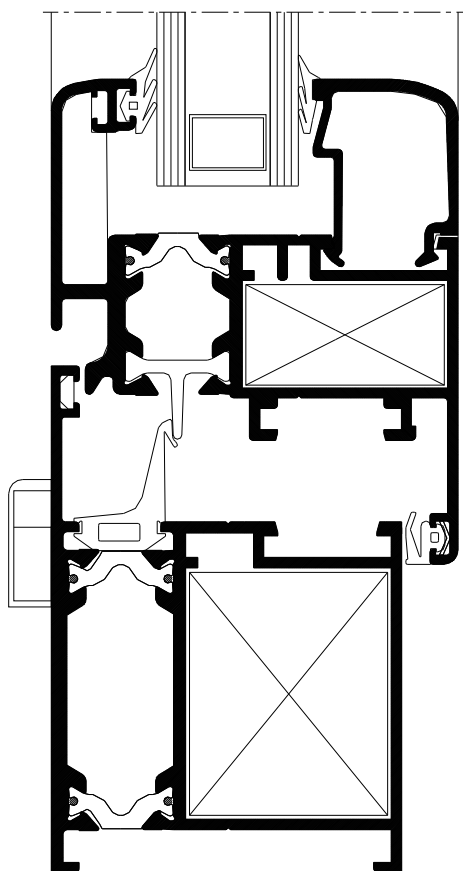
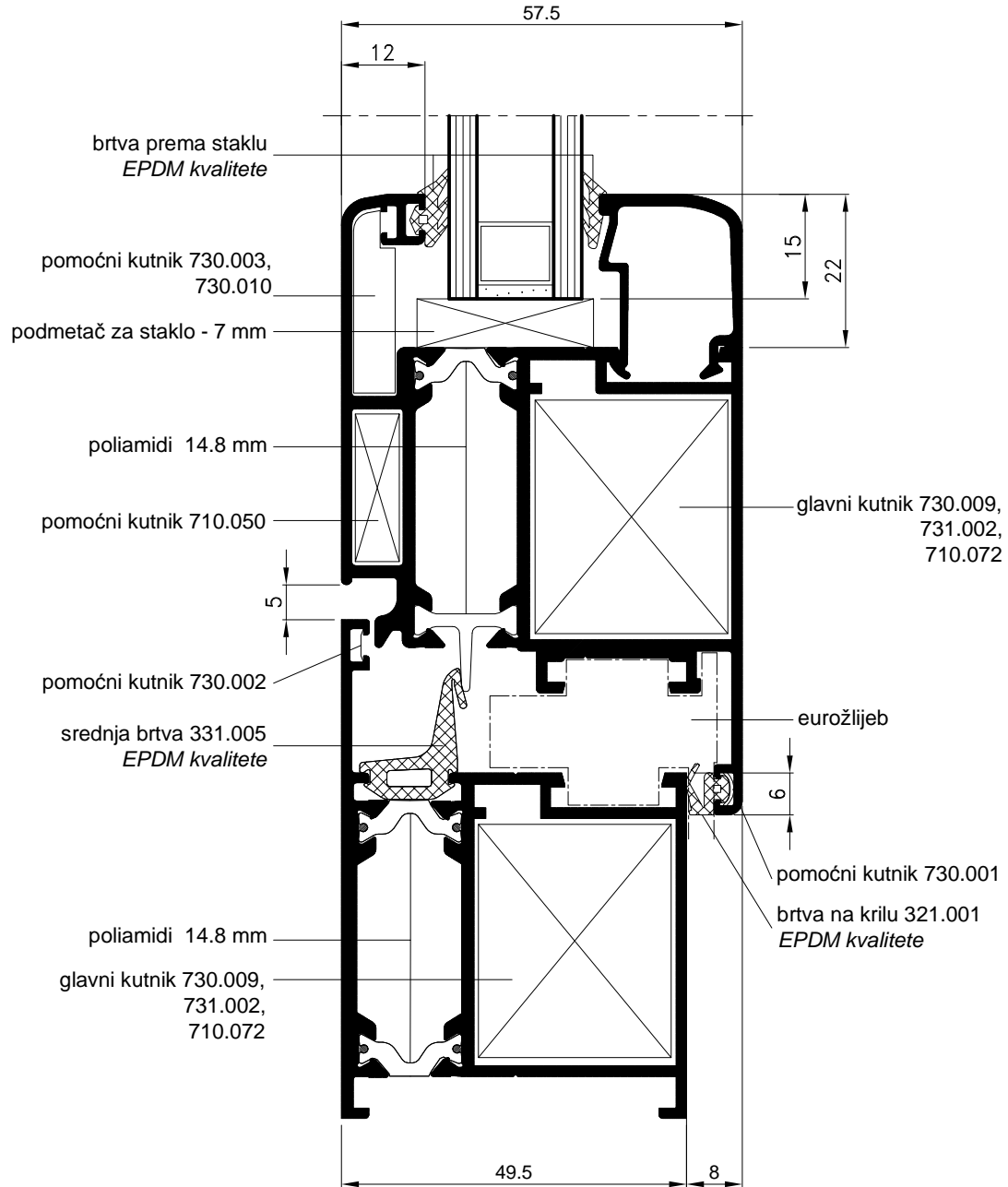


# FEAL

FEAL-poduzeće za preradu aluminija-Široki Brijeg Trn b.b.



serija **TERMO 50**





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### Opis ispitnog uzorka

Ispitan je jedan uzorak jednokrlnog otklopno-zaokretnog prozora, vanjskih izmjera: 1.23 m x 1.48 m, izrađen od aluminijskih profila za prozore i vrata serije TERMO 50. Korišteni su ekstrudirani profili legure AlMgSi 0,5, površinski zaštićeni elektrostatski bojanjem, debljine bojenog sloja 70  $\mu\text{m}$ .

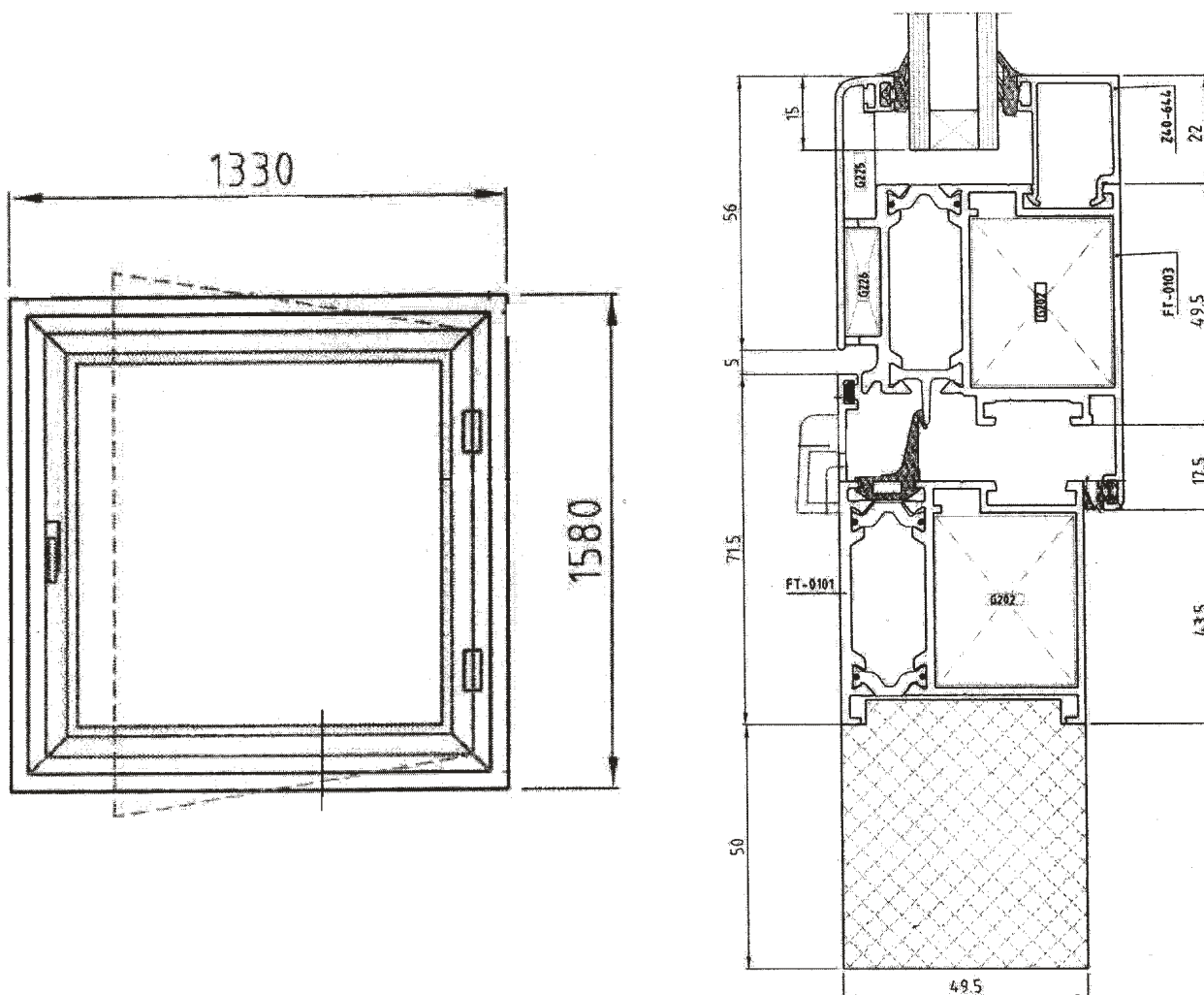
Za doprozornik je korišten profil FT-0101, a za krilo prozora profil FT-0103 i letvice – profil Z40-644.

Ispitni uzorak je ostakljen IZO staklom debljine 18 mm (4 mm + 10 mm + 4 mm), brtvljeno s unutarnje strane brtvom Z 918, a s vanjske strane brtvom Z 111. Na profilu se nalazi srednja brtva oznake Z 103, koja je na krajevima spojena kutnim umetcima od istog materijala. Doprozornik i krilo prozora su s unutarnje strane prozora razdvojeni brtvom Z 106.

Za spajanje doprozornika i krila prozora korišteni su vezni elementi od aluminijske slitine G226 i G202, te elementi izrađeni od inoxa G112 i G112/A.

Na donjem vodoravnom dijelu doprozornika nalaze se dvije okapnice skrivene plastičnim umetkom G101. Ugrađen okov za otklopno-zaokretni prozor je GIESSE art. 4701.

Skice ispitnog uzorka s poprečnim presjecima dani su od strane proizvođača prozora kako slijedi:





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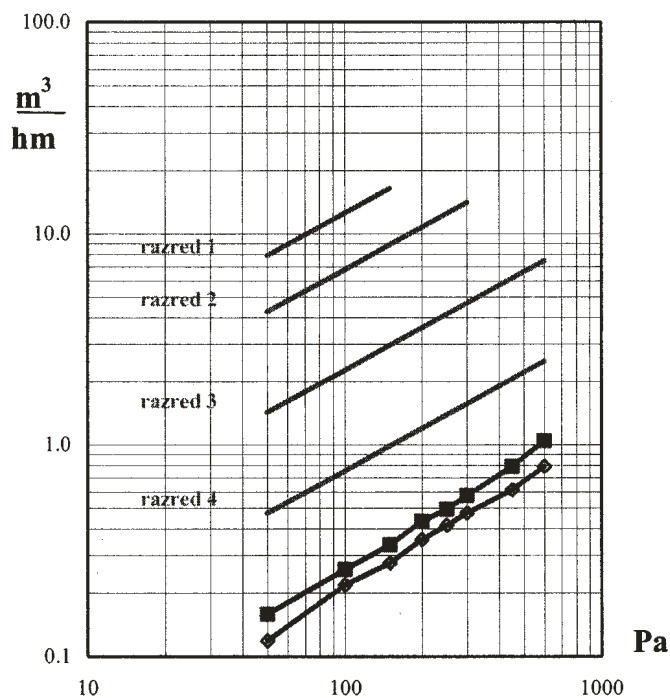
## REZULTATI ISPITIVANJA ZRAKOPROPUSNOSTI

Ispitivanje je provedeno u skladu s HRN EN 1026:2001.

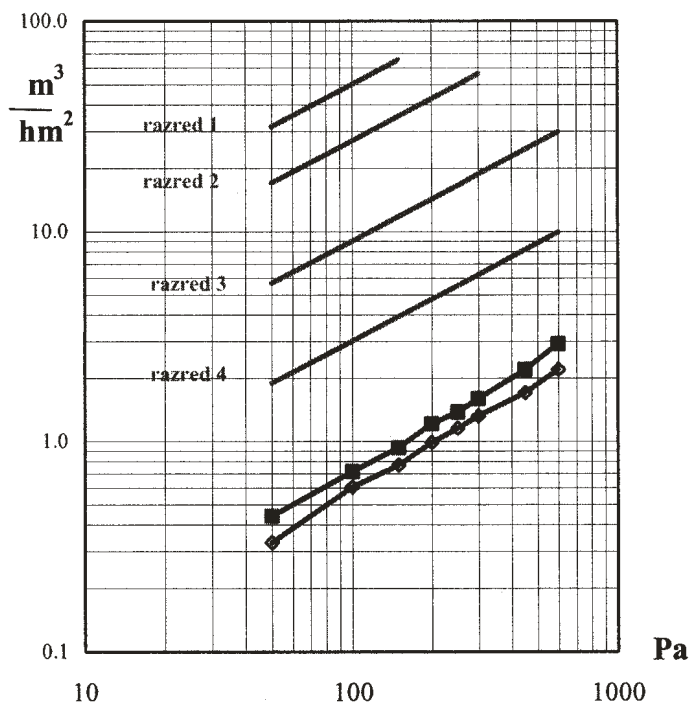
Ploština ispitivanog prozora:  $A = 1,23 \text{ m} \times 1,48 \text{ m} = 1,82 \text{ m}^2$ .

Duljina sljubnica ispitivanog prozora:  $l = 2 \times (1,14 \text{ m}) + 2 \times (1,39 \text{ m}) = 5,06 \text{ m}$ .

Dijagrami izmjerenih protoka zraka po jedinici duljine sljubnica uzorka i po jedinici ploštine uzorka, kao funkcija razlike tlakova



■ LGF 183/03 - prvo ispitivanje zrakopropusnosti  
 ◆ LGF 183/03 - ispitivanje zrakopropusnosti nakon ispitivanja otpornosti na opterećenje vjetrom



■ LGF 183/03 - prvo ispitivanje zrakopropusnosti  
 ◆ LGF 183/03 - ispitivanje zrakopropusnosti nakon ispitivanja otpornosti na opterećenje vjetrom

**S obzirom na zrakopropusnost, ispitani jednokrilni otklopno-zaokretni prozor izrađen od aluminijskih profila serije TERMO 50, ostakljen IZO staklom 18 mm, proizvođača FEAL d.o.o., može se svrstati u *razred 4*, u skladu s HRN EN 12207:2001.**





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### REZULTATI ISPITIVANJA VODONEPROPUSNOSTI

Tijekom ispitivanja vodonepropusnosti u skladu s HRN EN 1027:2001, Metoda 1A, u rasponu natisnog tlaka od 0 Pa do 600 Pa, ispitani uzorak LGF 183/03 nije propustio vodu.

Tablica:

TLAK $\Delta p$ (Pa)	VRIJEME $\tau$ (min)	LGF 183/03	RAZRED (HRN EN 12208:2001)
0	15	+	1 A
50	5	+	2 A
100	5	+	3 A
150	5	+	4 A
200	5	+	5 A
250	5	+	6 A
300	5	+	7 A
450	5	+	8 A
600	5	+	9 A

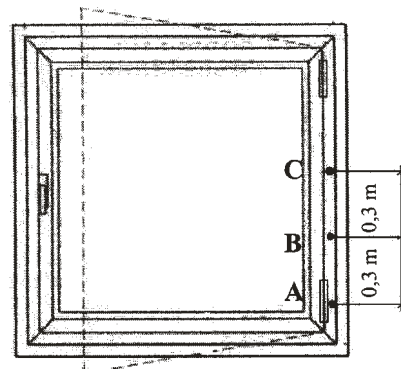
- + ..... Znači da nije došlo do propuštanja vode.  
 - ▽ ..... Znači da je došlo do propuštanja vode.

S obzirom na vodonepropusnost, ispitani jednokrlni otklopno-zaokretni prozor izrađen od aluminijskih profila serije TERMO 50, ostakljen IZO staklom 18 mm, proizvođača FEAL d.o.o. može se svrstati u razred 9A, u skladu s HRN EN 12208:2001.

### REZULTATI ISPITIVANJA OTPORNOSTI NA OPTEREĆENJE VJETROM

Ispitivanje je provedeno u skladu s HRN EN 12211:2002.

- B** – mjerno mjesto na sredini između A i C mjesta (vidi oznaku na crtežu),  
**A** – mjerno mjesto na donjem kraju desnog profila prozorskog krila, gdje se nalazi zglobnica (vidi oznaku na crtežu),  
**C** – mjerno mjesto na sredini desnog profila prozorskog krila, gdje se nalazi ukrućenje prozorskog krila (vidi oznaku na crtežu),  
**A<sub>0</sub>, B<sub>0</sub>, C<sub>0</sub>** – početno stanje s obzirom na pomak,  $\Delta p = 0$  (Pa),  
**A<sub>p</sub>, B<sub>p</sub>, C<sub>p</sub>** – pomak pri iskazanoj razlici tlakova P1,  
**A<sub>p</sub>-A<sub>0</sub>** – čeonu pomak na mjernom mjestu A,  
**B<sub>p</sub>-B<sub>0</sub>** – čeonu pomak na mjernom mjestu B,  
**C<sub>p</sub>-C<sub>0</sub>** – čeonu pomak na mjernom mjestu C,  
**F<sub>p</sub> = (B<sub>p</sub>-B<sub>0</sub>) - ((A<sub>p</sub>-A<sub>0</sub>) + (C<sub>p</sub>-C<sub>0</sub>))/2** – čeonu savijanje,  
**L = 0,60 m** - razmak između točaka A i C,  
**F<sub>rp</sub> = F<sub>p</sub> / L** - relativno čeonu savijanje.





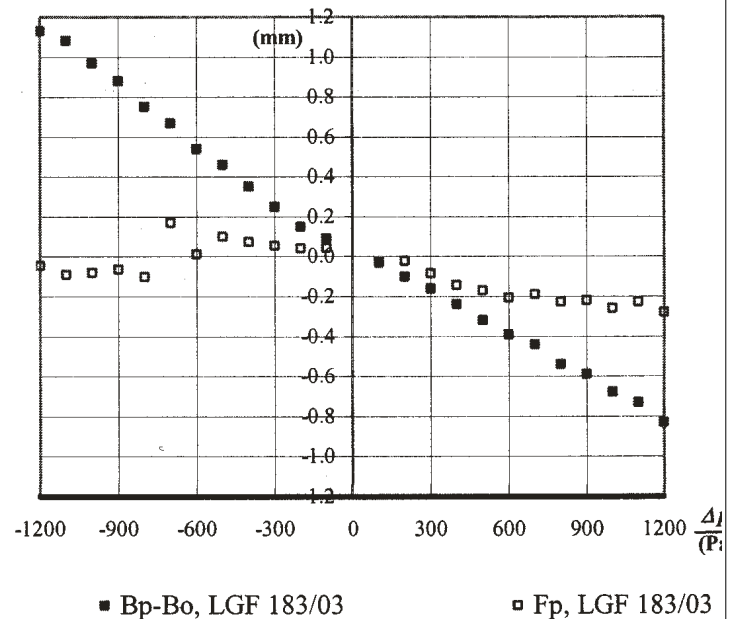
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TLAK $\Delta p$ (Pa)	LGF 183/03				
	$A_p$ (mm)	$B_p$ (mm)	$C_p$ (mm)	$F_p$ (mm)	$F_{rp}$ ( $\times 10^{-4}$ )
100	0.0	0.0	0.0	-0.03	-0.42
200	-0.1	-0.1	-0.1	-0.02	-0.33
300	0.0	-0.2	-0.2	-0.09	-1.42
400	0.0	-0.2	-0.2	-0.15	-2.42
500	0.0	-0.3	-0.3	-0.17	-2.83
600	0.0	-0.4	-0.4	-0.21	-3.42
700	0.0	-0.4	-0.5	-0.19	-3.17
800	-0.1	-0.5	-0.6	-0.23	-3.75
900	-0.1	-0.6	-0.7	-0.22	-3.67
1000	-0.1	-0.7	-0.8	-0.26	-4.33
1100	-0.2	-0.7	-0.8	-0.23	-3.75
1200	-0.2	-0.8	-0.9	-0.28	-4.67
-100	-0.1	0.1	0.2	0.05	0.75
-200	0.0	0.2	0.2	0.04	0.67
-300	0.0	0.3	0.4	0.06	0.92
-400	0.0	0.4	0.6	0.08	1.25
-500	0.0	0.5	0.7	0.10	1.67
-600	0.3	0.5	0.8	0.01	0.17
-700	0.1	0.7	0.9	0.17	2.83
-800	0.6	0.8	1.1	-0.10	-1.67
-900	0.7	0.9	1.2	-0.06	-1.08
-1000	0.8	1.0	1.3	-0.08	-1.33
-1100	0.9	1.1	1.5	-0.09	-1.50
-1200	0.8	1.1	1.5	-0.05	-0.75



S obzirom na relativno čeono savijanje, ispitani uzorak LGF 183/03, može se svrstati u razred C ( $F_{rp} < 1/300$ ), u skladu s HRN EN 12210:2001, budući da je maksimalno relativno čeono savijanje iznosilo 1/2140.

## REZULTATI ISPITIVANJA OTPORNOSTI PROMJENJIVIM TLAKOM P2

Ispitivanje je provedeno s 50 impulsa promjenjivog tlaka P2 od  $\pm 600$  Pa, a iznosi polovicu maksimalnog tlaka P1.

Nakon provedenog opterećenja na uzorku LGF 183/03 nije bilo vidljivih oštećenja niti promjena u funkcionalnosti prozora.

## REZULTATI SIGURNOSNOG ISPITIVANJA

Ispitivanje sigurnosti je provedeno s jednim impulsom od  $-1800$  Pa i s jednim impulsom od  $+1800$  Pa.

Nakon provedenog opterećenja na uzorku LGF 183/03 nije bilo vidljivih napuknuća na bilo kojem dijelu uzorka (staklo, okvir i okovi), niti je došlo do otvaranja prozora.

S obzirom na ispitivanje otpornosti na opterećenje vjetrom, ispitani jednokrilni otklopno-zaokretni prozor izrađen od aluminijskih profila serije TERMO 50, ostakljen IZO staklom 18 mm, proizvođača FEAL d.o.o., može se svrstati u razred C3, u skladu s HRN EN 12210:2001.



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## ZVUČNA IZOLACIJA

### REZULTATI ISPITIVANJA

Indeks zvučne izolacije ispitivanog uzorka prikazan je, kao funkcija frekvencije, dijagramom i tablicom.

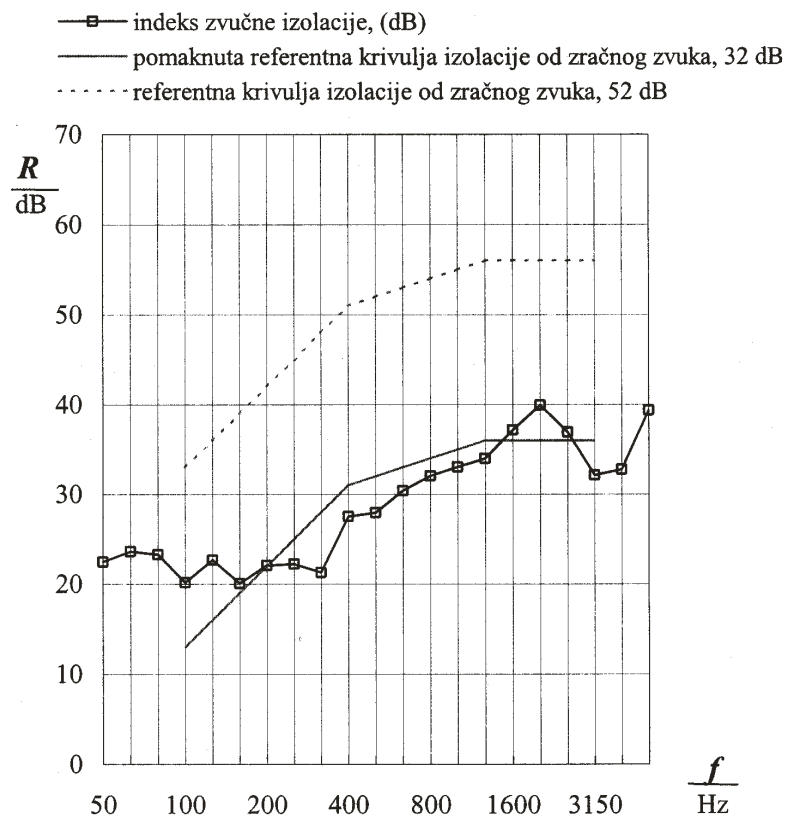
Pri iskazivanju rezultata ispitivanja rabljene su ove oznake:  $f$  ..... središnja frekvencija terca (Hz),

$R$  ..... indeks zvučne izolacije (dB),

$R_w$  .... vrednovani indeks zvučne izolacije (dB).

**Tablica:**

frekvencija $f$ (Hz)	terca $R$ (dB)
50	22.5
63	23.6
80	23.3
100	20.2
125	22.7
160	20.1
200	22.1
250	22.2
315	21.3
400	27.5
500	27.9
630	30.4
800	32.0
1000	33.0
1250	34.0
1600	37.2
2000	39.9
2500	36.9
3150	32.1
4000	32.8
5000	39.3

**Dijagram:**


U skladu s HRN EN ISO 717-1:1998. vrednovani indeks zvučne izolacije ispitivanog jednokrlnog otklopno-zaokretnog prozora izrađenog od aluminijskih profila serije TERMO 50, proizvođača FEAL d.o.o., iznosi:

$$R_w (C; C_{tr}; C_{50-5000}; C_{tr,50-5000}) = 32 (0; -4; -1; -4) \text{ dB.}$$

Voditelj ispitivanja:

Tomislav Vujić, ing. el.

Voditelj laboratorija:

mr. sc. Sonja Šuhard Mihaljević, dipl. ing. kem. tehn





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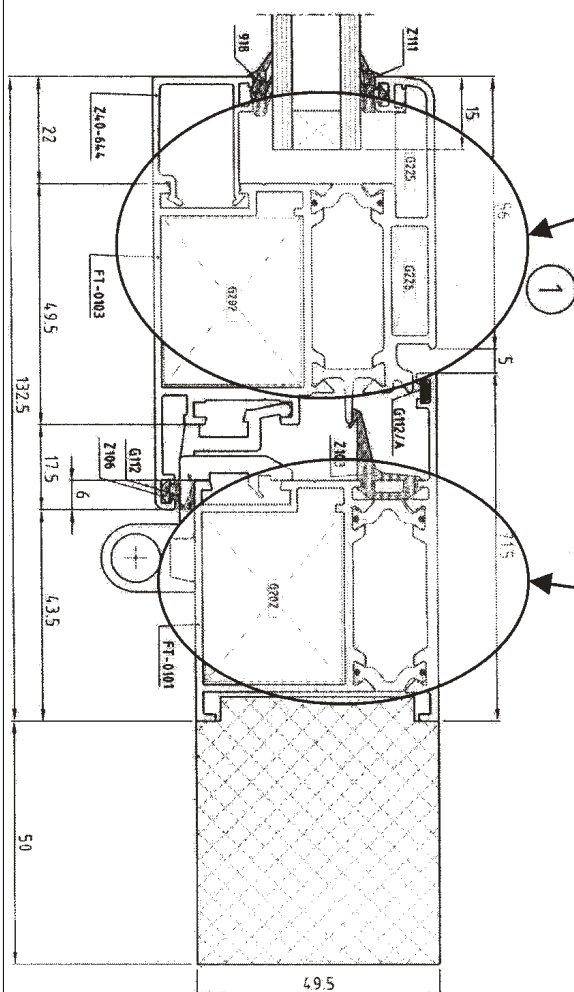
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## KOEFICIJENT PROLASKA TOPLINE

### Opis uzorka za ispitivanje

Predmetom ispitivanja bili su aluminjski profili za izradu prozora serije TERMO 50 s prekinutim toplinskim mostom.

Presjeci ispitivanih uzoraka profila dani su u nastavku kako slijedi:



**Ispitni uzorak 1:** izrađen iz aluminjskih profila za izradu krila prozora serije TERMO 50 s prekinutim toplinskim mostom.

**Ispitni uzorak 2:** izrađen iz aluminjskih profila za izradu doprozornika prozora serije TERMO 50 s prekinutim toplinskim mostom.



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**Tablica mjernih rezultata za profil krila-ispitnog uzorka 1:**

naziv veličine	jedinica	mjerna točka			
		1	2	3	
Srednja temperatura toplije strane ispitnog uzorka	$\vartheta_1$	°C	14,3	24,9	34,7
Srednja temperatura hladnije strane ispitnog uzorka	$\vartheta_2$	°C	7,0	17,3	26,8
Srednja temperatura ispitnog uzorka	$\vartheta_{sr}$	°C	10,7	21,1	30,8
Srednja temperaturna razlika	$\vartheta_1 - \vartheta_2$	K	7,3	7,6	7,9
Gustoća toplinskog toka	$q$	W · m <sup>-2</sup>	27,7	29,6	30,8
Toplinski otpor	$R$	K · m <sup>2</sup> · W <sup>-1</sup>	0,264	0,258	0,254
Toplinski otpor pri + 10,0 °C	$R_{10}$	K · m <sup>2</sup> · W <sup>-1</sup>	0,264		

**Tablica mjernih rezultata za profil doprozornika-ispitnog uzorka 2:**

naziv veličine	jedinica	mjerna točka			
		1	2	3	
Srednja temperatura toplije strane ispitnog uzorka	$\vartheta_1$	°C	14,5	25,2	35,3
Srednja temperatura hladnije strane ispitnog uzorka	$\vartheta_2$	°C	7,0	17,3	26,8
Srednja temperatura ispitnog uzorka	$\vartheta_{sr}$	°C	10,8	21,3	31,1
Srednja temperaturna razlika	$\vartheta_1 - \vartheta_2$	K	7,5	7,9	8,2
Gustoća toplinskog toka	$q$	W · m <sup>-2</sup>	28,9	30,7	32,2
Toplinski otpor	$R$	K · m <sup>2</sup> · W <sup>-1</sup>	0,260	0,258	0,254
Toplinski otpor pri + 10,0 °C	$R_{10}$	K · m <sup>2</sup> · W <sup>-1</sup>	0,257		

U skladu s HRN U.J5.510:1987, toplinska prohodnost (koeficijent prolaza topline  $k$ ) za profil krila-ispitnog uzorka 1, iznosi:

$$k = \frac{1}{\frac{1}{\alpha_i} + R_{10} + \frac{1}{\alpha_e}} = 2,3 \text{ W} \cdot \text{K}^{-1} \cdot \text{m}^{-2}$$

U skladu s HRN U.J5.510:1987, toplinska prohodnost (koeficijent prolaza topline  $k$ ) za profil doprozornika-ispitnog uzorka 2, iznosi:

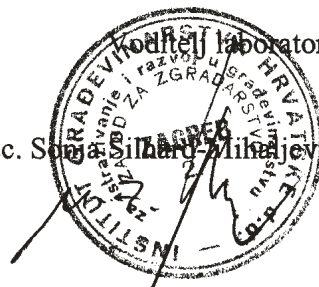
$$k = \frac{1}{\frac{1}{\alpha_i} + R_{10} + \frac{1}{\alpha_e}} = 2,4 \text{ W} \cdot \text{K}^{-1} \cdot \text{m}^{-2}$$

Voditelj ispitivanja:

Zlatko Franolić

laboratorija:

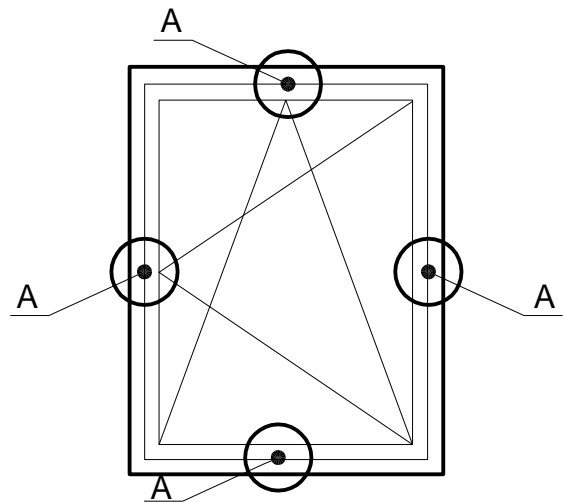
mr. sc. Slobodan Šilhard-Mikajević, dipl. ing. tehn.



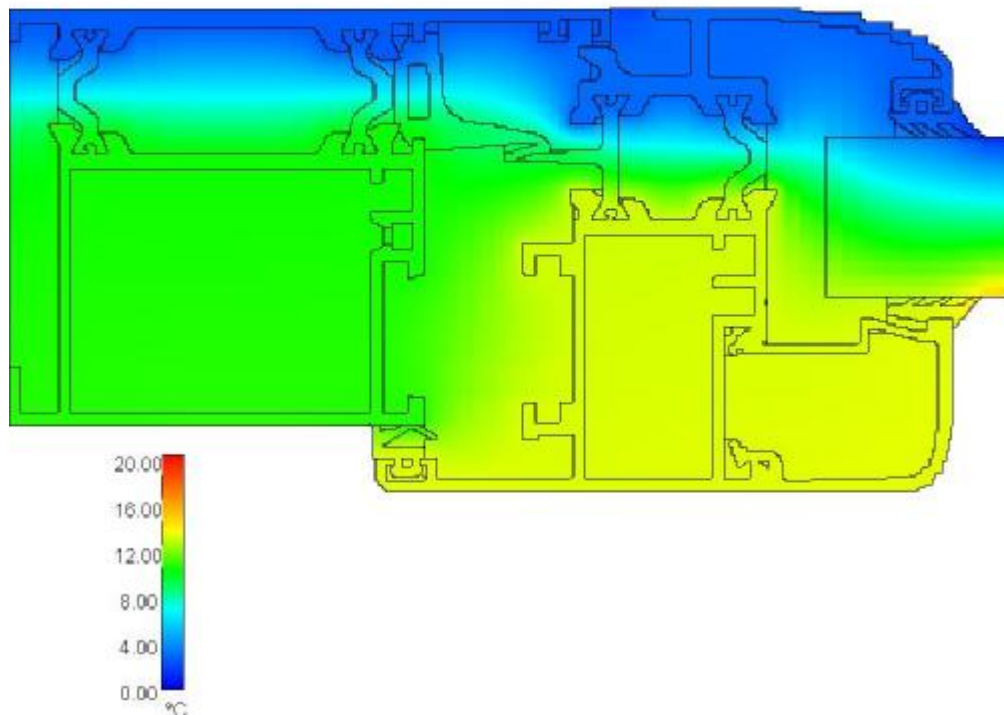
## TOPLINSKE ZNAČAJKE TERMO 50

Proračun koeficijenta prolaska topline počiva na dvodimenzionalnoj numeričkoj metodi konačnih elemenata određene prema prEN ISO 10077-2.

DIMENZIJE	L	(m)	1.23
	H	(m)	1.48
A-ram + krilo	$U_A$	(W/m <sup>2</sup> K)	3.4
S-staklo	$U_S$	(W/m <sup>2</sup> K)	1.1
Kombinacija stakla i profila	$U_w$	(W/m <sup>2</sup> K)	1.9



## Temperaturni dijagram za A

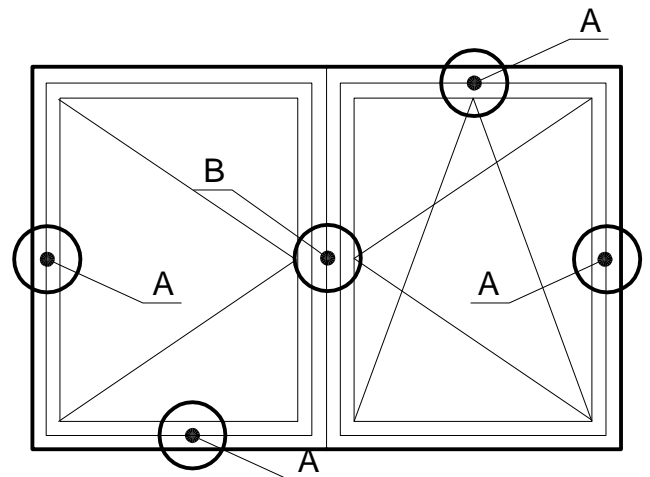
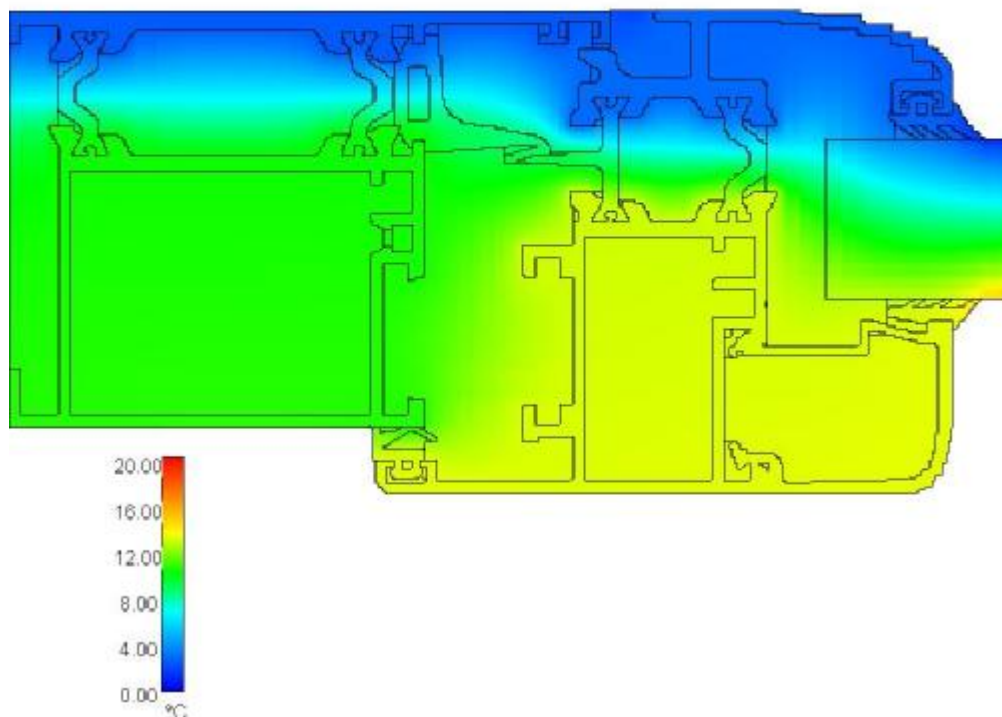




**TOPLINSKE ZNAČAJKE TERMO 50**

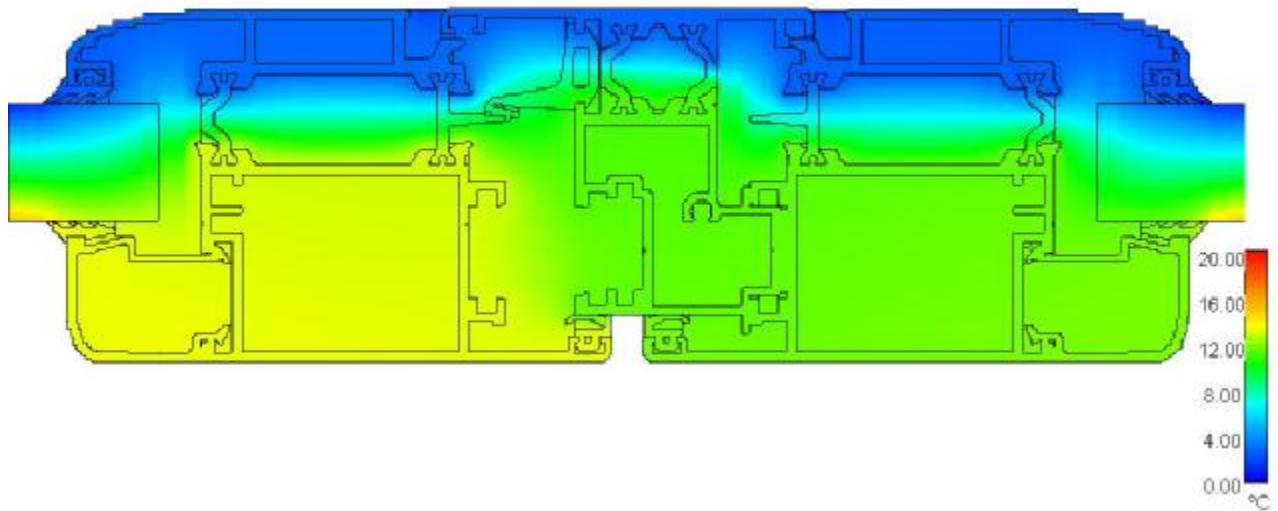
Proračun koeficijenta prolaska topline počiva na dvodimenzionalnoj numeričkoj metodi konačnih elemenata određene prema prEN ISO 10077-2.


