

## PERFORMANCE TEST REPORT

### Air Permeability and Watertightness ( Under Static Pressure )

Test Report No: 010.012.3/2010



Rendered to	: Burak Alüminyum San. ve Tic. Ltd. Şti.	Norms Applied	: EN 1026
			: EN 1027
Product	: As Hebe-Schiebe Sürme		:
			:
Sample Size	: 1375 mm x 2115 mm	Classification Norms	: EN 12207
			: EN 12208
Sample Description	: 4 / 12 / 4 mm Insulated Glass		:
	: Hebe-Schiebe Sürme ( HS 300 )		:
	: 687 mm x 2022 mm	Test Comp. Date	: 08.10.2010
Test Performed	: Air Permeability - Static Pressure	Report Date	: 11.10.2010
	: Watertightness - Static Pressure	Record Retention Date	: 11.10.2013
	:	Number of Pages	: 9
		Number of Annex Pages	: 9

**Test Results** : The Test sample performed in accordance of to following classifications

Air Penetration	: EN 12207 - Class ( 4 for Positive , 3 for Negative )
Water Tightness	: EN 12208 - Class 9A ( 600 Pa ) Refer to Section 4.4 and 6
Wind Resistance	: Performance measurement hadn't been made

\* Calibration of the test equipments certified by CEBTP / France referenced to report BEB1-9-2024-1/2

\*\*This Test Report includes spesific test data, results, photographic documentation and build drawings of the sample submitted for testing only and thus does not prejudge other related products.

**Murat Seyhan**  
General Manager

**Oktay Usta**  
Testing Manager



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## 1. PREFACE

This report comprises of tests which were performed by FTI Façade Testing Institute at the address Çakıl Village Bağlar Region, Çatalca - İstanbul. Tests were carried out in October 2010 for the determination of the air infiltration, water penetration and, resistance to wind loading of door systems.

The above mentioned tests have been carried out as per the test methods provided in project specifications and classified on the standards indicated below.

EN 14351-1	* Windows and Doors - Product standard, performance characteristics
EN 1026	* Windows and Doors - Air Permeability - Test Method
EN 12207	* Windows and Doors - Air Permeability - Classification
EN 1027	* Windows and Doors - Watertightness - Test Method
EN 12208	* Windows and Doors - Watertightness - Classification
EN 12211	* Windows and Doors - Wind Load – Test Method
EN 12210	* Windows and Doors - Wind Load – Classification
STS 52	* Menuiseries Exterieures 52.0 Generalites

Test sample, comprises a part of façade system which have been constructed for the Project Kiptaş Finanskent by Burak Alüminyum San.ve Tic.Ltd.Şti.

Test sample was prepared by the company's own facilities and testing laboratories has been set to FTI Façade Testing Institute's testing laboratories on 30 / 09 / 2010.

## 2. PARTICIPANTS TO TESTS

Tests were conducted 08 / 10 / 2010 in prevent of the following participants.

Mr. Oktay USTA	FTI	Testing Manager
----------------	-----	-----------------

and partially by

Mr. Şükrü BOZOKLUOĞLU	Burak Alüminium
Mr. Erdem ŞAHİN	Kiptaş
Mr. Yasin ENGİN	Kiptaş
Mr. Enver BAHAR	Arc İnşaat
Mr. Muammer ÖZAYDIN	Özgü Müh.
Mr. Mehmet GÜLMEZOĞLU	Metal Yapı
Mr. Seydi CERİT	Metal Yapı

### 3. DESCRIPTION OF TEST SAMPLE

* Type of Sample	<b>Sürme Windows&amp;Doors</b>
* System	<b>AS Hebe Schiebe Surme</b>
* Dimensions of Sample (LxH)	<b>1375 mm x 2115 mm</b>
* Surface area of Sample	<b>2,91 m<sup>2</sup></b>
* Fixed Panel Length	<b>8,82 m</b>
* Opening type	<b>VBH Surme Accesories (HS 300)</b>
* Openable window	<b>687 mm x 2022 mm</b>
* Surface area of wings	<b>1,39 m<sup>2</sup></b>
* Glass Type	<b>4 / 12 / 4 Insulated Glass</b>

#### System Components

* AS-110	Aluminium Profile
* AS-120	Aluminium Profile
* AS-170	Aluminium Profile
* 5644-14	Aluminium Profile
* SERT PVC 24	PVC
* ÇELİK RAY	
* AS-160	Profile
SY-01	Epdm Gasket
* SY-02	Epdm Gasket
* SY-17	Epdm Gasket
* SY-18	Epdm Gasket
* SY-22	Epdm Gasket
* VBH Surme Accesories (HS 300)	

Please refer to the drawings in annex 7.1.

#### 4. TEST RESULTS

##### 4.1 Test Conditions

Local Temperature	:	13	°C
Atmospheric Pressure	:	1019	mbar
Ambient Humidity	:	50	%
Test Stand	:	Stand	2
φ1 : Flow Calculation while DQ < 9.5 m³/h	:	14,781 x DQ + 0,85 / 10,644 x DQ + 1,16	
φ2 : Flow Calculation while DQ > 9.5 m³/h	:	62,828 x DQ – 6,93 / 90,686 x DQ – 39,82	

##### 4.2 Pressure Sequence

STEPS		POSITIVE PRESSURE (Pa)	NEGATIVE PRESSURE (Pa)
1	P1= 25%PN	150	150
2	P2= PN	600	600
3	P3= 50%PN	300	300
4	PE = 150%PN	900	900

PN: Pressure Normative  
PE: Pressure Extreme

##### 4.3 Air Permeability

Before starting the test, 3 impacts under 660 Pa is applied to the sample.

