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DENEY SERTİFİKASI / Test Certificate



Test
TS EN ISO IEC 17025
AB-0531-T

AB-0531-T

060.532.1/2016

03/2016



Müşterinin Adı ve Adresi / Customer's Name & Address: Burak Alüminyum San. ve Tic. A.Ş.

Orta Mah. Hamdi Efendi Sok. No:16 D:32 Iztower - 34880 Soğanlık - Kartal / İstanbul / TÜRKİYE

Referans No / Reference No: 2016.566

Numunenin Adı ve Tanımı / Sample's Name & Description: BM 60 Window System

Numunenin Kabul Tarihi / Receipt Date of Test Item: 24 / 02 / 2016

Uygulanan Normlar / Norms Applied: TS EN ISO 10140-2

Sonuçlar / Results: TS EN ISO 717-1 Rw (C ; Ctr) = 37,0 (-1,9 ; -4,5) dB

Test Tarihi / Date of Test

04 / 03 / 2016

Sayfa Sayısı / Number of Pages

1 / 13

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The Turkish Accreditation Agency (TURKAK) is signatory to the multilateral agreements of the European co-operation for the Accreditation (EA) and of the International Laboratory Accreditation (ILAC) for the Mutual recognition of test reports.

Uygulanan metodlar, test sonuçları ve genişletilmiş ölçüm belirsizlikleri (talep edilirse), bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. Bu sertifika yalnız test edilen numuneye ait sonuçları içerir ve ekte sunulan ilgili test raporu ile birlikte geçerlidir.

The applied methods, test results and the uncertainties (if requested) with confidence probability are given on the following pages which are part of this report. This certificate includes the test specimen which is identified above and its valid with the related test report which is presented as annex.

Mühür / Seal

Tarih / Date

23 / 03 / 2016

Test Faaliyetleri Yöneticisi

Testing Manager

M. Serhat COLAK

F.15.22 REV NO: D TEMMUZ 2015

Laboratuvar Müdürü

Laboratory Manager

Öner ARSLAN





TEST REPORT

Report Number : 060.532.1 / 2016

Report Date : 23.03.2016

Testing Reference : TS EN ISO 10140-2 Acoustics –Laboratory Measurement of Sound Insulation of Building Elements
Part 2: Measurement of Airborne Sound Insulation

Product : BM 60 Window System

Client : Burak Alüminyum San ve Tic. A.Ş.

1. PREFACE

This report comprises of tests and results, which were performed by FTI Façade Testing Institute at the address; Çakıl Mah. Şehit Teğmen Tamer Aydın Sok. No: 60 / A 34540 Çatalca – İstanbul / TÜRKİYE. Test sample is a window system which name is BM 60 Window has been designed and constructed by Burak Aluminyum San ve Tic. A.Ş.

Test was carried out 04 / 03 / 2016 for the determination of acoustic performance

Test sample has been sent to FTI Laboratory on 24.02.2016

2. CLIENT

Burak Aluminyum San. ve Tic. A.Ş.

Orta Mah.Hamdi Efendi Sk. No:16 D:32 Iztower - 34880

Soğanlık-Kartal / İstanbul / TÜRKİYE

3. TEST METHODS

The above mentioned test has been carried out in project specifications and classified on the standard indicated below. Test has been reported as the number of 060.532.1 / 2016 and test report has been prepared by Mr Murat GÖL.

TS EN ISO 10140-2 Acoustics-Laboratory Measurement of Sound Insulation of Building Elements
Part2: Measurement of Airborne Sound Insulation

TS EN ISO 717-1 Acoustics-Rating of Sound Insulation in Buildings and of Building Elements
Part 1: Airborne Sound Insulation

4. TEST DATE AND PARTICIPANTS

Test was performed on 04 / 03 / 2016 with the following participants:

Mr. Öner ARSLAN	FTI	Laboratory Manager
Mr. Serhat ÇOLAK	FTI	Testing Manager
Miss. Nilay BULUT	FTI	Testing Engineer

5. DESCRIPTION OF TEST SAMPLE

Type of sample	Window System
System Name	BM 60
Dimension of Sample (L x H)	1244 mm x 1244 mm
Surface area of Sample	1,55 m ²
Type of Operable Part	1
Dimensions of Operable Part	567 mm x 1152 mm
Surface Area of Operable Part	0,65 m ²
Sash Glass Type	6 mm Float Transparent Glass + 16 mm air space + 6 mm Float Transparent Glass
Fixed Glass Type	6 mm Float Transparent Glass + 16 mm air space + 6 mm Float Transparent Glass

Please refer to the annexes for the system details.

