

PROFİL LİSTESİ
P 232 Sürme Seri Sistemi
Ana ve Yardımcı Profiller

<p>Sürme Kasa Profili (Çift Ray) 21206-01000</p>	<p>Sürme Kasa Profili (Tek Ray) 21206-12000</p>	<p>Eco Sürme Kasa Profili (Tek Ray) 000</p>		
<p>Sürme Kanat Profili 21206-15000</p>	<p>Orta Kayıt Profili 21205-13000</p>	<p>Kasa Profili 21205-11000</p>	<p>Yeni Sürme Kasa Profili(Çift Ray) 21206-14000</p>	
<p>Tek Cam Çıtası (4 mm) 20101-03100</p>	<p>Çift Cam Çıtası (20mm) 20101-03000</p>	<p>Isı Cam Çıtası (24mm) 20101-01300</p>	<p>Kanat Kapama Profili 20107-01000</p>	<p>Kanat Ara Bindirme 20107-03000</p>
<p>Bağ Profili 20107-02000</p>	<p>Kasa Kanal Kapama 20107-02000</p>	<p>Alüminyum Sürme Ray 34025-11020</p>	<p>Alm. Sürme Kilitleme Adaptör Profili 34025-12010</p>	<p>Alm. Sürme Kasa Cam Yuvası Kapağı 34025-13010</p>
<p>Sürme Kanat Arka Kapama Kod:20107-01100</p>	<p>Çift Ray Adaptör Profili 21206-14000</p>			

Teknik Detayları değiştirme hakkı PLASPEN'e aittir. "WİNTECH". 2009

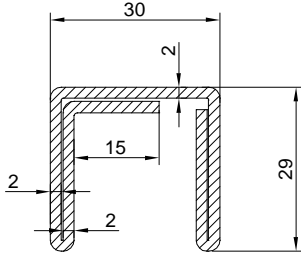
<p>PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ</p>		<p>P 232 SÜRME SERİSİ PROFİLLERİ</p>		
<p>ÖLÇEK: 1/1</p>	<p>MALZEME CİNSİ: SERT PVC</p>	<p>PLASPEN</p>	<p>SAYFALAR</p>	<p>NO:</p>

232 Destek Sacı PROFİL LİSTESİ

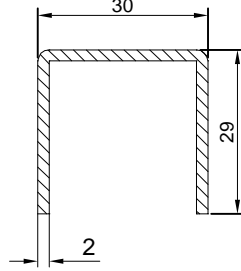
Destek Saçları

P 232 Sürme Seri Sistemi

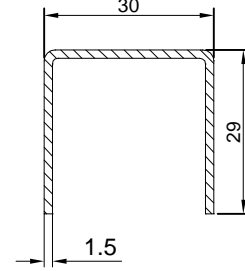
Sliding System Frame - Sash Reinforcement Profiles
Kod: 34022-12002



2mm lik $I_x = 4,0 \text{ cm}^4$
 $I_y = 2,38 \text{ cm}^4$

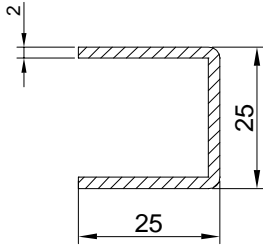


2mm lik $I_x = 2,53 \text{ cm}^4$
 $I_y = 1,45 \text{ cm}^4$



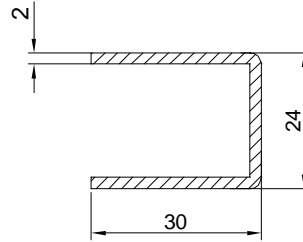
2mm lik $I_x = 1,9 \text{ cm}^4$
 $I_y = 1,1 \text{ cm}^4$

Mullion Reinforcement Profiles-Sliding System
Kod: 34022-12003



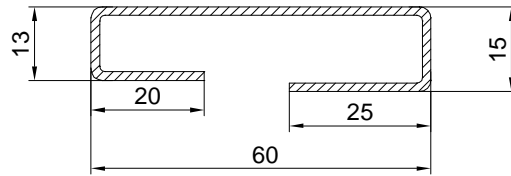
2mm lik $I_x = 1,45 \text{ cm}^4$
 $I_y = 0,9 \text{ cm}^4$

Sliding System New Frame Reinforcement Profiles
Kod: 34022-12002



2mm lik $I_x = 1,56 \text{ cm}^4$
 $I_y = 1,46 \text{ cm}^4$

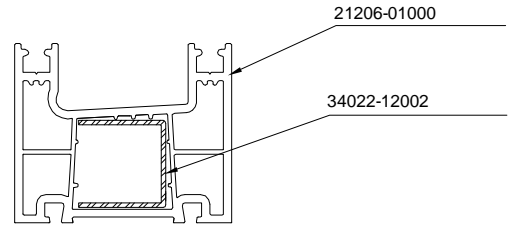
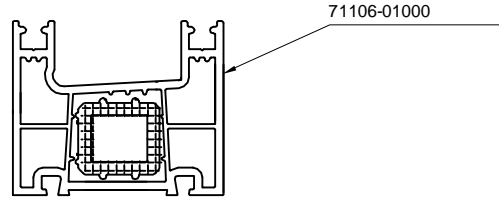
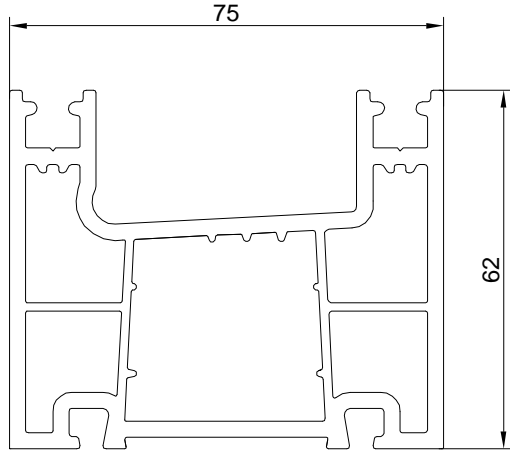
Sliding System Eco Frame Reinforcement Profiles



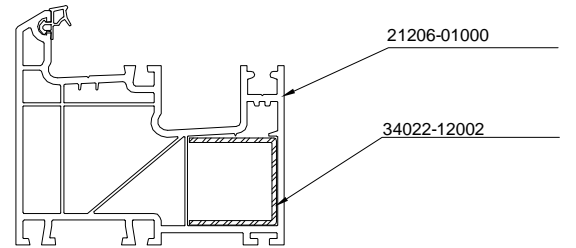
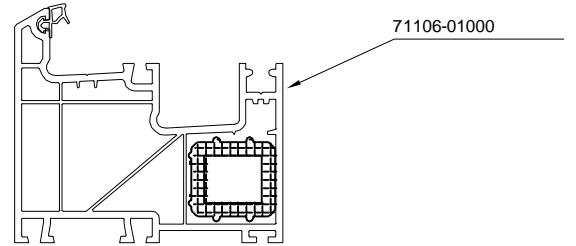
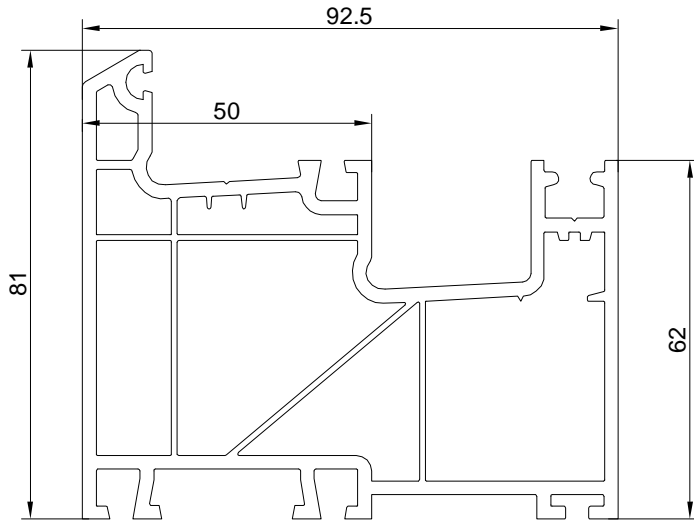
PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ		ANA PROFİLLER		
ÖLÇEK : 1/1	MALZEME CİNSİ : SERT PVC	PLASPEN	SAYFALAR	NO:

PROFİL LİSTESİ
Ana ve Yardımcı Profiller
P 232 Sürme Seri Sistemi

Sürme Kasa (Çift Ray) 21206-01000



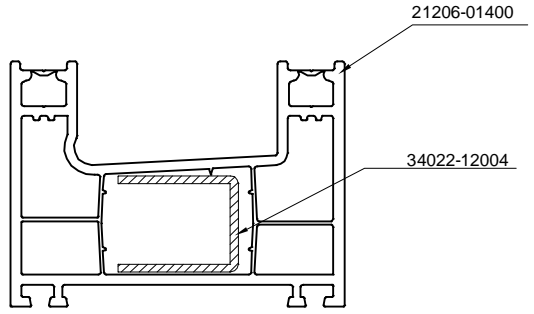
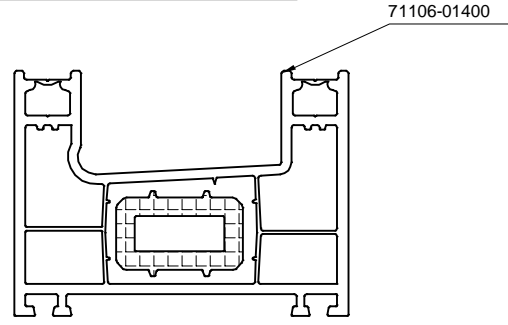
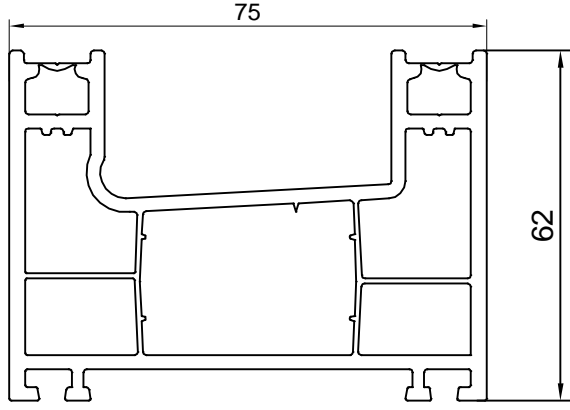
Kasa Profili (Tek Ray) 21206-12000



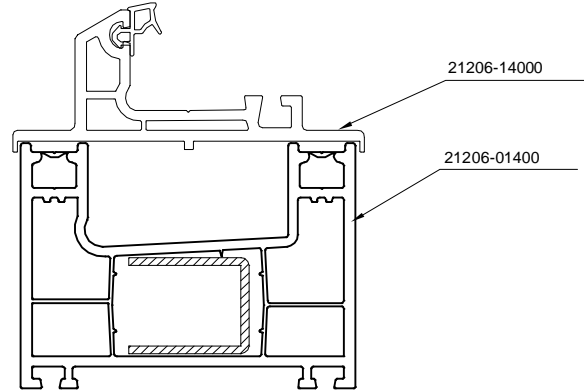
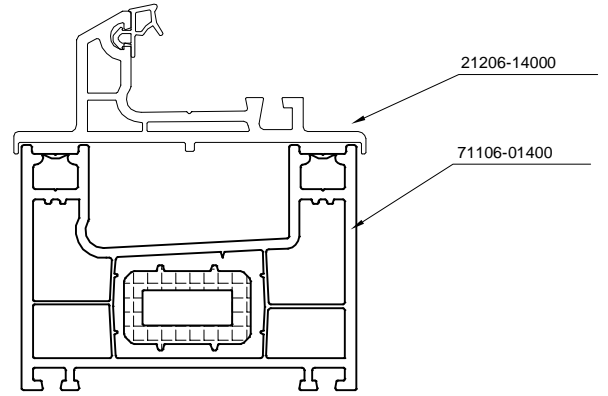
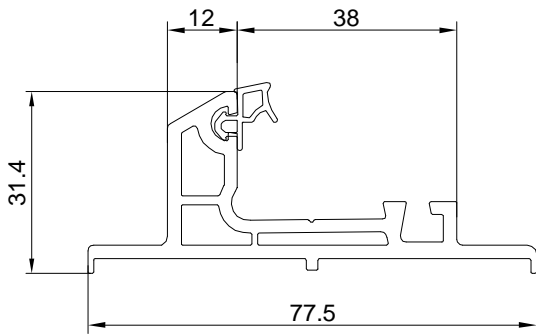
PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ		ANA PROFİLLER		
ÖLÇEK : 1/1	MALZEME CİNSİ : SERT PVC	PLASPEN	SAYFALAR	NO:

PROFİL LİSTESİ
Ana ve Yardımcı Profiller
P 232 Sürme Seri Sistemi

Yeni Sürme Kasa (Çift Ray) 21206-01400



Çift Ray Adaptör Profili 21206-14000



PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

ANA PROFİLLER

ÖLÇEK :
1/1

MALZEME CİNSİ :
SERT PVC

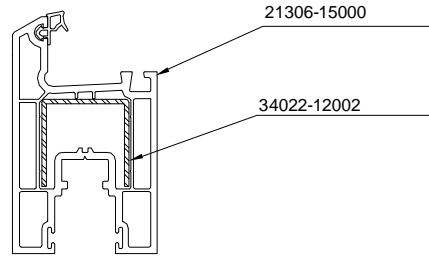
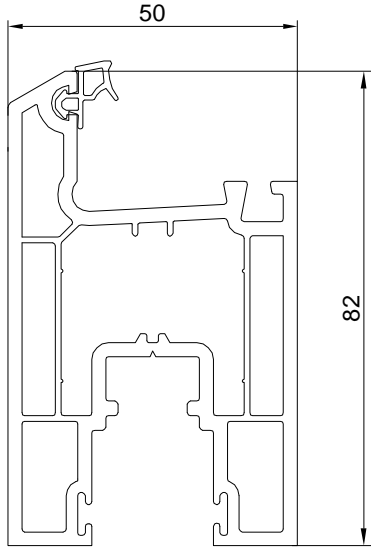
PLASPEN

