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Laboratoire Produits de l'Enveloppe

DOTT. GALLINA

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TEST REPORT NO. BEB1.E.4058-1

TESTS PERFORMED on: Polycarbonate panelling ArcoWALL
System 60 mm 2000 x 5000 mm HT 3
supports

Upon request of the company: **DOTT GALLINA**

On behalf of the company: **DOTT GALLINA**

TEST LOCATION: Laboratoire d'Elancourt (78)
Date: 07/10/2014

TEST OBJECT

Provided by the company **POLY-PAC**
Received at GINGER CEBTP on 03/10/2014 With no. **119146**

NATURE OF TESTS:

Air permeability tests based on a test procedure described in the NF EN 12152 standard of May 2002: Curtain walling. Air permeability. Performance requirements and classification. Water tightness tests based on a test procedure described in the NF EN 12155 standard of October 2000: Curtain walling. Water tightness. Laboratory test under static pressure.

REMARK: RAS

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This report consists of 12 pages, of which 7 pages of drawings as annexes.

EXPERTISE THAT MAKES THE DIFFERENCE



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ANNEXES

1 PREAMBLE

The company **DOTT GALLINA** selected GINGER CEBTP for the task of conducting air permeability and water tightness tests on a polycarbonate translucent wall panel system.

- Air permeability tests based on a test procedure described in the NF EN 12152 standard of May 2002: Curtain walling. Air permeability. Performance requirements and classification.
- Water tightness tests based on a test procedure described in the NF EN 12155 standard of October 2000: Curtain walling. Water tightness. Laboratory test under static pressure.

2 PURPOSE

The purpose of this report is to provide a summary of the results obtained with the above-mentioned tests performed based on the test procedures described in the NF EN 12152 standard of May 2002: Curtain walling. Air permeability.— Performance requirements and classification, the NF EN 12155 standard of October 2000: Curtain walling. Water tightness. Laboratory test under static pressure.

3 PARTICIPANTS

3.1 Persons performing the tests

Jean-Thomas GUIRAUD GINGER CEBTP

3.2 Persons attending the tests

M. BERTRAND POLY-PAC
M. VEYRON POLY-PAC

4 CHARACTERISTICS OF THE MOCK-UP

Polycarbonate wall panelling system

- **Mock-up** HT size: 2000 x 5000 mm
- **Support** Plank frame 50 x 100 mm
+ Aluminium profile, ref.: Pac 611*
Horizontal steel tube support 120 x 60 mm, th.: 3 mm. + steel plate th.: 3 mm and aluminium profile, ref.: Pac 611 *
- **Material** Aluminium 6060 T6*
- **Filling** Extruded polycarbonate panels, nesting system (x4)
System **ArcoWall**, ref.: 5613*
Width: 500 mm, th.: 60 mm
- **Number of supports** 3
- **Casing** Extruded aluminium support profiles
ArcoWall system, ref.: 4800*
- **Filler maintenance** Panel interlocking with male-female system.
Extruded aluminium glazing bead profile, ref.: 4804* + Aluminium base, ref.: 4715* at the level of the intermediate support.
- **Joints** Inside: EPDM sliding joint, ref.: 4820*
Outside: EPDM expansion joint, ref.: 1169*
- **Drainage** 0.8 mm hole every 500 mm (x4)

*Data provided by the company **Poly-Pac**

5 TESTING PRINCIPLE

5.1 Air permeability test

The test consists in applying air pressures by 50 Pa steps, starting from 300 Pa by 150 Pa steps up to 600 Pa.

At each test step, the air leak rate per m² and ml is measured.

5.2 Water tightness test

The test consists in spraying the test object at a flow rate of 2 l/min with a tube under a pressure of 0 Pa for 15 minutes, then at a test pressure increasing every 5 minutes. The total duration depends on the water permeability of the test object.

The items to be tested are subjected to an artificial rain created by using a spray line provided with Full-cone water jet nozzles (angle 120°) at a rate of 400 mm - by positive static test pressure steps.

Number of spray lines : 2 separate 1500 mm spray lines positioned at 250 mm from the upper face of the test object.