During the tests the pressure at the following values is applied for 10 secs.

**Air permeability values based on overall area ;**

POSITIVE PRESSURE			
φ1 / φ2	Test Pressure (Pa)	Air Leakage (m³/h)	Air Leakage (m³/h/m²)
φ1	50	0,92	0,32
φ1	100	1,71	0,59
φ1	150	2,62	0,90
φ1	200	3,08	1,06
φ1	250	3,85	1,33
φ1	300	4,29	1,47
φ1	450	5,39	1,85
φ1	600	6,25	<b>2,15</b>

Test No : 2010.089.12

NEGATIVE PRESSURE			
φ1 / φ2	Test Pressure (Pa)	Air Leakage (m³/h)	Air Leakage (m³/h/m²)
φ1	50	1,57	0,54
φ1	100	2,76	0,95
φ1	150	4,02	1,38
φ1	200	4,83	1,66
φ1	250	5,77	1,98
φ1	300	6,82	2,35
φ1	450	8,47	2,91
φ1	600	9,65	<b>3,32</b>

Test No : 2010.089.13

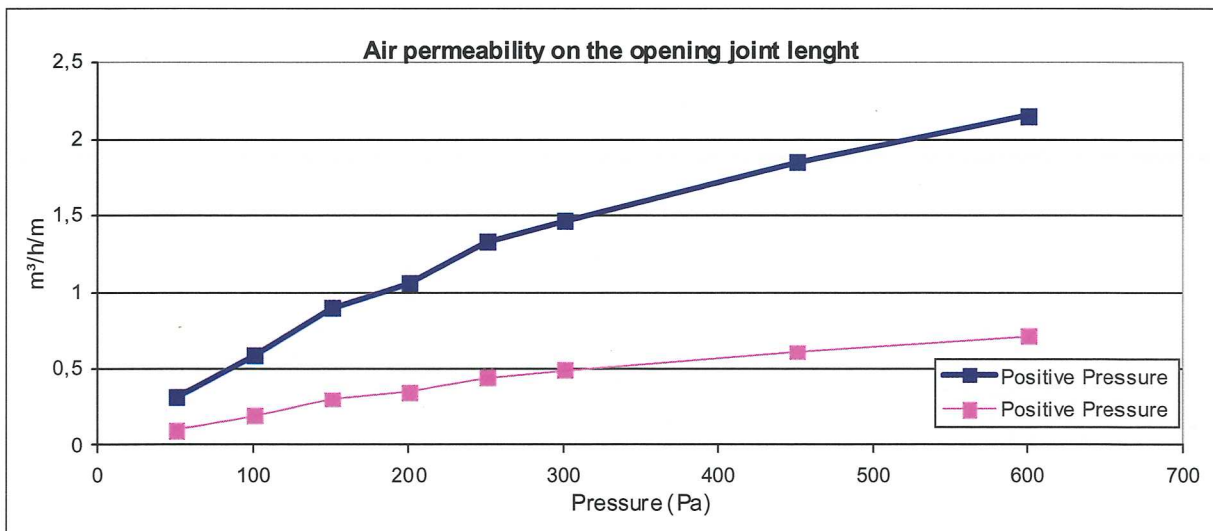
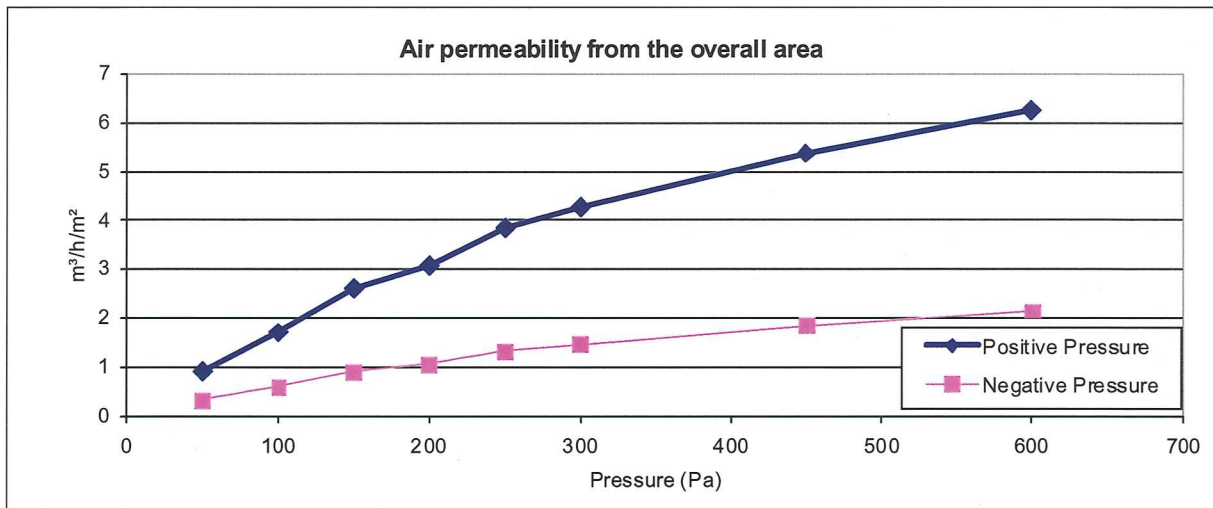
**Air permeability values based on the opening joint lenght ;**

POSITIVE PRESSURE			
$\phi 1 / \phi 2$	Test Pressure (Pa)	Air Leakage (m <sup>3</sup> /h)	Air Leakage (m <sup>3</sup> /h/m)
$\phi 1$	50	0,92	0,10
$\phi 1$	100	1,71	0,19
$\phi 1$	150	2,62	0,30
$\phi 1$	200	3,08	0,35
$\phi 1$	250	3,85	0,44
$\phi 1$	300	4,29	0,49
$\phi 1$	450	5,39	0,61
$\phi 1$	600	6,25	<b>0,71</b>

