

## TEST REPORT

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Notified Body  
NB 0957  
NB 0960

**Report number** 15.00320

**Start of test** 26 June 2014  
**End of test** 09 February 2015

**Date report** 12 May 2015

**Applicant** Reynaers Aluminium N.V.  
Oude Liersebaan 266  
B-2570 Duffel  
Belgium

**Project number applicant** TC14\_035

**Size report** This report consists of 14 pages (including appendices)

**Subject** Determination of the

- Resistance to repeated opening and closing according EN 1191
- Operating forces according EN 12046-2
- Resistance to vertical load according EN 947
- Resistance to static torsion according EN 948

of an aluminium, outwards opening door with sizes W x H: 1504 x 3066 mm,  
Constructed from the profile system: CS 77-HID

**Inspector** P. Scheerman / R. de Graaff

**Technical manager** ir. J.T. Boersma

<b>Conclusion</b>	The door of Reynaers Aluminium N.V. meets the classification as hereby mentioned:	<b>Class</b>
	<ul style="list-style-type: none"> <li>• Mechanical durability according EN 12400</li> <li>• Operating forces according EN 12217</li> <li>• Resistance to vertical load according EN 1192</li> <li>• Resistance to static torsion according EN 1192</li> </ul>	<p><b>8</b></p> <p><b>2</b></p> <p><b>4</b></p> <p><b>4</b></p>

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## 1. PURPOSE OF THE TEST

SKG-IKOB was commissioned by Reynaers Aluminium N.V. - Duffel to perform various tests on a door to classify the

- Mechanical durability
- Operating forces
- Resistance to vertical load
- Resistance to static torsion

of the door according to the relevant European Standards.

The tests are performed as an Initial Type Testing (ITT) based on EN 14351-1:2006+A1:2010

SKG-IKOB is a Notified Body (NB 0957 + 0960) for certifying and testing doors and windows.

## 2. METHOD OF INVESTIGATION

The door was delivered for testing on:

**26-06-2014**

The door was produced by and at the address of the applicant

SKG-IKOB has verified all details of the door with reference to the supplied drawings.

The door was tested in a test rig for:

### **Mechanical durability**

Test according to:

- EN 1191:2012 Windows and Doors - Resistance to repeated opening and closing - Test method
- Test procedure according to annex H

Classification according to:

- EN 12400:2002 Windows and pedestrian doors - Mechanical durability - Requirements and classification

### **Operating forces**

Test according to:

- EN 12046-2:2000 Operating forces - Test method - Part 2: Doors

Classification according to:

- EN 12217:2004 Doors - Operating forces - Requirements and classification

### **Resistance to vertical load**

Test according to:

- EN 947:1999 Hinged or pivoted doors - Determination of the resistance to vertical load

Classification according to:

- EN 1192:1999 Doors - Classification of strength requirements

### **Resistance to static torsion**

Test according to:

- EN 948:1999 Hinged or pivoted doors - Determination of the resistance to static torsion

Classification according to:

- EN 1192:1999 Doors - Classification of strength requirements

The test was performed with the measuring equipment and test rig of:  
on the location:

**Reynaers  
Duffel**

SKG-IKOB has verified and approved the status of the equipment.

The ambient temperature during the tests was approx. : 19 °C

### 3. CONSTRUCTION TESTED

The door was constructed with profile system: CS 77-HID

Frame sizes (W x H): 1504 x 3066 mm

Leaf sizes (W x H): 1408 x 3008 mm

Drawings of door were received and are appended to this report (Appendix 1)

#### Technical specification:

<b>Construction:</b>	<b>Nr</b>	<b>Description</b>	<b>Article nr.</b>
Frame Profile			<b>008.0469.xx</b>
Floor profile			<b>008.0874.xx</b>
Leaf Profile			<b>008.0064.xx</b>
Glazing bead			<b>030.3609.xx</b>
Insulation glass		88.2 - 12 - 55.2	
Glazing gaskets:			
Inner glazing gasket			<b>080.9125.SY</b>
Outer glazing gasket			<b>080.9114.SY</b>
Butt strips:			
Gasket inside			<b>080.9078.04</b>
Gasket outside			<b>080.9078.04</b>
Gasket outside			<b>080.9440.04</b>

<b>Hardware:</b>	<b>Nr</b>	<b>Description</b>	<b>Article nr.</b>
Multipointlock		Sobinco Orca	<b>061.6010.ZC</b>
number of locking points	7		
Door handle		Sobinco Horizon	<b>061.7130.xx</b>
			<b>061.7140.xx</b>
Hinges	4	Dr. Hahn Tuerband 4	<b>065.6688.xx</b>

#### Mass of the leaf an driving unit

The mass of the leaf was:

**255.2** kg

Note:

The door was not loaded by the weight of the driving unit.