6. CONDITIONS

Local Temperature	17	°C
Humidity	52	%
Atmospheric Pressure	1009	mbar

7. TEST PERFORMANCE

7.1. Test Results

According to the airborne sound insulation tests conducted in the laboratory, weighted sound reduction index rated according to TS EN ISO 717-1 are given here below.

$$R_w (C ; C_{tr}) = 37,0 (-1,9 ; -4,5) \text{ dB} / 2016.566.A01 / 04.03.2016$$

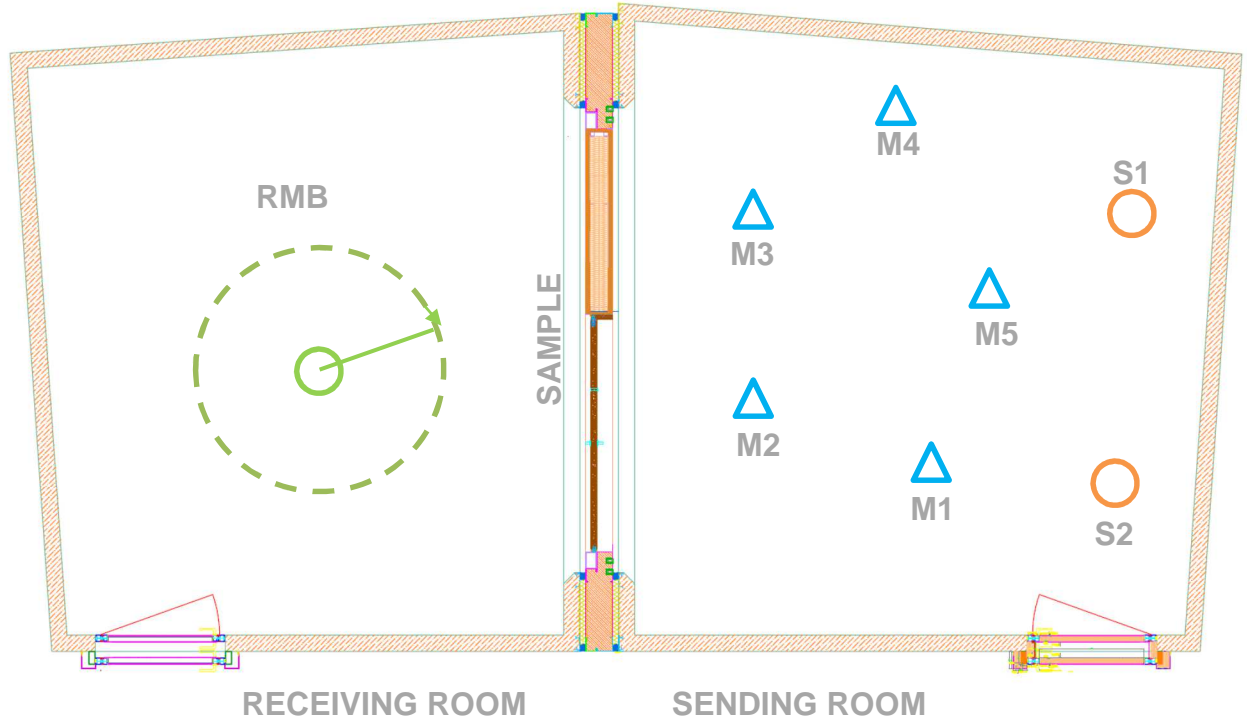
7.2. Mounting in the Laboratory

Test Opening Size	1244 mm x 1244 mm
Test Setup	Modular test wall incorporating openings with differing size. Laboratory conforms to TS EN ISO 10140-2 suppressed flanking transmission suite conditions. Test wall frame is mounted with 50 mm continuous acoustic break filled with rock wool insulation and sealed with elastic PU foam and non setting mastic on all sides. The

	insert frame was adapted to the necessary test area by utilization of a high sound insulation light weight wall detail.
Mounting of The Specimen	Carried out by staff of client.
Mounting Conditions	Test specimen was fitted with foam insulation and sealed on both sides with non setting mastic.

7.3. Testing Conditions

Source Room	Volume= 105,8 ; RT < 1,7 s
Receiving Room	Volume= 95,1 ; RT < 1,5 s
Test Opening in The Wall	Largest opening 3890 x 2570 mm (9,99 m ²)
Depth of Test Opening	250 mm
Total Partition Wall Area	21,07 m ²
Maximum Sound Insulation	R'max =59 dB
Sound Source	Dodecahedron loudspeaker placed in two positions inside the source room
Microphone System	Rotating microphone positioned inside the receiving room with 60s/rotation. A microphone with tripod placed in five different positions inside the source room.
Source Signal	Wideband white noise
Filters	One-third octave band filters with centre frequencies within the range of 50-5000Hz



- S 1,2 : LOUDSPEAKER POSITION**
- M 1,2,3,4,5 : MICROPHONE POSITION**
- RMB : ROTATING MICROPHONE BOOM**

Figure 1. The figure of microphone, loudspeaker and sample positions

7.4. Test Equipment

Instrument	Type	Manufacturer
Acoustic Analyzer	NOR 140	Norsonic
Sound Level Calibrator	NOR 1251	Norsonic
Sound Source	NOR 270	Norsonic
Amplifier	NOR 280	Norsonic
Rotating Microphone Boom	NOR 265	Norsonic
Microphone Ext. Cables	NOR 1494	Norsonic
Temperature-Humidity Sensor	TFA Dostmann REF 486	TFA Dostmann/Wertheim

7.5. Detailed Result

Results obtained from the airborne sound insulation tests of the specimen are given in the following graphs prepared according to TS EN ISO 717-1.

