

TESTCENTRUM

VOOR

GEVELELEMENTEN

TEST REPORT NR. 363/2060

TESTS CARRIED OUT IN ACCORDANCE WITH

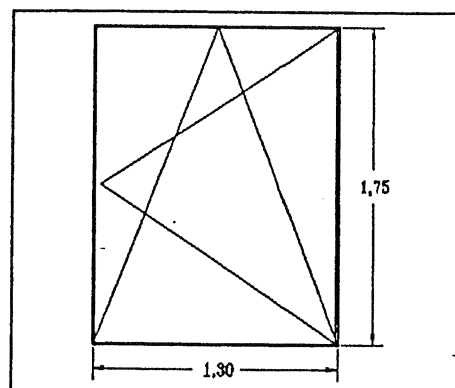
STS 52.0

ON AN ALUMINIUM TURN AND TILT WINDOW
WITH THERMAL BREAK.

TEST REPORT NR: 363/2060

TEST CARRIED OUT ON AN ALUMINIUM
TURN AND TILT WINDOW WITH THERMAL
BREAK

OF THE COMPANY :
ALIPLAST N.V.



APPLICANT :
.....
ALIPLAST N.V.

Dijkstraat 20
9160 LOKEREN

Phone: (091) 48 52 22

2 MANUFACTURER :
.....
ALIPLAST N.V.

Dijkstraat 20
9160 LOKEREN

Phone: (091) 48 52 22

3 DESTINATION : not indicated
.....

4 MATERIAL SENT FOR TEST :
.....

4.1. Identification of the test element :

Test element supplied by the applicant on 91-05-07 and in
accordance with the included drawing with ref. nr: 363/ 2060

Drawing certified with the stamp:

4.2. Dimensions of the test element:

width : 1.30 m
height : 1.75 m
total surf.: 2.27 m²
length of the opening joints : 5.86 m
surface of the opening lighth frame : 2.10 m²

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TESTCENTRUM
VOOR GEVELELEMENTEN
* Sint-Pietersnieuwstraat, 41 *
** B-9000 GENT (BELGIË) **

4.3. Description of the parts of the test element:

Sections :

material : aluminium with thermal break
type : VL10 and VL20
type of connection : pressed + glued

Tightening strips :

material : epdm
type : ACVL 030 and ACVL 031
place : center and inside

Glass :

thickness : double 5 + 12 + 5 mm
type : not indicated
way of glazing : pre-fabricated profils

Fittings :

hinges : mark : Siegenia
type : LM 3100
number: 2

closing fittings : mark : Siegenia
type : LM 3100
number of locking points : 6

Drainage:

of the glazing : see drawing ref. nr. 363/2060
of the opening joint : see drawing ref. nr. 363/2060

5 INSTALLATION IN THE TEST CENTER:
.....

The element to test is fixed on the test chamber in accordance with
the included drawings nr.: 363/2060 and scheme 363/1/1
Air temperature in the test chamber : 19.0 °C
Air temperature in the test center : 19.0 °C

6 TESTS CARRIED OUT : see scheme 363/1/2

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6.1. Air permeability in accordance with NBN B 25-204:

6.1.1. Positive pressure see fig 363/2060/1

Pres- sure Pa	Air permeability m ³ /h	Per m opening joint m ³ /hm	Per m ² opening surface m ³ /hm ²	Per m ² tot. surface m ³ /hm ²
50.	0.79	0.14	0.38	0.35
100.	1.17	0.20	0.56	0.52
150.	1.54	0.26	0.73	0.68
200.	1.87	0.32	0.89	0.82
300.	2.45	0.42	1.17	1.08
400.	2.96	0.51	1.41	1.30
500.	3.49	0.59	1.66	1.53
600.	4.05	0.69	1.93	1.78
500.	3.36	0.57	1.60	1.48
400.	2.90	0.49	1.38	1.27
300.	2.40	0.41	1.14	1.06
200.	1.81	0.31	0.86	0.79
150.	1.50	0.26	0.72	0.66
100.	1.12	0.19	0.53	0.49
50.	0.79	0.14	0.38	0.35

6.1.2. Negative pressure see fig 363/2060/1

Pres- sure Pa	Air permeability m ³ /h	Per m opening joint m ³ /hm	Per m ² opening surface m ³ /hm ²	Per m ² tot. surface m ³ /hm ²
50.	0.79	0.14	0.38	0.35
100.	1.17	0.20	0.56	0.52
150.	1.46	0.25	0.70	0.64
200.	1.70	0.29	0.81	0.75
300.	2.29	0.39	1.09	1.01
400.	2.85	0.49	1.36	1.25
500.	3.23	0.55	1.54	1.42
600.	3.73	0.64	1.78	1.64
500.	3.13	0.53	1.49	1.37
400.	2.70	0.46	1.28	1.19
300.	2.18	0.37	1.04	0.96
200.	1.70	0.29	0.81	0.75
150.	1.42	0.24	0.67	0.62
100.	1.12	0.19	0.53	0.49
50.	0.71	0.12	0.34	0.31

REMARKS : none.