#### 4. OBSERVATIONS AND RESULTS

##### Mechanical durability - Operating forces

For the location of reference points, see appendix 1

#### 4.1 Code of leaf 1 Mode of operation Turn

##### 4.1.1 Resistance to repeated opening and closing according EN 1191

Operating forces at reference points Number of cycles: **1.000.000**

Reference points	Stroke before	Stroke after duration	Difference (mm)
M1	8,16	4,98	3,18
M2	7,77	6,19	1,58
M3	6,03	6,16	0,13
M4	5,63	4,13	1,50
M5	5,70	7,14	1,44
M6	4,80	7,67	2,87
M7	5,29	6,63	1,34
M8	5,66	5,30	0,36

##### 4.1.2 Operating forces according EN 12046-2

Operating forces before and after test

Action	Before test	After test	variation (%)
Unlocking (Nm)	4,87	4,73	-2,8%
Opening (N)	14,27	8,47	-40,6%
Closing (N)	10,80	9,33	-13,6%

1) This leaf automatically locks.

It was determined that after these resistance tests the door showed no visible changes and functioned normally.

**Classification durability according EN 12400 Class 8**

**Classification of operating forces according EN 12217 Class 2**

**OBSERVATIONS AND RESULTS**
**Resistance to vertical load**
**Resistance to static torsion**
**4.2 Resistance to vertical load according EN 947**

The leaf was tested in the fixed state at 90° opening.

The maximum displacement after 300 sec at a load of 1000 N was:

**3,68** mm

After omitting the load, the remaining displacement after 180 sec. was:

**0,55** mm

**Classification according EN 1192**
**Class**
**4**
**4.3 Resistance to static torsion according EN 948**

The leaf was tested in the fixed state at 90° opening.

The maximum displacement after 300 sec at a load of 350 N was:

**45,3** mm

After omitting the load, the remaining displacement after 180 sec. was:

**1,6** mm

**Classification according EN 1192**
**Class**
**4**
**Operating forces before and after resistance tests**

Action	Before test	After test	variation (%)
Unlocking (Nm)	4,73	4,06	-14,09
Opening (N)	8,47	10,53	24,41
Closing (N)	9,33	9,93	6,43

1) This leaf automatically locks.

It was determined that after these resistance tests the door showed no visible changes and functioned normally.

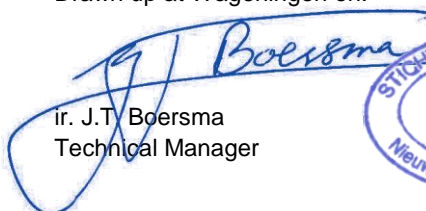
**5. CLASSIFICATION**

<b>Mechanical durability</b>	<b>Class</b>	<b>8</b>
<b>Operating forces</b>	<b>Class</b>	<b>2</b>
<b>Resistance to vertical load</b>	<b>Class</b>	<b>4</b>
<b>Resistance to static torsion</b>	<b>Class</b>	<b>4</b>

