



**Lab
for
curtain wall elements**

TEMPORARY RESULTS test 494-503
FUNCTIONAL TESTS CARRIED OUT ACCORDING TO
STS 52.0
ON AN ALUMINIUM TURNING SYSTEM
WITH THERMAL BREAK.
SERIES : Elegance VEC

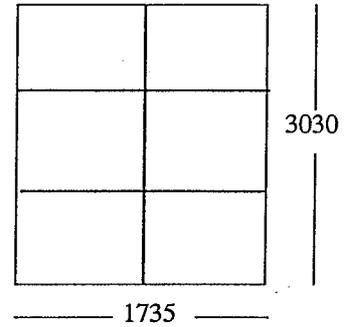
RC SYSTEM
ALUMINIUM PROFESSIONALS

8810 LICHTERVELDE, 3/07/97
INDUSTRIELAAN 17
TEL (051) 72 96 66

TEST REPORT N°: 494-503

FUNCTIONAL TESTS CARRIED OUT ON
AN ALUMINIUM CURTAIN WALL ELEMENT
WITH THERMAL BREAK

OF THE COMPANY :
N.V. RC SYSTEMS



1. CLIENT :

RC System

*Industrielaan 17
8810 Lichtervelde*

2. CONSTRUCTOR:

RC System

*Industrielaan 17
8810 Lichtervelde*

3. SITE :

4. TEST SUBJECT :

4.1. Identification of the test element :

*ref. profiles : 52I53
52V01
52G01*

4.2. Dimensions of the test subject :

width : *1.735 m*
height : *3.030 m*
total surface : *5.257 m²*

4.3. Description of the test element's components :

Profiles :

material : *aluminium with thermal break*
type : *Elegance 52 VEC*
connecting method : *glued, screwed with T-parts*

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Sealing pales :
material: *EPDM*

Glazing :
thickness : 6/9/6 mm
way of glazing : *structural bond with kit DC992*

Drainage:
of the glazing : see drawing *fig 494-503/7*

5. ARRANGEMENT IN THE TEST CENTER : RC. SYSTEMS LICHTERVELDE

date of the last gauging : 16 April 1997
report gauging : ref. 839/14
center curtain wall elements RUG

6. CONDUCTED TESTS :

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

6.1.1. Overpressure see fig. 6.1.1.f

pressure Pa	air permeability m ³ /h	m ³ /hm
50	5,09	0,24
100	5,94	0,28
150	7,2	0,34
200	8,2	0,38
300	8,25	0,38
400	9,25	0,43
505	9,51	0,44
600	10,56	0,49
500	9,62	0,45
400	8,67	0,4
300	7,62	0,35
200	6,57	0,31
150	5,78	0,27
100	4,94	0,23
50	5,04	0,23

6.1.2. Under pressure see fig. 6.1.2.f

pressure Pa	air permeability m ³ /h	m ³ /hm
50	4,47	0,21
100	5,1	0,24
150	7,15	0,33
200	9,52	0,44
300	14,14	0,66
400	17,03	0,79
500	26,34	1,23
600	36,27	1,69
500	28,7	1,34
400	22,03	1,03
300	14,04	0,65
200	9,94	0,46
150	7,94	0,37
100	5,89	0,27
50	4,84	0,23

FIG. 6.1.1.f (according to STS52)