NEGATIVE PRESSURE			
$\phi 1 / \phi 2$	Test Pressure (Pa)	Air Leakage (m <sup>3</sup> /h)	Air Leakage (m <sup>3</sup> /h/m)
$\phi 1$	50	1,57	0,18
$\phi 1$	100	2,76	0,31
$\phi 1$	150	4,02	0,46
$\phi 1$	200	4,83	0,55
$\phi 1$	250	5,77	0,65
$\phi 1$	300	6,82	0,77
$\phi 1$	450	8,47	0,96
$\phi 1$	600	9,65	<b>1,09</b>

Test No : 2010.089.12

Test No : 2010.089.13



#### 4.4 Watertightness

Before starting the test, 3 impacts under 660 Pa applied to the sample.

Waiting duration between each impact is 3 seconds.

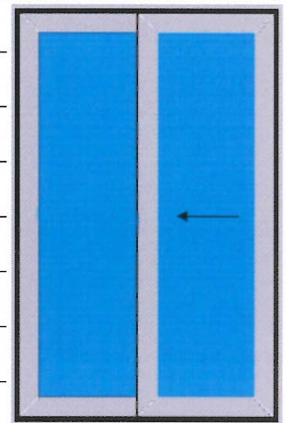
Water eject nozzles are arranged in 1 rows, such that the first nozzle is apart 250 mm. from the side and there is a gap of 1500mm between the rows of 2 nozzles

The number of nozzles at each row is 3 pieces.

The amount of water applied to the Façade = ( 2 l/min x 3 ) = 6 l/min. = 360 l/h

#### Observations

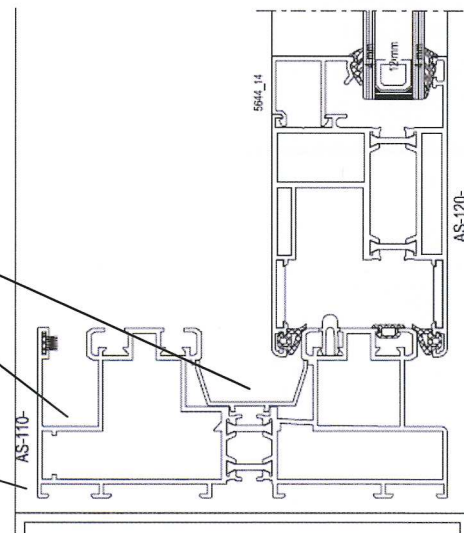
Pressure Value Pa	Time Period min	Observations
0	15	No water leakage was observed.
50	5	No water leakage was observed.
100	5	No water leakage was observed.
150	5	No water leakage was observed..
200	5	No water leakage was observed.
300	5	No water leakage was observed.
450	5	No water leakage was observed.
600	5	No water leakage was observed.



Test No : 2010.089.15

There was observed water during the test in this field.

No water leakage was observed internal at the 600Pa.



**Resistance to Wind Load (performance measurement hadn't been made)**

Before starting the test, 3 impacts under 600 Pa applied to the sample.

Waiting duration between each impact is 3 seconds.

During the tests the following pressure values have been applied for 10 seconds of period

Acceptable proportion at resistant to wind load:

Position: Vertical distance for mullion at middle axe

Scale: **Vertical 2022 mm**

The proportion measured under the positive and negative design loads should not exceed the **1/200** of the gap of framing element measured between the constructional support points.

**Vertical 10,11 mm**

**Positions of the points on which measurements have been carried out on Test Samples**





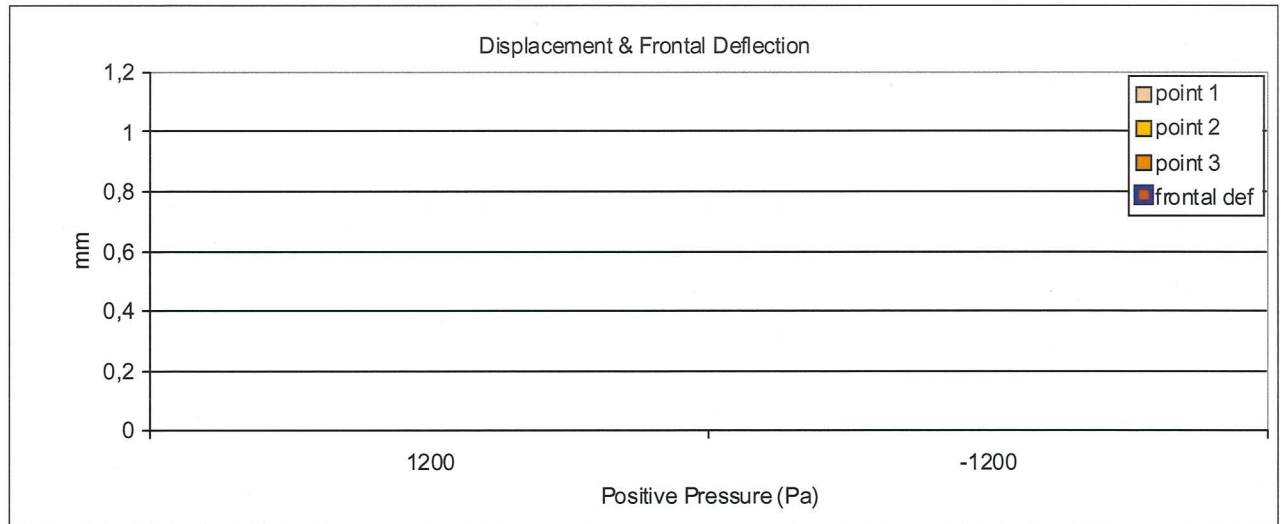
**Test results for samples on which the measurement have been carried out on Vertical Column ;**