SAYFALAR

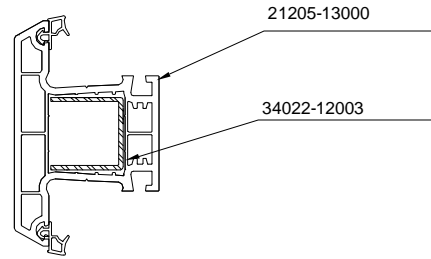
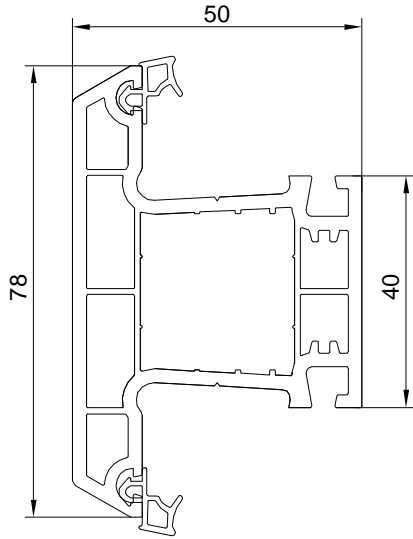
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PROFİL LİSTESİ
Ana ve Yardımcı Profiller
P 232 Sürme Seri Sistemi

Sürme Kanat Profili 21206-15000



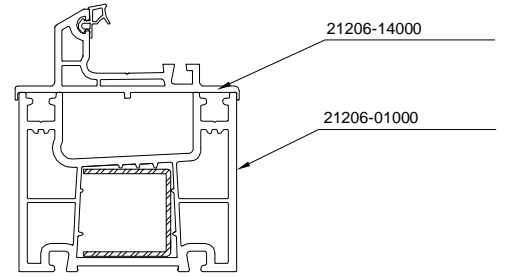
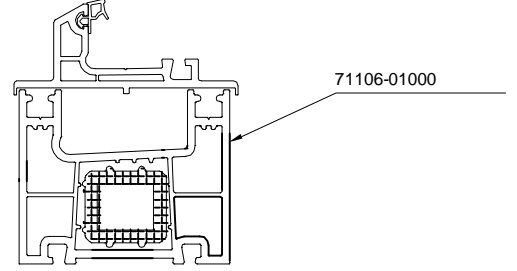
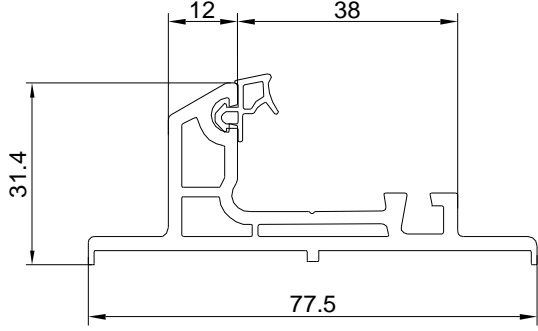
Sürme Orta Kayıt Profili 21205-13000



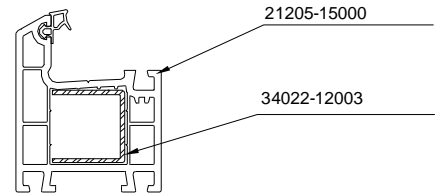
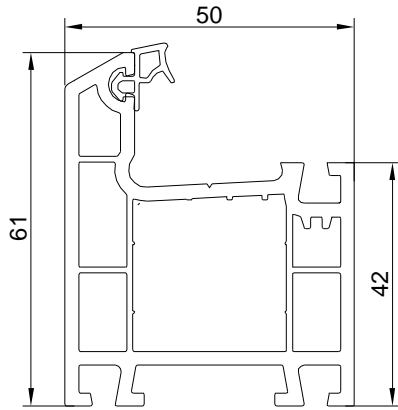
PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ		ANA PROFİLLER		
ÖLÇEK : 1/1	MALZEME CİNSİ : SERT PVC	PLASPEN	SAYFALAR	NO:

PROFİL LİSTESİ
Ana ve Yardımcı Profiller
P 232 Sürme Seri Sistemi

Çift Ray Adaptör Profili 21206-14000



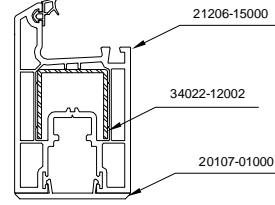
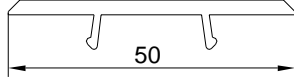
Orta Kayıt Profili 21205-13000



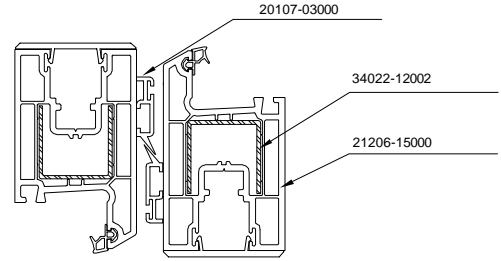
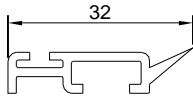
PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ		ANA PROFİLLER		
ÖLÇEK : 1/1	MALZEME CİNSİ : SERT PVC	PLASPEN	SAYFALAR	NO:

PROFİL LİSTESİ
Ana ve Yardımcı Profiller
P 232 Sürme Seri Sistemi

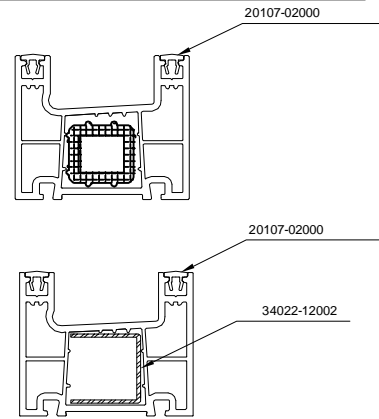
Kanat Kapama Profili 20107-01000



Kanat Ara Bindirme 20107-03000



Kasa Kanal Kapama Profili 20107-02000



PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

YARDIMCI PROFİLLER

ÖLÇEK :
1/1

MALZEME CİNSİ :
SERT PVC

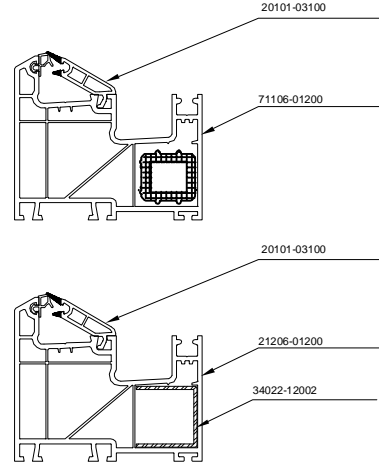
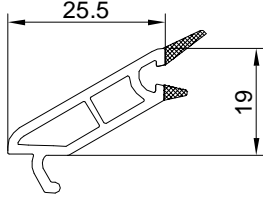
PLASPEN

SAYFALAR

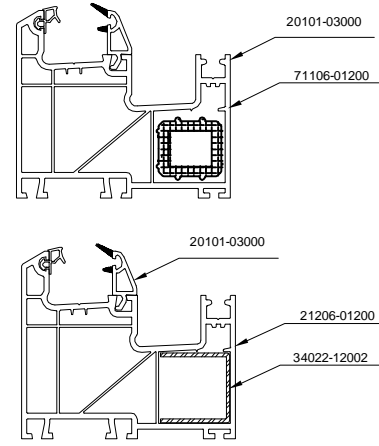
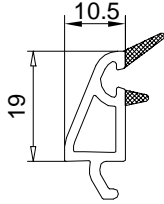
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PROFİL LİSTESİ
Ana ve Yardımcı Profiller
P 232 Sürme Seri Sistemi

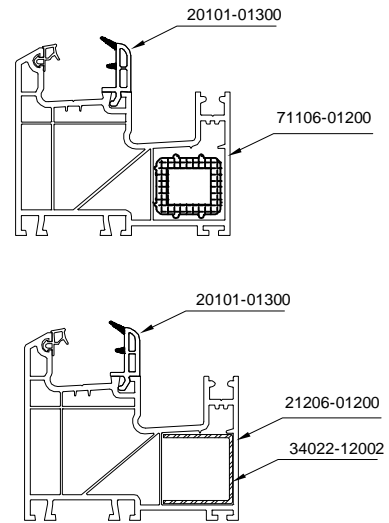
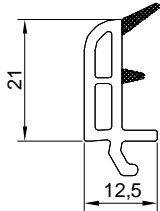
Tek Cam Çıtası (4 MM) 20101-03100



Çift Cam Çıtası (20mm) 20101-03000



Isı Cam Çıtası (24mm) 20101-01300



PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

YARDIMCI PROFİLLER

ÖLÇEK :
1/1

MALZEME CİNSİ :
SERT PVC

PLASPEN

SAYFALAR

NO:

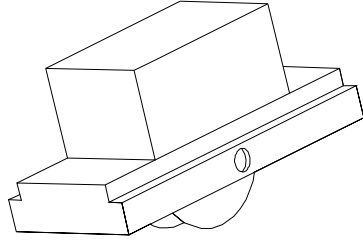
PROFİL LİSTESİ

P 232 Sürme Serisi Aksesuar Malzemeleri

P 232 Sürme Seri Sistemi

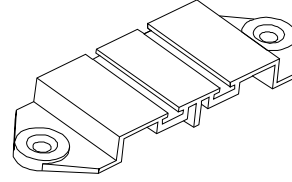
Sürme Tekerlek - Piriç Makaralı 34009-16010

Sürme Tekerlek - Plastik Makaralı 34009-16020



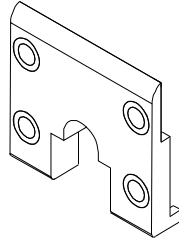
Sızdırmazlık Parçası-Çift Raylı Kasa 34009-26010

Sızdırmazlık Parçası-Tek Ray Kasa 34009-26020



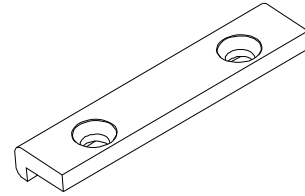
Kanat Arka Kapağı Bitirme Parçası

34009-46010



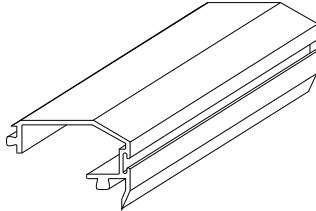
Upper bedding Piece for Sliding Rail

34009-26010



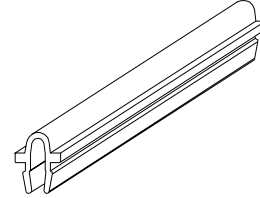
Alm. Sürme Kasa Cam Yuvası Kapağı

34025-13010



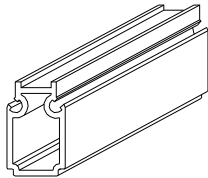
Alm. Sürme Ray

34025-11020



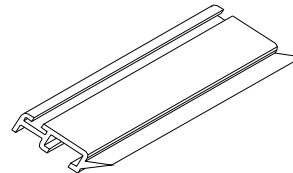
Double Sash Adaptor Prf.Alm.

20107-04000



Kanat Ara Bindirme Profili

20107-03000



PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

AKSESUAR MALZEMESİ

ÖLÇEK :
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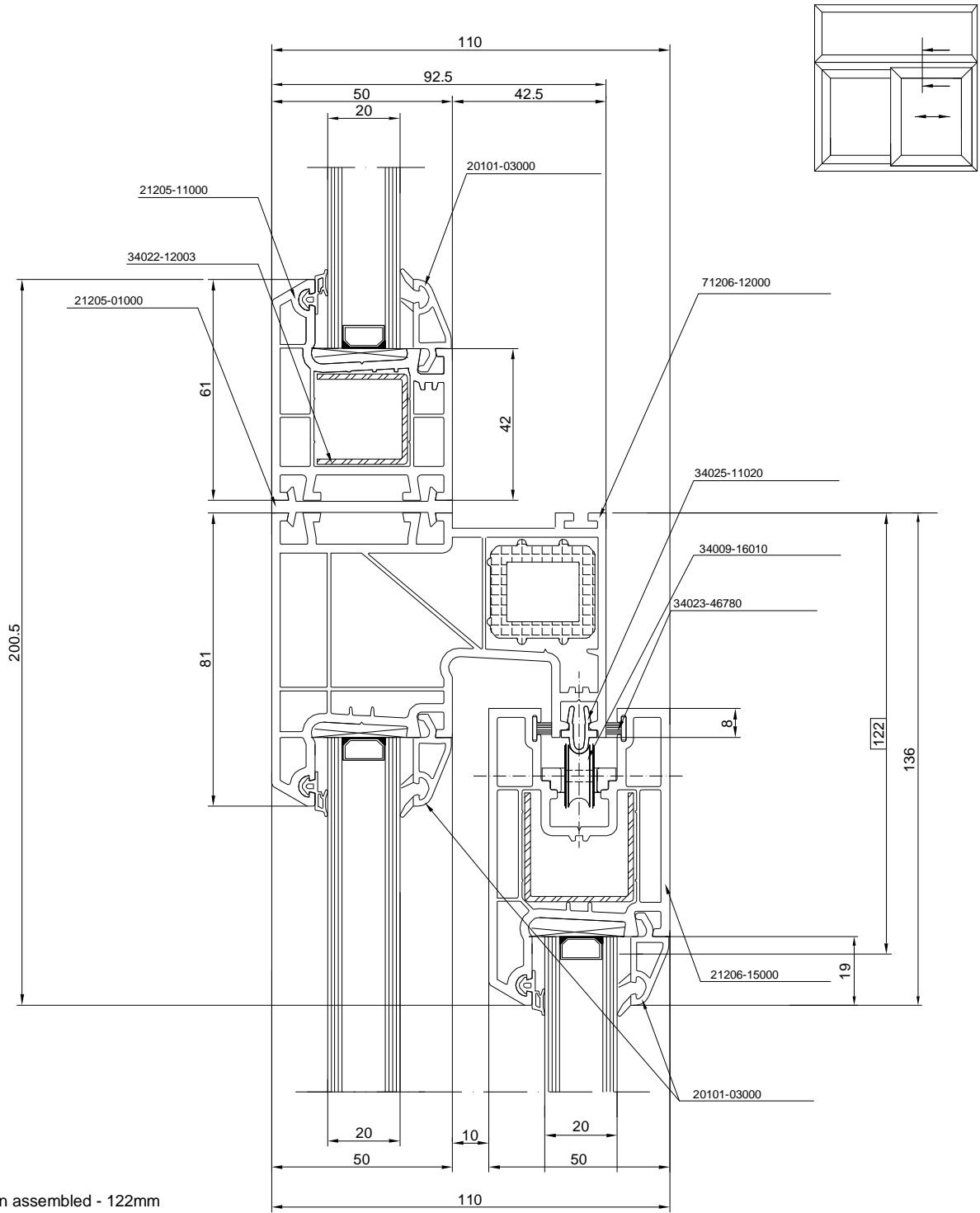
MALZEME CİNSİ :
SERT PVC