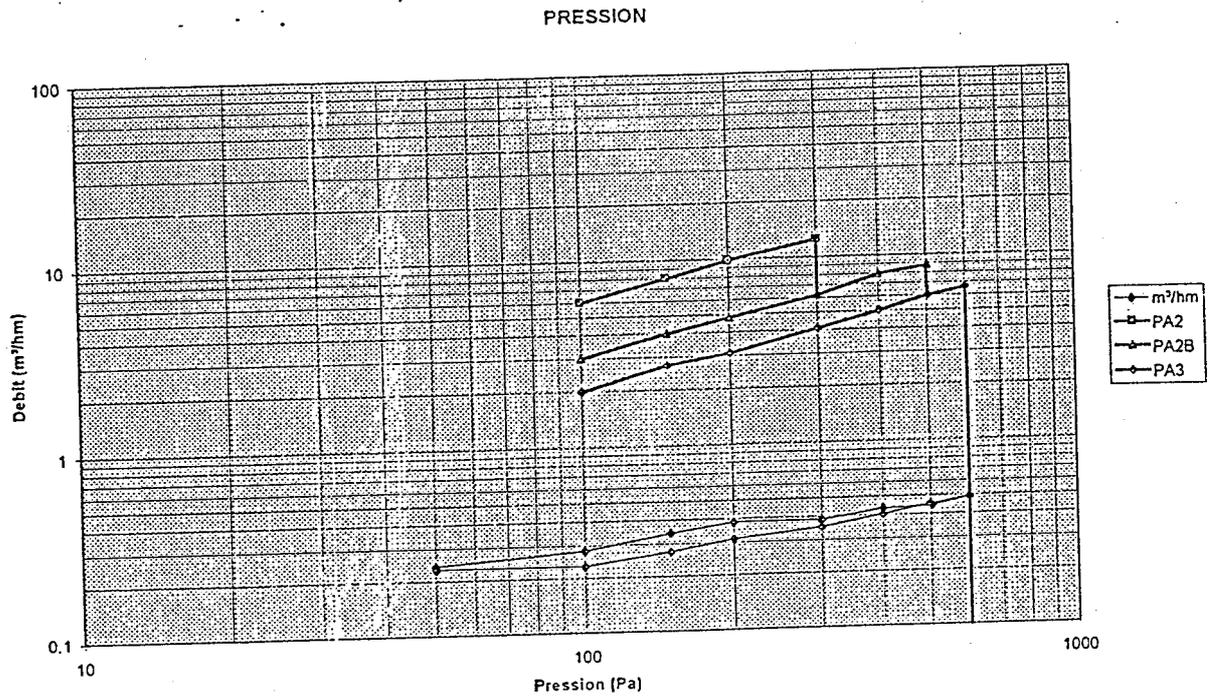


FIG. 6.1.1.f (according to UEATC)

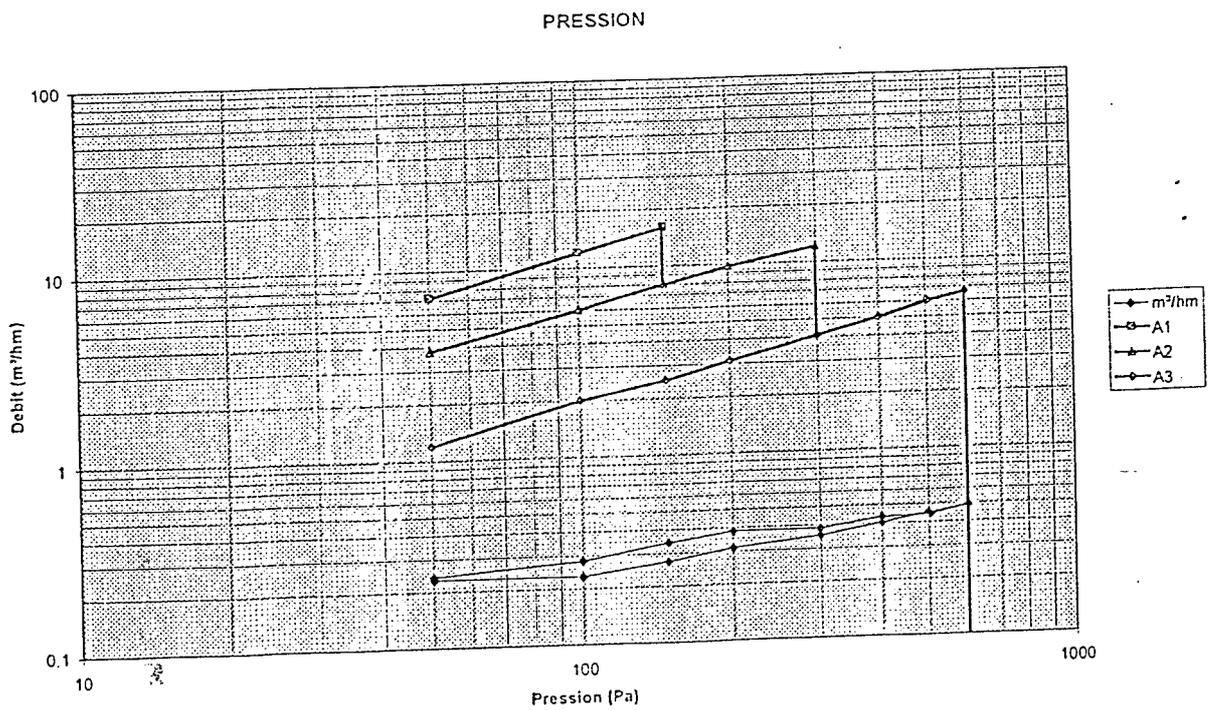


FIG. 6.1.2.f (according to STS52)