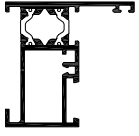
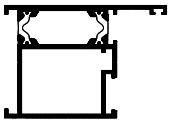
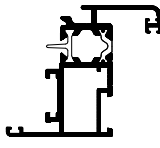
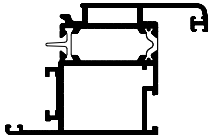
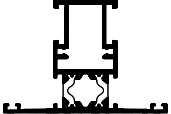
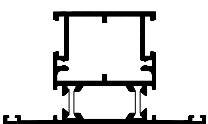
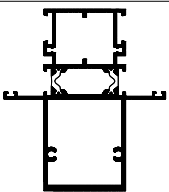
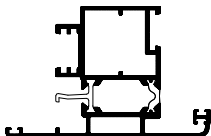
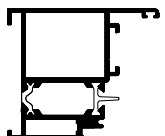
DIMENZIJE	L	(m)	1.5
	H	(m)	1.48
A-ram + krilo	$U_A$	(W/m <sup>2</sup> K)	3.3
B-prečka	$U_B$	(W/m <sup>2</sup> K)	3.5
S-staklo	$U_S$	(W/m <sup>2</sup> K)	1.1
Kombinacija stakla i profila	$U_w$	(W/m <sup>2</sup> K)	2.3


**Temperaturni dijagram za A**




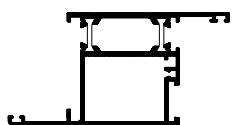
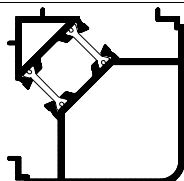
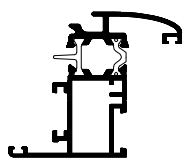
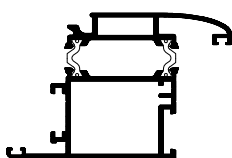
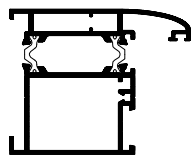
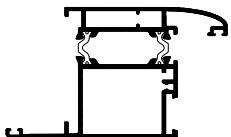

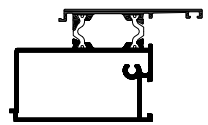


## Temperaturni dijagram za B






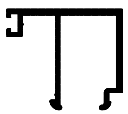
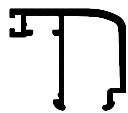





Oznaka		Izgled-presjek	Težina /kg/ml/	Opseg /mm/	$I_x$ /cm <sup>4</sup> /	$W_x$ /cm <sup>3</sup> /
FT-0100			1.081	281	12.08	
FT-0101			1.419	320	16.31	
FT-0102			1.386	402	19.00	
FT-0103			1.804	435	25.01	
FT-0104			1.270	341	13.03	
FT-0105			1.548	375	16.99	
FT-0106			2.501	515	86.65	
FT-0107			1.734	478	22.53	
FT-0110			1.555	334	22.55	

Oznaka		Izgled-presjek	Težina /kg/ml/	Opseg /mm/	$I_x$ /cm <sup>4</sup> /	$W_x$ /cm <sup>3</sup> /
FT-0112			3.030	584	37.60	
FT-0113			2.926	531	34.35	
FT-0114			1.507	360	13.81	
FT-0115			1.316	343	14.69	
FT-0116			1.228	342	15.77	
FT-0117			1.377	308	32.74	
FT-0118			1.305	290	19.89	
FT-0119			1.228	335	15.01	
FT-0120			1.538	408	25.43	







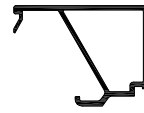
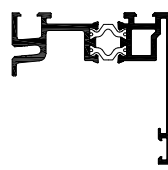


Oznaka		Izgled-presjek	Težina /kg/ml/	Opseg /mm/	$I_x$ /cm <sup>4</sup> /	$W_x$ /cm <sup>3</sup> /
FT-0121			0.770	234	6.82	
FT-0122			1.557	446	20.19	
FT-0128			1.289	294	13.44	
FT-0130			1.332	379	18.23	
FT-0131			1.743	416	24.37	
FT-0132			1.597	370	21.88	
FT-0141			1.735	427		
FT-0142			1.327	420	3.36	
FT-0145			1.498	337		

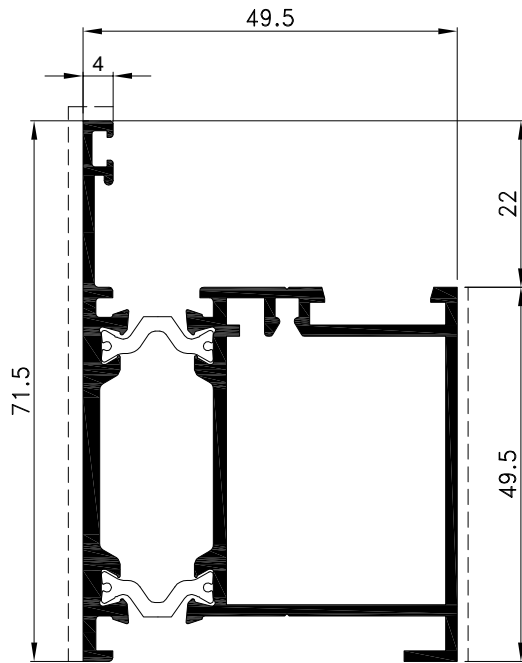
Oznaka		Izgled-presjek	Težina /kg/ml/	Opseg /mm/	$I_x$ /cm <sup>4</sup> /	$W_x$ /cm <sup>3</sup> /
FT-0146			1.197	342	12.65	
FT-0154			1.178	296	13.87	
FT-0155			1.362	334	18.68	
FT-0156			1.414	325		
FT-0217			1.780	269	31.23	
F-0735			0.418	166		
P45-648			0.257	140		
060 350			0.285	107		
F-0228			0.153	68		

Oznaka		Izgled-presjek	Težina /kg/ml/	Opseg /mm/	$I_x$ /cm <sup>4</sup> /	$W_x$ /cm <sup>3</sup> /
NC-1459			0.156			
M45-709			0.258	153		
M45-740			0.258	148		
Z40-656			0.215	107		
Z40-657			0.186	73		
Z40-636			0.261	141		
Z40-644			0.275	166		
Z40-646			0.286	157		
Z40-647			0.226	137		

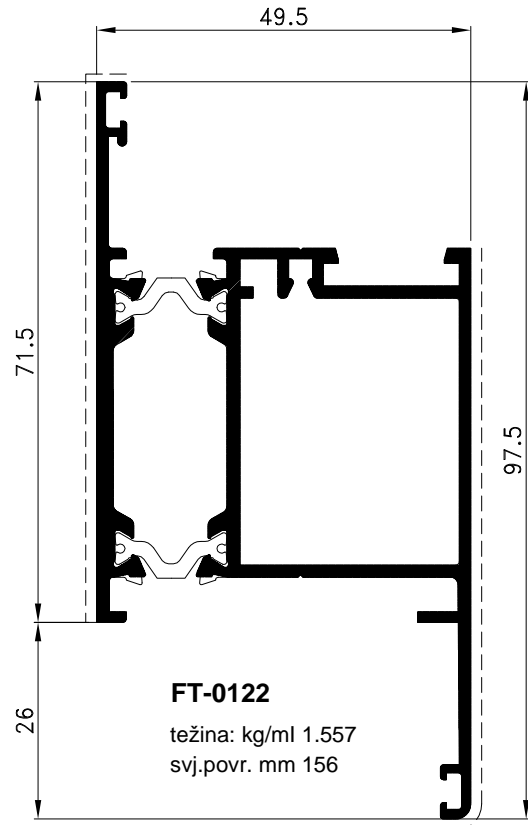
Oznaka		Izgled-presjek	Težina /kg/ml/	Opseg /mm/	$I_x$ /cm <sup>4</sup> /	$W_x$ /cm <sup>3</sup> /
Z40-648			0.268	125		
Z40-649			0.221	105		
Z40-653			0.348	201		
Z40-653/B			0.356	199		
Z40-658			0.318	184		
Z40-659			0.359	204		
Z40-660			0.179	89		
Z40-661			0.314	146		
Z40-662			0.245	116		



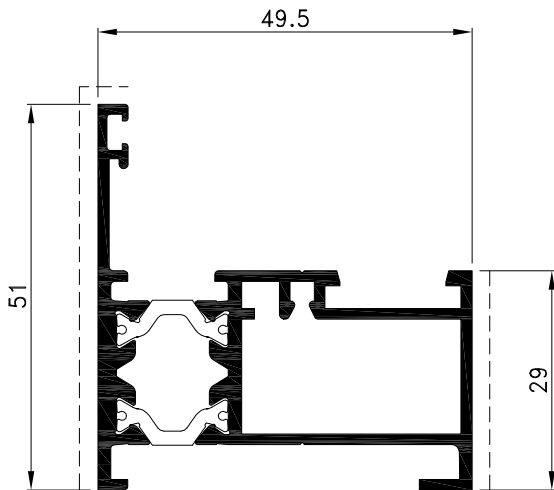
Oznaka		Izgled-presjek	Težina /kg/ml/	Opseg /mm/	$I_x$ /cm <sup>4</sup> /	$W_x$ /cm <sup>3</sup> /
F-0784			0.330	105		
Z40-665			0.272	112		
Z40-666			0.289	122		
Z40-667			0.358	139		
Z40-668			0.326	135		
Z40-669			0.347	143		
FT-0166			1.424	414		
F-1190			0.461	145		
FM 072			0.258	152		



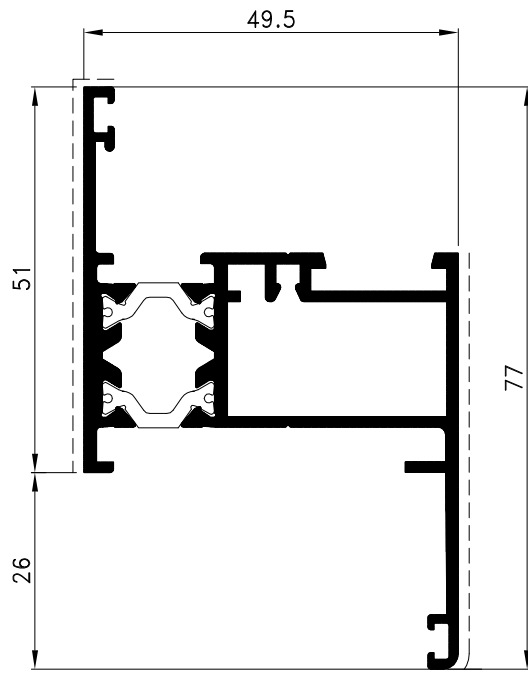
**FT-0101**  
težina: kg/ml 1.419  
svj.povr. mm 126



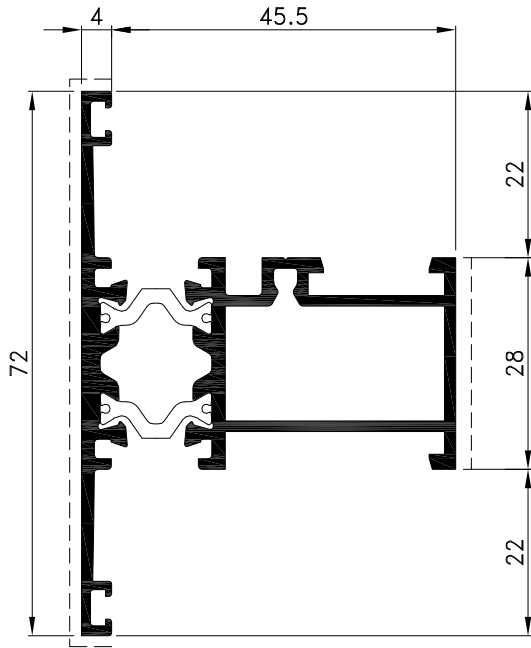
**FT-0122**  
težina: kg/ml 1.557  
svj.povr. mm 156



**FT-0100**  
težina: kg/ml 1.081  
svj.povr. mm 85

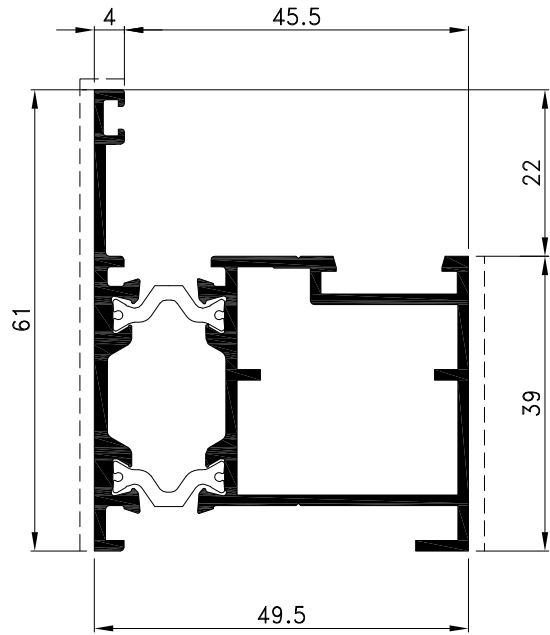


**FT-0116**  
težina: kg/ml 1.228  
svj.povr. mm 115



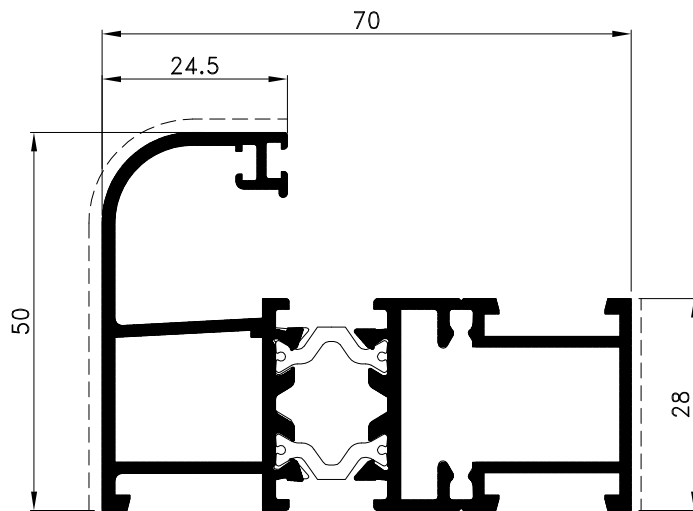
**FT-0146**

težina: kg/ml 1.197  
svj.povr. mm 108



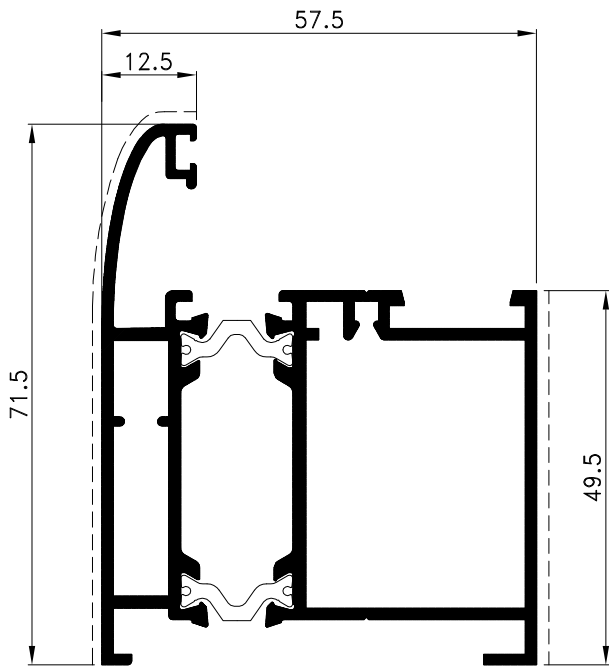
**FT-0154**

težina: kg/ml 1.178  
svj.povr. mm 104



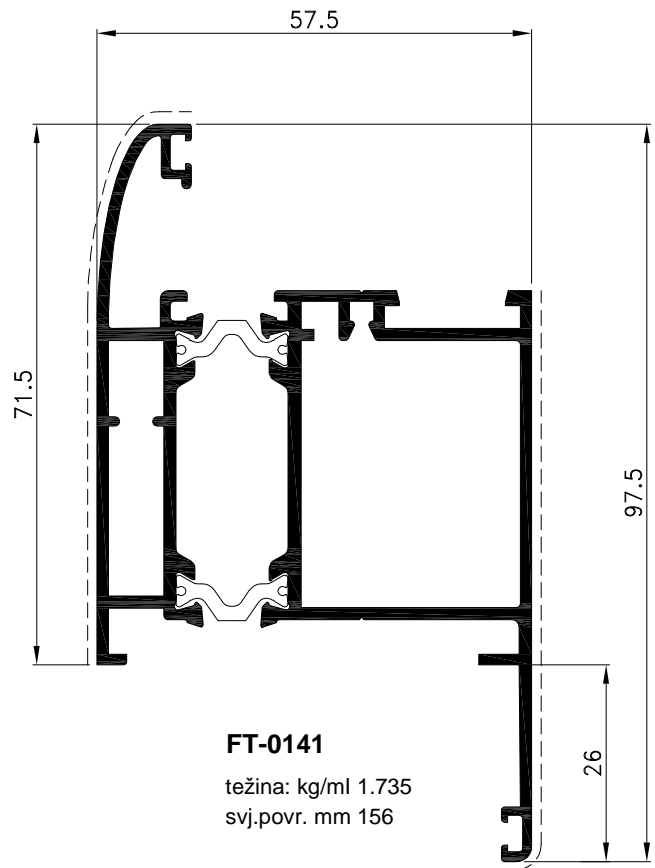
**FT-0120**

težina: kg/ml 1.538  
svj.povr. mm 97



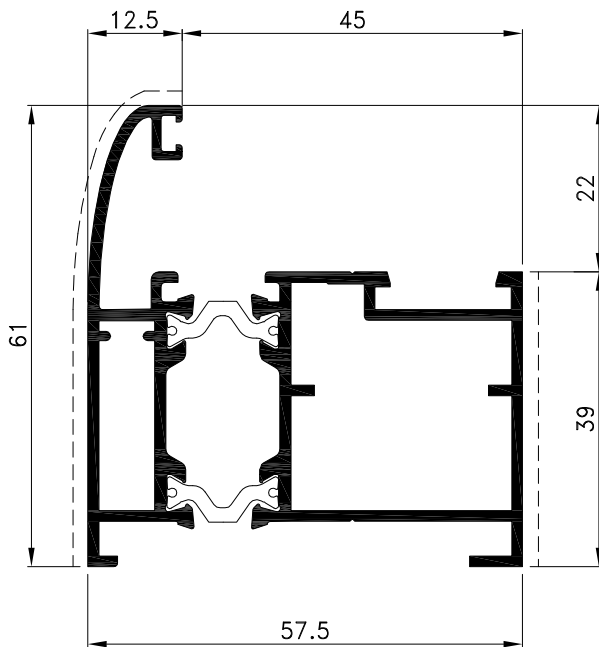
**FT-0132**

težina: kg/ml 1.597  
svj.povr. mm 130



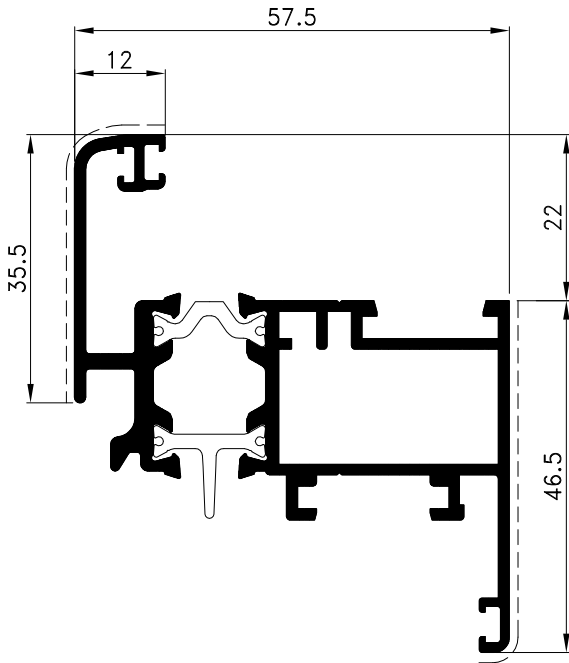
**FT-0141**

težina: kg/ml 1.735  
svj.povr. mm 156



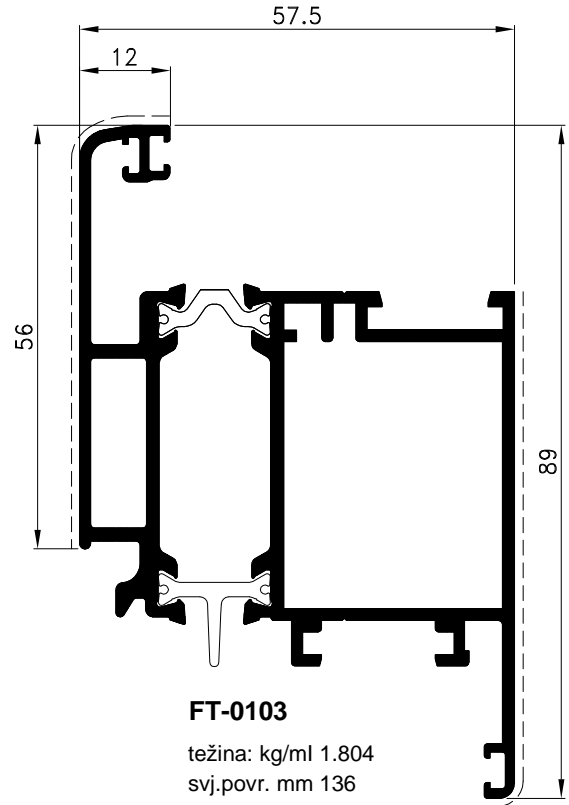
**FT-0155**

težina: kg/ml 1.362  
svj.povr. mm 109



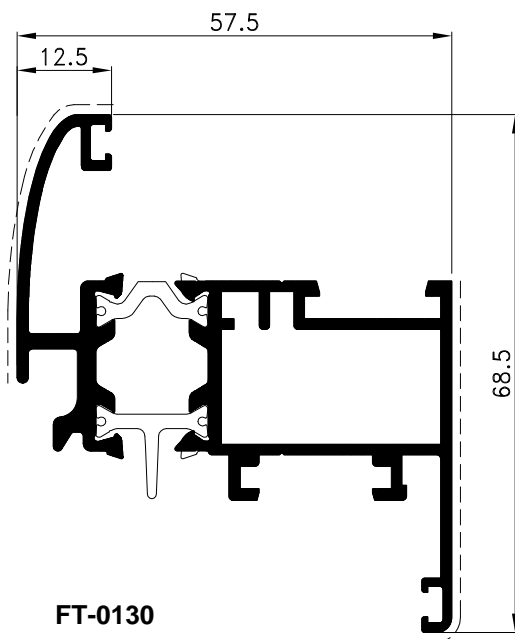
**FT-0102**

težina: kg/ml 1.386  
svj.povr. mm 95



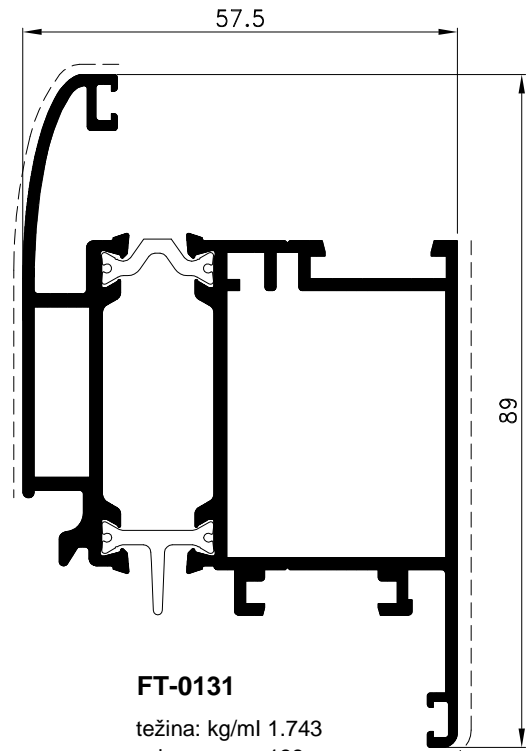
**FT-0103**

težina: kg/ml 1.804  
svj.povr. mm 136



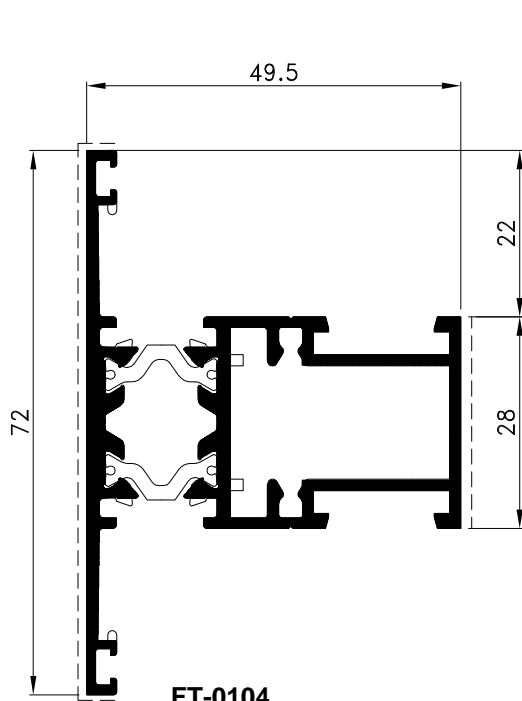
**FT-0130**

težina: kg/ml 1.332  
svj.povr. mm 97



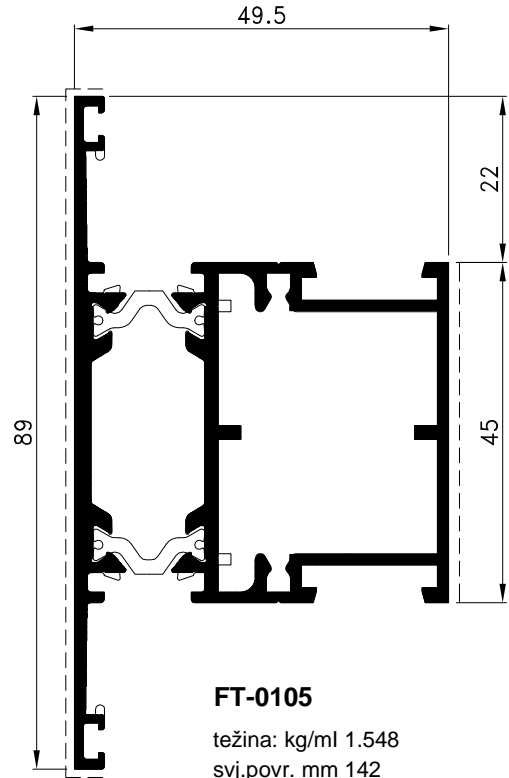
**FT-0131**

težina: kg/ml 1.743  
svj.povr. mm 138



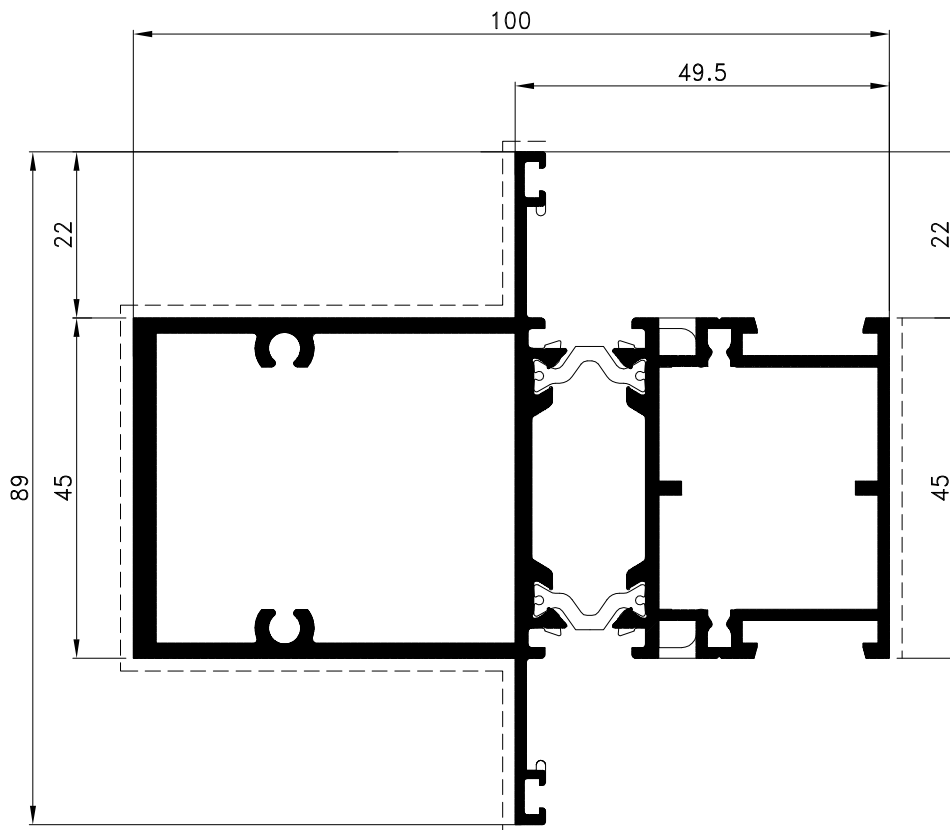
**FT-0104**

težina: kg/ml 1.270  
svj.povr. mm 108



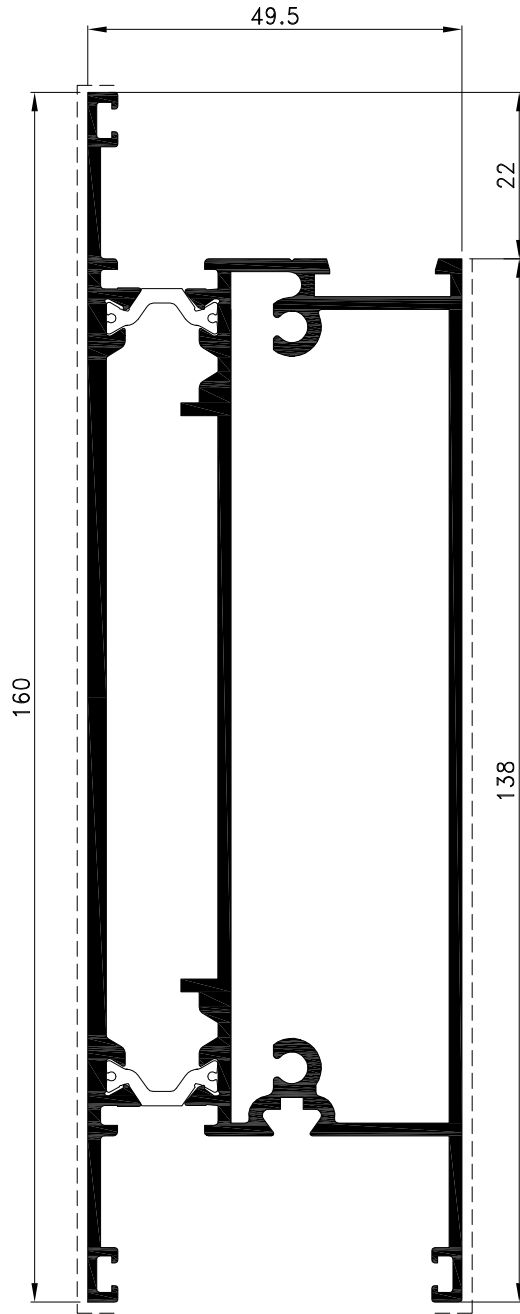
**FT-0105**

težina: kg/ml 1.548  
svj.povr. mm 142



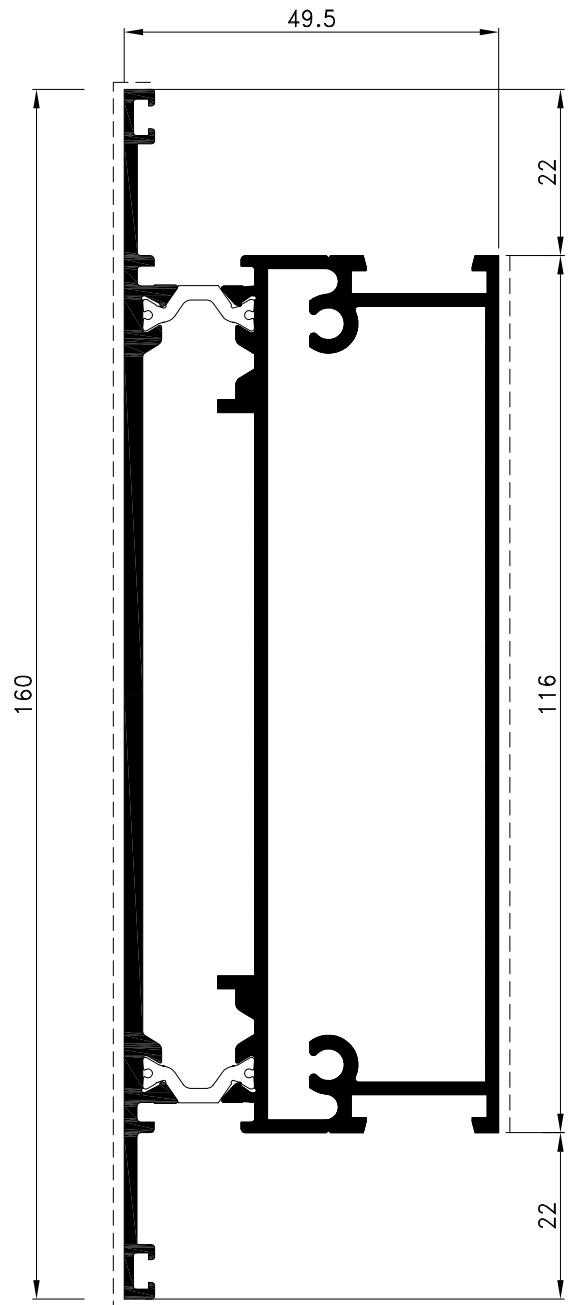
**FT-0106**

težina: kg/ml 2.501  
svj.povr. mm 284



**FT-0112**

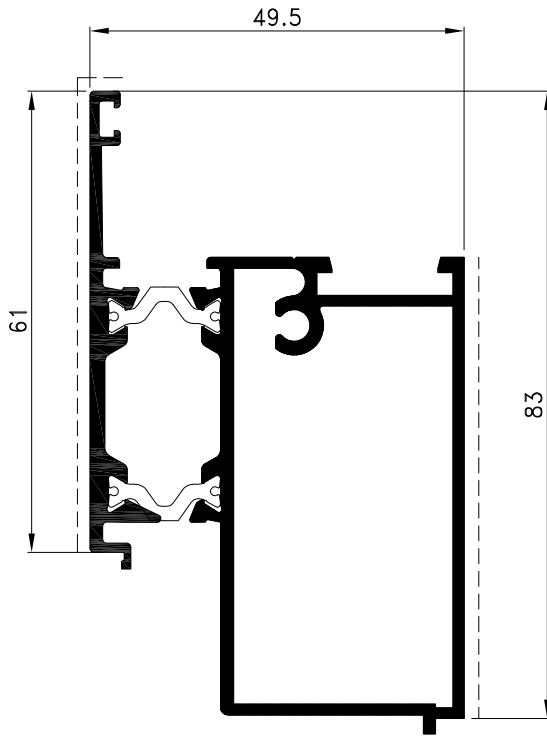
težina: kg/ml 3.030  
svj.povr. mm 310



**FT-0113**

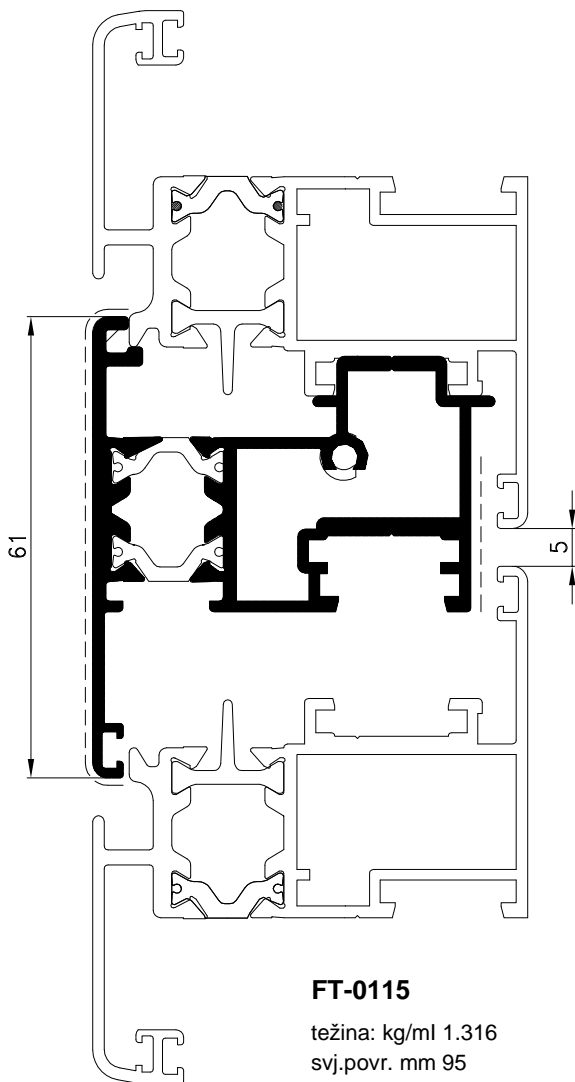
težina: kg/ml 2.926  
svj.povr. mm 284





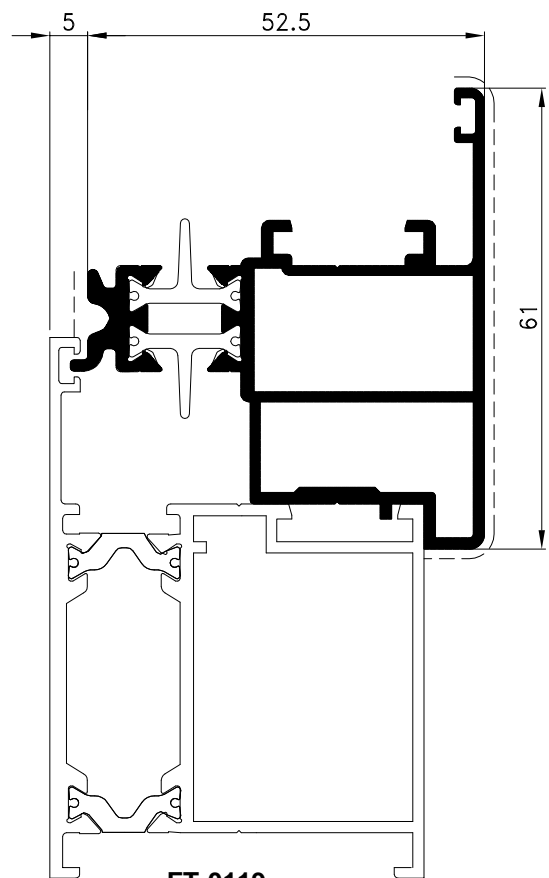
**FT-0145**

težina: kg/ml 1.498  
svj.povr. mm126



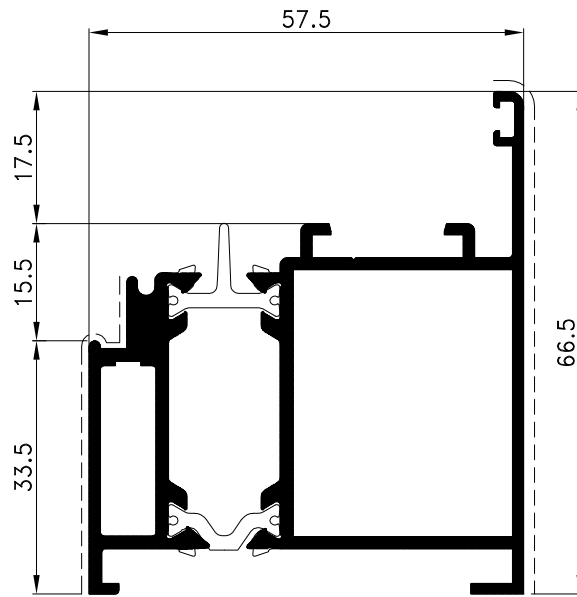
**FT-0115**

težina: kg/ml 1.316  
svj.povr. mm 95



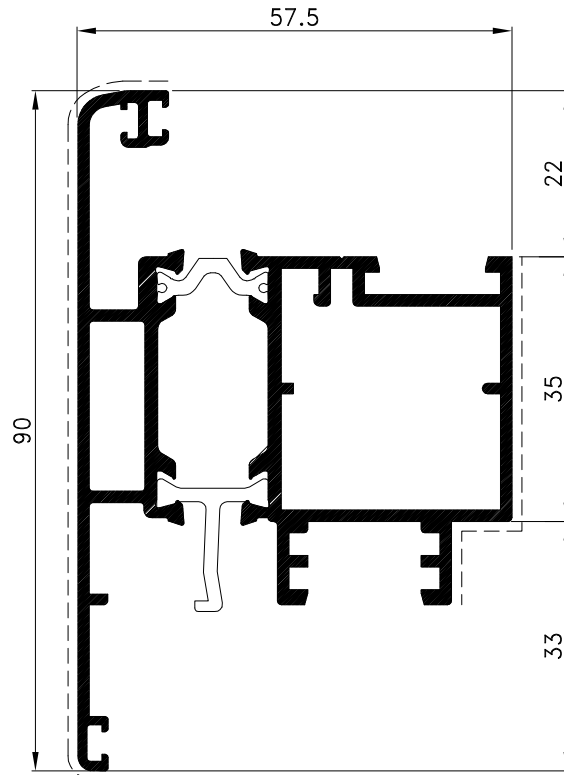
**FT-0119**

težina: kg/ml 1.228  
svj.povr. mm 85



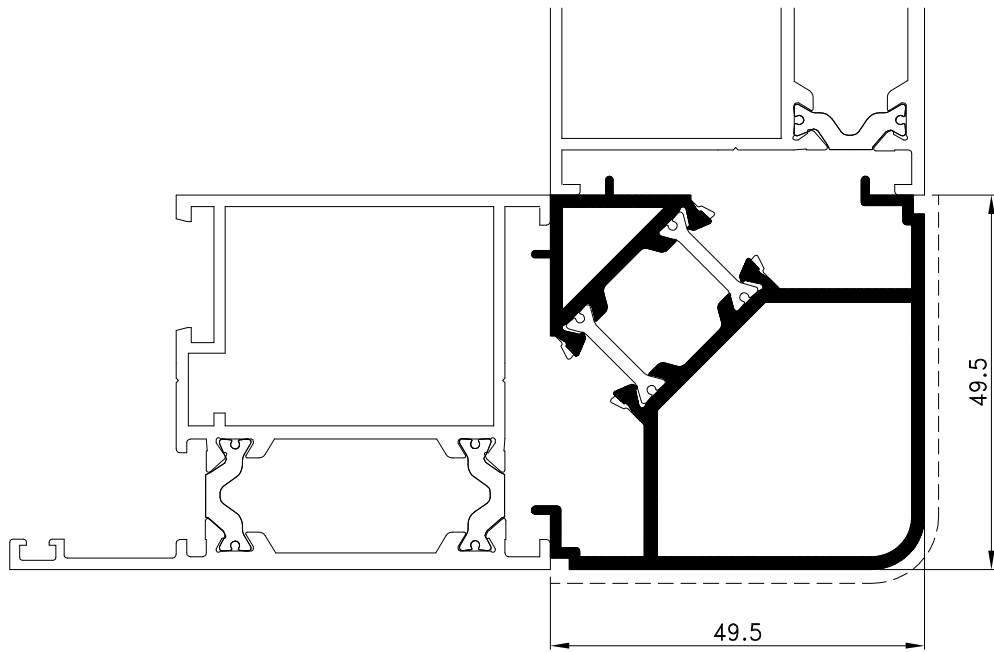
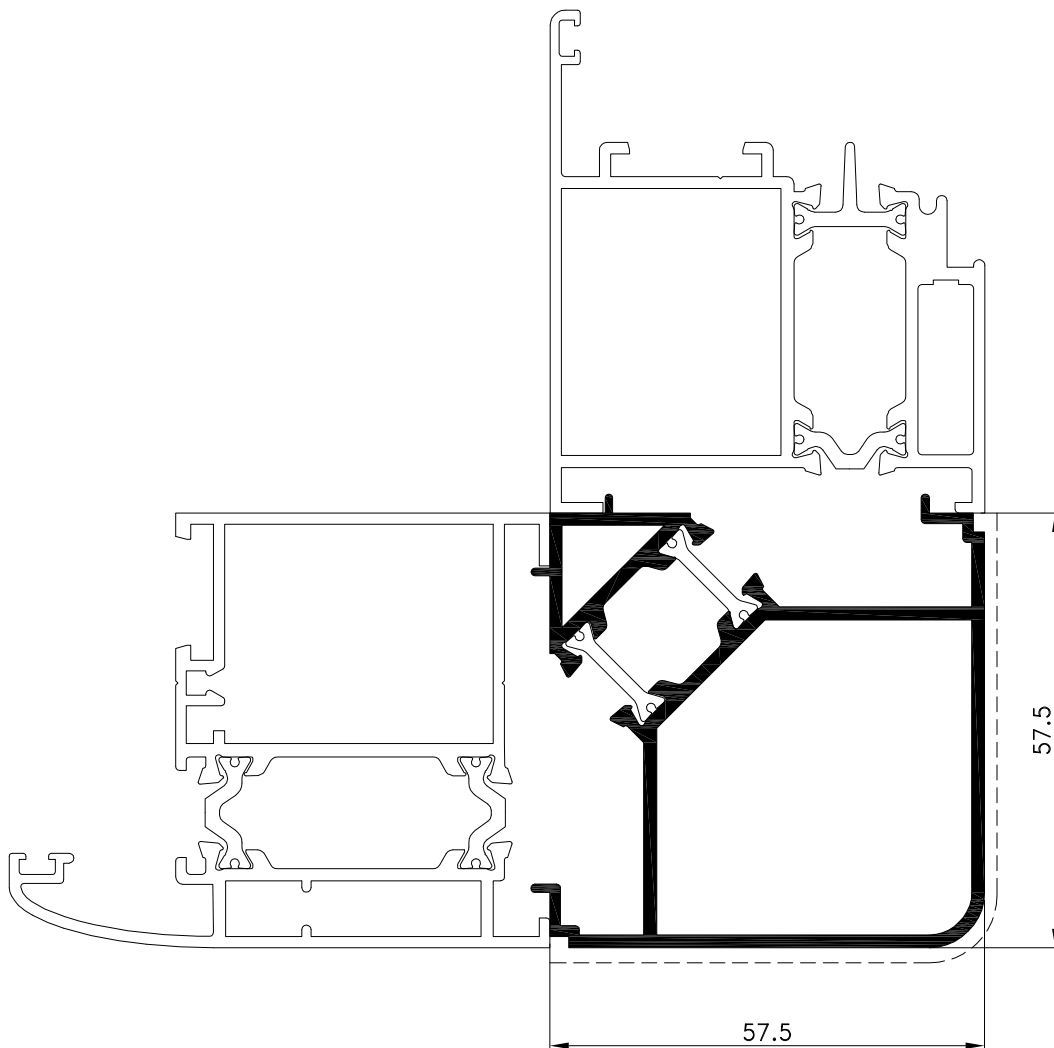
**FT-0110**