Number of nozzles : 5 nozzles per spray line (1 every 400 mm)

Water flow rate : 2 l/min/m²

6 TEST RESULTS

6.1 Air permeability test

Test conditions

Temperature: **19.8 °C**

Humidity: **50.6 %**

Atmospheric pressure: **1003 hPa**

Pa	PRESSURE				
	Diaph ragm #	DP Pa	Q _{fc} global m3/h	QS m3/h/m ²	QL m3/h/ml
50	2	96.2	10.25	1.01	0.37
100	2	231.2	15.89	1.57	0.58
150	3	46.8	19.50	1.93	0.71
200	3	62.2	22.48	2.22	0.81
250	3	82.5	25.89	2.56	0.94
300	3	101.2	28.67	2.84	1.04
450	3	168.7	37.02	3.66	1.34
600	3	257.5	45.73	4.52	1.66
750	4	33.1	55.40	5.48	2.01

Diaph ragm #	DP Pa	Q _{fc} global m3/h	DEPRESSION	
			QS m3/h/m ²	QL m3/h/ml
2	108.7	10.50	1.04	0.38
2	221.8	15.00	1.48	0.54
3	50	19.59	1.94	0.71
3	70	23.18	2.29	0.84
3	94.3	26.90	2.66	0.98
3	123.7	30.81	3.05	1.12
3	203.7	39.53	3.91	1.43
4	26.2	49.39	4.88	1.79
4	35	57.09	5.65	2.07

6.2 Water tightness test

Conditions

Temperature: **19.5 °C**

Humidity: **50.1%**

Atmospheric pressure: **1003Hpa**


Total flow rate: **1200 l/h**

Test result

Pa	Time mn		COMMENTS	Class NF EN 12 154
0	15	15	RAS	OK
50	5	20	RAS	OK
100	5	25	RAS	OK
150	5	30	RAS	OK
200	5	35	RAS	OK
250	5	40	RAS	OK
300	5	45	RAS	OK
450	5	50	RAS	OK
600	5	55	Water passage at left lower angle	Leak
0	5	55	RAS	OK

THE TEST REPORT DOES NOT PRECLUDE THE ATTRIBUTION OF A QUALITY MARK

Project Manager
Building Envelope


Anthony SOUCHARD

Services Manager Building
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Aurélien GAUDRON