Positive Pressure Pa	Point 1	Point 2	Point 3	Frontal Deflection
0	0,00	0,00	0,00	0,00
0	0,00	0,00	0,00	0,00
0	0,00	0,00	0,00	0,00
0	0,00	0,00	0,00	0,00
1200	0,00	0,00	0,00	0,00
0	0,00	0,00	0,00	0,00

Negative Pressure Pa	Point 1	Point 2	Point 3	Frontal Deflection
0	0,00	0,00	0,00	0,00
0	0,00	0,00	0,00	0,00
0	0,00	0,00	0,00	0,00
0	0,00	0,00	0,00	0,00
0	0,00	0,00	0,00	0,00
1200	0,00	0,00	0,00	0,00
0	0,00	0,00	0,00	0,00

Test No : 2010.089.XX

Test No : 2010.089.XX



**4.5 Repeated Pressure Test (performance measurement hadn't been made)**

Test samples positive and negative pressure was applied to 50 cycles at + 600 Pa

**4.6 Increased Load ( Safety Test ) ( Secure Load ) (performance measurement hadn't been made)**

The load stated as Pascal by multiplying 1.5 times the design wind load.

Test Pressure	Observations
PE = + 1800 Pa	-
PE = - 1800 Pa	-

## 5. REVISIONS MADE ACCORDING TO TEST RESULTS

- The number of the water drainage increased from 4 to 8 number, before the test.

## 6. RESULT

### 6.1. Results and classification

	CONDITIONS	RESULTS		CLASSIFICATION
<b>AIR PERMEABILITY EN 12207 (overall area)</b>	300 Pa < 27,0 m <sup>3</sup> /h,m <sup>2</sup>	Positive Pressure	2,15	<b>4</b>
	600 Pa < 9,0 m <sup>3</sup> /h,m <sup>2</sup>	Negative Pressure	3,32	<b>3</b>
<b>AIR PERMEABILITY EN 12207 (overall lenght)</b>	300 Pa < 6,75 m <sup>3</sup> /h,m	Positive Pressure	0,71	<b>4</b>
	600 Pa < 2,25 m <sup>3</sup> /h,m	Negative Pressure	1,09	<b>3</b>
<b>WATER-TIGHTNESS EN 12208</b>	There will be no water leakage at 600 Pa	None of water leakage observed at 600 Pa. (internal)		<b>9A*</b>
<b>RESISTANCE TO WIND LOAD EN 12210</b>	Proportion < 10,11 mm for L/200	OK (max. ---mm) max. ---mm		---
	There will not be any damage at secure load	None of any damage has been observed at positive or negative pressure		

\* This test was performed out of classification.

DOSYA NO:	
SAYFA NO:	

PROFİL KESİM LİSTESİ

PROFİL SEKİLİ	PROFİL KODU VE ADI	ADET	BOYU mm	KESİM SEKİLİ
	AS-110 KASA PROFİLİ	2	1375 mm	
	AS-110 KASA PROFİLİ	2	2115 mm	
	AS-120 KANAT PROFİLİ	4	688 mm	
	AS-120 KANAT PROFİLİ	4	2022 mm	
	AS-5644_14 CAM CİTASI PRF.	4	528 mm	
	AS-5644_14 CAM CİTASI PRF.	4	1825 mm	
	AS-170 ADAPTOR PROFİLİ	2	579 mm	
	AS-170 ADAPTOR PROFİLİ	1	2052 mm	
	AS-150 KAPAK PROFİLİ	2	2022 mm	

CAM LİSTESİ

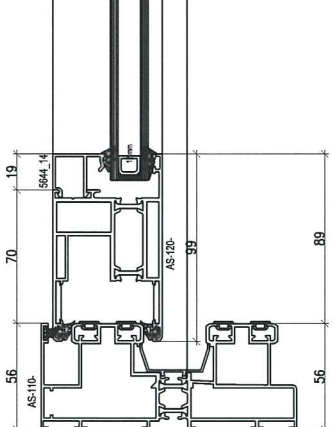
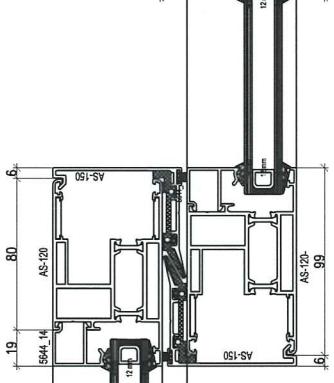
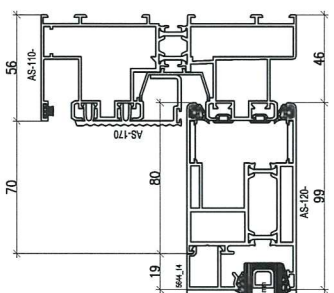
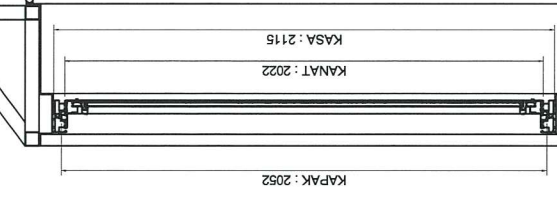
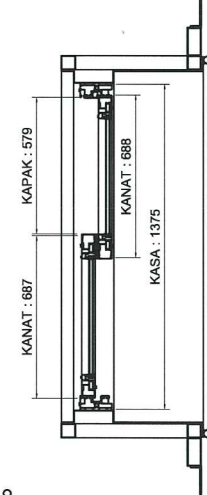
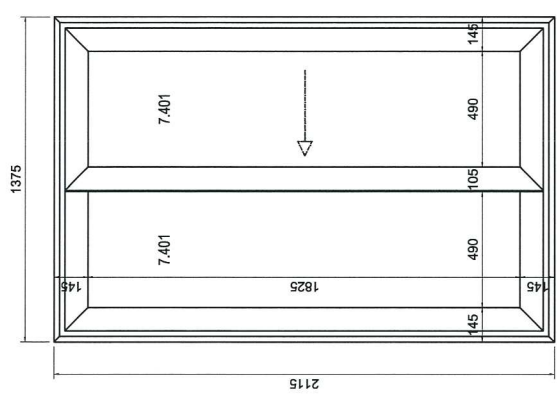
CAM TİPİ	CAM KODU	ADET	ACILIM mm
4/12/4 mm ÇİFT CAM	7.401	2	518 x 1853

