

CS 77

CS 77

**R**  
**REYNAERS**  
aluminium

Edition 09/2010 (based on 089.C13F.00)





### CS 77 (windows)

- 1 Fixed elements
- 2 Opening elements
- 3 Composed elements
- 4 Connections within the system

### CS 77 (doors)

- 5 Inward opening
- 6 Outward opening

CS 77 Hidden Vent (CS 77-HV)

CS 77 Renaissance (CS 77-Re)

CS 77 Front (CS 77-Fr)

CS 77 Pivot Door (CS 77-PD)

CS 77 Automatic Sliding Door (CS 77-AD)

CS 77 Bullet Proof (CS 77-BP)

CS 77-Fire Proof EI 60 (CS 77-FP EI 60)

CS 77-Fire Proof EI 30 (CS 77-FP EI 30)

CS 77 Anti-burglary Proof (CS 77-AP)

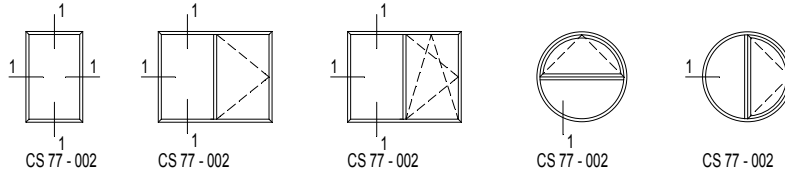
Connections with other systems

## CS 77 (windows)

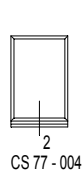


### 1 Fixed elements

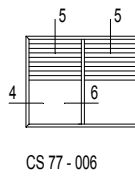
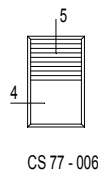
#### Outer frames



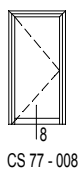
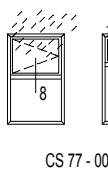
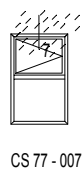
#### Window sills



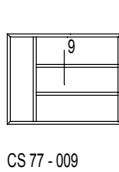
#### Shutter guide



#### Drip cap

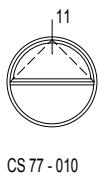
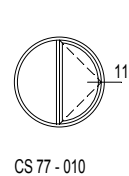
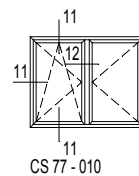
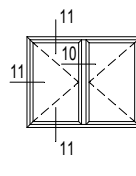
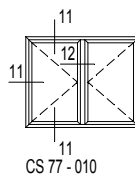
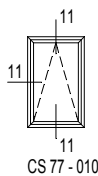
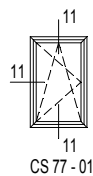
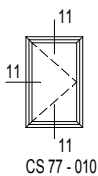


#### Division in fixed frame

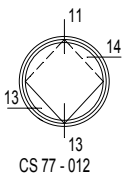
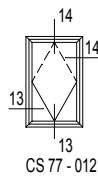


### 2 Opening elements

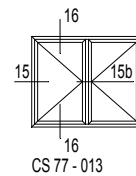
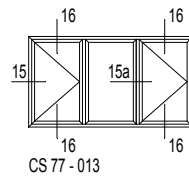
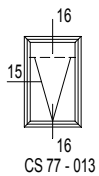
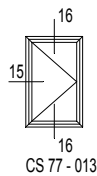
#### Inward opening windows



#### Pivot window



#### Outward opening windows



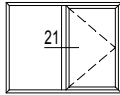
#### Division in window vent



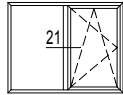


### 3 Composed elements

Transom-mullion

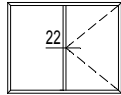


CS 77 - 016

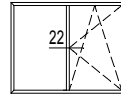


CS 77 - 016

Transom-mullion reinforced

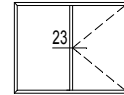


CS 77 - 018

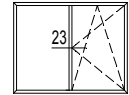


CS 77 - 018

Reinforcement profile

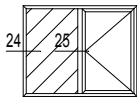


CS 77 - 020  
CS 77 - 021



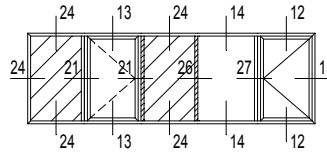
CS 77 - 020  
CS 77 - 021

Outer frames / Transom-mullion

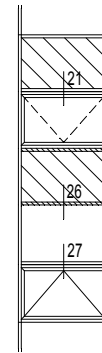


CS 77 - 024

Changeover profile outside glazing



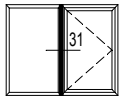
CS 77 - 026



CS 77 - 026

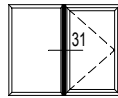
### 4 Connections within the system

In the same plane



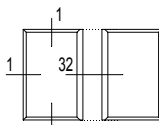
CS 77 - 027

Enlarging profile

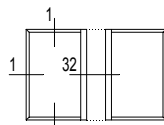


CS 77 - 027

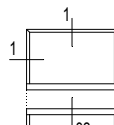
Dilatation



CS 77 - 028

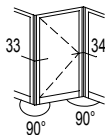


CS 77 - 028

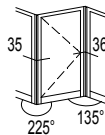


CS 77 - 028

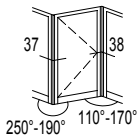
Corner profiles



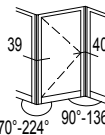
CS 77 - 030  
CS 77 - 031



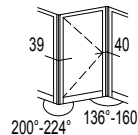
CS 77 - 032



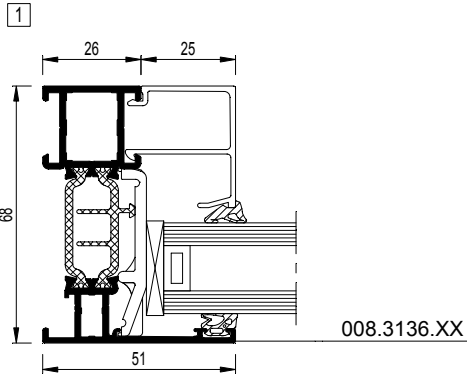
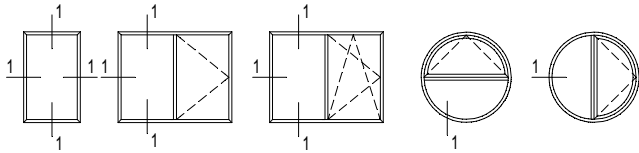
CS 77 - 033