6.2. Testing the wind resistance in accordance with NBN B 25-205:

6.2.1. Deformation test by positive pressure measured over a length of 0.88 m in point B see fig 363/2060/2:

Pressure Pa	Deformation point B mm	Relative deformation mm
50.	0.0	0.0
100.	0.0	0.0
150.	0.0	0.0
200.	0.0	0.0
300.	0.0	0.0
400.	0.0	0.0
500.	0.0	0.0
600.	0.1	1./8800
750.	0.1	1./8800
1000.	0.2	1./4400

Permanent deformation : 0.0 mm

RESULT : the element is satisfactory.

6.2.2. Deformation test by negative pressure measured over a length of 0.88 m in point B see fig 363/2060/2:

Pressure Pa	Deformation point B mm	Relative deformation mm
50.	0.0	0.0
100.	0.0	0.0
150.	0.0	0.0
200.	0.0	0.0
300.	0.0	0.0
400.	0.0	0.0
500.	0.0	0.0
600.	0.1	1./8800
750.	0.1	1./8800
1000.	0.2	1./4400

Permanent deformation : 0.0 mm

RESULT : the element is satisfactory.

6.3. Control of the air permeability in accordance with NBN B 25-204:
(after test 6.2. the wind resistance.)

6.3.1. Positive pressure see fig 363/2060/1:

Difference in air permeability expressed in percentage and in m^3/hm opening joint in relation to test 6.1.1.

Pres- sure Pa	Difference air permeability %	Per m opening joint m^3/hm
50.	-10.6	-0.01
100.	-20.2	-0.04
150.	-23.9	-0.06
200.	-24.4	-0.08
300.	-26.4	-0.11
400.	-26.3	-0.13
500.	-29.7	-0.18
600.	-31.8	-0.22
500.	-27.0	-0.15
400.	-26.7	-0.13
300.	-26.3	-0.11
200.	-24.0	-0.07
150.	-21.8	-0.06
100.	-16.3	-0.03
50.	-10.6	-0.01

6.3.2. Negative pressure see fig 363/2060/1:

Difference in air permeability expressed in percentage and in m^3/hm opening joint in relation to test 6.1.2.

Pres- sure Pa	Difference air permeability %	Per m opening joint m^3/hm
50.	-10.6	-0.01
100.	-26.1	-0.05
150.	-23.3	-0.06
200.	-19.2	-0.06
300.	-19.8	-0.08
400.	-19.6	-0.10
500.	-9.5	-0.05
600.	-2.3	-0.01
500.	-9.4	-0.05
400.	-13.9	-0.06
300.	-14.2	-0.05
200.	-19.2	-0.06
150.	-20.9	-0.05
100.	-22.5	-0.04
50.	-13.4	-0.02

6.3.3. Conservation of the qualities:

The air permeability measured after the wind resistance test may not be higher than 20 % (with a minimum of $0.3 \text{ m}^3/\text{hm}$ opening joint) of the air permeability measured before the wind resistance test.

RESULT : the element is satisfactory

6.4. Watertightness test in accordance with NBN B 25-209:

6.4.1. Under static air pressure:

Pressure Pa	Duration min.	Remarks
0	15	no infiltration
50	5	no infiltration
100	5	no infiltration
150	5	no infiltration
200	5	no infiltration
300	5	no infiltration
400	5	no infiltration
500	5	no infiltration
600	5	no infiltration
700	5	no infiltration
800	5	no infiltration
900	5	no infiltration
1000	5	no infiltration

6.4.2. Under dynamic air pressure:

50 pulsations are carried out between 0 + 50 Pa en 250 + en - 50 Pa:

no infiltration

6.5. Mechanical tests in accordance with NBN B 25-210:

6.5.1. Locking power : 94.2 N

6.5.2. Unlocking power : 64.0 N

6.5.3. Power necessary to start moving the opening light frame : 7.2 N

6.5.4. Power necessary to move the opening light frame : 4.0 N

6.5.5. Warp test :

The fittings are unlocked and at the handle side a corner of the opening light frame is blocked. At the height of the handle a horizontal power of 400 N is put on

RESULT :

There was no damage or faulty operation after the test.

6.5.6. Vertical load on the opening light frame corner:

A vertical power of 500 N is put on the opening light frame corner during 1 min.

RESULT :

There was no damage or faulty operation after the test.

6.5.7. Testing the link arm and hinges:

RESULT :

There was no damage or faulty operation after the test.

6.6. Test for wind resistance in accordance with NBN B 25-205:

6.6.1. Safety test with a positive pressure of : 2000. Pa

RESULT:

There was no damage or faulty operation after the test.

6.6.2. Safety test with a negative pressure of : 2000. Pa

RESULT:

There was no damage or faulty operation after the test.

7 EVALUATION :

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7.1. In accordance with STS 52.0:
results for

- air permeability	:	PA3
- wind resistance	:	PV2
- watertightness	:	PEE 1000 Pa
- mechanical behaviour	:	the element is satisfactory

7.2. In accordance with UEATC:
class for

- air permeability	:	A3
- wind resistance	:	V2
- watertightness	:	EE
- mechanical behaviour	:	the element is satisfactory

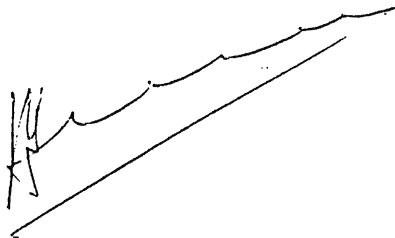
8 REMARKS :

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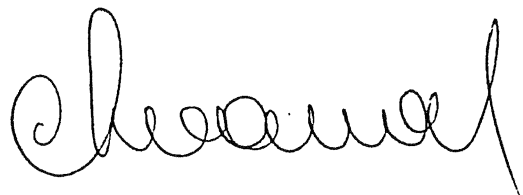
8.1. The results are only valid under the conditions as ruling during the test.