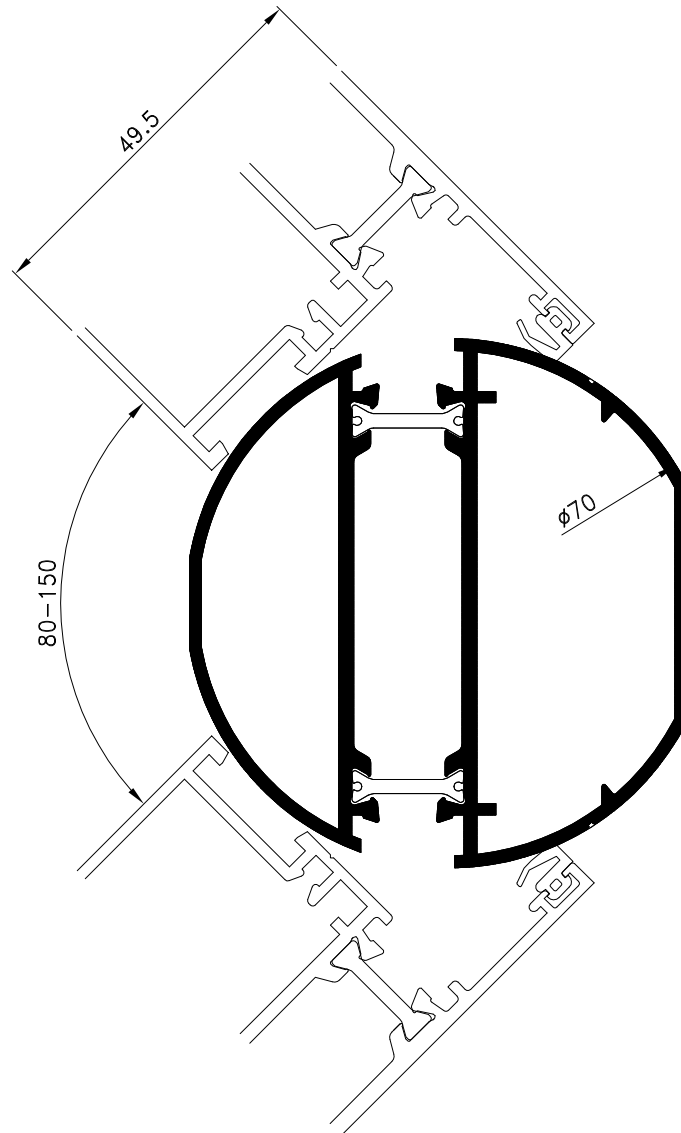
težina: kg/ml 1.555  
svj.povr. mm 119



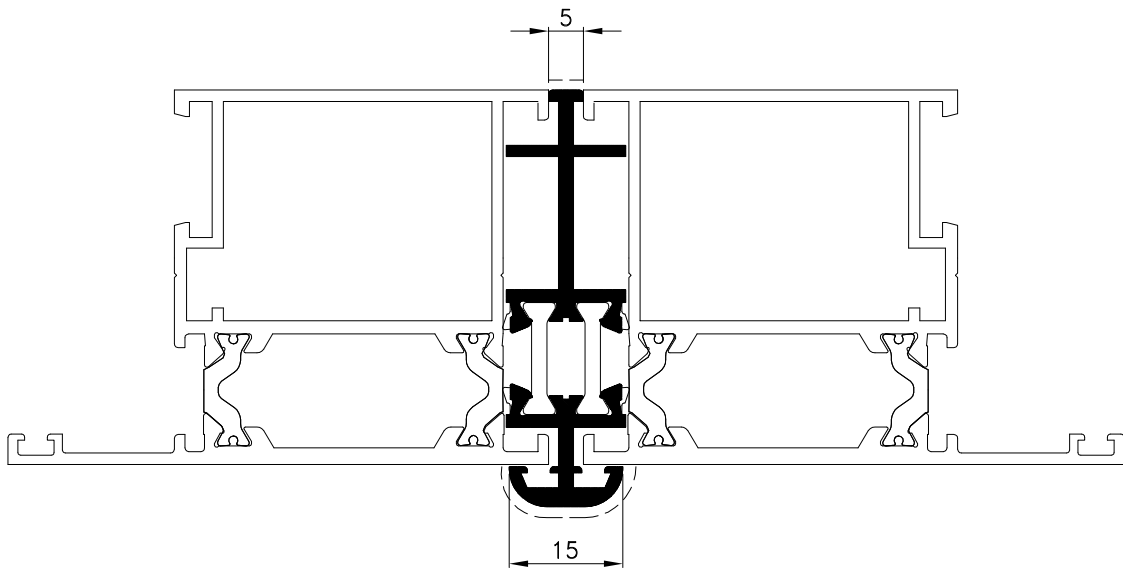
**FT-0107**

težina: kg/ml 1.734  
svj.povr. mm 162

**FT-0128**težina: kg/ml 1.289  
svj.povr. mm 99**FT-0156**težina: kg/ml 1.414  
svj.povr. mmb 115

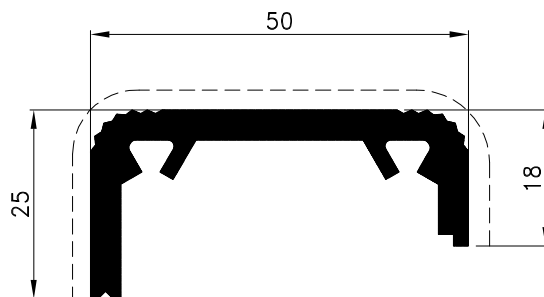
**FT-0217**

težina: kg/ml 1.780



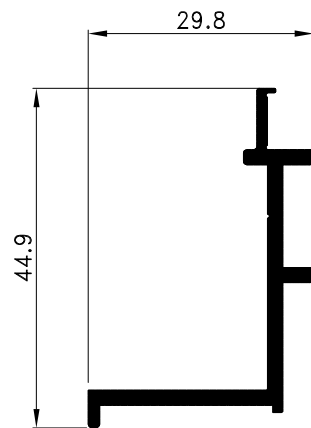
**FT-0121**

težina: kg/ml 0.770  
svj.povr. mm 26

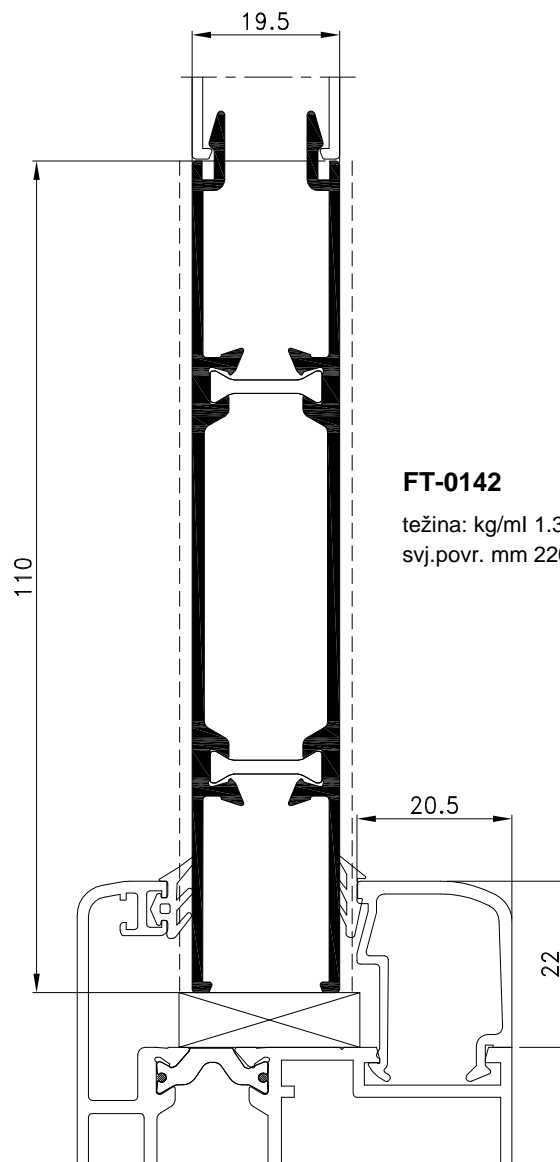


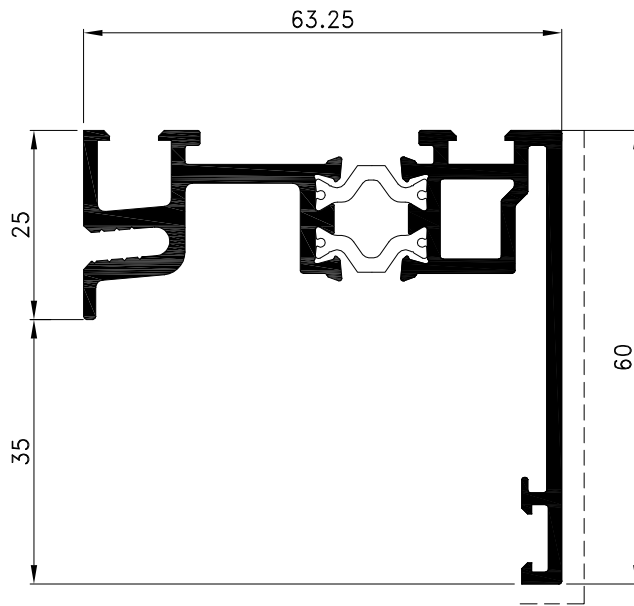
**F-0606**

težina: kg/ml 0.960  
svj.povr. mm 93

**F-0735**

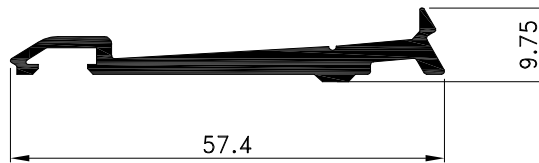
težina: kg/ml 0.418

**FT-0142**težina: kg/ml 1.327  
svj.povr. mm 220



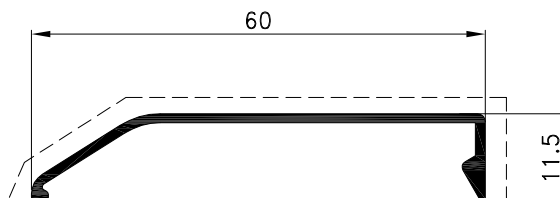
**FT-0166**

težina: kg/ml 1.424  
svj.povr. mm 70



**F-1190**

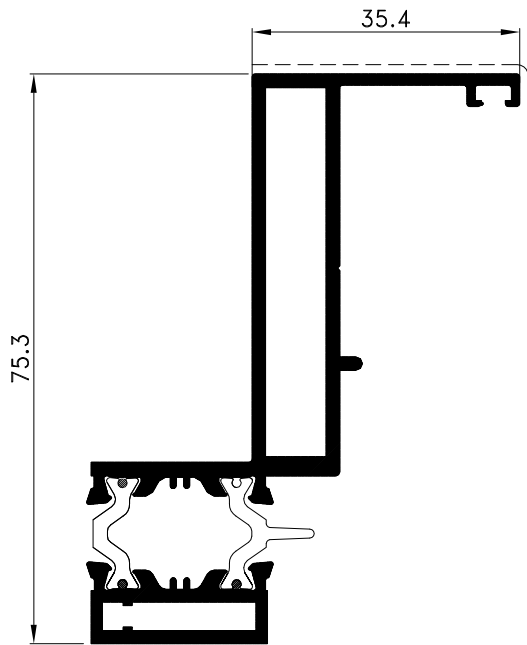
težina: kg/ml 1.461  
svj.povr. mm



**FM 072**

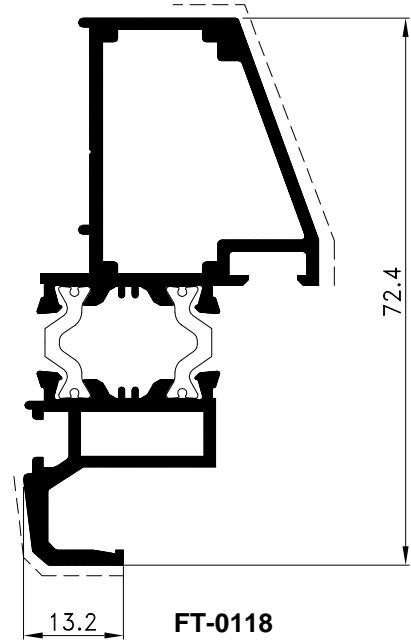
težina: kg/ml 0.258  
svj.povr. mm 81





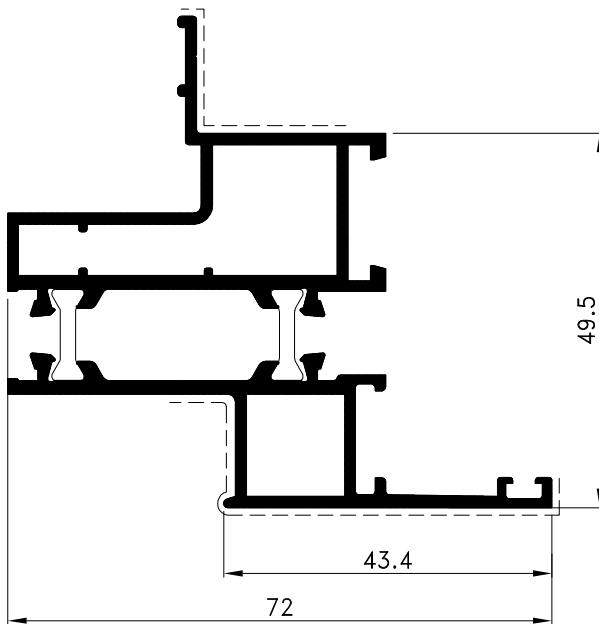
**FT-0117**

težina: kg/ml 1.377  
svj.povr. mm 41



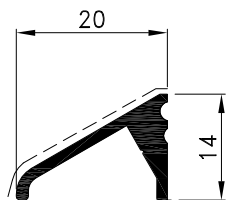
**FT-0118**

težina: kg/ml 1.305  
svj.povr. mm 73



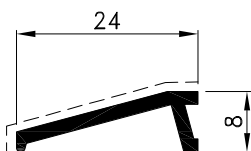
**FT-0114**

težina: kg/ml 1.507  
svj.povr. mm 109



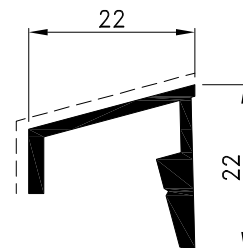
**Z40-657**

težina: kg/ml 0.186  
svj.povr. mm 23



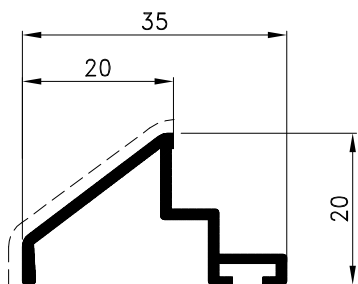
**F-0228**

težina: kg/ml 0.153  
svj.povr. mm 27



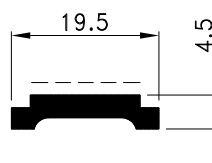
**060 350**

težina: kg/ml 0.285  
svj.povr. mm 31



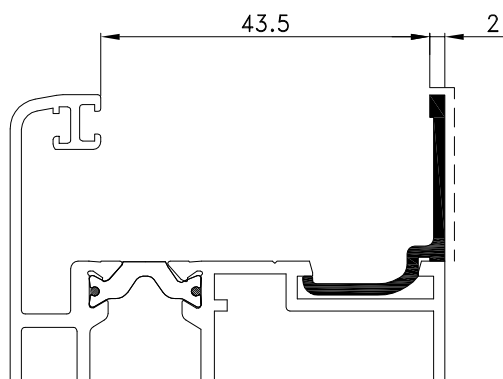
**P45-648**

težina: kg/ml 0.257  
svj.povr. mm 33



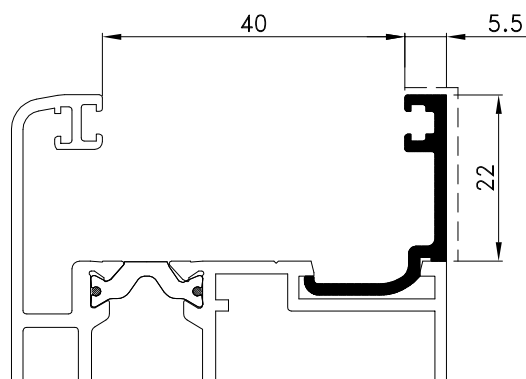
**NC-1459**

težina: kg/ml 0.156  
svj.povr. mm 15



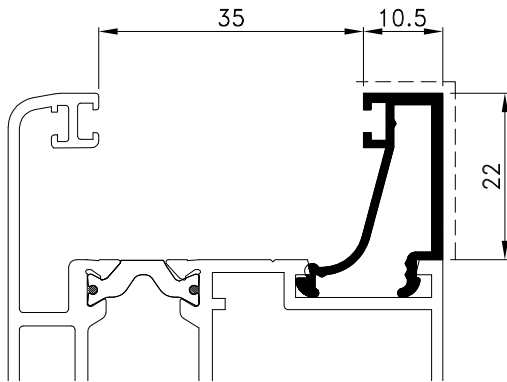
**Z40-660**

težina: kg/ml 0.179  
svj.povr. mm 24



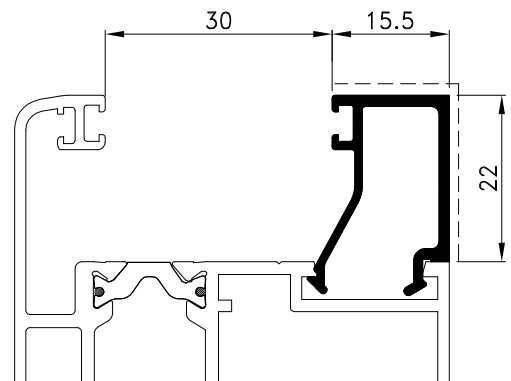
**Z40-656**

težina: kg/ml 0.215  
svj.povr. mm 27



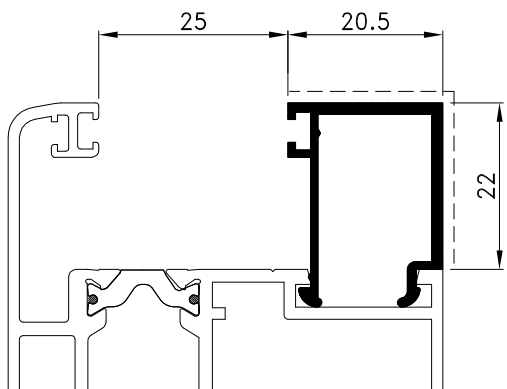
**Z40-636**

težina: kg/ml 0.261  
svj.povr. mm 32



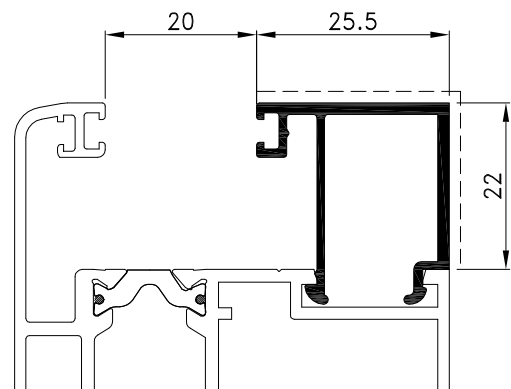
**M45-709**

težina: kg/ml 0.258  
svj.povr. mm 37



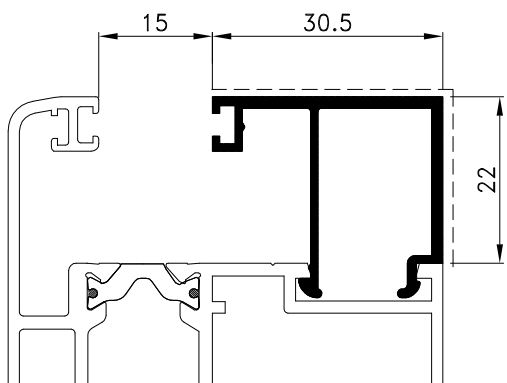
**Z40-644**

težina: kg/ml 0.275  
svj.povr. mm 42



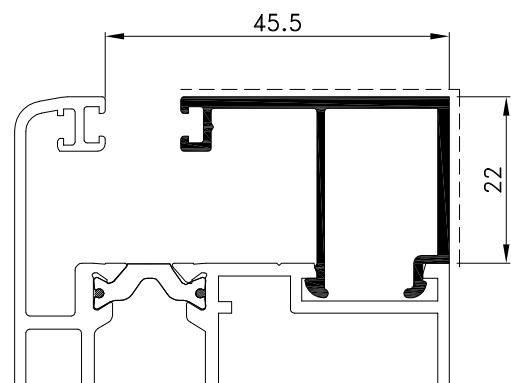
**Z40-658**

težina: kg/ml 0.318  
svj.povr. mm 47



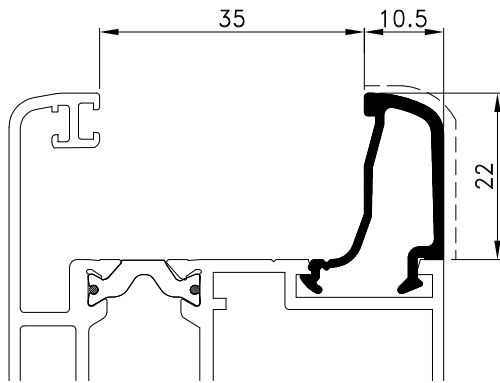
**Z40-653**

težina: kg/ml 0.347  
svj.povr. mm 52



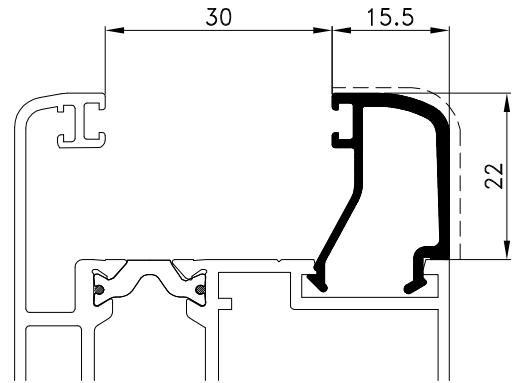
**Z40-659**

težina: kg/ml 0.359  
svj.povr. mm 57



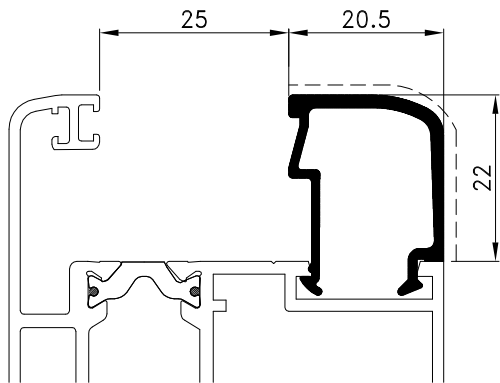
**Z40-647**

težina: kg/ml 0.226  
svj.povr. mm 30



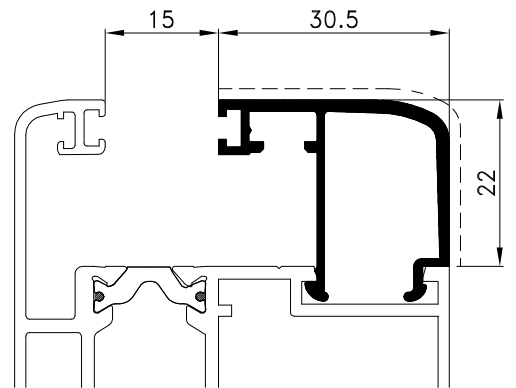
**M45-740**

težina: kg/ml 0.258  
svj.povr. mm 35



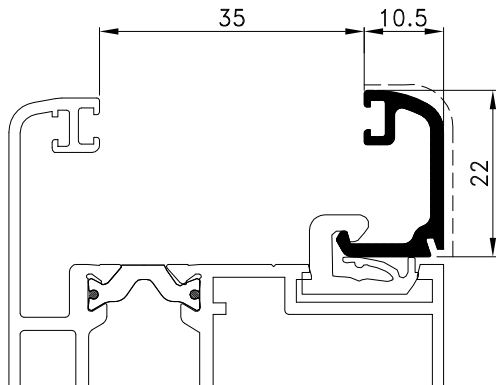
**Z40-646**

težina: kg/ml 0.286  
svj.povr. mm 40



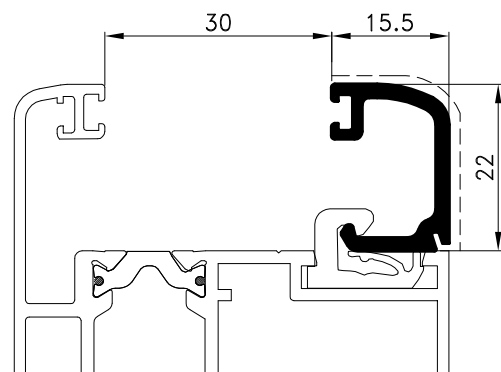
**Z40-653/B**

težina: kg/ml 0.356  
svj.povr. mm 53



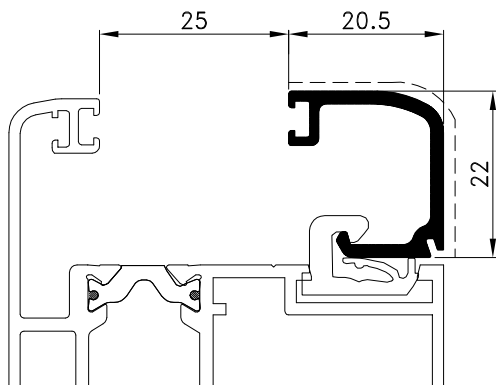
**Z40-649**

težina: kg/ml 0.221  
svj.povr. mm 30



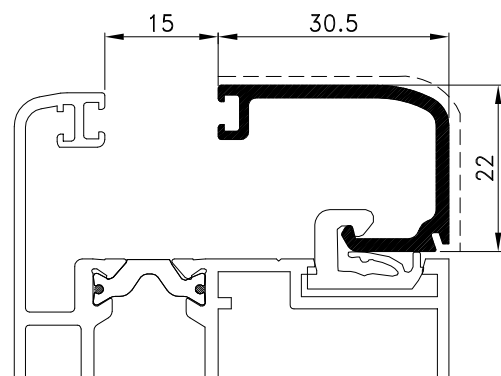
**Z40-662**

težina: kg/ml 0.245  
svj.povr. mm 35



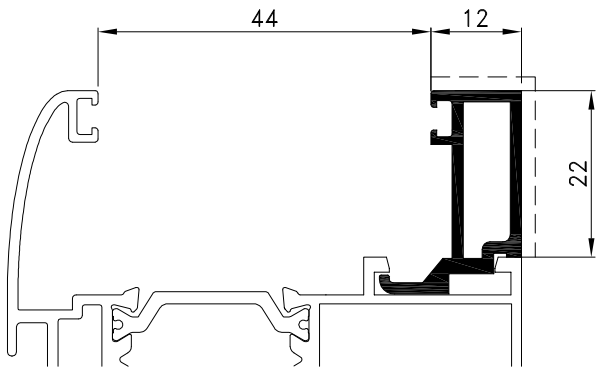
**Z40-648**

težina: kg/ml 0.268  
svj.povr. mm 40

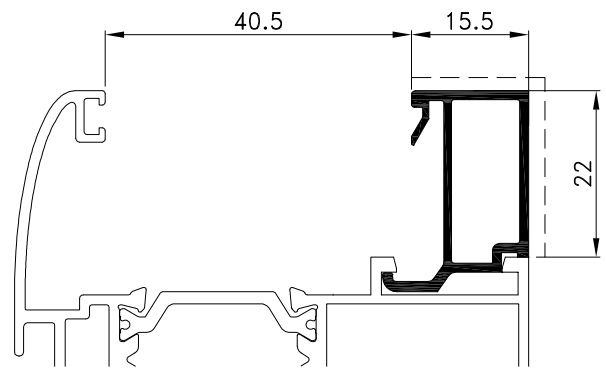


**Z40-661**

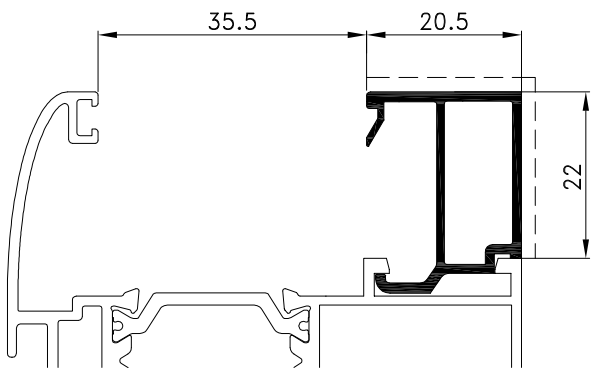
težina: kg/ml 0.268  
svj.povr. mm 50



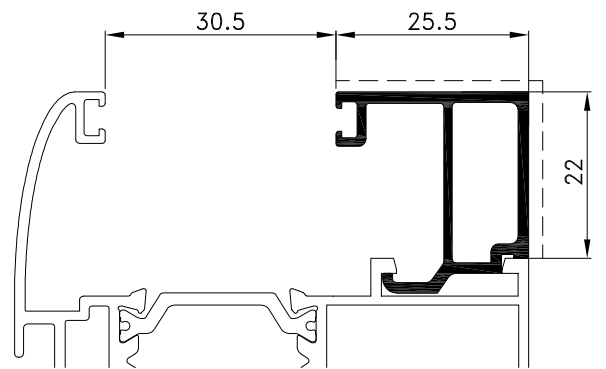
**F-0784**  
težina kg/m 0.330  
svj. povr.mm 34



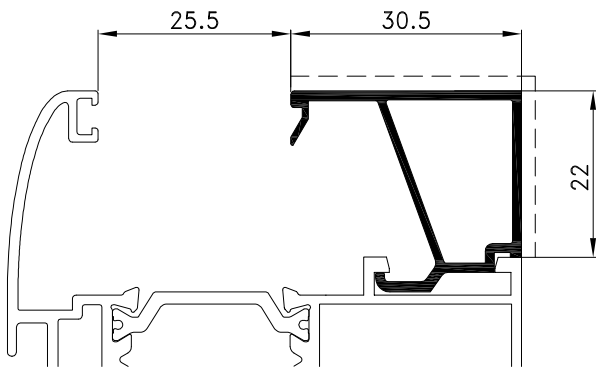
**Z40-665**  
težina kg/m 0.272  
svj. povr.mm 37



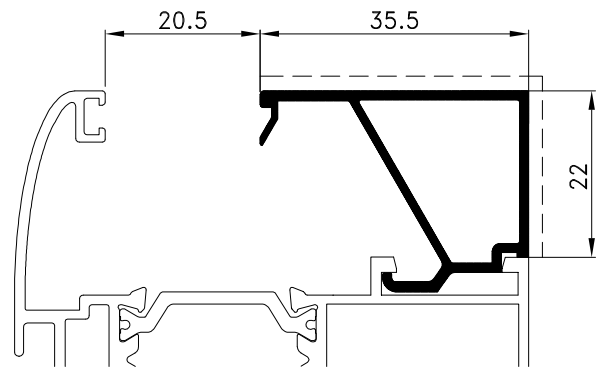
**Z40-666**  
težina kg/m 0.289  
svj. povr.mm 42



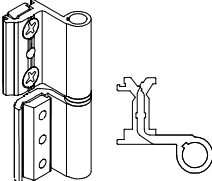
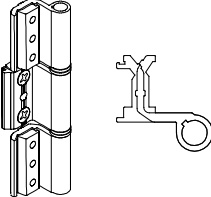
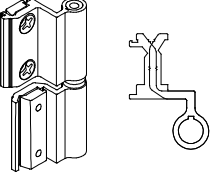
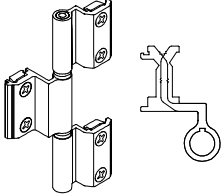
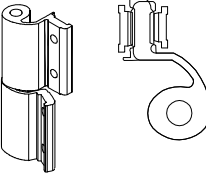
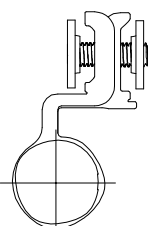
**Z40-667**  
težina kg/m 0.358  
svj. povr.mm 47

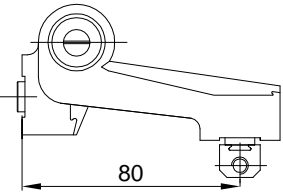
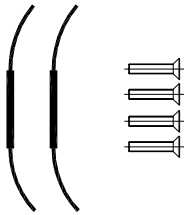
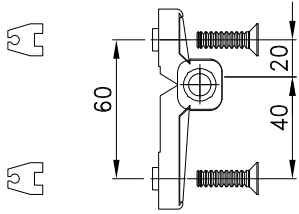
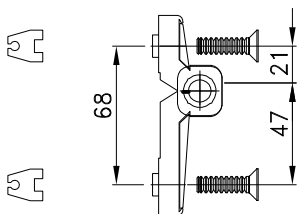
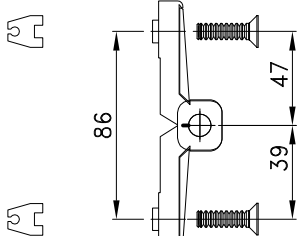
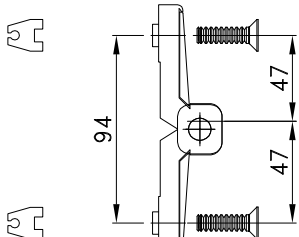


**Z40-668**  
težina kg/m 0.326  
svj. povr.mm 52



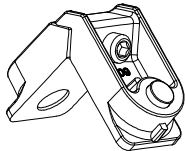
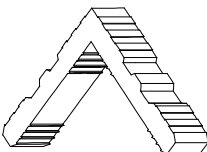
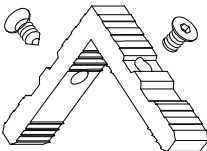
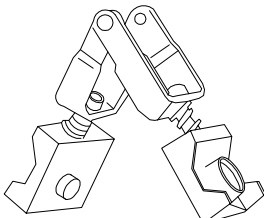
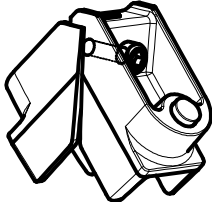
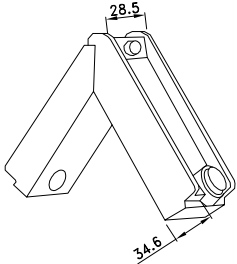
**Z40-669**  
težina kg/m 0.347  
svj. povr.mm 57

CODE	Izgled-presjek	Opis	Materijal	Nap.
111.001.01 02 03		- Dvodijelna šarka <i>EURO ŽLIJEB</i> - Stara oznaka E-100 - Boje: 01- bijela; 02 - siva;03 - crna		
111.002.01 02 03		- Trodjelna šarka <i>EURO ŽLIJEB</i> - Stara oznaka E-120 - Boje: 01- bijela; 02 - siva;03 - crna		
111.003.01 02 03		- Dvodijelna šarka-vani <i>EURO ŽLIJEB</i> - Stara oznaka EV-110 - Boje: 01- bijela; 02 - siva;03 - crna		
111.004.01 02 03		- Trodjelna šarka-vani <i>EURO ŽLIJEB</i> - Stara oznaka EV-130 - Boje: 01- bijela; 02 - siva;03 - crna		
114.001.01 02 03		- Dvodijelna šarka- <i>EURO ŽLIJEB</i> - Stara oznaka 2006.00.305-s 310-b 313-c		
113.003.01 02 03		- Dvodijelna šarka- <i>EURO ŽLIJEB</i> - Stara oznaka: VENUS - Boje: 01- bijela; 02 - siva;03 - crna		

CODE	Izgled-presjek	Opis	Materijal	Nap.
<b>110.003.01</b> <b>02</b> <b>03</b>		<ul style="list-style-type: none"> <li>- Dvodijelna usadna šarka 90°- vanjsko otvaranje</li> <li>- Stara oznaka FAPIM-D ANGOLO ART 6492</li> <li>- Boje: 01- bijela; 02 - siva;03 - crna</li> </ul>		
<b>110.004</b>		<ul style="list-style-type: none"> <li>- Set za ART 6492</li> <li>- Stara oznaka: 6620I</li> </ul>		
<b>113.006.01</b> <b>02</b> <b>03</b>		<ul style="list-style-type: none"> <li>- Dvodijelna šarka OSNO 60</li> <li>- Stara oznaka: Osno 60</li> <li>- Boje: 01- bijela; 02 - siva;03 - crna</li> </ul>	Al. Čelik	
<b>113.002.01</b> <b>02</b> <b>03</b>		<ul style="list-style-type: none"> <li>- Dvodijelna šarka OSNO 68</li> <li>- Stara oznaka: Osno 68</li> <li>- Boje: 01- bijela; 02 - siva;03 - crna</li> </ul>	Al. Čelik	
<b>113.007.01</b> <b>02</b> <b>03</b>		<ul style="list-style-type: none"> <li>- Dvodijelna šarka OSNO 86</li> <li>- Stara oznaka: Osno 86</li> <li>- Boje: 01- bijela; 02 - siva;03 - crna</li> </ul>	Al. Čelik	
<b>113.001.01</b> <b>02</b> <b>03</b>		<ul style="list-style-type: none"> <li>- Dvodijelna šarka OSNO 94</li> <li>- Stara oznaka: Osno 94</li> <li>- Boje: 01- bijela; 02 - siva;03 - crna</li> </ul>	Al. Čelik	



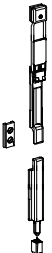
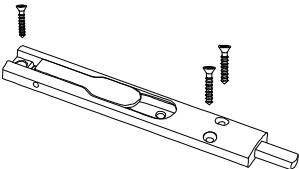
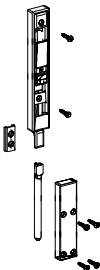


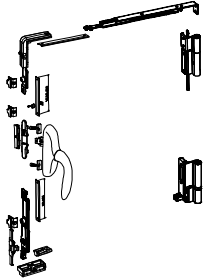
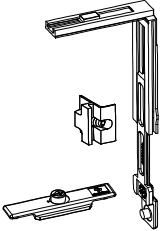
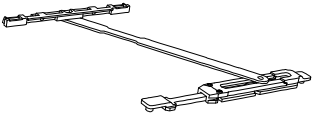
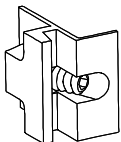


CODE	Izgled-presjek	Opis	Materijal	Nap.
113.008.01 02 03		- Dvodijelna šarka OSNO 60 - Stara oznaka: Max3D 60 - Boje: 01- bijela; 02 - siva;03 - crna	Al. Čelik	
113.009.01 02 03		- Dvodijelna šarka OSNO 70 - Stara oznaka: Max3D 68 - Boje: 01- bijela; 02 - siva;03 - crna	Al. Čelik	
113.010.01 02 03		- Dvodijelna šarka OSNO 86 - Stara oznaka: Max3D 86 - Boje: 01- bijela; 02 - siva;03 - crna	Al. Čelik	
113.011.01 02 03		- Dvodijelna šarka OSNO 96 - Stara oznaka: Max3D 94 - Boje: 01- bijela; 02 - siva;03 - crna	Al. Čelik	
113.013		- Set za TERMO 50 - Stara oznaka: Set za Termo 65		
730.005		- Kutna spojnica za komoru 27.5x4 - Stara oznaka K-65-01	<b>Zamak #3</b>	

CODE	Izgled-presjek	Opis	Materijal	Nap.
730.008		- Kutna spojnica prozora-za komoru 29x15.2 - Stara oznaka: 0409 ,1001	Zamak #3	
710.035	 l=28,5mm	- Kutna spojnica za komoru 29x15,2 - Stara oznaka K-0868-A	Al.	
710.075	 l=28,5mm  M8x13	- Kutna spojnica za komoru 29x15,2 - Stara oznaka K-0868	Al.	
731.001		- Kutna spojnica za promjenjiv kut za komoru 29x15.2 - Stara oznaka: 0909	Zamak #3	
730.009		- Kutna spojnica prozora -za komoru 29x35.5 - Stara oznaka: 4004 ,2001	Zamak #3	
731.002		- Kutna spojnica za komoru 29x35.5 - Stara oznaka: 1007	<b>Zamak #3</b>	

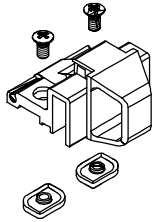
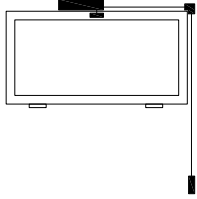
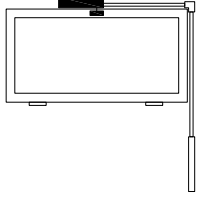
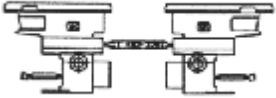
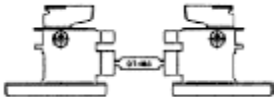
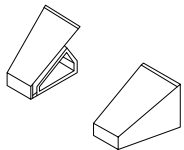
CODE	Izgled-presjek	Opis	Materijal	Nap.
710.059	<p>L=28,5mm</p>	- Kutna spojnica za komoru 29x35,5 - Stara oznaka K-0795	Al.	
710.072	<p>L=28,5mm M8x13</p>	- Kutna spojnica za komoru 29x35,5 - Stara oznaka K-0795	Al.	
730.001		- Kutna spojnica za komoru 1.7x4.7 - Stara oznaka: G112	Inox	
730.002		- Kutna spojnica za komoru 1.7x4.7 - Stara oznaka: G112/A	Inox	
710.050	<p>L=7mm</p>	- Kutna spojnica za komoru 7.35x22.5 - Stara oznaka: G226, K-0899/A	Al.	
730.010		- Kutna spojnica za komoru 6.5x27 - Stara oznaka: 5001	Inox	

