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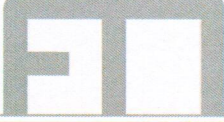
FTI Fasad Teknoloji Merkezi / FTI Façade Testing Institute
NB 2547 no'lu AB Onaylanmış Kuruluşu / EU Notified Body Nr. 2547

Merkez / Head Office

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DENEY SERTİFİKASI / Test Certificate



Test
TS EN ISO/IEC 17025
AB-0531-T

AB-0531-T

060.416.1 / 2015

07 / 2015

Üreticinin Adı ve Adresi / Manufacturer's Name & Address : BURAK ALUMİNYUM San. ve Tic. A.Ş.

Orta Mah. Hamdi Efendi Sk. No: 16 D:32 İztower Soğanlık-Kartal / İstanbul / TÜRKİYE

Ürün Kabul Tarihi : 25 / 06 / 2015

Acceptance Date of Item

FTI Referans No : 2015.478

FTI Reference No

Ürün Tipi Kimlik Kodu / Identification Code of the Product Type : BM 72 - Hinged Window System

İlgili Ürün Standardı : TS EN 14351-1+ A1

Relevant Product Standard

Performansın Değişmezliğinin Değerlendirilmesi ve Doğrulanması Sistemi : System 3

System of Assessment and Verification of Constancy of Performance

Uygulanan Test Standartları : TS EN ISO 10140-2

Applied Test Standards

TS EN ISO 717-1

Sonuçlar / Results : $R_w (C ; C_{tr}) = 37,5 (-2,1 ; -5,4)$ dB

Test Tarihi / Date of Test

27 / 07 / 2015

Sayfa Sayısı / Number of Pages

1 / 17

Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği (EA) ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanınma anlaşması imzalamıştır.

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.

Bu sertifika, NB-2547 no'lu Avrupa Birliği Onaylanmış Kuruluşu FTI Fasad Teknoloji Merkezi tarafından 305/2011/AB Yapı Malzemeleri Yönetmeliği doğrultusunda verilmektedir.

This certificate is issued by FTI Façade Testing Institute - European Union Notified Body Nr. 2547 according to the Construction Products Regulation 305/2011/EU.

Mühür / Seal



Tarih / Date of Issue

27 / 07 / 2015

NB 2547 no'lu AB Onaylanmış Kuruluşu adına / on behalf of EU NB 2547

Onaylanmış Kuruluş Direktif Yöneticisi / Directive Manager of Notified Body

Öner ARSLAN

F.15.24 REV. NO.B TEMMUZ 2015



TEST REPORT

Report Number : 060.416.1 / 2015

Report Date : 27 / 07 / 2015

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

Product : BM 72 – Hinged 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 name is BM 72 – Hinged Window System which has been produced by Burak Alüminyum San. ve Tic. A.Ş.

Test was carried out on 27 / 07 / 2015 for the determination of acoustic performance.

Test sample has been sent to FTI Laboratory on 25 / 06 / 2015.

2. CLIENT

Burak Alüminyum San. ve Tic. A.Ş.

Orta Mah.Hamdi Efendi Sok. No:16 D:32 İztower - 34880

Soğanlık - Kartal / İstanbul / TÜRKİYE 34540

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 060.416.1 / 2015 by Ayfer DİNCEL.

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 27 / 07 / 2015 with the following participants:

Mr. Öner ARSLAN	FTI	Directive Manager of Notified Body
Mr. Serhat ÇOLAK	FTI	Testing Manager
Mrs.Ayfer DİNCEL	FTI	Testing Engineer
Mr. Sinan BAYRAKTAR	FTI	Testing Engineer
Miss. Nilay BULUT	FTI	Testing Engineer

5. DESCRIPTION OF TEST SAMPLE

Type of sample	Hinged Window System
System Name	BM 72
Dimension of Sample (L x H)	1200 mm x 1200 mm



Surface area of Sample	1,44 m ²
Dimensions of Operable Part (1)	567 mm x 1152 mm
Surface Area of Operable Part (1)	0,65 m ²
Glass Type	External glass 6 mm flat transparent glass + 16 HB + Internal glass 6 mm flat transparent glass

6. CONDITIONS

Local Temperature	28	°C
Humidity	66	%
Atmospheric Pressure	1008,0	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.

$$R_w (C ; C_{tr}) = 37,5 (-2,1 ; -5,4) \text{ dB} / 2015.478.17 / 27.07.2015$$

7.2. Mounting in the Laboratory

Test Opening Size	1200 mm x 1200 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 rockwool 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 utilisation 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
Thermo-Hygro	28°C ; 66% RH ;1008,0 mbar

7.4. Test Equipment

Instrument	Type	Manufacturer
Acoustic Analyser	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. PICTURE OF TEST SAMPLE

View from the source room



View from the receiving room



9. RESULT

	MOCKUP	RESULT	CLASSIFICATION
TS EN ISO 10140-2	BM 72 – Hinged Window System	$R_w (C ; C_{tr}) = 37,5 (-2,1 ; -5,4) dB$	-