8.2. This report is only valid when showing the reference number and stamp on all annexes.

8.3. Partial copy of this report is not allowed without written consent of Prof. Dr. Ir. Ch. Van Aken, director of the "Testcentrum voor Gevelelementen".



R. HUWEL
Engineer responsible for the tests.



Prof. Dr. Ir. Ch. VAN AKEN
Director.

ANNEXES :

.....

with stamp

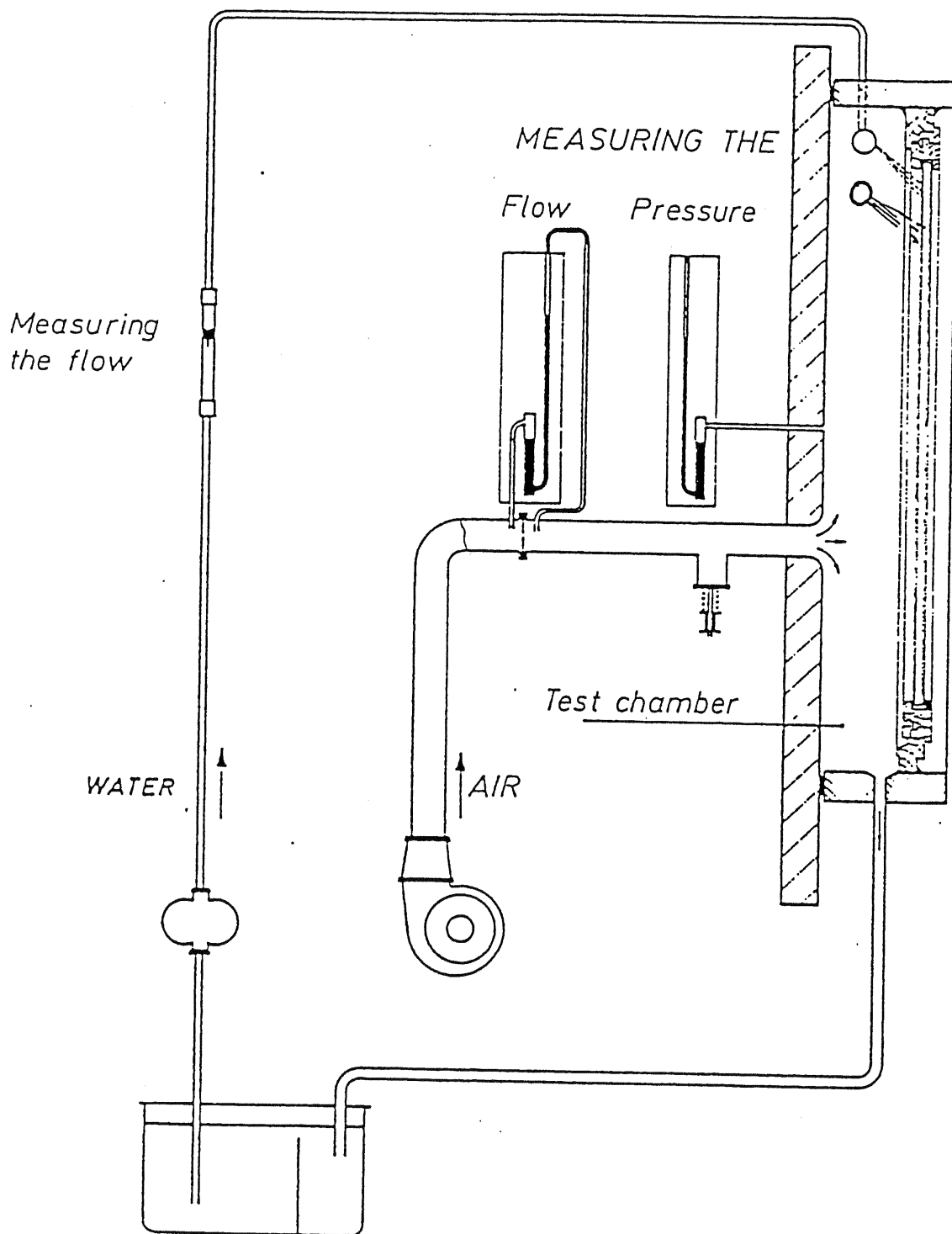
Drawings nr.