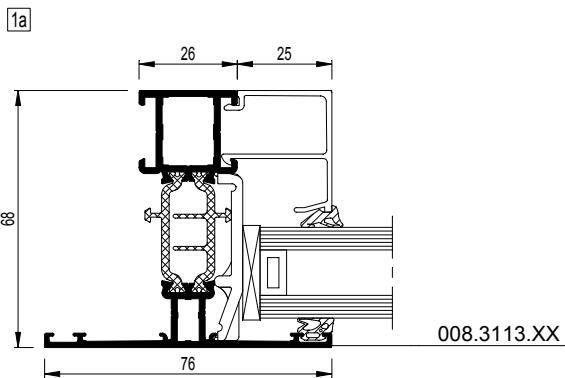
CS 77 - 033



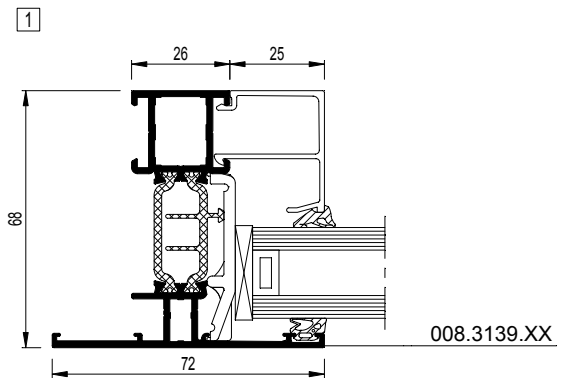
CS 77 - 033



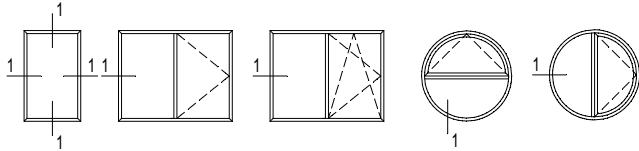
... .dxf  
 ... .dwg



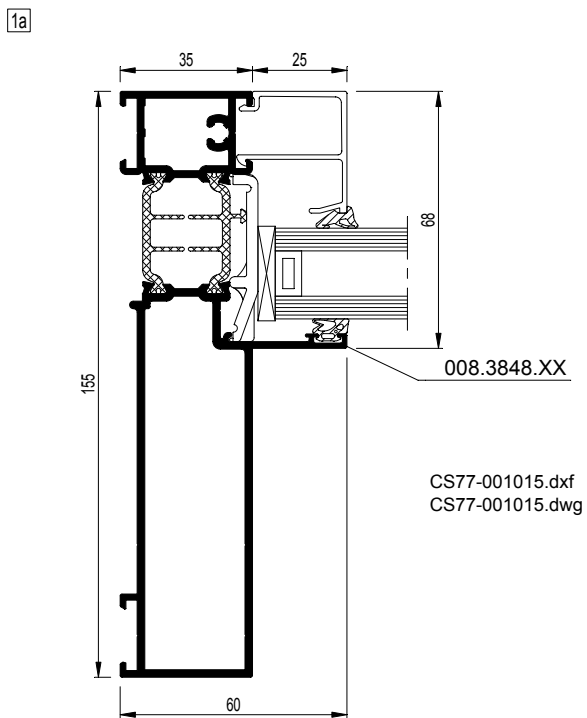
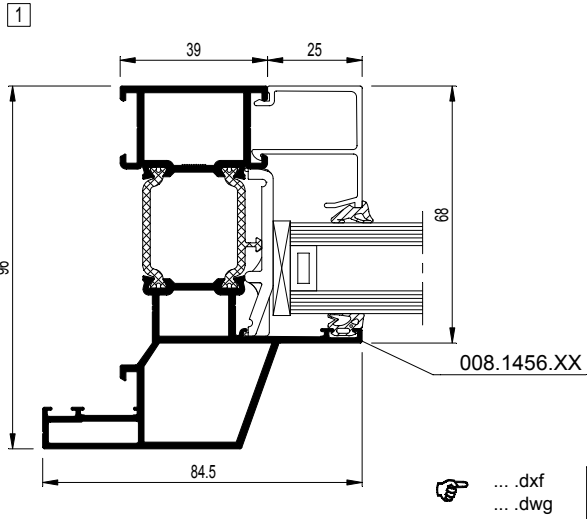
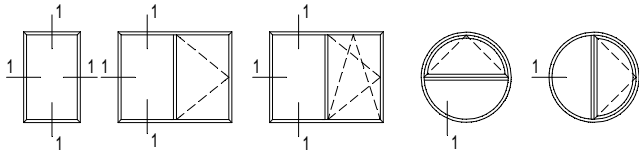
... .dxf  
 ... .dwg



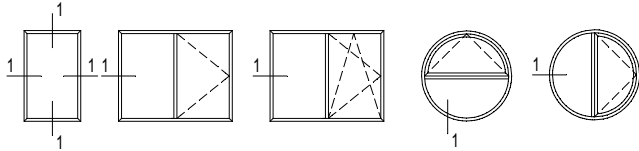
CS77-001005.dxf  
 CS77-001005.dwg



<p><b>008.3136.XX</b></p> <p><math>I_x = 14.563 \text{ cm}^4</math></p> <p>1 CS77-001001.dxf CS77-001001.dwg</p>	<p><b>008.3183.XX</b></p> <p><math>I_x = 23.783 \text{ cm}^4</math></p> <p>1 CS77-001002.dxf CS77-001002.dwg</p>	<p><b>008.3125.XX</b></p> <p><math>I_x = 28.494 \text{ cm}^4</math></p> <p>1 CS77-001003.dxf CS77-001003.dwg</p>	<p><b>008.3140.XX</b></p> <p><math>I_x = 33.22 \text{ cm}^4</math></p> <p>1 CS77-001004.dxf CS77-001004.dwg</p>
<p><b>008.3139.XX</b></p> <p><math>I_x = 16.753 \text{ cm}^4</math></p> <p>1 CS77-001005.dxf CS77-001005.dwg</p>	<p><b>008.3141.XX</b></p> <p><math>I_x = 17.381 \text{ cm}^4</math></p> <p>1 CS77-001006.dxf CS77-001006.dwg</p>	<p><b>008.3197.XX</b></p> <p><math>I_x = 20.218 \text{ cm}^4</math></p> <p>1 CS77-001007.dxf CS77-001007.dwg</p>	
<p><b>008.3113.XX</b></p> <p><math>I_x = 16.916 \text{ cm}^4</math></p> <p>1a CS77-001008.dxf CS77-001008.dwg</p>	<p><b>008.3120.XX</b></p> <p><math>I_x = 26.891 \text{ cm}^4</math></p> <p>1a CS77-001009.dxf CS77-001009.dwg</p>	<p><b>008.3114.XX</b></p> <p><math>I_x = 31.671 \text{ cm}^4</math></p> <p>1a CS77-001010.dxf CS77-001010.dwg</p>	<p><b>008.3123.XX</b></p> <p><math>I_x = 36.452 \text{ cm}^4</math></p> <p>1a CS77-001011.dxf CS77-001011.dwg</p>

