start of the tests.
The test specimen did not show any functional faults.

Classification of continuous function according to prEN 12400

Class 2

Test specimen 2 One sash turn-tilt casement door

Project no.	105 25763
System provider	Alumil
Profile series	M 15000 Prestige
Tester	Mr. Sewald
Goods intake no.	12060/2
Intake date	19.06.02
Test date	21.06.02 to 05.08.02

Description of test specimen

Frame

Frame material	Aluminum
Panel frame	
External dimensions	1012 mm x 2190 mm
Leaf frame	
External dimensions	932 mm x 2110 mm

Rebate design

Rebate seal	see Appendix
Inside	adjoining mitre
Middle	corner shaped pieces
Outside	laid touching
Rebate drainage	3 slits 35 mm x 10 mm

Hardware

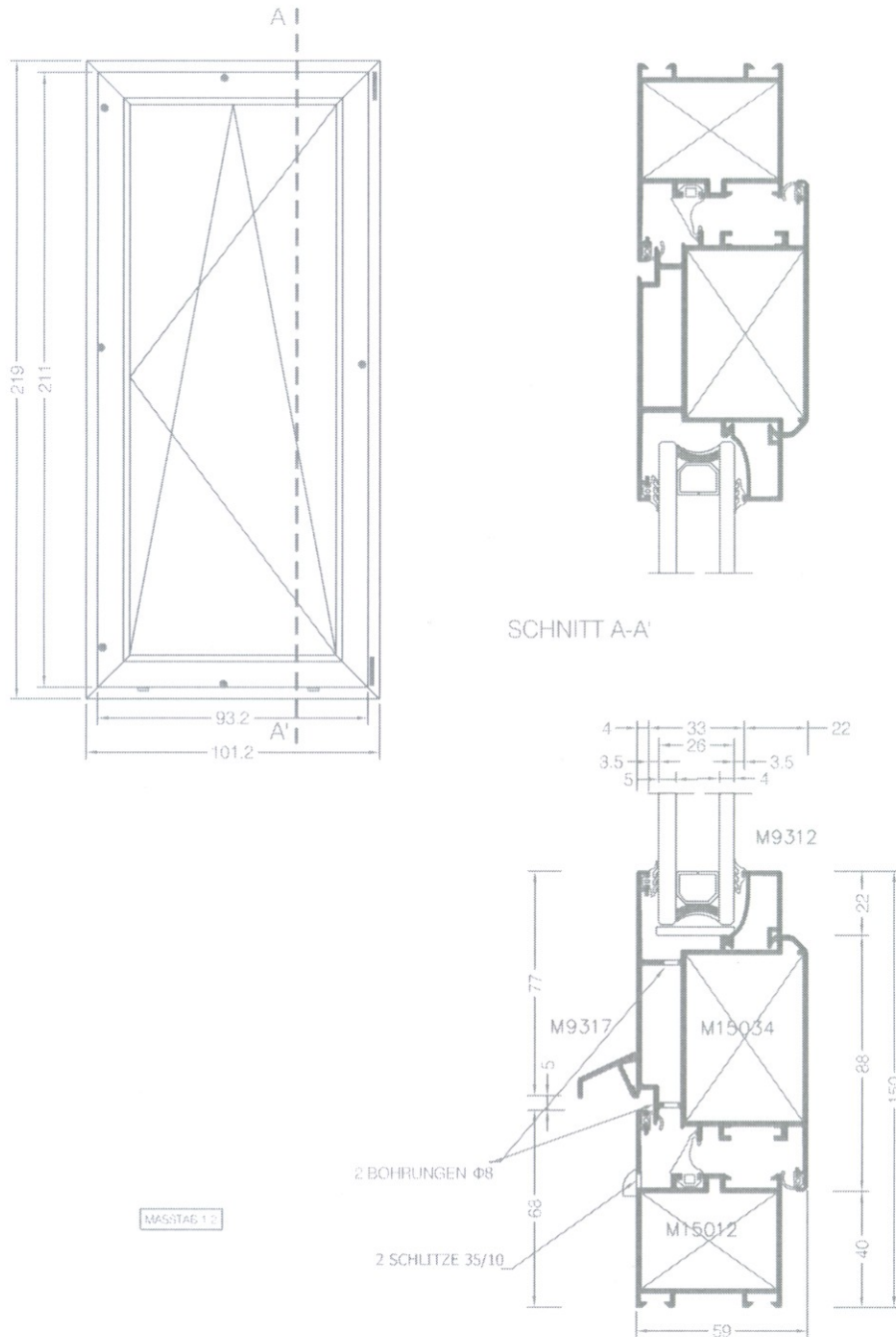
Type of opening	Turn-tilt
Make	ROTO Alu 200 DK
Number of hinges/bearings	
Locks	bottom 1, top 1, hinge side 1, closure side 3
Operating forces	<10 Nm

Infill

Glazing	Multipane insulation glass
Pane construction	<u>5</u> / <u>17</u> / <u>4</u> total thickness 26 mm
Glass seal	
Inside	continuous
Outside	to mitre, with additional elastic mass
Steam pressure release	2 openings, diameter ø 8 mm

Cross section of test specimen 2

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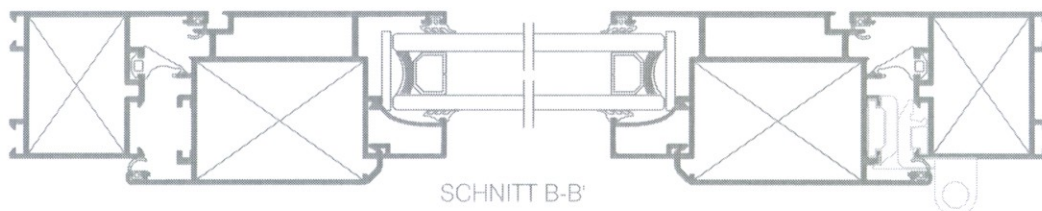
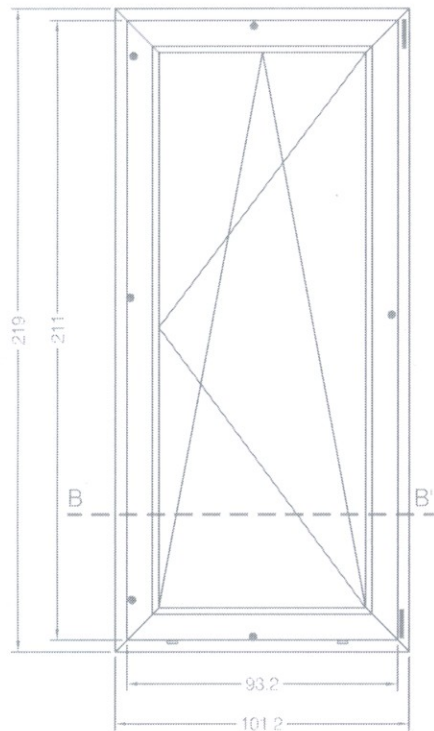