PLASPEN

SAYFALAR

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PROFİL LİSTESİ
P 232 Sürme Seri Sistemi
P 232 SÜRME SERİ MONTAJ DETAYLARI



Width when assembled - 122mm

□ -Stepping Distance from Frame till Multiple Glazing unit

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P 232 SÜRME SERİSİ MONTAJ DETAYLARI

ÖLÇEK :
1/1

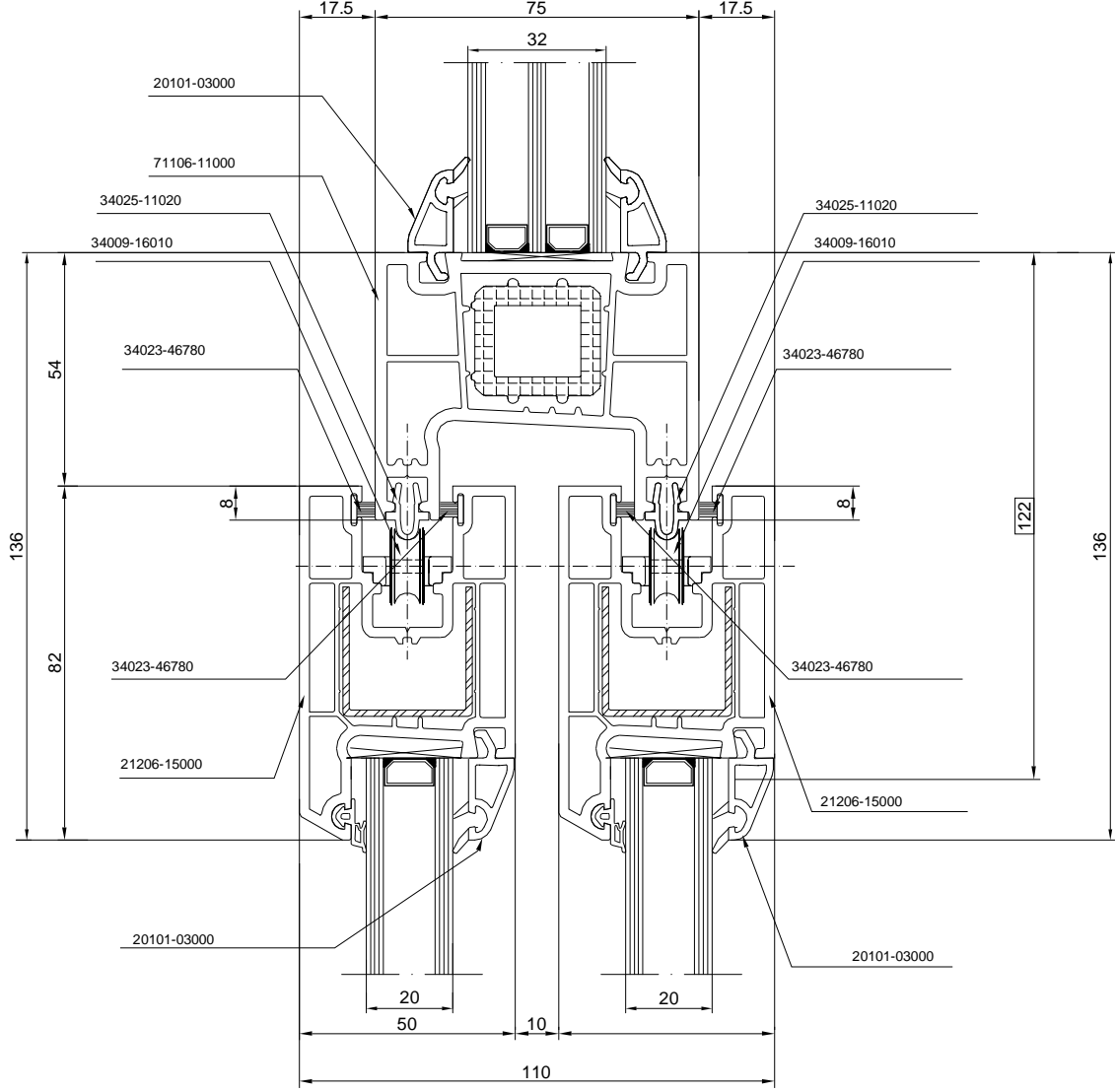
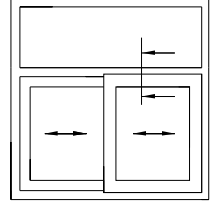
MALZEME CİNSİ :
SERT PVC

PLASPEN

SAYFALAR

NO:

PROFİL LİSTESİ
P 232 Sürme Seri Sistemi
P 232 SÜRME SERİ MONTAJ DETAYLARI



PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

P 232 SÜRME SERİSİ MONTAJ DETAYLARI

ÖLÇEK :
1/1

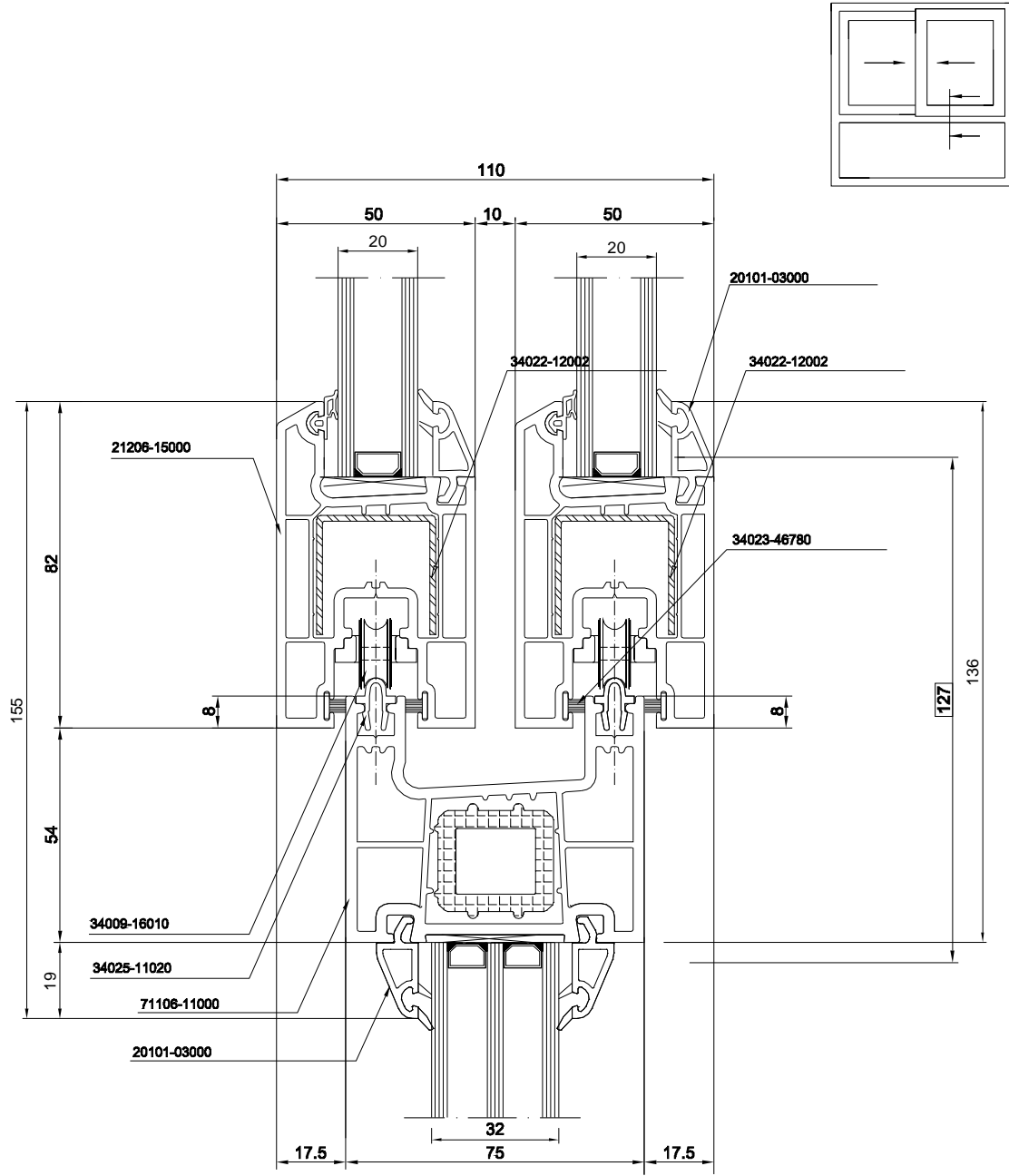
MALZEME CİNSİ :
SERT PVC

PLASPEN

SAYFALAR

NO:

PROFİL LİSTESİ
P 232 Sürme Seri Sistemi
P 232 SÜRME SERİ MONTAJ DETAYLARI



PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

P 232 SÜRME SERİSİ MONTAJ DETAYLARI

ÖLÇEK :
1/1

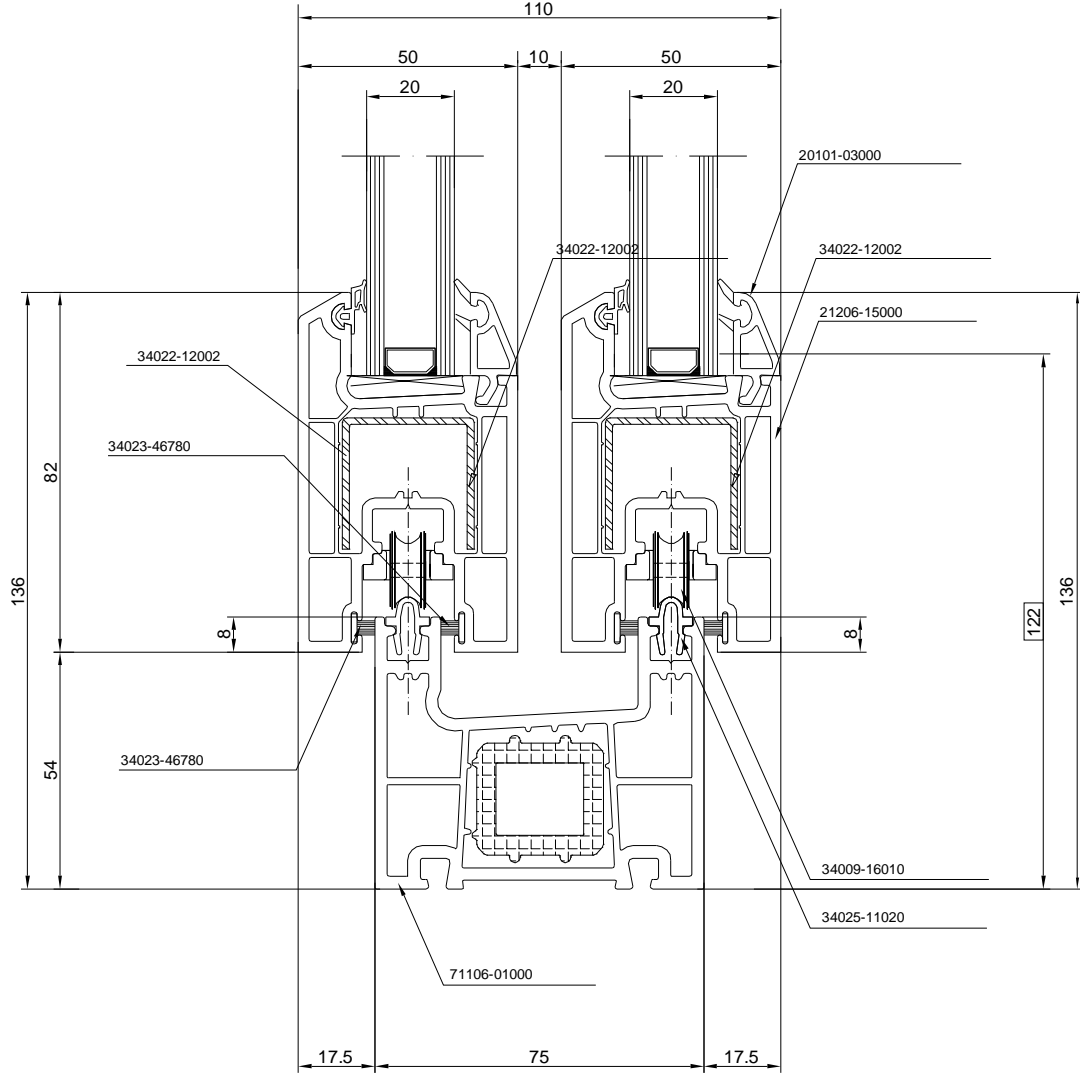
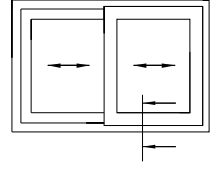
MALZEME CİNSİ :
SERT PVC