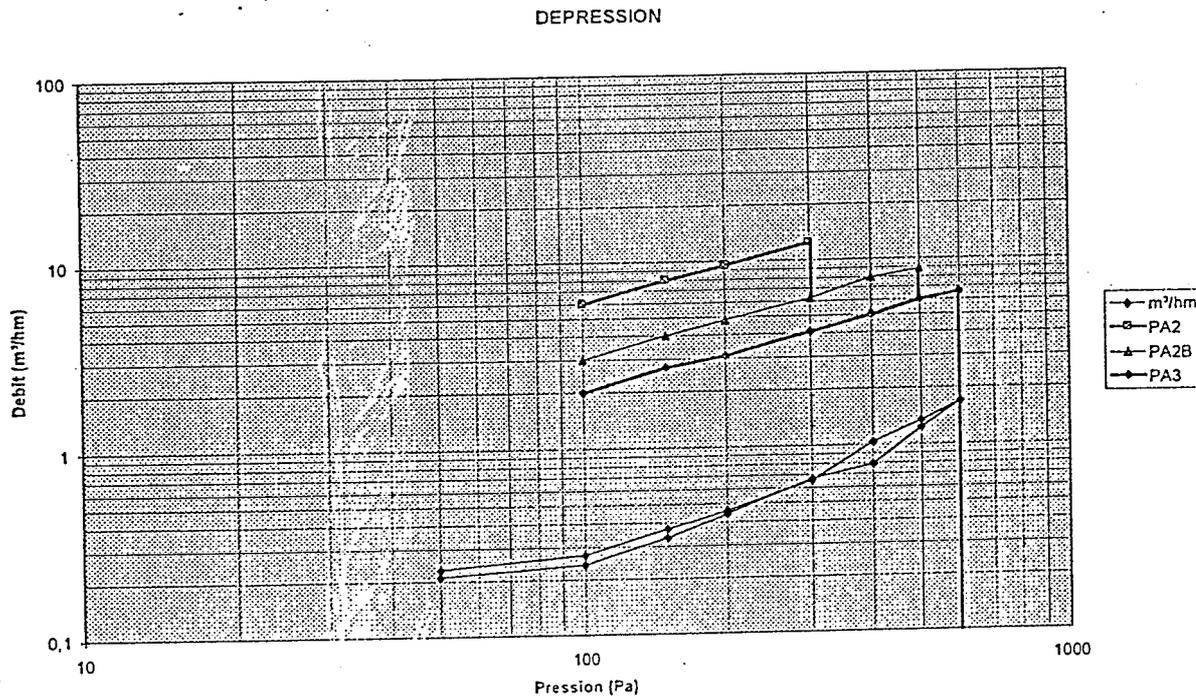
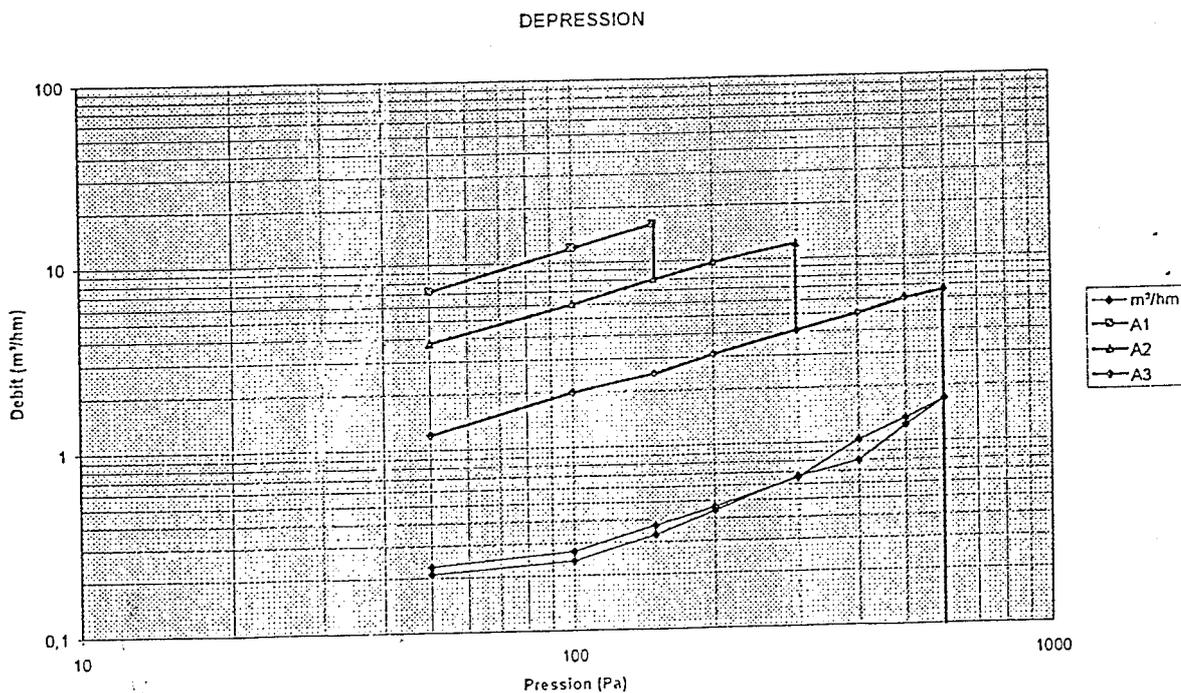