Apparent sound reduction index according to ISO 10140-2

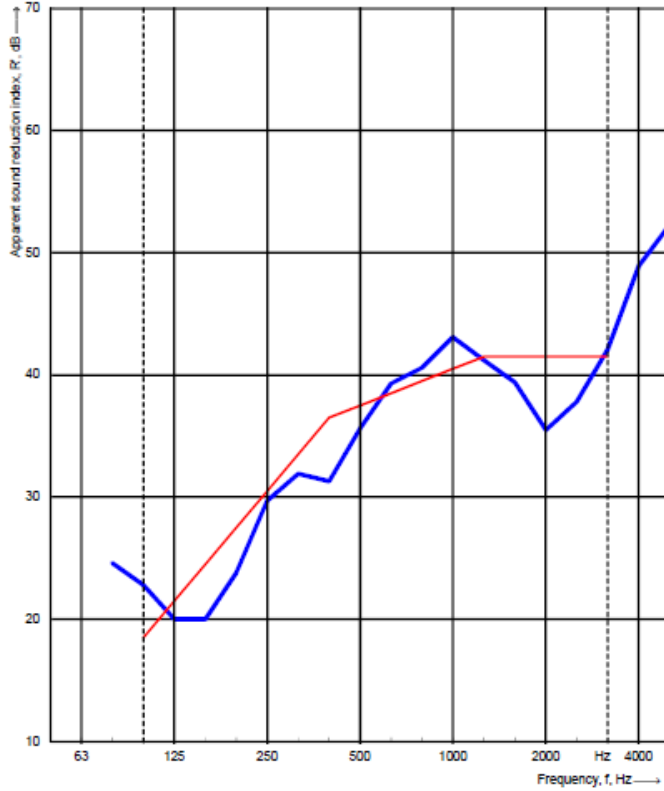
Laboratory measurements of airborne sound insulation of building elements

Client: BURAK ALUMINYUM SAN. VE TIC. A.Ş. Date of test: 27.07.2015
 Manufacturer:
 Test room identification:
 Test specimen mounted by:
 Product identification: BM 72 - Hinged Window System
 Description of the specimen: 1200mm x 1200mm

Size of test opening:
 Mass per unit area:
 Temperature:
 Air humidity:
 Source room volume:
 Receiving room volume:

1,44 m² - - - - - Frequency range according to the
 kg/m² - - - - - curve of shifted reference values (ISO 717-1)
 °C
 %
 105,8 m³
 95,1 m³

Frequency f [Hz]	R' 1/3 octave [dB]
50	
63	
80	24,6
100	22,8
125	20,0
160	20,0
200	23,8
250	29,7
315	31,9
400	31,3
500	35,6
630	39,3
800	40,6
1000	43,1
1250	41,2
1600	39,4
2000	35,5
2500	37,8
3150	42,1
4000	48,9
5000	52,3



Rating according to ISO 717-1
 $R'_{w}(C;C_w) = 37,5$ (-2,1 ; -5,4) dB
 Evaluation based on laboratory measurement results obtained in one-third-octave bands by an engineering method.
 $C_{50-3150} =$ dB $C_{50-5000} =$ dB $C_{100-5000} = -1,1$ dB
 $C_{tr,50-3150} =$ dB $C_{tr,50-5000} =$ dB $C_{tr,100-5000} = -5,4$ dB

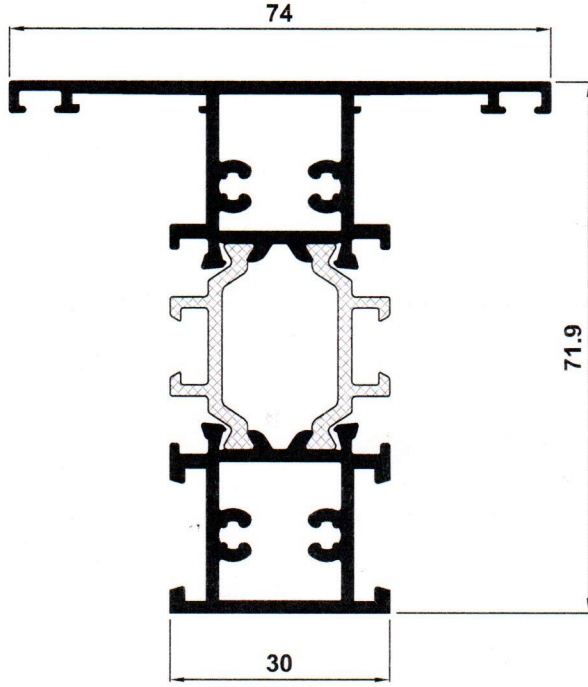
Company:
 No. of test report: 2015.478.17
 Date: 27.07.2015 Signature:

BM 72

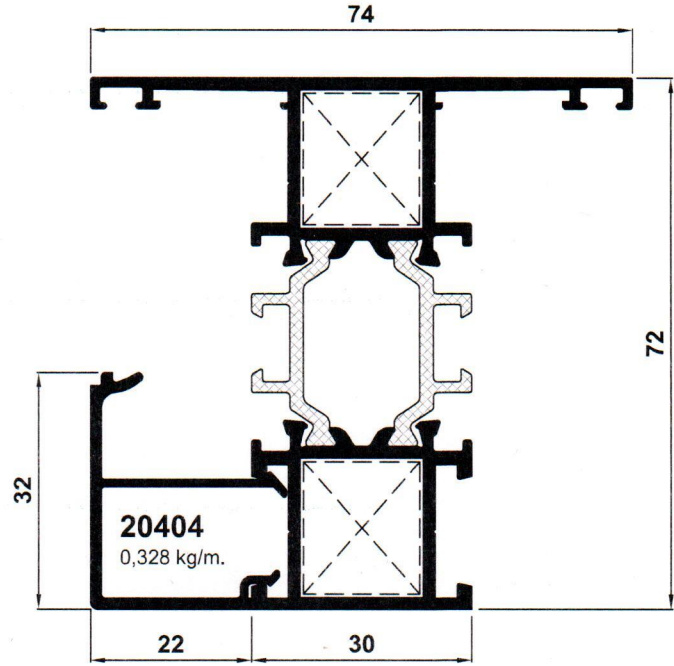
YÜKSEK PERFORMANSLI MENTEŞELİ DOĞRAMA SİSTEMİ

YENİ TASARIM

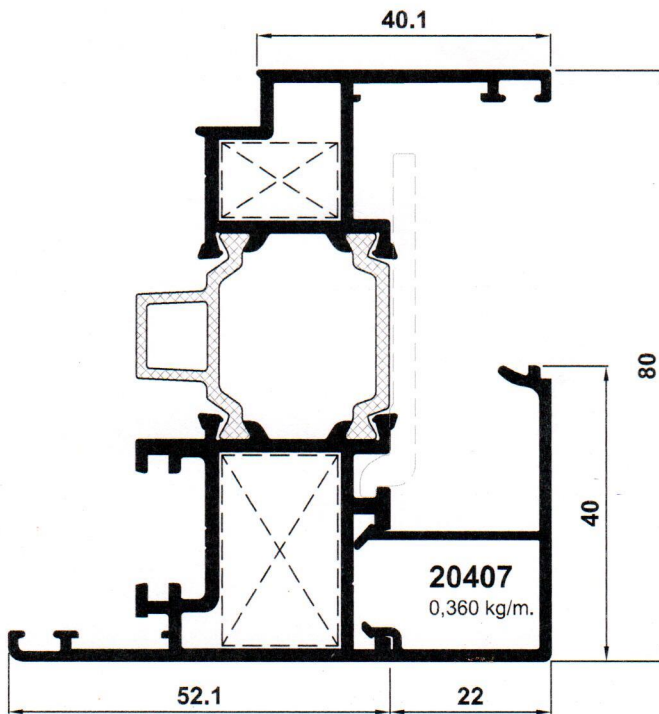
BM8002 (1,681 kg/m.)



BM8001 (1,496 kg/m.)



BM8003 (1,636 kg/m.)

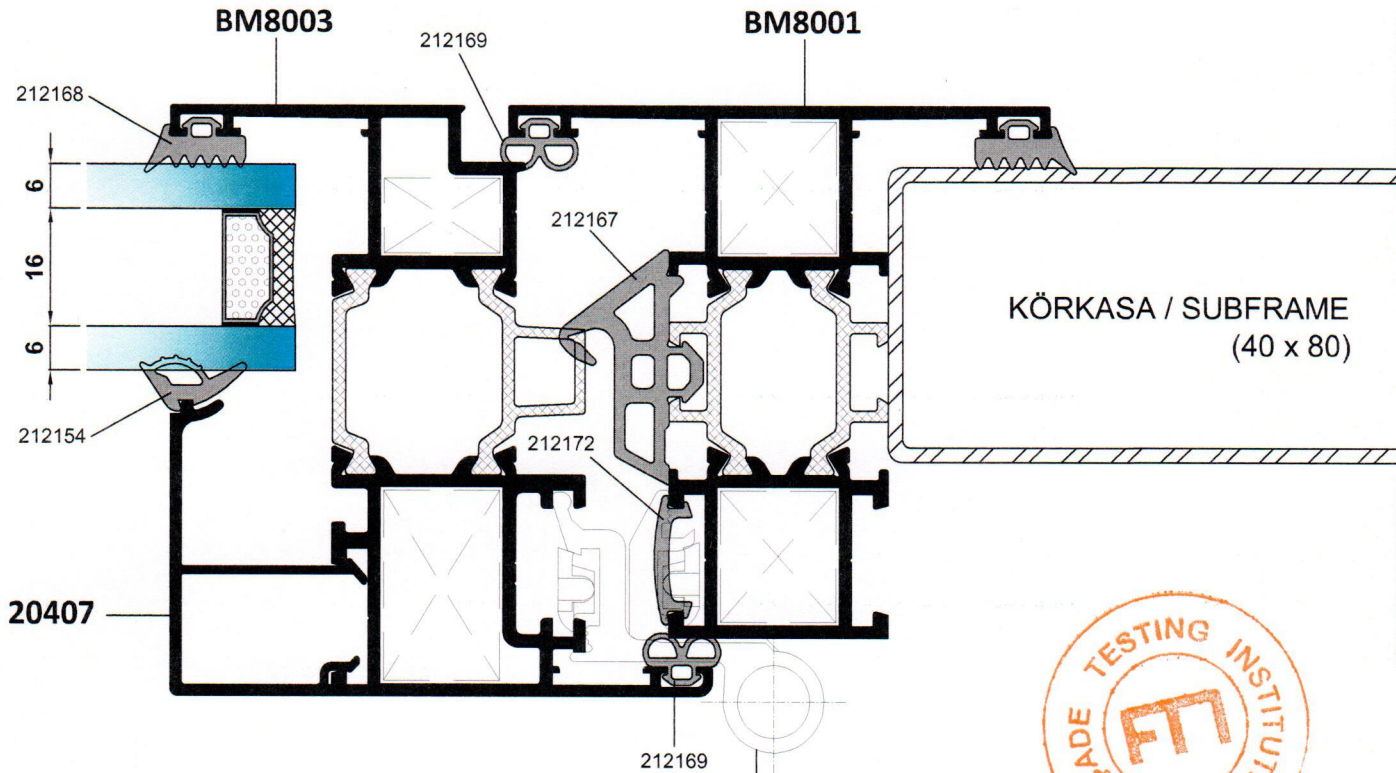
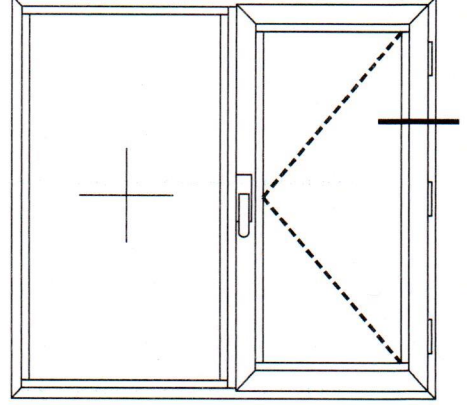