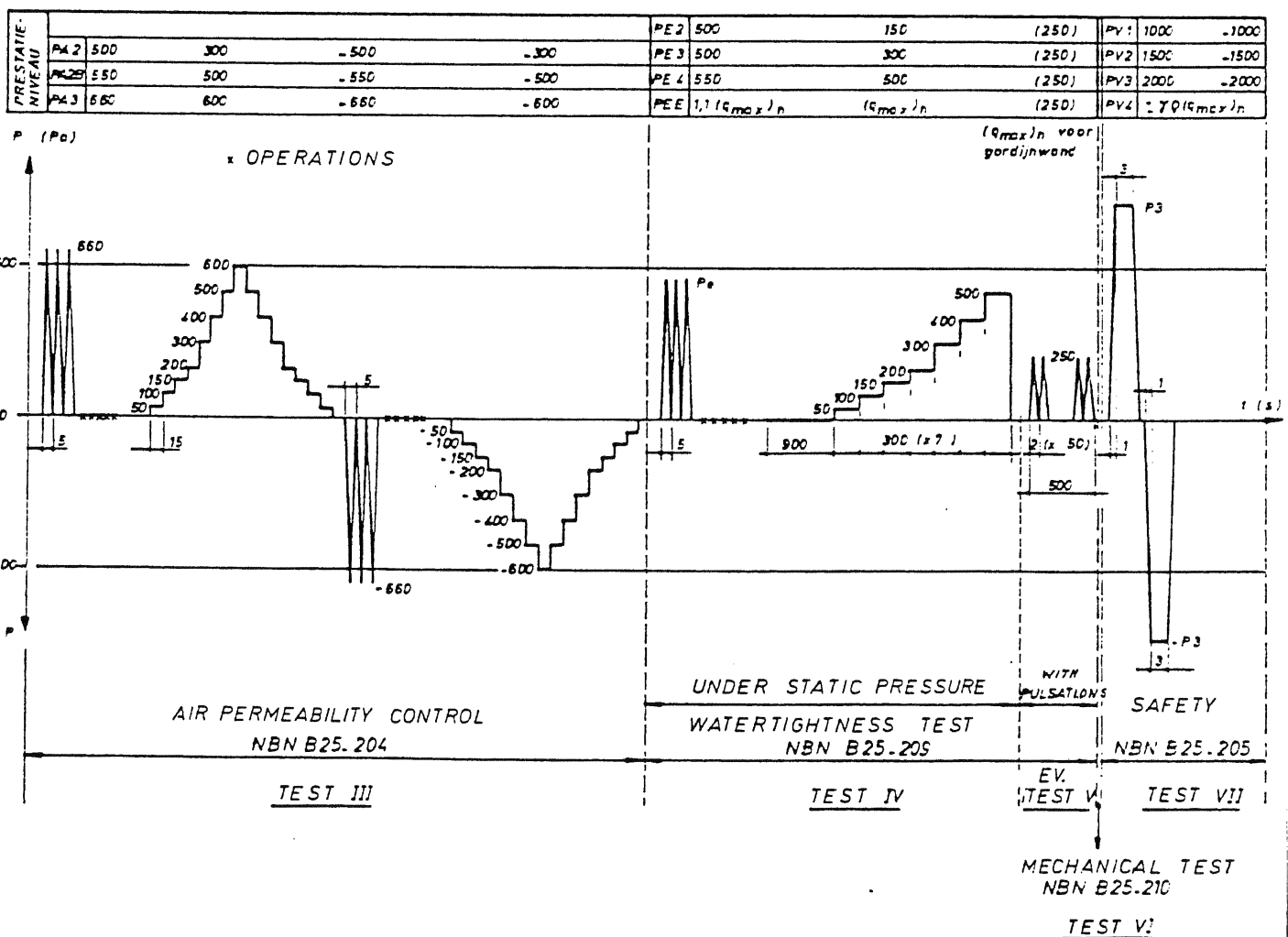
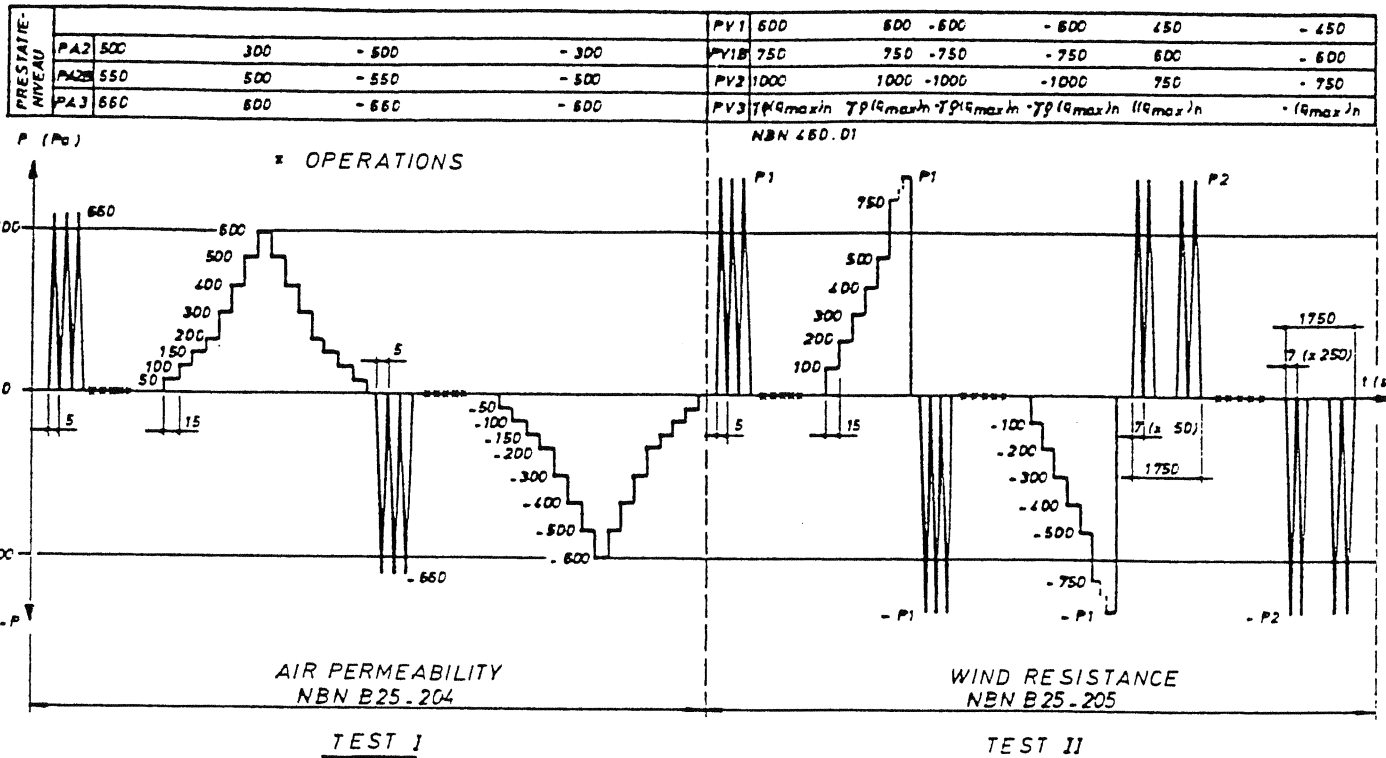
363/1/1
363/1/2
363/2060