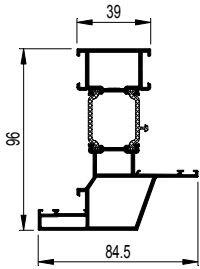






008.1456.XX

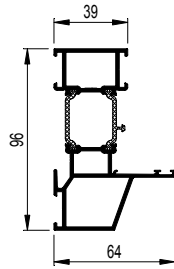
$I_x = 56.445 \text{ cm}^4$



1 CS77-001012.dxf  
 CS77-001012.dwg

008.1455.XX

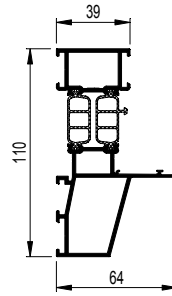
$I_x = 47.750 \text{ cm}^4$



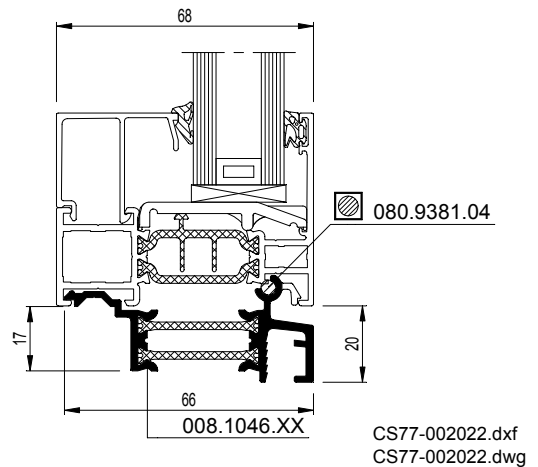
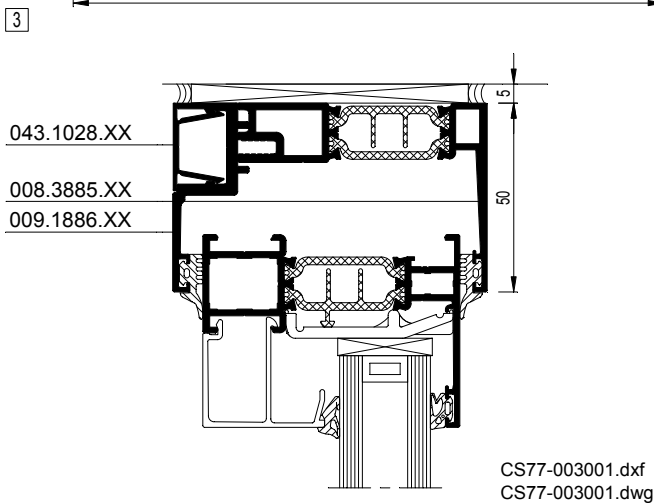
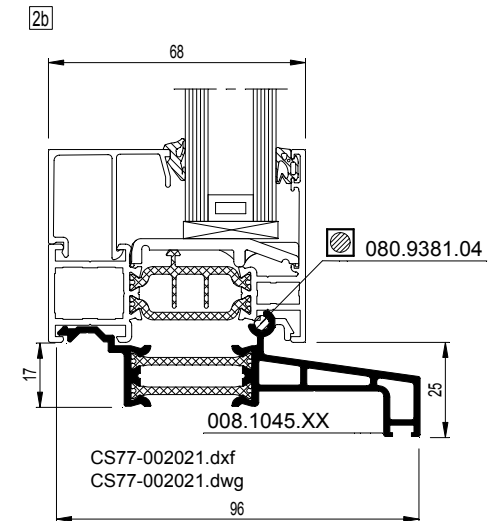
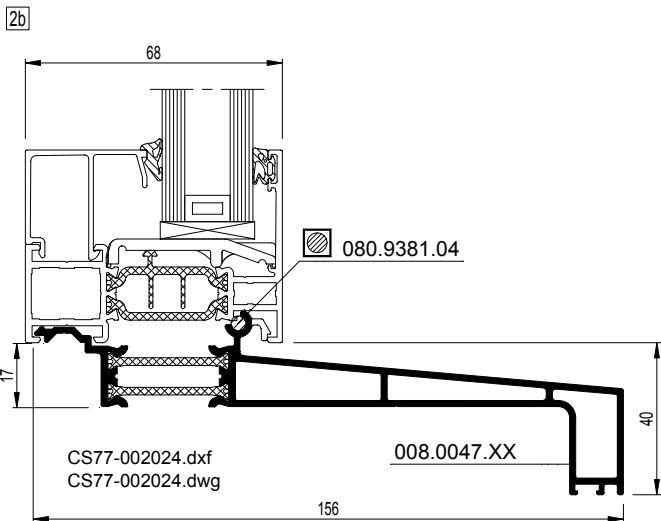
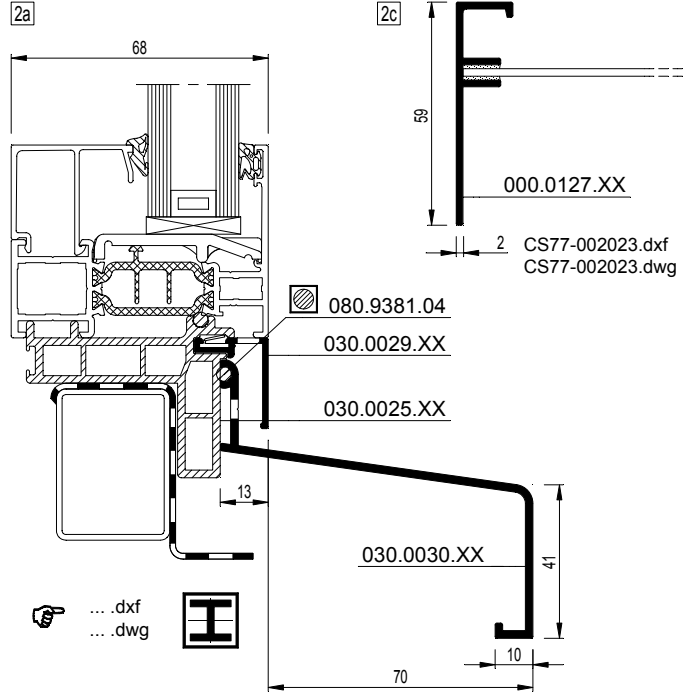
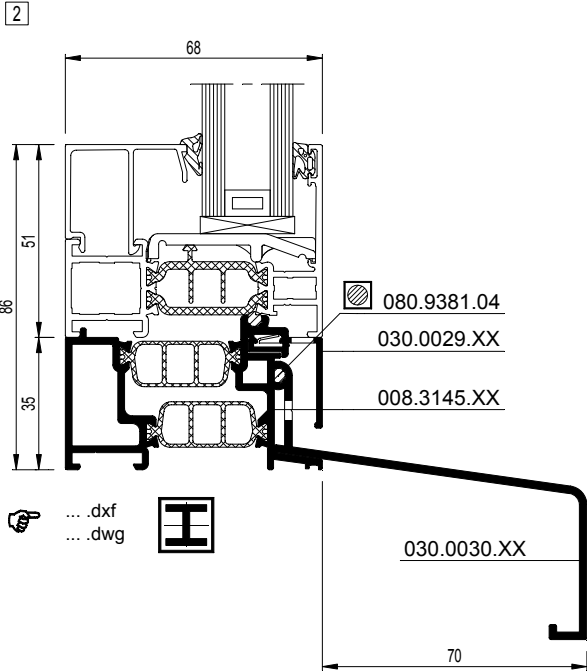
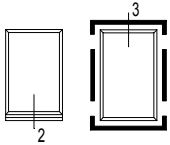
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 CS77-001013.dwg

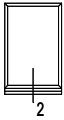
008.3452.XX

$I_x = 62.683 \text{ cm}^4$



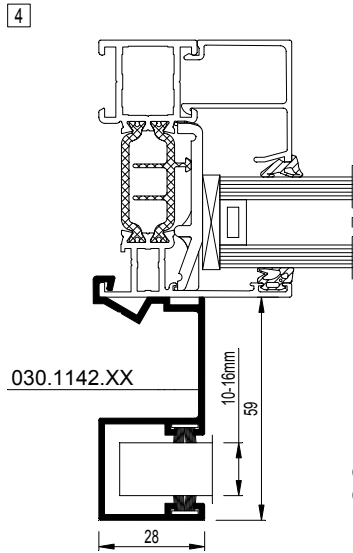
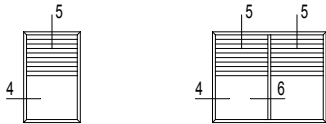
1 CS77-001014.dxf  
 CS77-001014.dwg



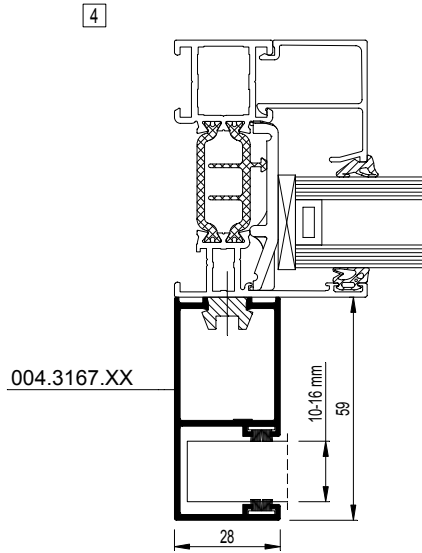


<p>2 CS77-002009.dxf CS77-002009.dwg</p> <p>030.0038.XX</p> <p>2 CS77-002008.dxf CS77-002008.dwg</p> <p>030.0037.XX</p> <p>2 CS77-002007.dxf CS77-002007.dwg</p> <p>030.0036.XX</p> <p>2 CS77-002006.dxf CS77-002006.dwg</p> <p>030.0035.XX</p> <p>2 CS77-002005.dxf CS77-002005.dwg</p> <p>030.0034.XX</p> <p>2 CS77-002004.dxf CS77-002004.dwg</p> <p>030.0033.XX</p> <p>2 CS77-002003.dxf CS77-002003.dwg</p> <p>030.0032.XX</p> <p>2 CS77-002002.dxf CS77-002002.dwg</p> <p>030.0031.XX</p> <p>2 CS77-002001.dxf CS77-002001.dwg</p> <p>030.0030.XX</p>	<p>2a CS77-002019.dxf CS77-002019.dwg</p> <p>2a CS77-002018.dxf CS77-002018.dwg</p> <p>2a CS77-002017.dxf CS77-002017.dwg</p> <p>2a CS77-002016.dxf CS77-002016.dwg</p> <p>2a CS77-002015.dxf CS77-002015.dwg</p> <p>2a CS77-002014.dxf CS77-002014.dwg</p> <p>2a CS77-002013.dxf CS77-002013.dwg</p> <p>2a CS77-002012.dxf CS77-002012.dwg</p> <p>2a CS77-002011.dxf CS77-002011.dwg</p>
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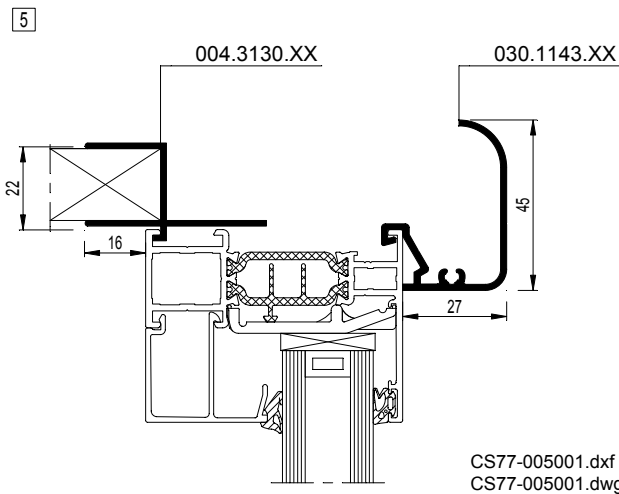
CS77-3d0001.dxf  
CS77-3d0001.dwg