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Cross section of test specimen 2



MASSTAB 1:1

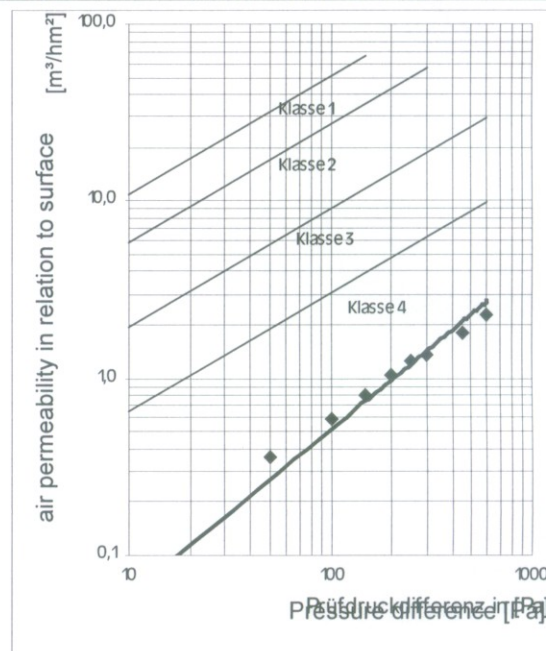
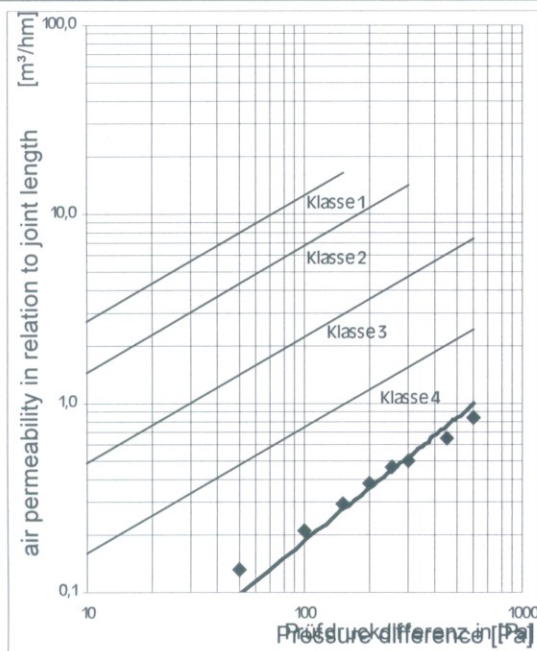
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Test specimen 2: Measurement results

1 Testing the air permeability according to EN 1026

Pressure diff. Pa		10	50	100	150	200	250	300	450	600
Measured values	m ³ /h	0,1	0,8	1,3	1,8	2,3	2,8	3,0	4,0	5,1
	m ³ /hm	0,02	0,13	0,21	0,30	0,38	0,46	0,49	0,66	0,84
	m ³ /hm ²	0,05	0,36	0,59	0,81	1,04	1,26	1,35	1,80	2,30



Classification according to EN 12207
in relation to joint length
in relation to surface of test specimen

Reference air permeability
 $Q_{100} = 0,18 \text{ m}^3/\text{hm}$
 $Q_{100} = 0,51 \text{ m}^3/\text{hm}^2$

Classification
Class 4
Class 4

Overall classification of air permeability according to EN 12207

Class 4

2 Testing the water tightness according to EN 1027

No entry of water up to a test pressure difference of 750 Pa

Classification of water tightness according to EN 12208

Class E750

3 Resistance to wind load

3.1 Pressure/suction loading according to EN 12211

The test specimen was loaded with 50 pressure/suction cycles at $\pm 1000 \text{ Pa}$.
No visible changes were observed.

Classification of pressure/suction loading according to EN 12210

Class 5

3.2 Safety testing according to EN 12211

The test specimen was subjected to a brief safety test pressure of ± 3000 Pa.
No visible changes were observed.

Classification of safety according to EN 12210

Class 5

Overall classification according to EN 12210

Class C5

4 Mechanical tests

4.1 Resistance to vertical loading according to prEN 947-1

The casement leaf was loaded at an opening angle of 90° with 80 kg for 5 minutes.
The test specimen did not show any functional faults.

Classification of vertical loading according to EN 13115

Class 4

4.2 Resistance to torsion according to prEN 948-1

4.2.1 Torsion in turn position

At an opening angle of 90° , the casement leaf was fixed at the lower corner and a load of 35 kg was applied horizontally to the upper corner for 5 minutes.
The test specimen did not show any functional faults.

Classification of torsion according to EN 13115

Class 4

4.2.2 Torsion in tilt position

In the tilt position, the casement leaf was fixed at the hinge-side upper corner of the leaf and a load of 35 kg was applied horizontally to the other upper corner of the leaf for 5 minutes.
The test specimen did not show any functional faults.

Classification of torsion according to EN 13115

Class 4

4.3 Continuous function test according to EN 1191

The test specimen was subjected to a continuous function test with 10,000 operating processes (turning and tilting). The hardware was greased before the start of the tests.
The test specimen did not show any functional faults.