burak
alüminyum

BM 72

YÜKSEK PERFORMANSLI MENTEŞELİ DOĞRAMA SİSTEMİ

YENİ TASARIM



413004

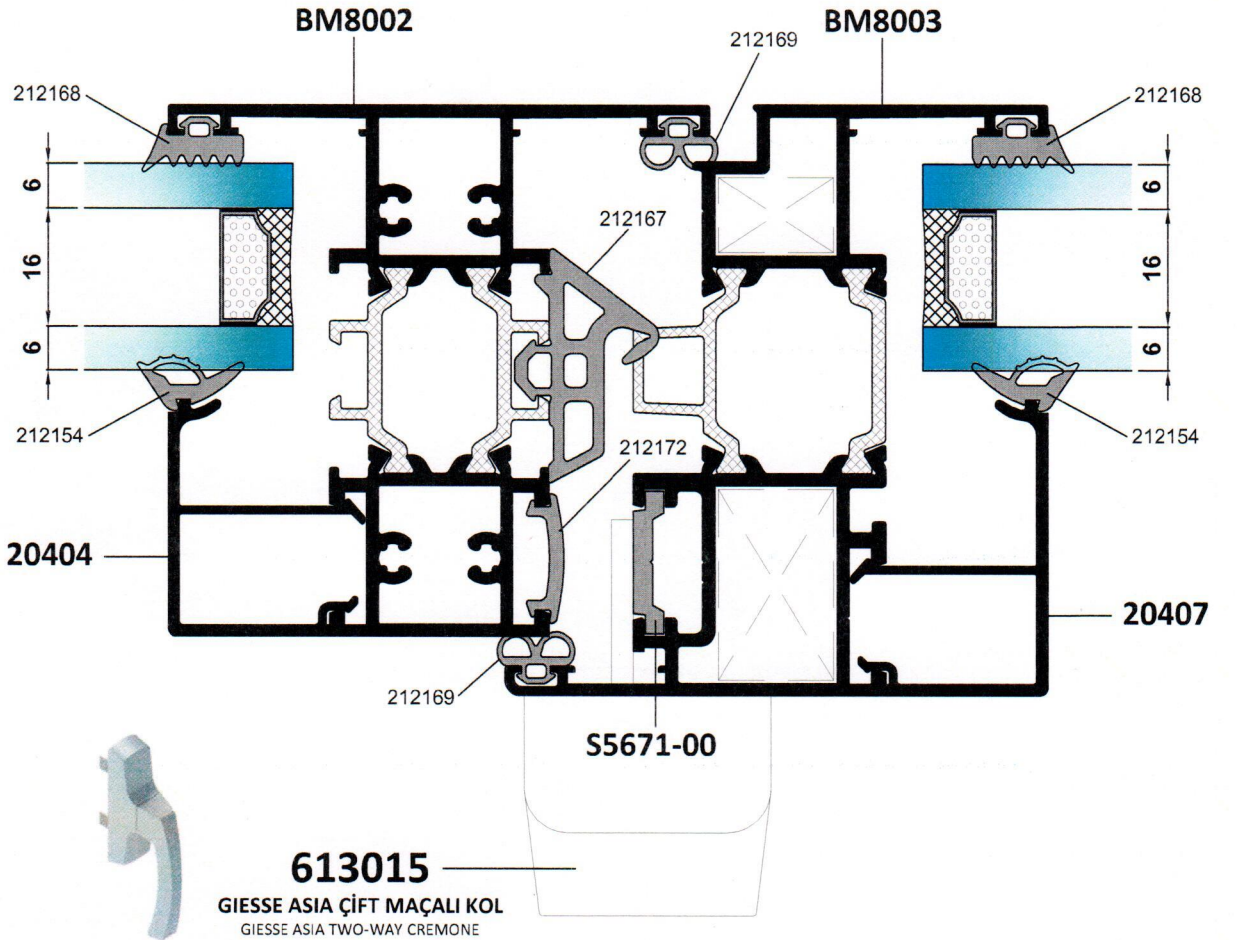
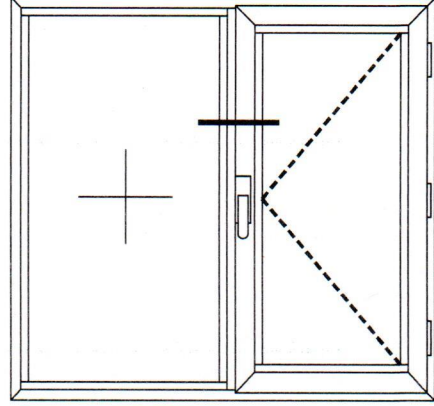
GIESSE FLASH BASE
PENCERE MENTEŞESİ
GIESSE FLASH BASE WINDOW HINGE