FIG. 6.1.2.f (according to UEATC)



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

6.2.1. Deformation test in case of overpressure : deformation level measured on the cantilevered element with a 2.660 m length.

pressure Pa	deformation point B mm	relative deformation level
100	0.11	1/24182
200	0.18	1/14778
300	0.21	1/12667
400	0.27	1/8370
500	0.32	1/8313
600	0.38	1/7000
750	0.49	1/5429
1000	0.64	1/4156
1700	1.24	1/2145

Permanent deformation : 0,0 mm

RESULT : *The element is satisfactory*

6.2.2. Deformation test in case of under pressure : deformation level measured on the cantilevered element with a 2.660 m length.

pressure Pa	deformation point B mm	relative deformation level
100	0.02	1/133000
200	0.06	1/44333
300	0.18	1/14778
400	0.21	1/12667
500	0.08	1/33250
600	0.00	
750	0.2	1/13300
1000	0.64	1/4156
1700	0.94	1/2829

Permanent deformation : 0,0 mm

RESULT : *The element is satisfactory*

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

6.3.1. Overpressure see fig. 6.3.f.

Difference in air permeability expressed in percent and in m³/hm² total surface compared to measurement 6.1.1.

pressure Pa	difference air permeability %	per m ² total surface m ³ /hm ²
50	3.09	0.03
100	5.31	0.06
150	2.92	0.04
200	3.85	0.06
300	0.64	0.01
400	3.41	0.06
500	10.50	0.19
600	7.46	0.15
500	6.56	0.12
400	1.82	0.03
300	9.66	0.14
200	0.8	0.01
150	10.91	0.12
100	12.77	0.12
50	7.29	0.07

6.3.2. Under pressure see fig. 6.3.f.

Difference in air permeability expressed in percent and in m³/hm² total surface compared to measurement 6.1.2.

pressure Pa	difference air permeability %	per m ² total surface m ³ /hm ²
50	2.35	0.02
100	14.43	0.14
150	9.56	0.13
200	11.03	0.15
300	8.84	0.16
400	12.27	0.33
500	6.19	0.31
600	2.90	0.20
500	3.19	0.22
400	2.86	0.12
300	10.11	0.27
200	11.64	0.22
150	12.58	0.19
100	8.04	0.09
50	3.26	0.03

6.3.3. Preservation of the qualities :

The air permeability measured after testing the wind resistance must not be more than 20% higher than the air permeability measured before testing the wind resistance.

NOTES : test is OK.

6.6. Water tightness test in accordance with NBN B 25-209:

6.6.1. Under static air pressure :

pressure Pa	duration min.	notes
0	15	<i>no water infiltration</i>
50	5	<i>no water infiltration</i>
100	5	<i>no water infiltration</i>
150	5	<i>no water infiltration</i>
200	5	<i>no water infiltration</i>
300	5	<i>no water infiltration</i>
400	5	<i>no water infiltration</i>
500	5	<i>no water infiltration</i>
600	5	<i>no water infiltration</i>
700	5	<i>no water infiltration</i>
800	5	<i>no water infiltration</i>
900	5	<i>no water infiltration</i>
1000	5	<i>no water infiltration</i>
1200	5	<i>no water infiltration</i>
1400	5	<i>no water infiltration</i>
1600	5	<i>no water infiltration</i>
1800	5	<i>no water infiltration</i>
2000	5	<i>no water infiltration</i>

6.6.2. Under dynamic air pressure :

50 pulses between 0 and 250 Pa : *no infiltration*

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

Tests have not been carried out

7. EVALUATION:

7.1. according to STS 52.0:

performance level with :

- air permeability : *PA3*
- mechanical wind resistance : *PV3*
- water tightness : *PEE*

7.2. according to UEATC:

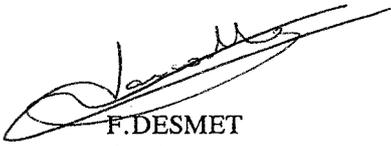
class with

- air permeability : *A3*
- mechanical wind resistance : *V3*
- water tightness : *E4*