Classification of continuous function according to prEN 12400

Class 2

Test specimen 3 Double-leaf turn/turn-tilt casement door with opening center section

Project no.	105 25763
System provider	Alumil
Profile series	M 15000 Prestige
Tester	Mr. Sewald
Goods intake no.	12060/3
Intake date	19.06.02
Test date	21.06.02 to 05.08.02

Description of test specimen

Frame

Frame material	Aluminum
Panel frame	
External dimensions	1565 mm x 2190 mm
Leaf frame	
External dimensions	740 mm x 2110 mm

Rebate design

Rebate seal	see appendix
Inside	adjoining mitre
Middle	Corner shaped pieces
Outside	adjoining mitre
Rebate drainage	4 slits 35 mm x 10 mm

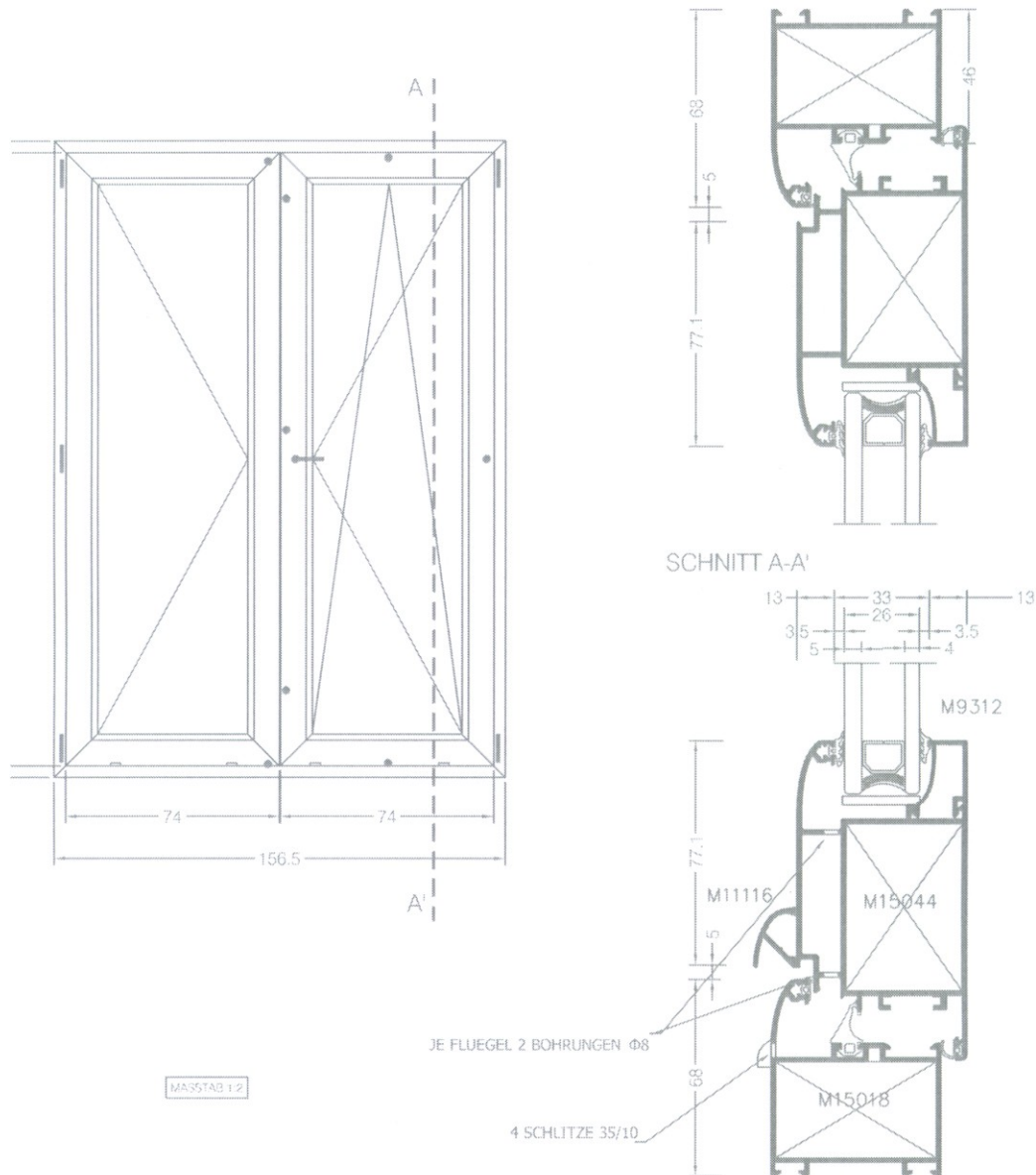
Hardware

Type of opening	Turn-tilt
Make	ROTO Alu 200
Number of hinges/bearings	First leaf 2, secondary leaf 3
Locks	First leaf bottom 1, top 1, hinge side 1, closure side 3 Secondary leaf: bottom 1, top 1, hinge side 1
Operating forces	<10 Nm

Infill

Glazing	Multipane insulation glass
Pane construction	5/17/4 , total thickness 26 mm
Glass seal	
Inside	continuous
Outside	to mitre, with additional elastic mass
Steam pressure release	per sash 2 openings, ø 8 mm