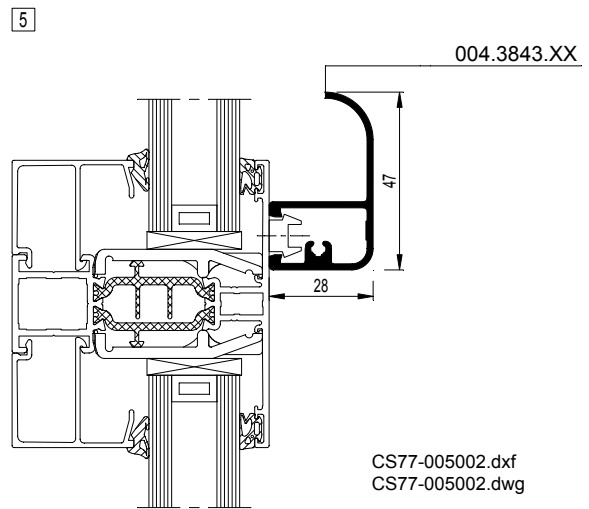
CS77-004001.dxf  
 CS77-004001.dwg



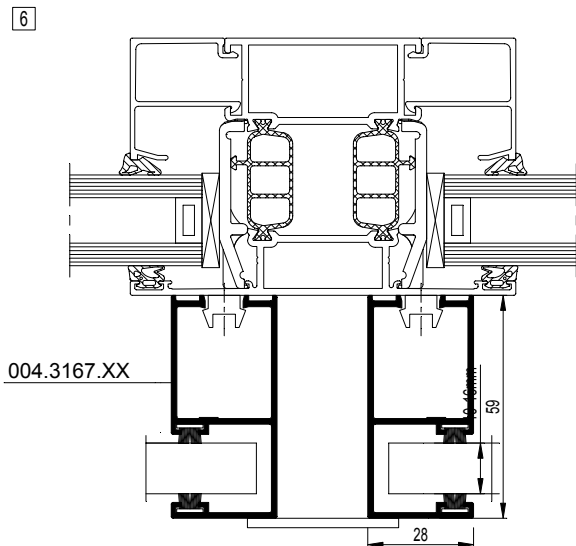
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 CS77-004002.dwg



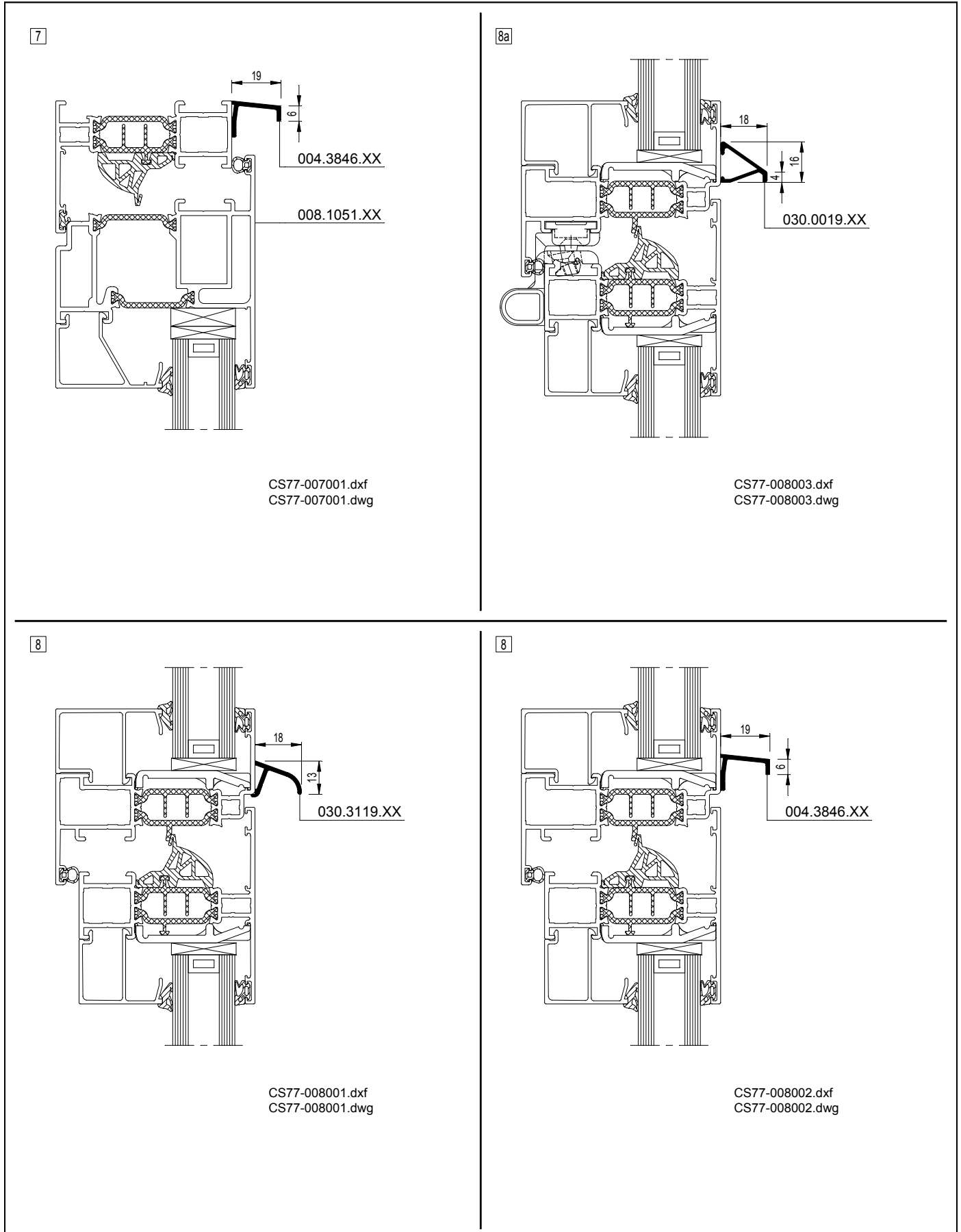
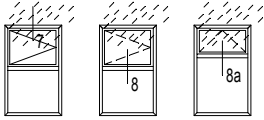
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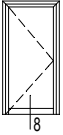