Background noise correction was not necessary.

8. PICTURES OF TEST SAMPLE

The view from the sending room



The view from the receiving room



9. RESULT

	MOCKUP	RESULT	CLASSIFICATION
TS EN ISO 10140-2	BM 60 Window System	$R_w (C ; C_{tr}) = 37,0 (-1,9 ; -4,5) \text{ dB}$	-

Apparent sound reduction index according to ISO 10140-2

Laboratory measurements of airborne sound insulation of building elements

Client: _____ Date of test: 04.03.2016

Manufacturer: _____

Test room identification: _____

Test specimen mounted by: _____

Product identification: _____

Description of the specimen: Sample size : 1244 x 1244 mm (External)

Size of test opening:

 1,55 m²

Mass per unit area:

 kg/m²

Temperature:

°C

Air humidity:

%

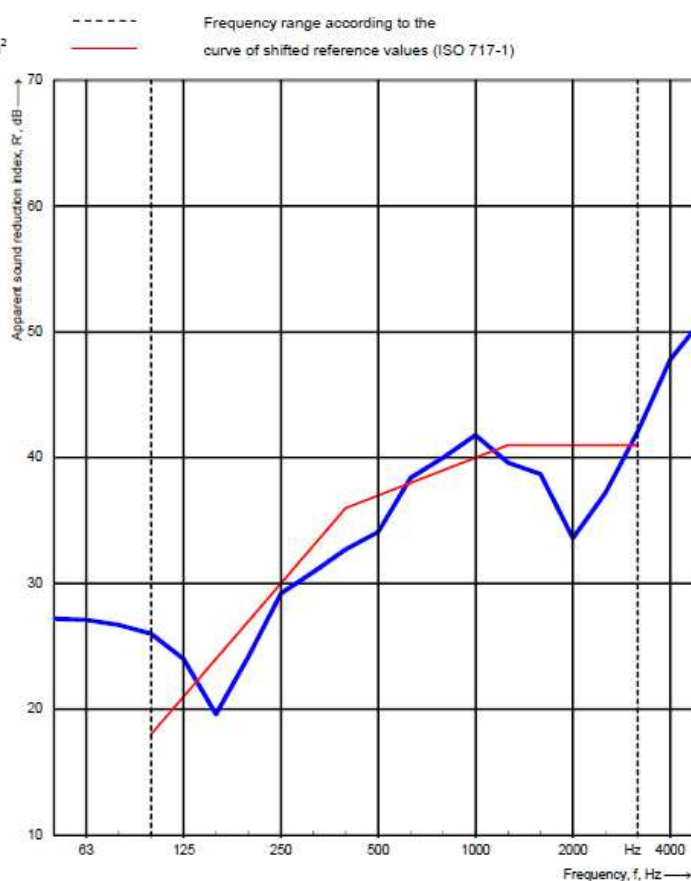
Source room volume:

 105,8 m³

Receiving room volume:

 95,1 m³

Frequency f [Hz]	R' 1/3 octave [dB]
50	27,2
63	27,1
80	26,7
100	26,0
125	24,0
160	19,6
200	24,2
250	29,2
315	30,9
400	32,7
500	34,1
630	38,4
800	40,0
1000	41,8
1250	39,6
1600	38,7
2000	33,6
2500	37,2
3150	42,1
4000	47,8
5000	51,0



Rating according to ISO 717-1

 $R'_w(C;C_T) = 37,0$ (-1,9 ; -4,5) dB

Evaluation based on laboratory measurement results obtained in one-third-octave bands by an engineering method.

 $C_{50-3150} = -1,9$ dB $C_{50-5000} = -0,9$ dB $C_{100-5000} = -0,9$ dB
 $C_{T,50-3150} = -4,8$ dB $C_{T,50-5000} = -4,8$ dB $C_{T,100-5000} = -4,5$ dB