CODE	Izgled-presjek	Opis	Materijal	Nap.
730.003		<ul style="list-style-type: none"> <li>- Kutna spojnica za komoru 6.5x27</li> <li>- Stara oznaka: 0366</li> </ul>	PVC	
710.066	<p>M8x13 M6x10</p>	<ul style="list-style-type: none"> <li>- Veznik (L=14.7mm)</li> <li>- Stara oznaka E-200</li> </ul>	Al.	
104.002.01 02 03		<ul style="list-style-type: none"> <li>- Ručka za prozor</li> <li>- Stara oznaka: 1004.00.3xx</li> <li>- Boje: 01- bijela; 02 - siva; 03 - crna</li> </ul>	AISI Zamak	
140.035		<ul style="list-style-type: none"> <li>- Elementi za povezivanje ručke i klizača</li> <li>- Stara oznaka: 28002955 (alutec)</li> </ul>	PVC	
143.003		<ul style="list-style-type: none"> <li>- Jednostrani prihvrat zapinjača</li> <li>- Stara oznaka GS 1314</li> </ul>		
131.002		<ul style="list-style-type: none"> <li>- Škare za <i>ventus</i> prozor</li> <li>- Stara oznaka E-350</li> </ul>		

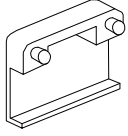
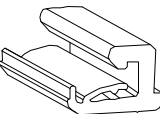
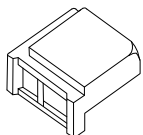
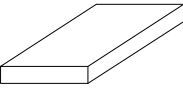
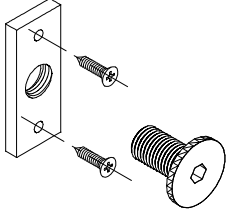
CODE	Izgled-presjek	Opis	Materijal	Nap.
143.001		- Zapinjač - Stara oznaka: GS 2114		
143.002		-Zapinjač-krakun za pasivno krilo - Stara oznaka: GS 2111		
143.005		- Fiksni zapinjač-krakun za vrata - Stara oznaka: GS 2172		
144.000		- Zapinjač-krakun za vrata - Stara oznaka:3006.00		
143.006		- Zapinjač vanjski - Stara oznaka: GS 2170		

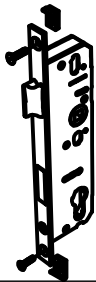
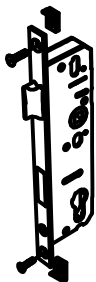
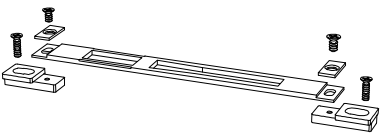
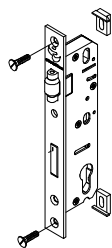
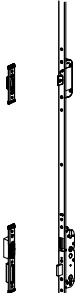
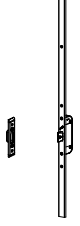
CODE	Izgled-presjek	Opis	Materijal	Nap.
<b>134.000.01</b> <b>02</b> <b>03</b>		<ul style="list-style-type: none"> <li>- Otklopno-zaokretni mehanizam -(dry-clip)</li> <li>- Stara oznaka 4030.00</li> <li>- Boje: 01- bijela; 02 - siva;03 - crna</li> </ul>	AISi Zamak	
<b>134.002</b>		<ul style="list-style-type: none"> <li>-Komplet za bočno zatvaranje krila kod dry kipa (dodatno ključanje)</li> <li>-Stara oznaka 4010.40</li> </ul>	AISi Zamak	
<b>134.003</b>		<ul style="list-style-type: none"> <li>-Pomoćne škare kod dry kipa- za krila veća od L=1200 mm</li> <li>-Stara oznaka 4010.50</li> </ul>		
<b>134.004</b>		<ul style="list-style-type: none"> <li>- Dodatno ključanje-prihvatnik tuljca</li> <li>- Stara oznaka 4010.03</li> </ul>		
<b>134.005</b>		<ul style="list-style-type: none"> <li>- Dodatno ključanje-tuljac</li> <li>- Stara oznaka 4010.27</li> </ul>		
<b>134.001</b>		<ul style="list-style-type: none"> <li>- Komplet okova za fiksiranje pomoćnog krila</li> <li>- Stara oznaka: 4001.00.301</li> </ul>	AISi Zamak	

CODE	Izgled-presjek	Opis	Materijal	Nap.
133.027		- Otklopno-klizni mehanizam (notter)- bazni mehanizam-osnovni set -Stara oznaka 464 507 00	AlSi Zamak	
133.028.01 02 03		-Ručka sa pogonom -Stara oznaka: 080 914 03, 05, 07		
133.029		-Točkići -Stara oznaka: -005 509 10-desni -005 509 20-lijevi		
133.030		-Pločice -Stara oznaka: 060 510 00		
133.033		-Dodatak po širini-za širine krila veće od 1481 mm -Stara oznaka: 005 519 00		
133.031		-Škare -Stara oznaka: -005 516 00-za širine krila 630-930 -005 517 00-za širine krila 931-1280 -005 518 00-za širine krila 1281-1680		
133.032		-Pokrivni profil -Stara oznaka:-005 511 0x-za širine krila 630-930 -005 512 0x-za širine krila 931-1080 -005 513 0x-za širine krila 1081-1280 -005 514 0x-za širine krila 1281-1480 -005 515 0x-za širine krila 1481-1680		

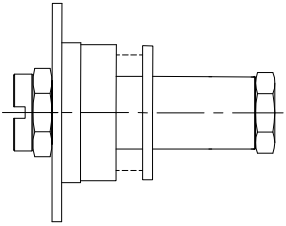


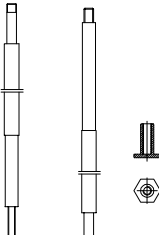
CODE	Izgled-presjek	Opis	Materijal	Nap.
<b>124.005.01</b> <b>02</b> <b>03</b>		- Mehanizam-"šklijoca" otklopnog prozora - Stara oznaka: 1014.00.305-s. .310-b. .313-c) - Boje: 01- bijela; 02 - siva;03 - crna		
<b>145.001</b>		- Mehanizam za otklopno na visini sa špagom - Stara oznaka: Ragno		
<b>146.001.01</b> <b>.02</b> <b>.03</b>		- Mehanizam za otklopno na visini sa šipkom - Stara oznaka: OL90 (Geze) - Boje: 01- bijela; 02 - siva;03 - crna  1.Škare 2.Ručica 3.Šipka Ø8 4.Pokrovni profil		
<b>364.002</b>		- Umetak profila za okretanjeFT-0115- otvaranje unutra - Stara oznaka: GT482	PVC	
<b>364.003</b>		- Umetak profila za okretanje FT-0119- otvaranje vani - Stara oznaka: GT483, 2278	PVC	
<b>373.002</b>		- Umetak za profil okapnice Z40-657 - Stara oznaka PRO 23	PVC	

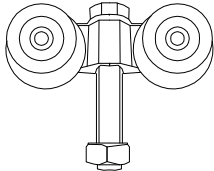
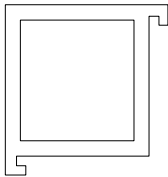


CODE	Izgled-presjek	Opis	Materijal	Nap.
373.003		- Maska za drenažni otvor - Stara oznaka: 2328	PVC	
374.002		- umetak za profil rama FT-0201 - Stara oznaka: GT 134	PVC	
385.002		- Kutni umetak za zaobljene lajsne - Stara oznaka: G2311	ZAMAK	
370.000 370.001 370.002		- Podmetači za staklo 3 mm 370.000 5 mm 370.001 7 mm 370.002	PVC	
521.104		- Element za ugradnju - Stara oznaka EU 52		

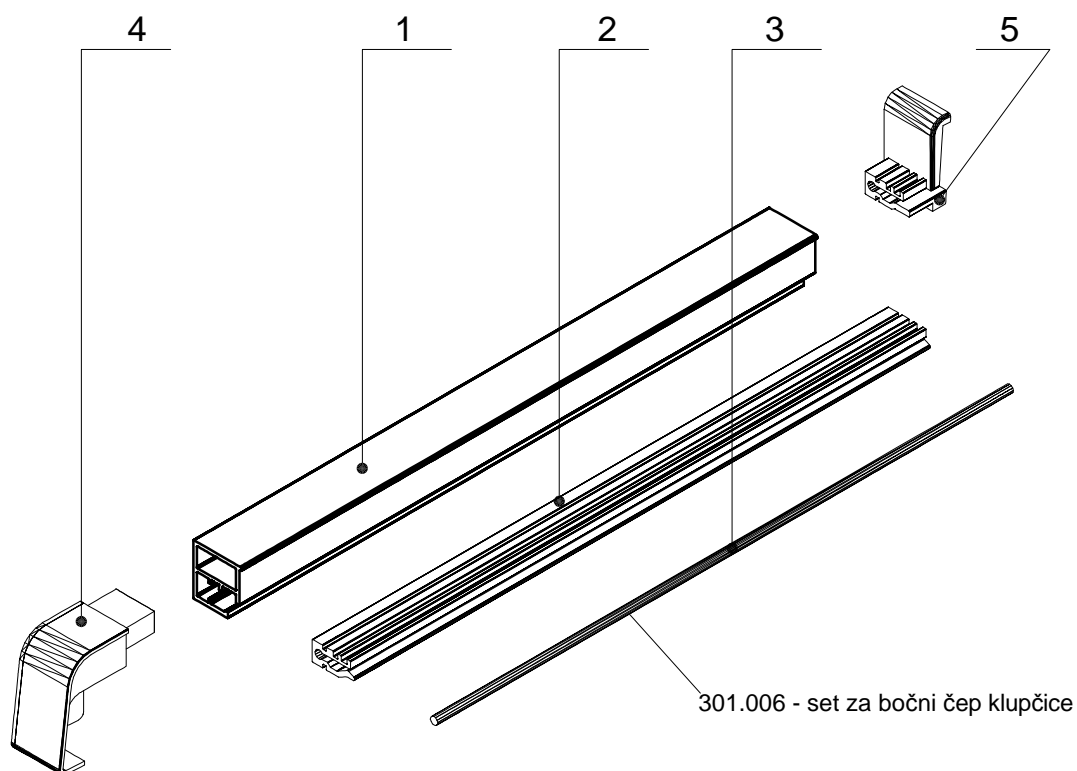
CODE	Izgled-presjek	Opis	Materijal	Nap.
124.016		<ul style="list-style-type: none"> <li>- Brava 25 mm sa jezičkom</li> <li>- Stara oznaka: 3020.00</li> </ul>	Inox Čelik	
124.001		<ul style="list-style-type: none"> <li>- Brava 35 mm sa jezičkom</li> <li>- Stara oznaka: 3022.00</li> </ul>	Inox Čelik	
124.003		<ul style="list-style-type: none"> <li>-Prihvatnik jezička brave (šild)</li> <li>- Stara oznaka: 3016.00</li> </ul>	Prokrom Čelik	
124.010		<ul style="list-style-type: none"> <li>- Brava 35 mm sa valjkom</li> <li>- Stara oznaka: 3032</li> </ul>	Inox Čelik	
126.001		<ul style="list-style-type: none"> <li>-Sigurnosna brava 35 mm <u>sa jezičkom</u> (ISEO)</li> <li>-Ključanje u tri točke</li> <li>-Prihvatnik za bravu-šild</li> <li>-Stara oznaka brave: 785111352</li> <li>-Stara oznaka šilda: 6862/1</li> </ul>	Inox Čelik	
126.002		<ul style="list-style-type: none"> <li>-Sigurnosna brava 35 mm <u>sa valjkom</u> (ISEO)</li> <li>-Ključanje u tri točke</li> <li>-Prihvatnik za bravu-šild</li> <li>-Stara oznaka brave: 785211352</li> <li>-Stara oznaka šilda: 6862/1</li> </ul>	Inox Čelik	

CODE	Izgled-presjek	Opis	Materijal	Nap.
125.001		-Prihvatnik jezička brave (šild) - Stara oznaka: 6862/5	Prokrom Čelik	
123.001.01 02 03		- Štitnik cilindra za bravu (par) - Stara oznaka: 149.805 - Boje: 01- bijela; 02 - siva;03 - crna	PVC	
124.004.01 02 03		- Štitnik cilindra za bravu (par) - Stara oznaka: 1016.00 - Boje: 01- bijela; 02 - siva;03 - crna	Zn Čelik	
124.014		- Uložak za bravu 31/45 - Stara oznaka: 5055.00.520	Čelik	
103.001.01 02 03		- Ručke za vrata (par) - Stara oznaka: 890 - Boje: 01- bijela; 02 - siva;03 - crna	AlSi Zamak	
104.001.01 02 03		- Ručke za vrata (par) - Stara oznaka: 1032.00 - Boje: 01- bijela; 02 - siva;03 - crna	AlSi Zamak	

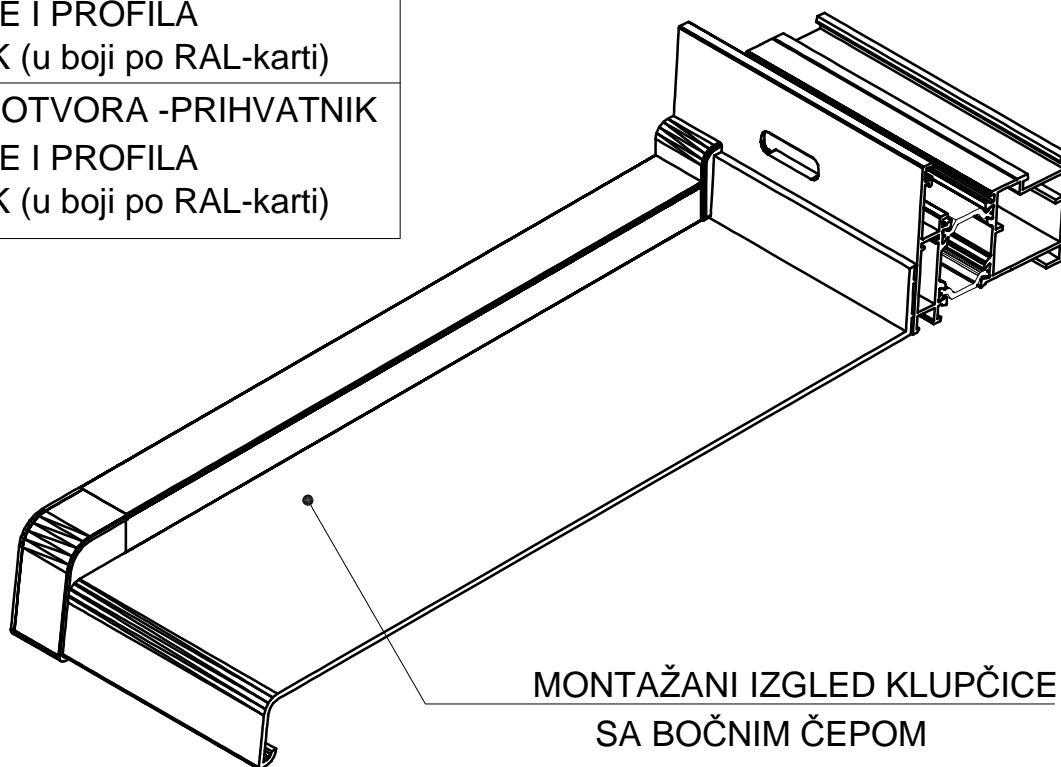
CODE	Izgled-presjek	Opis	Materijal	Nap.
220.006		- Grupa glodala za obradu prečki prema profilu krila i okvira - Stara oznaka: Grupa glodala Termo 50	Čelik	
210.000		- Štanca za otklopno zaokretne sisteme prozora i vrata - Stara oznaka S1		
210.001		- Kliješta za kutne spojnice - Stara oznaka :kliješta -83064		
210.002		- Noževi za kliješta kutnih spojnica - Stara oznaka :noževi		
301.006		Set za bočni čep klupice	PVC, TPE Al	
140.036		Elementi mehanizma za harmo otvaranje -Stara oznaka: OHV-01		

CODE	Izgled-presjek	Opis	Materijal	Nap.
140.037		Dvostruke koturaljke Žeče -Stara oznaka:Dvostruke koturaljke		
374.012		PVC distancer-profil -Stara oznaka: PI-102	PVC	

MONTAŽA KLUPČICE VRATA

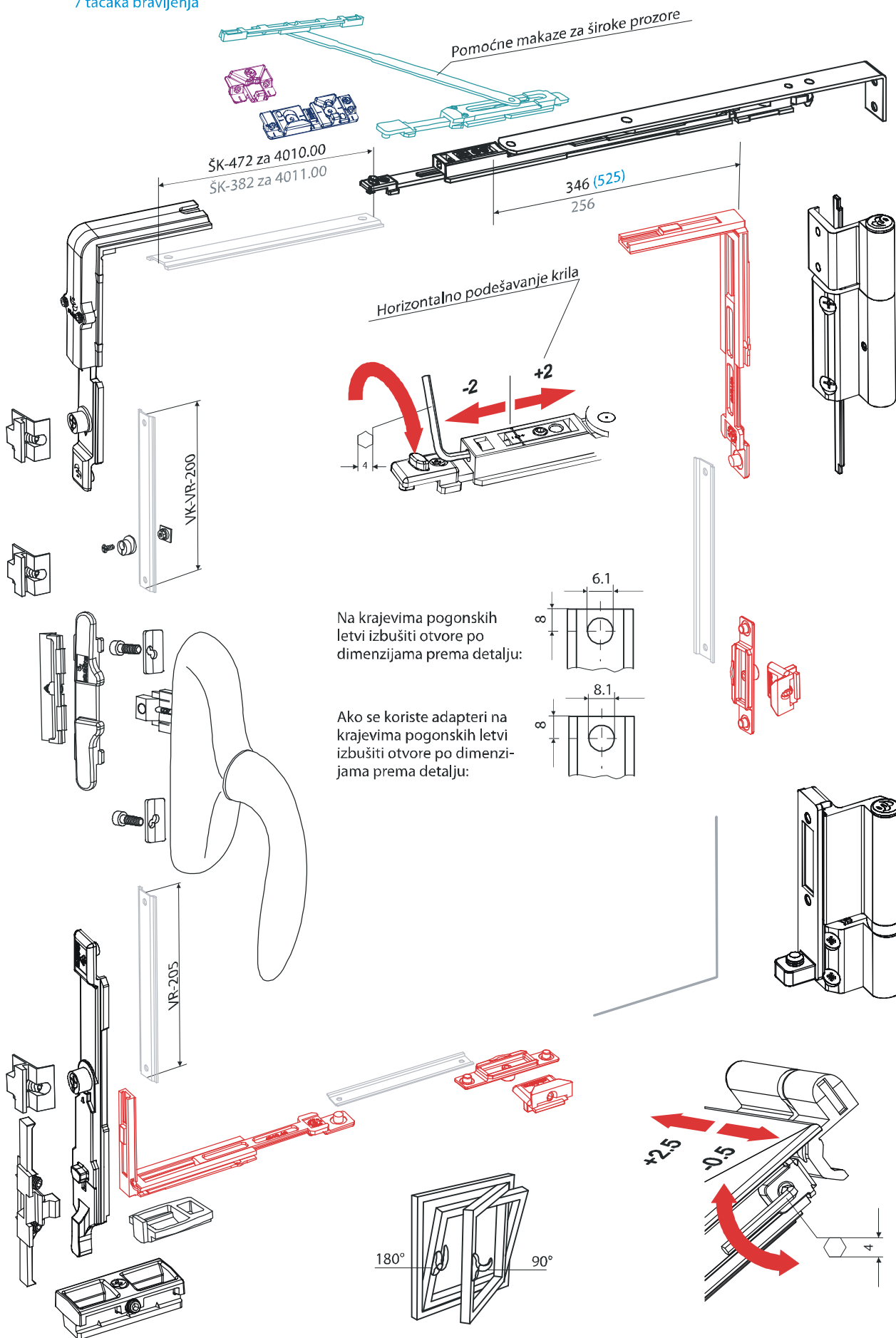


1 - OSNOVNI PROFIL KLUPČICE
2 - PVC PRIHVATNIK KLUPČICE
3 - GUMENI DISTANCER
4 - VANJSKI ČEP -PRIHVATNIK KLUPČICE I PROFILA mat:ZAMK (u boji po RAL-karti)
5 - ČEP DO OTVORA -PRIHVATNIK KLUPČICE I PROFILA mat:ZAMK (u boji po RAL-karti)



### 134.000.xx-OTKLOPNO-ZAKRETNI MEHANIZAM-Stublina

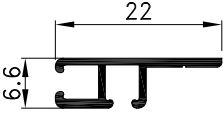
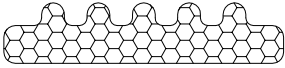

G=80 kg  
7 tačaka bravljenja

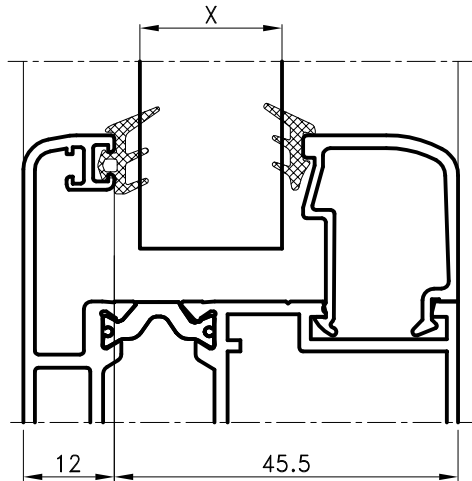


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331.005		- Srednja brtva - Stara oznaka: Z103	EPDM	61
321.001		- Brtva u krilu - Stara oznaka: Z106	EPDM	61
311.001		- Brtva prema staklu /unutarnja/ - Stara oznaka: 921	EPDM	71
311.002		-Brtva prema staklu /unutarnja/ - Stara oznaka: 918	EPDM	71
321.002		- Brtva prema staklu /vanjska/ - Stara oznaka: Z111	EPDM	61
321.003		- Brtva prema staklu /vanjska/ - Stara oznaka: Z113	EPDM	61



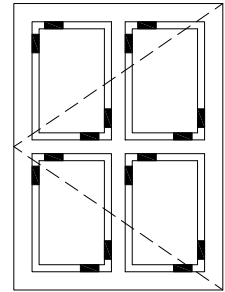
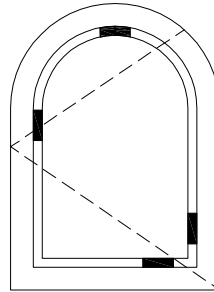
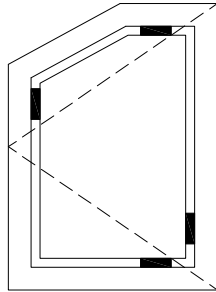
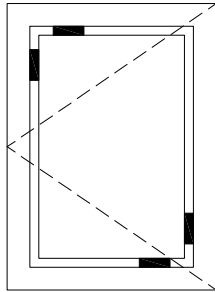
CODE	Izgled-presjek	Opis	Materijal	Nap.
311.003		- Brtva prema staklu /unutarnja,nosi 3-4 mm/	EPDM	71
311.004		- Brtva prema staklu /unutarnja,nosi 5-6 mm/	EPDM	71
311.005		- Brtva prema staklu /unutarnja,nosi 7-8 mm/	EPDM	71
311.007 311.008 311.009 311.010		-Brtva prema staklu /unutarnja/ - Stare oznake UP-5 nove oznake UP-6 UP-7 UP-8	311.007 311.008 311.009 311.010	EPDM 71
314.001		- Brtva u ramu-smanjuje ulazak kapljevina u prozor - Stara oznaka Z-10	TPE	65
345.004		- Kutnik srednje brtve Z-103 - otvaranje unutra L=50x50 - Stara oznaka Z-903	Dutral	

CODE	Izgled-presjek	Opis	Materijal	Nap.
521.001		- Držač četkaste brtve L=2500 mm - Stara oznaka Z 801	Al.	
347.001		- Četkasta brtva L=2500 mm - Stara oznaka Z 802		
348.001		- Ispuna po opsegu stakla- <b>CLIMAFILL</b> - Stara oznaka CLIMAFILL	PP	
348.002		- Ispuna po opsegu stakla sa ljepljivom trakom- <b>NOMAFLEX</b>	XPE	
347.003		Četkasta brtva 7x9 -Stara oznaka: PB*HFC	EPDM	

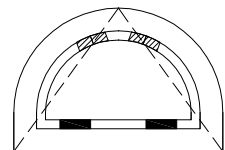
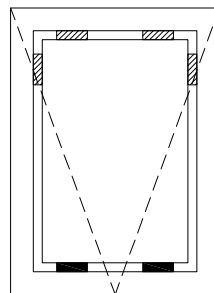
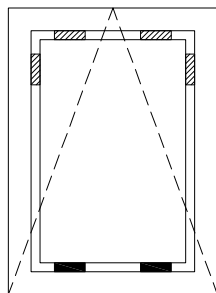
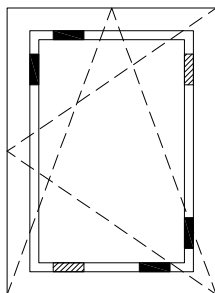


Ispuna X	Vanjska brtva	Unutarnja brtva	Lajsna			
			<b>Z40-659</b>			<b>Z40-669</b>
7-8	321.003	311.002				
9-11	321.002	311.001	<b>Z40-653</b>	<b>Z40-653/B</b>	<b>Z40-661</b>	<b>Z40-668</b>
11-12	321.003	311.002				
13-15	321.002	311.001	<b>Z40-658</b>			<b>Z40-667</b>
16-17	321.003	311.002				
18-20	321.002	311.001	<b>Z40-644</b>	<b>Z40-646</b>	<b>Z40-648</b>	<b>Z40-666</b>
21-22	321.003	311.002				
23-25	321.002	311.001	<b>M45-709</b>	<b>M45-740</b>	<b>Z40-662</b>	<b>Z40-665</b>
26-27	321.003	311.002				
28-30	321.002	311.001	<b>Z40-636</b>	<b>Z40-647</b>	<b>Z40-649</b>	<b>F-784</b>
31-32	321.003	311.002				
33-35	321.002	311.001	<b>Z40-656</b>			
34-36	321.003	311.002				
37-39	321.002	311.001	<b>Z40-660</b>			

PREPORUKE ZA RASPORED PODMETAČA KOD UGRADNJE ELEMENATA ZA ISPUNU

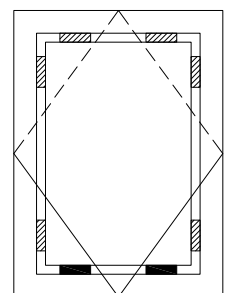
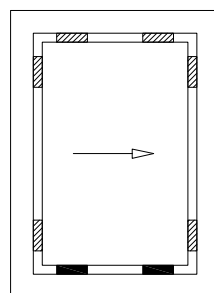
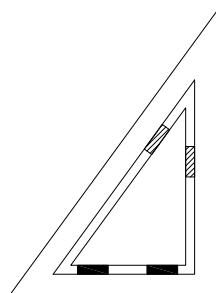
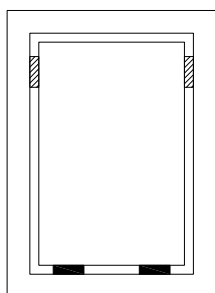


zaokretno



otklopno-zaokretno

otklopno



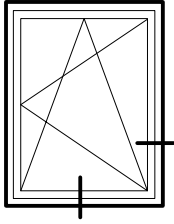
fiksno

klizno

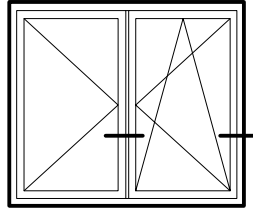
oko srednje ose

- nosivi podmetač
- odstojni podmetač

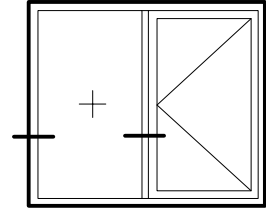
Materijal podmetača: pvc



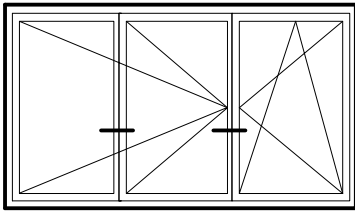
str. 1



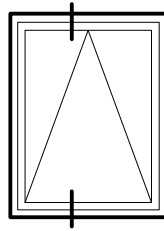
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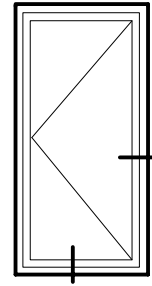
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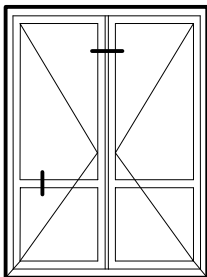
str. 4



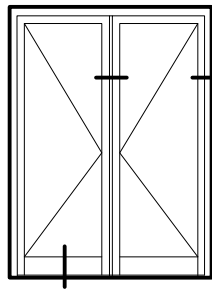
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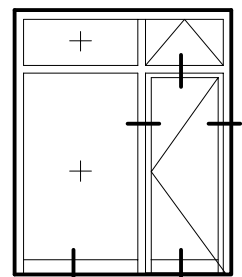
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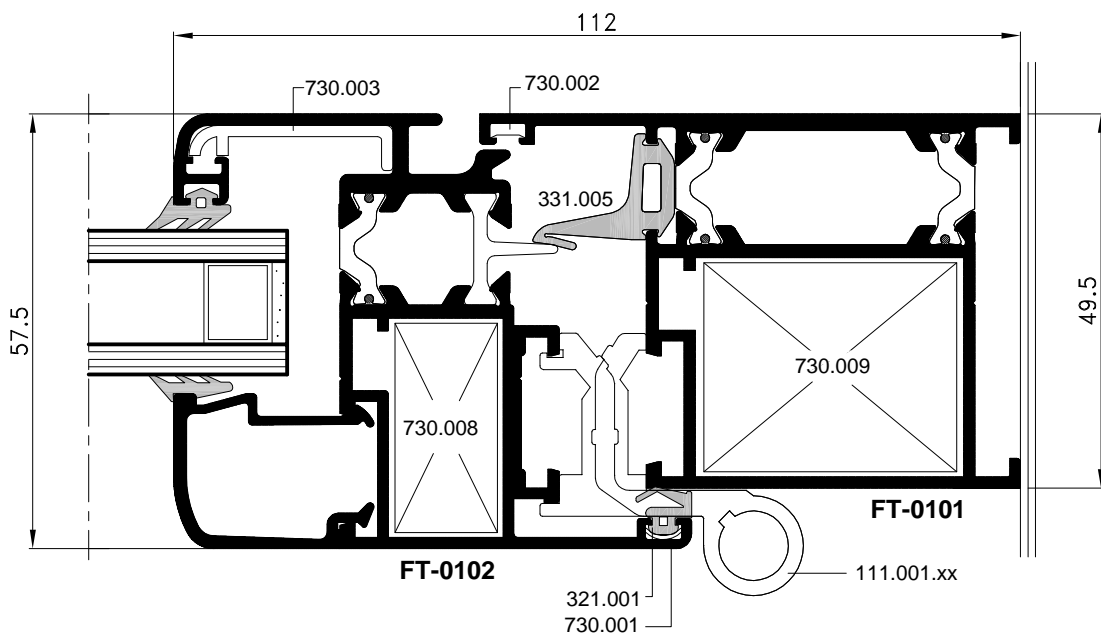
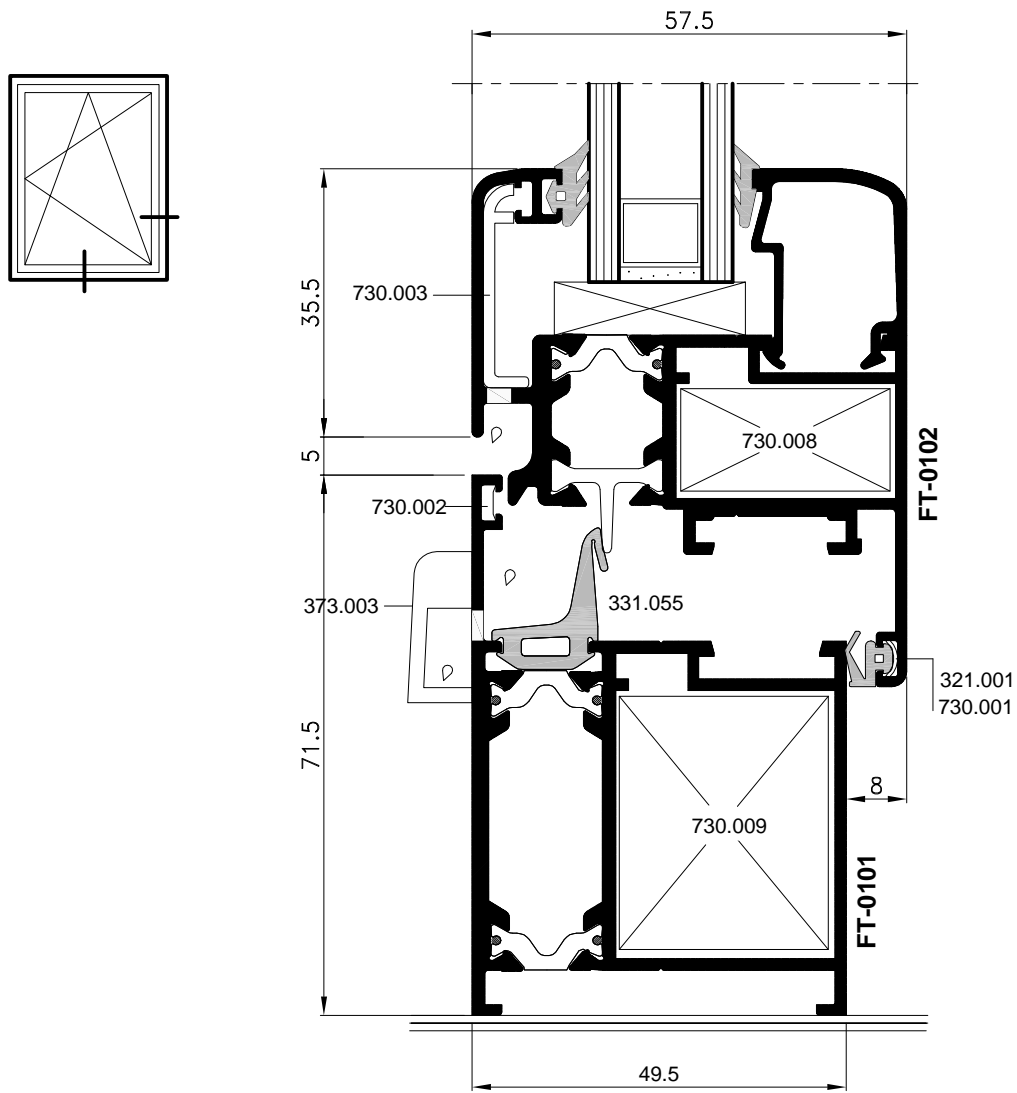
str. 8

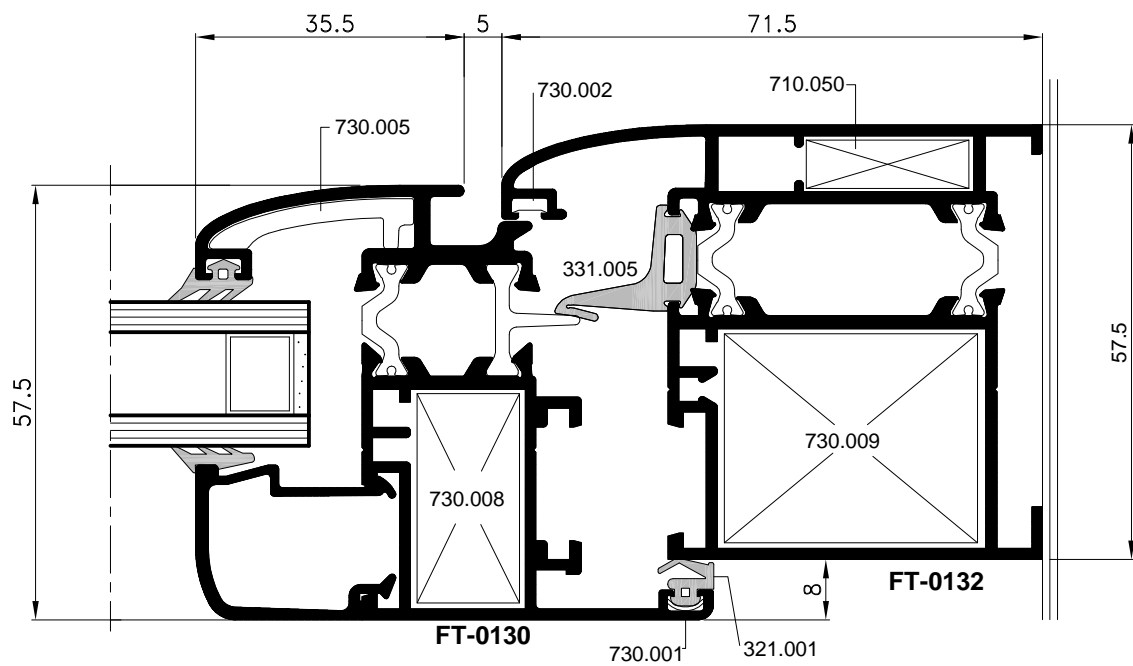
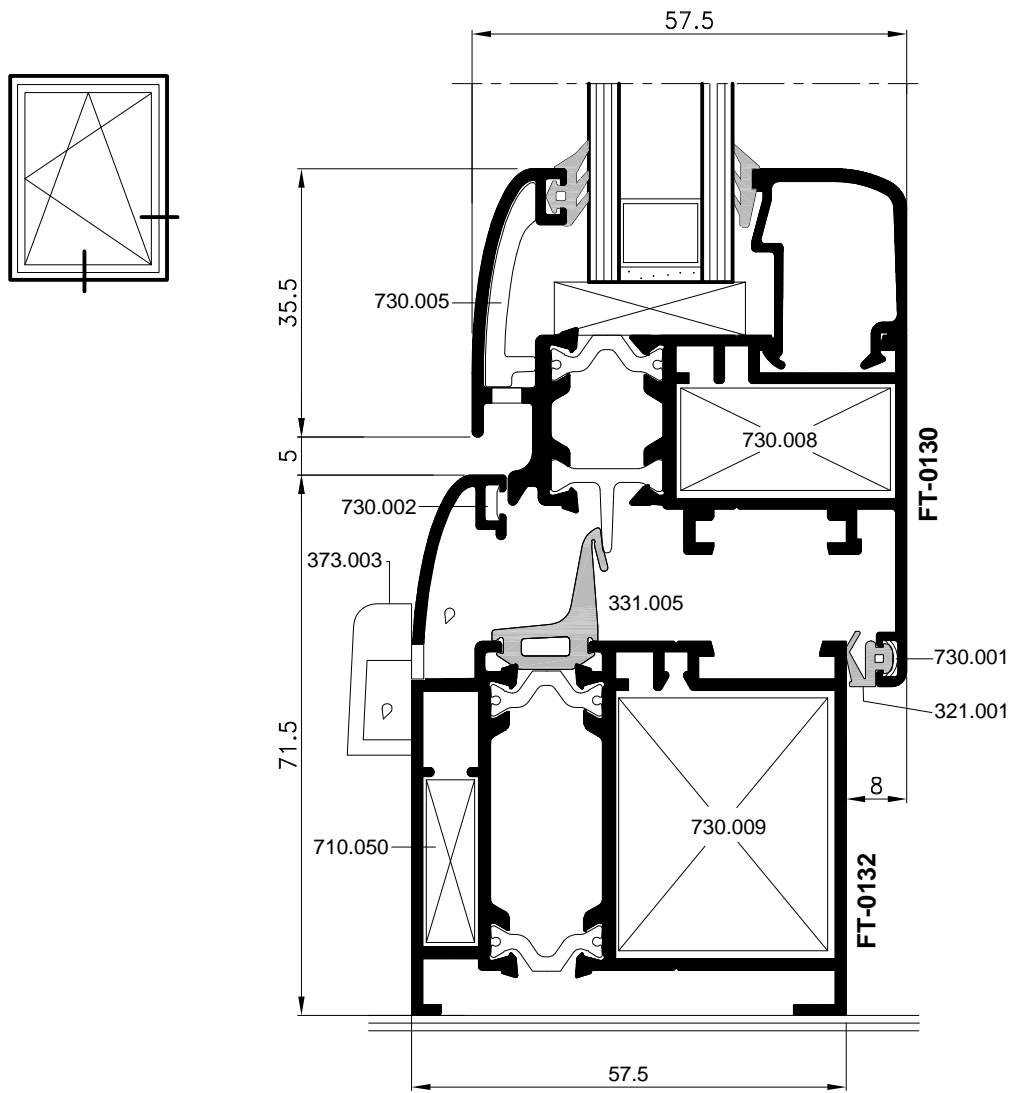


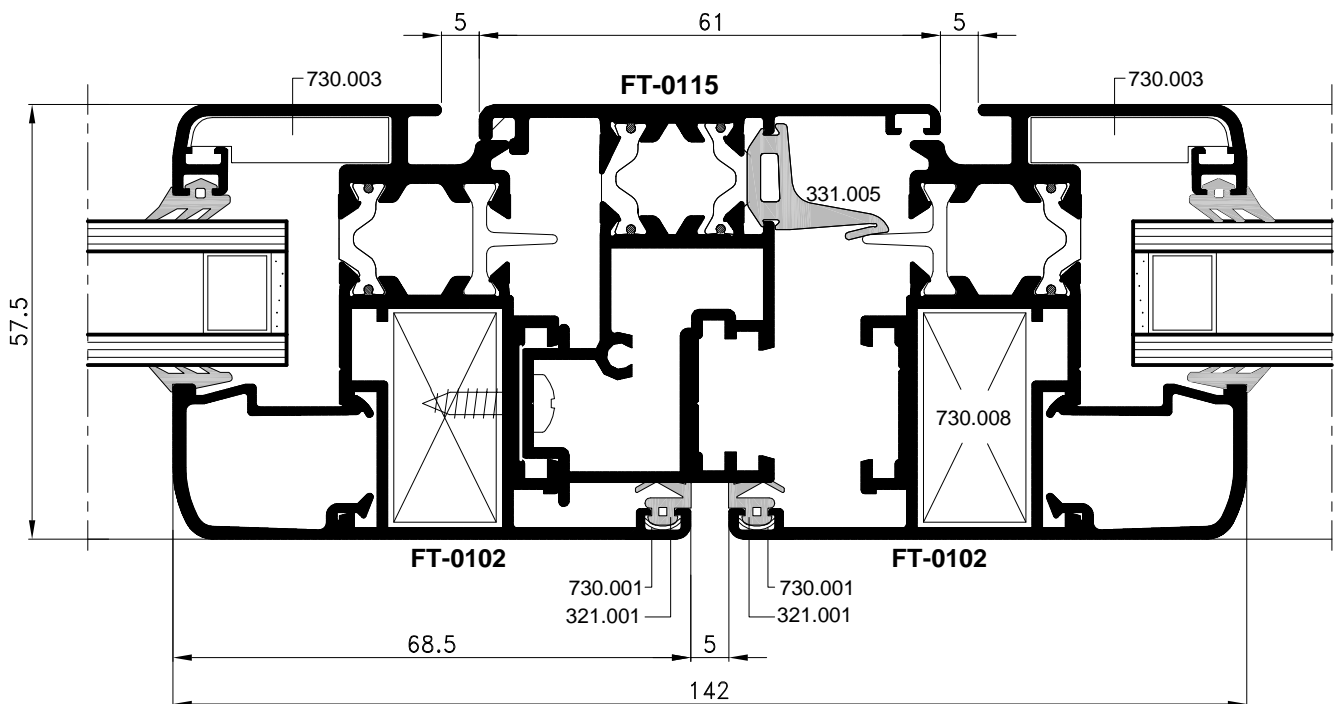
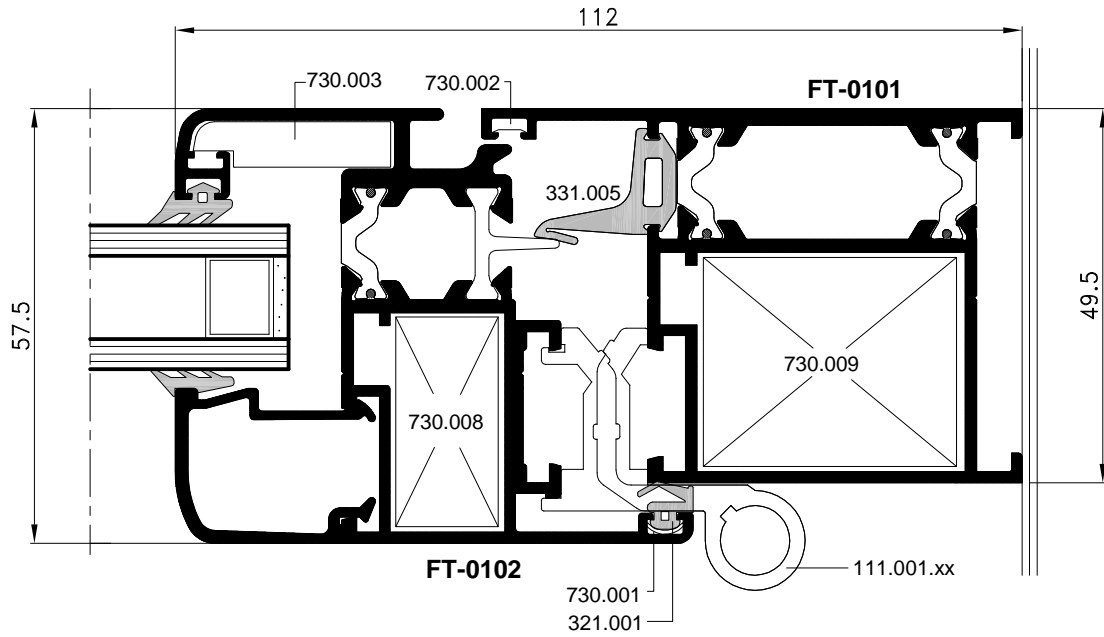
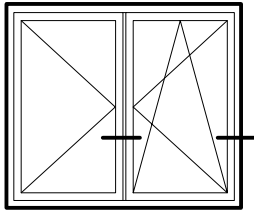
str. 9-10