CS77-005002.dxf  
 CS77-005002.dwg

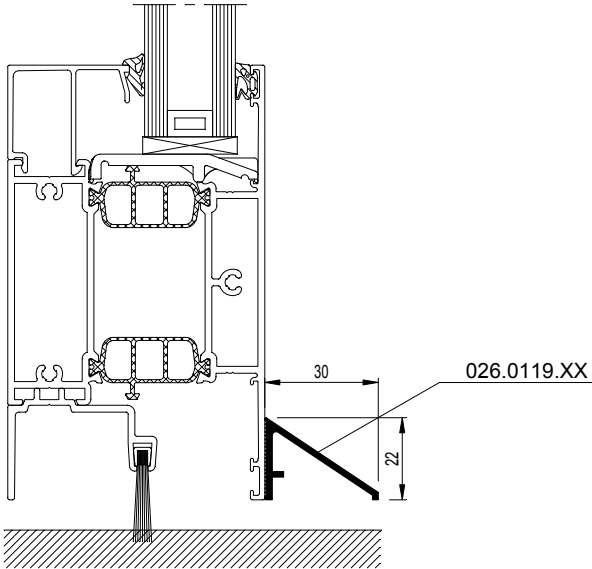


CS77-006001.dxf  
 CS77-006001.dwg



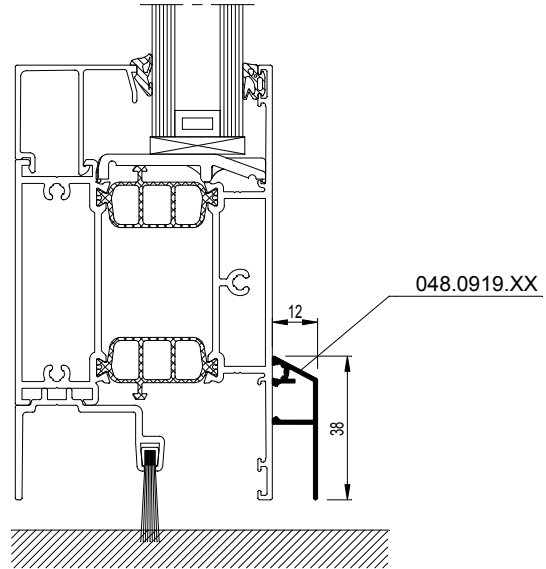


8

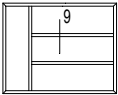


CS77-008004.dxf  
CS77-008004.dwg

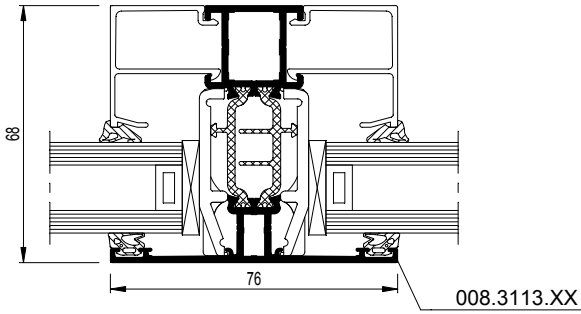
8




CS77-008005.dxf  
CS77-008005.dwg



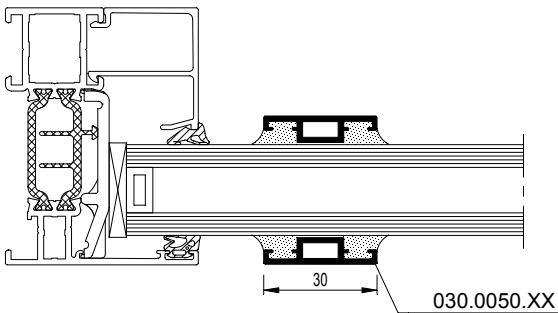
9



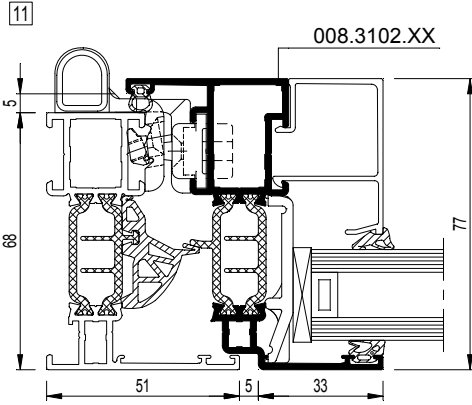
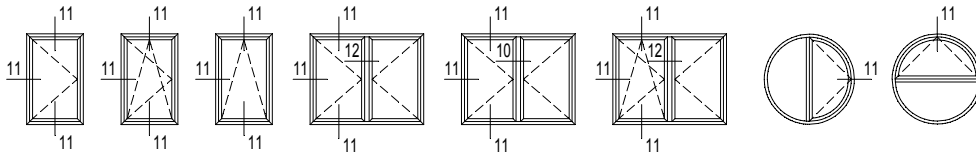
CS77-009003.dxf  
 CS77-009003.dwg

 Zie ook T-profielen blz. 18-19  
 Voire aussi traverse pag. 18-19  
 Look also transom pag. 18-19  
 Siehe auch Sprosse pag. 18-19

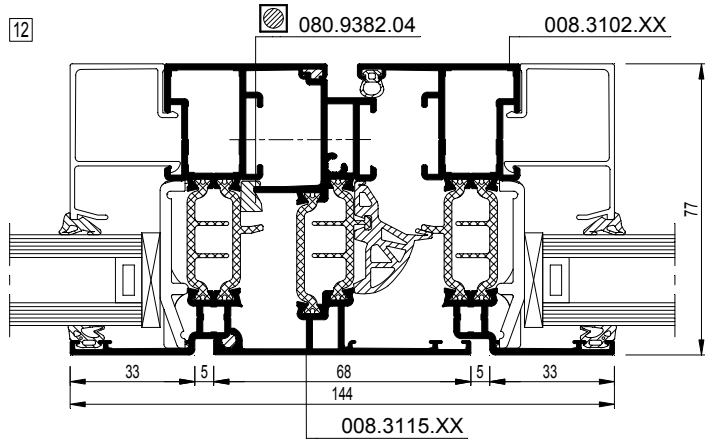
9



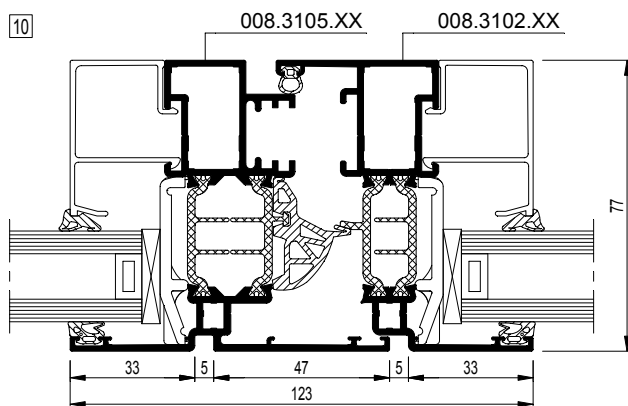
CS77-009002.dxf  
 CS77-009002.dwg



... .dxf  
 ... .dwg

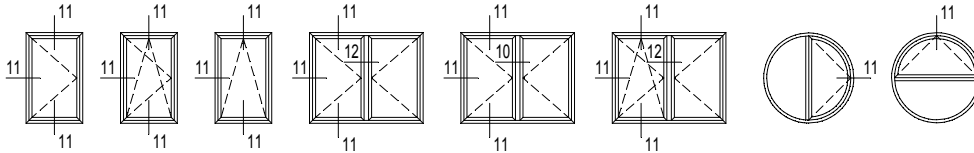


... .dxf  
 ... .dwg



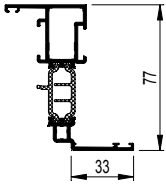
CS77-010001.dxf  
 CS77-010001.dwg





## 008.3102.XX

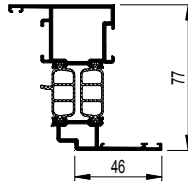
lx = 19.808 cm<sup>4</sup>



- 11 CS77-011001.dxf  
CS77-011001.dwg
- 12 CS77-012001.dxf  
CS77-012001.dwg
- 10 CS77-010001.dxf  
CS77-010001.dwg

## 008.3192.XX

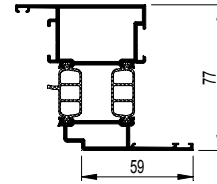
lx = 33.259 cm<sup>4</sup>



- 11 CS77-011002.dxf  
CS77-011002.dwg
- 12 CS77-012002.dxf  
CS77-012002.dwg

## 008.3112.XX

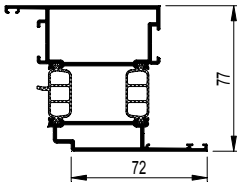
lx = 39.373 cm<sup>4</sup>



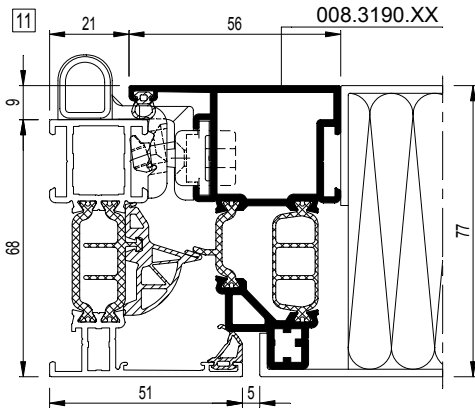
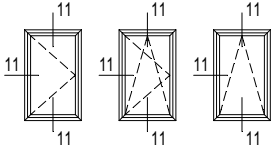
- 11 CS77-011003.dxf  
CS77-011003.dwg
- 12 CS77-012003.dxf  
CS77-012003.dwg

## 008.3121.XX

lx = 45.438 cm<sup>4</sup>



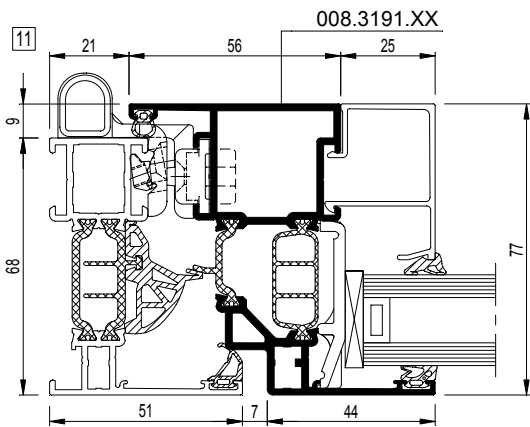
- 11 CS77-011004.dxf  
CS77-011004.dwg
- 12 CS77-012004.dxf  
CS77-012004.dwg