Company: _____

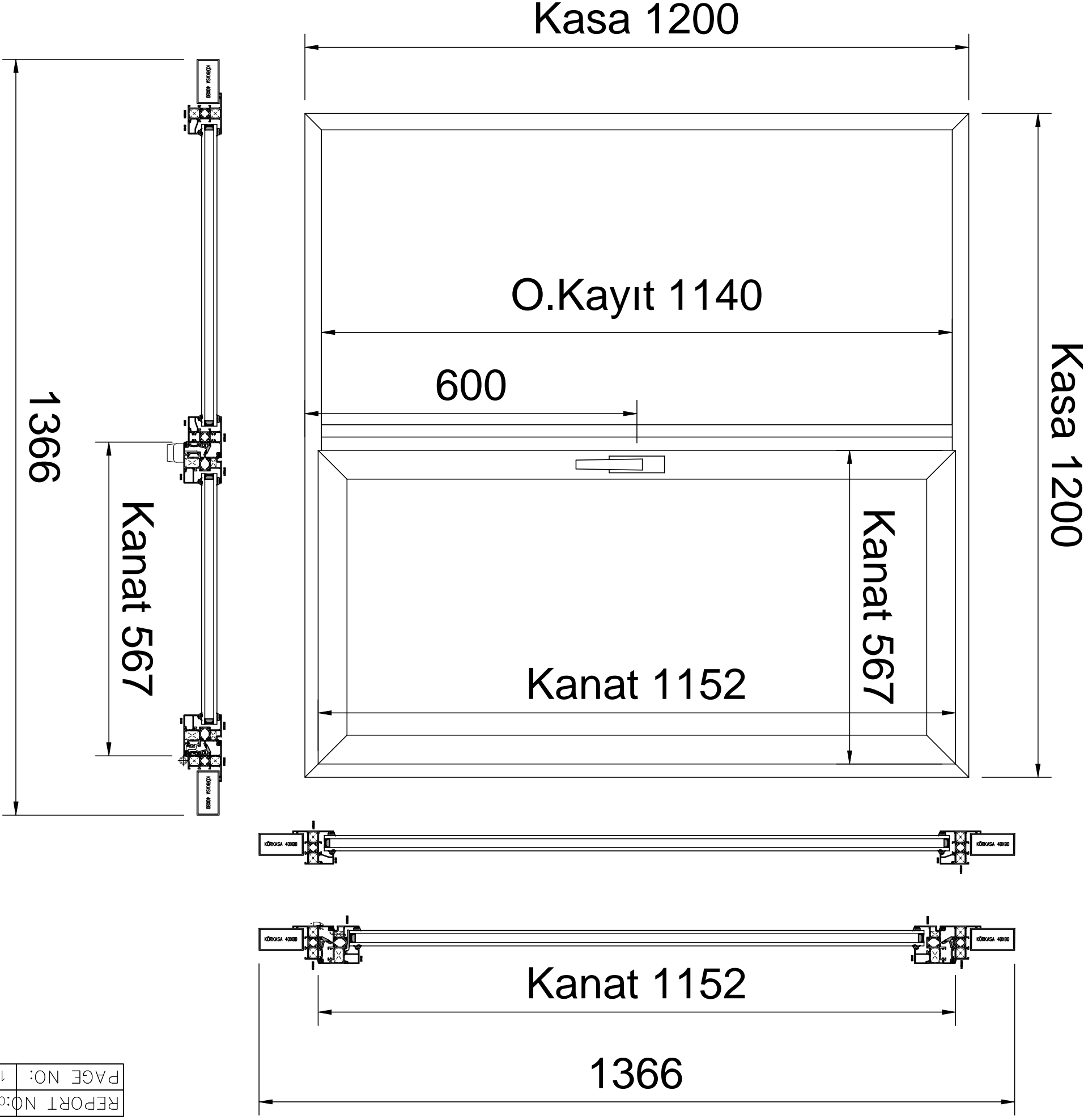
No. of test report: 2016.568.A01

Date: 04.03.2016

Signature: _____

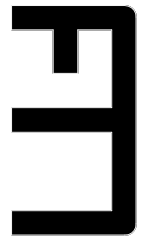
10. TEST PHOTOS

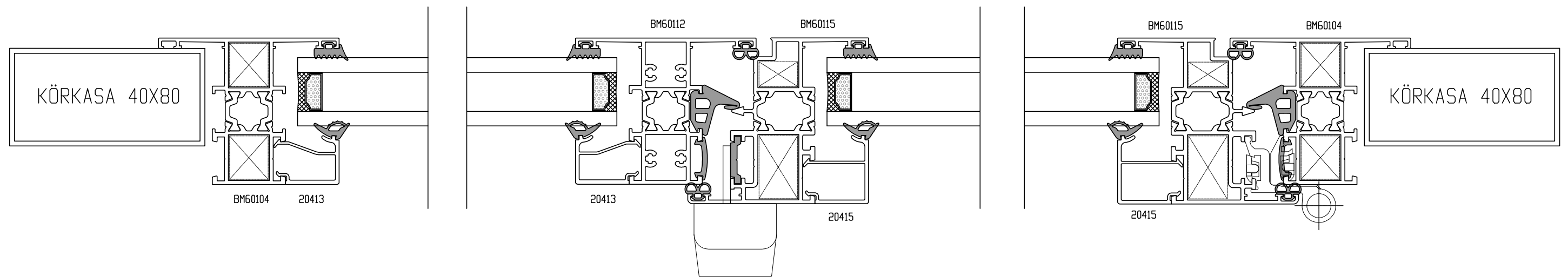
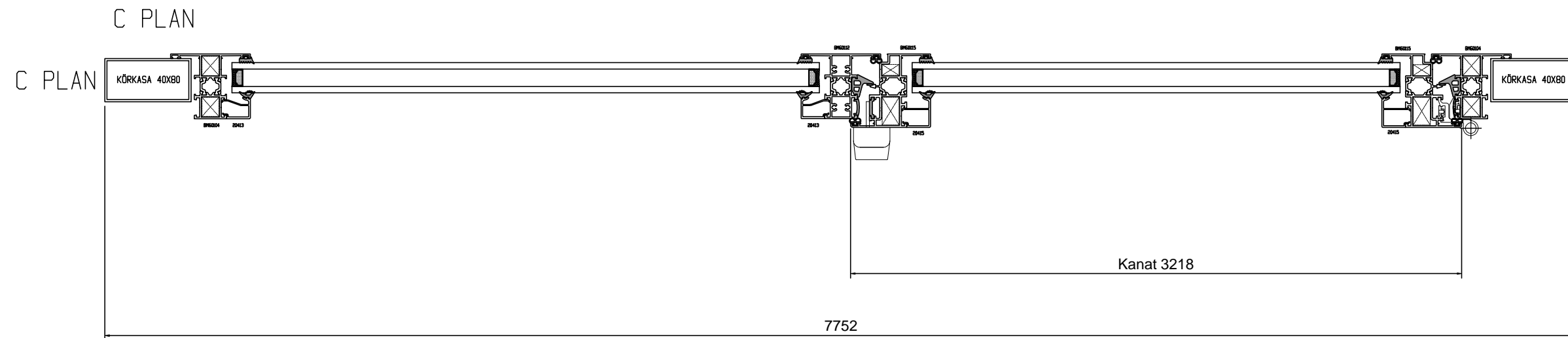
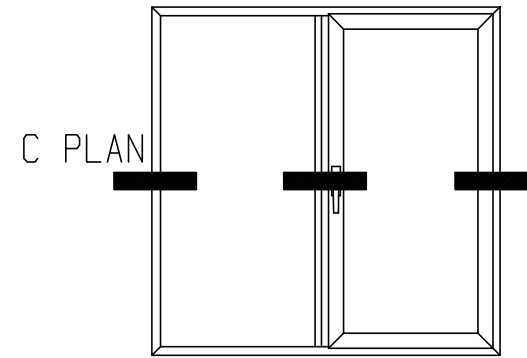