Annex 1: Photographic survey



Tested mock-up



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PROJECT:
ARCOWALL AEV TEST

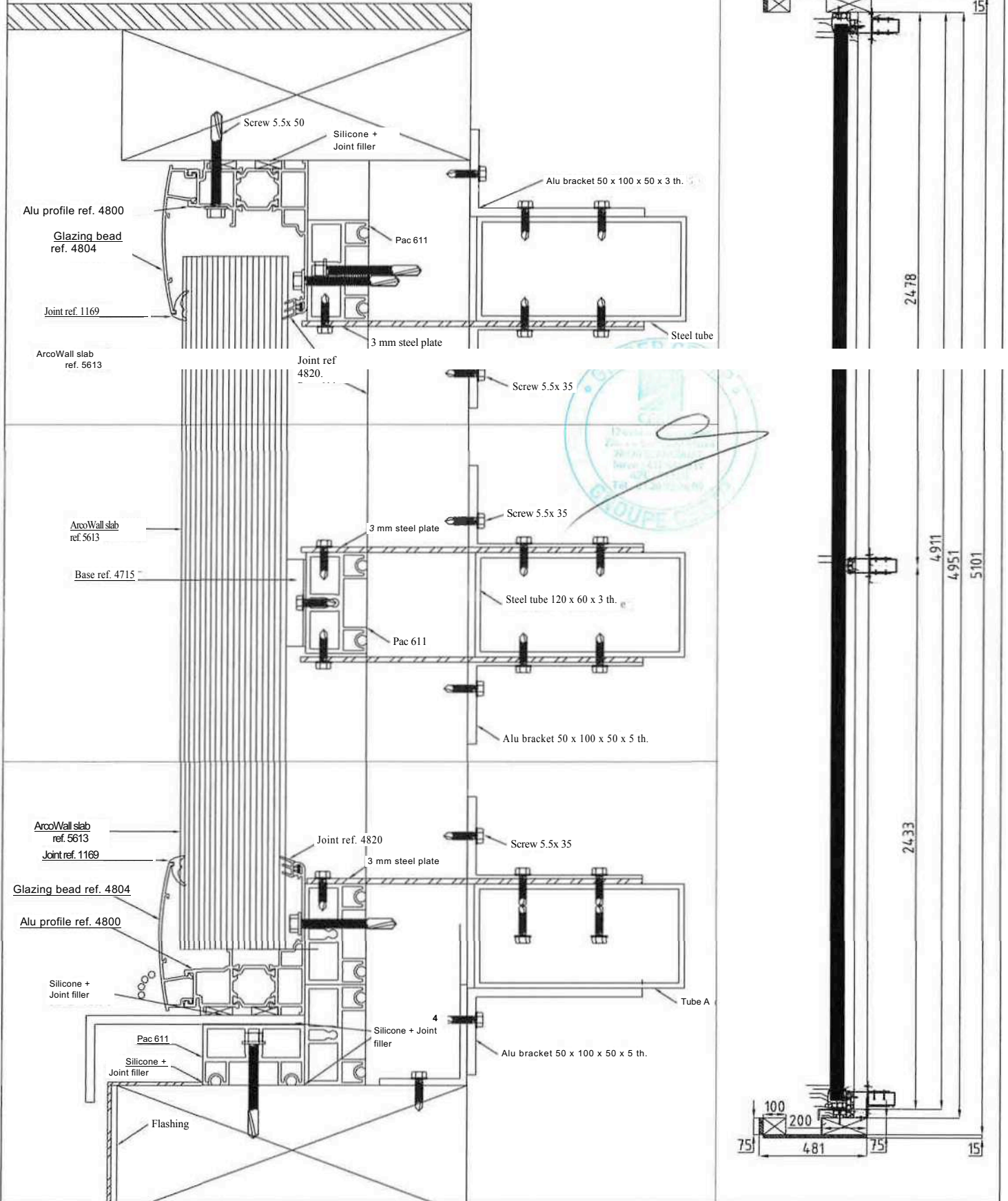
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ARCOWALL AEV TEST