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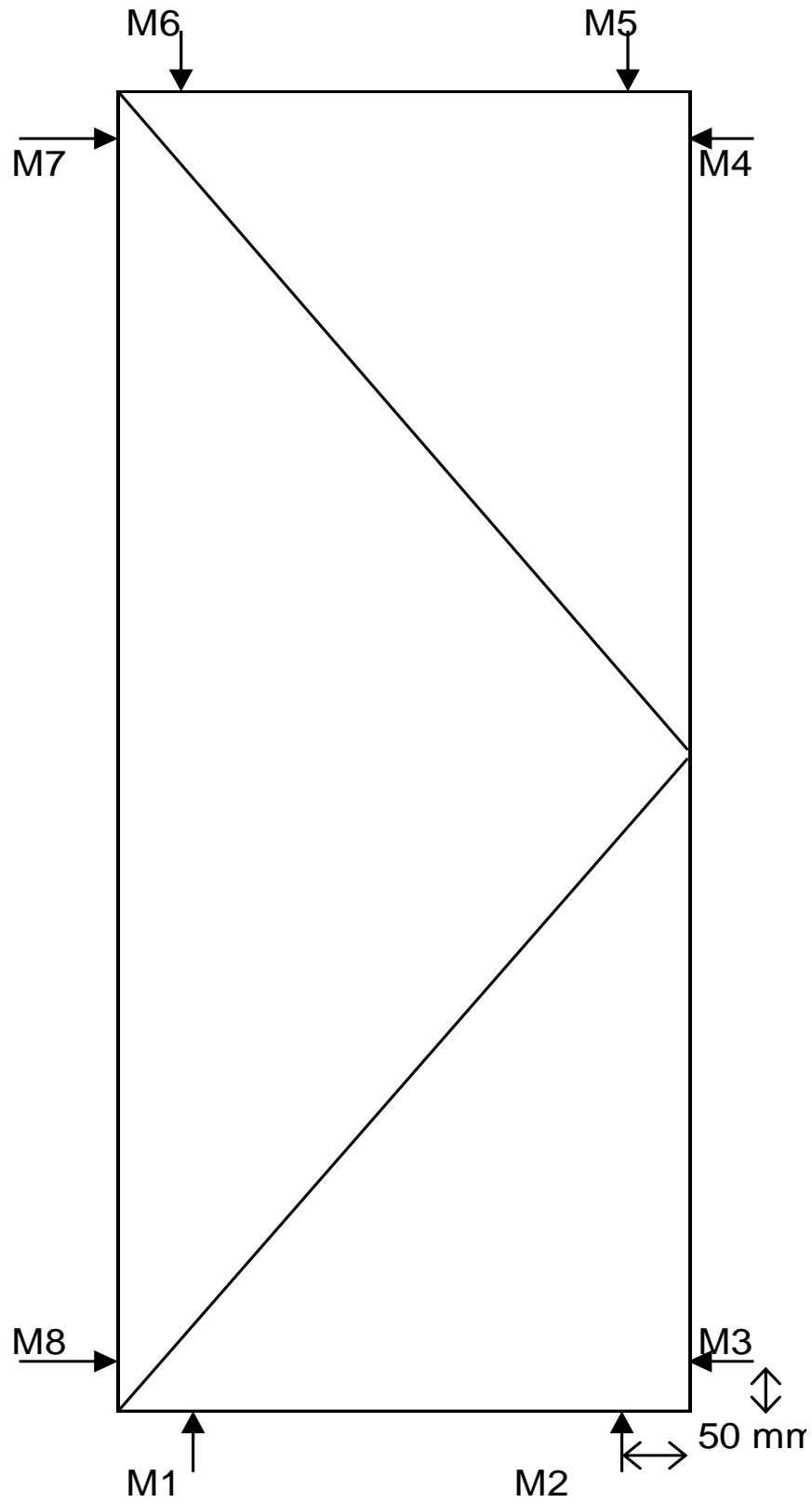
Drawn up at Wageningen on:

**12 May 2015**

  
ir. J.T. Boersma  
Technical Manager

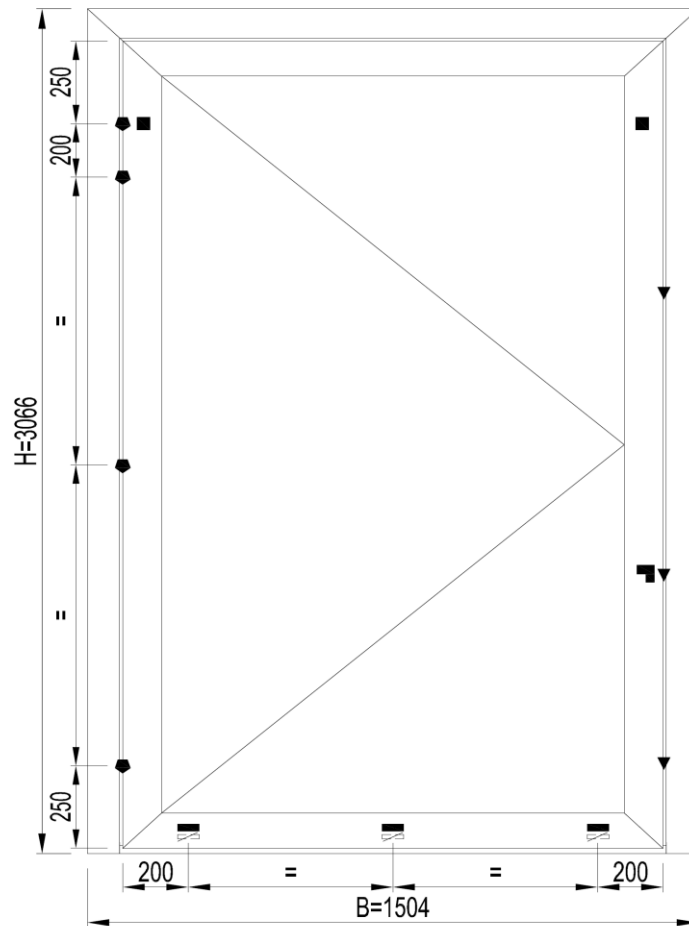














## APPENDIX 1 LOCATION OF REFERENCE POINTS



# CS 77 HID CYCLIC TEST

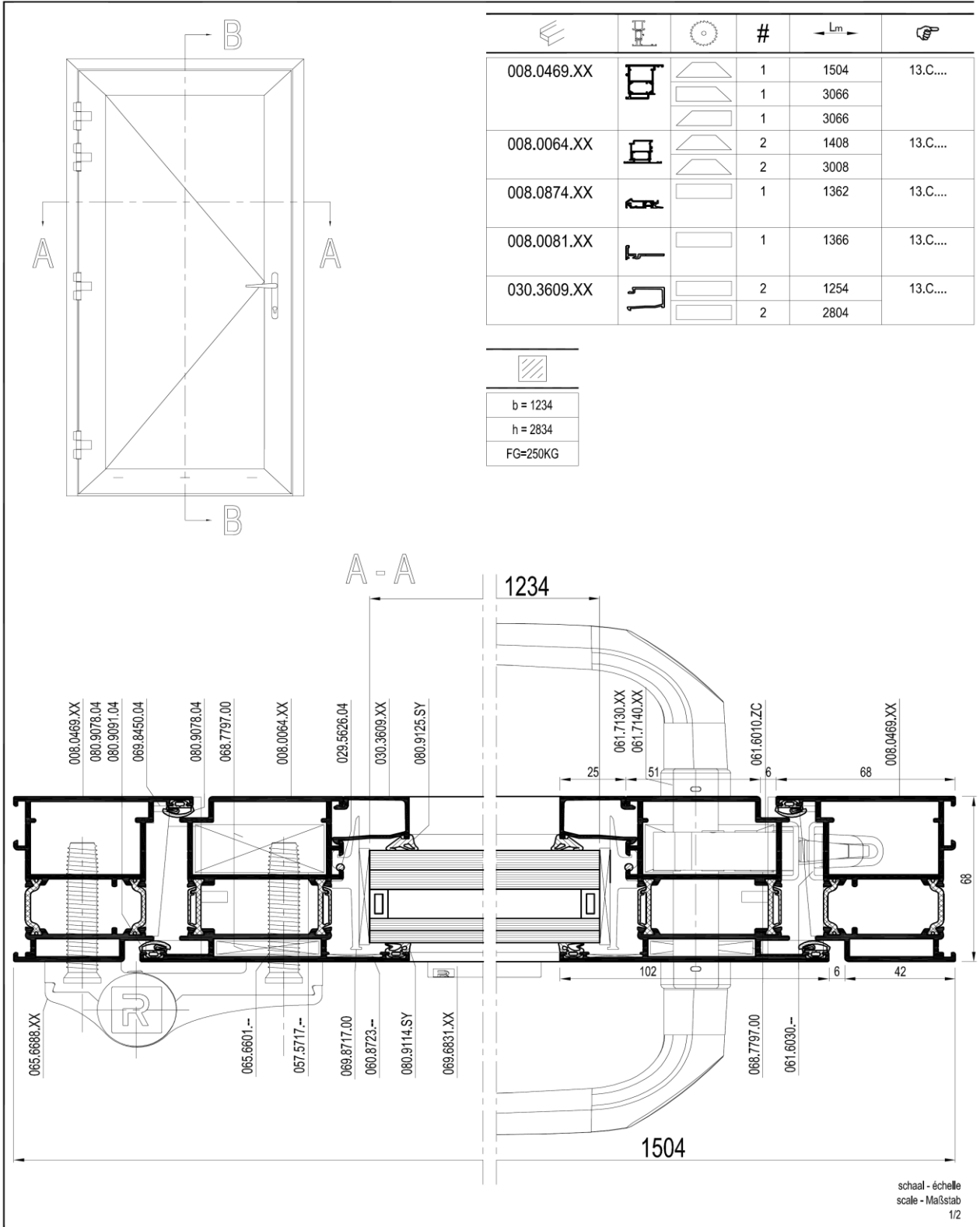
12.0029 Dr.Hahn Tuerband IV



-  Decompression in frame 50mm
  -  Decompression in vent Ø5mm
  -  Drainage vent profile ... x Ø...mm
  -  Drainage vent profile slot ... x ...mm
  -  Drainage outer frame Ø8x34mm
  -  Weep hole cover 069.6830.04
  -  Weep hole cover 069.6831.04
  -  Locking points
  -  Handle
  -  Hinges
  -  Roller
  -  Displacement device
- glass type: 55.2/12/88.2  
 Mark/Type accessories: Sobinco - 061.6010.ZC, 061.6032.--, 061.6034.--, Hinges: Dr.Hahn 065.6688.XX