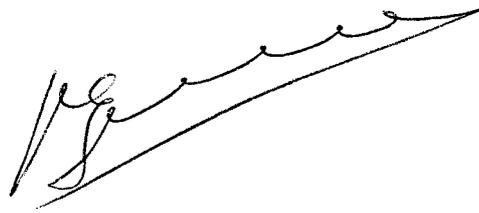
8. NOTES :

8.1 The results are only valid under the conditions to which attention has been paid during the test.

8.2. Parts of this report must not be copied without the written permission of RC SYSTEM.



F. DESMET
RC SYSTEM



R. HUWEL
RIJKSUNIVERSITEIT GENT

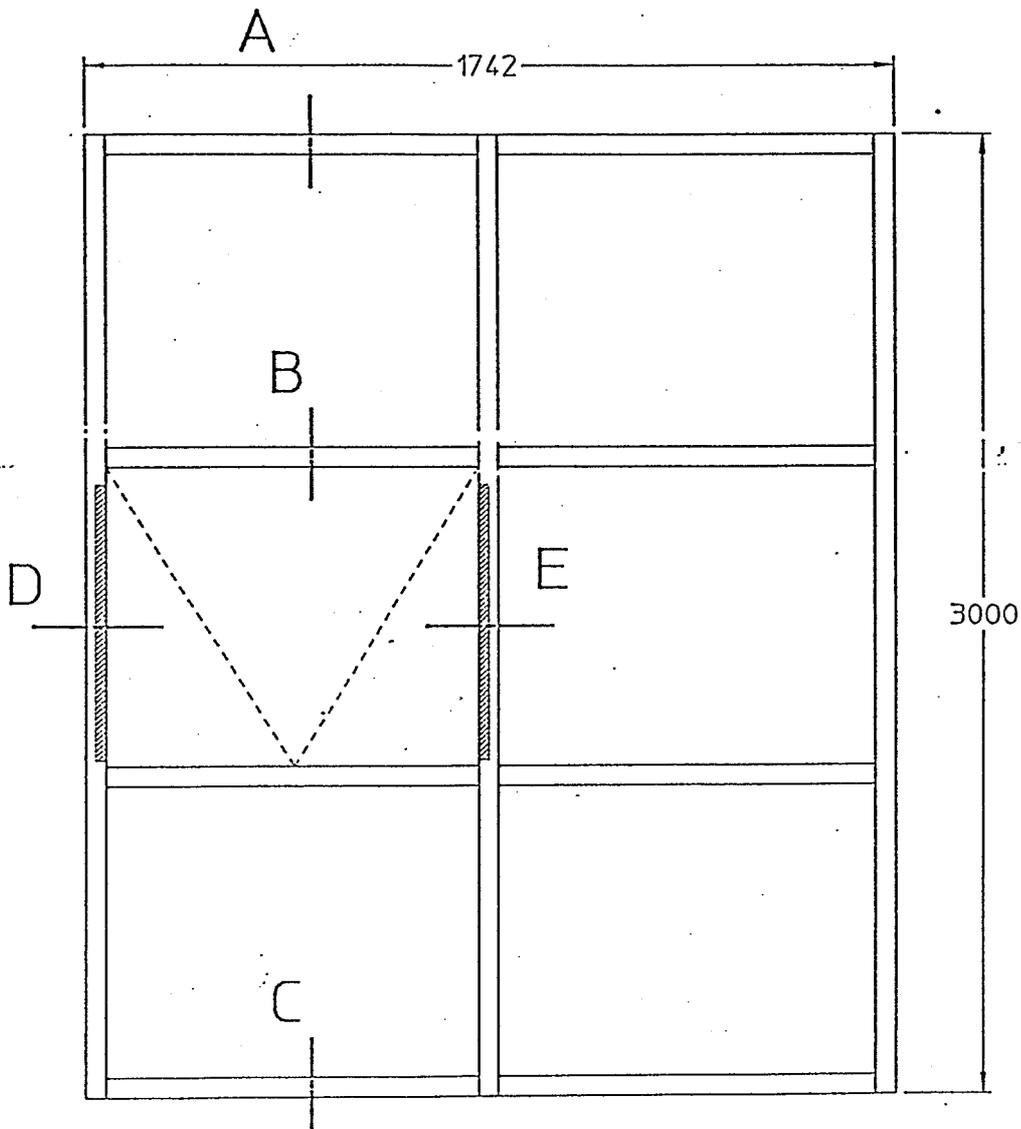
Encl. : fig. 494-503/1 to 7

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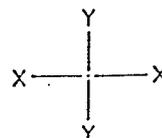
fig 494-503/1