Cross section of test specimen 3

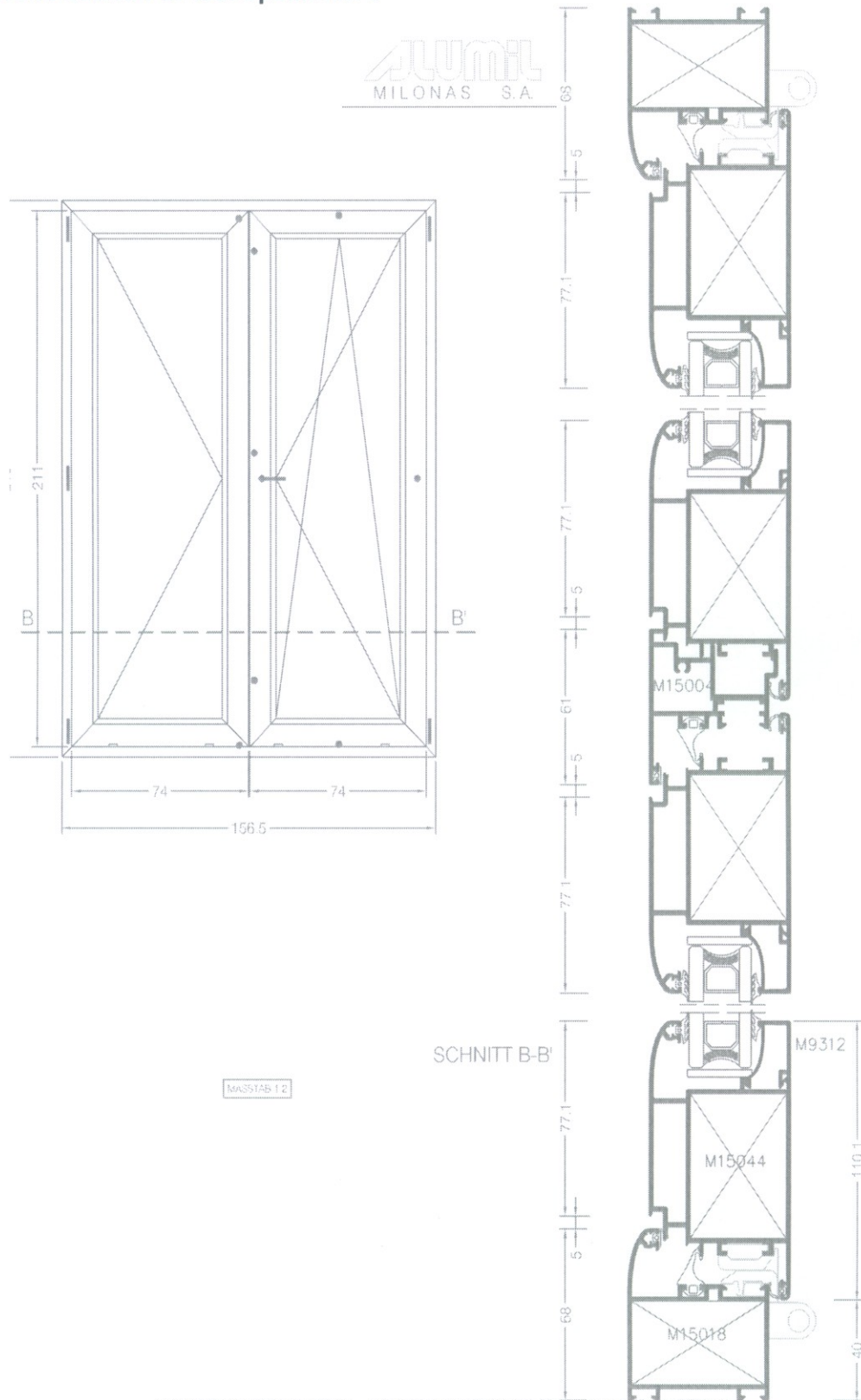


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Cross section of test specimen 3



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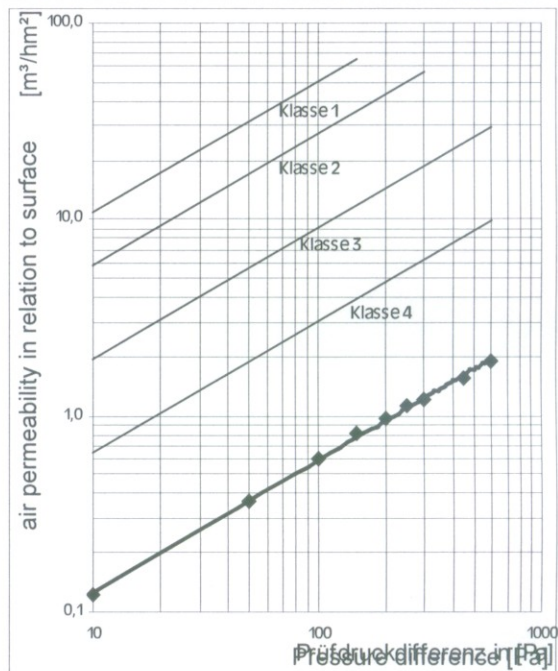
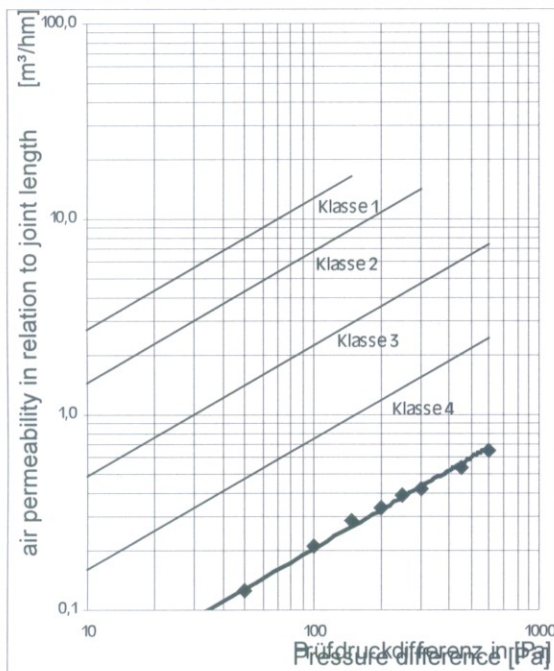
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Test specimen 3: Measurement results

1 Testing the air permeability according to EN 1026

Pressure diff. Pa		10	50	100	150	200	250	300	450	600
Measured values	m ³ /h	0,4	1,2	2,0	2,7	3,2	3,7	4,0	5,1	6,2
	m ³ /hm	0,04	0,13	0,21	0,28	0,34	0,39	0,42	0,54	0,65
	m ³ /hm ²	0,12	0,36	0,61	0,82	0,97	1,12	1,21	1,54	1,88



Classification according to EN 12207
in relation to joint length
in relation to surface of test specimen

Reference air permeability
 $Q_{100} = 0,20 \text{ m}^3/\text{hm}$
 $Q_{100} = 0,59 \text{ m}^3/\text{hm}^2$

Classification
Class 4
Class 4

Overall classification of air permeability according to EN 12207

Class 4

2 Testing the water tightness according to EN 1027

No entry of water up to a test pressure difference of von 300 Pa

Classification of water tightness according to EN 12208

Class 7A

3 Resistance to wind load

3.1 Deflection according to DIN EN 12211

Frontal deflection was measured on the lock case front at a test pressure difference up to 2000 Pa. The maximum deflection (l/300) with a support width of 2110 mm is 7,03 mm.