NOTIFIED BODY NO:	NB-2547	PROJECT	BM 60 WINDOW SYSTEM		
ACCREDITATION NO:	AB-0531-T	GENERAL PROFILE DETAILS			
REPORT NO:	060.532.1 / 2016	Project Code:	2016.566	DATE:	23.03.2016
PREPARED BY:	M.GOL	Client:	BURAK ALUMINYUM SAN. VE TIC. AS.	REV.NO:	A
CONTROL BY:	S. ÇOLAK	Explanation:	ACOUSTIC TEST		

REPORT NO:060.532.1/2016
PAGE NO: 10/13

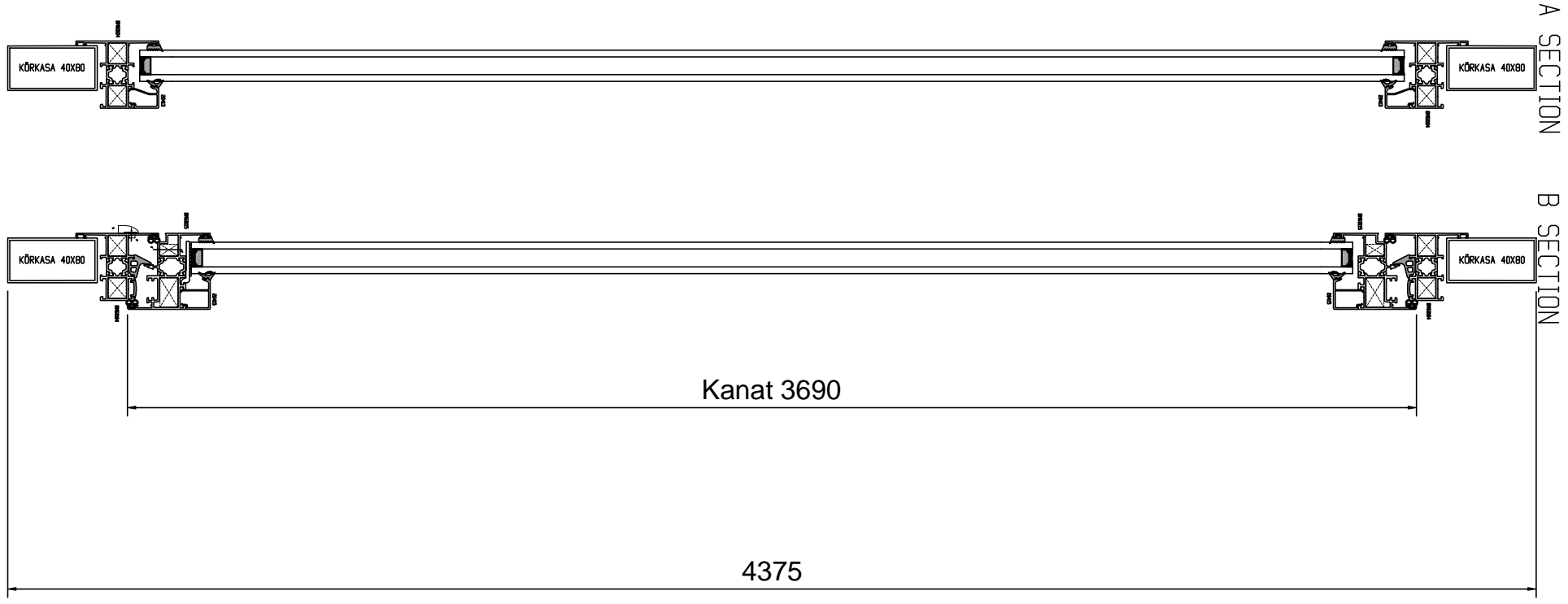
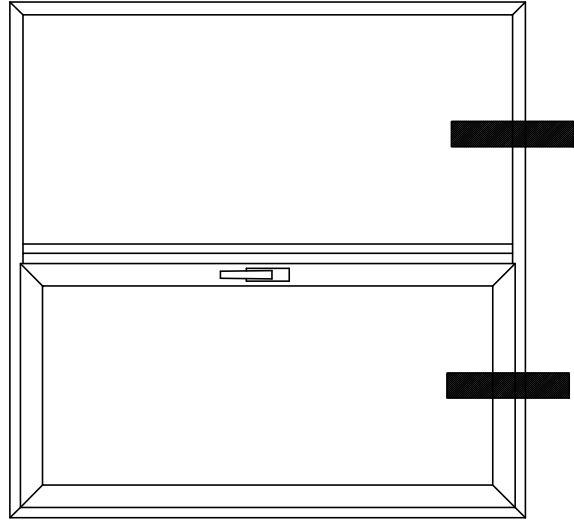