Figures nr.

363/2060 /1
363/2060 /2

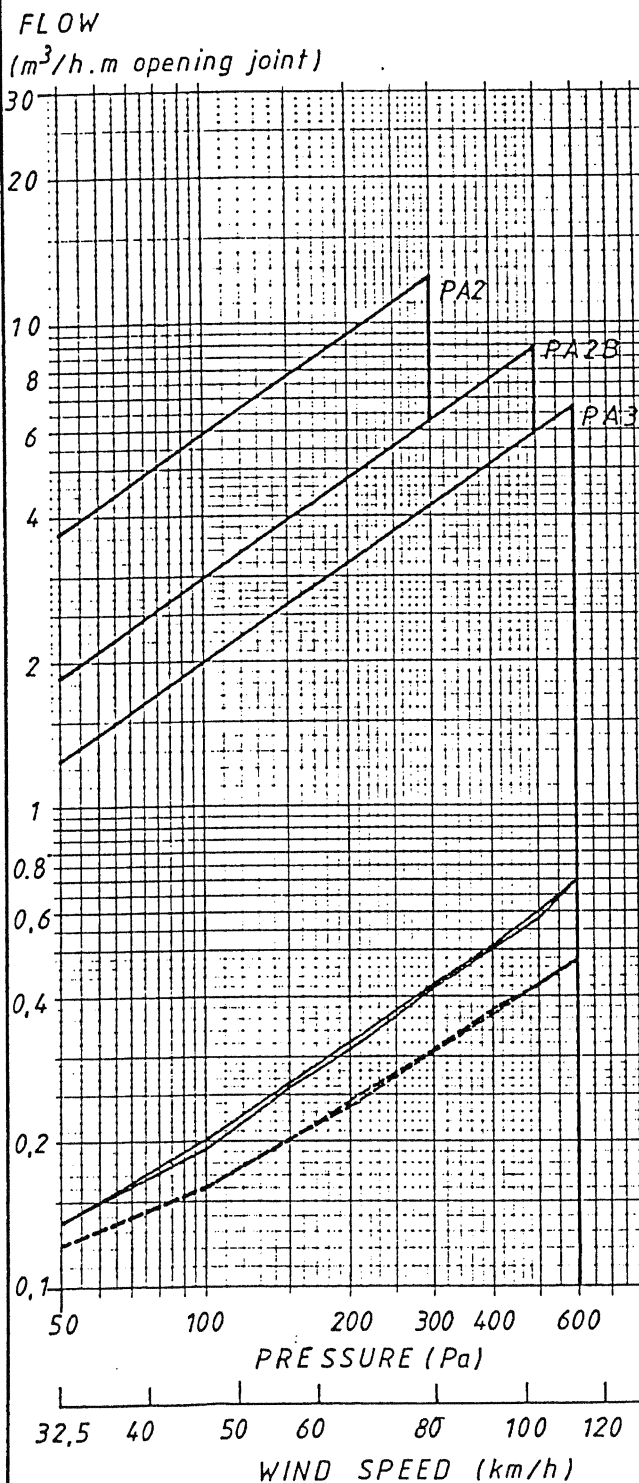
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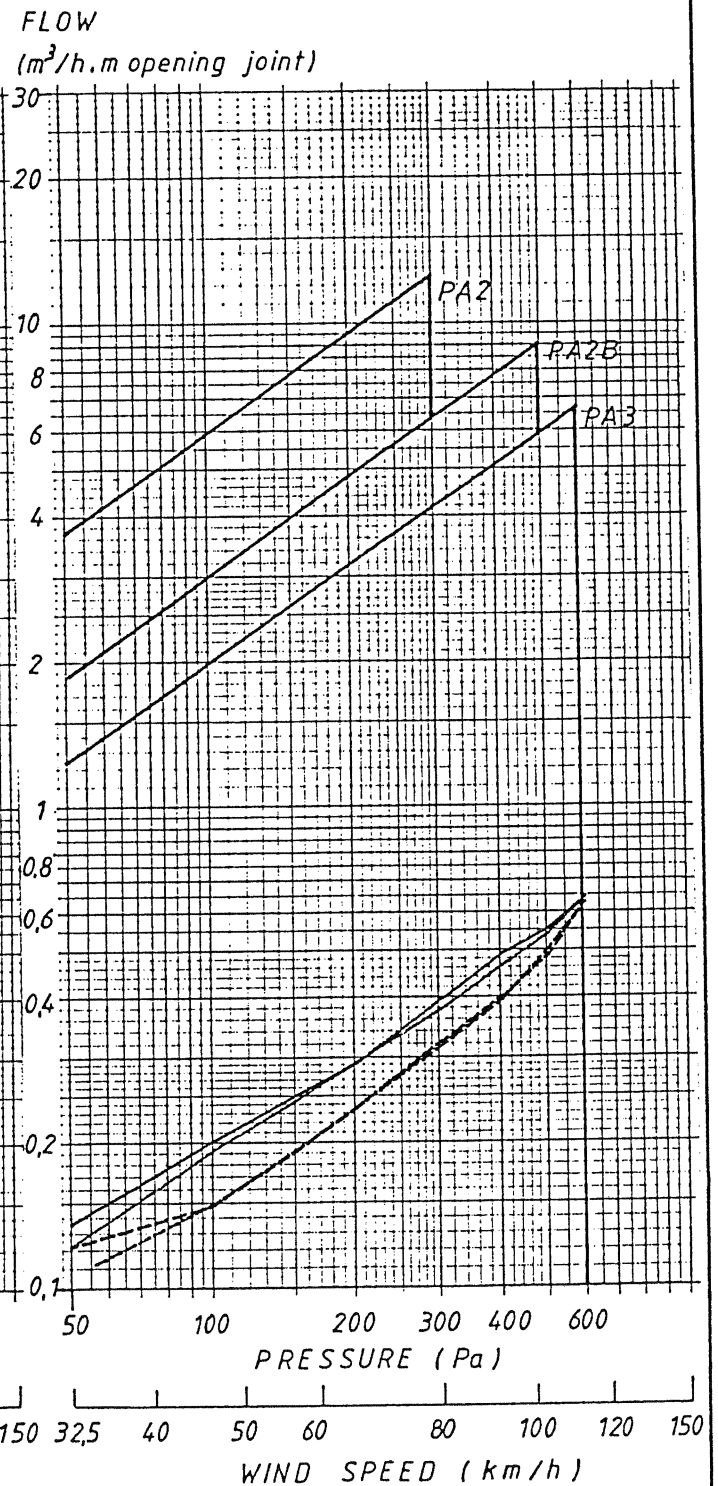