Class		1	2	3	4	5
Test pressure p_1	Pa	400	800	1200	1600	2000
Measurement point M1	mm	0,5	1,0	1,4	2,2	2,9
Measurement point M2	mm	1,5	3,1	5,0	6,7	8,8
Measurement point M3	mm	0,6	1,1	1,5	2,4	3,2
Effective deflection f	mm	0,95	2,05	3,55	4,40	5,75
1/l		2221	1029	594	480	367

Classification of deflection according to EN 12210

Class C5

3.4 Pressure/suction loading according to EN 12211

The test specimen was loaded with 50 pressure/suction cycles at ± 1000 Pa.
No visible changes were observed.

Classification of pressure/suction loading according to EN 12210

Class 5

3.5 Safety testing according to EN 12211

The test specimen was subjected to a brief safety test pressure of ± 3000 Pa.
No visible changes were observed.

Classification of safety according to EN 12210

Class 5

Overall classification according to EN 12210

Class C5

4 Mechanical tests

4.3 Resistance to vertical loading according to prEN 947-1

The casement leaf was loaded at an opening angle of 90° with 80 kg for 5 minutes.
The test specimen did not show any functional faults.

Classification of vertical loading according to EN 13115

Class 4

4.4 Resistance to torsion according to prEN 948-1

4.2.3 Torsion in turn position

At an opening angle of 90° , the casement leaf was fixed at the lower corner and a load of 35 kg was applied horizontally to the upper corner for 5 minutes.
The test specimen did not show any functional faults.

Classification of torsion according to EN 13115

Class 4

4.2.4 Torsion in tilt position

In the tilt position, the casement leaf was fixed at the hinge-side upper corner of the leaf and a load of 35 kg was applied horizontally to the other upper corner of the leaf for 5 minutes.
The test specimen did not show any functional faults.

Classification of torsion according to EN 13115

Class 4

4.4 Continuous function test according to EN 1191

The test specimen was subjected to a continuous function test with 10.000 operating processes (turning and tilting). The hardware was greased before the start of the tests.
The test specimen did not show any functional faults.

Classification of continuous function according to prEN 12400

Class 2



200.68310



200.02035



210.15000



220.11001



220.15001



MASSTAB 2:1

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1. Dichtungen

An der Glasfalz werden folgende Dichtungen eingesetzt:

Außen: 200.68310 aus EPDM 75 (umläufen)
Innen: SP 4 aus EPDM 68 (45°- Schnitt und mit Flüssiggummi geklebt)

Im Falzbereich der Fenster werden drei Dichtungen eingesetzt:

- Dichtung 210.15000 zentrale Dichtung aus EPDM 68, mit Eckformstücke
- Dichtung 220.11001 aussen (am Rahmenüberschlag) aus EPDM 75, auf Gehrung gestossen
- Dichtung 220.15001 innen (am Flügel-überschlag) aus EPDM 75, auf Gehrung gestossen

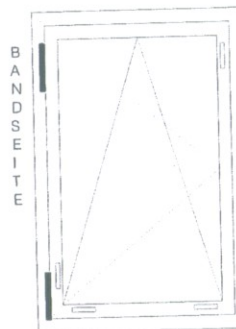
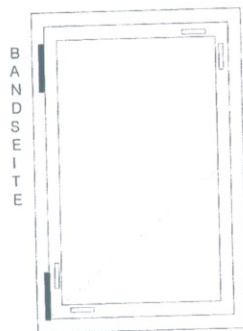
Außen und Innendichtung sind in Eckbereich auf Gehrung gestossen, der Dichtungstüß im Eckbereich ist eingeklebt.
Dichtungs Zeichnungen-Materialien siehe Anhang

2. Verglassung- Verklotzung

Die Glasscheibe ist um 10 mm kleiner als das Glasfalzmaß des Flügels. Verklotzt wird mit Plastikloetzen wie in den Zeichnungen unten.

Kloetzegroessen:

35 X 45 X 5
35 X 45 X 4
35 X 45 X 3
35 X 45 X 2



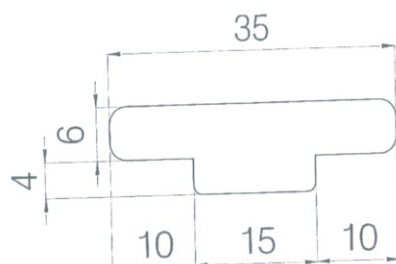
Note

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2.Eckwinkeln-Gehrungswinkeln

Bei allen Eckverbindungen wird der ALU-S EINKOMPONENTEN-KLEBER (Anhang C) eingesetzt. Damit wird auch die ganze Gehrungsschnittfläche berollt.

7.Entwässerungsbohrungen



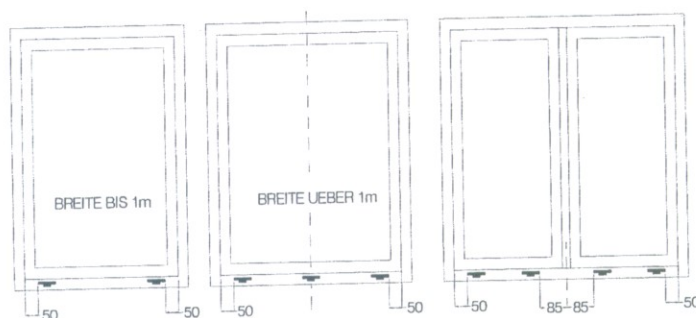
Zeichnung 1: Entwässerungsschlitz

Entwässerungsbohrungen werden mit spezieller Presse gestanzt und zwar:

Für Einflügel Fenster

- Bis 1m Breite 2 Schlitz
- Ueber 1m Breite 3 Schlitz

Für Zweiflügel Fenster oder Türen, 4 Schlitz wie in der Zeichnung 2
 Zeichnung 2: Anzahl der Entwässerungsschlitz