\*KÖL BURAK ALUMİNYUM TARAFINDAN TAKILACAKTIR.

DOĞRAMA KODU : D 100  
ACILIM : 1375 x 2115 mm  
ADET : 1  
RENK : NAT E-6

**Metal Yapı**  
Calefi Köyü Başlar Mevkii  
P.K. 39 34540 / Çatalca / İSTANBUL  
Tel : +90 212 776 40 50 / Faks : +90 212 776 40 58  
www.metal-yapi.com

F.04.06 REV.NC: C. SUBAT 2010

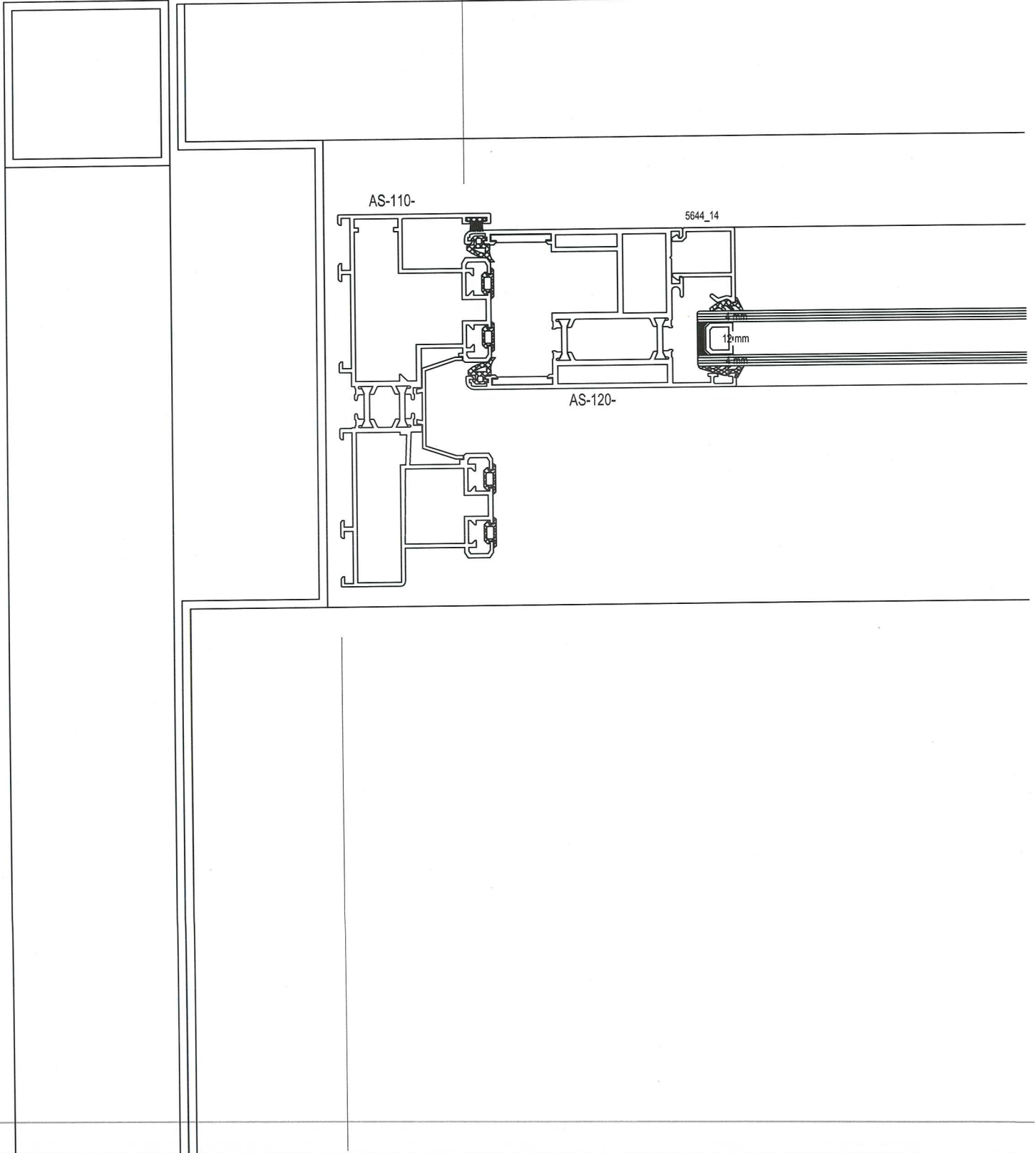


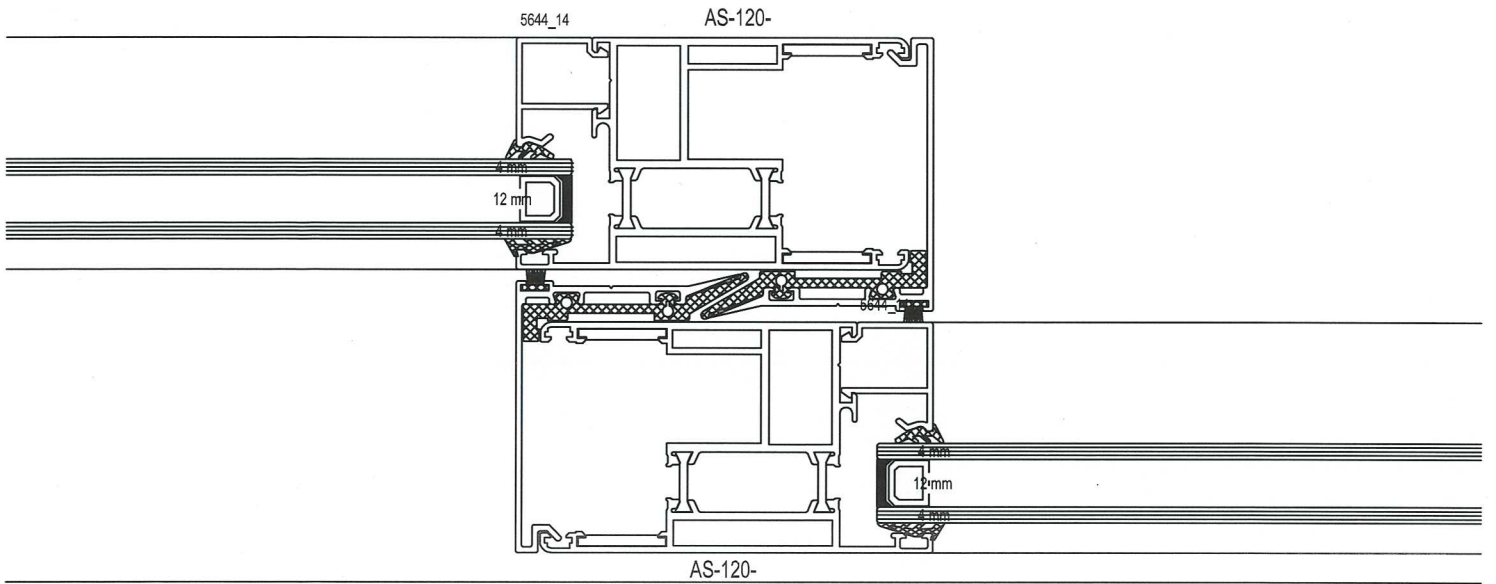
PROJE ADI: BURAK ALUMİNYUM  
SİSTEM ADI: BURAK ALUMİNYUM  
SİSTEM KODU: 5260  
REVİZYON NO: 2

PAFTA ADI: DOĞRAMA İMALATI  
SURME DOĞRAMA İMALATI

PROJE KODU: 5260  
KONTROL: G. SAZLI  
CİZEN: GÜLSEN  
TARİH: 27.07.2010  
ADRES: T:PROJE/5260-MYS TEST LABARATUVARI/18595-BURAK ALU.