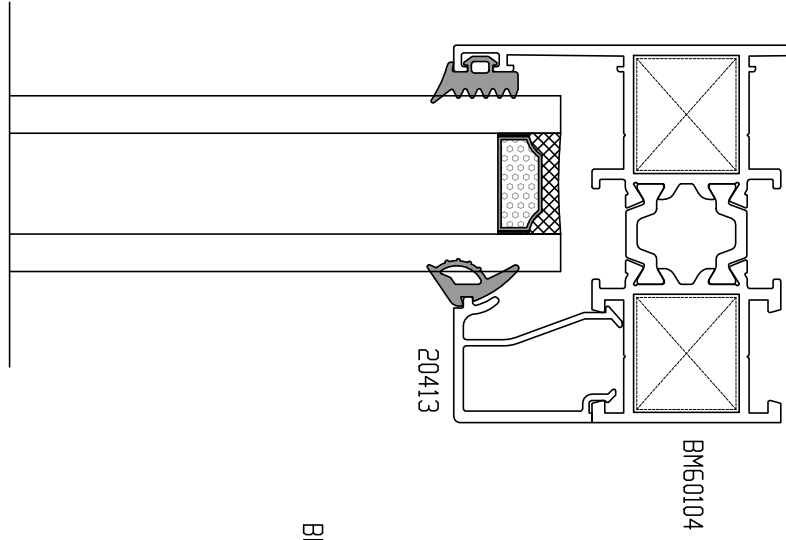
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ACCREDITATION NO	AB-0531-T	PLAN DETAILS			
REPORT NO	060.532.1/2016	SAMPLE NO	2016.566	DATE	23.03.2016
PREPARED BY	M.GOL	CLIENT	BURAK ALUMINYUM SAN. VE TIC. AS.	REV.NO	A
CONTROL BY	S. ÇOLAK	EXPLANATION	ACOUSTIC TEST		



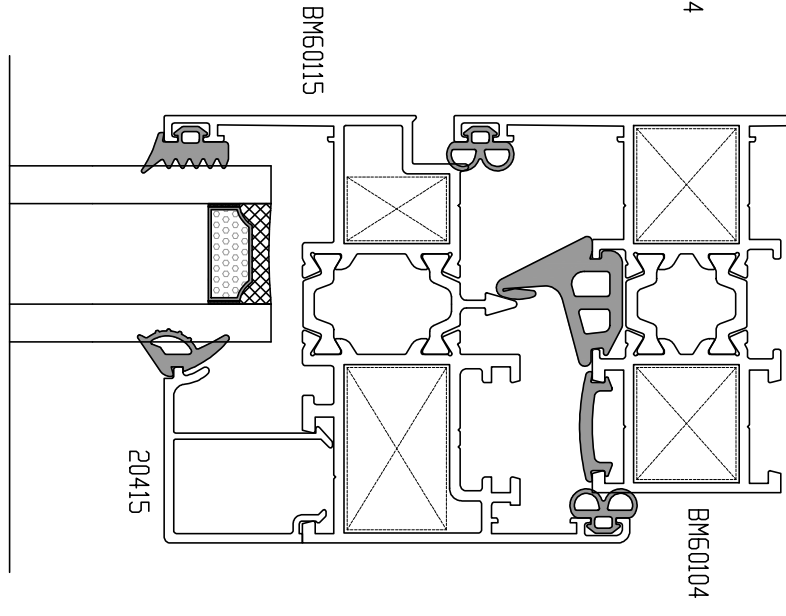
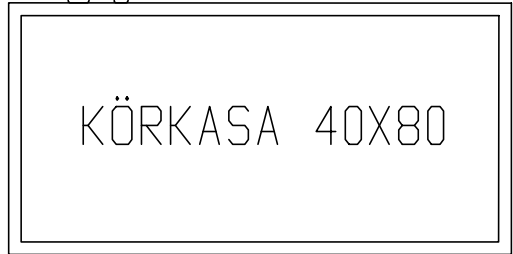
A SECTION B SECTION