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eleg52

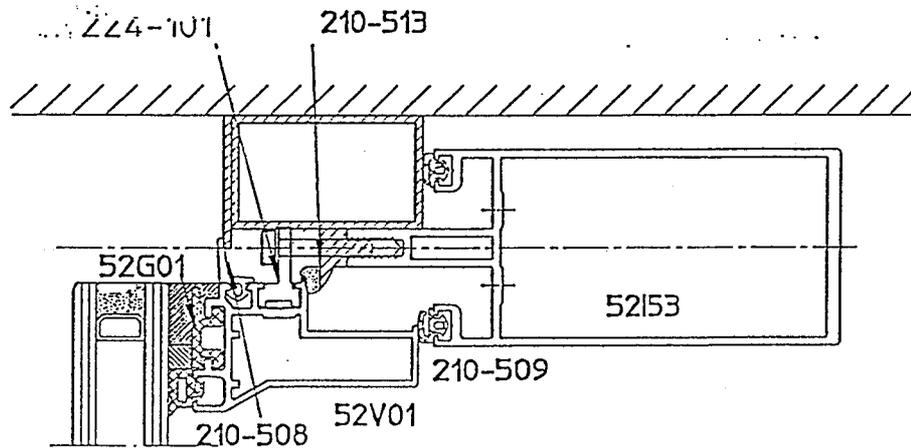
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fig 494-503/2

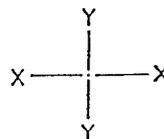
schaal 1/2

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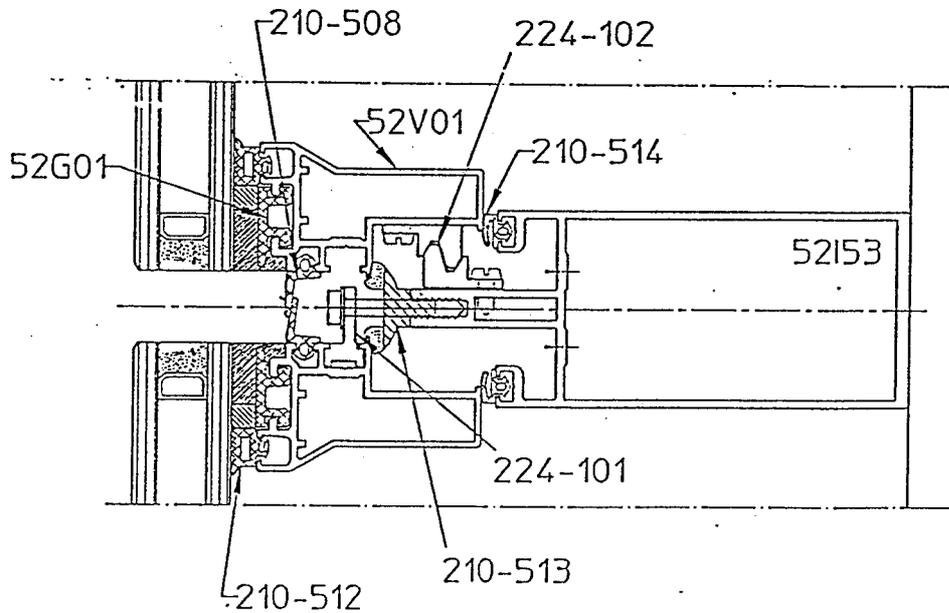
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fig 494-503/3

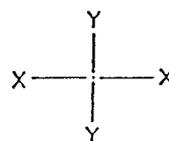
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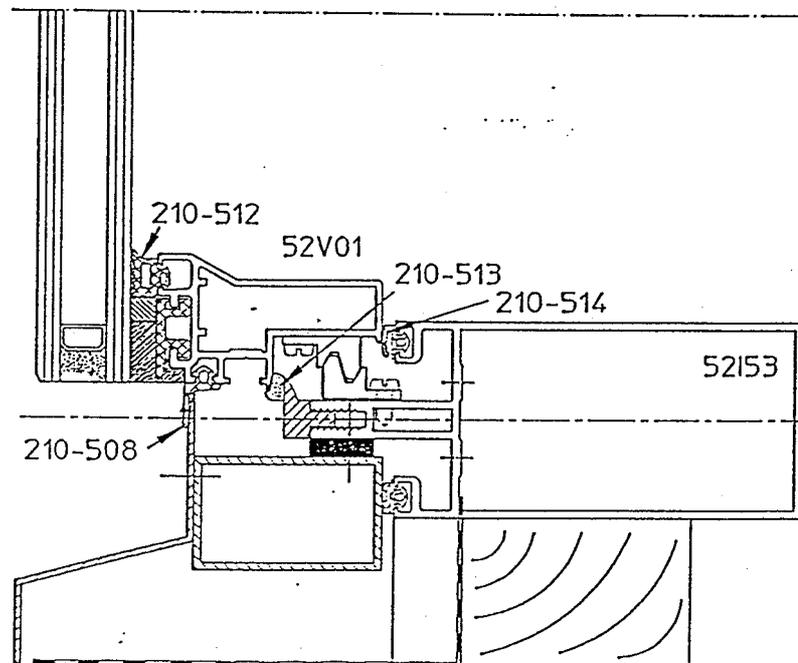
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fig 494-503/4