SİSTEM ADI	PROJE ADI	PROJE KODU	KONTROL	G. SAZLI	CİZEN	GÜLSEN
NO	ACIKLAMA	TARİH	SORUM.	TARİH	ADRES	ADRES

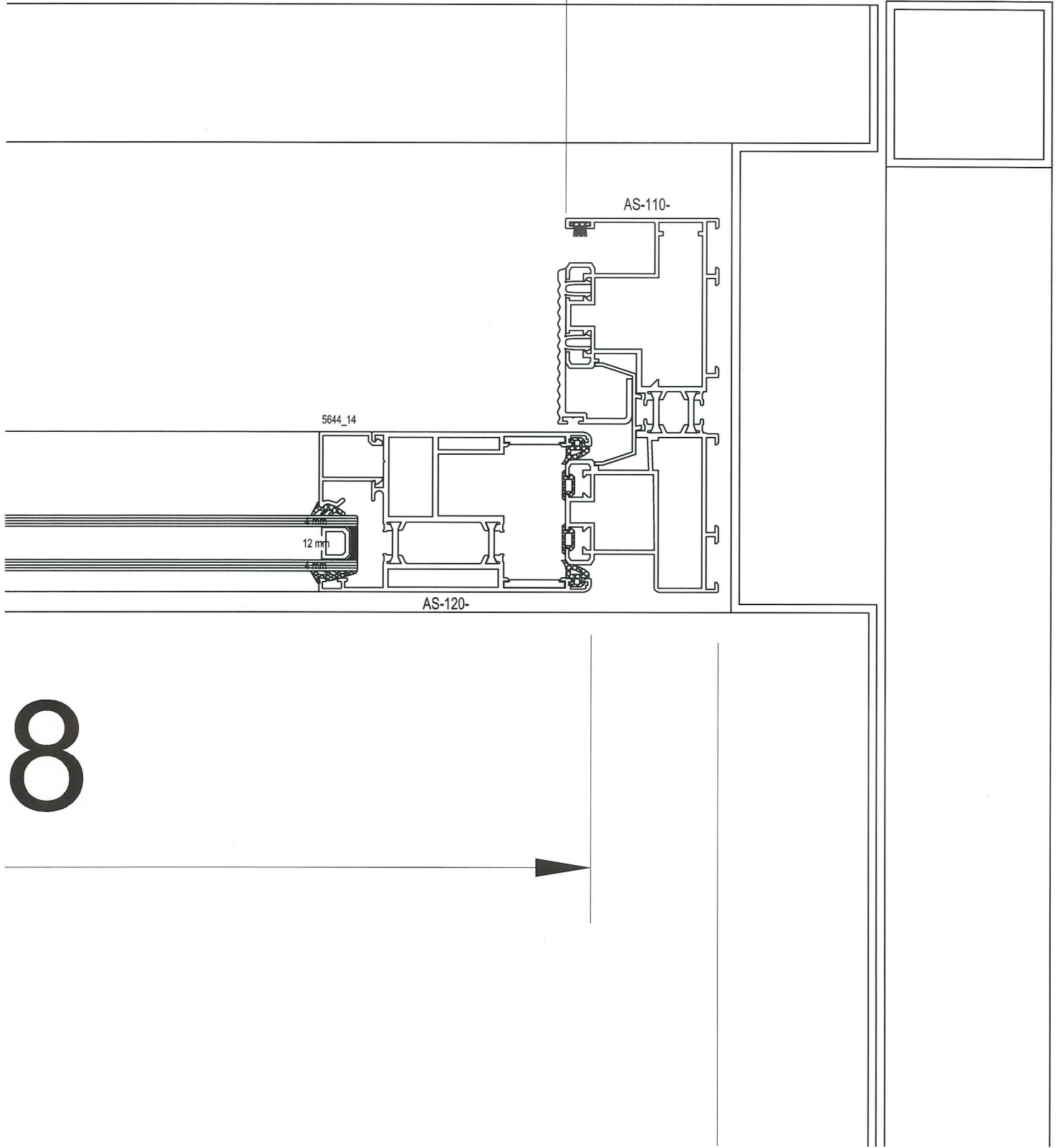


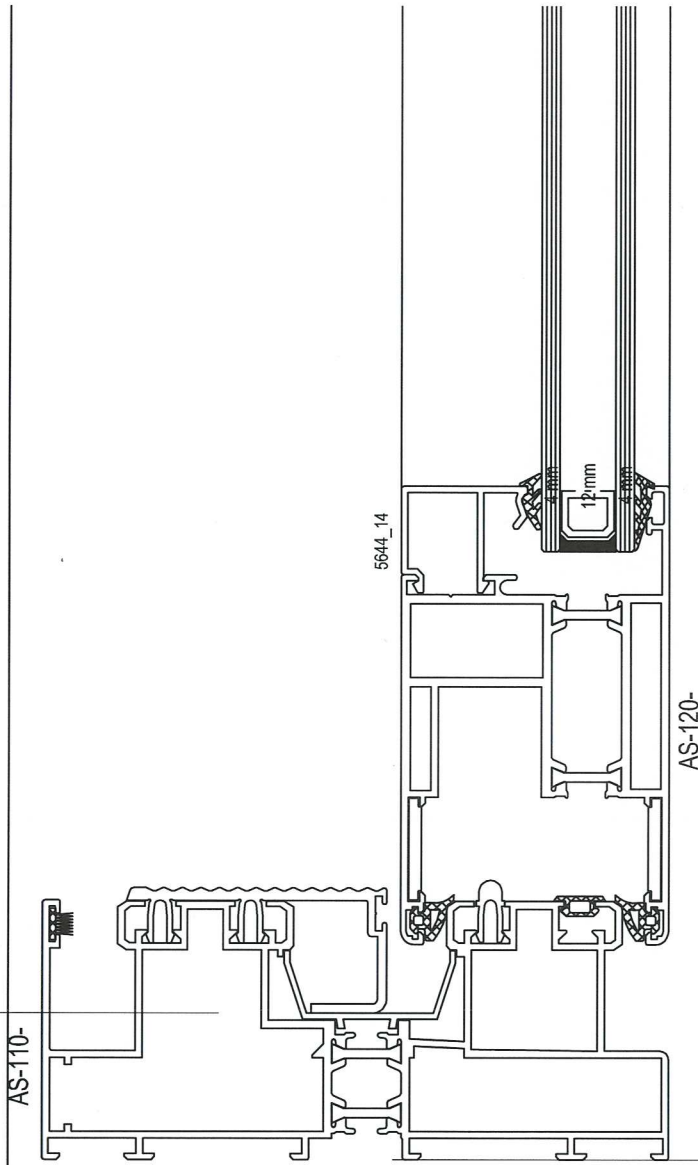


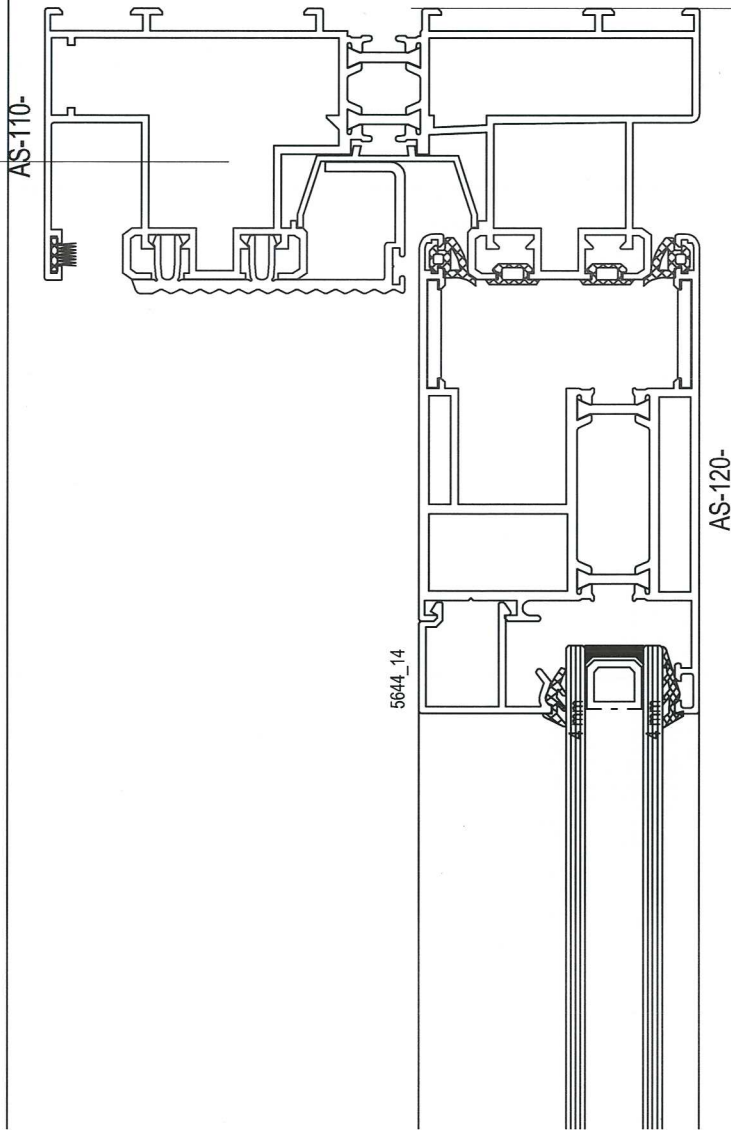
**KA**



**KASA : 1375**











GINGER CEBTP

Division Enveloppe du bâtiment

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TURQUIE

à l'attention de M : EMRE BENGISU

## RAPPORT DE VERIFICATION

N° : BEB1.9.2024-1/2

## RECAPITULATIF des CONTRÔLES EFFECTUES PAR LE CEBTP

L'étalonnage doit être renouvelé tous les 3 ans. L'Autocontrôle doit être effectué tous les 6 mois par l'entreprise, sous sa responsabilité, afin de vérifier les dérives éventuelles du banc.

Date du Contrôle **juin-09**Prochain contrôle à faire pour **juin/2012**

## CONDITIONS DE MESURES (au début des vérifications)

TEMPÉRATURE **29.5** °CHYGROMÉTRIE **28.0** %PRESSION ATMOSPHÉRIQUE **986.0** Hpa

Les résultats des calculs sont à corriger en fonction des conditions réelles.

## FORMULES POUR LE CALCUL DES DÉBITS D'AIR

MESURES EFFECTUEES EN PRESSION						MESURES EFFECTUEES EN DEPRESSION					