AIR PERMEABILITY IN ACCORDANCE WITH NBN B25 - 204

POSITIVE PRESSURE



NEGATIVE PRESSURE



——— BEFORE

TESTING WIND RESISTANCE IN ACCORDANCE WITH NBN B25 - 205

----- AFTER

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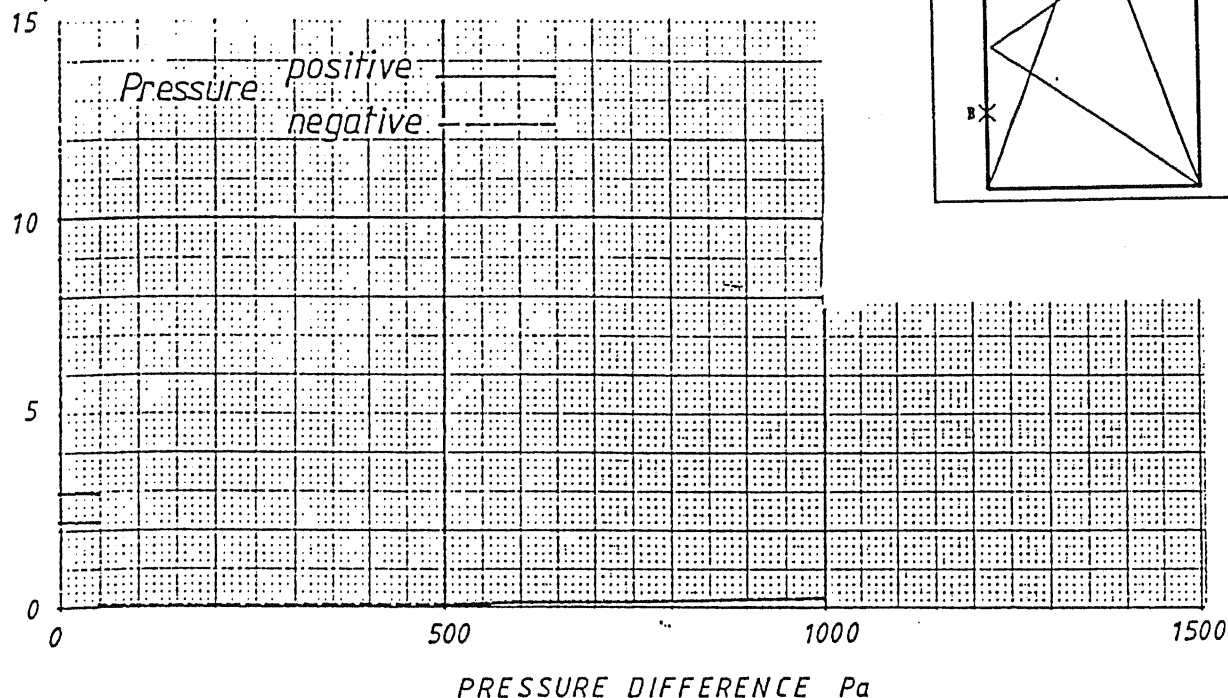
AIR PERMEABILITY BY
POSITIVE & NEGATIVE
PRESSURE