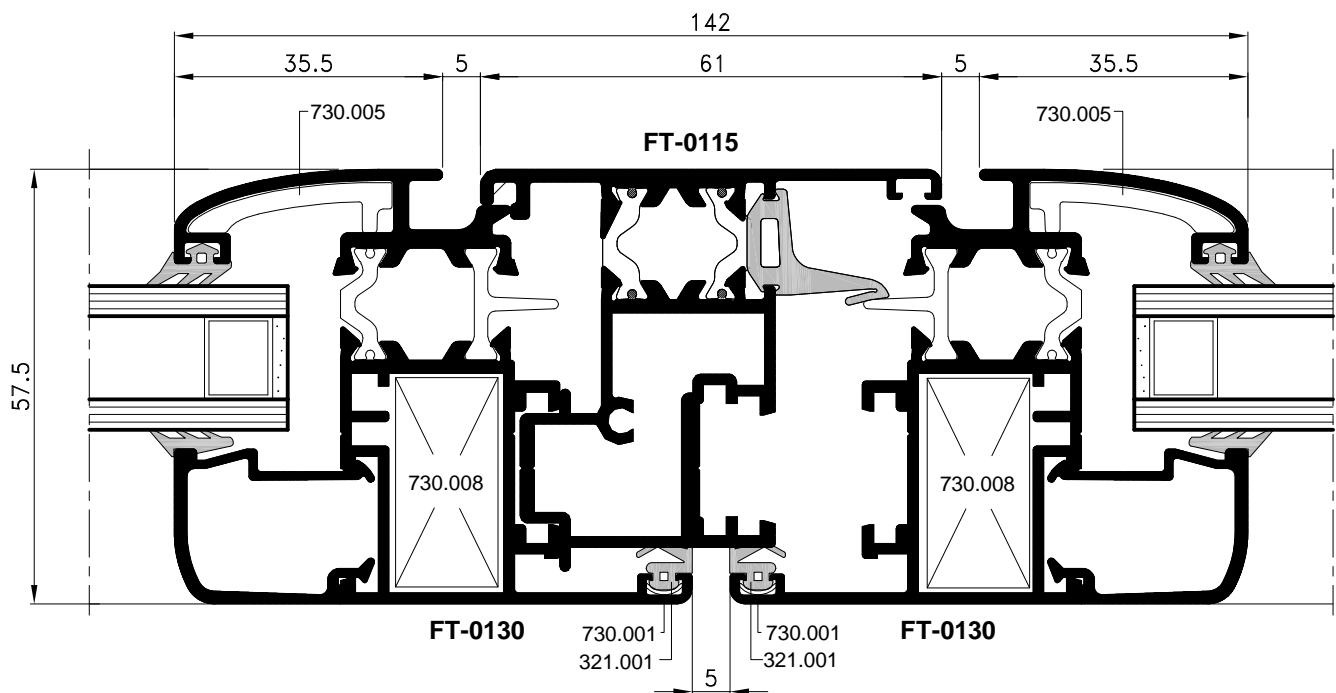
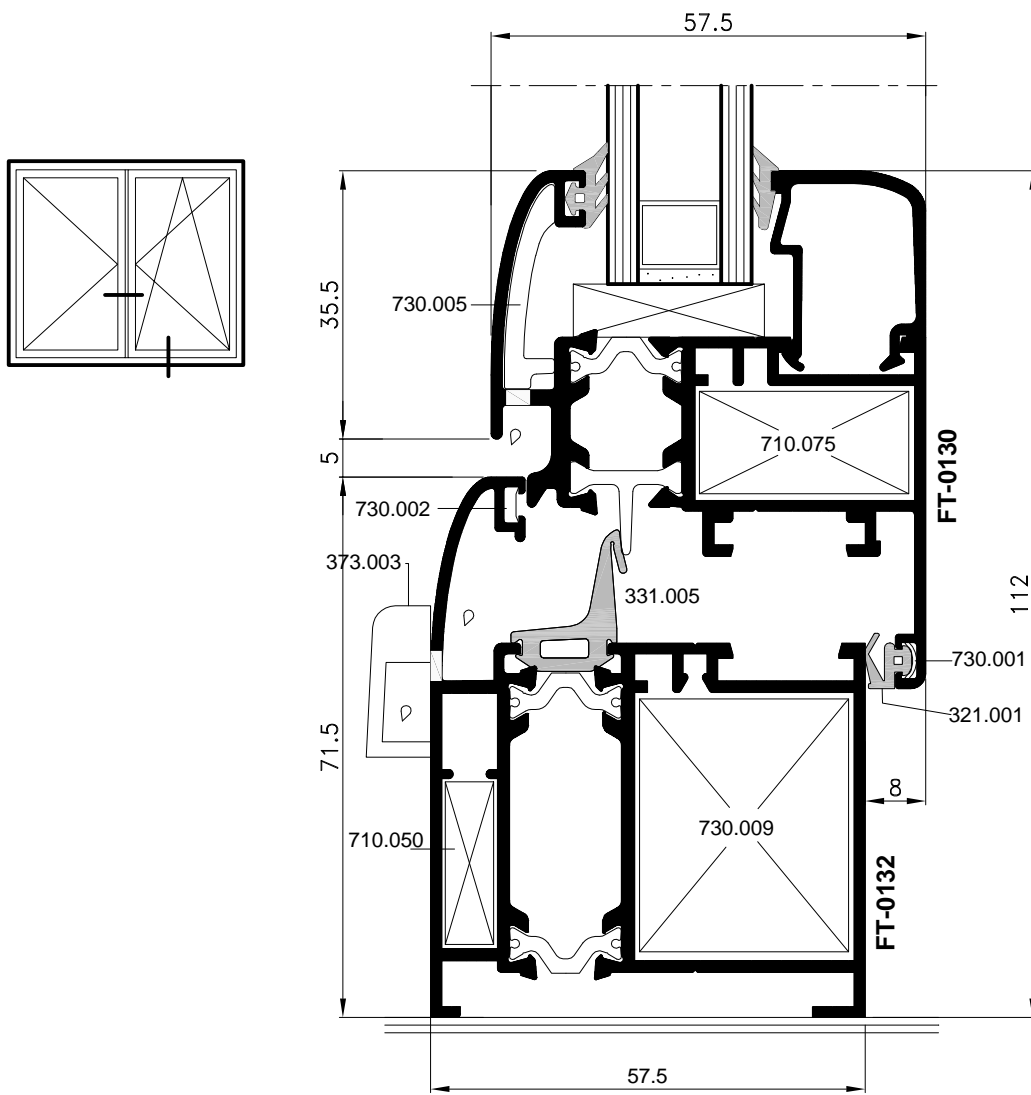
str. 10-13

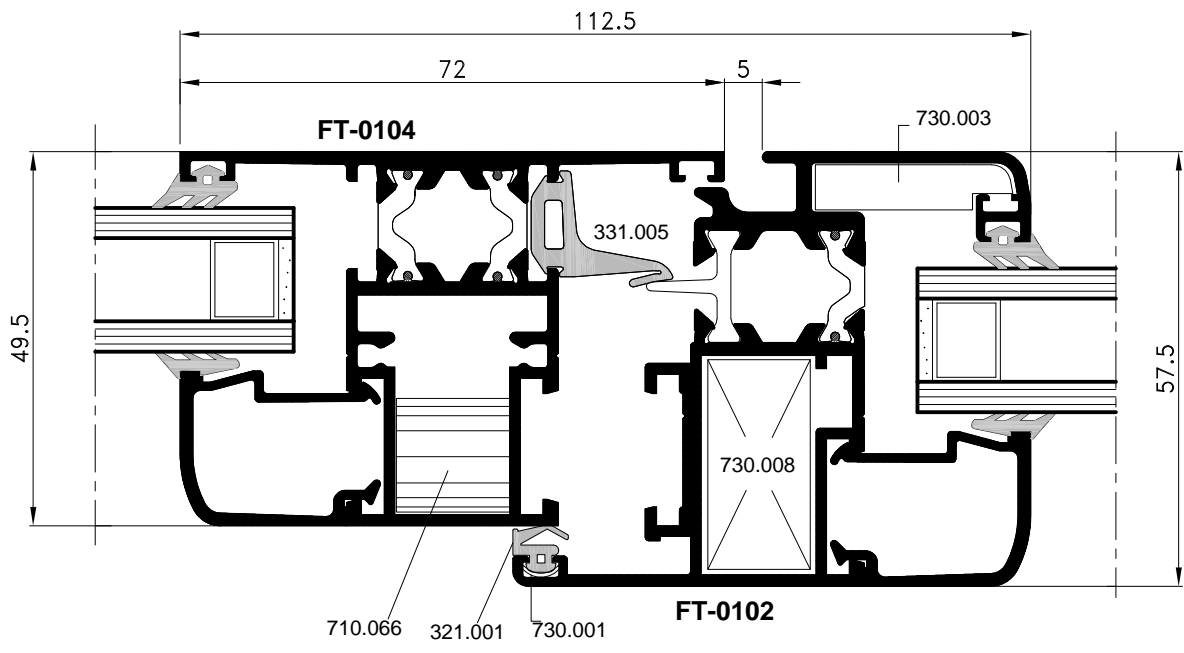
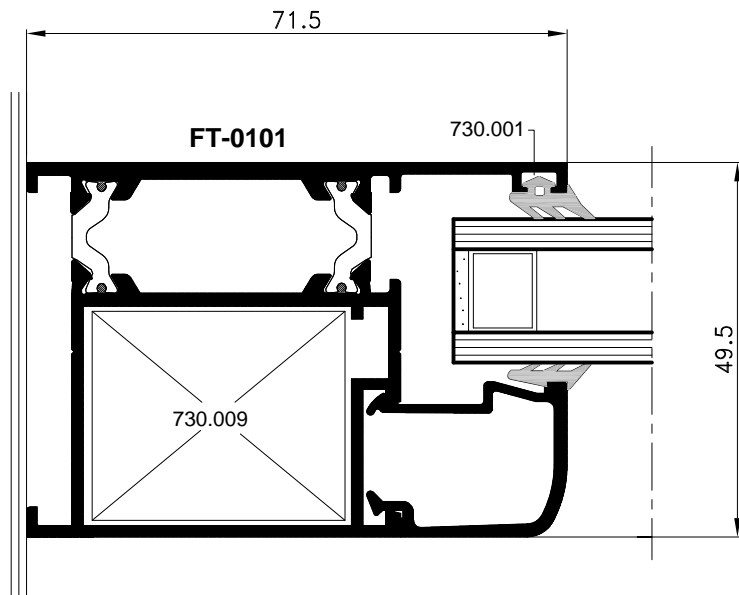
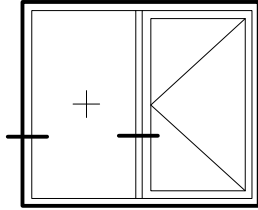


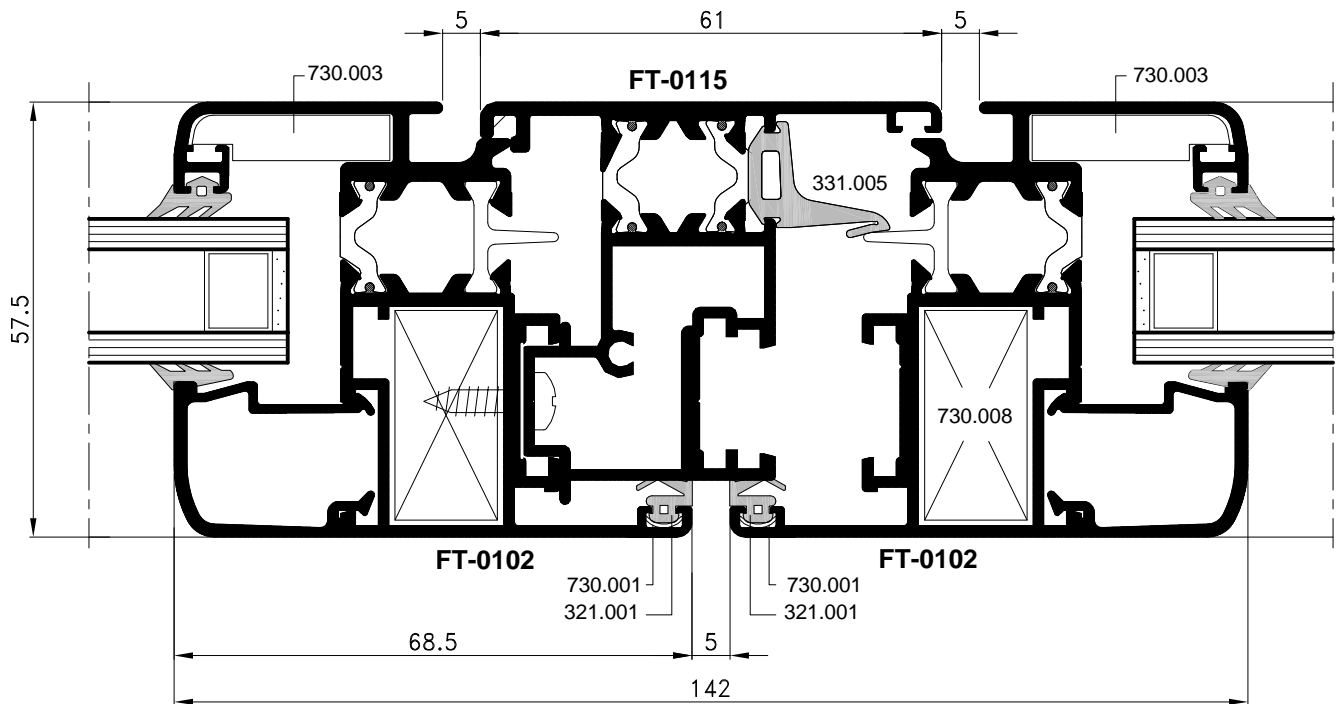
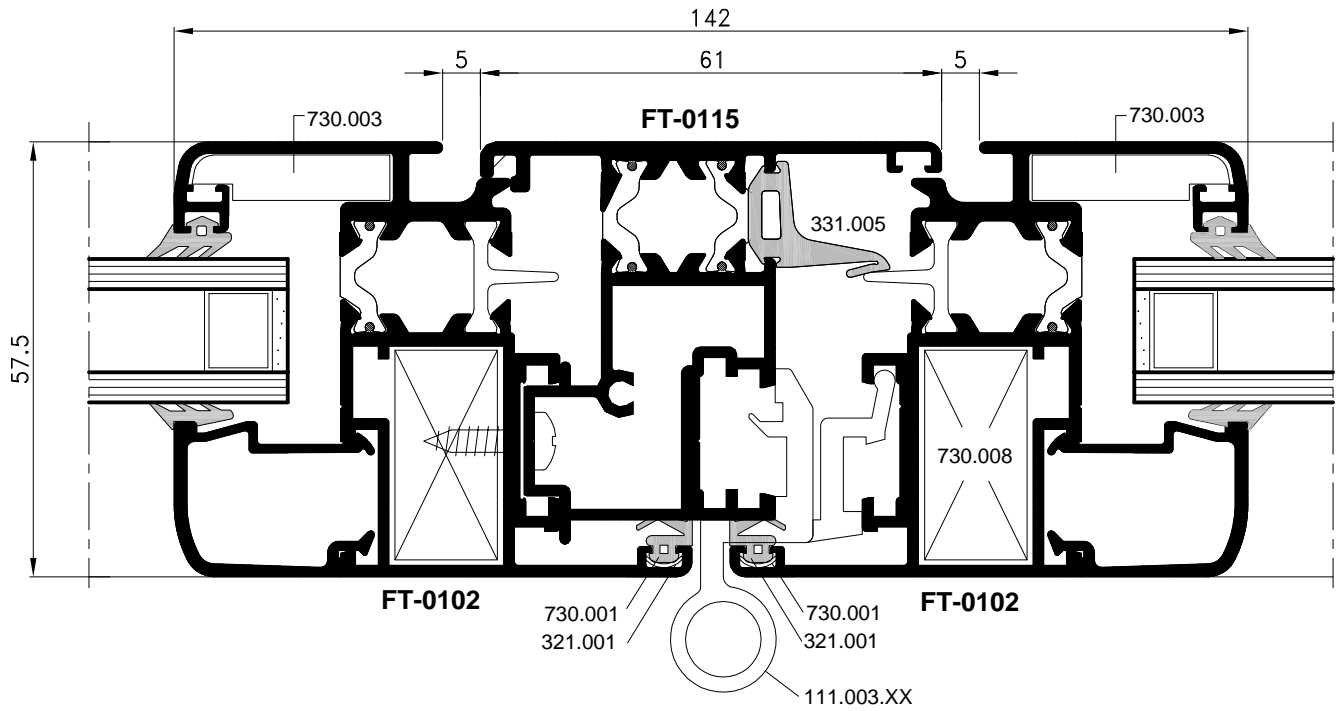
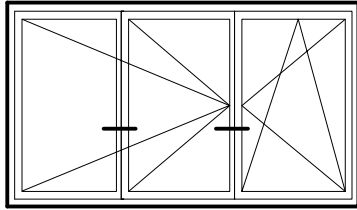


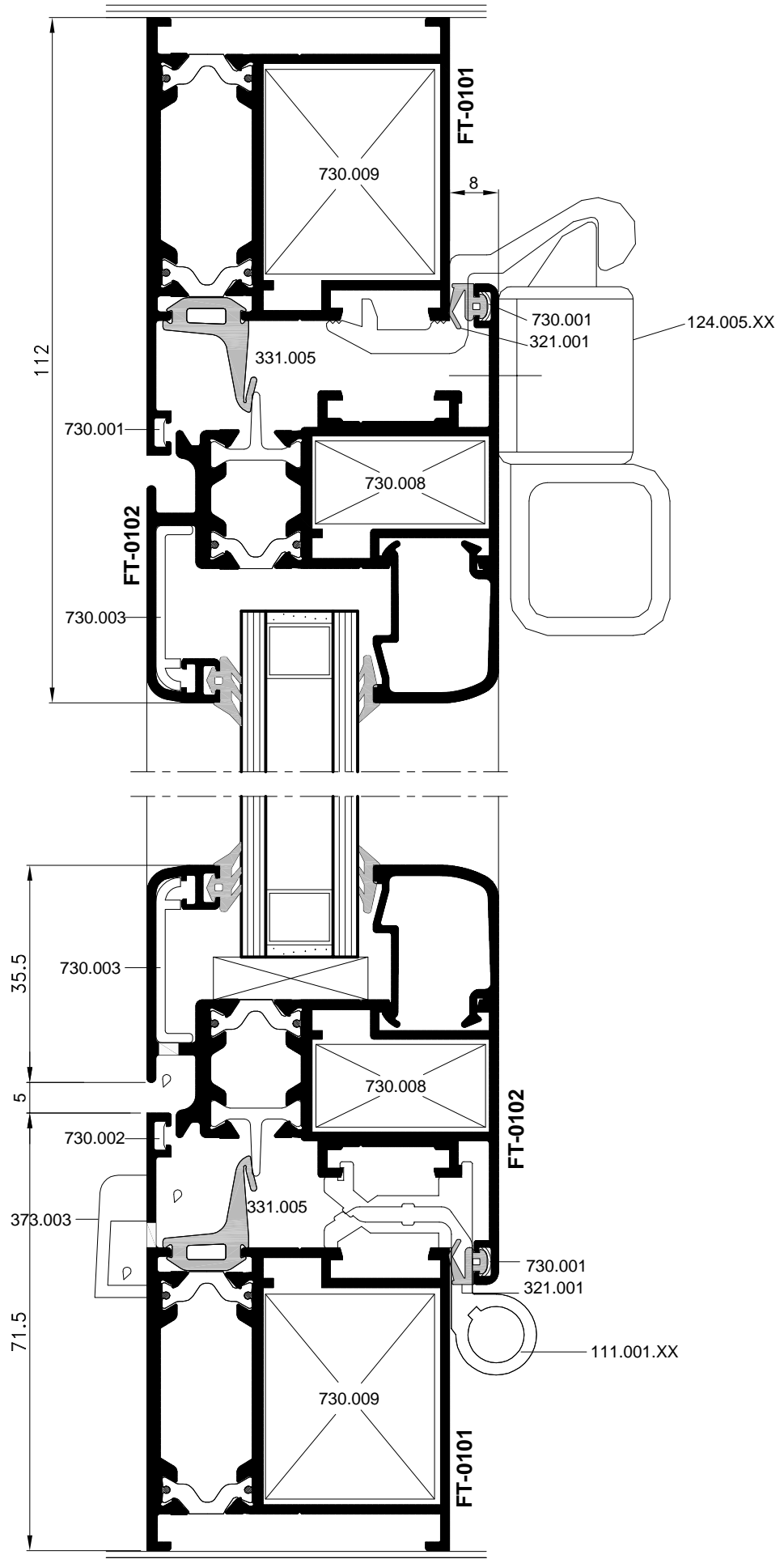
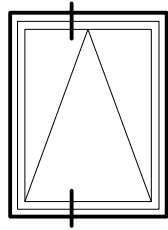


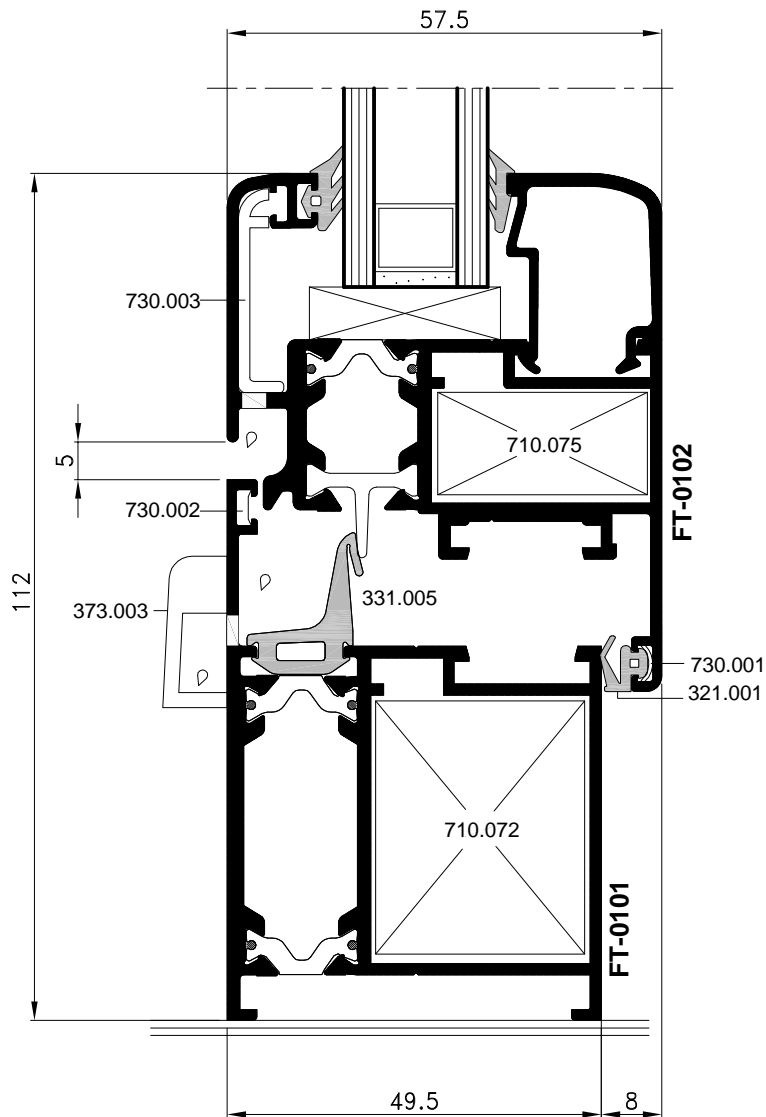
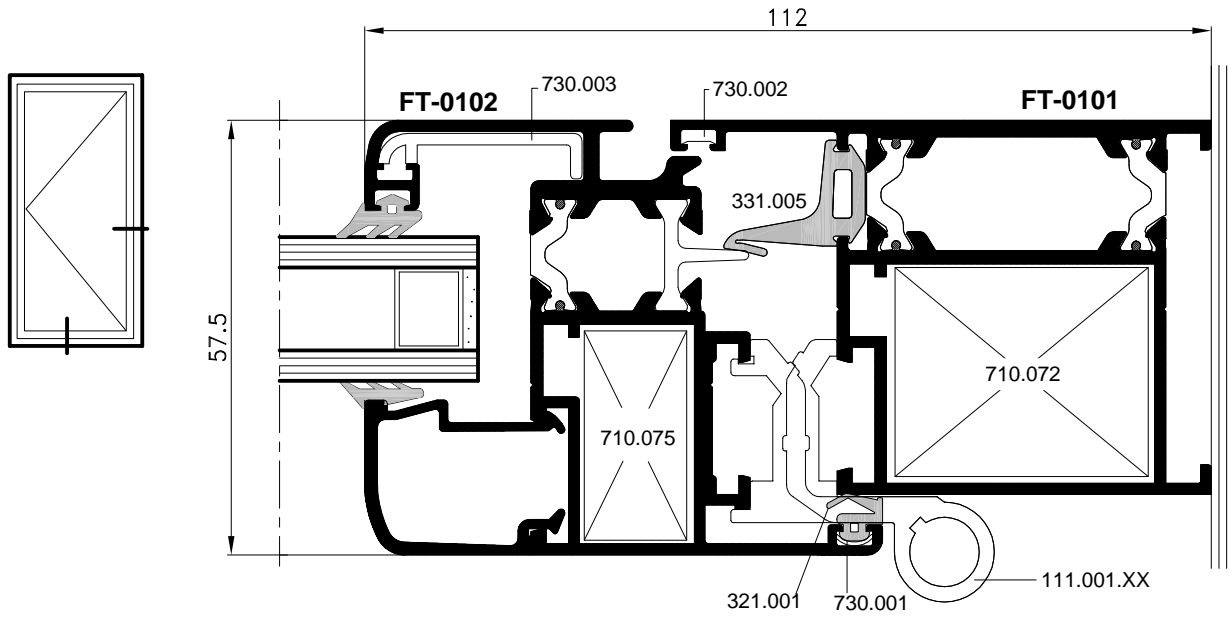


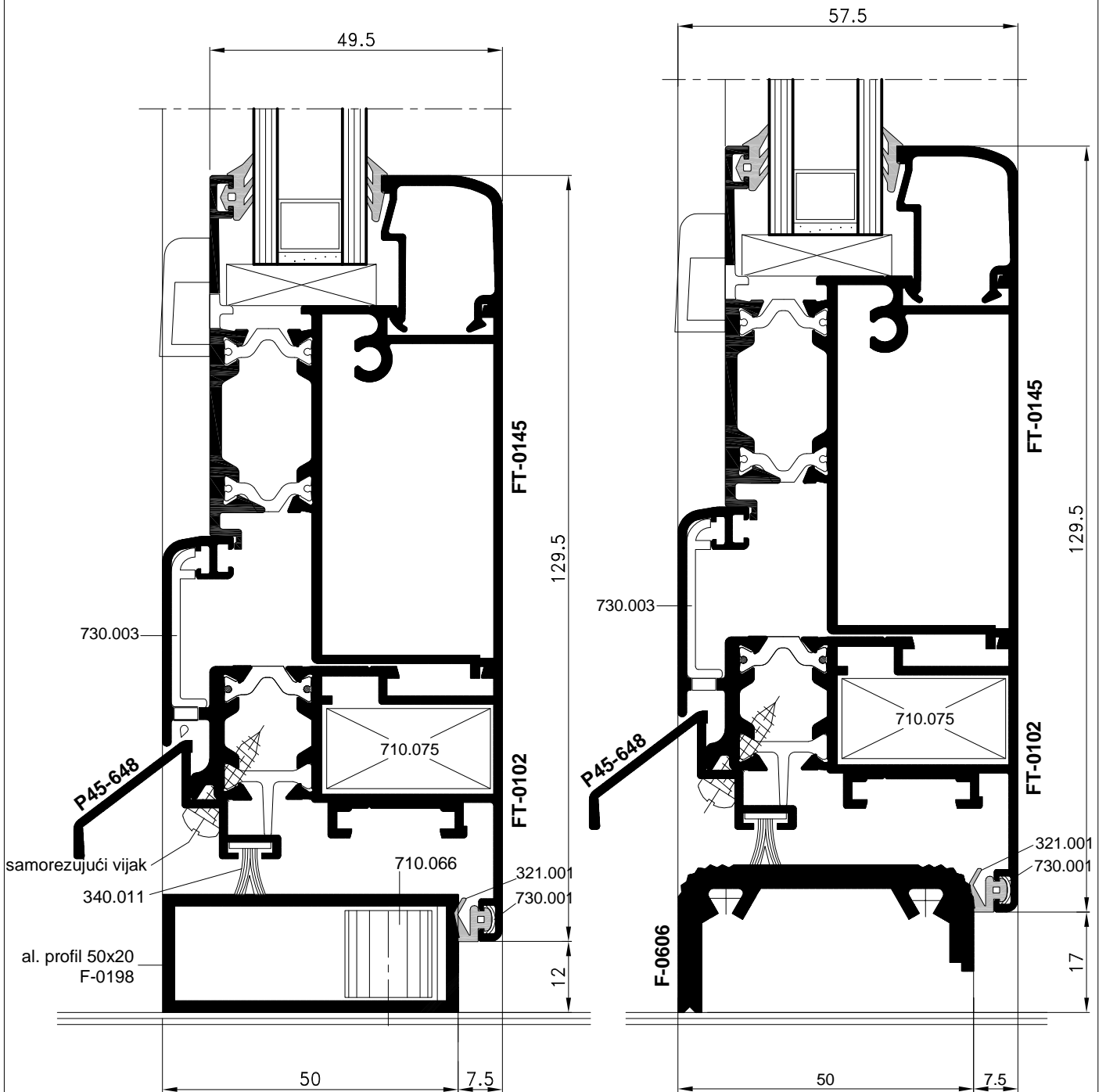
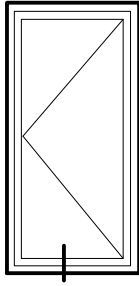


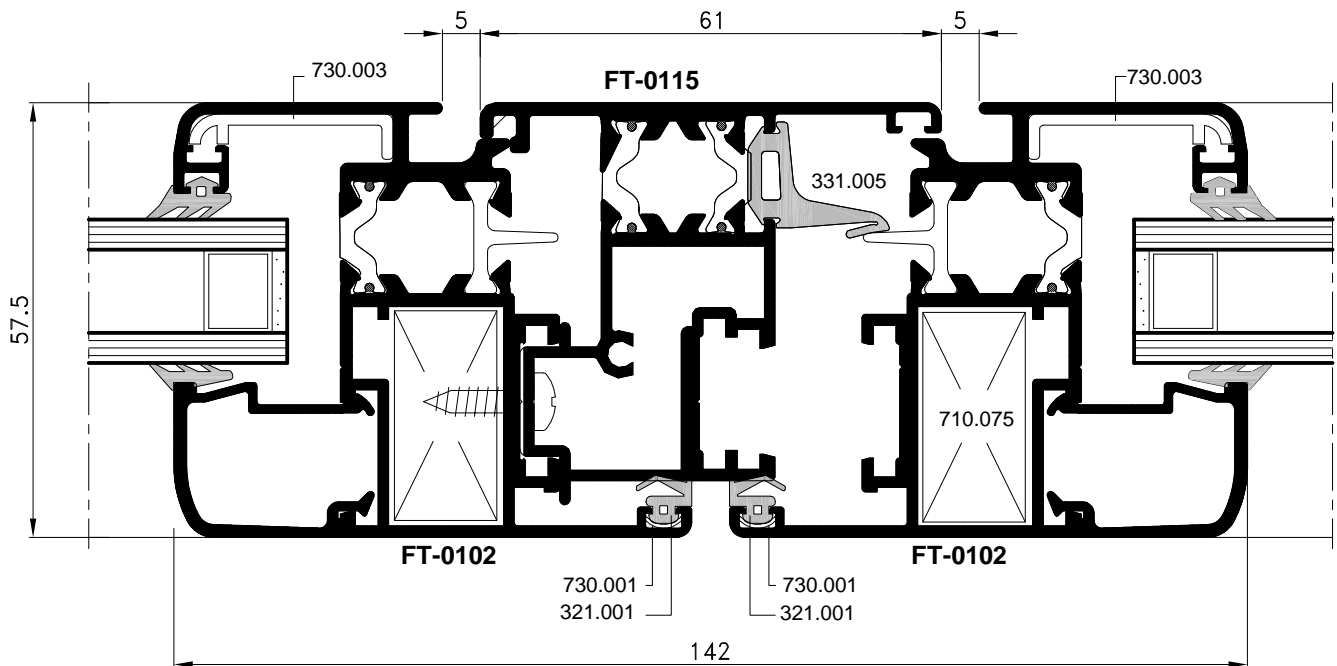
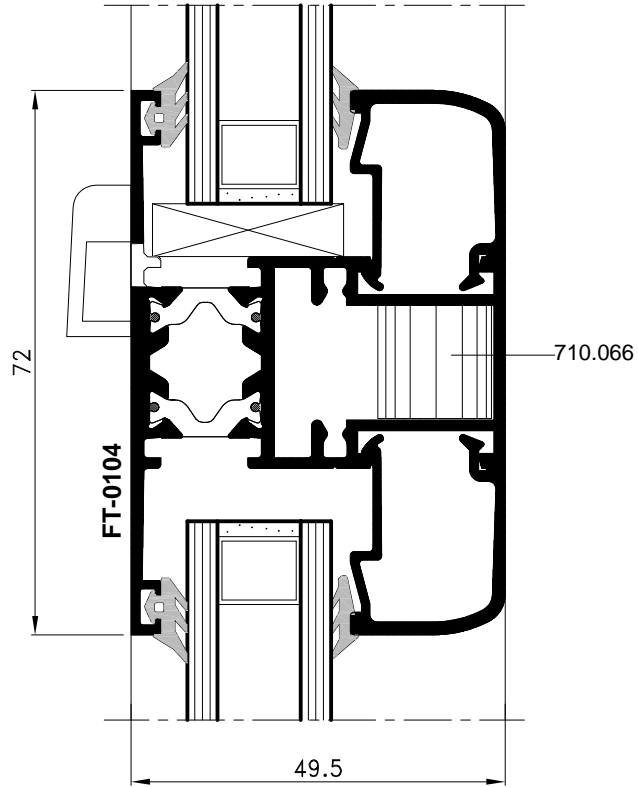
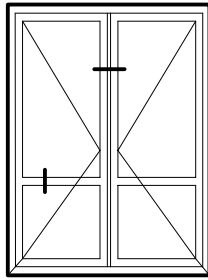


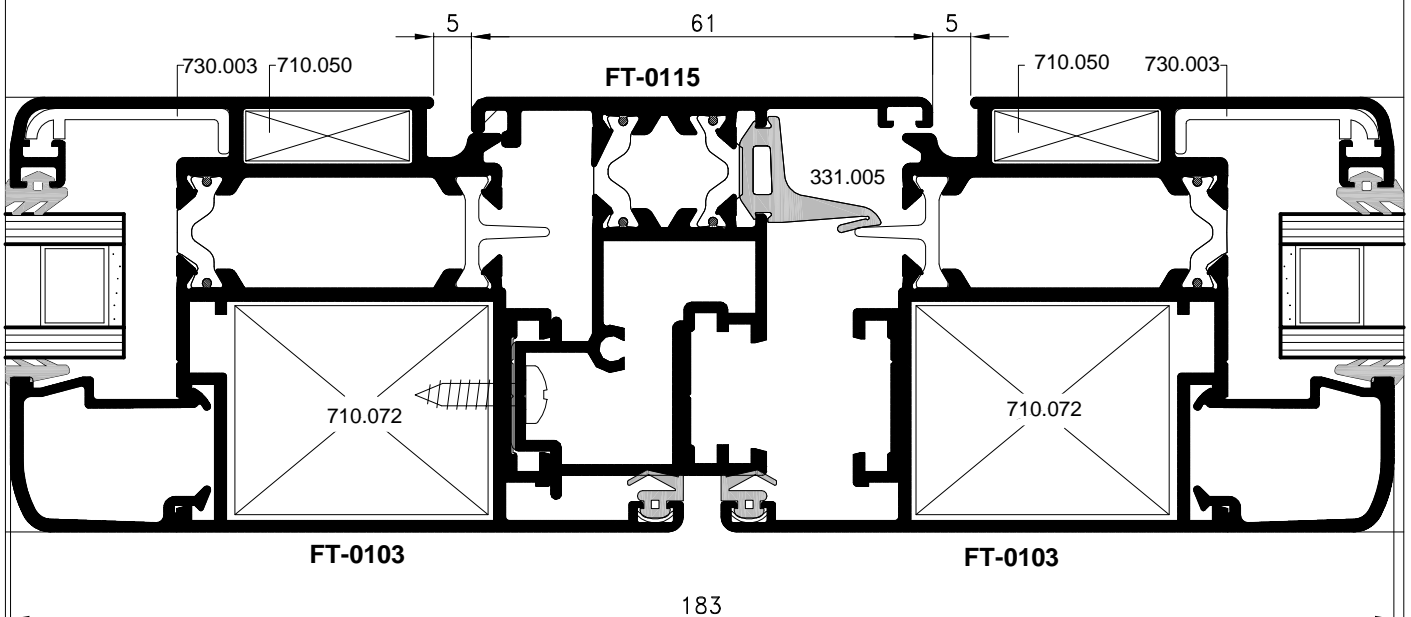
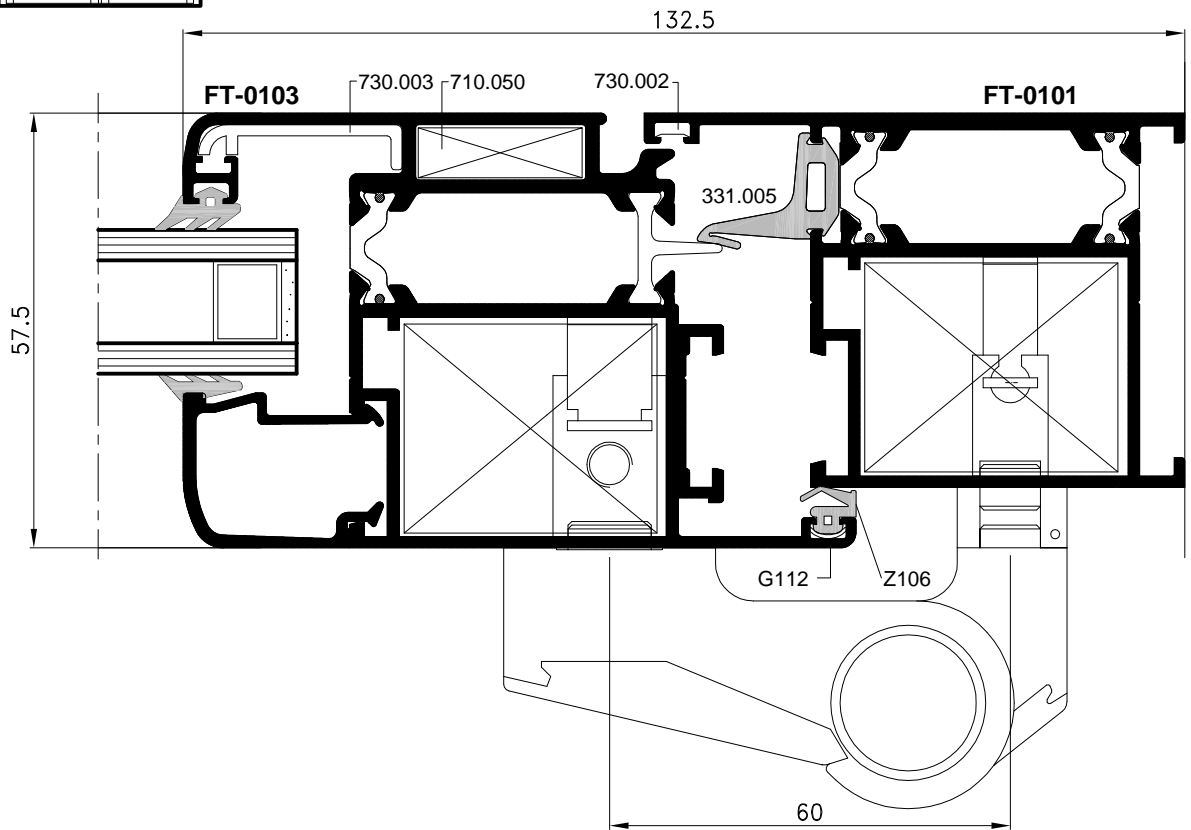
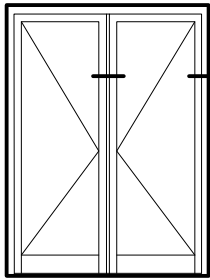