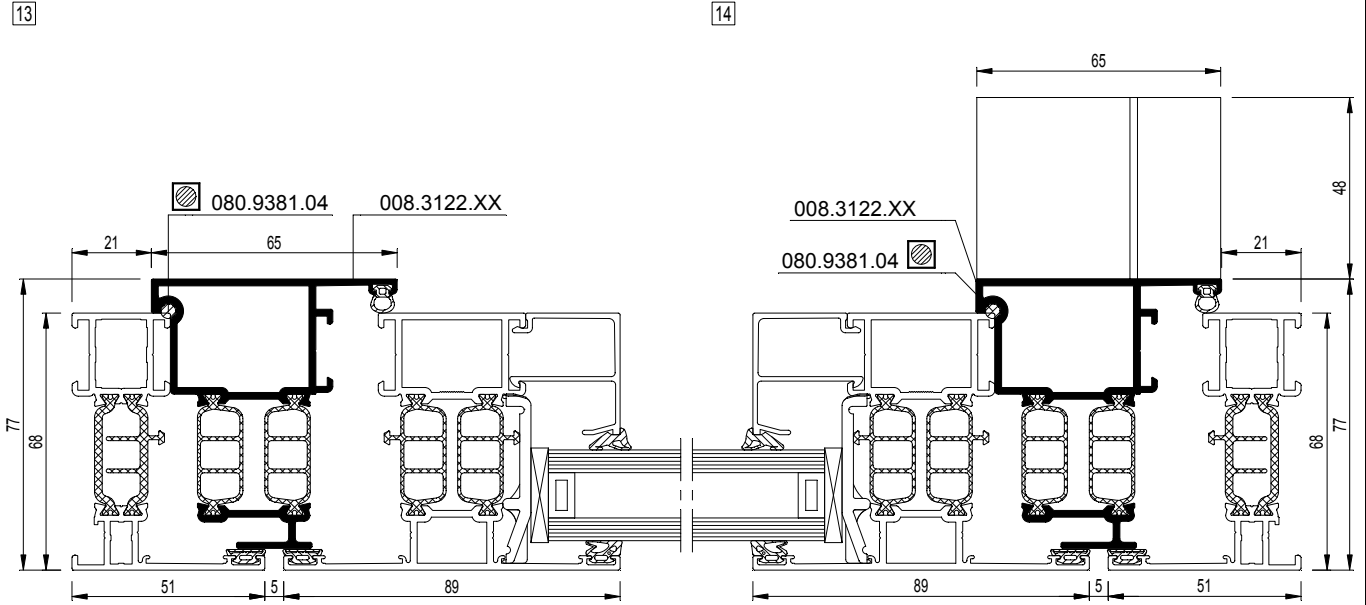
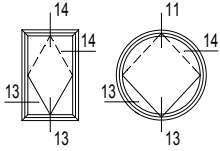
MINIMUM BESTELHOEVEELHEID: 160 PROFIELLENGTEN  
 QUANTITE MINIMALE DE COMMANDE: 160 LONGUEURS DE PROFILES  
 MINIMUM ORDER QUANTITY : 160 PROFILE LENGHTS  
 MINIMALBESTELLMENGE: 160 PROFILLÄNGEN

250mm < FB < 500mm

CS77-011005.dxf  
 CS77-011005.dwg

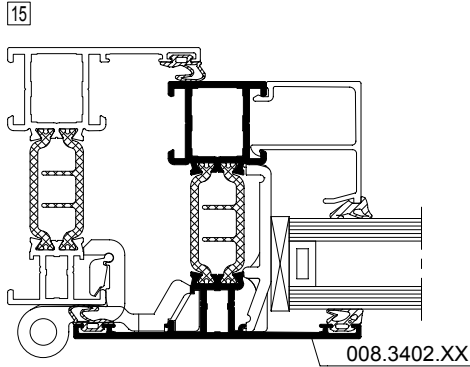
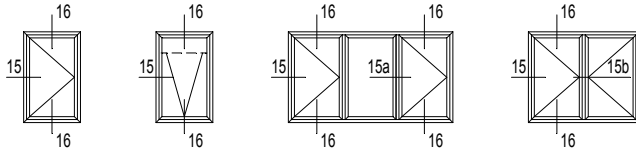


CS77-011006.dxf  
 CS77-011006.dwg



CS77-013001.dxf  
 CS77-013001.dwg

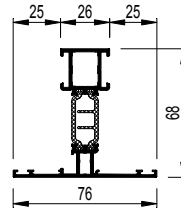
CS77-014001.dxf  
 CS77-014001.dwg



☞ ... .dxf  
 ... .dwg

## 008.3402.XX

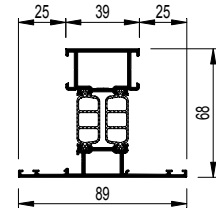
lx = 16.998 cm<sup>4</sup>



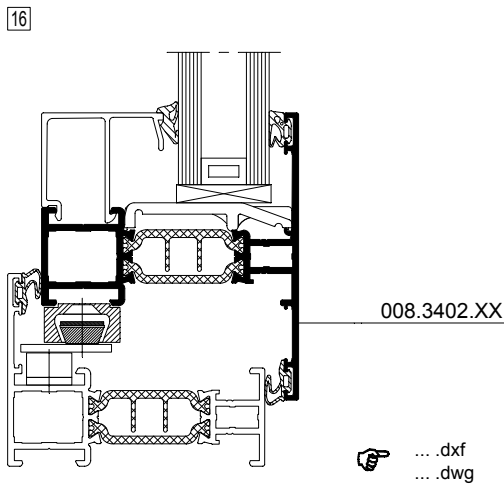
- 15 CS77-015001.dxf  
CS77-015001.dwg
- 16 CS77-016001.dxf  
CS77-016001.dwg

## 008.3492.XX

lx = 27.026 cm<sup>4</sup>



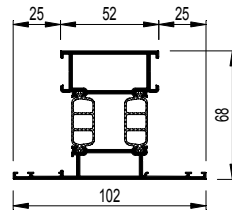
- 15 CS77-015002.dxf  
CS77-015002.dwg
- 16 CS77-016002.dxf  
CS77-016002.dwg



☞ ... .dxf  
 ... .dwg

## 008.3412.XX

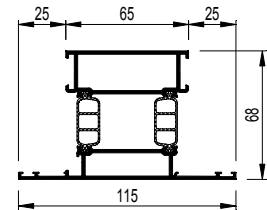
lx = 31.809 cm<sup>4</sup>



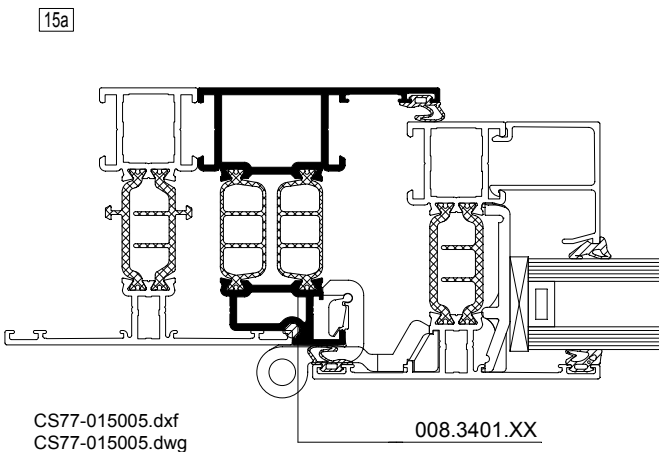
- 15 CS77-015003.dxf  
CS77-015003.dwg
- 16 CS77-016003.dxf  
CS77-016003.dwg