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alüminyum

BM 72

YÜKSEK PERFORMANSLI MENTEŞELİ DOĞRAMA SİSTEMİ

YENİ TASARIM

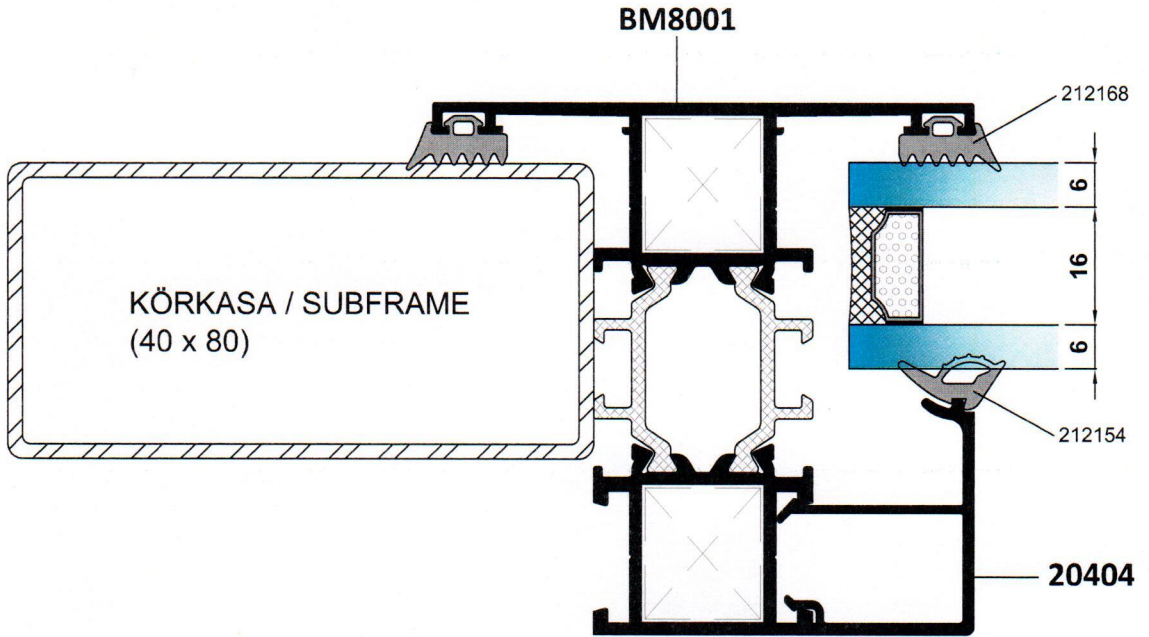
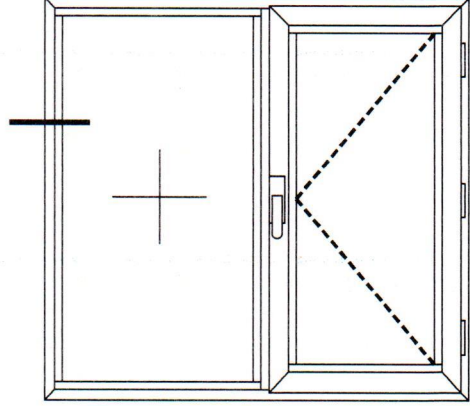