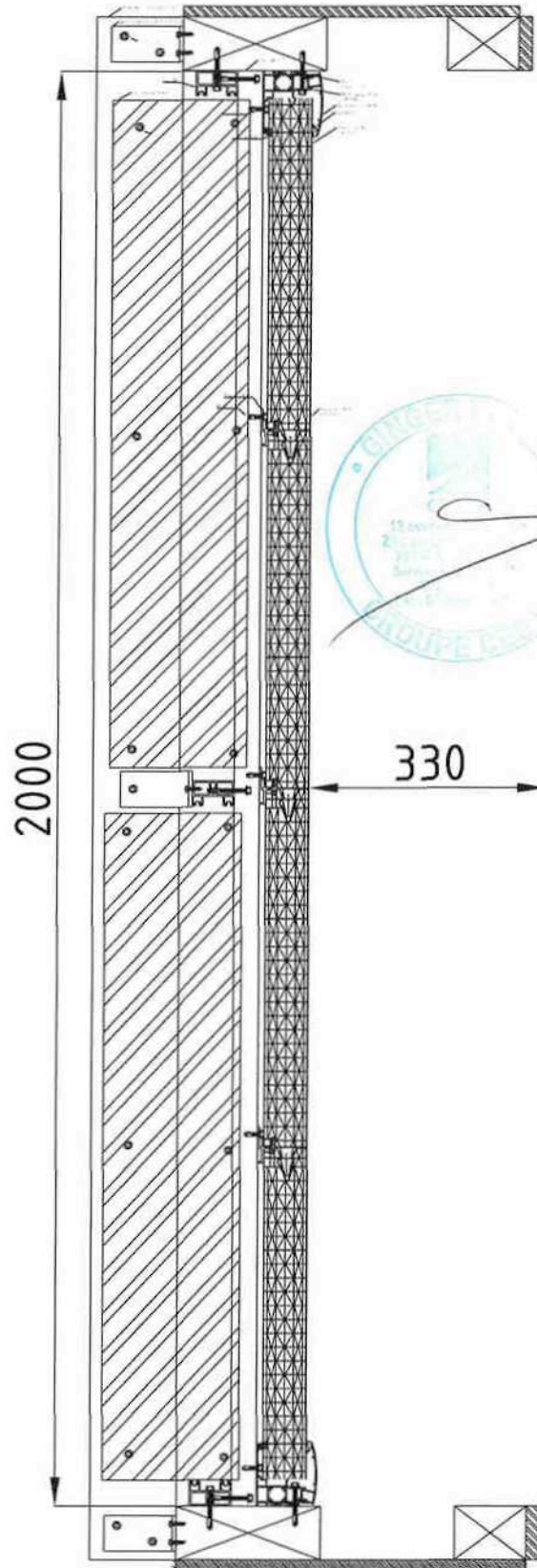
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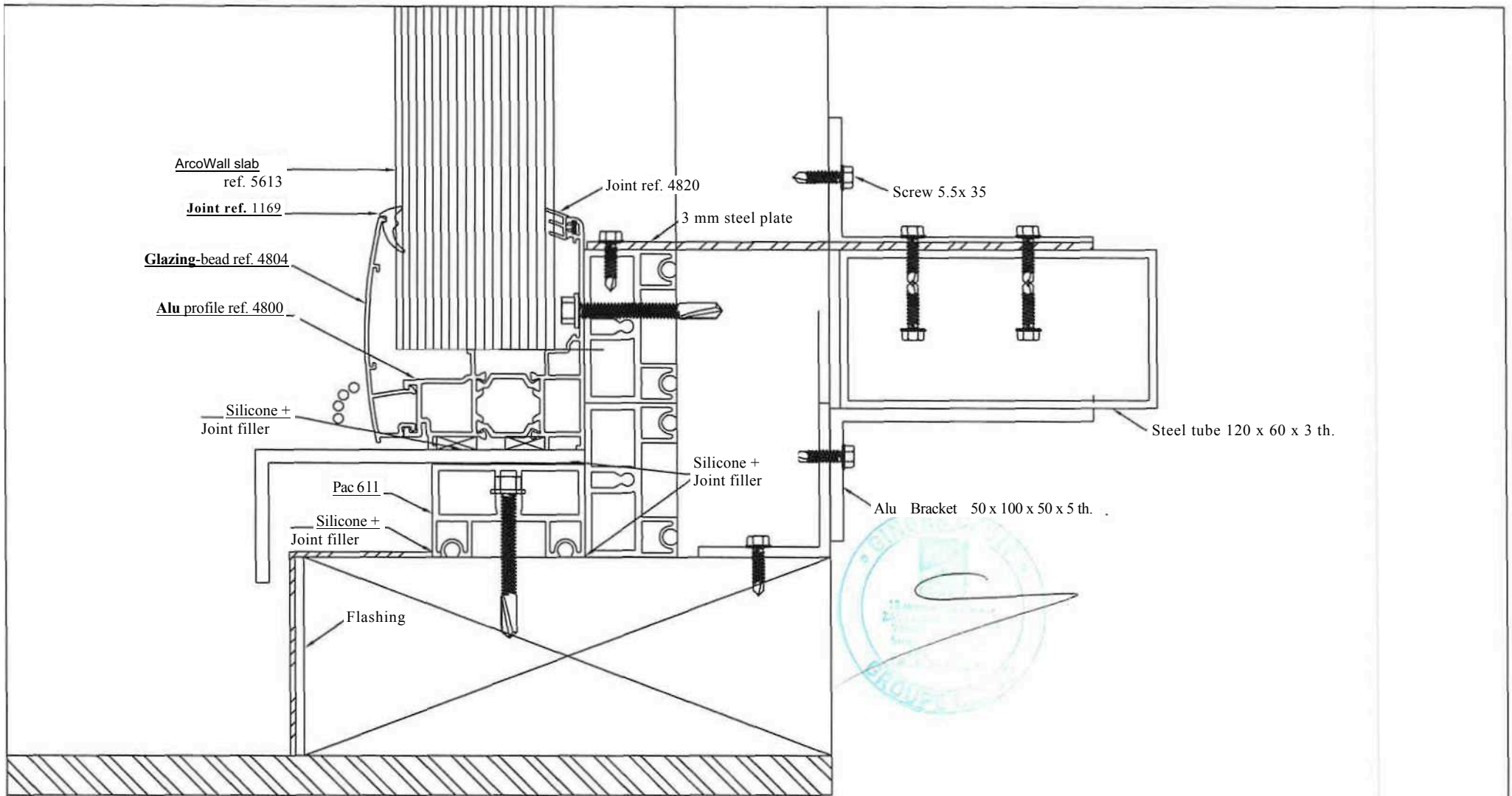