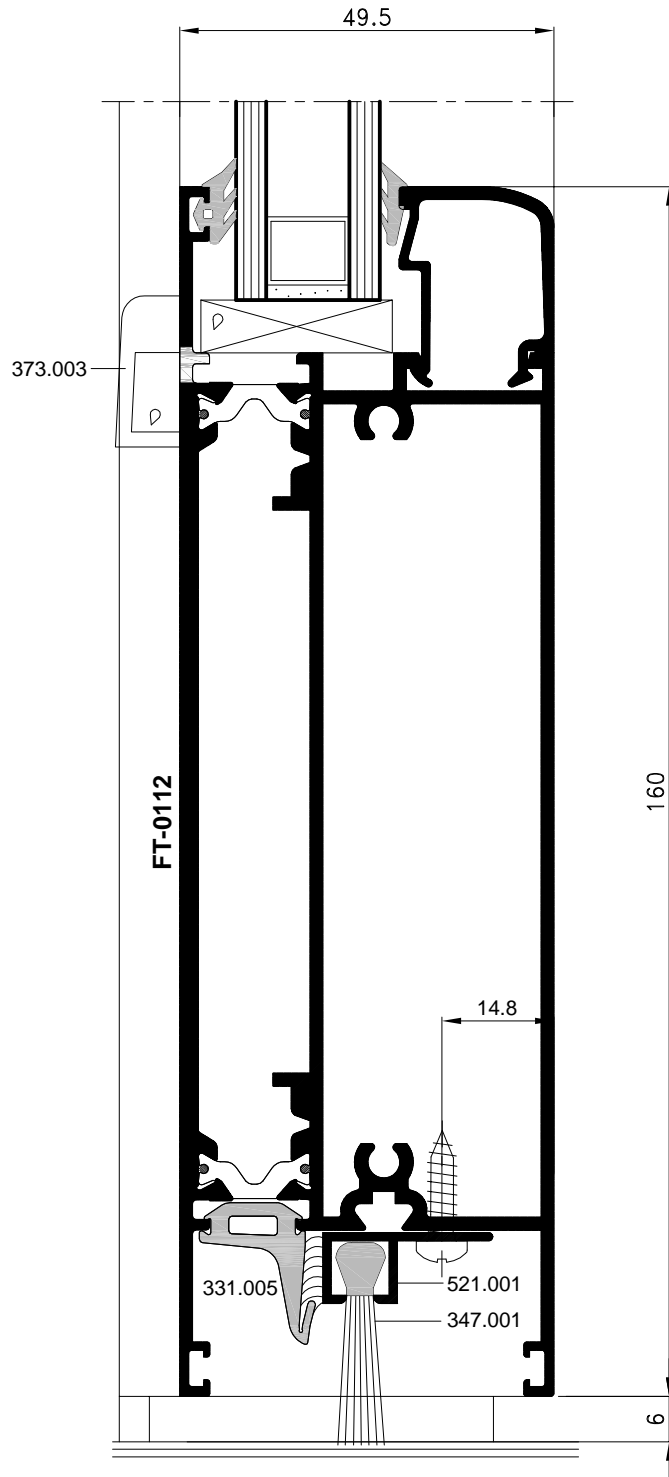
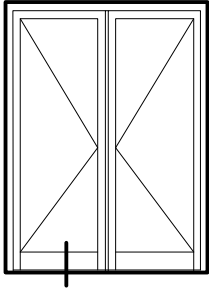


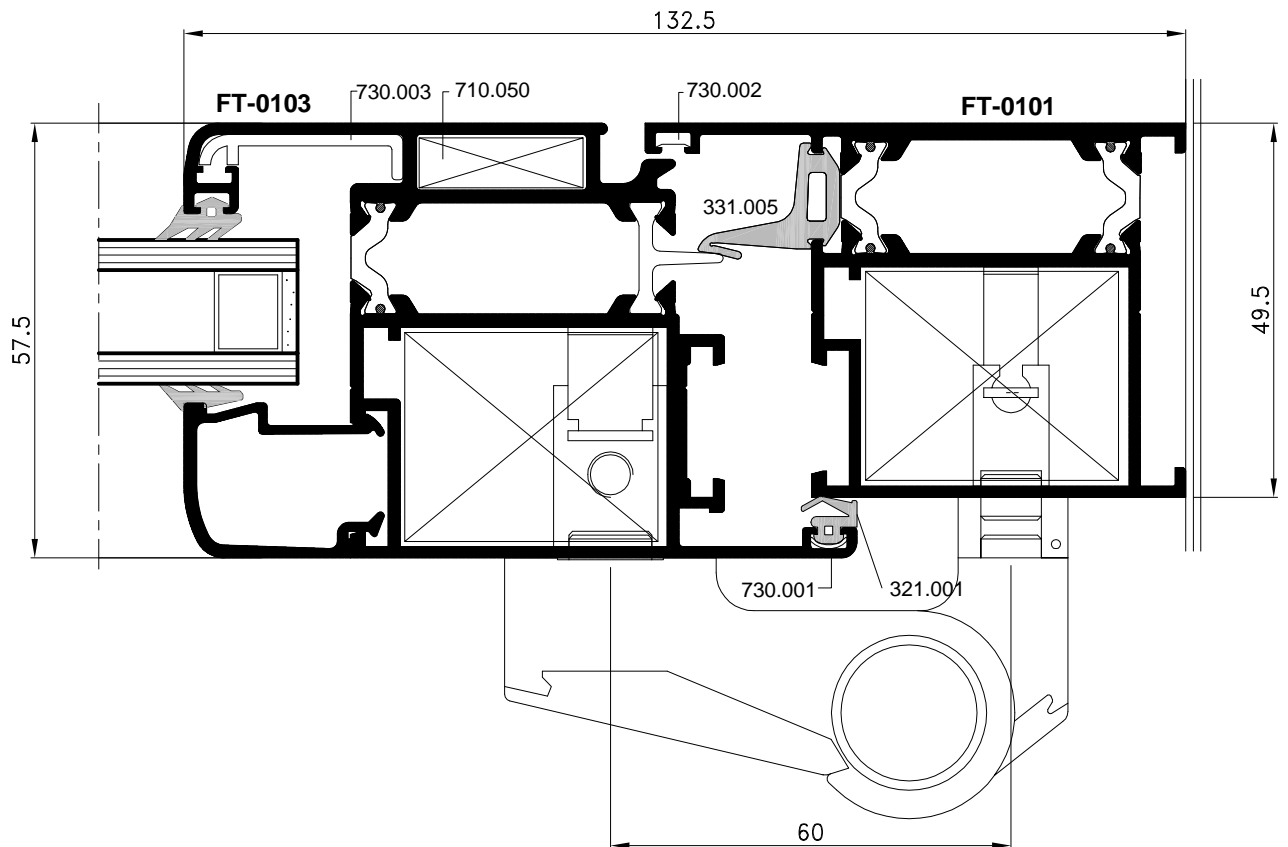
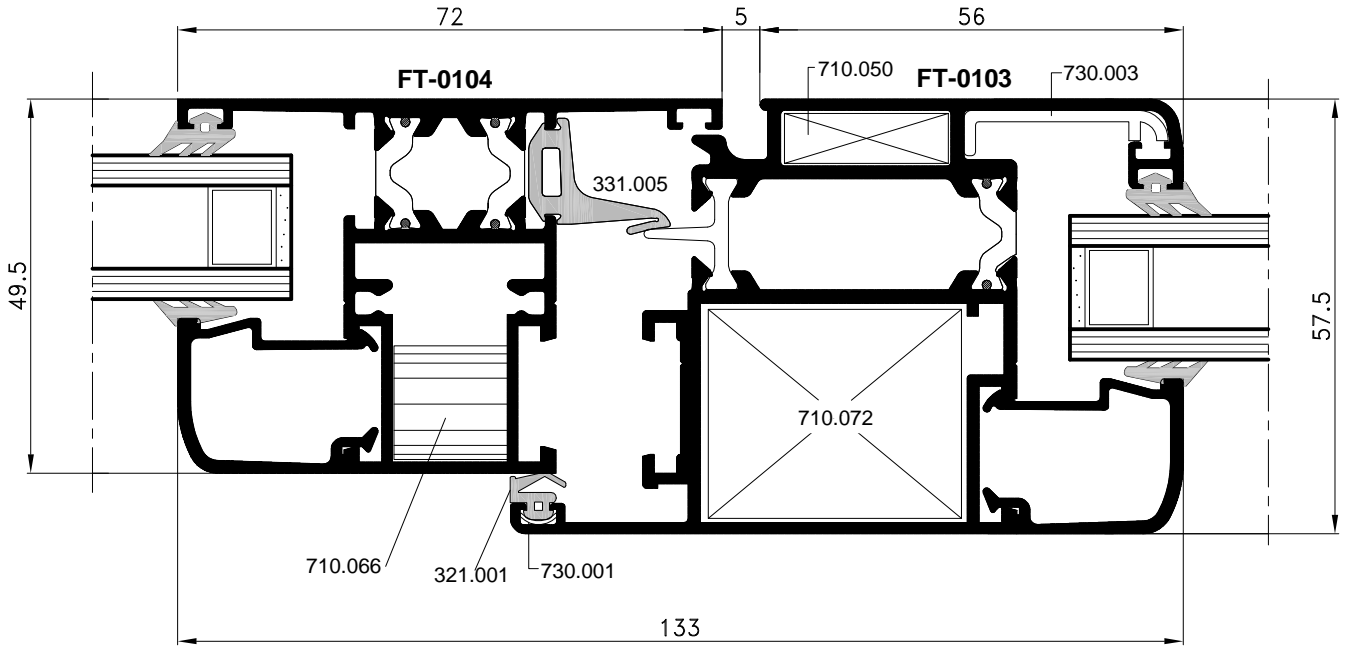
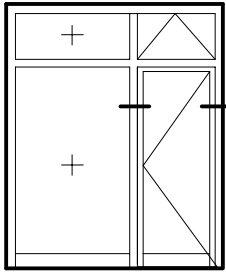


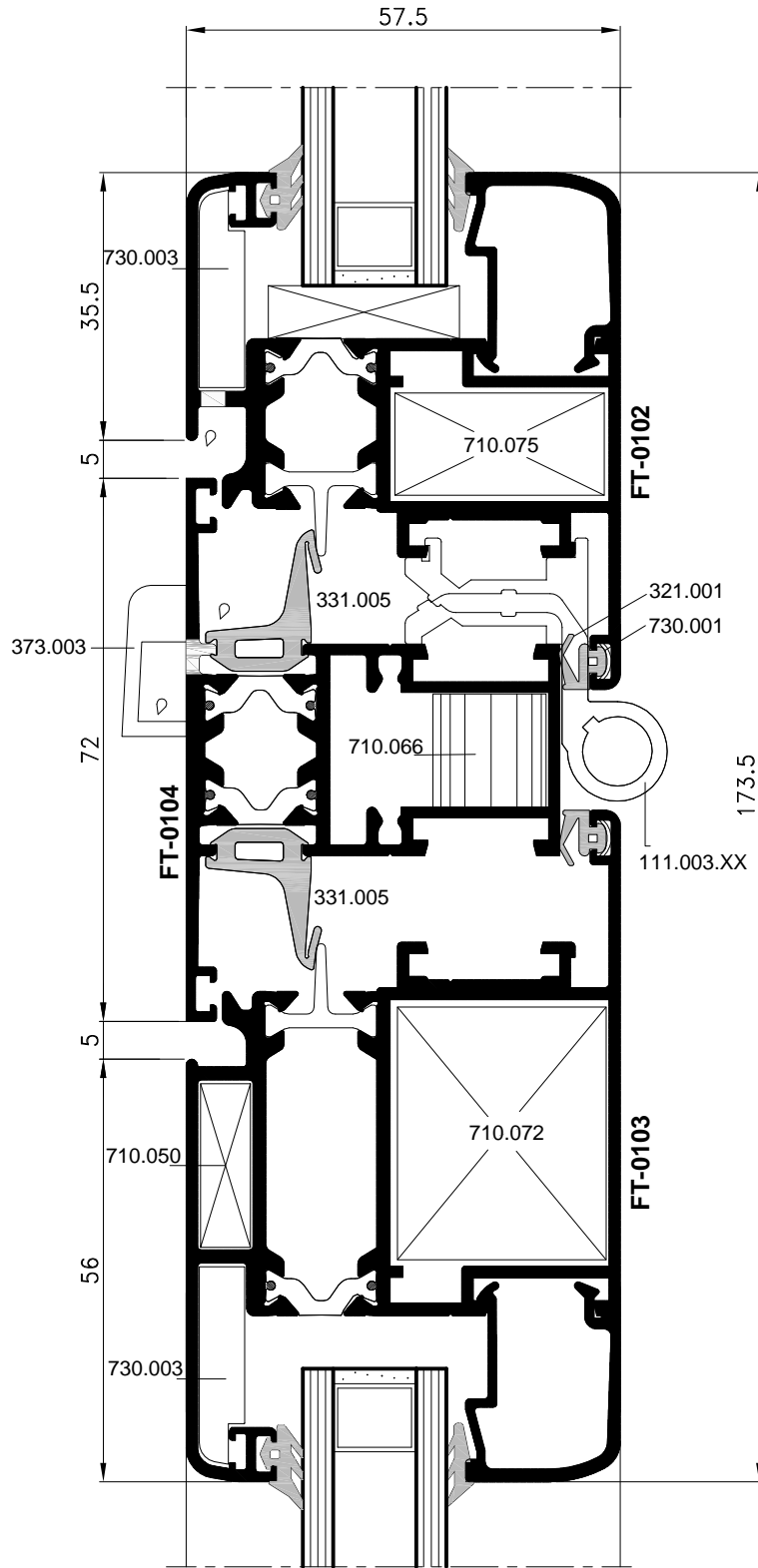
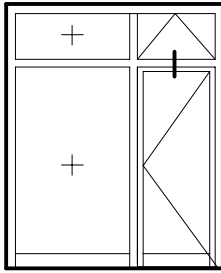


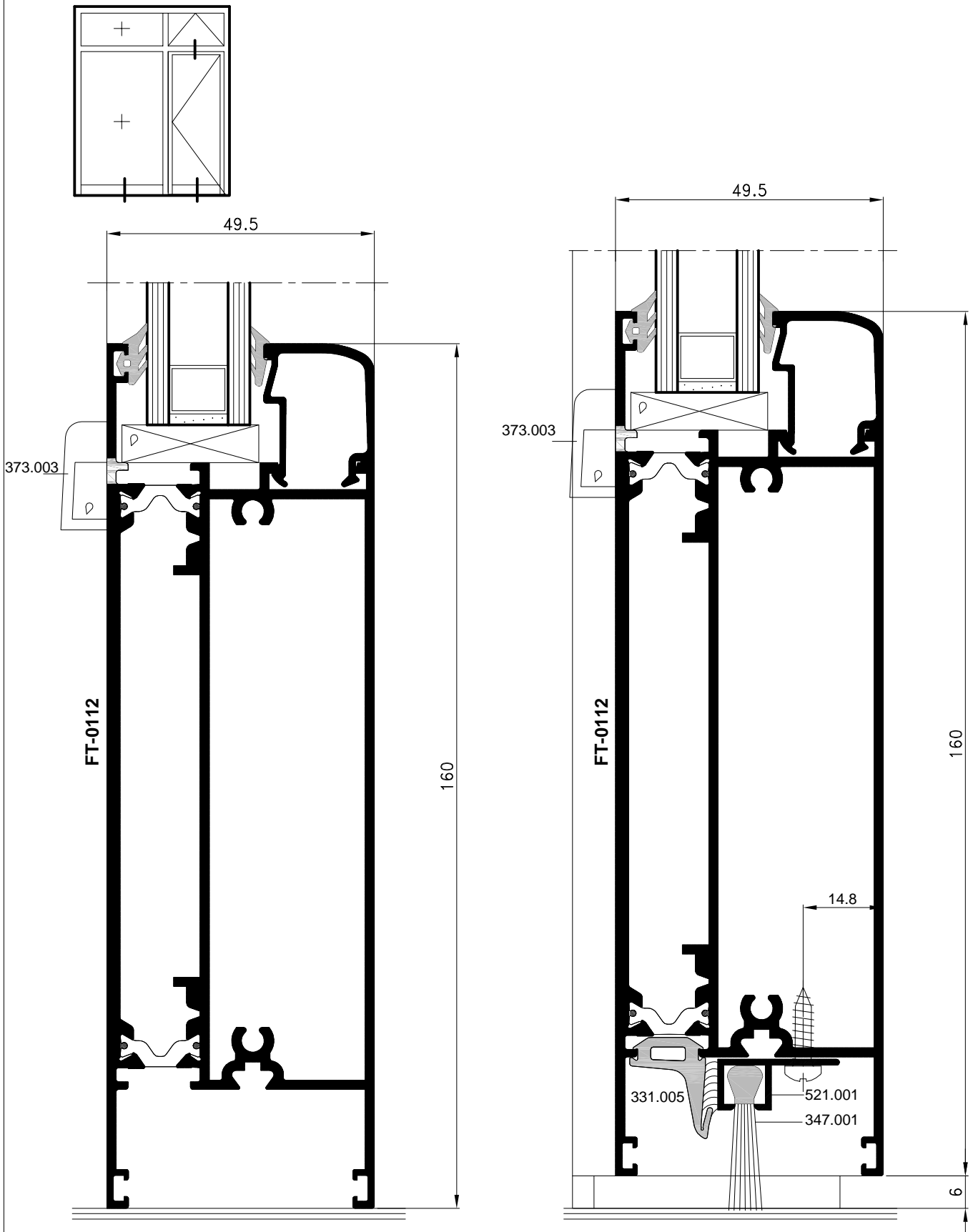


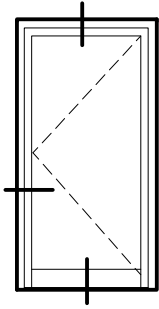




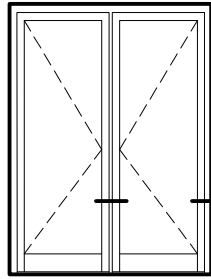




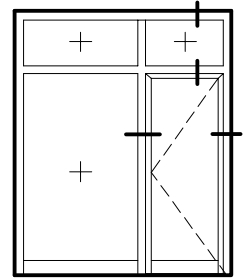




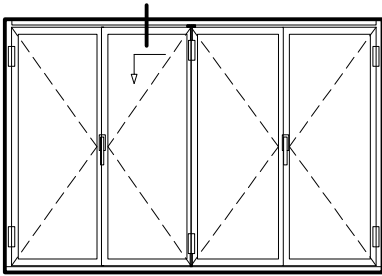
str. 14-15



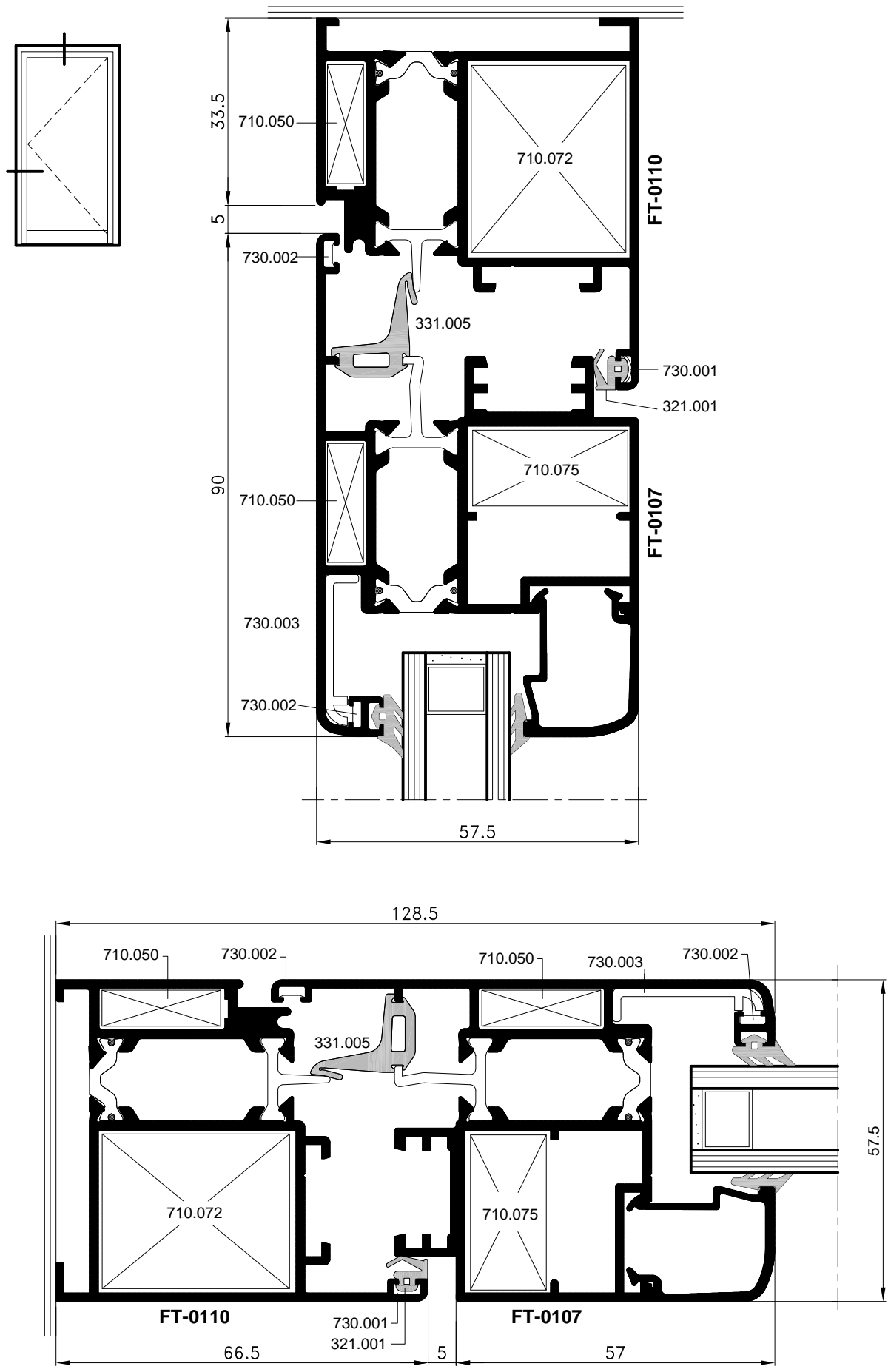
str. 16

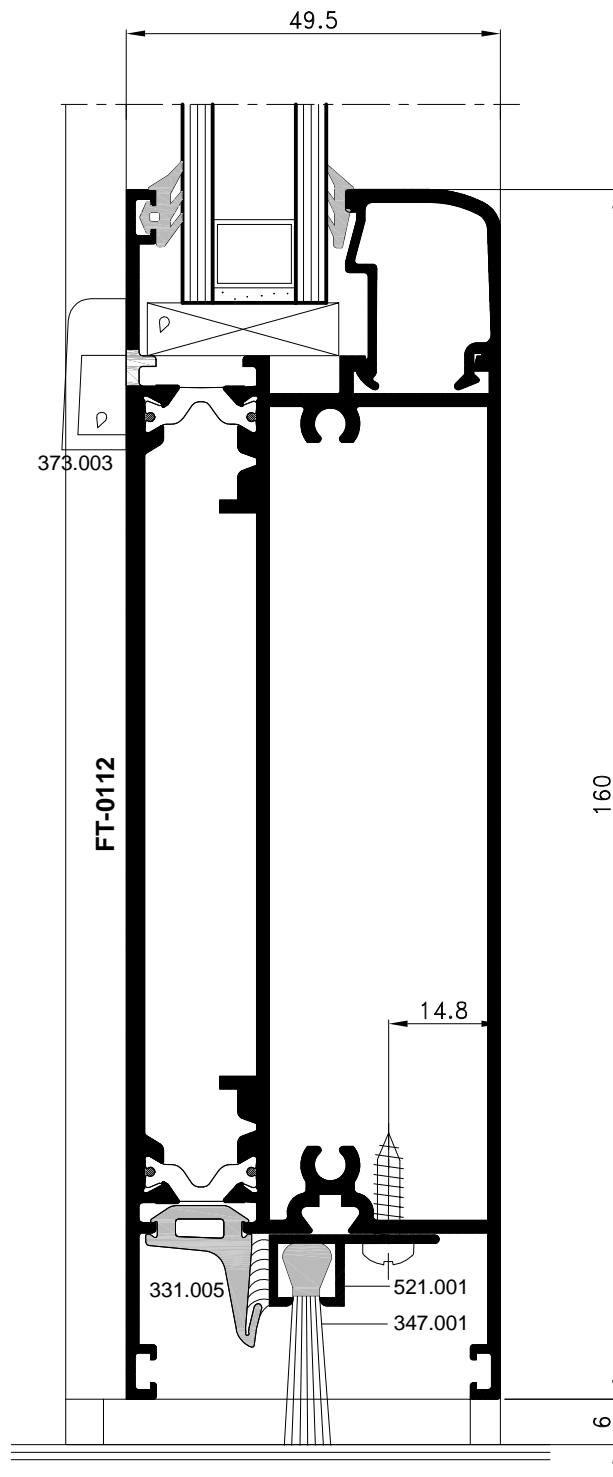
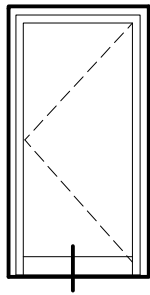


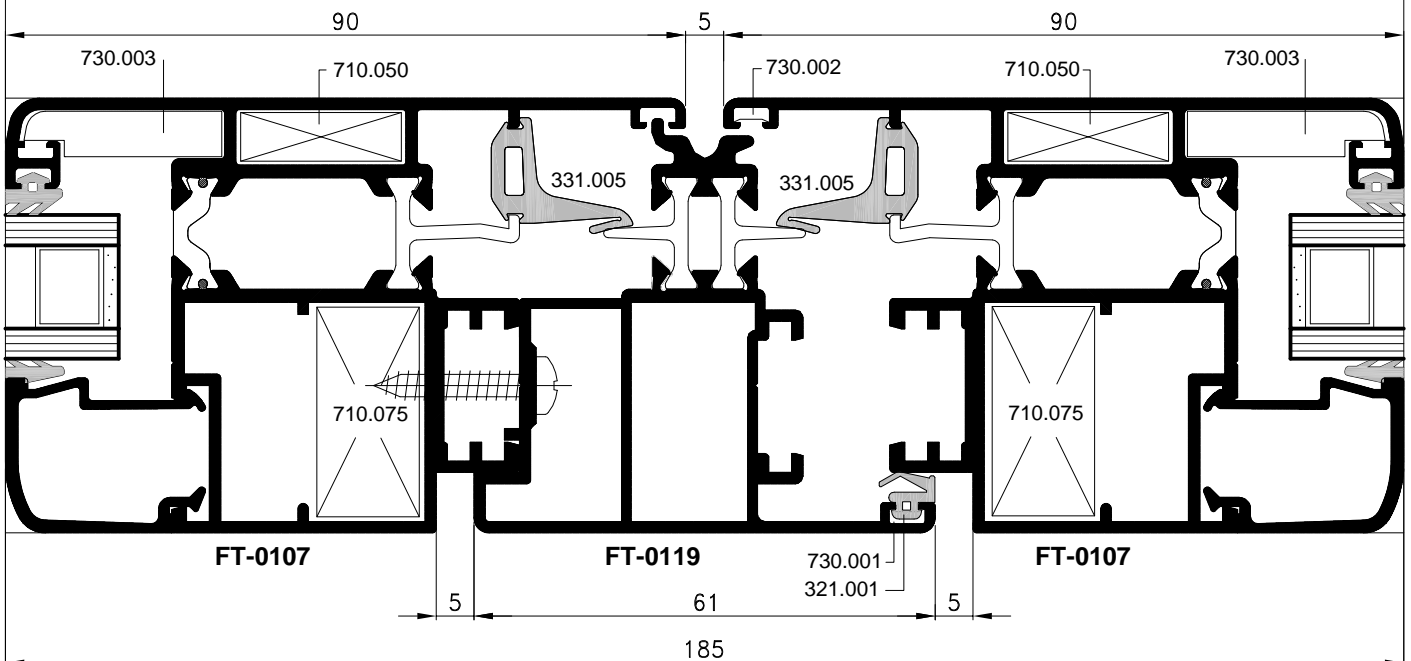
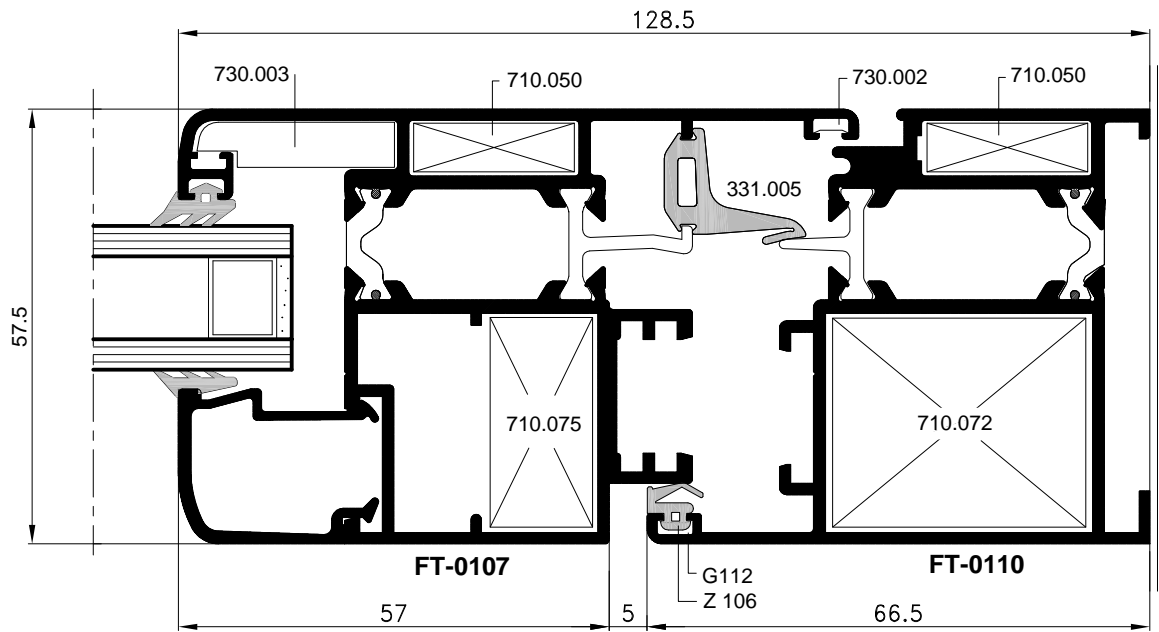
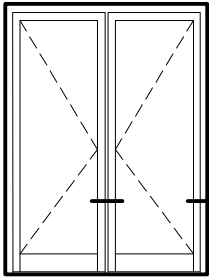
str. 17-18



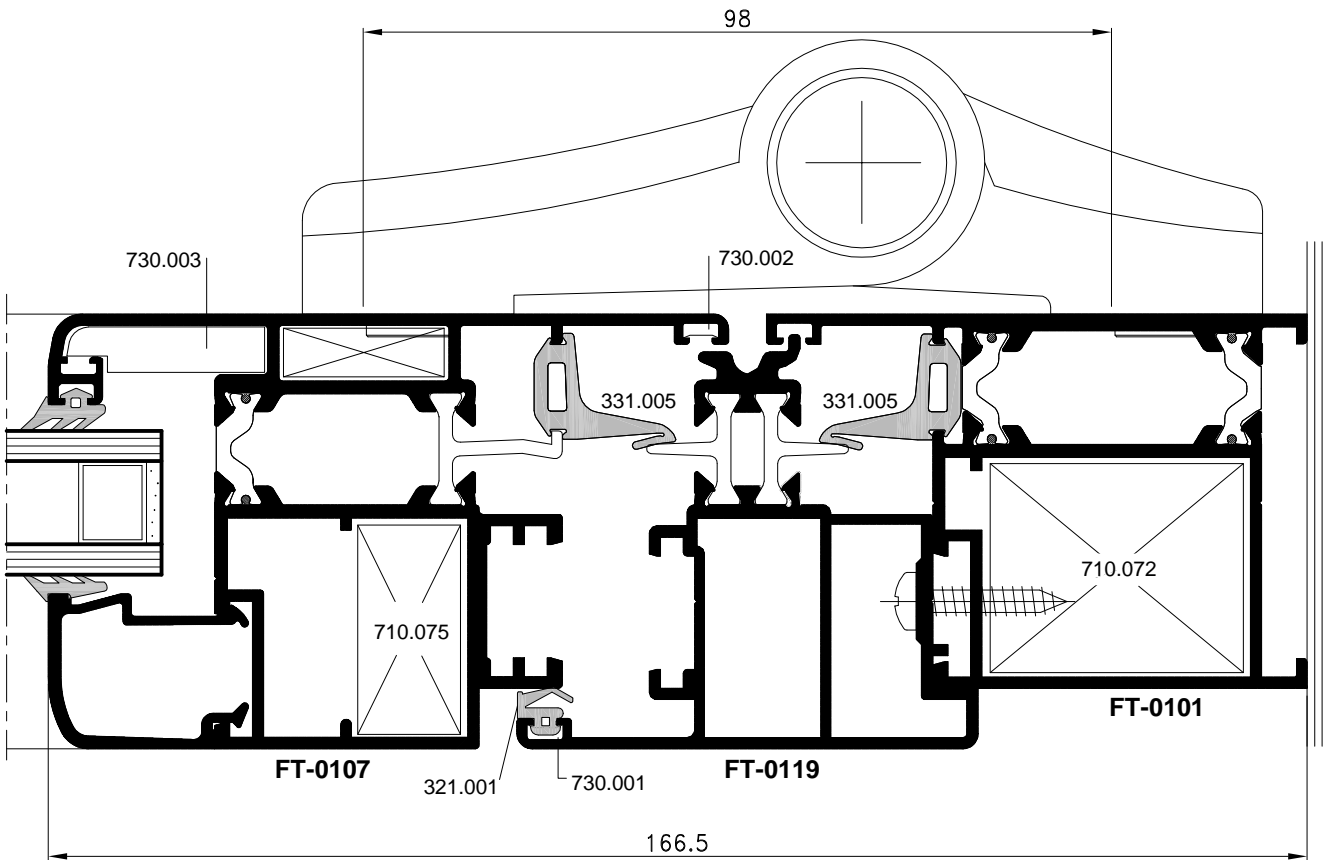
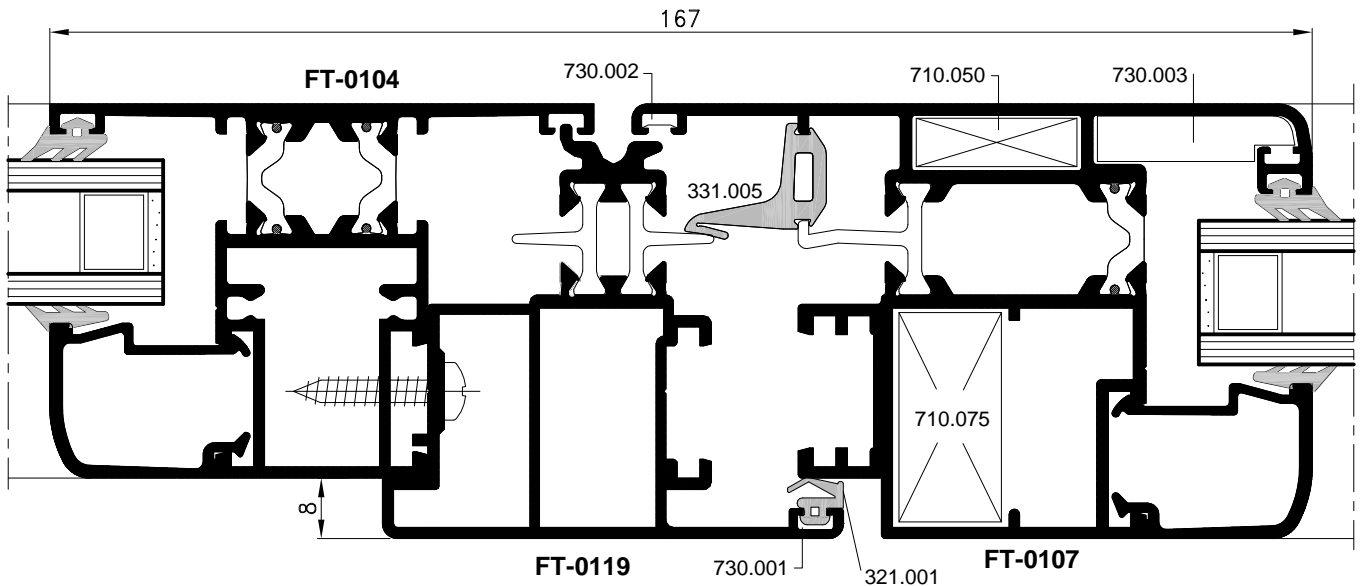
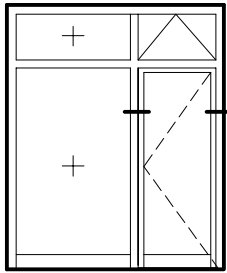
str. 19-20

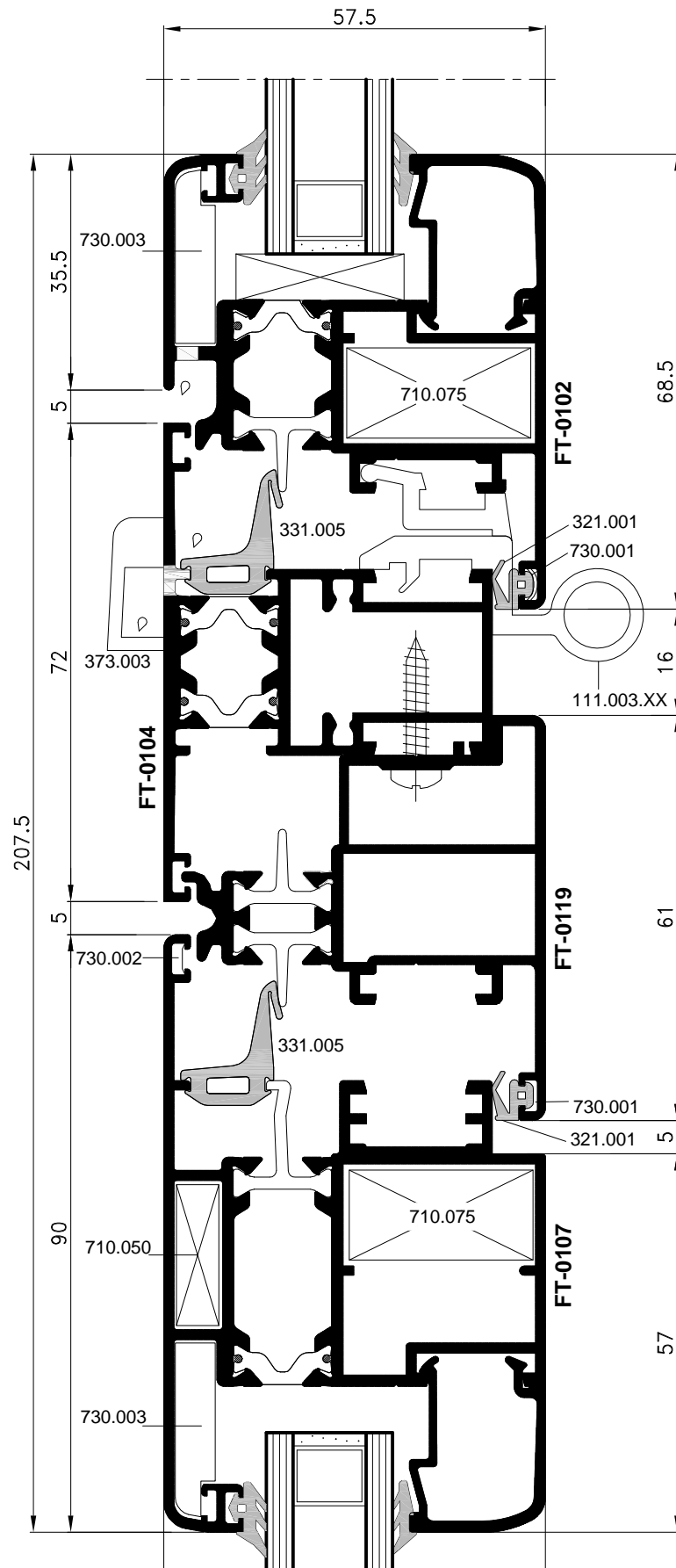
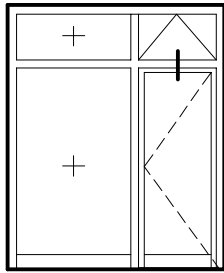




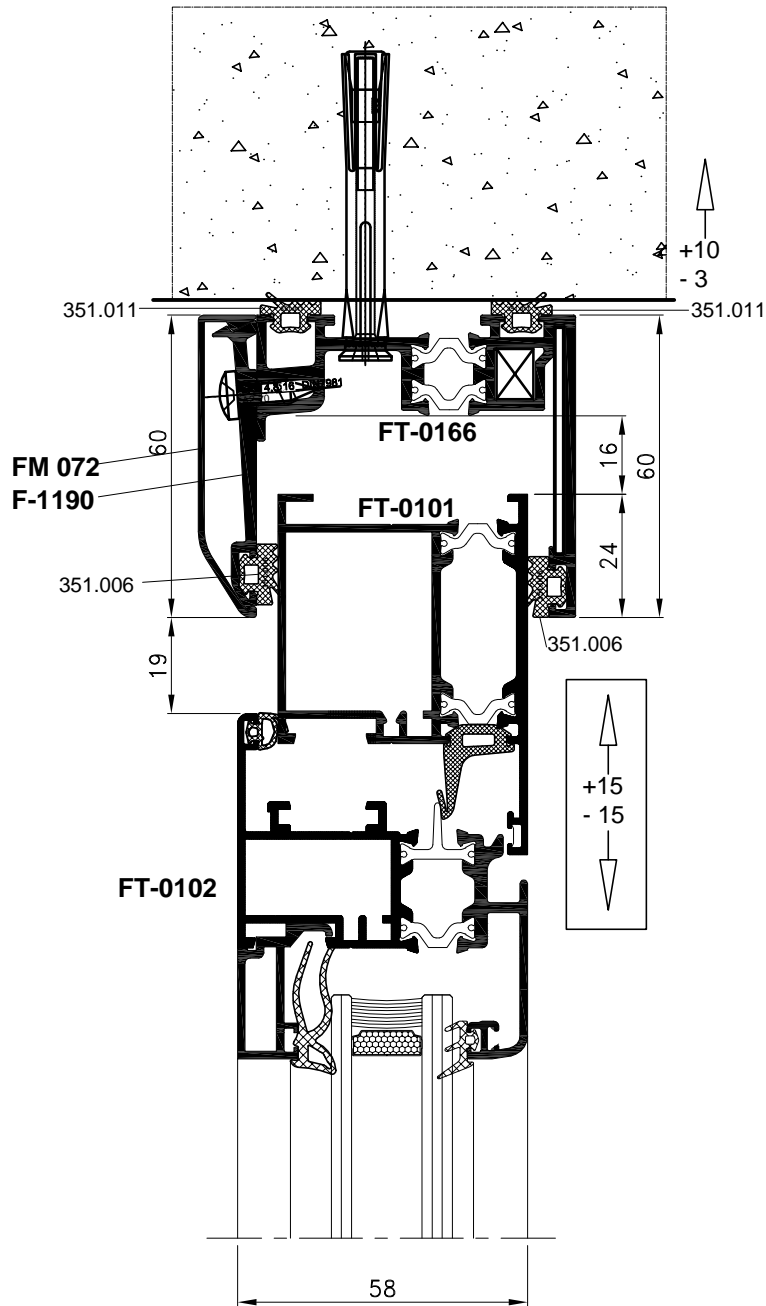
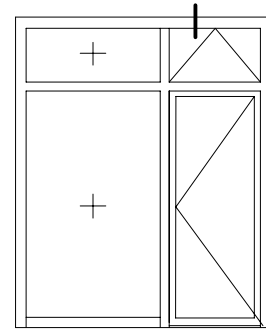