PLASPEN

SAYFALAR

NO:

PROFİL LİSTESİ
P 232 Sürme Seri Sistemi
P 232 SÜRME SERİ MONTAJ DETAYLARI



PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

P 232 SÜRME SERİSİ MONTAJ DETAYLARI

ÖLÇEK :
1/1

MALZEME CİNSİ :
SERT PVC

PLASPEN

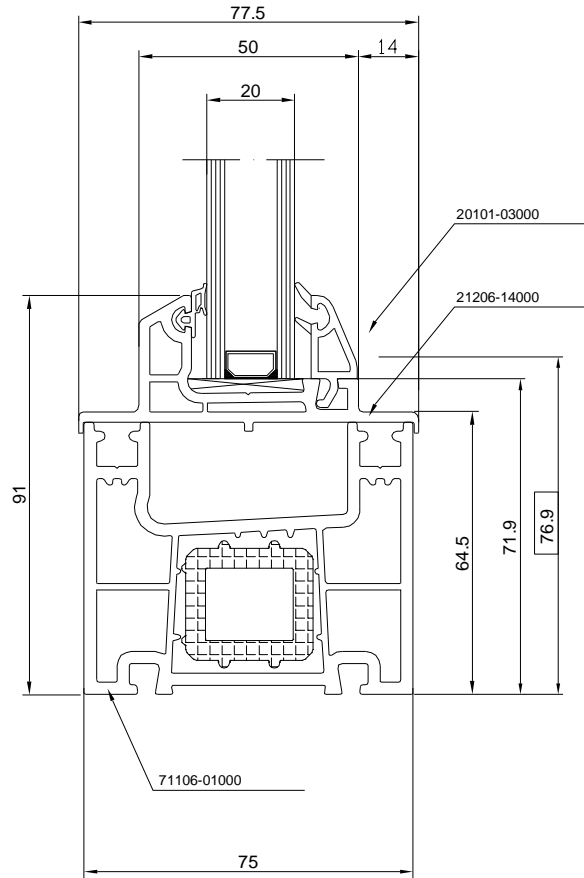
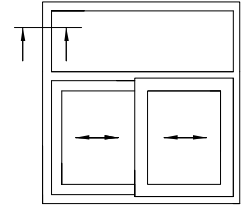
SAYFALAR

NO:

PROFİL LİSTESİ

P 232 Sürme Seri Sistemi

P 232 SÜRME SERİ MONTAJ DETAYLARI



PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

P 232 SÜRME SERİSİ MONTAJ DETAYLARI

ÖLÇEK :
1/1

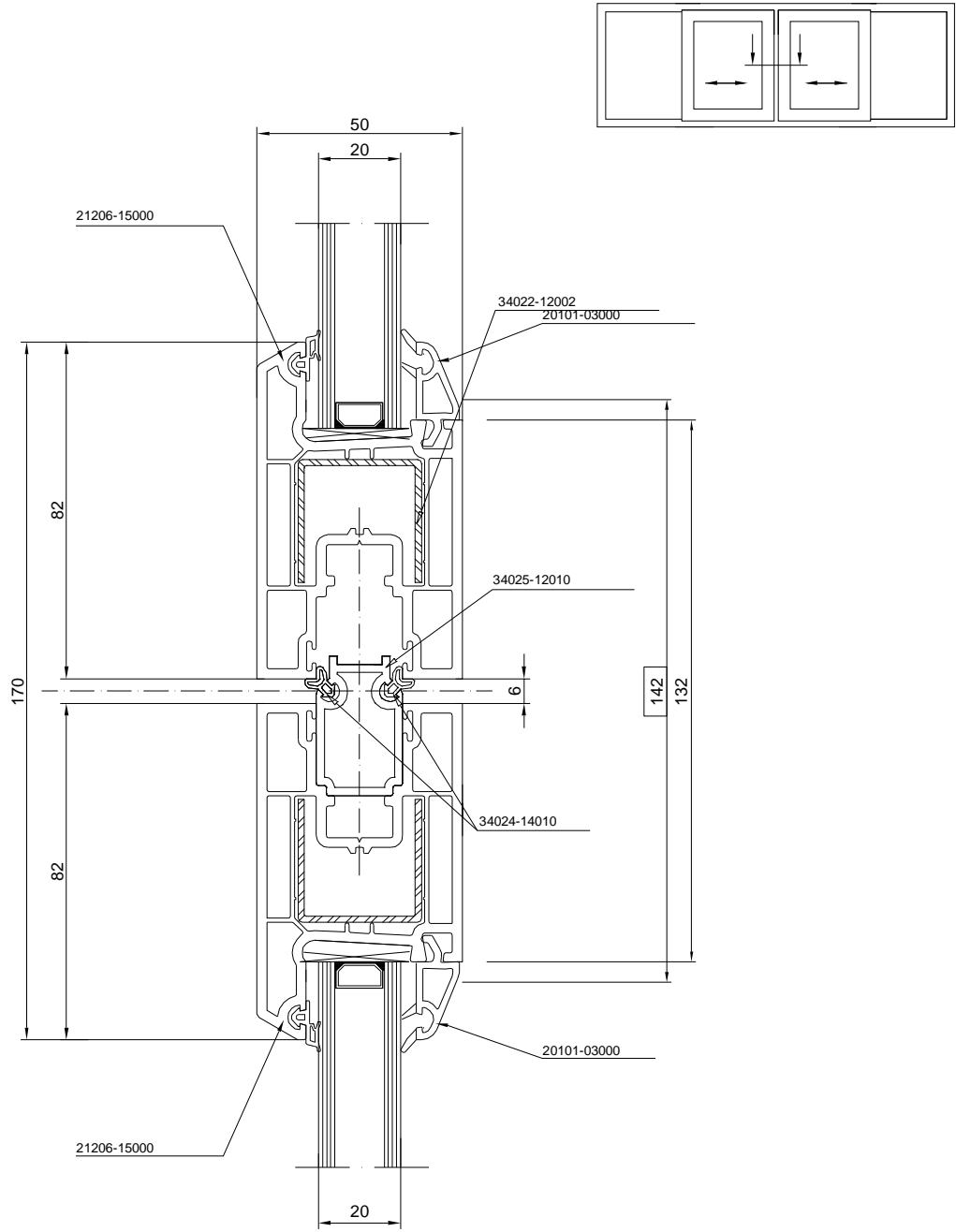
MALZEME CİNSİ :
SERT PVC

PLASPEN

SAYFALAR

NO:

PROFİL LİSTESİ
P 232 Sürme Seri Sistemi
P 232 SÜRME SERİ MONTAJ DETAYLARI



PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

P 232 SÜRME SERİSİ MONTAJ DETAYLARI

ÖLÇEK :
1/1

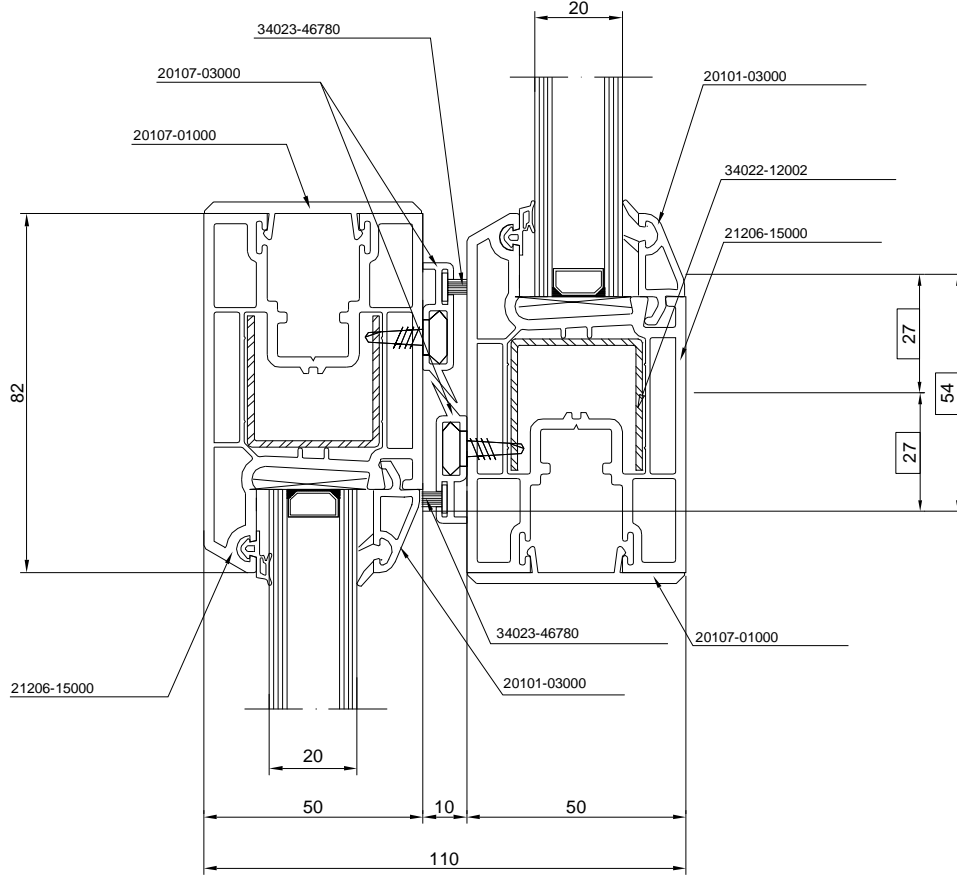
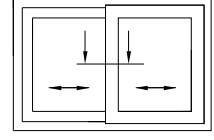
MALZEME CİNSİ :
SERT PVC

PLASPEN

SAYFALAR

NO:

PROFİL LİSTESİ
P 232 Sürme Seri Sistemi
P 232 SÜRME SERİ MONTAJ DETAYLARI



PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

P 232 SÜRME SERİSİ MONTAJ DETAYLARI

ÖLÇEK :
1/1

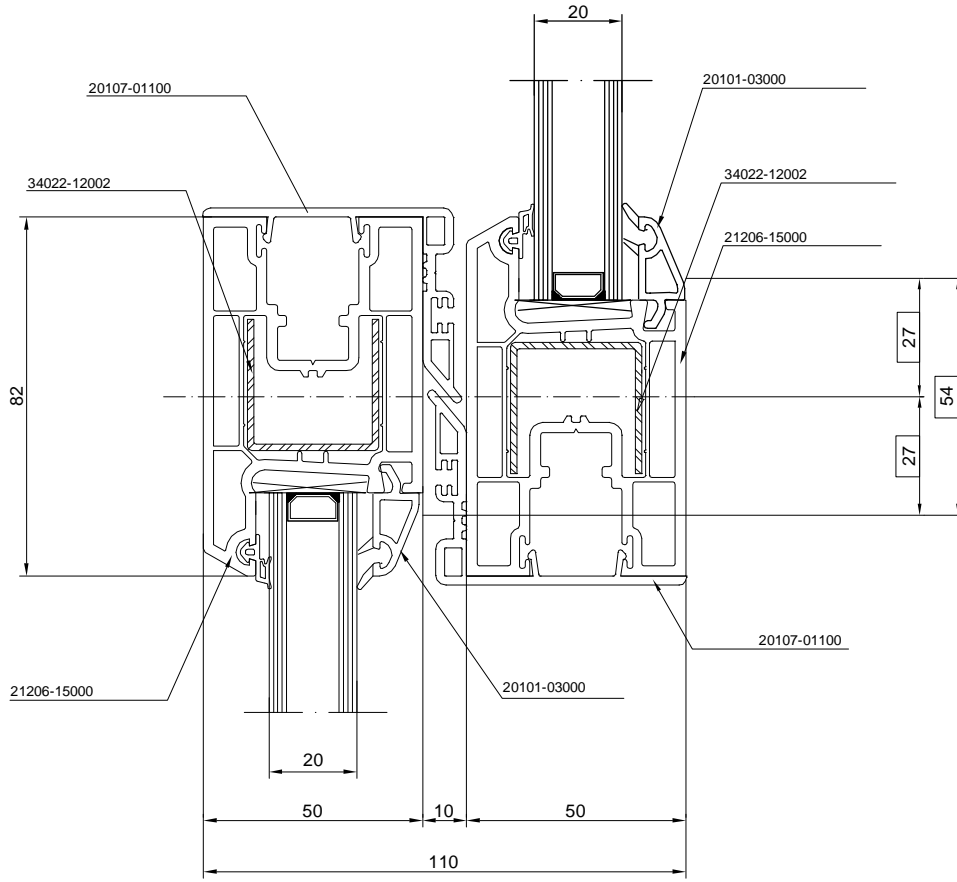
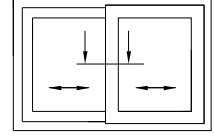
MALZEME CİNSİ :
SERT PVC

PLASPEN

SAYFALAR

NO:

PROFİL LİSTESİ
P 232 Sürme Seri Sistemi
P 232 SÜRME SERİ MONTAJ DETAYLARI



PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

P 232 SÜRME SERİSİ MONTAJ DETAYLARI

ÖLÇEK :
1/1

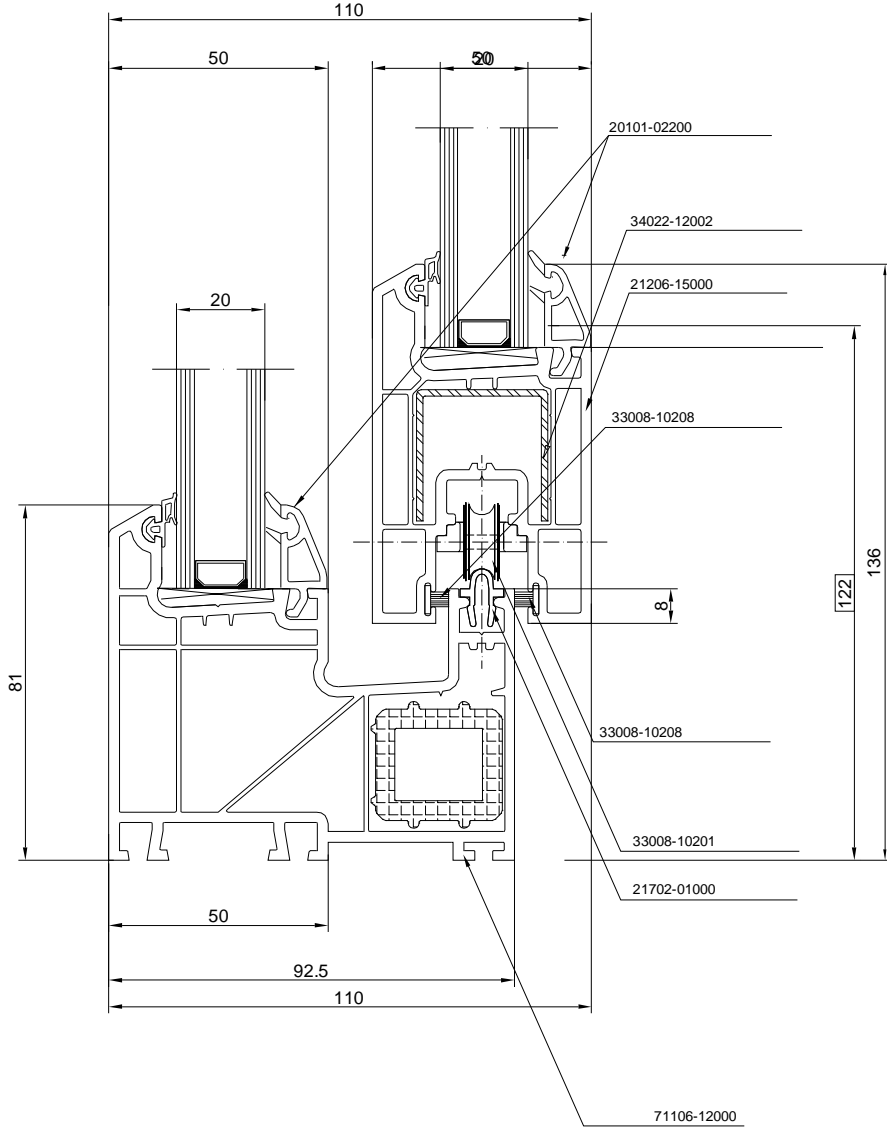
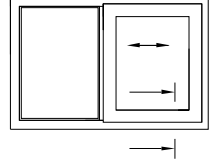
MALZEME CİNSİ :
SERT PVC

PLASPEN

SAYFALAR

NO:

PROFİL LİSTESİ
P 232 Sürme Seri Sistemi
P 232 SÜRME SERİ MONTAJ DETAYLARI



PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

P 232 SÜRME SERİSİ MONTAJ DETAYLARI

ÖLÇEK :
1/1

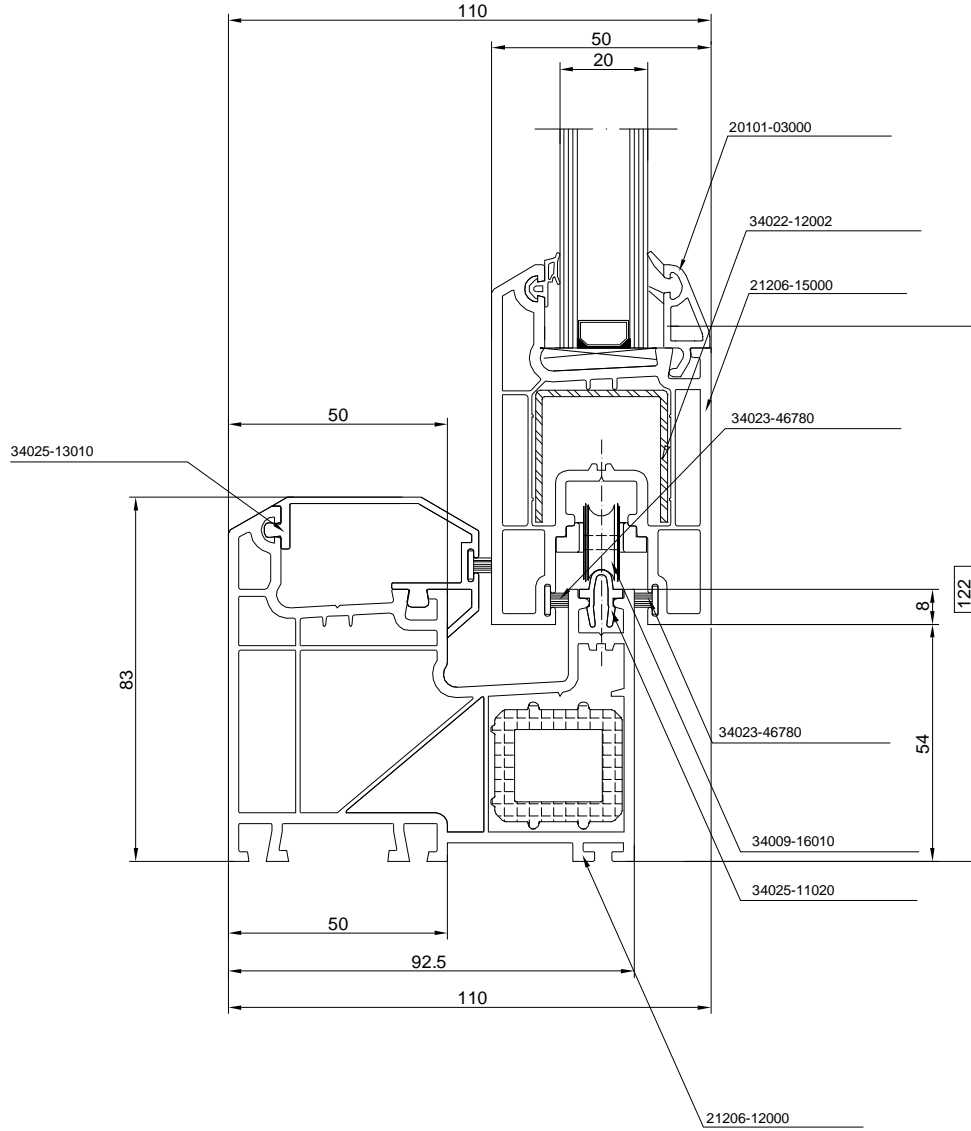
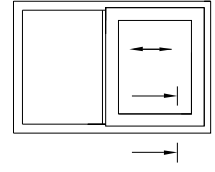
MALZEME CİNSİ :
SERT PVC

PLASPEN

SAYFALAR

NO:

PROFİL LİSTESİ
P 232 Sürme Seri Sistemi
P 232 SÜRME SERİ MONTAJ DETAYLARI



PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

P 232 SÜRME SERİSİ MONTAJ DETAYLARI

ÖLÇEK :
1/1

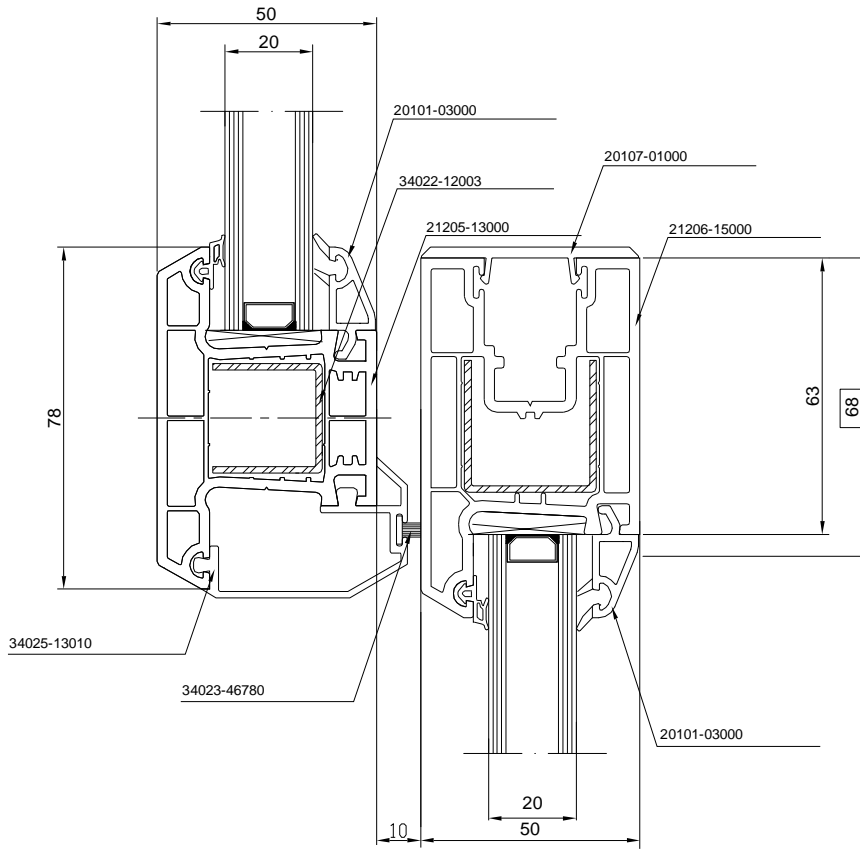
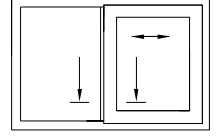
MALZEME CİNSİ :
SERT PVC

PLASPEN

SAYFALAR

NO:

PROFİL LİSTESİ
P 232 Sürme Seri Sistemi
P 232 SÜRME SERİ MONTAJ DETAYLARI



PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

P 232 SÜRME SERİSİ MONTAJ DETAYLARI

ÖLÇEK :
1/1

MALZEME CİNSİ :
SERT PVC

PLASPEN

SAYFALAR

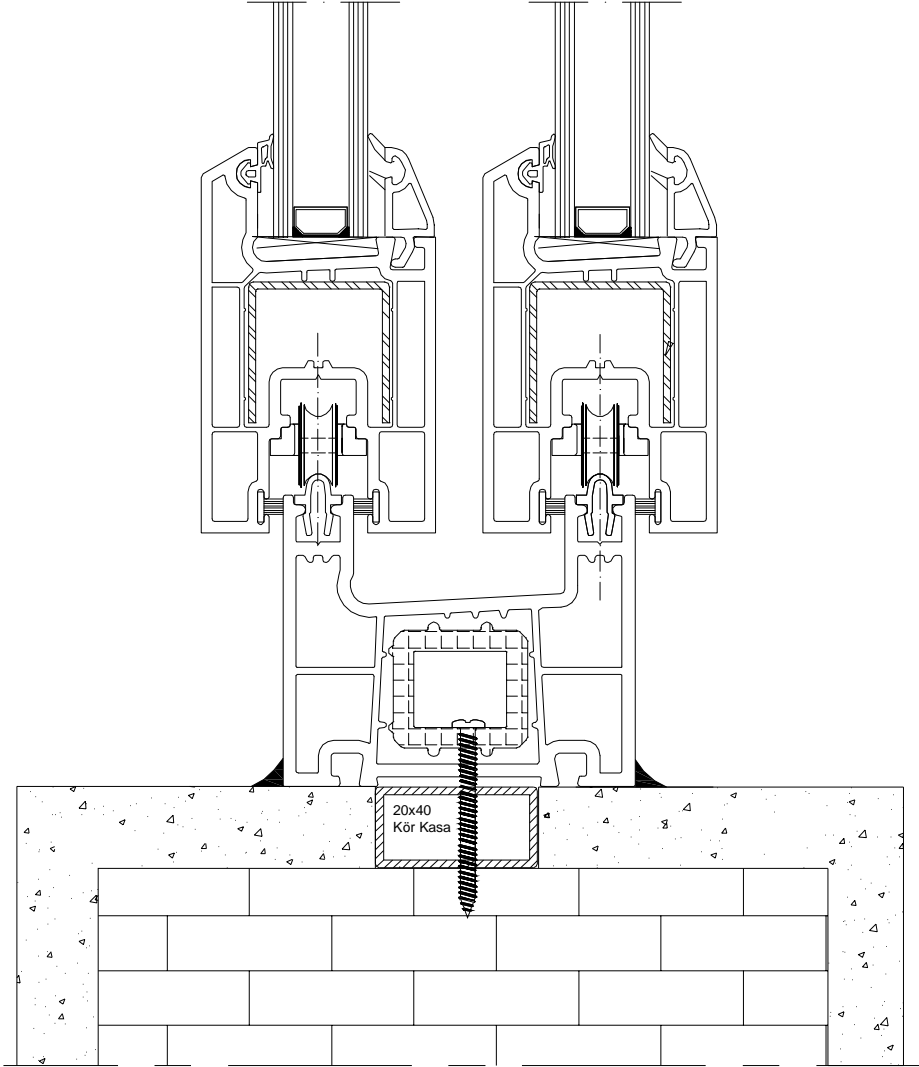
NO:

PROFİL LİSTESİ

P 232 Sürme Seri Sistemi

P 232 SÜRME SERİ MONTAJ DETAYLARI

SÜRME KASA-KANAT MONTAJI



- 1 -20mm Isıcam Çıtası
- 2- Kanat Destek Sacı
- 3- Kanat Profili
- 4- Kasa Profili
- 5- Silikon
- 6- 20x40 Kör Kasa
- 7- Dış Sıva
- 8- Dış Sıva
- 9-Vida
- 10- Duvar

PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

P 232 SÜRME SERİSİ MONTAJ DETAYLARI

ÖLÇEK :
1/1

MALZEME CİNSİ :
SERT PVC

PLASPEN

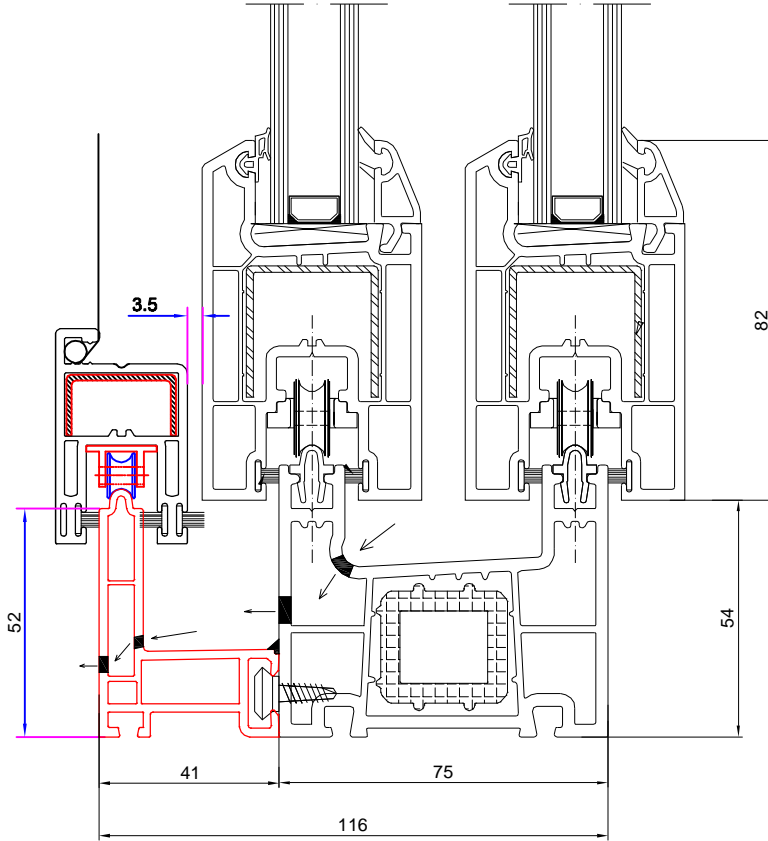
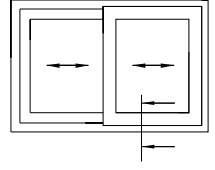
SAYFALAR

NO:

PROFİL LİSTESİ

P 232 Sürme Seri Sistemi

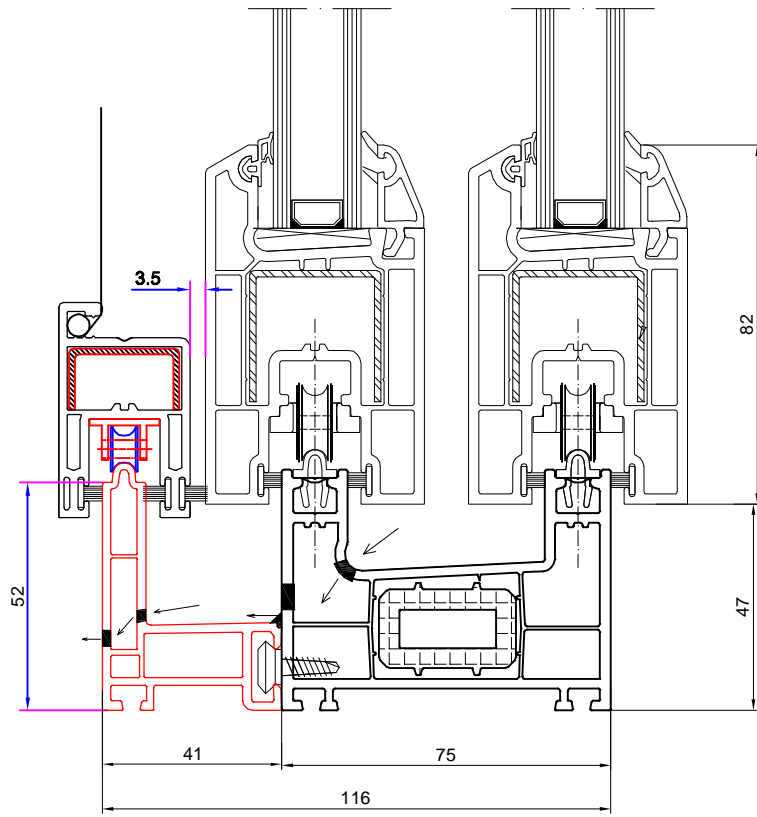
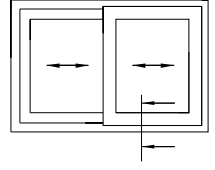
P 232 SÜRME SERİ MONTAJ DETAYLARI



P 232 SÜRME KASA KANAT MONTAJ ŞEKLİ

	PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ	P 232 SÜRME SERİSİ MONTAJ DETAYLARI		
ÖLÇEK : 1/1	MALZEME CİNSİ : SERT PVC	PLASPEN	SAYFALAR	NO:

PROFİL LİSTESİ
P 232 Sürme Seri Sistemi
P 232 SÜRME SERİ MONTAJ DETAYLARI



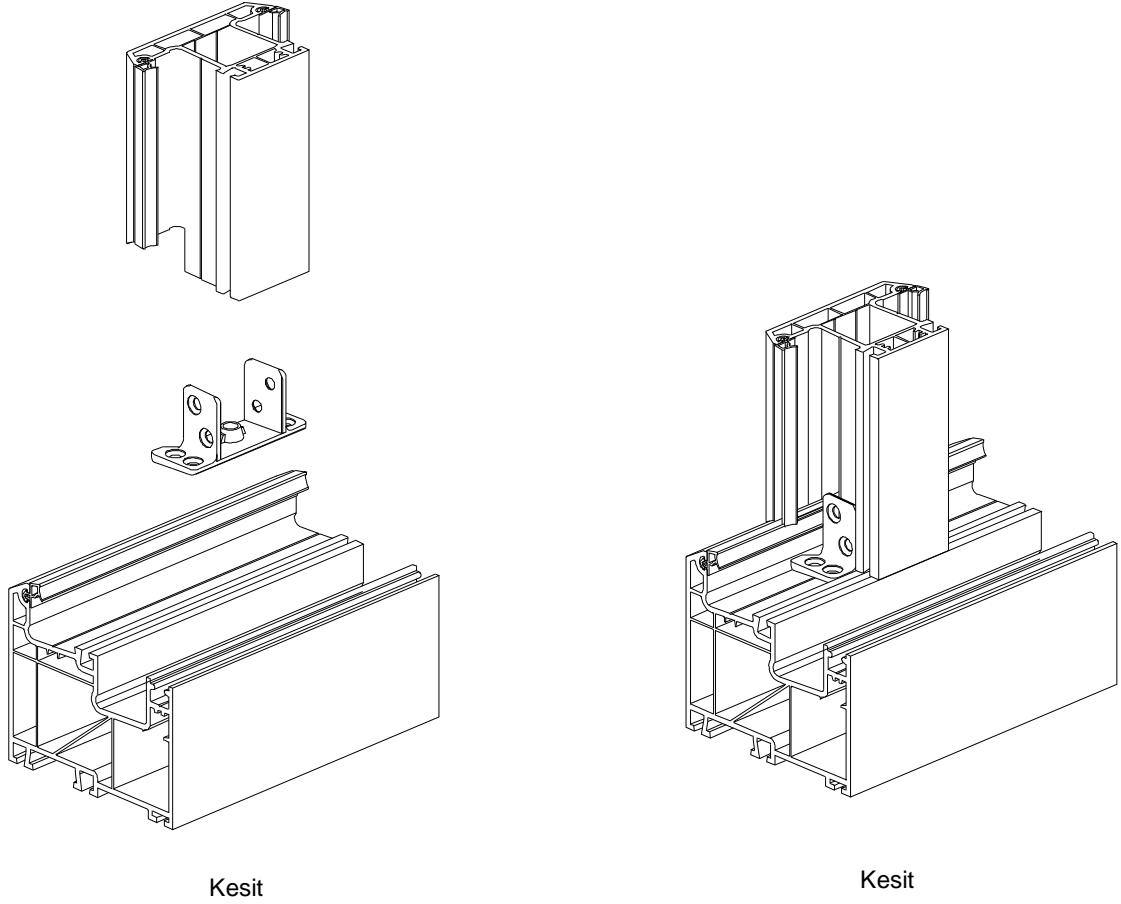
P 232 SÜRME ECO KASA KANAT MONTAJ ŞEKLİ

PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ		P 232 SÜRME SERİSİ MONTAJ DETAYLARI		
ÖLÇEK : 1/1	MALZEME CİNSİ : SERT PVC	PLASPEN	SAYFALAR	NO:

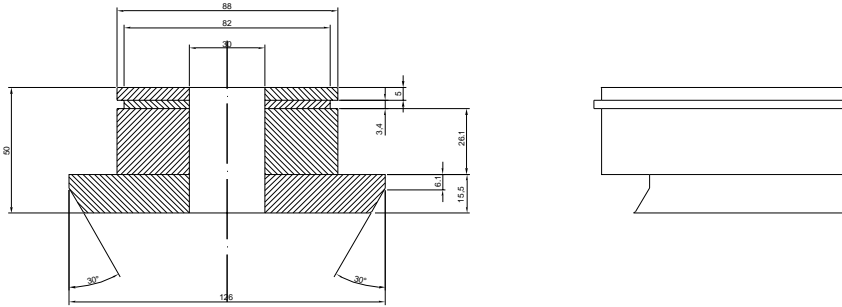
PROFİL LİSTESİ

P 232 Sürme Seri Sistemi

P 232 SÜRME SERİ MONTAJ DETAYLARI



Orta Kayıt Bağlantı Takozu Montajı

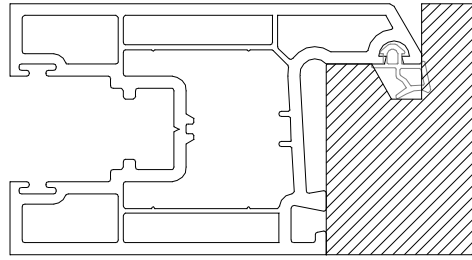
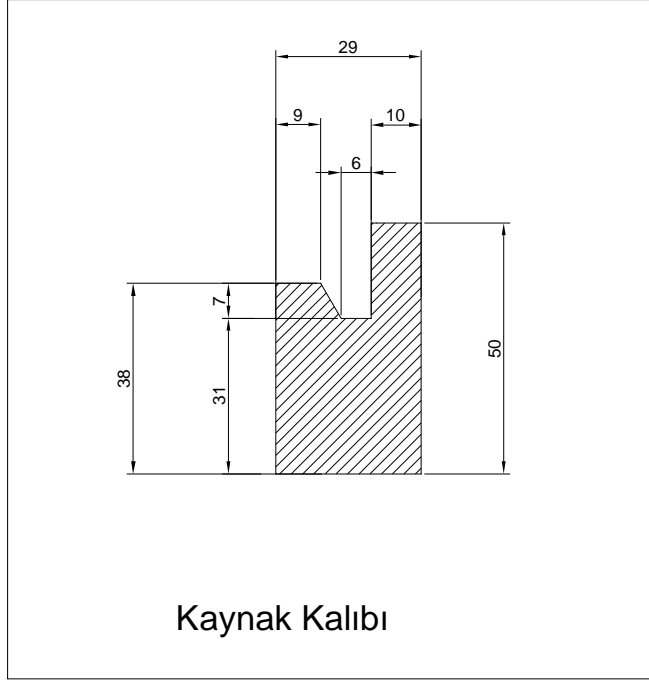


Orta Kayıt Kertme Bıçağı

Window system

PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ		P 232 SÜRME SERİSİ MONTAJ DETAYLARI		
ÖLÇEK : 1/1	MALZEME CİNSİ : SERT PVC	PLASPEN	SAYFALAR	NO:

PROFİL LİSTESİ
P 232 Sürme Seri Sistemi
KAYNAK KALIPLARI



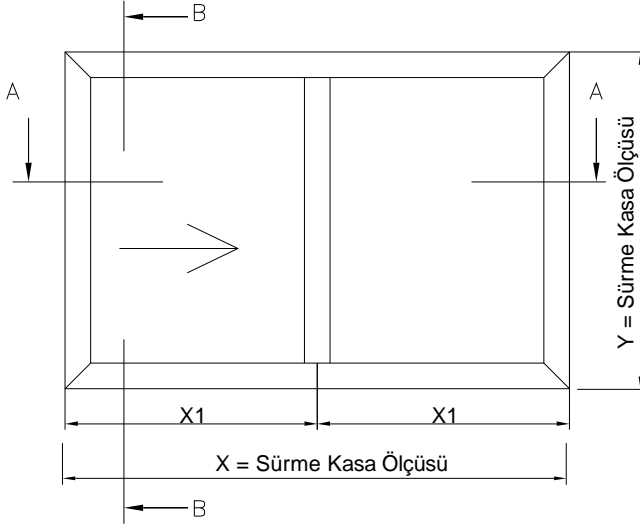
Kanat Profili Kaynak Kalıbı

Window system

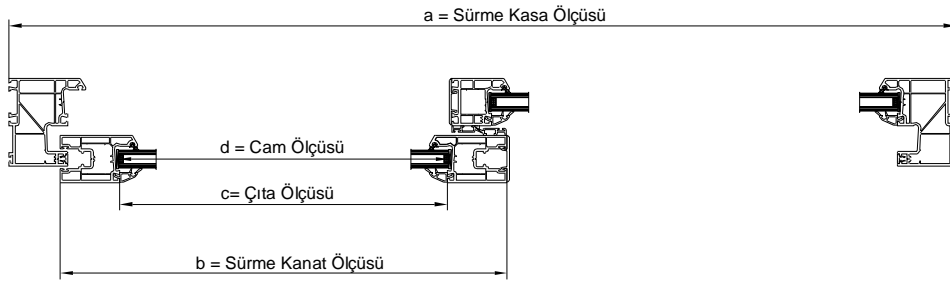
PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ				
ÖLÇEK : 1/1	MALZEME CİNSİ : SERT PVC	PLASPEN	SAYFALAR	NO:

PROFİL LİSTESİ
P 232 Sürme Seri Sistemi
KESİM ÖLÇÜLERİ

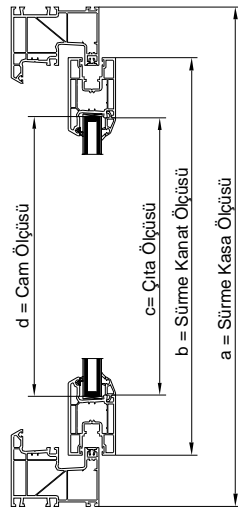
SÜRME KASA (TEK RAY) - SÜRME KANAT KOMBİNASYONU



Sürme Kasa - Sürme Kanat	P 232 SÜRME Serisi
a	X + 6
b	X1 - 19
c	X1 - 151
d	X1 - 161



A - A KESİTİ



B - B KESİTİ

Sürme Kasa - Sürme Kanat	P 232 SÜRME Serisi
a	Y + 6
b	Y - 102
c	Y - 272
d	Y - 292

PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

P 232 SÜRME SERİSİ KESİM ÖLÇÜLERİ

ÖLÇEK :
1/1

MALZEME CİNSİ :
SERT PVC

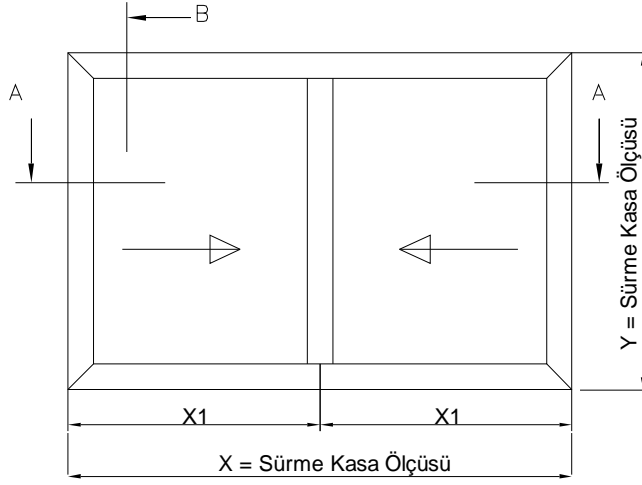
PLASPEN

SAYFALAR

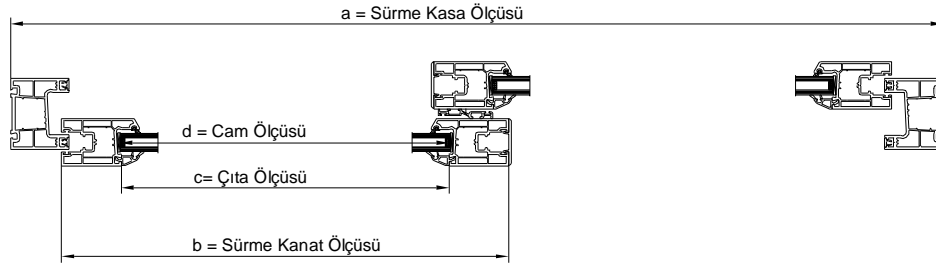
NO:

PROFİL LİSTESİ
P 232 Sürme Seri Sistemi
KESİM ÖLÇÜLERİ

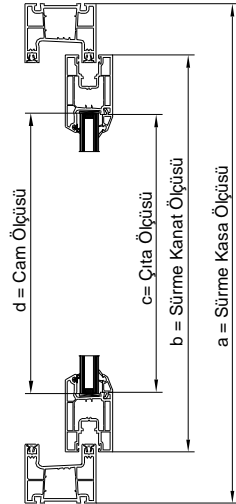
SÜRME KASA (ÇİFT RAY) - SÜRME KANAT KOMBİNASYONU



Sürme Kasa - Sürme Kanat	P 232 SÜRME Serisi
a	X + 6
b	X1 - 7
c	X1 - 139
d	X1 - 149



A - A KESİTİ



B - B KESİTİ

Sürme Kasa - Sürme Kanat	P 232 SÜRME Serisi
a	Y + 6
b	Y - 102
c	Y - 272
d	Y - 292

Window system

PVC PROFİL SİSTEMİ P 232 SÜRME SERİSİ

P 232 SÜRME SERİSİ KESİM ÖLÇÜLERİ

ÖLÇEK :
1/1

MALZEME CİNSİ :
SERT PVC

PLASPEN

SAYFALAR

NO:

Elastisite Modülü = 210.000 N/mm²Montaj Yüksekliği 0 - 8m
Rüzgar Basıncı 60Kp/m²

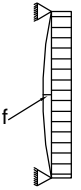
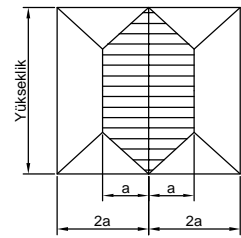
RÜZGAR BASINCINA BAĞLI OLARAK DOĞRU T PROFİL SEÇİMİ

Kanat Yüksekliği, h (cm)	Kanat Genişliği a (cm)																		
	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
100	0,21	0,29	0,34	0,36															
110	0,28	0,39	0,48	0,52															
120	0,37	0,52	0,64	0,72	0,74														
130	0,47	0,67	0,84	0,95	1,01														
140	0,59	0,85	1,07	1,23	1,34	1,37													
150	0,73	1,06	1,34	1,56	1,72	1,80													
160	0,89	1,30	1,65	1,94	2,16	2,30	2,34												
170	1,07	1,56	2,00	2,38	2,67	2,87	2,97												
180	1,28	1,87	2,40	2,87	3,24	3,52	3,69	3,75											
190	1,50	2,21	2,85	3,42	3,89	4,26	4,51	4,64											
200	1,76	2,58	3,35	4,03	4,61	5,09	5,43	5,64	5,71										
210	2,04	3,00	3,90	4,71	5,42	6,01	6,46	6,77	6,93										
220	2,35	3,46	4,51	5,46	6,31	7,03	7,60	8,02	8,28	8,37									
230	2,68	3,96	5,17	6,29	7,28	8,15	8,86	9,41	9,78	9,97									
240	3,05	4,51	5,90	7,19	8,36	9,38	10,25	10,94	11,44	11,75	11,85								
250	3,60	5,32	6,97	8,51	9,92	11,17	12,25	13,13	13,81	14,27	14,50								
260	4,21	6,24	8,18	10,01	11,69	13,20	14,62	15,63	16,52	17,16	17,55	17,69							
270	4,90	7,27	9,54	11,69	13,68	15,49	17,09	18,46	19,59	20,44	21,02	21,32							
280	5,67	8,42	11,06	13,57	15,91	18,06	19,98	21,65	23,05	24,16	24,96	25,45	25,61						
290	6,53	9,70	12,76	15,67	18,41	20,93	23,21	25,22	26,93	28,33	29,40	30,12	30,48						
300	7,48	11,12	14,64	18,01	21,18	24,12	26,80	29,19	31,27	33,00	34,37	35,36	35,96	36,16					
310	8,53	12,69	16,72	20,59	24,25	27,66	30,79	33,62	36,09	38,20	39,92	41,23	42,11	42,55					
320	9,69	14,42	19,02	23,44	27,63	31,57	35,21	38,51	41,44	43,98	46,09	47,76	48,96	49,69	49,93				
330	10,97	16,33	21,54	26,57	31,36	35,88	40,07	43,90	47,34	50,36	52,92	55,00	56,58	57,64	58,17				
340	12,36	18,41	24,31	30,01	35,45	40,60	45,41	49,83	53,84	57,39	60,45	62,99	65,00	66,45	67,32	67,61			
350	13,88	20,69	27,33	33,76	39,92	45,77	51,26	56,34	60,97	65,11	68,73	71,80	74,29	76,17	77,44	78,08			

c = 1.2*) * Standart binalar için

Zorlama Gubu	Binanın Yerden Yüksekliği	Rüzgar Hızı (u)	Dinamik Basıncı (q)		Katsayı ile çarpılmış rüzgar basıncı c=1.2* p=cxq		Değişim Faktörü
	m	m/s	Kp/m ²	KN/m ²	Kp/m ²	KN/m ²	
A	0 - 8	28,30	50,00	0,50	60,00	0,60	1,00
B	8 - 20	35,80	80,00	0,80	96,00	0,96	1,60
C	20 - 100	42,00	110,00	1,10	132,00	1,32	2,20
Özel Hal	> 100	45,60	130,00	1,30	156,00	1,56	2,60

* Bu atalet momenti tablosu çiftcam sistemi içindir.
* $f=H/300 < 0,8\text{cm}$ (Maximum müsaade edilebilir sapma)
* Cam tipi ve özelliklerini belirlemek için, cam firmalarına sorunuz.
Değişik mesafe ve yükseklikler için cam kalınlıkları değişmektedir.



Elastisite Modülü = 210.000 N/mm²Montaj Yüksekliği 8 - 20m
Rüzgar Basıncı 96Kp/m²

RÜZGAR BASINCINA BAĞLI OLARAK DOĞRUT PROFİL SEÇİMİ

Kanat Yüksekliği, h (cm)	Kanat Geniliği a (cm)																			
	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	
100	0,33	0,46	0,54	0,57																
110	0,45	0,63	0,76	0,83																
120	0,59	0,84	1,02	1,14	1,18															
130	0,76	1,08	1,34	1,52	1,62															
140	0,95	1,36	1,71	1,98	2,14	2,20														
150	1,17	1,69	2,14	2,50	2,75	2,88														
160	1,43	2,07	2,64	3,11	3,46	3,67	3,74													
170	1,72	2,50	3,21	3,80	4,27	4,59	4,75													
180	2,04	2,99	3,84	4,58	5,19	5,63	5,91	6,00												
190	2,41	3,53	4,56	5,46	6,22	6,81	7,22	7,42												
200	2,81	4,13	5,35	6,45	7,38	8,14	8,69	9,03	9,14											
210	3,26	4,80	6,24	7,54	8,67	9,61	10,34	10,83	11,08											
220	3,75	5,54	7,21	8,74	10,09	11,24	12,16	12,84	13,25	13,39										
230	4,29	6,34	8,28	10,06	11,66	13,04	14,18	15,06	15,65	15,95										
240	4,88	7,22	9,44	11,50	13,37	15,01	16,39	17,50	18,30	18,79	18,96									
250	5,75	8,52	11,15	13,62	15,87	17,87	19,60	21,02	22,10	22,83	23,21									
260	6,74	9,98	13,09	16,01	18,70	21,12	23,24	25,02	26,43	27,46	28,08	28,29								
270	7,84	11,63	15,27	18,70	21,89	24,78	27,35	29,54	31,34	32,71	33,64	34,11								
280	9,07	13,47	17,70	21,71	25,46	28,89	31,96	34,64	36,88	38,65	39,94	40,72	40,98							
290	10,45	15,52	20,41	25,08	29,45	33,48	37,13	40,35	43,09	45,33	47,03	48,18	48,76							
300	11,97	17,79	23,43	28,81	33,88	38,59	42,88	46,71	50,03	52,80	54,99	56,58	57,54	57,86						
310	13,65	20,31	26,76	32,94	38,79	44,26	49,27	53,78	57,75	61,13	63,87	65,96	67,37	68,08						
320	15,51	23,08	30,43	37,50	44,22	50,51	56,33	61,61	66,30	70,36	73,74	76,41	78,34	79,50	79,89					
330	17,54	26,12	34,47	42,51	50,18	57,40	64,11	70,24	75,75	80,57	84,67	88,00	90,52	92,22	93,07					
340	19,78	29,46	38,90	48,01	56,72	64,96	72,65	79,74	86,14	91,82	96,72	100,79	104,00	106,31	107,71	108,18				
350	22,21	33,10	43,73	54,02	63,88	73,24	82,01	90,14	97,55	104,18	109,97	114,88	118,86	121,88	123,91	124,92				

c = 1.2*) * Standart binalar için

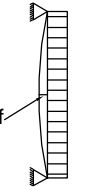
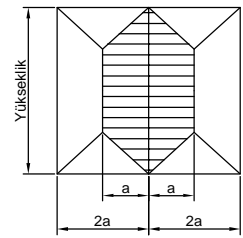
Zorlama Gubu	Binanın Yerden Yüksekliği	Rüzgar Hızı (u)	Dinamik Basıncı (q)		Katsayı ile çarpılmış rüzgar basıncı c=1.2* p=cxq		Değişim Faktörü
			Kp/m ²	KN/m ²	Kp/m ²	KN/m ²	
A	0 - 8	28,30	50,00	0,50	60,00	0,60	1,00
B	8 - 20	35,80	80,00	0,80	96,00	0,96	1,60
C	20 - 100	42,00	110,00	1,10	132,00	1,32	2,20
Özel Hal	> 100	45,60	130,00	1,30	156,00	1,56	2,60

* Bu atalet momenti tablosu çiftcam sistemi içindir.

* f=H/300 < 0,8cm (Maximum müsaade edilebilir sapma)

* Cam tipi ve özelliklerini belirlemek için, cam firmalarına sorunuz.

Değişik mesafe ve yükseklikler için cam kalınlıkta değişmektedir.