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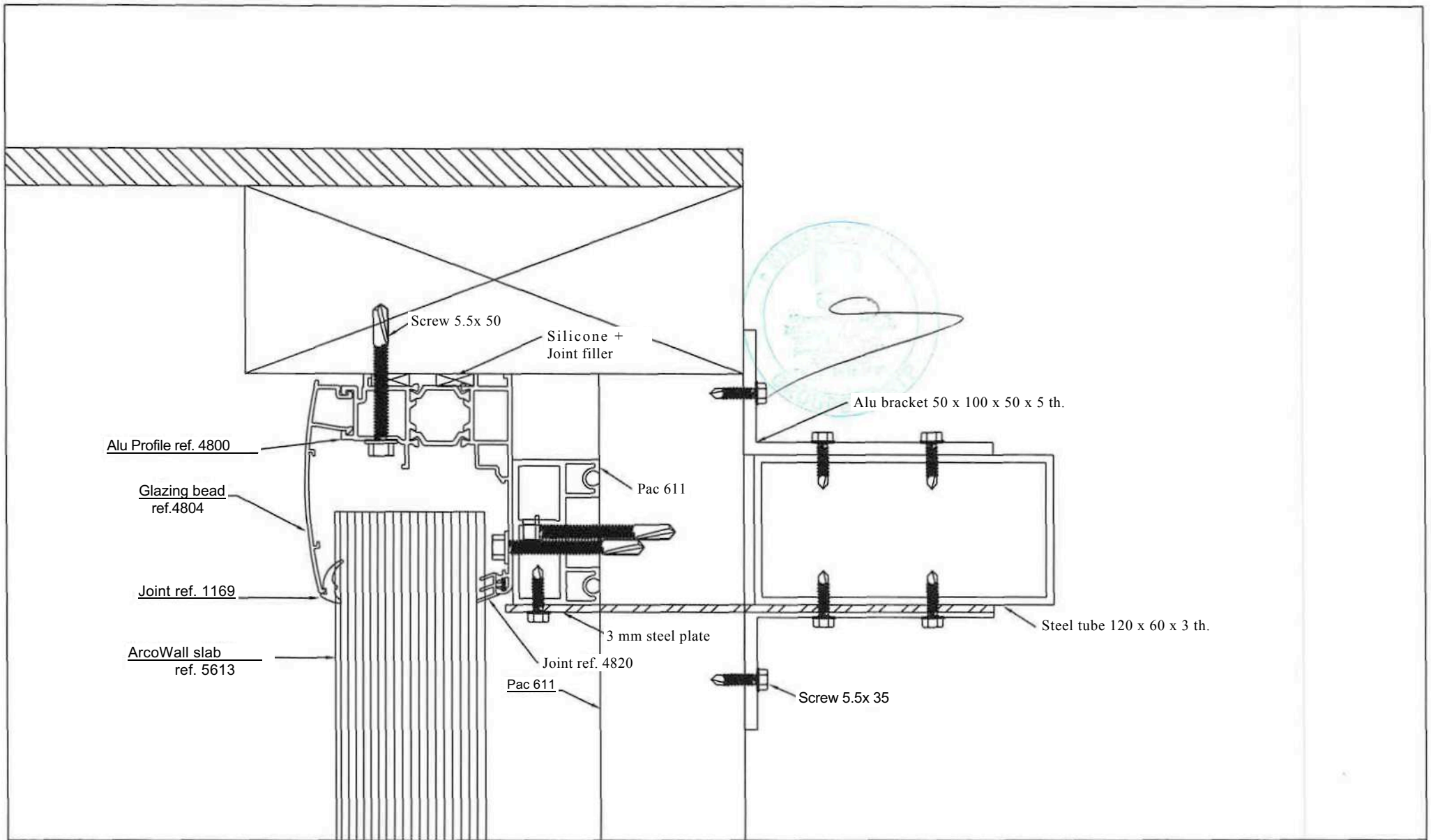
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PROJECT:
ARCOWALL AEV TEST