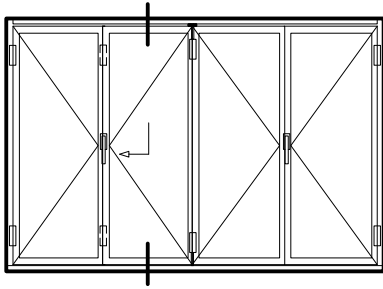






## PROFIL ZA UGRADNJU

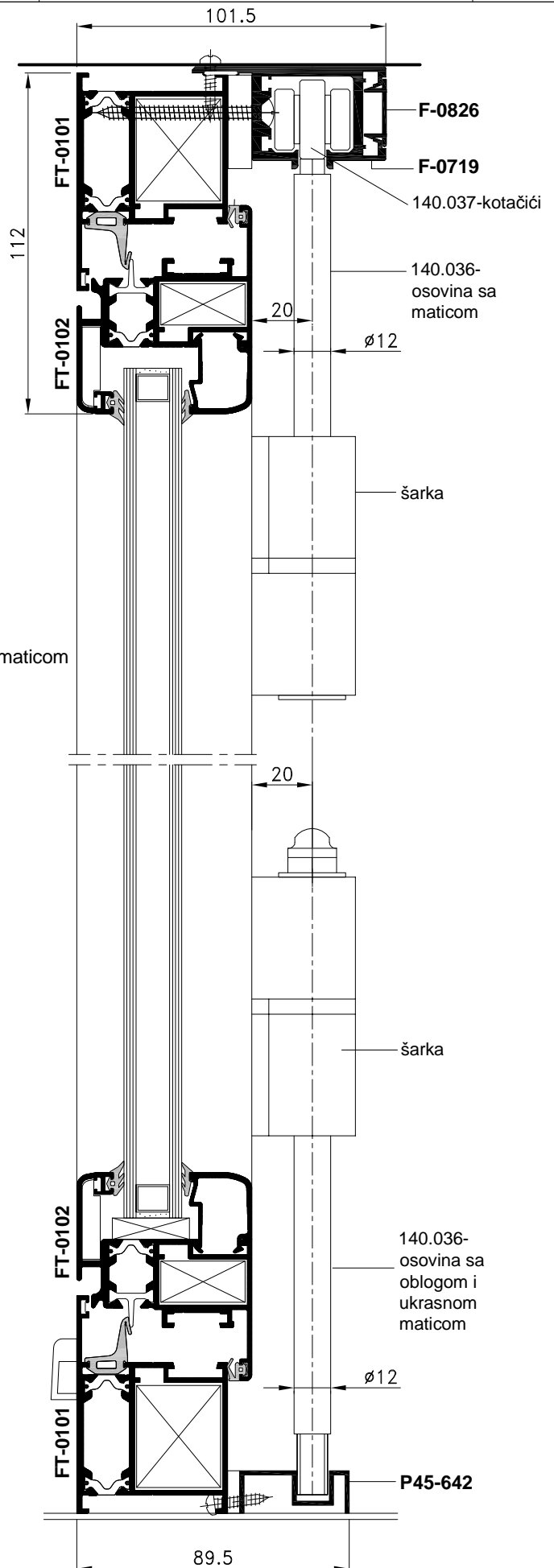
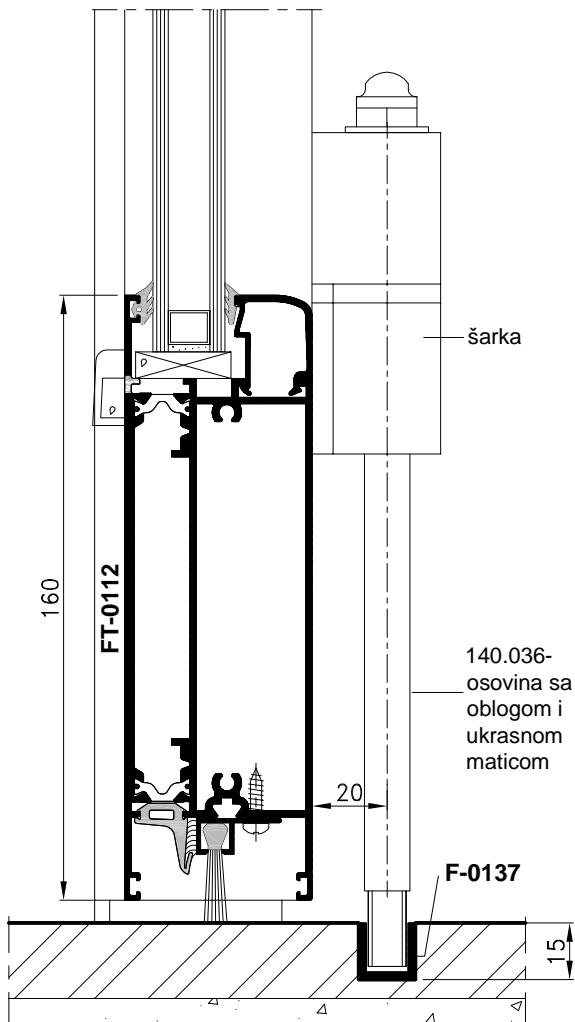


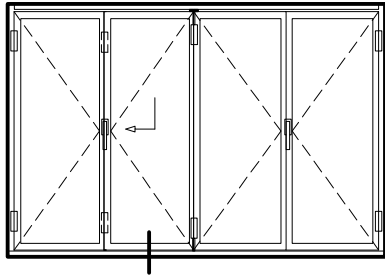

**SUSTAV HARMO**
**NOŠENJE KRILA PREKO KOTAČIČA I ŠARKI**

Elementi za nošenje: -kotačići (140.037)  
 -šarka  
 -osovina sa maticom (140.036)

**VOĐENJE KRILA PREKO ŠARKI I VODILICE**

Elementi za vođenje: -šarka  
 -osovina sa oblogom i ukrasnom maticom (140.036)

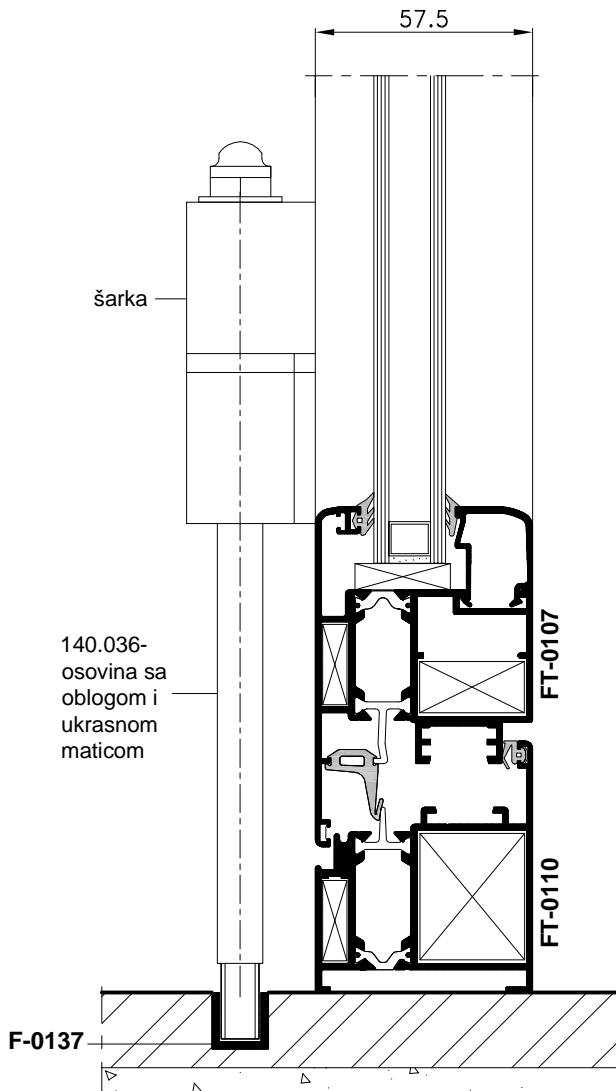
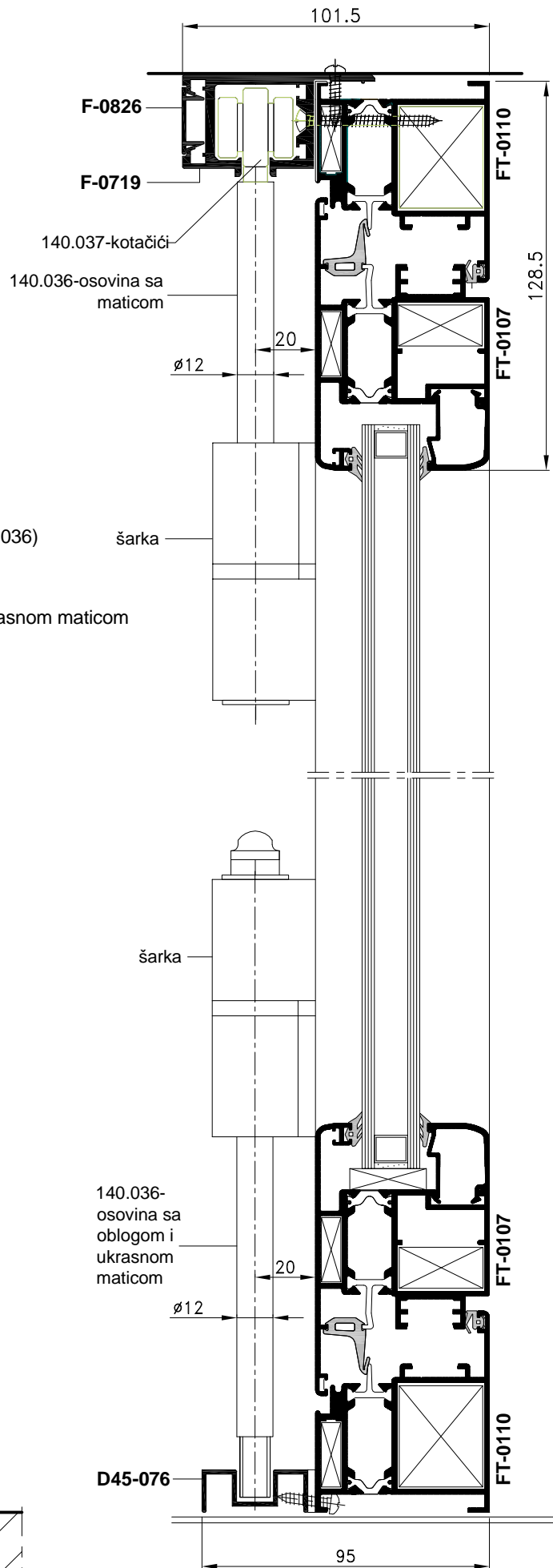


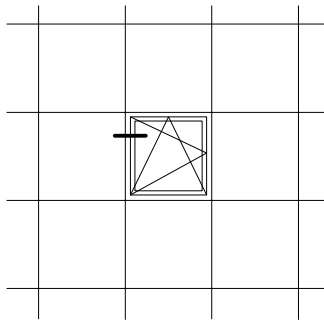
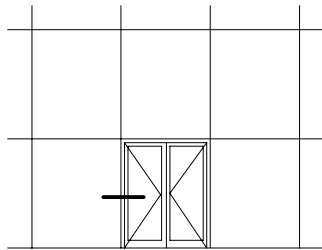
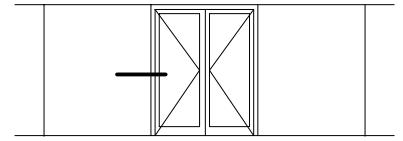
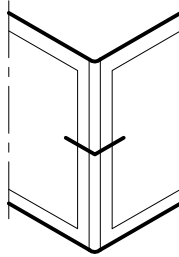
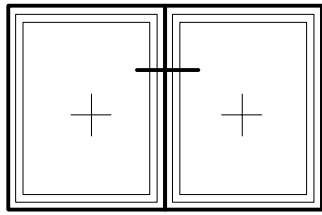

**SUSTAV HARMO**
**NOŠENJE KRILA PREKO KOTAČIČA I ŠARKI**

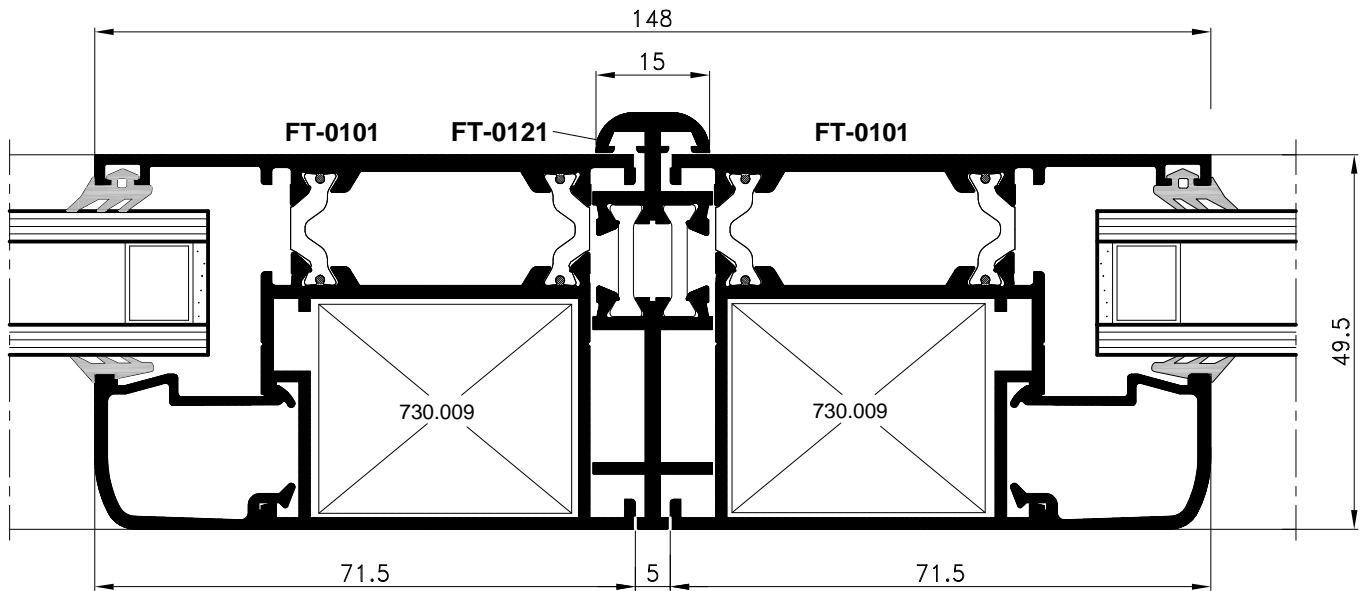
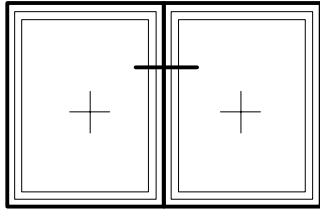
Elementi za nošenje: -kotačići (140.037)  
 -šarka  
 -osovina sa maticom (140.036)

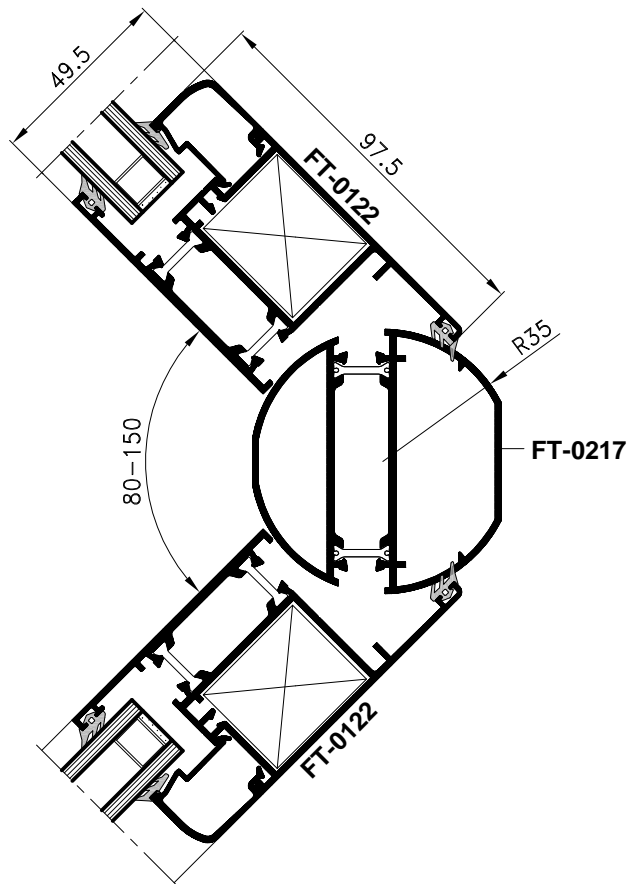
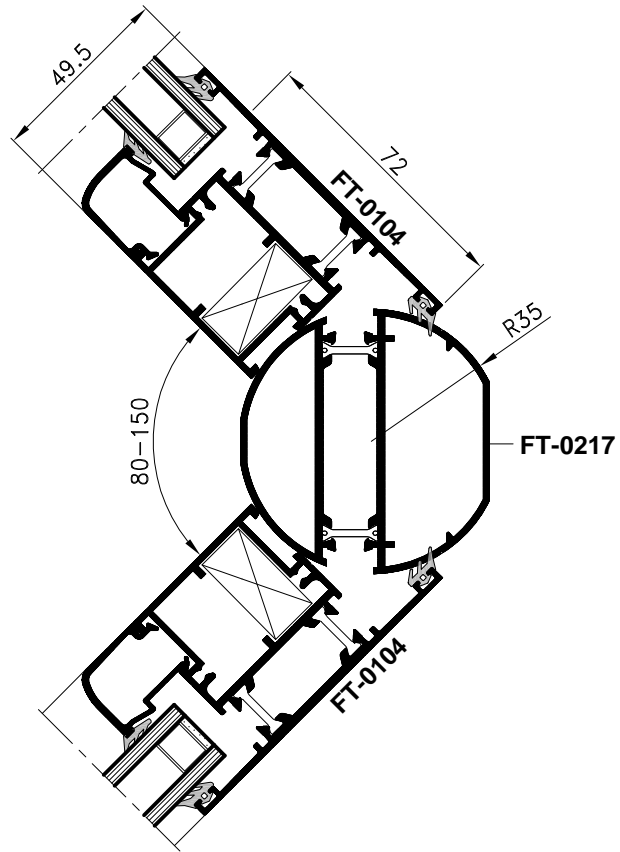
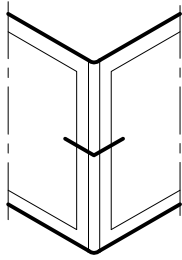
**VOĐENJE KRILA PREKO ŠARKI I VODILICE**

Elementi za vođenje: -šarka  
 -osovina sa oblogom i ukrasnom maticom (140.036)

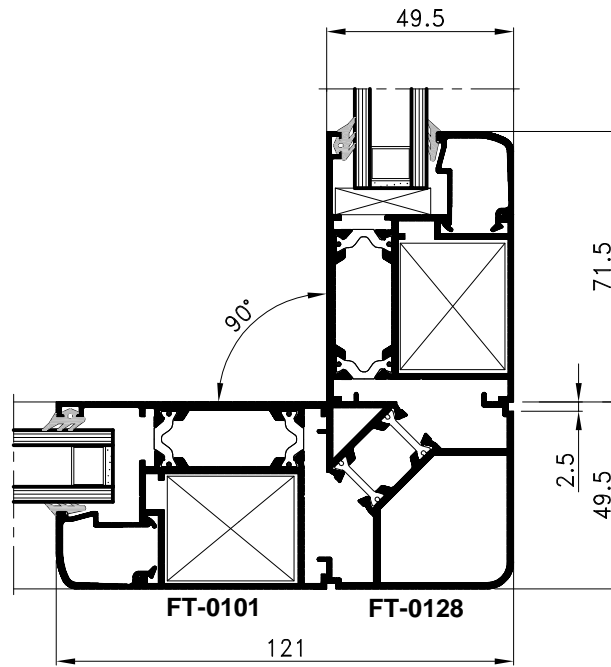
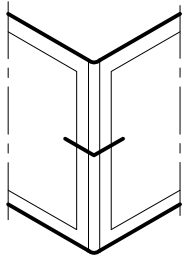




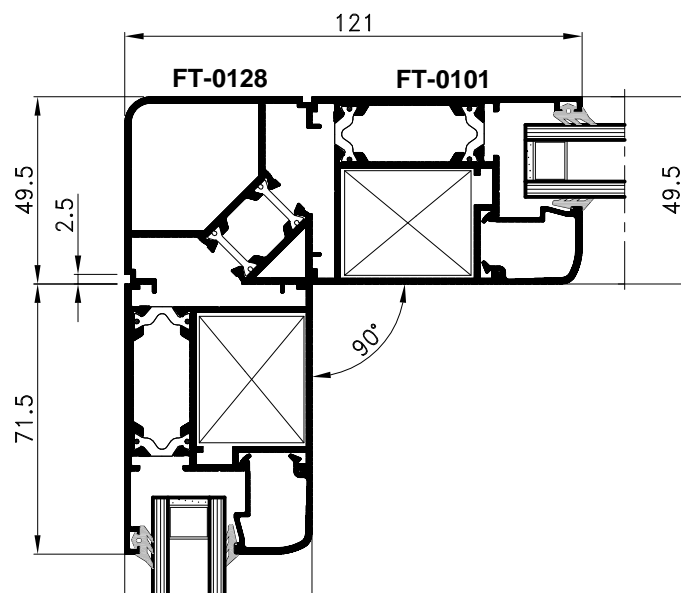




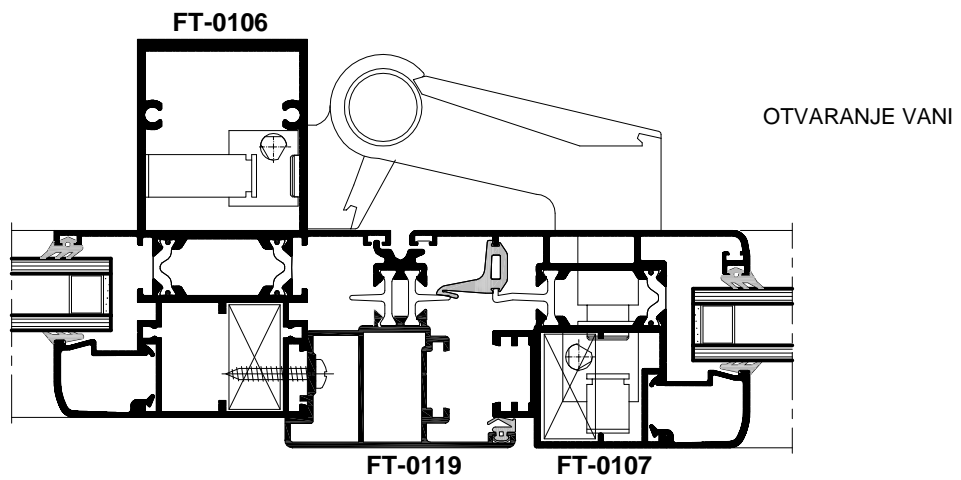
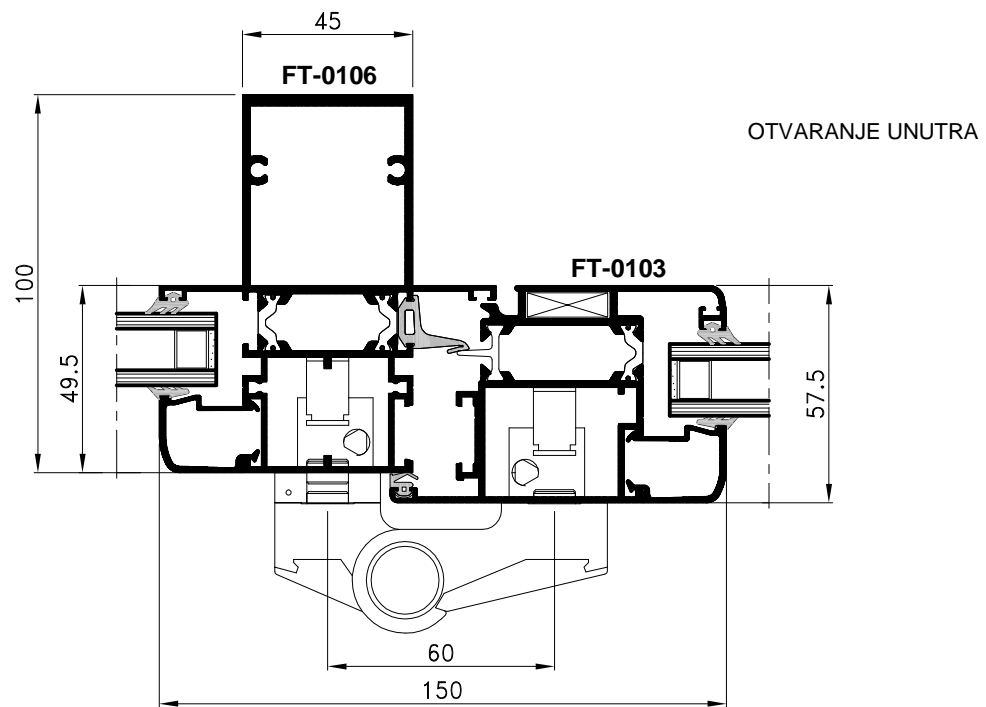
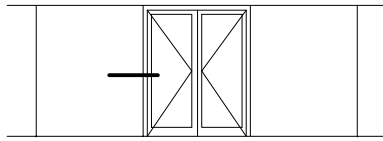


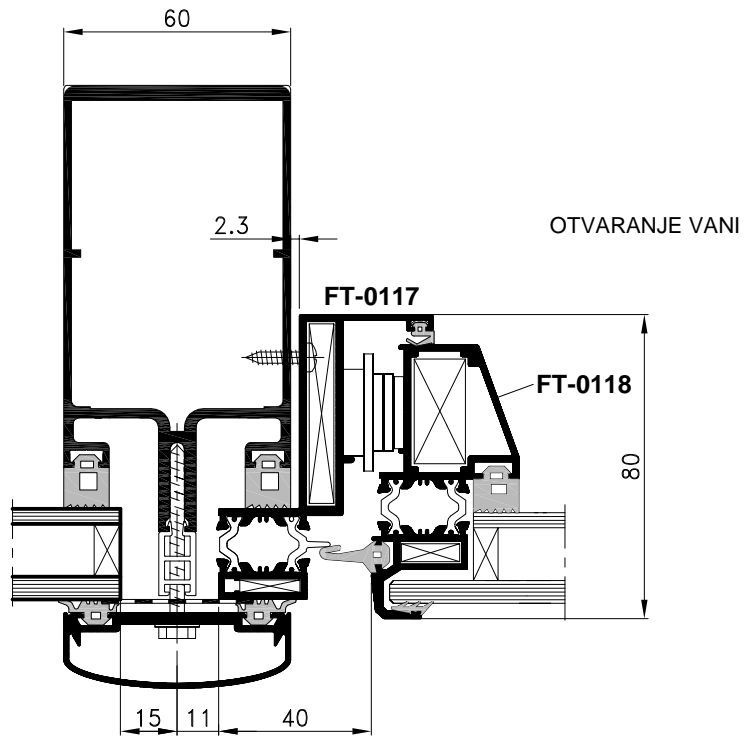
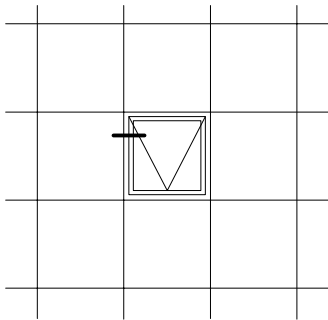
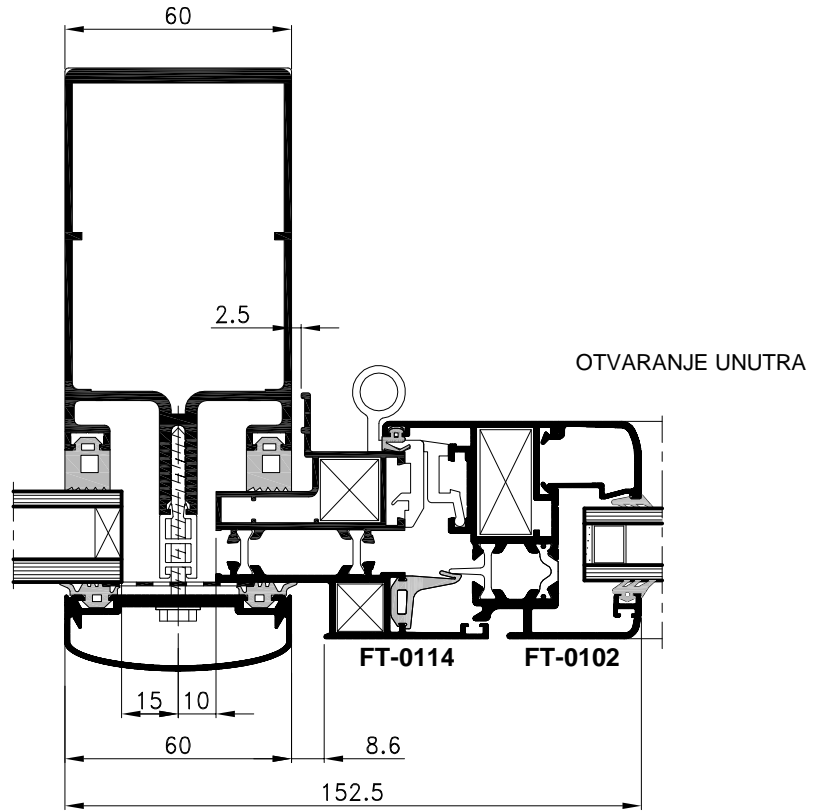
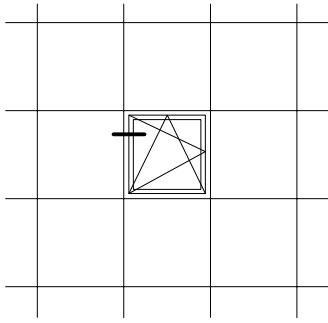


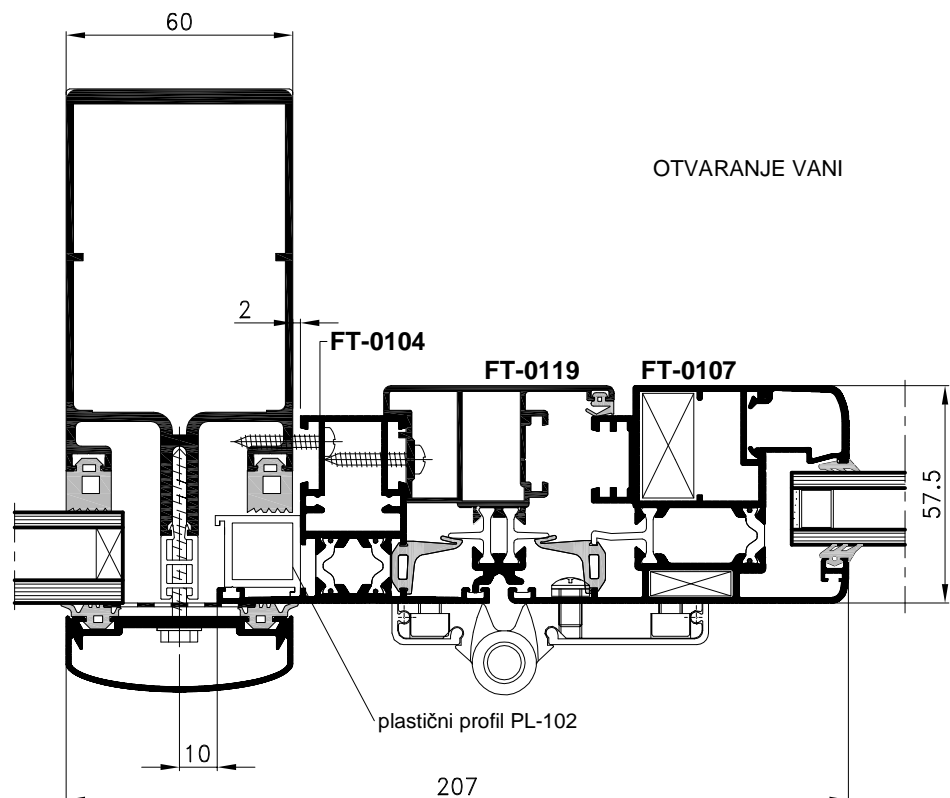
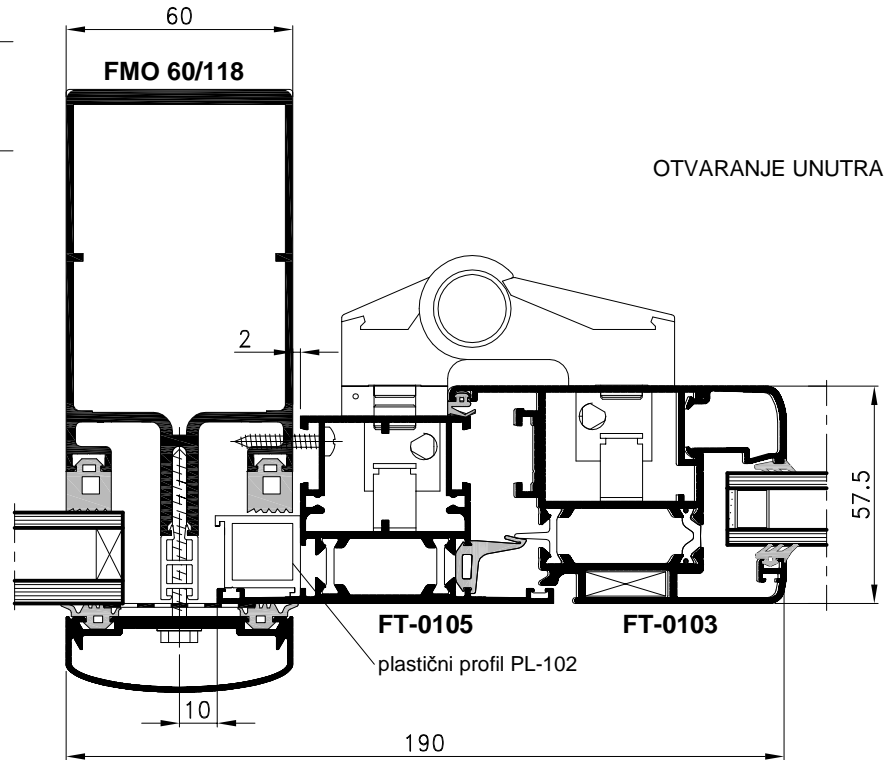
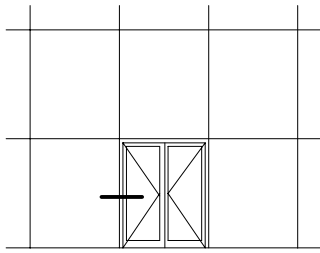
KUT PREMA VANI

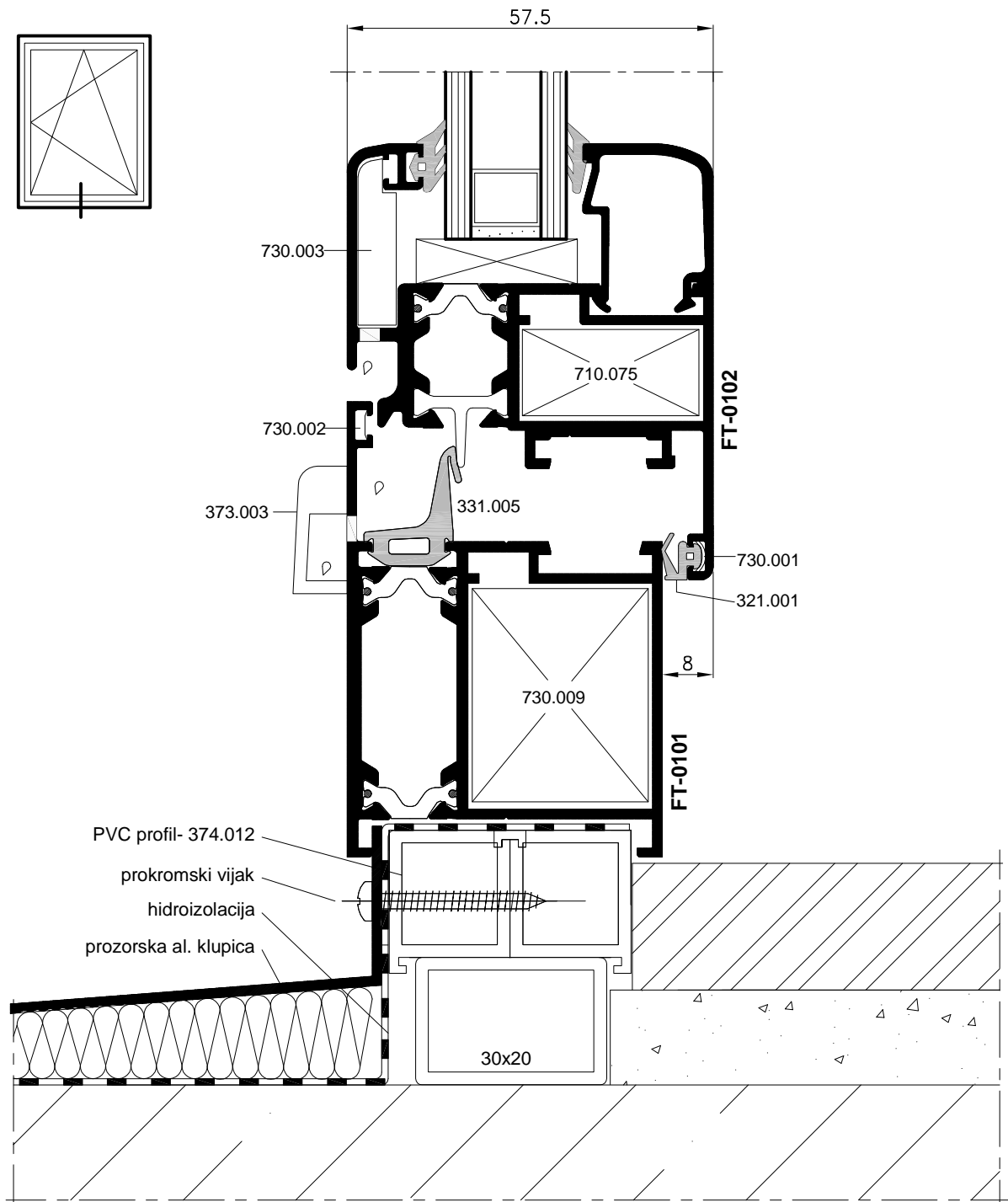


KUT PREMA UNUTRA

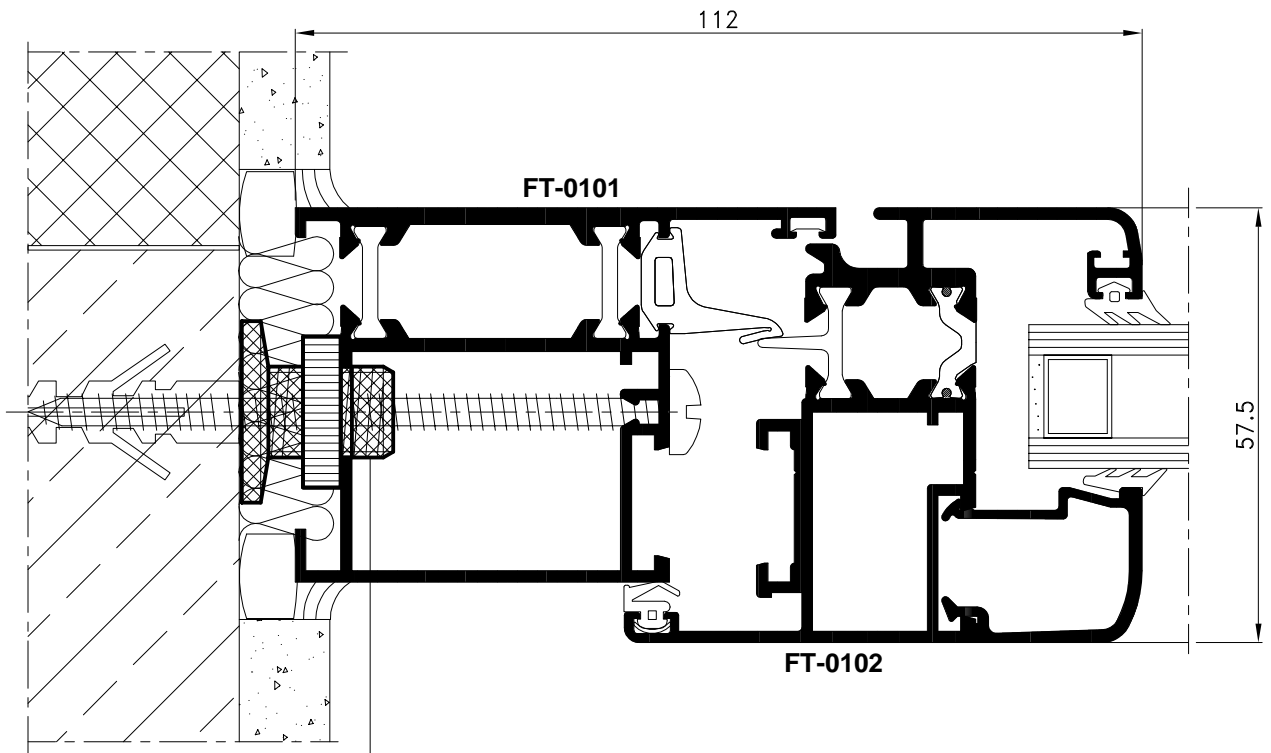






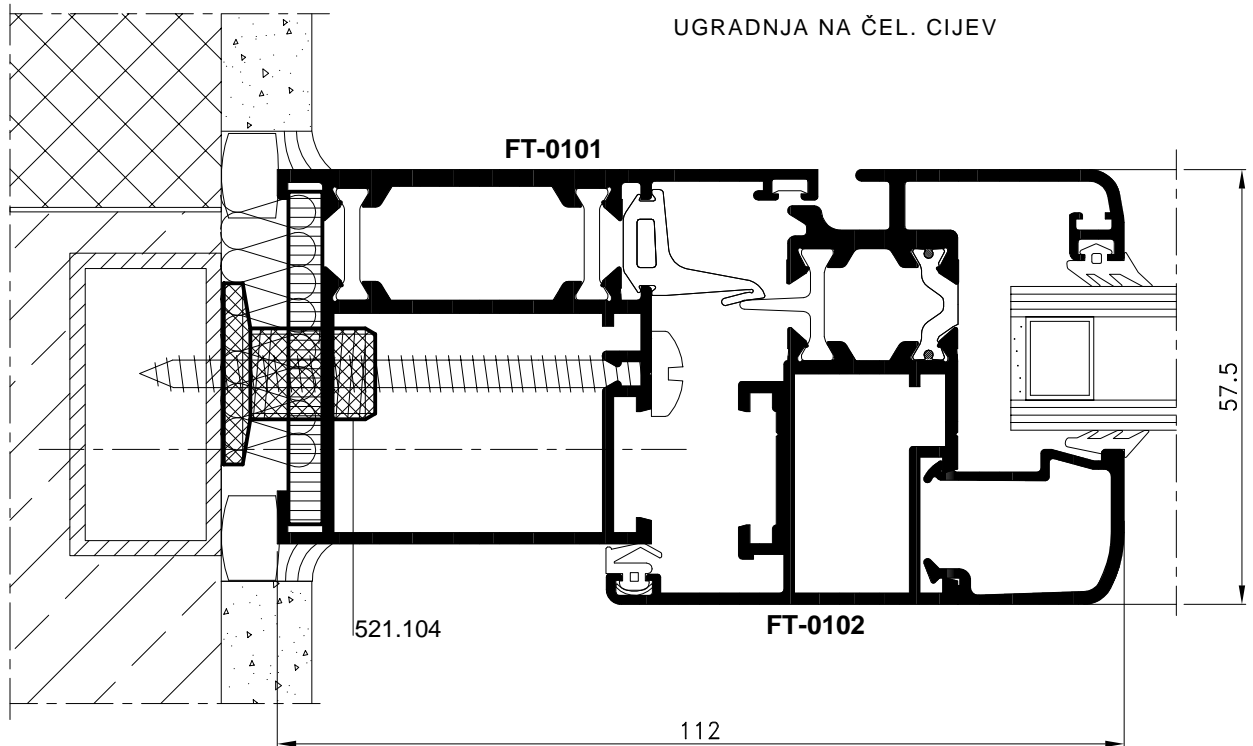


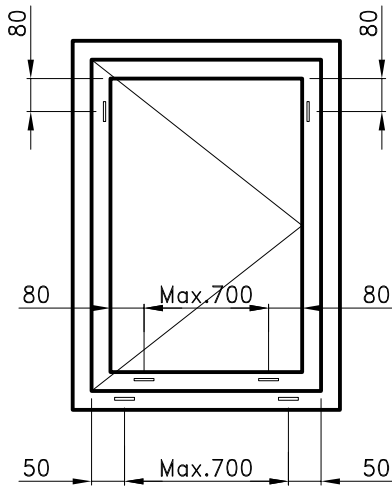
UGRADNJA SA PVC TIPLOM



Elementi za ugradnju  
-521.104

UGRADNJA NA ČEL. CIJEV

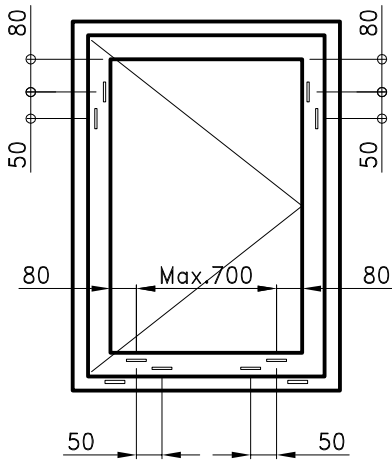
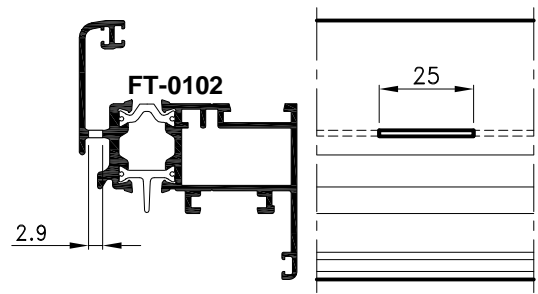
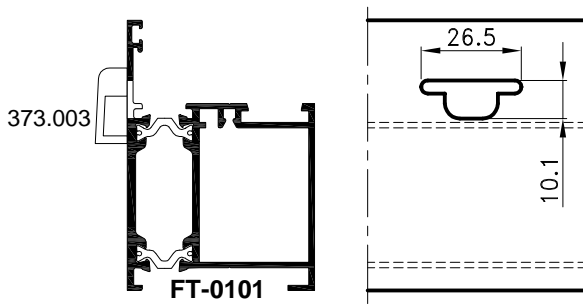