N°	plage	FORMULE			formule simplifiée	N°	Diam	FORMULE			formule simplifiée
1	1 à 9,5 m3/h	14.781	x V +	0.85	17.608	1	1 à 9,5 m3/h	10.644	x V +	1.16	13.509
1	9,5 à 120 m3/h	62.828	x V +	-6.93	57.252	1	9,5 à 120 m3/h	90.686	x V +	-39.82	57.679

V est la vitesse en m/s lue directement sur le banc d'essais

Les formules sont rapportées à T° = 20° et Patm = 101325 Pa

## Planification: Auto Contrôles

L'entreprise doit avoir réalisé son auto-contrôle interne aux dates suivantes

Date	juin-09	A
Date	nov-09	B
Date	mai-10	C
Date	nov-10	D
Date	mai-11	E
Date	nov-11	F

Si la dérive est > 10%, refaire le contrôle par le CEBTP, sans attendre les 3 ans

## CORRECTION DES DÉBITS D'EAU

N° 1	1200 à 12000 l / h	
AFFICHE	RÉEL	CORRECT
l/h	l/h	E %
1900.0	1890	1%
2800.0	2685	4%
4000.0	3888	3%

Le vérificateur  
Yanisse Nait-Bouda

Le chef de service  
Aurélien Gaudron



Direction régionale Ile de France  
Z.A.C. La Clef de Saint Pierre  
12 avenue Gay Lussac  
F-78990 ELANCOURT

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34805 Kavacık / Istanbul  