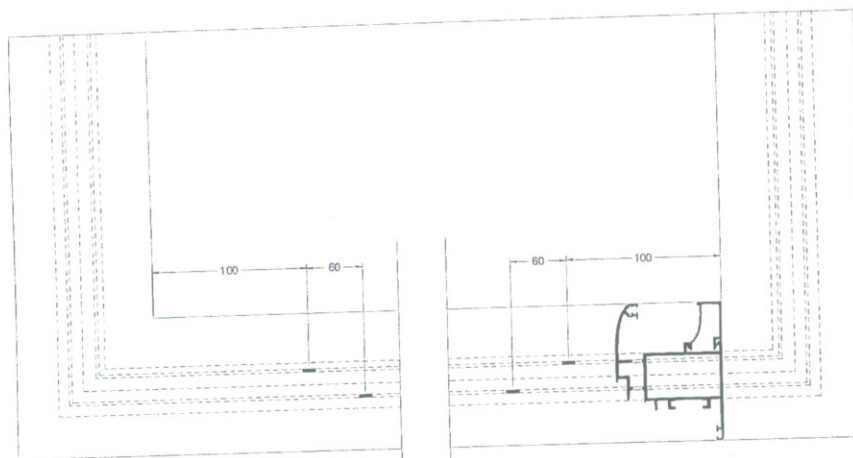
Zeichnung 2

Note

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8. Druckausgleichsbohrungen

An der unteren Seite jedes Fluegels werden 4X Ø8 Bohrungen angebracht, jeweils versetzt wie in der folgenden Zeichnung verdeutlicht wird.



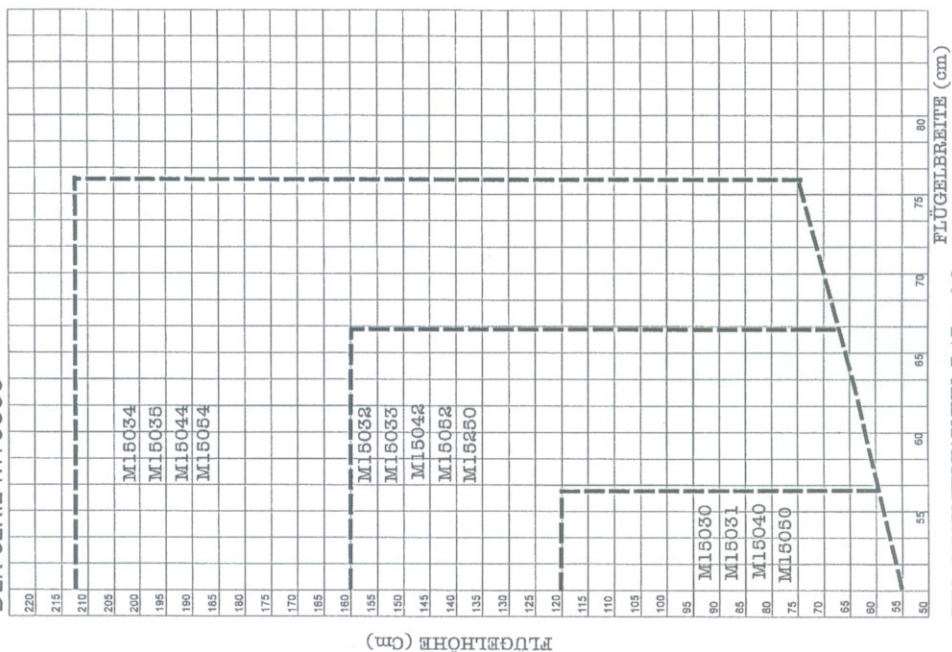
9. Drehkippbeschlaege

Bei allen Testobjekte wurden Drehkippbeschläge des Beschlagsherrstellers ROTO verwendet und zwar der ROTO ALU 200DK Drehkippbeschlag:

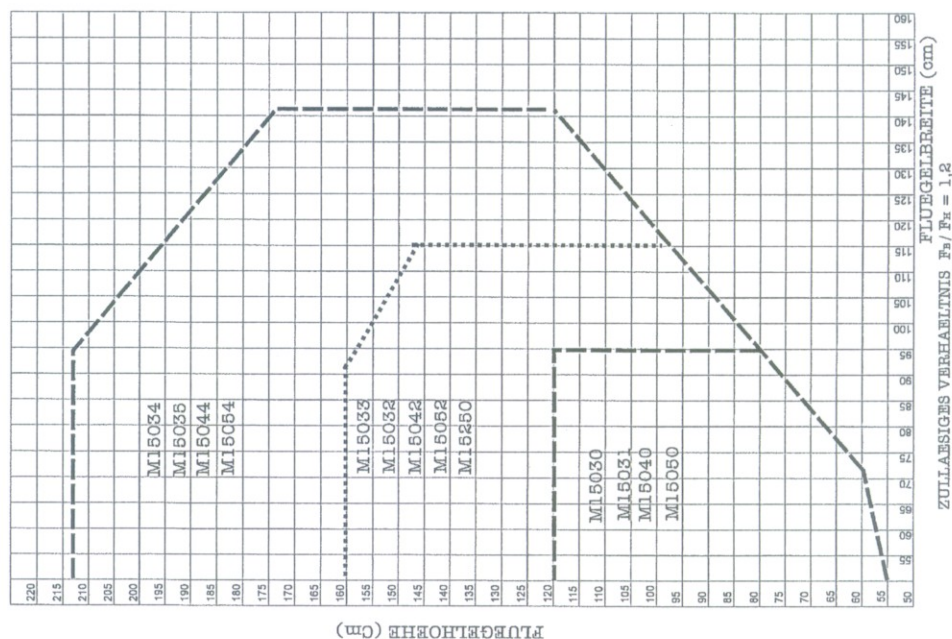
Note

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FLÜGELGRÖSSEN FÜR ZWEIFLÜGELIGE FENSTER
DER SERIE M15000



MAXIMALE FLÜGELGRÖSSEN FÜR EINFÜGELIGE
FENSTER DER SERIE M15000



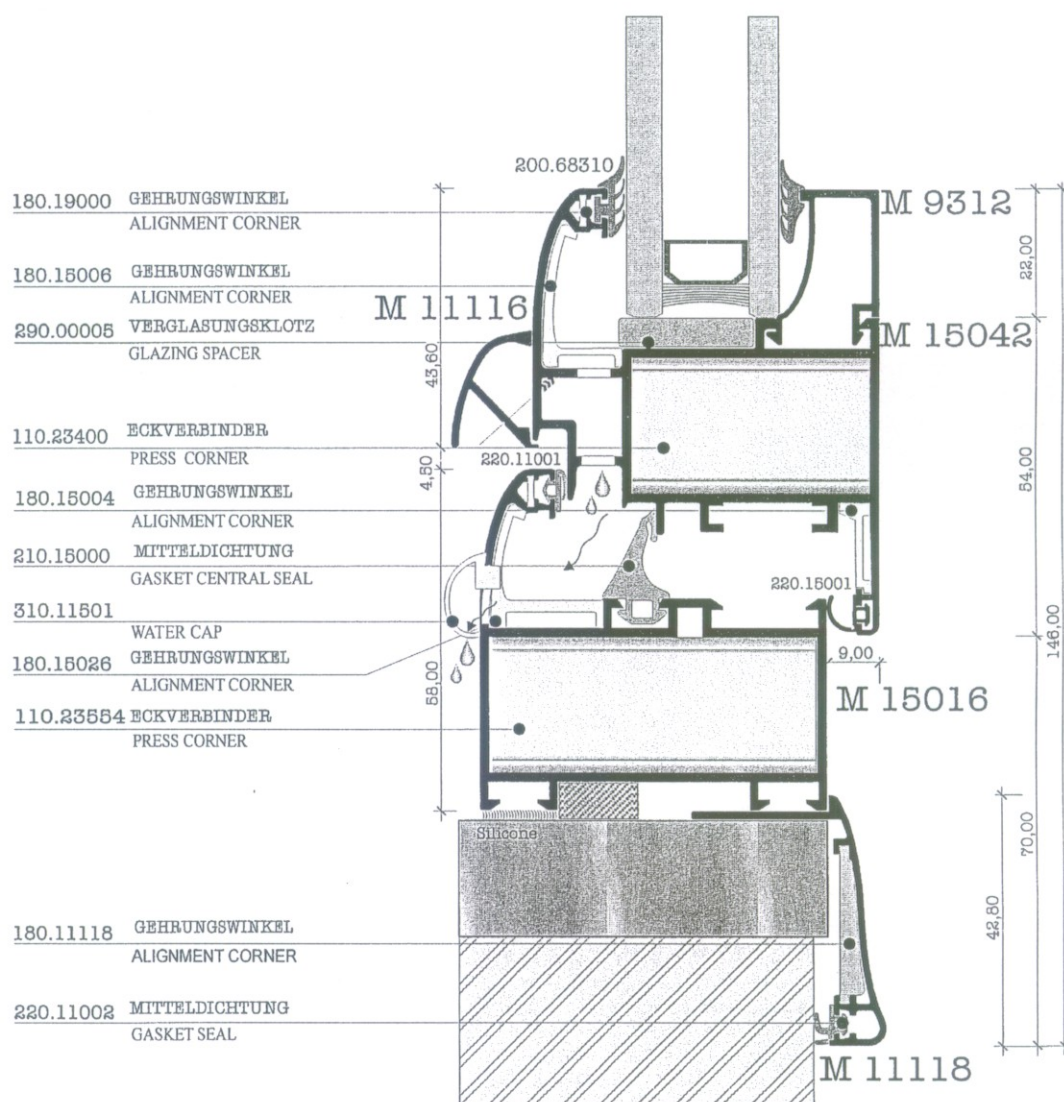
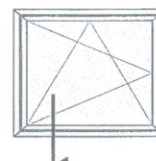
Flügelgrößenprogramme

M15000 "PRESTIGE"

M15000 **alumil**

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PROFILE	Profile Number Weight (gr/m)	X mm Y mm	I cm ⁴ J cm ⁴
	M 15008 862	50,00 48,00	4,29 9,97

	M 15010 944	50,00 58,00	8,12 11,92
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	M 15012 1055	50,00 68,00	13,84 13,78
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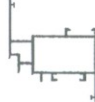
	M 15016 1101	59,00 58,00	10,55 18,04
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	M 15018 1159	59,00 68,00	16,99 20,42
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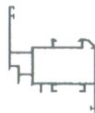
	M 15022 1123	59,00 58,00	11,23 18,45
---	-----------------	----------------	----------------

	M 15024 1206	59,00 68,00	20,83 17,90
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PROFILE	Profile Number Weight (gr/m)	X mm Y mm	I cm ⁴ J cm ⁴
	M 15031 1050	59,00 66,00	6,27 16,77

	M 15033 1237	59,00 76,00	11,14 20,40
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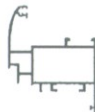
	M 15030 1075	59,00 66,00	11,40 20,40
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	M 15032 1251	59,00 76,00	11,38 20,28
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	M 15034 1673	59,00 110,00	46,86 39,11
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	M 15035 1631	59,00 110,00	45,50 30,10
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	M 15040 1096	59,00 66,00	7,80 17,09
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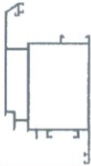
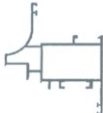
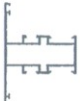
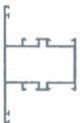
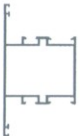
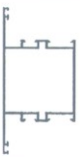
	M 15042 1261	59,00 76,00	13,31 20,77
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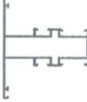
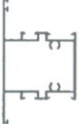
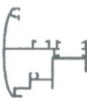
	M 15044 1696	59,00 110,00	50,89 30,46
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M15000		M15000 "PRESTIGE"	Profiles	R=1:4
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Note

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PROFILE	Profile Number Weight (gr/m)	X mm Y mm	I cm ⁴ J cm ⁴
	M 15050 1115	59,00 66,00	8,31 17,61
	M 15052 1280	69,00 76,00	14,04 21,26
	M 15054 1702	59,00 110,00	52,07 30,74
	M 15250 1221	68,00 76,00	11,13 20,61
	M 15060 979	50,00 70,00	7,58 11,24
	M 15062 1066	50,00 80,00	12,85 13,22
	M 15064 1152	50,00 90,00	20,10 16,17
	M 15066 1238	50,00 100,00	29,46 17,10