## 008.3421.XX

lx = 36.596 cm<sup>4</sup>

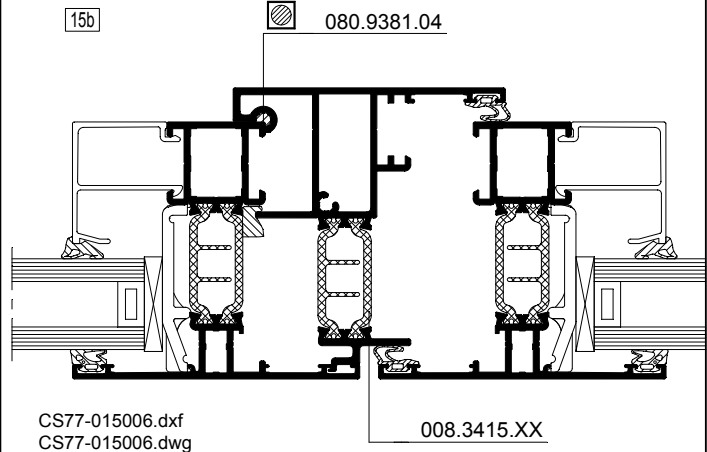


- 15 CS77-015004.dxf  
CS77-015004.dwg
- 16 CS77-016004.dxf  
CS77-016004.dwg



CS77-015005.dxf  
 CS77-015005.dwg

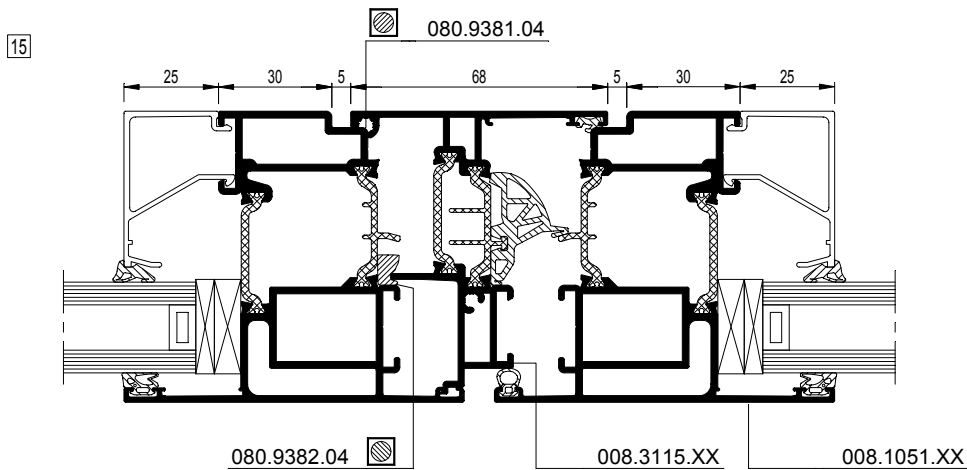
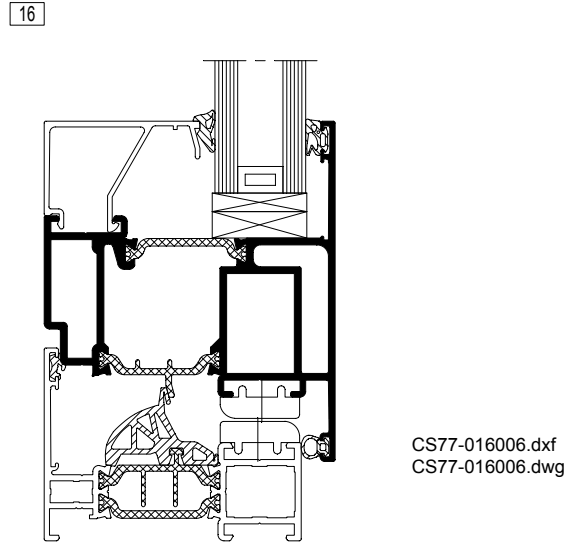
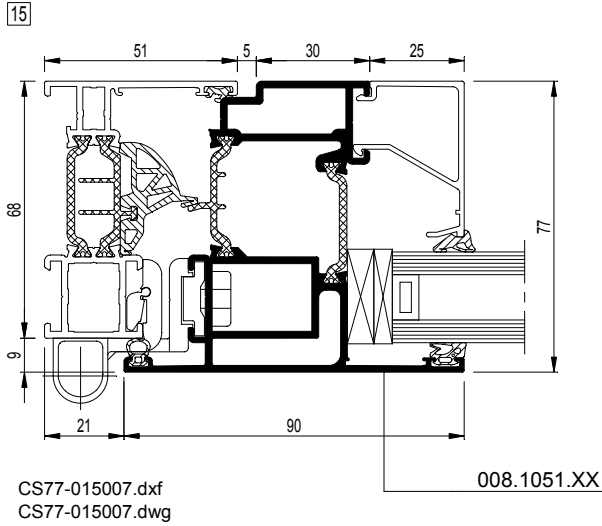
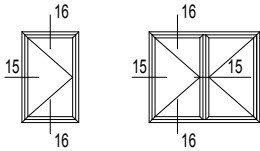
008.3401.XX



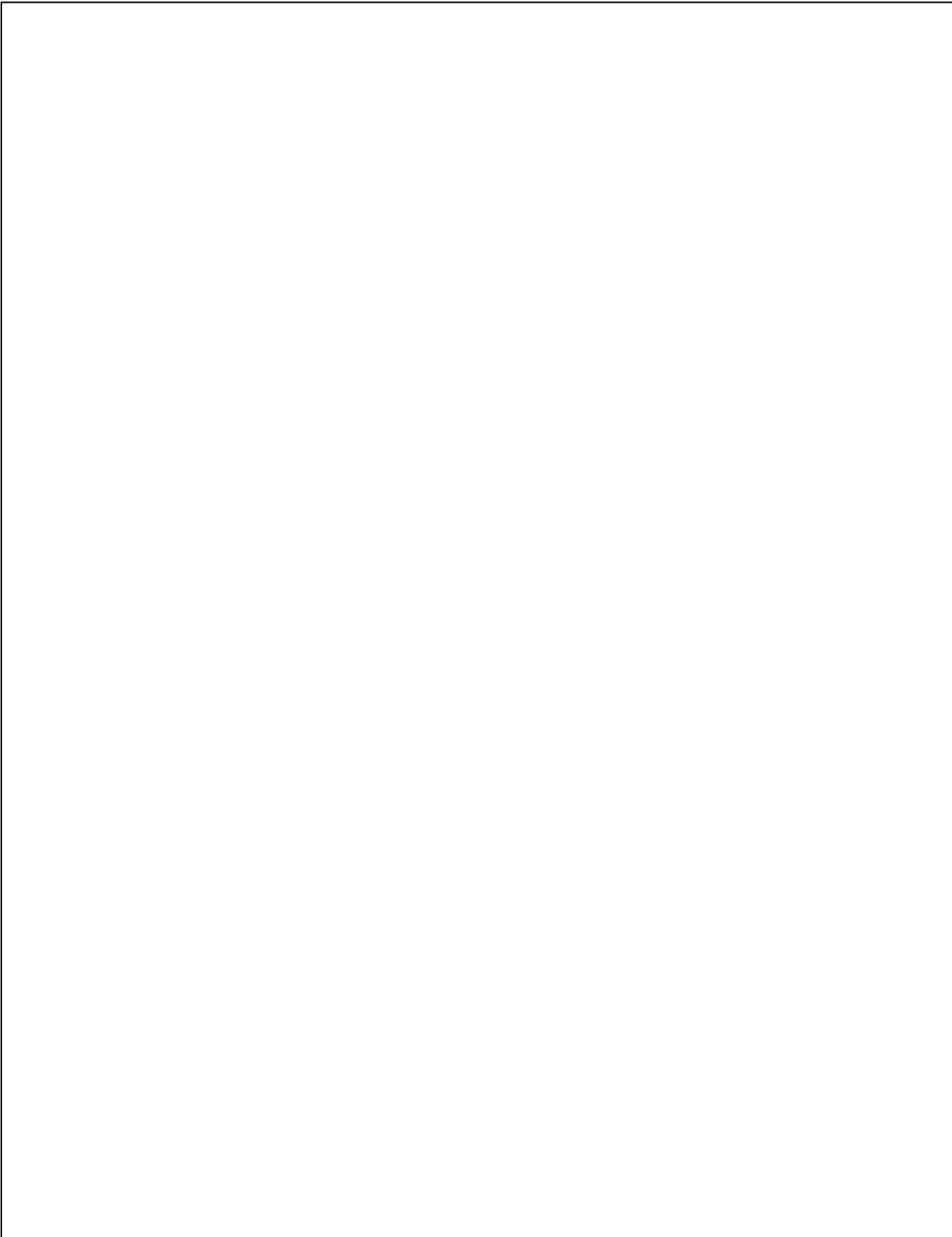
CS77-015006.dxf  
 CS77-015006.dwg

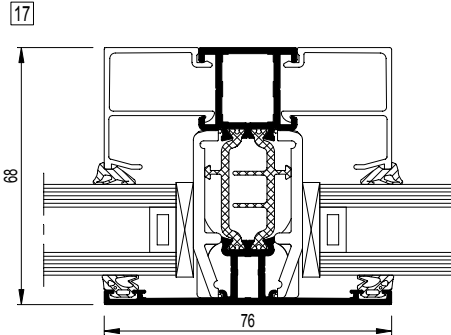
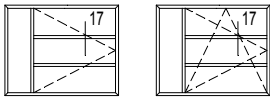
008.3415.XX

080.9381.04



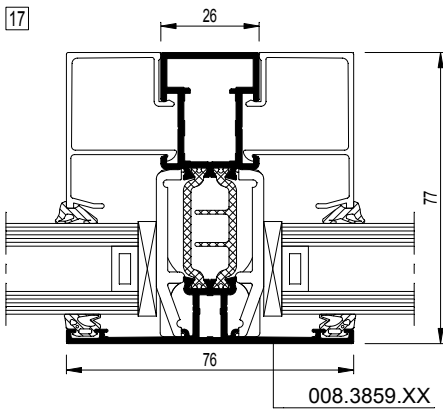
CS77-015008.dxf  
 CS77-015008.dwg





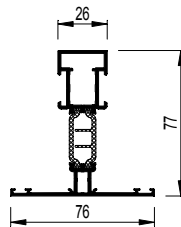
CS77-017005.dxf  
 CS77-017005.dwg

Zie ook T-profielen blz. 20-21  
 Voir aussi traverse pag. 20-21  
 Look also transom pag. 20-21  
 Siehe auch Sprosse pag. 20-21