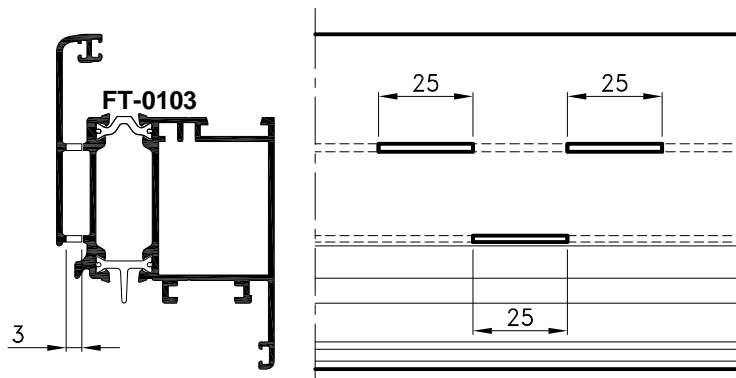
OBRADA NA OKVIRU

Obrada na okviru i krilu prozora radi odvoda kapljevina i provjetravanja

OBRADA NA KRILU

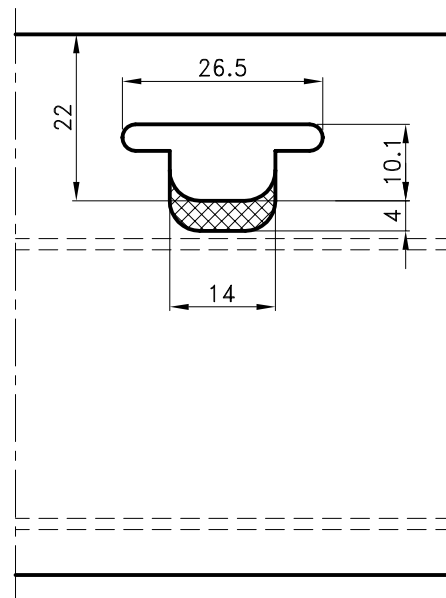
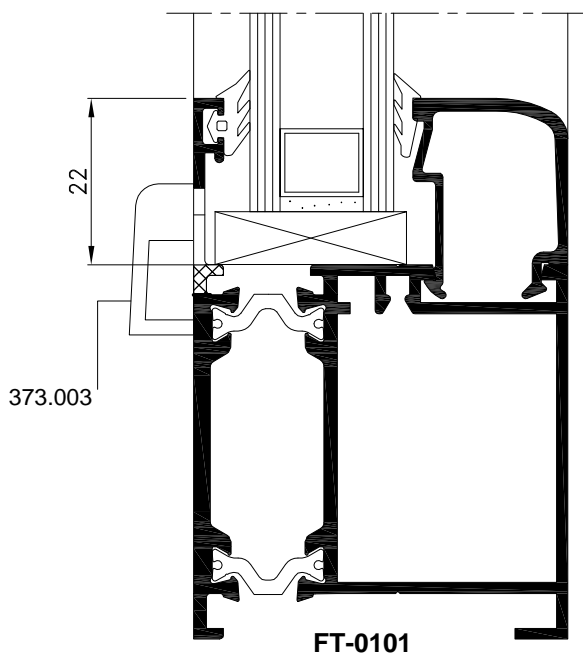


OBRADA NA KRILU



OBRADA NA PROFILU ZA ODVOD KAPLJEVINA

- nakon probijanja otvora štancanjem potrebna je dodatna obrada otvora /prema skici/
- vrijedi za slučajeve kad je u profilu fiksna ispuna
- radi onemogućavanja prodora vode unutar objekta



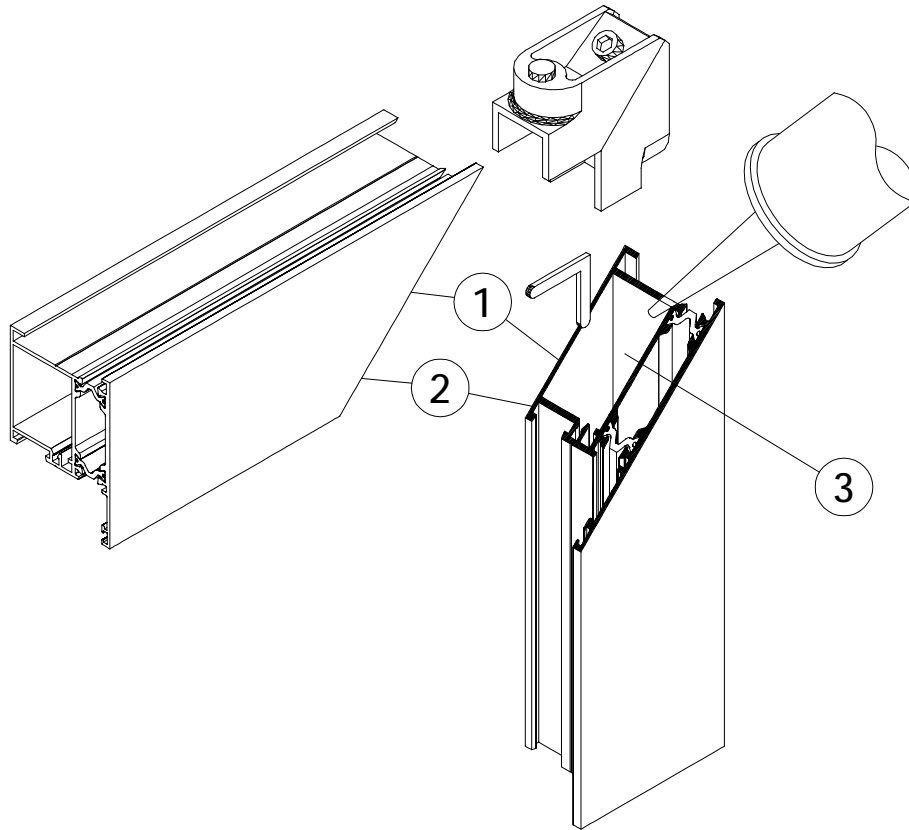
NAVEDENA OBRADA SE ODNOSI NA PROFILE ŠTOKA I PREČKE-

/FT-0100; FT-0101; FT-0102; FT-0116; FT-0146; FT-0154;

FT-0104; FT-0105; FT-0112; FT-0113; FT-0145 /



## SPAJANJE PROFILA KUTNICIMA POD KUTEM OD 90°



## POSTUPAK SPAJANJA PROFILA:

1. Površine koje se spajaju-rezove očistiti i odmastiti prikladnim sredstvom /npr. Sika Remover 208; Wurth-kat.br.:892 130 30/.
2. Premazati površine koje se spajaju ljepilom za metal /npr. Sika Force 7851; Wurth-kat.br.:892 130 010/.
3. Ljepilo za metal ušpricati u komoru za kutnik - po opsegu komore
4. Profile s kutnikom izravnati i spojiti
5. Dio ljepila koji iscuri između rezova očistiti sredstvom za čišćenje i odmašćivanje /npr. Sika Remover 208; Wurth-kat.br.:892 130 30/.

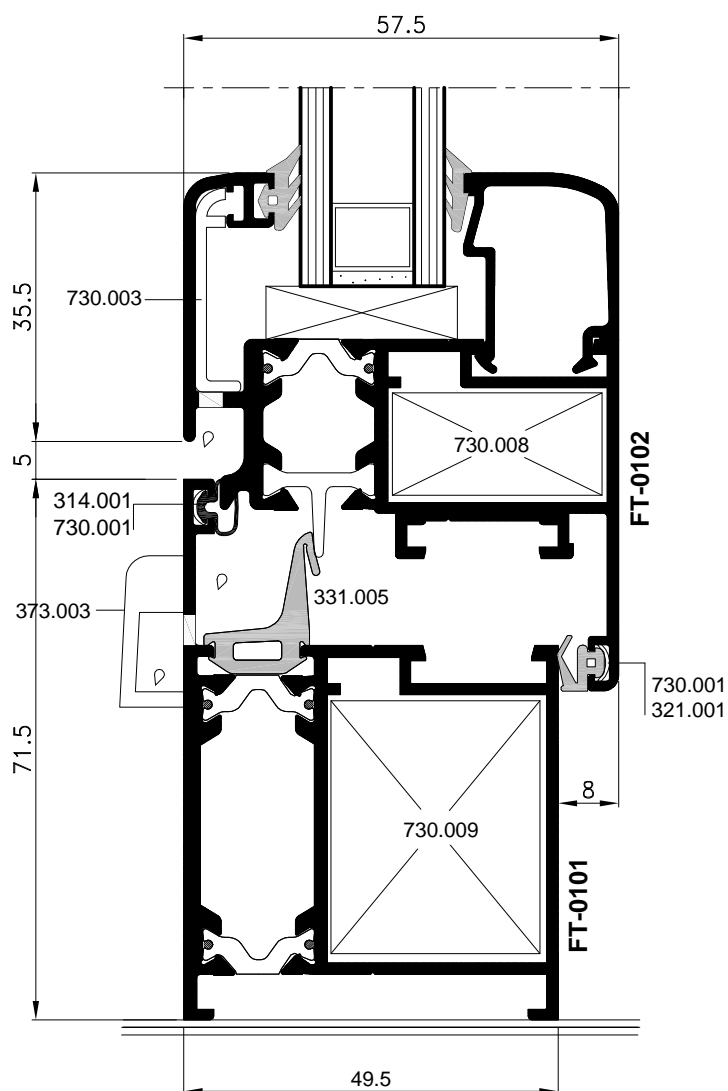
## NAPOMENA:

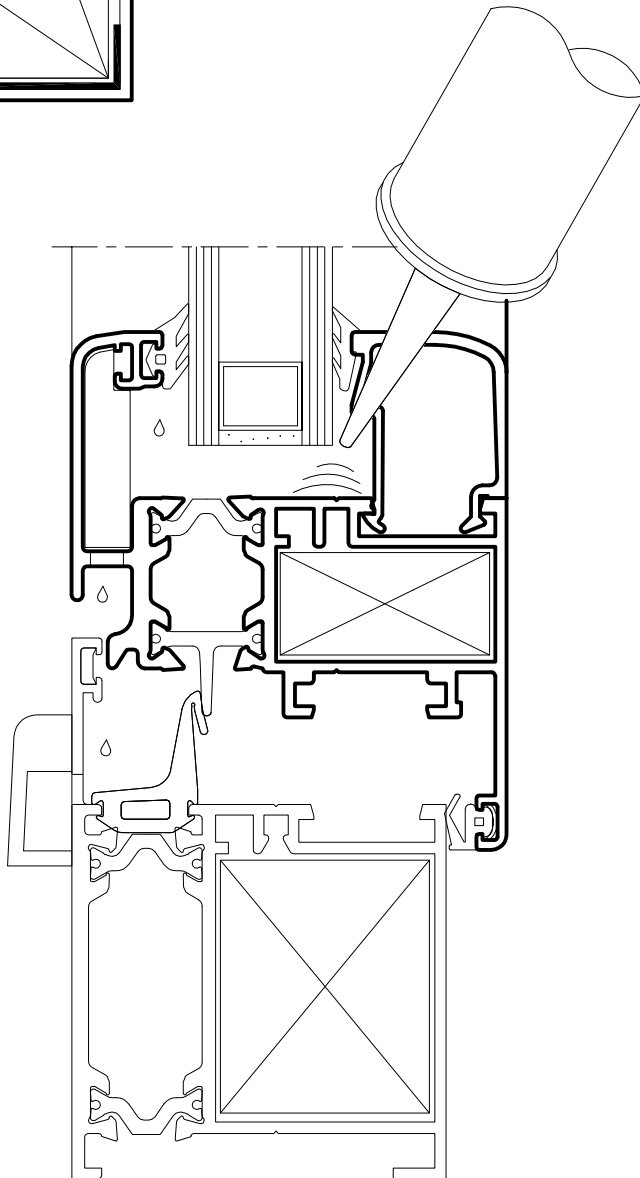
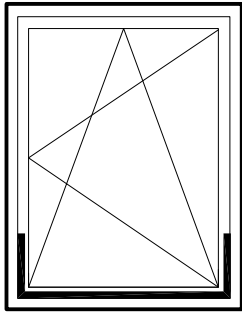
Ovaj postupak spajanja profila primjenjiv je za sve Feal-ove kutnike i njima odgovarajuće komore:

Lijepljenjem rezova i kutnika ljepilima za metal osigurava se potrebna zrako- i vodonepropusnosti spoja kao i dodatna mehanička čvrstoća spoja.

## UPORABA BRTVE PREMA VANI 314.001

- radi smanjenja ulaska kapljevina u prozor koristiti brtvu 314.001 u profilu okvira rama - prema vani
- korištenje brtve 314.001 zahtjeva uporabu kutnika 730.001 umjesto kutnika 730.002

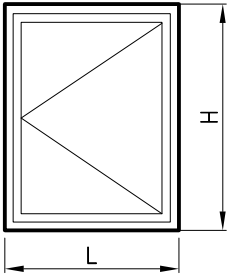




**PREPORUKA:**

Radi mogućeg prodora vode u unutarnji dio profila krila preporučuje se nanošenje sloja silikona u donjem pojasu krila i po 200 mm po okomitim pojasevima krila

Odnosi se na profile krila:  
 FT-0102, FT-0103, FT-0130, FT-0131,  
 FT-0107



PROFILI		kom	mjera	pilanje
FT-0101	vodoravnica okvira	2	L	45-45
FT-0101	okomica okvira	2	H	45-45
FT-0102	vodoravnica krila	2	L-87	45-45
FT-0102	okomica krila	2	H-87	45-45
Z40-646	vodoravna lajsna	2	L-170.8	45-45
Z40-646	okomita lajsna	2	H-170.8	45-45
NC-1459	klizač			90-90

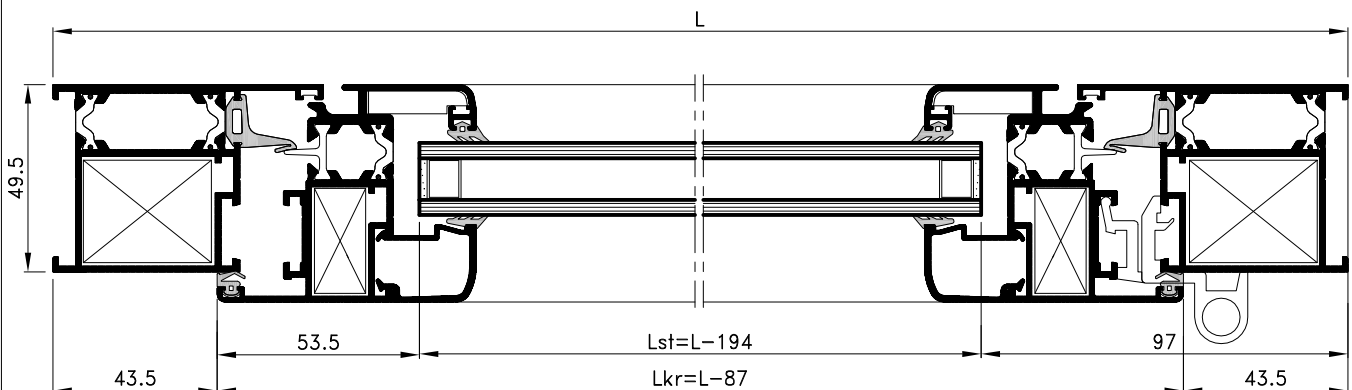
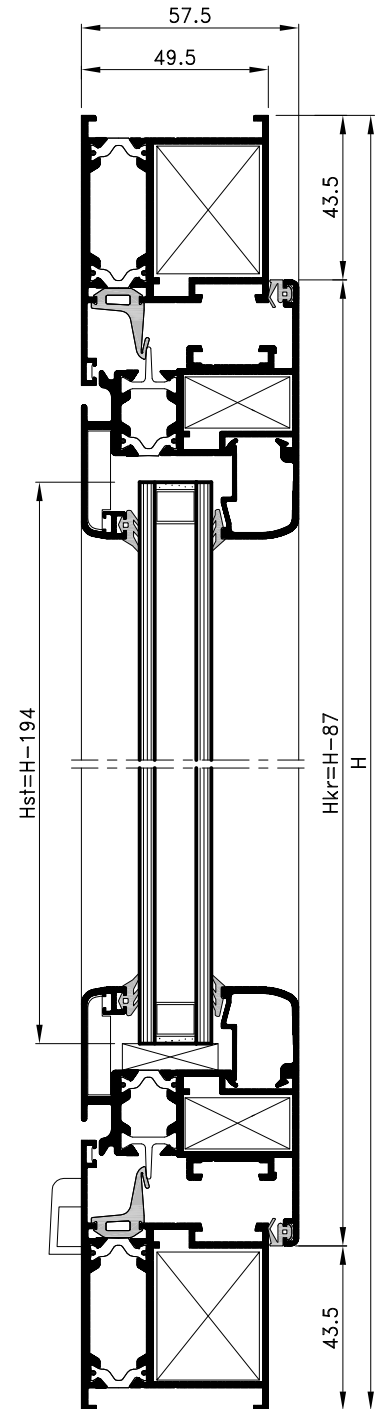
OKOVI		kom	
730.009	osnovni kutnik	4	
730.008	osnovni kutnik	4	
730.001	pomoćni kutnik	4	
730.002	pomoćni kutnik	4	
730.003	pomoćni kutnik	4	
111.001.xx	šarka	2	
104.002.xx	ručka prozora	1	
140.035	veza ručke i klizača	par	
143.001	zapinjač-nastavak klizača	2	
143.003	jednostrani prihvatač zapinjača	2	
373.003	maska za drenažni otvor	2	

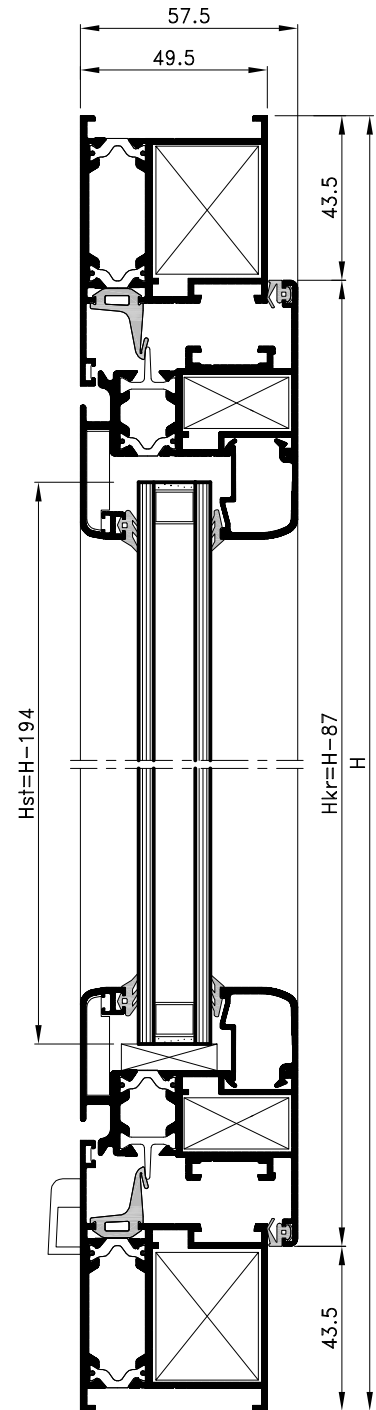
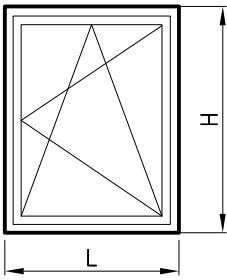
  

BRTVE		kom	mjera
331.005	srednja brtva		2L+2H
321.001	brtva na spoju profila		2L+2H
311.001	brtva prema staklu		2L+2H
321.002	brtva prema staklu		2L+2H
345.004	kutni umetak	4	

STAKLO		kom	mjera
20 mm		1	L-194 x H-194



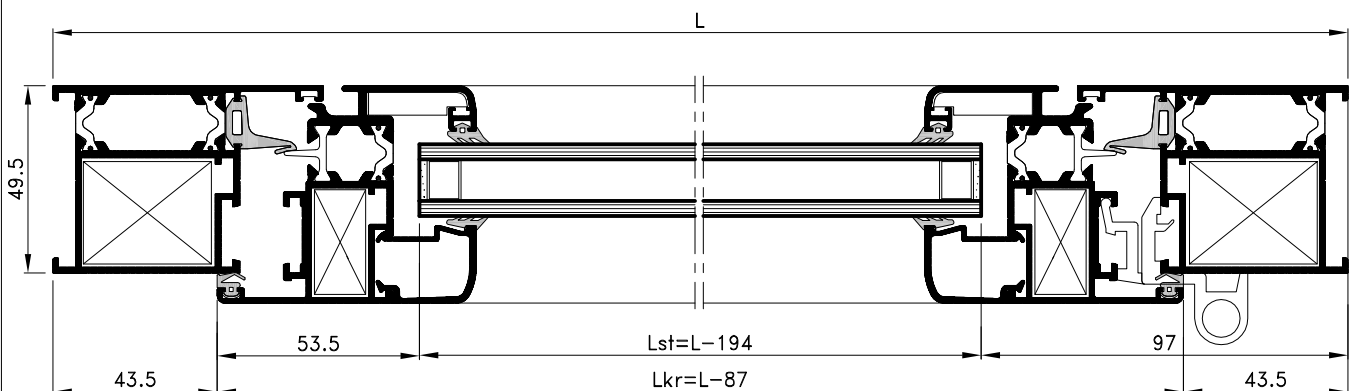


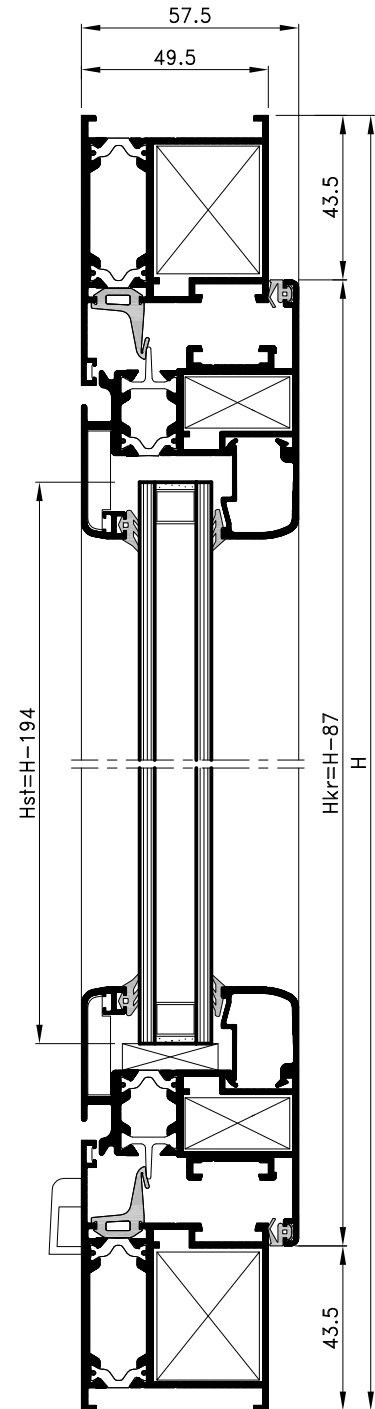
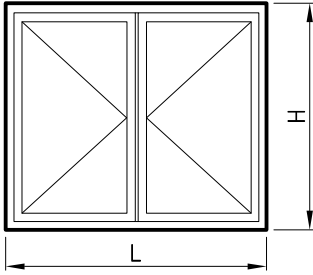
PROFILI		kom	mjera	pilanje
FT-0101	vodoravnica okvira	2	L	45-45
FT-0101	okomica okvira	2	H	45-45
FT-0102	vodoravnica krila	2	L-87	45-45
FT-0102	okomica krila	2	H-87	45-45
Z40-646	vodoravna lajsna	2	L-170.8	45-45
Z40-646	okomita lajsna	2	H-170.8	45-45
NC-1459	klizač			90-90

OKOVI		kom	
730.009	osnovni kutnik	4	
730.008	osnovni kutnik	4	
730.001	pomoćni kutnik	4	
730.002	pomoćni kutnik	4	
730.003	pomoćni kutnik	4	
134.000.xx	dry-kip mehanizam	1	
373.003	maska za drenažni otvor	2	

BRTVE		kom	mjera
331.005	srednja brtva		2L+2H
321.001	brtva na spoju profila		2L+2H
311.001	brtva prema staklu		2L+2H
321.002	brtva prema staklu		2L+2H
345.004	kutni umetak	4	

STAKLO		kom	mjera
20 mm		1	L-194 x H-194



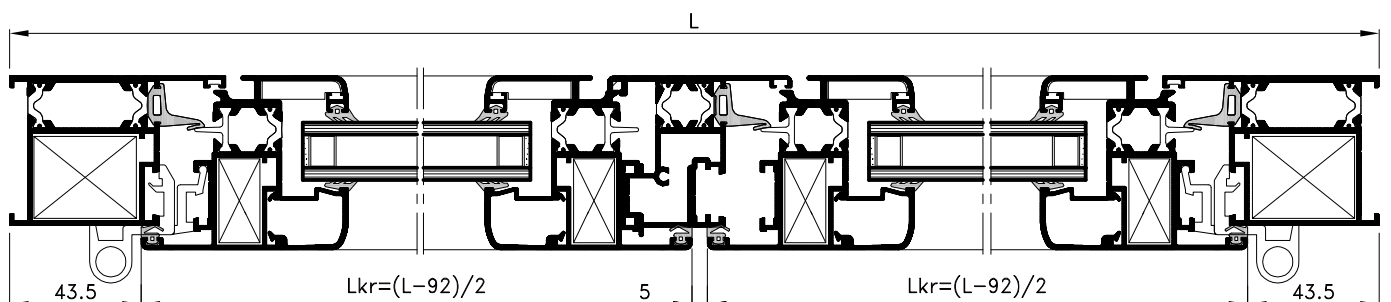


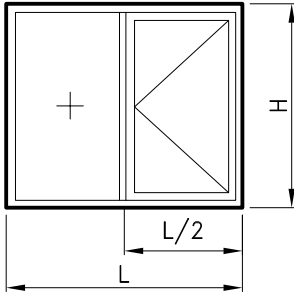
PROFILI		kom	mjera	pilanje
FT-0101	vodoravnica okvira	2	L	45-45
FT-0101	okomica okvira	2	H	45-45
FT-0102	vodoravnica krila	4	$(L-92)/2$	45-45
FT-0102	okomica krila	4	H-87	45-45
FT-0115	profil za okretanje	1	H-155	90-90
Z40-646	vodoravna lajsna	4	$(L-259.6)/2$	45-45
Z40-646	okomita lajsna	4	H-170.8	45-45
NC-1459	klizač			90-90

OKOVI		kom	
730.009	osnovni kutnik	4	
730.008	osnovni kutnik	8	
730.001	pomoćni kutnik	8	
730.002	pomoćni kutnik	4	
730.003	pomoćni kutnik	8	
111.001.xx	šarka	4	
104.002.xx	ručka prozora	1	
140.035	veza ručke i klizača	par	
143.001	zapinjač-nastavak klizača	2	
134.001	okov za fiks.pom. krila	1	
143.003	jednostrani prihvat zapinjača	2	
373.003	maska za drenažni otvor	2	

BRTVE		kom	mjera
331.005	srednja brtva		2L+3H
321.001	brtva na spoju profila		2L+4H
311.001	brtva prema staklu		2L+4H
321.002	brtva prema staklu		2L+4H
345.004	kutni umetak	4	

STAKLO		kom	mjera
20 mm		2	$(L-306)/2 \times H-194$



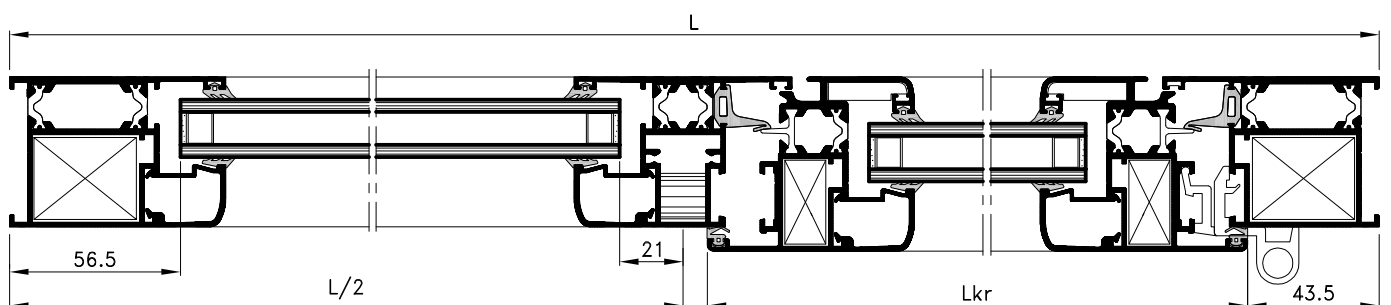
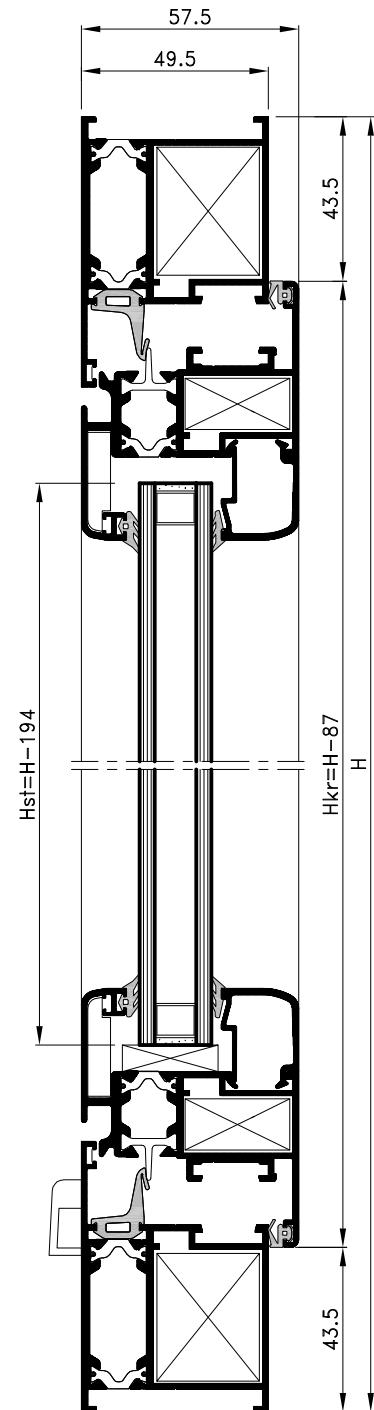


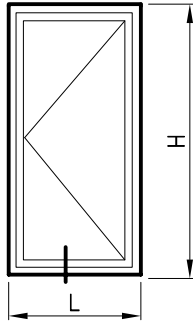
PROFILI		kom	mjera	pilanje
FT-0101	vodoravnica okvira	2	L	45-45
FT-0101	okomica okvira	2	H	45-45
FT-0102	vodoravnica krila	2	L/2-51.5	45-45
FT-0102	okomica krila	2	H-87	45-45
FT-0104	prečka	1	H-89	90-90
Z40-646	vodoravna lajsna	2	L/2-135.3	45-45
Z40-646	okomita lajsna	2	H-170.8	45-45
NC-1459	klizač			90-90

OKOVI		kom	
730.009	osnovni kutnik	4	
730.008	osnovni kutnik	4	
730.001	pomoćni kutnik	4	
730.002	pomoćni kutnik	4	
730.003	pomoćni kutnik	4	
111.001.xx	šarka	2	
104.002.xx	ručka prozora	1	
140.035	veza ručke i klozača	par	
143.001	zapinjač-nastavak klizača	2	
143.003	jednostrani prihvatač zapinjača	2	
373.003	maska za drenažni otvor	2	
710.066	veznik	2	

BRTVE		kom	mjera
331.005	srednja brtva		L+2H
321.001	brtva na spoju profila		L+2H
311.001	brtva prema staklu		2L+4H
321.002	brtva prema staklu		2L+4H
345.004	kutni umetak	4	

STAKLO		kom	mjera
20 mm		1	L/2-158.5 x H-194
20 mm		1	L/2-77.5 x H-113





PROFILI		kom	mjera	pilanje
FT-0101	vodoravnica okvira	2	L	45-45
FT-0101	okomica okvira	2	H	45-45
FT-0102	vodoravnica krila	2	L-87	45-45
FT-0102	okomica krila	2	H-87	45-45
Z40-646	vodoravna lajsna	2	L-170.8	45-45
Z40-646	okomita lajsna	2	H-170.8	45-45
NC-1459	klizač			90-90

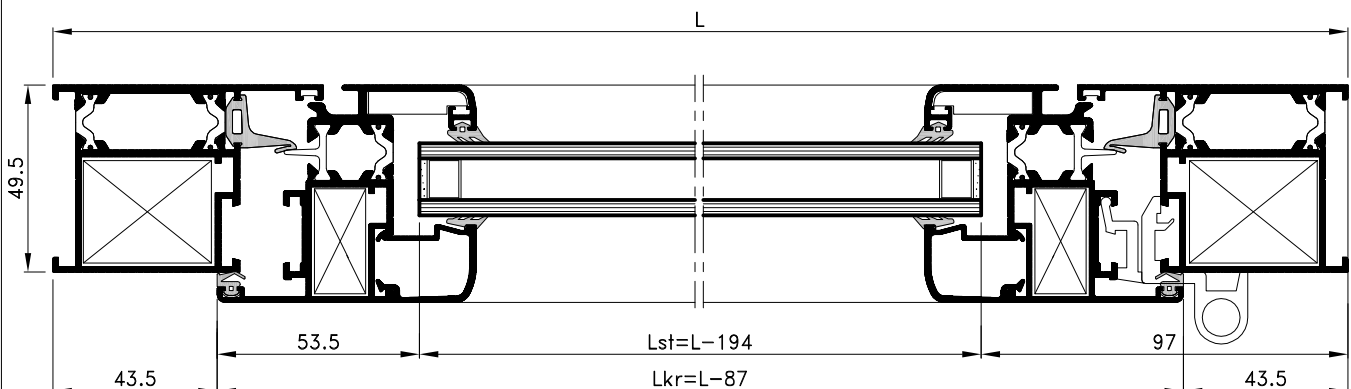
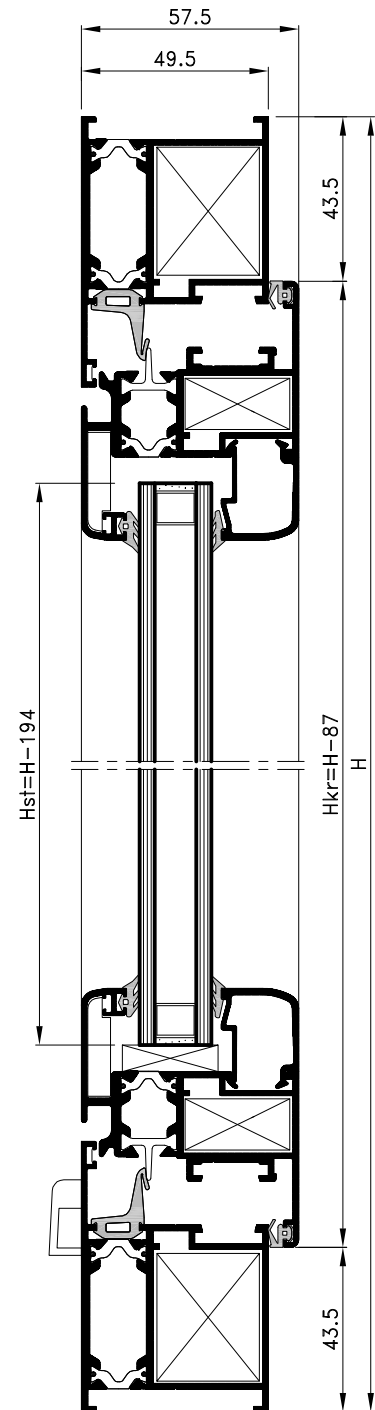
OKOVI		kom	
710.072	osnovni kutnik	4	
730.008	osnovni kutnik	4	
730.001	pomoćni kutnik	4	
730.002	pomoćni kutnik	4	
730.003	pomoćni kutnik	4	
111.001.xx	šarka	2	
104.002.xx	ručka prozora	1	
140.035	veza ručke i klizača	par	
143.001	zapinjač-nastavak klizača	2	
143.003	prihvat zapinjača	2	
373.003	maska za drenažni otvor	2	

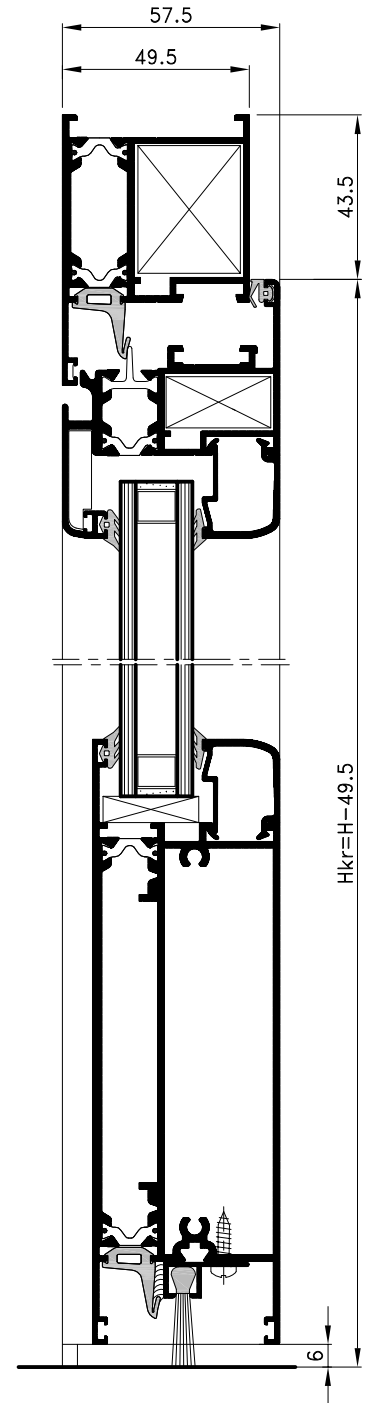
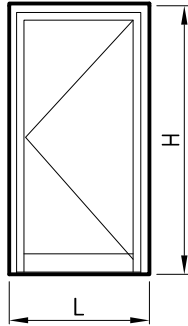
BRTVE		kom	mjera
331.005	srednja brtva		2L+2H
321.001	brtva na spoju profila		2L+2H
311.001	brtva prema staklu		2L+2H
321.002	brtva prema staklu		2L+2H
345.004	kutni umetak	4	

STAKLO		kom	mjera
20 mm		1	L-194 x H-194







PROFILI		kom	mjera	pilanje
FT-0101	vodoravnica okvira	1	L	45-45
FT-0101	okomica okvira	2	H	45-90
FT-0102	vodoravnica krila	1	L-87	45-45
FT-0112	vodoravnica krila-parapet	1	L-170	90-90
FT-0102	okomica krila	2	H-49.5	45-90
Z40-646	vodoravna lajsna	2	L-170.8	45-45
Z40-646	okomita lajsna	2	H-224.8	45-45

OKOVI		kom	
710.072	osnovni kutnik	2	
730.008	osnovni kutnik	2	
730.001	pomoćni kutnik	2	
730.002	pomoćni kutnik	2	
730.003	pomoćni kutnik	2	
111.001.xx	šarka	3	
124.001	brava za vrata	1	
124.003	šild		
124.014	cilindar za bravu	1	
104.001.xx	ručka	1	

BRTVE		kom	mjera
331.005	srednja brtva		2L+2H
321.001	brtva na spoju profila		L+2H
311.001	brtva prema staklu		2L+2H
321.002	brtva prema staklu		2L+2H
345.004	kutni umetak	2	
Z 801	al.profil	1	L
Z 802	četkasta brtva	1	L

STAKLO		kom	mjera
20 mm		1	L-194 x H-248