**Panelling
bottom
detail**

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**Panelling
 head detail
 Scale: 1/2**

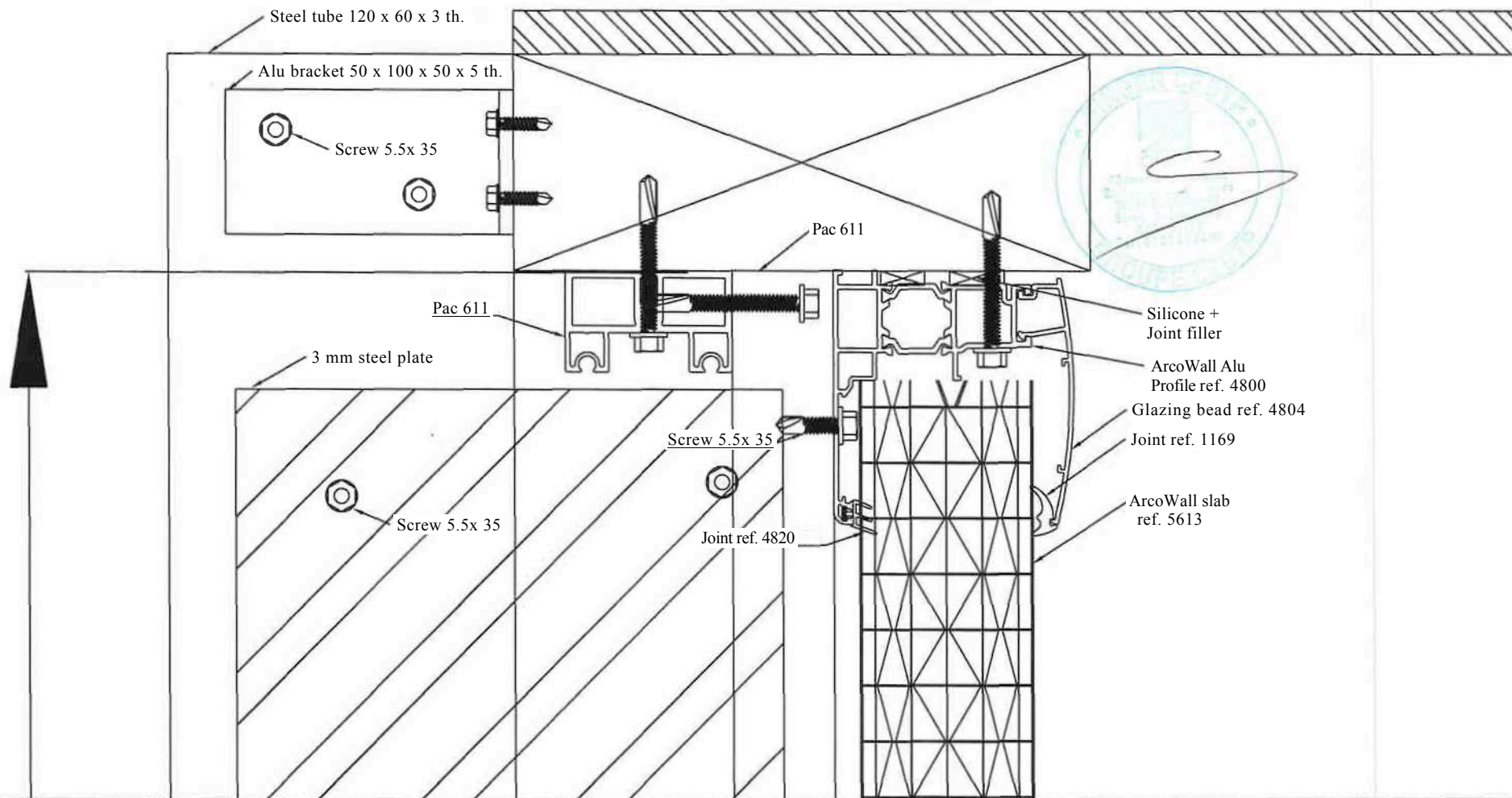
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Ind: 0