Elastisite Modülü = 210.000 N/mm²Montaj Yüksekliği 20 - 100m
Rüzgar Basıncı 132Kp/m²

RÜZGAR BASINCINA BAĞLI OLARAK DOĞRU T PROFİL SEÇİMİ

Kanat Yüksekliği, h (cm)	Kanat Geniştirliği a (cm)																		
	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
100	0,46	0,63	0,75	0,79															
110	0,62	0,87	1,05	1,14															
120	0,81	1,15	1,41	1,57	1,63														
130	1,04	1,48	1,84	2,10	2,23														
140	1,30	1,88	2,35	2,72	2,94	3,02													
150	1,61	2,33	2,95	3,44	3,78	3,96													
160	1,96	2,85	3,63	4,27	4,75	5,05	5,15												
170	2,36	3,44	4,41	5,23	5,87	6,31	6,53												
180	2,81	4,11	5,28	6,30	7,13	7,74	8,12	8,25											
190	3,31	4,85	6,27	7,51	8,56	9,37	9,92	10,20											
200	3,87	5,68	7,36	8,86	10,15	11,19	11,96	12,41	12,57										
210	4,48	6,60	8,58	10,36	11,92	13,21	14,21	14,89	15,24										
220	5,16	7,61	9,91	12,01	13,88	15,46	16,72	17,65	18,22	18,41									
230	5,90	8,72	11,38	13,83	16,03	17,93	19,50	20,70	21,52	21,94									
240	6,71	9,93	12,98	15,81	18,38	20,64	22,54	24,06	25,17	25,84	26,07								
250	7,91	11,71	15,34	18,72	21,82	24,58	26,95	28,90	30,39	31,40	31,91								
260	9,26	13,73	18,00	22,01	25,71	29,04	31,95	34,40	36,34	37,75	38,61	38,90							
270	10,78	15,99	20,99	25,71	30,10	34,08	37,60	40,62	43,09	44,98	46,25	46,90							
280	12,47	18,52	24,34	29,86	35,01	39,73	43,95	47,63	50,70	53,15	54,91	55,98	56,34						
290	14,36	21,34	28,07	34,48	40,48	46,04	51,05	55,47	59,25	62,33	64,67	66,25	67,05						
300	16,46	24,46	32,21	39,61	46,59	53,06	58,97	64,23	68,79	72,60	75,61	77,79	79,11	79,55					
310	18,77	27,92	36,79	45,30	53,34	60,85	67,75	73,95	79,41	84,05	87,83	90,70	92,63	93,60					
320	21,32	31,73	41,84	51,56	60,80	69,45	77,45	84,72	91,17	96,75	101,40	105,06	107,71	109,31	109,85				
330	24,12	35,92	47,40	58,46	69,00	78,93	88,15	96,59	104,16	110,79	116,42	120,99	124,47	126,80	127,97				
340	27,19	40,51	53,48	66,01	77,99	89,32	99,90	109,64	118,45	126,26	132,99	138,59	143,00	146,18	148,10	148,75			
350	30,54	45,52	60,13	74,28	87,83	100,70	112,77	123,94	134,13	143,24	151,21	157,96	163,43	167,58	170,37	171,77			

c = 1,2*) * Standart binalar için

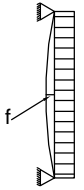
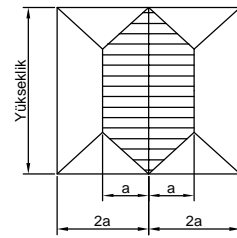
Zorlama Gubu	Binanın Yerden Yüksekliği	Rüzgar Hızı (u)	Dinamik Basıncı (q)		Katsayı ile çarpılmış rüzgar basıncı c=1,2* p=cxq		Değişim Faktörü
	m	m/s	Kp/m ²	KN/m ²	Kp/m ²	KN/m ²	
A	0 - 8	28,30	50,00	0,50	60,00	0,60	1,00
B	8 - 20	35,80	80,00	0,80	96,00	0,96	1,60
C	20 - 100	42,00	110,00	1,10	132,00	1,32	2,20
Özel Hal	> 100	45,60	130,00	1,30	156,00	1,56	2,60

* Bu atalet momenti tablosu çiftcam sistemi içindir.

* f=H/300 < 0,8cm (Maximum müsaade edilebilir sapma)

* Cam tipi ve özelliklerini belirlemek için, cam firmalarına sorunuz.

Değişik mesafe ve yükseklikler için cam kalınlıkları değişmektedir.



232 SERIAL STATIC CALCULATION

A window's endurance and resistance to wind depends on the PVC profile and inertia momenti values (I_x ; I_y) relative to its steel reinforcement profile.

The main function of the reinforcement inside windows and doors made from hard PVC is to enable them to achieve their general functions through ensuring their necessary mechanic endurance.

The reinforcement profile's shape and thickness identify the maximum joinery's measurements that are related to the height where the window will be fitted as well as to wind force.

Main principles:

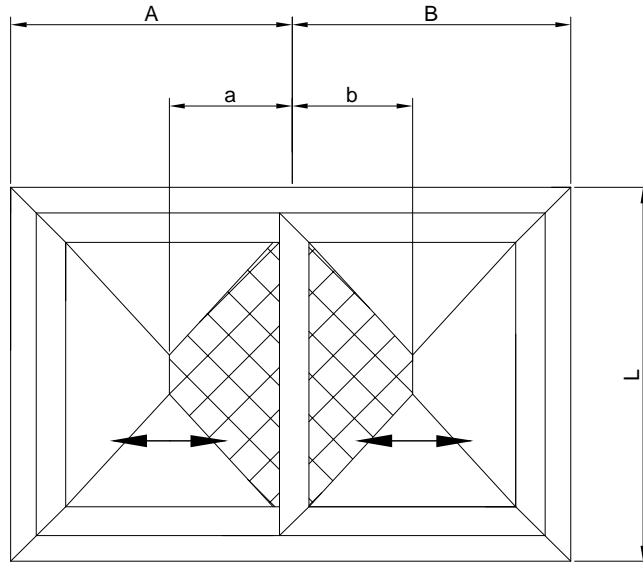
The sash's maximum exterior measurement is showed in the graphic.

The required maximum area is given m^2 .

While identifying the maximum measurements, glass/panel weight is given as 25 kg/m^2 .

Those measurements are valid for white profiles.

Limits given by fittings companies shall be taken into consideration.

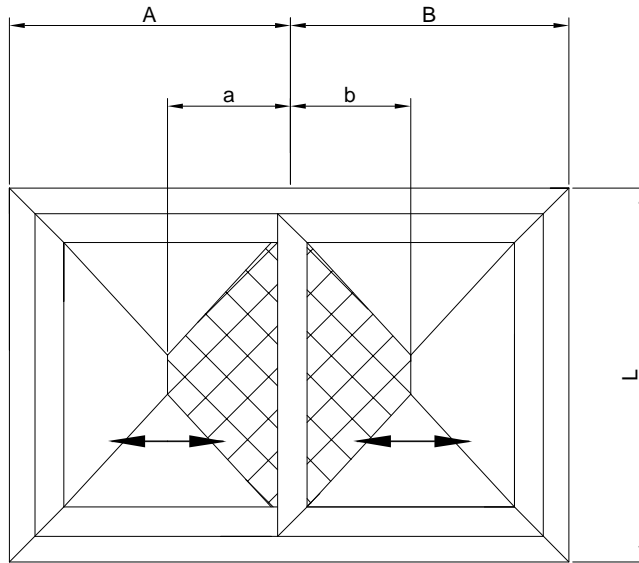


$I_x = \frac{W \cdot L \cdot a}{1920 \cdot E \cdot f} \left(25 \cdot 40 \left(\frac{a}{L} \right)^2 + 16 \left(\frac{a}{L} \right)^4 \right)$
I_x = Required Moment of inertia (cm^4)
W = Rüzgar Yüğü (N/cm^2)
E = Elasticity Module ($E_{\text{PVC}} = 2600 \text{ MPa}$ / $E_{\text{Destek Sacı}} = 210000 \text{ MPa}$)
f = Allowed Deflection ($L / 300$) cm
a = loading width (cm)
L = Support space (cm)

0 - 8 m	60 kp/m^2
8 - 20 m	96 kp/m^2
20 - 100 m	110 kp/m^2
> 100 m	130 kp/m^2

$$1 \text{ kp/m}^2 = 10 \text{ Pa}$$

**232 SERIAL
STATIC CALCULATION
EXAMPLE:**



Window's Height $L = \dots\dots\dots 200$ cm

$A = \dots\dots\dots 100$ cm

$B = \dots\dots\dots 100$ cm

$a = \dots\dots\dots 50$ cm

$b = \dots\dots\dots 50$ cm

Building's Height $h = \dots\dots\dots 8$ m

Wind Pressure $q = \dots\dots\dots 50$ kp/m²

Constant Multiplier $c = 1,2$

Wind Load $w = q \cdot c = \dots\dots\dots 50 \times 1,2 = 60$ kp/m² = 0,0060 kp/cm²

Allowed Deflection $L/300$ $f = \dots\dots\dots 200/300 = 0,67$ cm

Elasticity Module $E = 2,1 \cdot 10^6$ kp/cm²

$I_{x_1} = \text{Required Moment of inertia (cm)} \quad I_{x_1} = \frac{W \cdot L^4 \cdot a}{1920 \cdot E \cdot f} \left(25 - 40 \left(\frac{a}{L} \right)^2 + 16 \left(\frac{a}{L} \right)^4 \right)$

$I_{x_2} = \frac{W \cdot L^4 \cdot b}{1920 \cdot E \cdot f} \left(25 - 40 \left(\frac{b}{L} \right)^2 + 16 \left(\frac{b}{L} \right)^4 \right)$

232 SERIAL STATIC CALCULATION

EXAMPLE:

$$I_{x_1} = \frac{0,0060 \cdot 200^4 \cdot 50}{1920 \cdot 2100000 \cdot 0,67} \left(25 - 40 \left(\frac{50}{200} \right)^2 \right) + 16 \left(\frac{50}{200} \right)^4 = 4,01 \text{ cm}^4$$

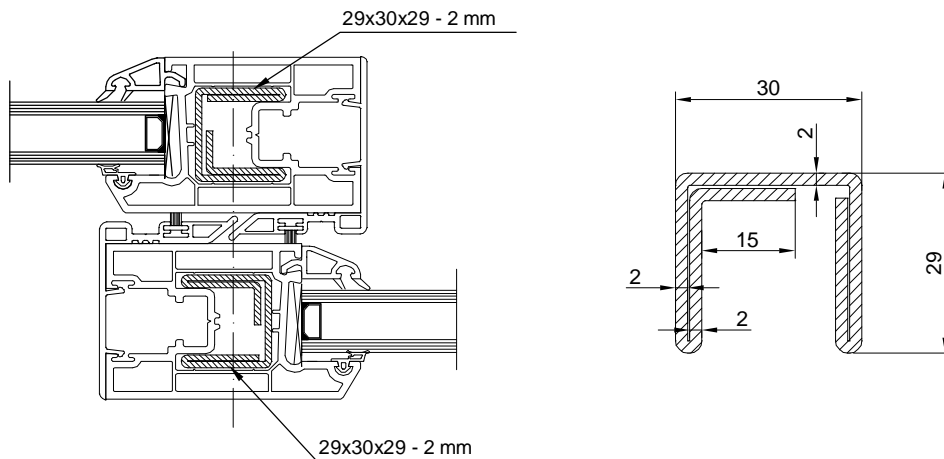
$$I_{x_2} = \frac{0,0060 \cdot 200^4 \cdot 50}{1920 \cdot 2100000 \cdot 0,67} \left(25 - 40 \left(\frac{50}{200} \right)^2 \right) + 16 \left(\frac{50}{200} \right)^4 = 4,01 \text{ cm}^4$$

180 cm height and 50 cm width are taken as maximum values in the table

$$\text{Total } I_x = I_{x_1} + I_{x_2} = 4,01 + 4,01 = 8,02 \text{ cm}^4$$

$$\text{Total in the table } I_x = I_{x_1} + I_{x_2} = 4,03 + 4,03 = 8,06 \text{ cm}^4$$

With this calculation, the table's accuracy was examined.



We got a sash system + mullion + sash

$$\text{Sash reinforcement profile } I_x = 29 \times 30 \times 29 - 2 \text{ mm} = 4,03 \text{ cm}^4$$

$$\text{Sash reinforcement profile } I_x = 29 \times 30 \times 29 - 2 \text{ mm} = 4,03 \text{ cm}^4$$

$$\text{Total in the system } I_x = 4,03 + 4,03 = 8,06 \text{ cm}^4$$

Total I_x of the used reinforcement profiles > the required I_x

$8,06 \text{ cm}^4 > 8,02 \text{ cm}^4$ with their reinforcement profiles a window work could be made in this measurement

TABLE OF WIND PRESSURE

Pa	m/sec	Km/h	mm H₂O	MPH	Psf
75	11,18	40,25	7,65	25,01	1,56
100	12,91	46,48	10,20	28,88	2,08
150	15,81	56,92	15,30	35,36	3,13
200	18,26	65,73	20,40	40,84	4,17
250	20,41	73,48	25,50	45,88	5,22
300	22,36	80,50	30,60	50,02	6,26
400	25,82	92,95	40,80	57,75	8,35
500	28,87	103,92	51,00	64,57	10,44
600	31,62	113,84	61,20	70,73	12,53
700	34,16	122,69	71,40	76,23	14,62
800	36,51	131,45	81,60	81,67	16,71
900	38,73	139,43	91,80	86,63	18,80
1000	40,82	146,97	102,00	91,32	20,89
1100	42,82	154,14	112,20	95,77	22,97
1200	44,72	161,00	122,40	100,04	25,06
1300	46,55	167,57	132,60	104,12	27,15
1400	48,30	173,90	142,80	108,05	29,24
1500	50,00	180,00	153,00	111,84	31,33
1600	51,64	185,90	163,20	115,51	33,42
1700	53,23	191,62	173,40	119,06	35,51
1800	54,77	197,18	183,60	122,52	37,60
1900	56,27	202,58	193,80	125,87	39,69
2000	57,74	207,85	204,00	129,15	41,78
2100	59,16	212,98	214,20	132,33	43,86
2200	60,55	218,00	224,40	135,45	45,95
2300	61,91	222,90	234,60	138,50	48,04
2400	63,25	227,68	244,80	141,47	50,13
2500	64,55	232,38	255,00	144,39	52,22
3000	70,71	254,56	306,00	158,17	62,67
4000	81,65	293,94	408,00	182,64	83,56
5000	91,29	328,63	510,00	204,20	104,45
6000	100,00	360,00	612,00	223,69	125,34