# CS 77 HID CYCLIC TEST

12.0029 Dr.Hahn Tuerband IV






































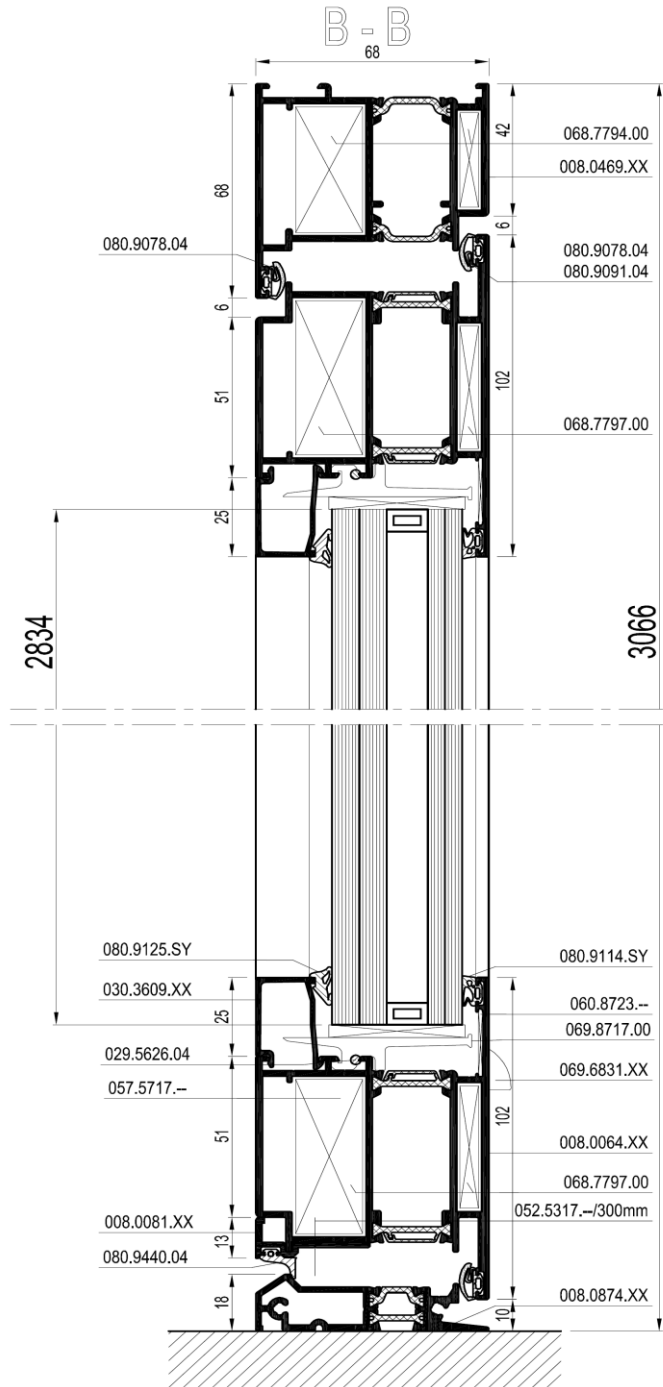
RI Test

TC14\_035  
06/2014

# CS 77 HID CYCLIC TEST

12.0029 Dr.Hahn Tuerband IV

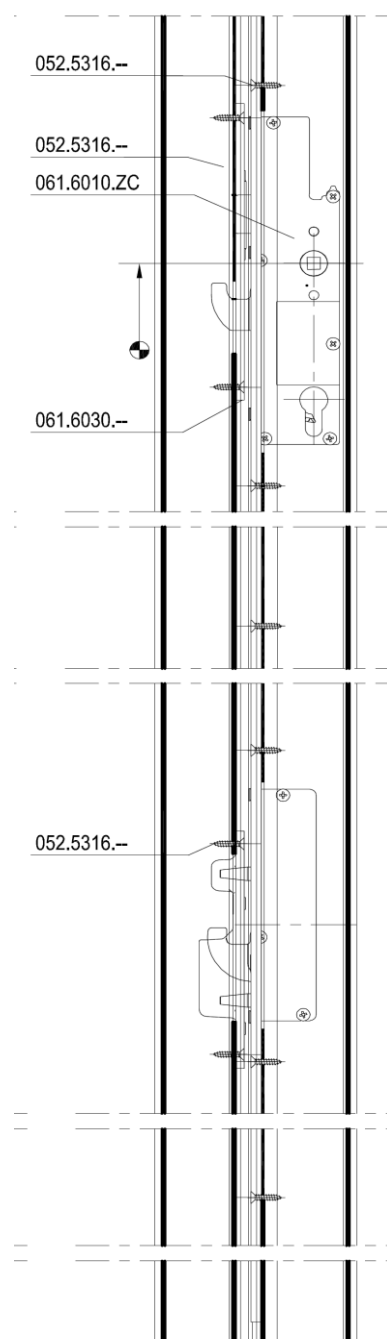
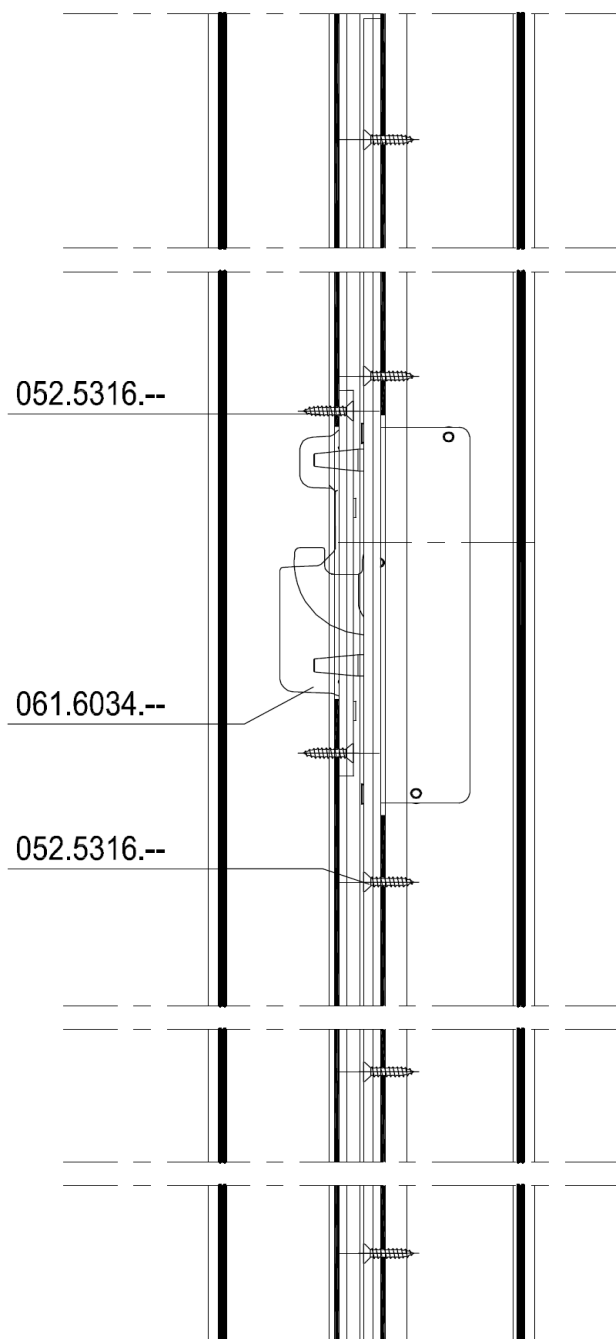
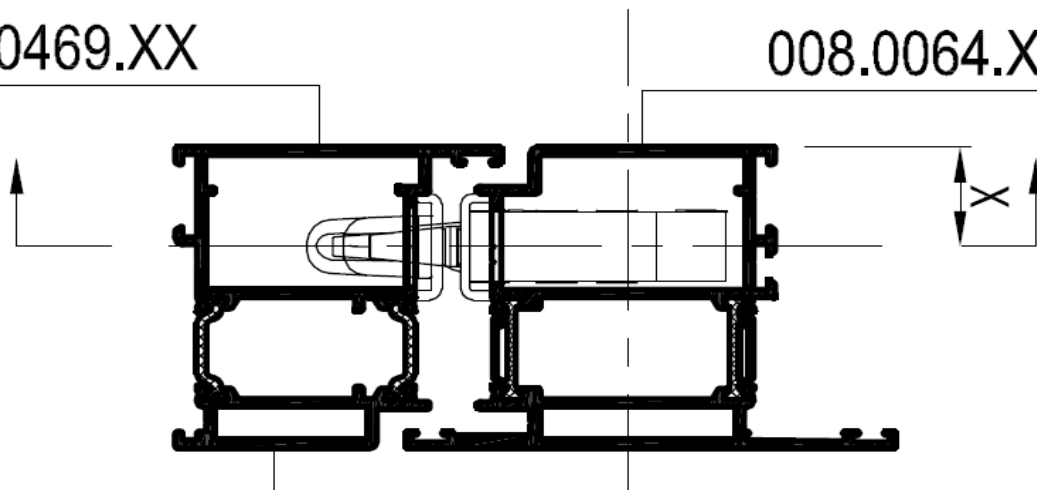
		#	
068.7794.00		2	ACCESS CS
068.7797.00		4	ACCESS CS
060.8723.--		4	ACCESS CS
065.6688.XX		4	ACCESS CS
065.6611.--		24	ACCESS CS
061.6010.ZC		1	ACCESS CS
052.5316.--		11	ACCESS CS
061.6030.--		1	ACCESS CS
052.5316.--		3	ACCESS CS
061.6034.--		2	ACCESS CS
052.5316.--		4	ACCESS CS
061.7130.XX		1	ACCESS CS
050.5083.--		3	ACCESS CS
061.7140.XX		1	ACCESS CS
061.7053.--		1	ACCESS CS
061.7098.--		1	ACCESS CS
061.7715.04		1	ACCESS CS
069.6831.XX		3	ACCESS CS
069.8717.00		4	ACCESS CS
029.5626.04		4x100	ACCESS CS
069.8450.04		1	ACCESS CS
052.5311.--		4	
069.8460.04		1	ACCESS CS
052.5311.--		4	
080.9078.04		16720	ACCESS CS
080.9091.04		4	ACCESS CS
080.9440.04		1362	ACCESS CS
080.9114.SY		8260	ACCESS CS
080.9125.SY		8260	ACCESS CS
081.9092.04		8 x 51.5	ACCESS CS
052.5313.--		4	ACCESS CS
052.5317.--		1/300mm	ACCESS CS



schaal - échelle  
scale - Maßstab  
1/2

008.0469.XX

008.0064.XX



APPENDIX 3 PHOTOS OF THE TESTED CONSTRUCTION