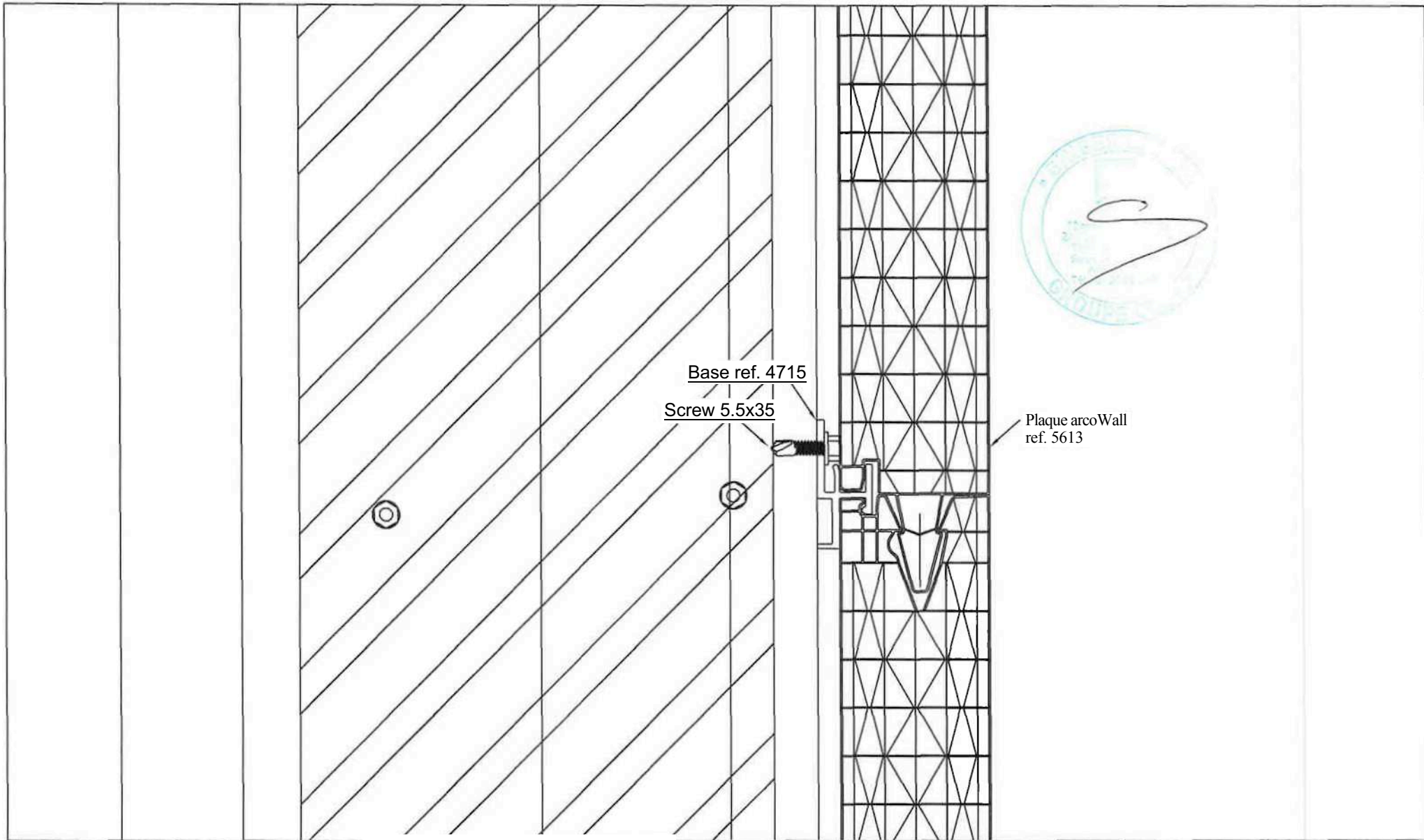


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PROJECT:
ARCOWALL AEV TEST

Side
 detail
 Scale: 1/2

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Base ref. 4715
Screw 5.5x35

Plaque arcoWall
ref. 5613



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PROJECT:
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Intermediates
Support
detail

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