TURQUIE

DIVISION ENVELOPPE DU BATIMENT  
Laboratoire Produits de l'Enveloppe

**ATTESTATION ETABLIE  
AUX VUS DU RAPPORT D'ESSAIS BEB1-9-2024-1/2 du 13/04/2010**

La station d'essais AEV installée sur le site de CATALCA (à l'extérieur) à Istanbul (Turquie) étalonnée le 3/06/2009 par nos soins, permet de réaliser des essais AEV sur fenêtres et portes conformément aux normes européennes en vigueur : NF EN 12207, NF EN1026, NF EN12208, NF EN1027, NF EN12210 et NF EN 12211 ainsi que les AEV sur façades rideaux selon : NF EN 12152, NF EN 12153, NF EN 12154, NF EN 12155, NF EN 13116 et NF EN 12179.

Cette attestation est valable sous conditions que :

- les autocontrôles sont bien réalisés tous les 6 mois
- Que le matériel d'essai de cycle est conforme à la NF EN 12210
- qu'aucune modification du banc n'est effectuée.

Cette attestation est valable jusqu'au 03/06/2012.

CETTE ATTESTATION NE PREJUGE PAS DE L'ATTRIBUTION D'UNE MARQUE DE QUALITE.

Le chef du service  
Produits de L'Enveloppe

Aurélien GAUDRON

Le chef de division  
Enveloppe du bâtiment

Philippe EXCOFFIER