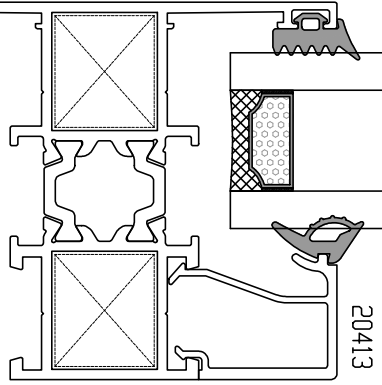
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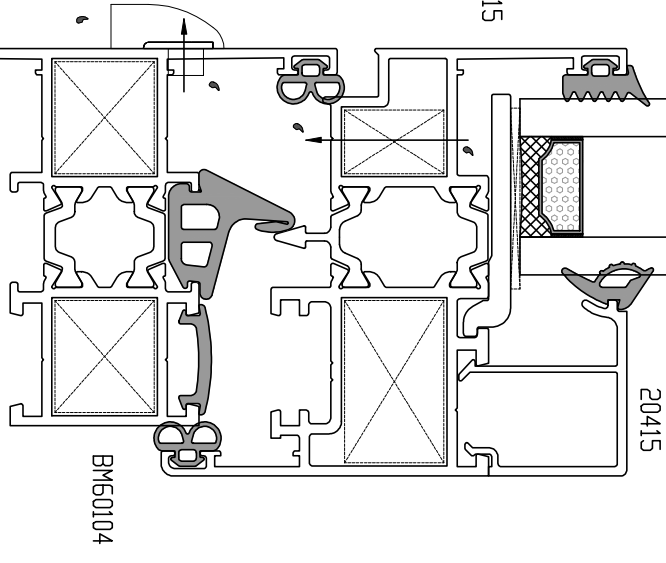
B SECTION