Nr. 363/ 2060 / 1

Date 91 05 04

WIND RESISTANCE IN ACCORDANCE
WITH NBN B 25 - 205

DEFLECTION
(mm)



WATERTIGHTNESS IN ACCORDANCE WITH NBN B 25-209

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WIND RESISTANCE

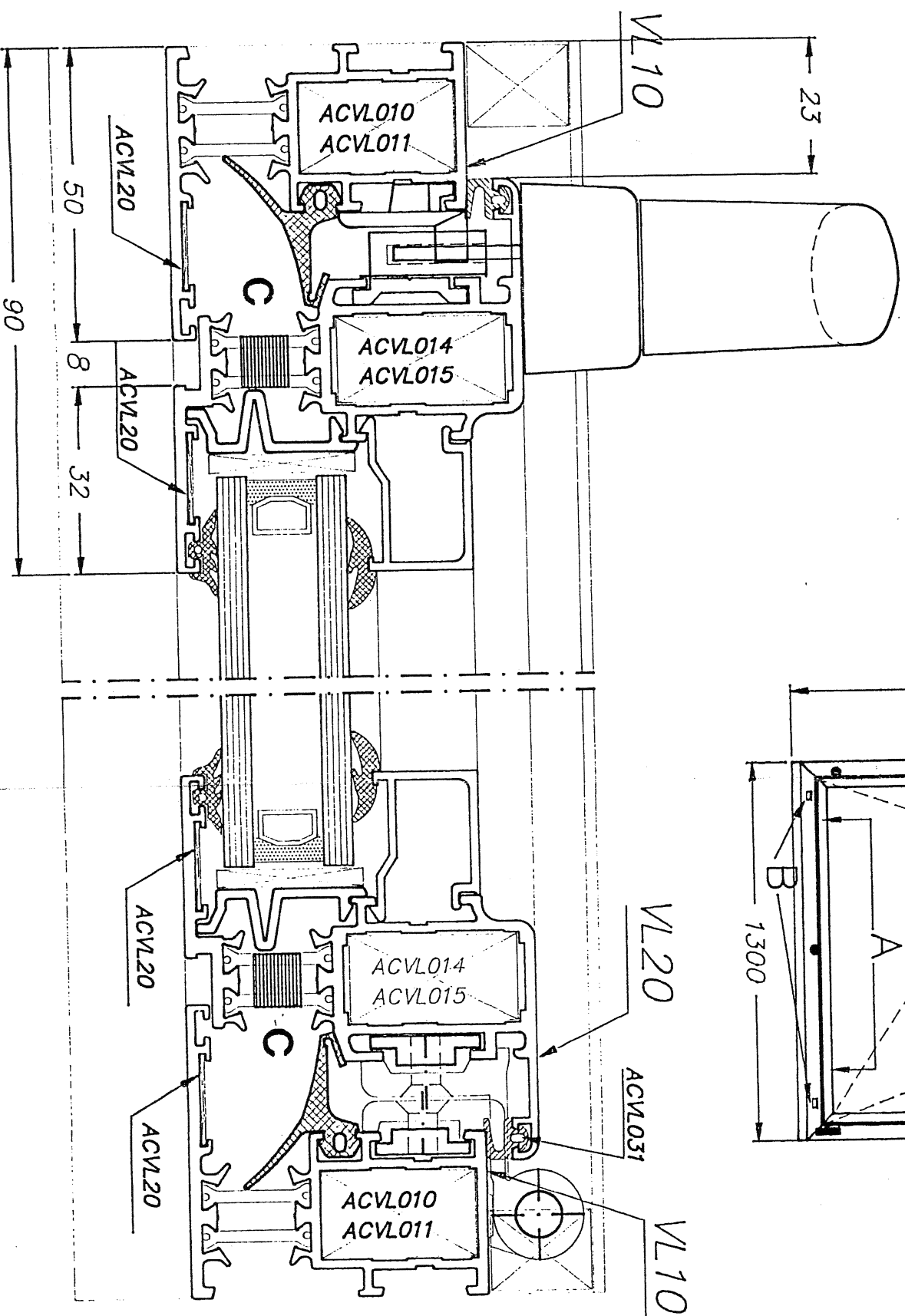
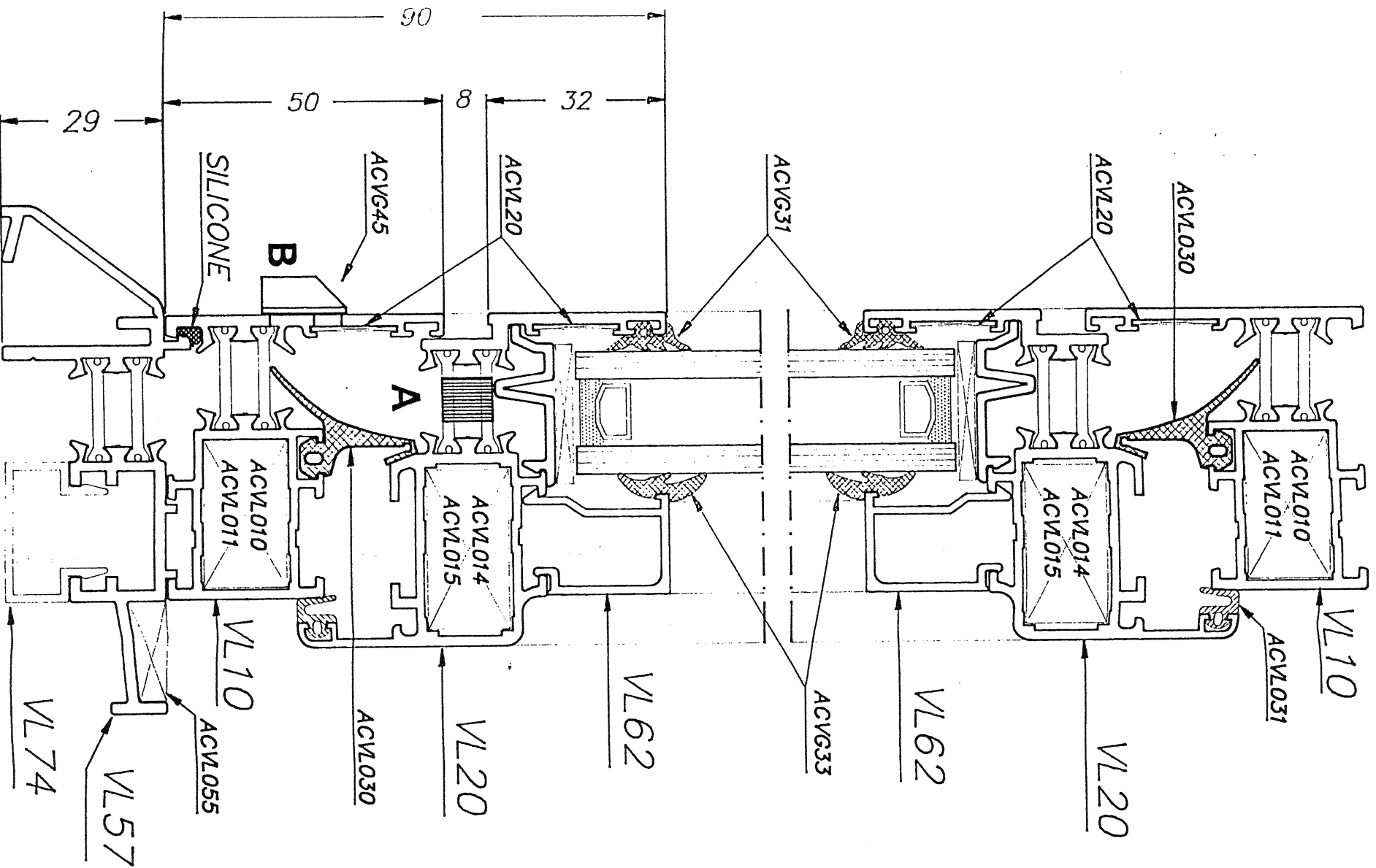
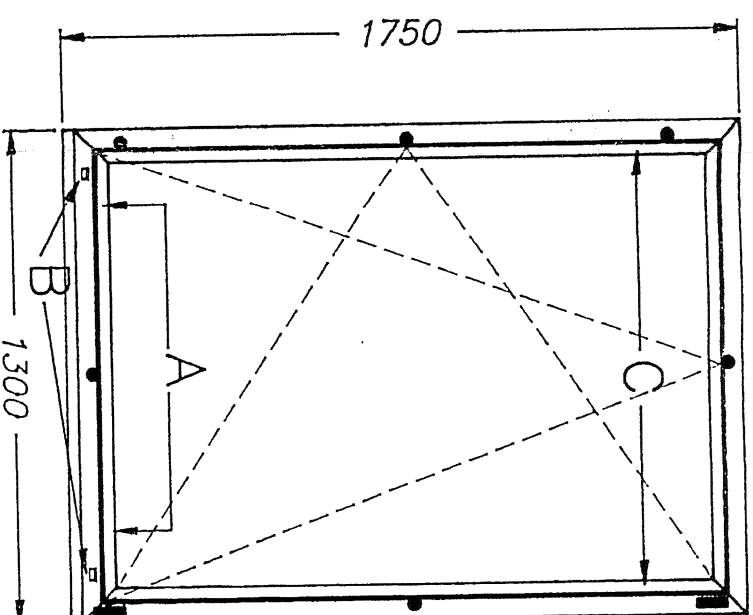
WATERTIGHTNESS

Nr. 363/ 2060/2

DATE, 91 05 04

- SLUITPUNTEN
- ! HANGPUNTEN

- A** GLASSPANNING ONTLUCHTING 2 X Ø10
- B** ONTWERING KOZIJN 2 X SLEUF 20 X13
- C** GLASSPANNING ONTLUCHTING 2 X Ø10



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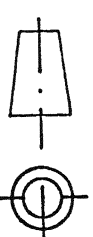
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363 | 2060

aliplast®

S Y S T E M S

ISO



Deftum: 13-03-1991

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Nogezien:

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Nr.: DK010391

PROEFFRAAM

School: 1:1

Articling:

Revisie