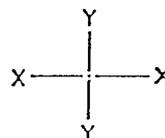
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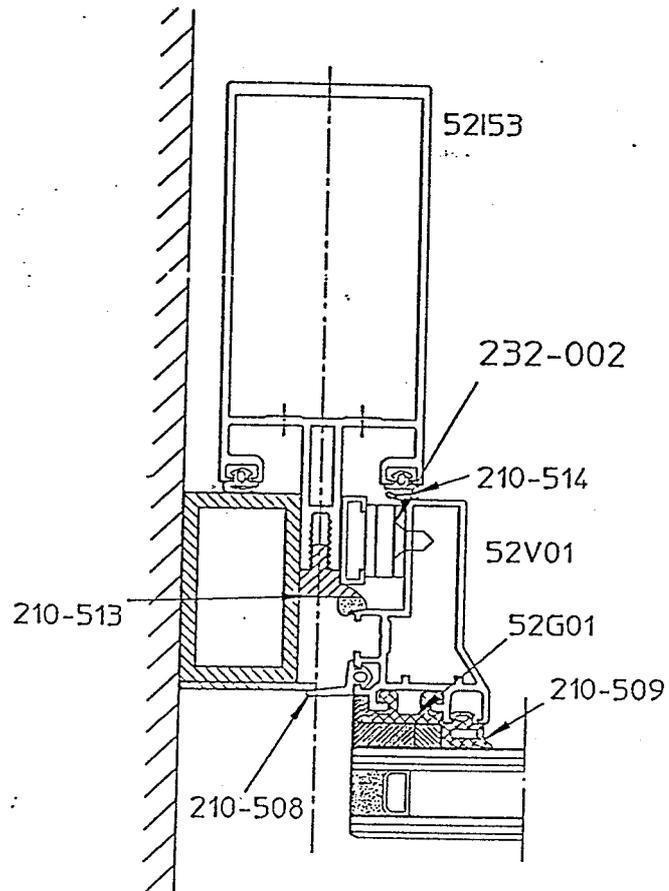
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fig 494-503/5

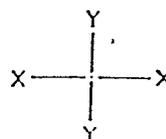
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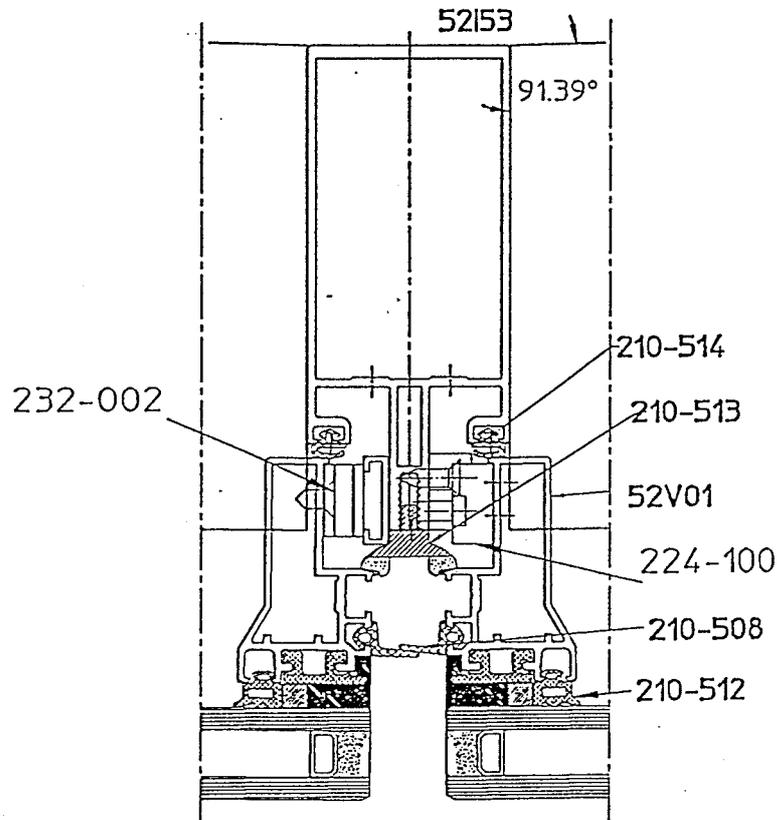
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fig 494-503/6