BM60104



BM60115

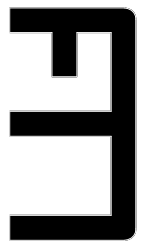


BM60104

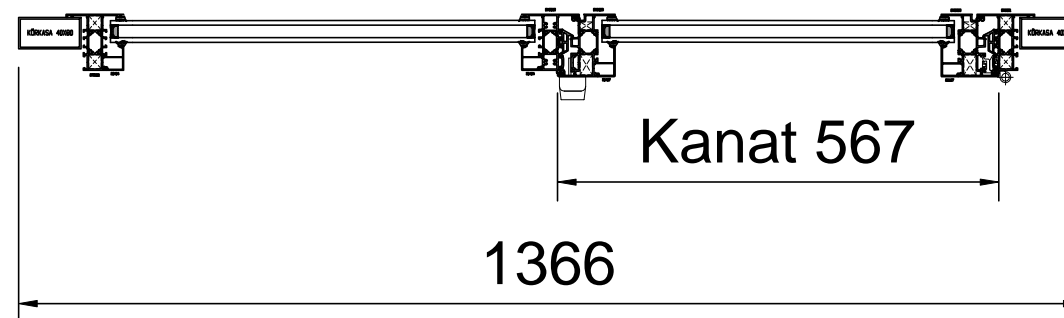
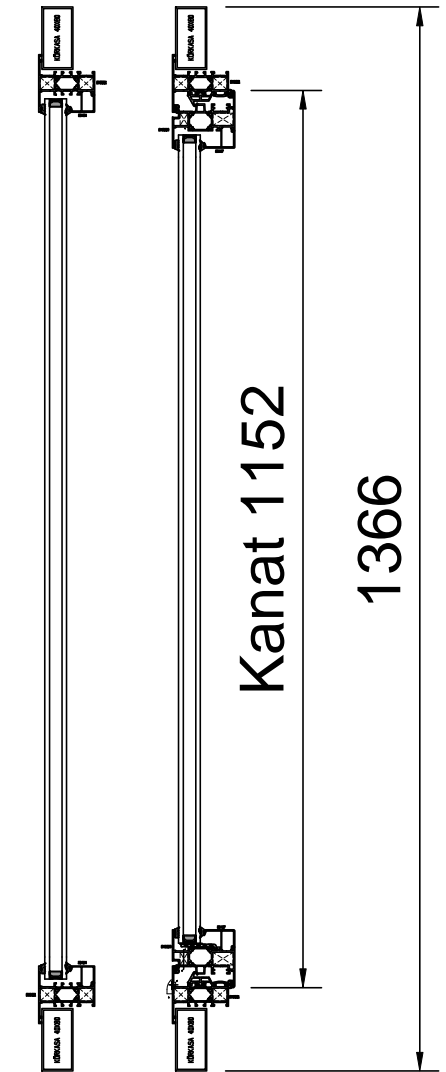
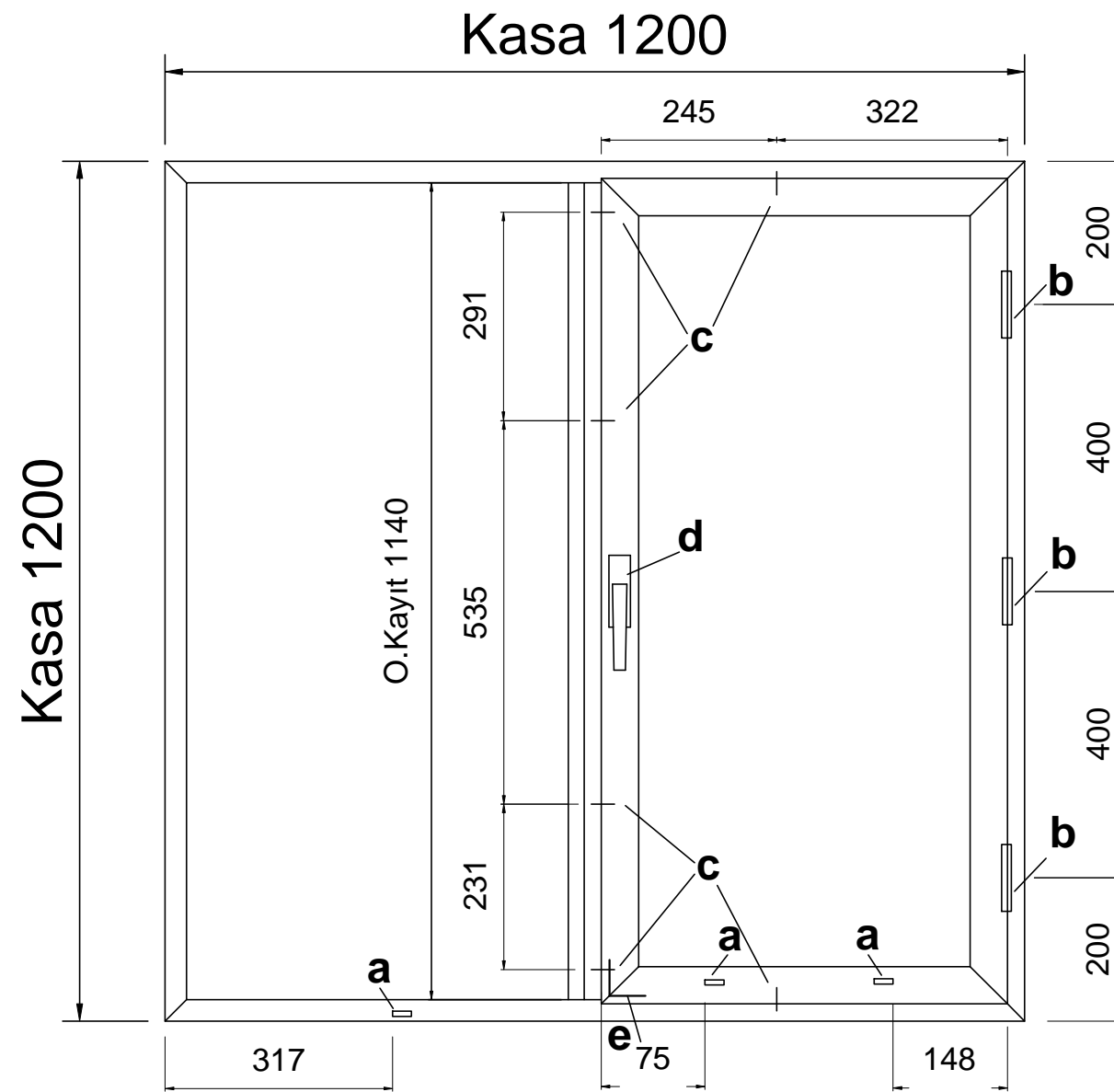
REPORT NO:060.532.1/2016	PAGE NO: 12/13
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NOTIFIED BODY NO: NB-2547	ACCREDITATION NO: AB-0531-T
REPORT NO: 060.532.1/2016	PREPARED BY: M.GOL
CONTROL BY: S. ÇOLAK	

detail:	BM 60 WINDOW SYSTEM
Project Code: 2016.566	FIXED AND SASH SECTION DETAILS
Client: BURAK ALUMINYUM SAN. VE TIC. AS.	DATE: 23.03.2016
Explanation: ACOUSTIC TEST	REV.NO: A



a- 6x25mm drainage hole
b- 413004 Giesse Flash Base Window hinge
c- locking points 733002-pin 733009-locking part
d- handle
e- 733003 - corner mechanism



NOTIFIED BODY NO	NB-2547	DETAIL:	BM 60 WINDOW SYSTEM SASH MECHANISM DETAILS		
ACCREDITATION NO	AB-0531-T	SAMPLE NO	2016.566	DATE	23.03.2016
REPORT NO	060.532.1/2016	CLIENT	BURAK ALUMINYUM SAN. VE TIC. AS.	REV.NO	A
PREPARED BY	M.GOL	EXPLANATION	ACOUSTIC TEST		
CONTROL BY	S. ÇOLAK				