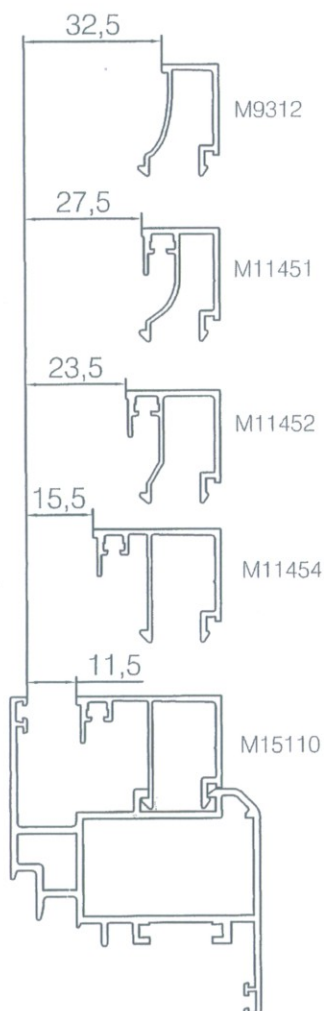
PROFILE	Profile Number Weight (gr/m)	X mm Y mm	I cm ⁴ J cm ⁴
	M 15068 1670	50,00 150,00	113,93 26,70
	M 15065 1043	59,00 70,00	7,71 16,49
	M 15266 1250	50,00 90,00	21,24 16,12
	M 15004 1110	53,80 61,00	7,48 12,90
	M 15006 1210	61,30 61,00	9,44 16,95
	M 15005 1292	62,70 61,00	18,91 11,01
	M 9317 180	21,00 15,60	0,11 0,30
	M 11116 183	15,00 20,00	0,28 0,14
	M 15110 360	34,00 26,60	0,97 1,70

R=1:4	Profiles	M15000"PRESTIGE"		M15000
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VERGLASSUNGSTABELLE



GLASSDICKE	AUSSENDICHTUNG	GLASSLEISTE	INNENDICHTUNG
4	Mo.68	M15110	SP.6
5			SP.7
6			SP.7
7		M11454	SP.1
8			SP.2
9			SP.3
10			SP.4
18	Mo.68	M11452	SP.3
19			SP.4
20			SP.5
21			SP.6
22			SP.7
23	Mo.68	M11451	SP.1
24			SP.2
25			SP.3
26			SP.4
27			SP.5
28	Mo.68	M9312	SP.2
29			SP.3
30			SP.4
31			SP.5
32			SP.6
33			SP.7

SP 6



SP 5



SP 1



SP 7



SP 4

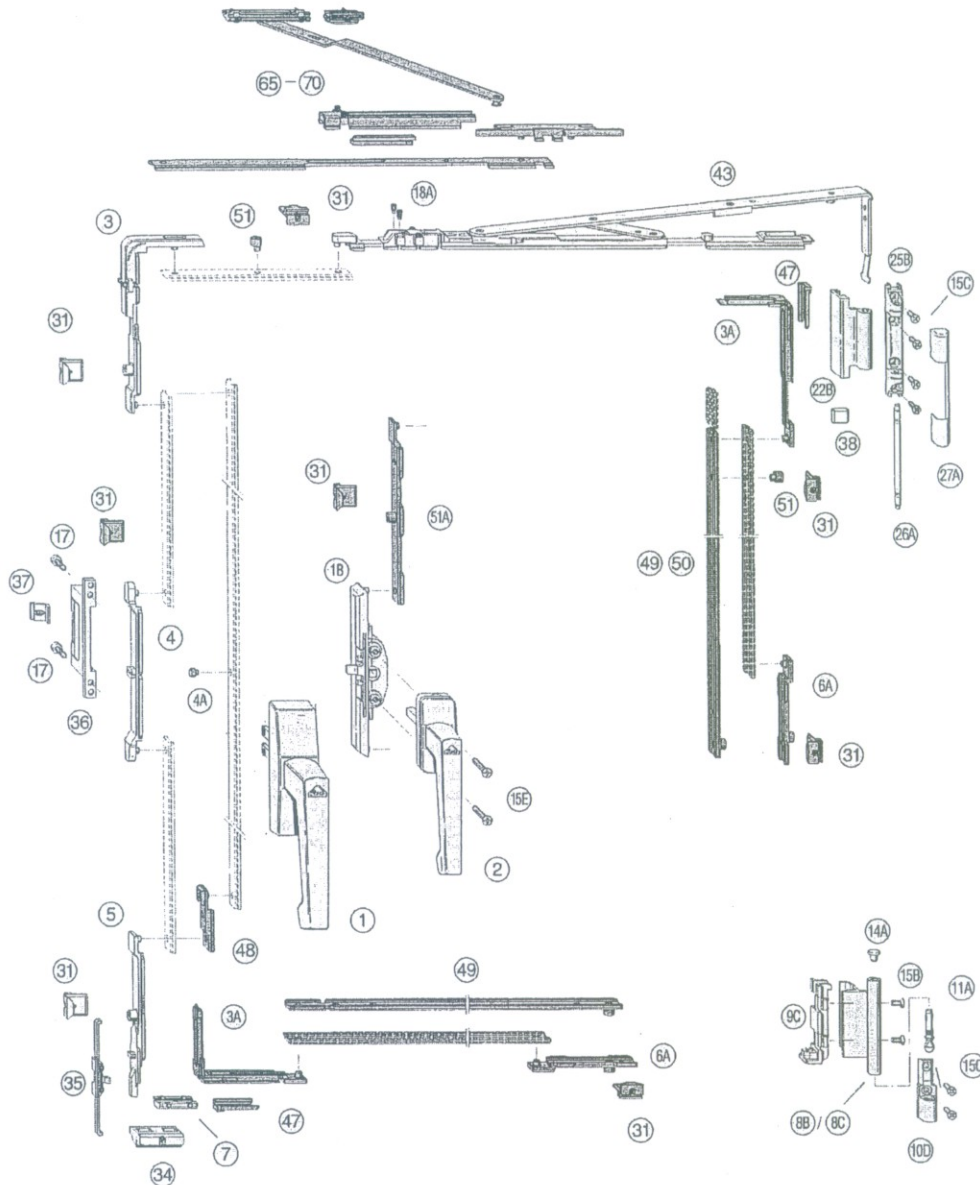


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M15000 PRESTIGE



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