schaal 1/2

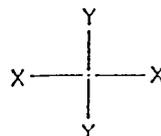
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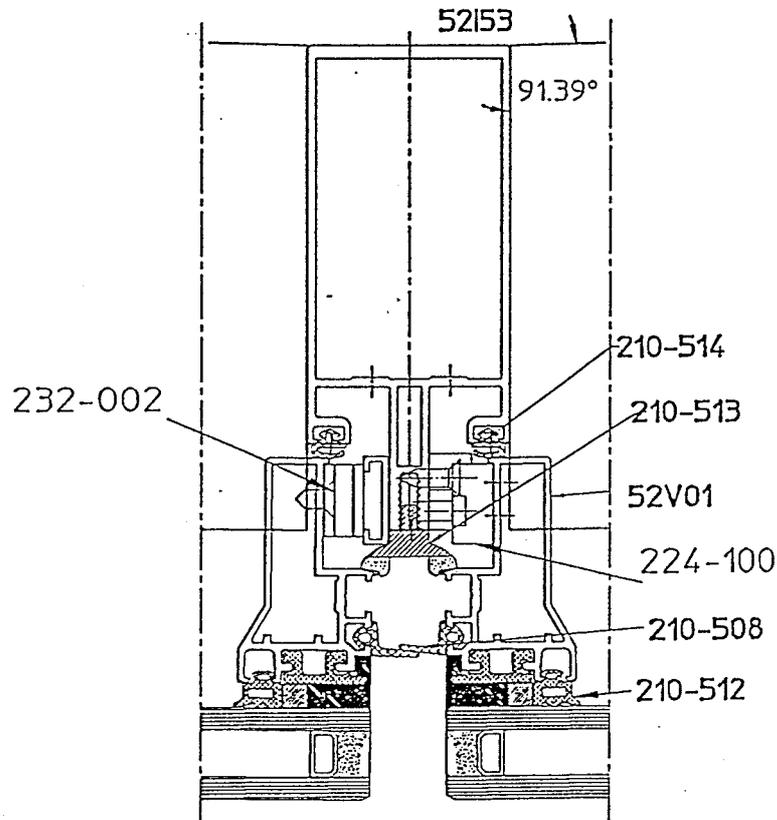
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fig 494-503/6

schaal 1/2

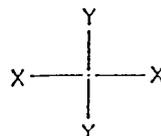
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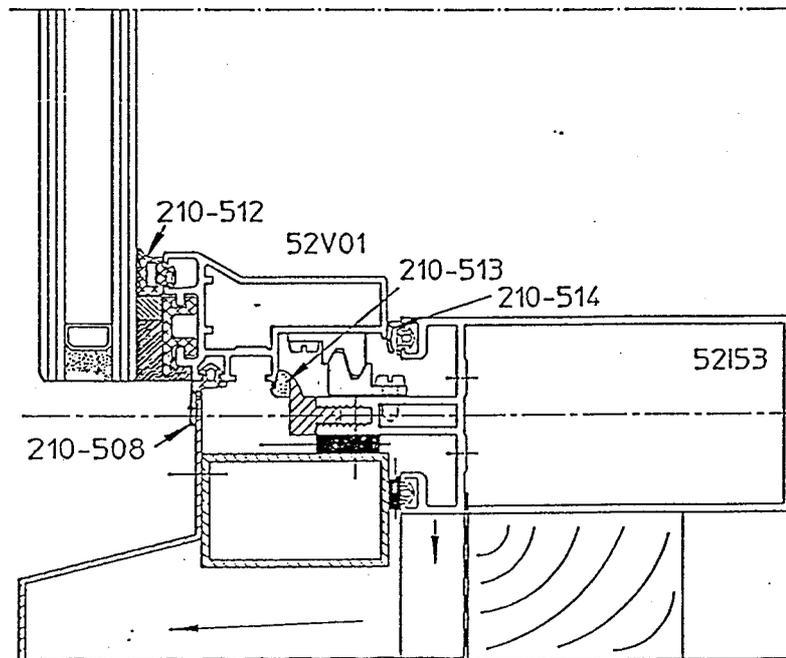
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fig 494-503/7

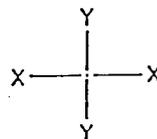
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