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BM 72

YÜKSEK PERFORMANSLI MENTEŞELİ DOĞRAMA SİSTEMİ

YENİ TASARIM

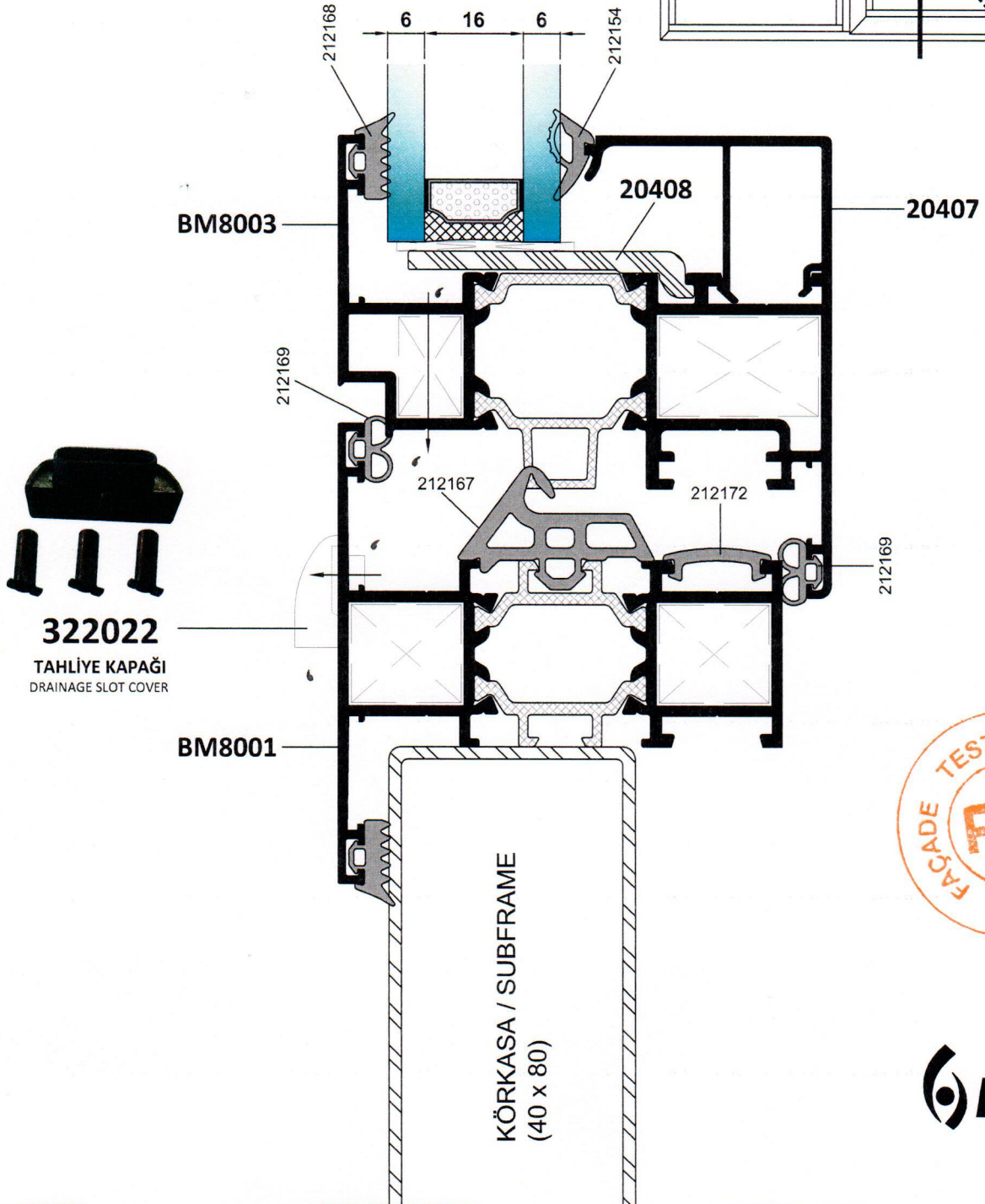
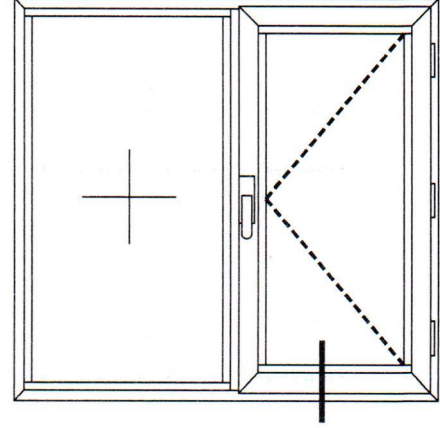


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BM 72

YÜKSEK PERFORMANSLI MENTEŞELİ DOĞRAMA SİSTEMİ

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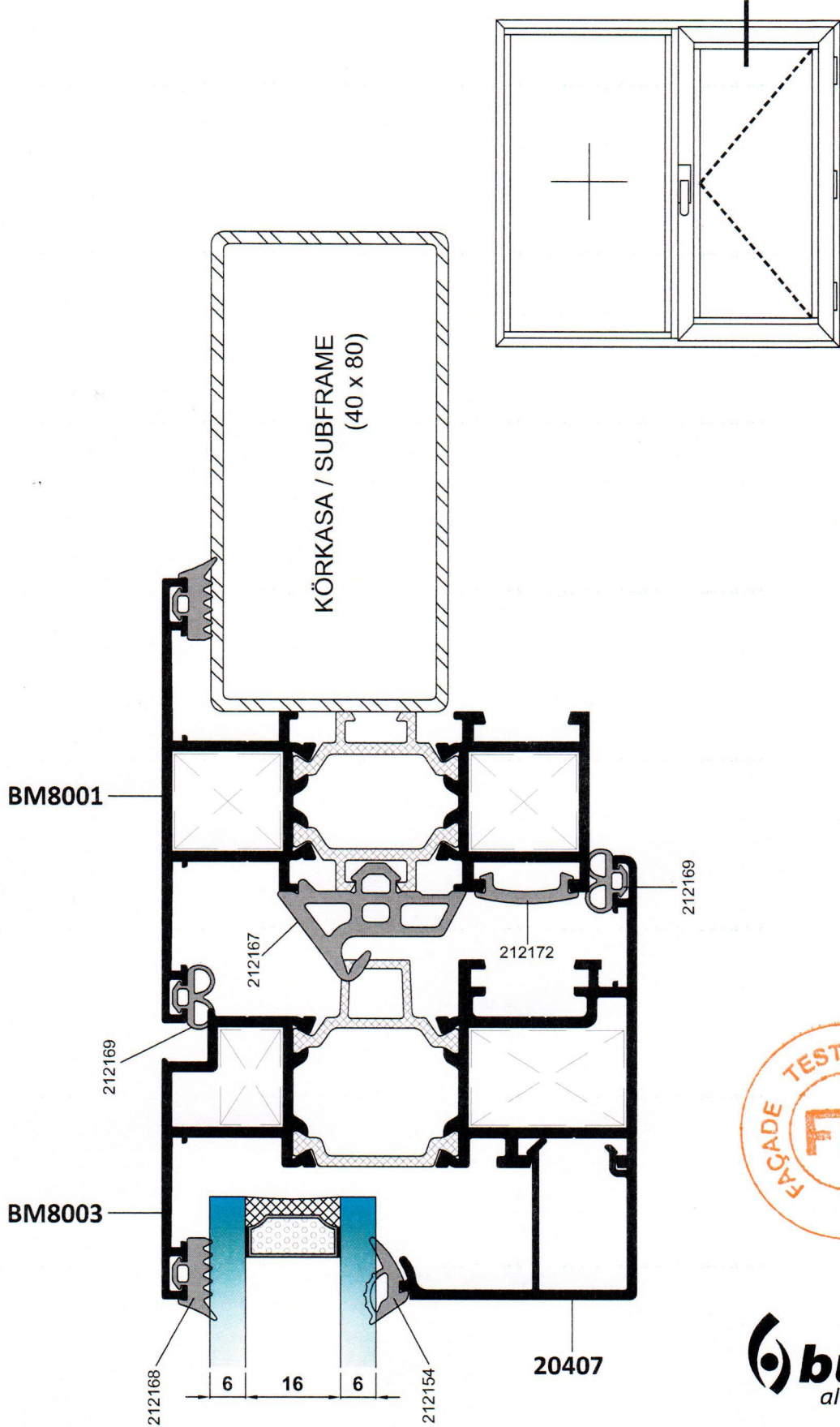


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BM 72

YÜKSEK PERFORMANSLI MENTEŞELİ DOĞRAMA SİSTEMİ

YENİ TASARIM



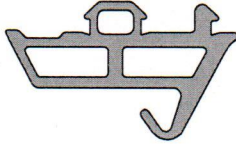


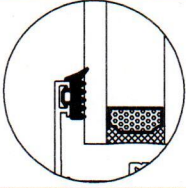

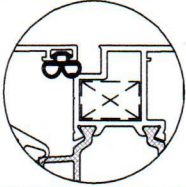

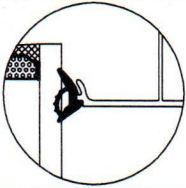

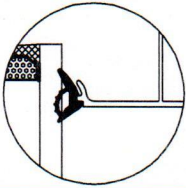

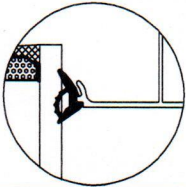

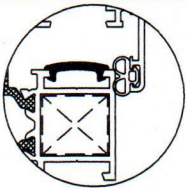
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BM 72

YÜKSEK PERFORMANSLI MENTEŞELİ DOĞRAMA SİSTEMİ

YENİ TASARIM

EPDM FİTİLLER / EPDM GASKETS

ÇİZİM / DRAWING	AKSESUAR KODU VE ÜRÜN BİLGİLERİ / ACCESSORY CODE AND PRODUCT DESCRIPTION	TAKILMA BÖLGESİ / APPLICATION AREA
	212167 ORTA BİNI FİTİLİ / CENTRAL STEP GASKET BİRİM AĞIRLIK / UNIT WEIGHT: g/m KOLİ MİKTARI / PACKAGE QUANTITY: 245 m	
	212168 DIŞ CAM FİTİLİ 4 mm / OUTER GLAZING GASKET 4 mm BİRİM AĞIRLIK / UNIT WEIGHT: 66 g/m KOLİ MİKTARI / PACKAGE QUANTITY: 230 m	
	212169 KASA FİTİLİ / FRAME GASKET BİRİM AĞIRLIK / UNIT WEIGHT: 39 g/m KOLİ MİKTARI / PACKAGE QUANTITY: 380 m	
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	212154 KAMA FİTİLİ 4 mm / SUPPORT GASKET 4 mm BİRİM AĞIRLIK / UNIT WEIGHT: 55 g/m KOLİ MİKTARI / PACKAGE QUANTITY: 270 m	
	212155 KAMA FİTİLİ 5 mm / SUPPORT GASKET 5 mm BİRİM AĞIRLIK / UNIT WEIGHT: 55 g/m KOLİ MİKTARI / PACKAGE QUANTITY: 270 m	
	212172 KAPATMA FİTİLİ / CLOSING GASKET BİRİM AĞIRLIK / UNIT WEIGHT: 52 g/m KOLİ MİKTARI / PACKAGE QUANTITY: 300 m	

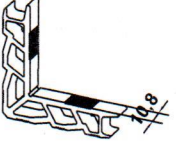
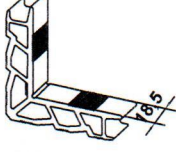
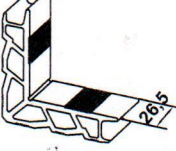


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YÜKSEK PERFORMANSLI MENTEŞELİ DOĞRAMA SİSTEMİ

YENİ TASARIM

KÖŞE TAKOZLARI / CORNER CLEATS

ÇİZİM / DRAWING	AKSESUAR KODU VE ÜRÜN BİLGİLERİ / ACCESSORY CODE AND PRODUCT DESCRIPTION	KESİM ÖLÇÜSÜ / CUTTING DIMENSION
	111207 PROFİL NUMARASI / PROFILE NUMBER: 20301 PROFİL AĞIRLIĞI / PROFILE WEIGHT: 2,564 kg/m	10,8 mm
	111208 PROFİL NUMARASI / PROFILE NUMBER: 20301 PROFİL AĞIRLIĞI / PROFILE WEIGHT: 2,564 kg/m	18,5 mm
	111209 PROFİL NUMARASI / PROFILE NUMBER: 20301 PROFİL AĞIRLIĞI / PROFILE WEIGHT: 2,564 kg/m	26,5 mm



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YÜKSEK PERFORMANSLI MENTEŞELİ DOĞRAMA SİSTEMİ

YENİ TASARIM

TEST NUMUNESİNDE KULLANILAN DİĞER AKSESUARLAR

GIESSE KÖŞE İLETİM PARÇASI
GIESSE CORNER DEVICE



733003

GIESSE AYARLI PİM
GIESSE ADJUSTABLE FASTENING PAWL



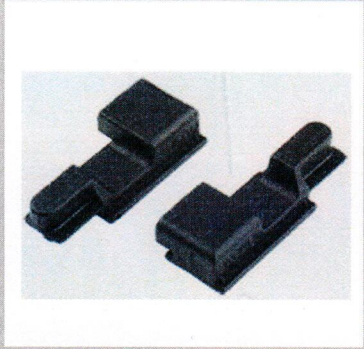
733002

GIESSE SABİT KARŞILIK
GIESSE FIXED STRIKER



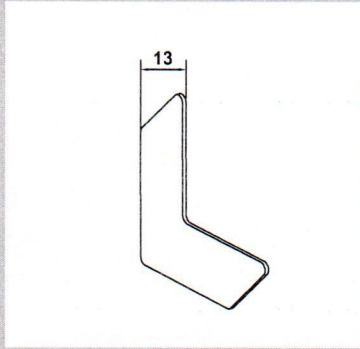
733009

GIESSE ÇİFT MAÇALI KOL
BAĞLANTILARI
GIESSE TWO-WAY DRIVE ROD COMPONENTS



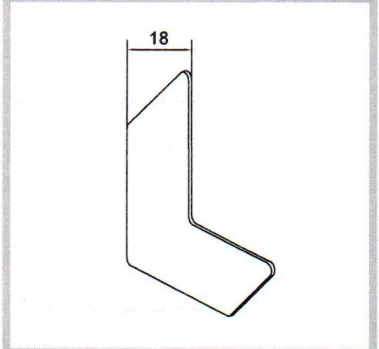
643004

KÖŞE ÇAVUŞU 13x1,5 mm
CORNER ALINGMENT 13x1,5 mm



162009

KÖŞE ÇAVUŞU 18x1,5 mm
CORNER ALINGMENT 18x1,5 mm

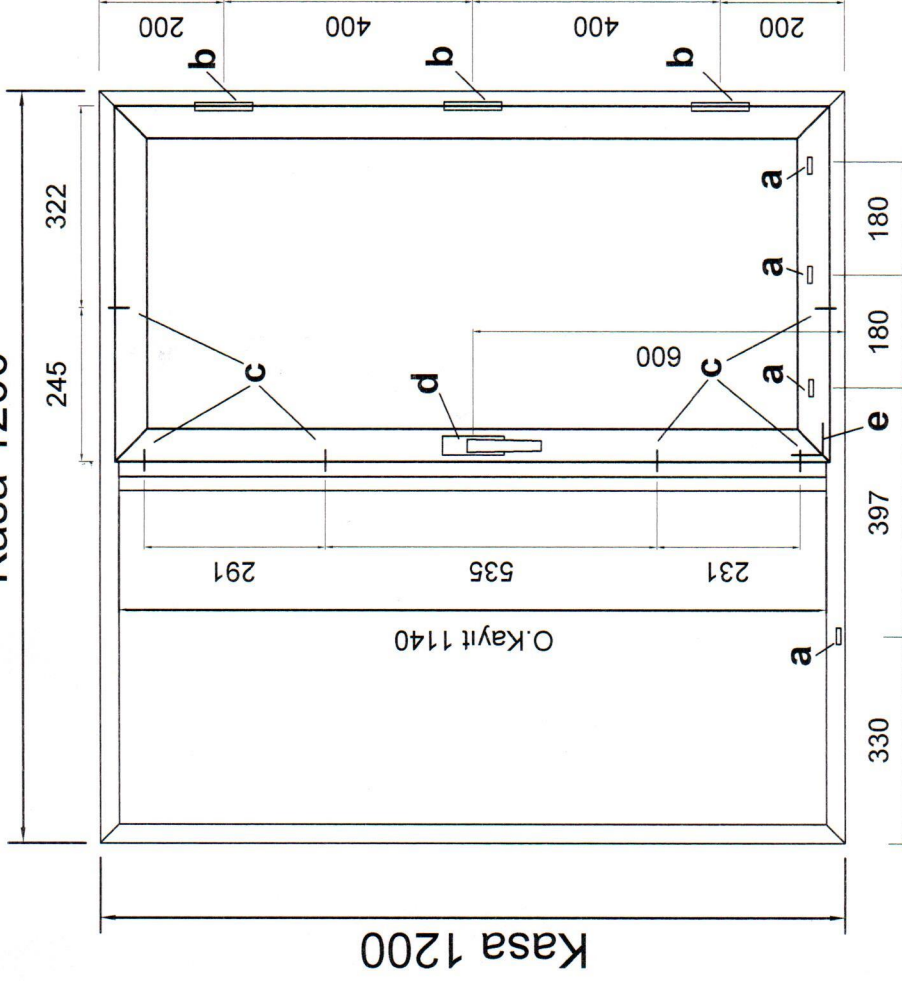


162010



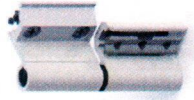
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Kasa 1200



a- 6x25mm drainage hole

b- 413004 Giesse Flash
Base Window hinge



c- locking points
733002-pin
733009-locking part

d- handle

e- 733003 - corner wedge



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