**008.3859.XX**

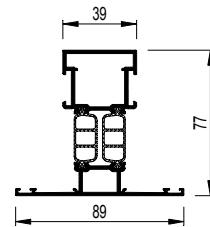
$I_x = 23.018 \text{ cm}^4$



CS77-017001.dxf  
 CS77-017001.dwg

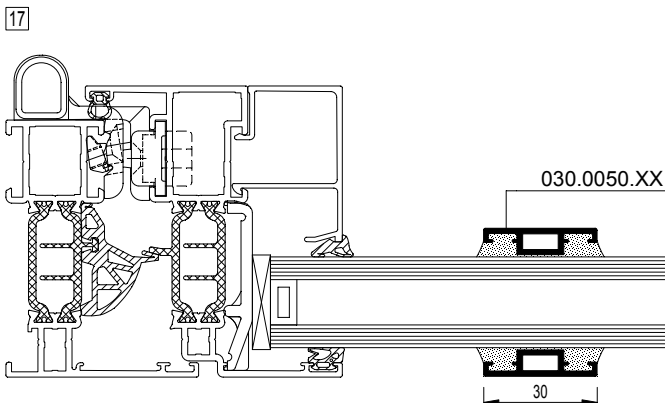
**008.3860.XX**

$I_x = 36.434 \text{ cm}^4$

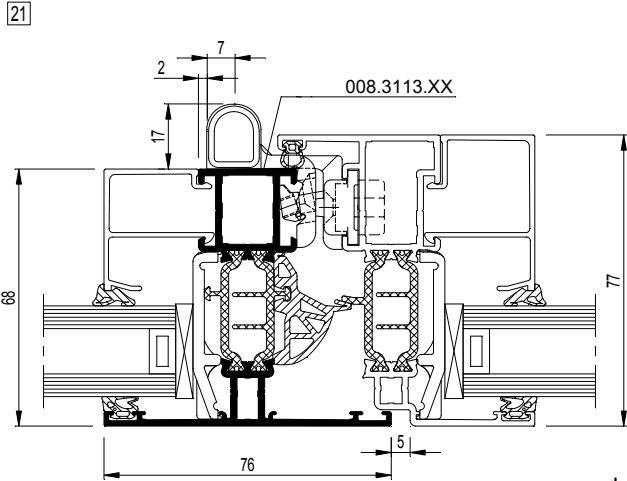
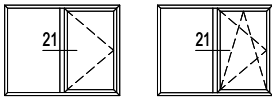


CS77-017002.dxf  
 CS77-017002.dwg

... .dxf  
 ... .dwg



CS77-017004.dxf  
 CS77-017004.dwg

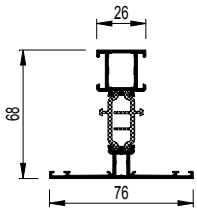


... .dxf  
 ... .dwg



## 008.3113.XX

$I_x = 16.916 \text{ cm}^4$

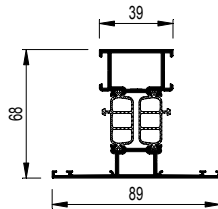


CS77-021001.dxf  
 CS77-021001.dwg

21

## 008.3120.XX

$I_x = 26.891 \text{ cm}^4$

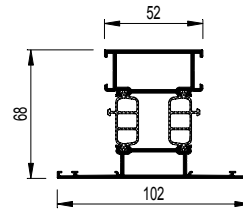


CS77-021002.dxf  
 CS77-021002.dwg

21

## 008.3114.XX

$I_x = 31.671 \text{ cm}^4$

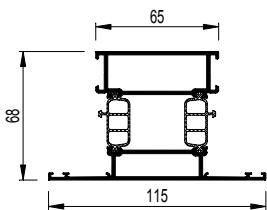


CS77-021003.dxf  
 CS77-021003.dwg

21

## 008.3123.XX

$I_x = 36.452 \text{ cm}^4$

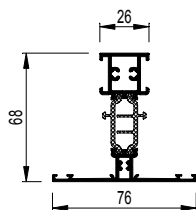


CS77-021004.dxf  
 CS77-021004.dwg

21

## 008.3813.XX

$I_x = 18.526 \text{ cm}^4$

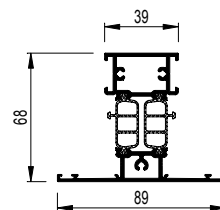


CS77-021005.dxf  
 CS77-021005.dwg

21

## 008.3820.XX

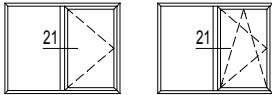
$I_x = 29.421 \text{ cm}^4$



CS77-021006.dxf  
 CS77-021006.dwg

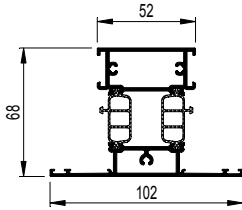
21





## 008.3814.XX

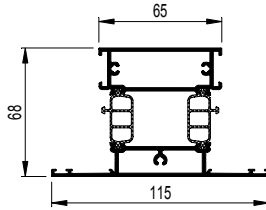
$I_x = 34.197 \text{ cm}^4$



CS77-021007.dxf  
 CS77-021007.dwg

## 008.3823.XX

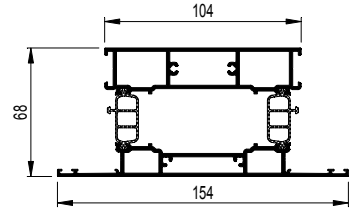
$I_x = 38.96 \text{ cm}^4$



CS77-021008.dxf  
 CS77-021008.dwg

## 008.3824.XX

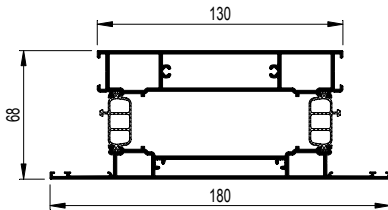
$I_x = 59.548 \text{ cm}^4$



CS77-021009.dxf  
 CS77-021009.dwg

## 008.3817.XX

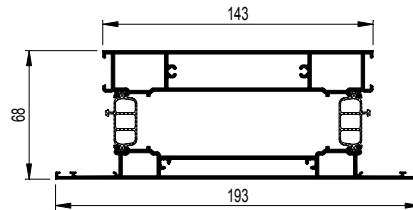
$I_x = 69.599 \text{ cm}^4$



CS77-021010.dxf  
 CS77-021010.dwg

## 008.3847.XX

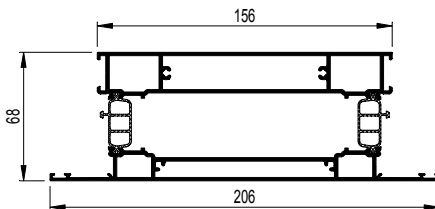
$I_x = 74.626 \text{ cm}^4$



CS77-021011.dxf  
 CS77-021011.dwg

## 008.3850.XX

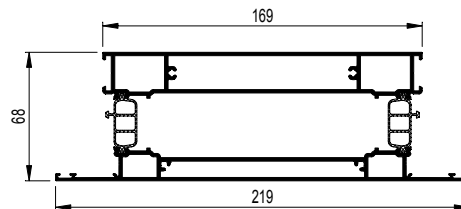
$I_x = 79.653 \text{ cm}^4$



CS77-021012.dxf  
 CS77-021012.dwg

## 008.3854.XX

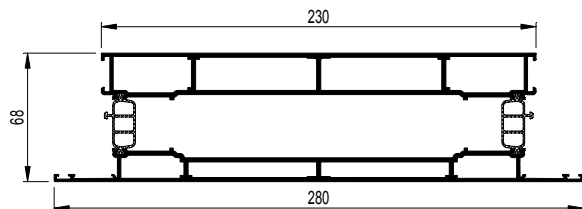
$I_x = 84.681 \text{ cm}^4$



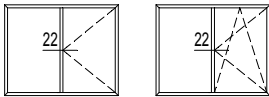
CS77-021013.dxf  
 CS77-021013.dwg

## 008.0155.XX

$I_x = 98.618 \text{ cm}^4$

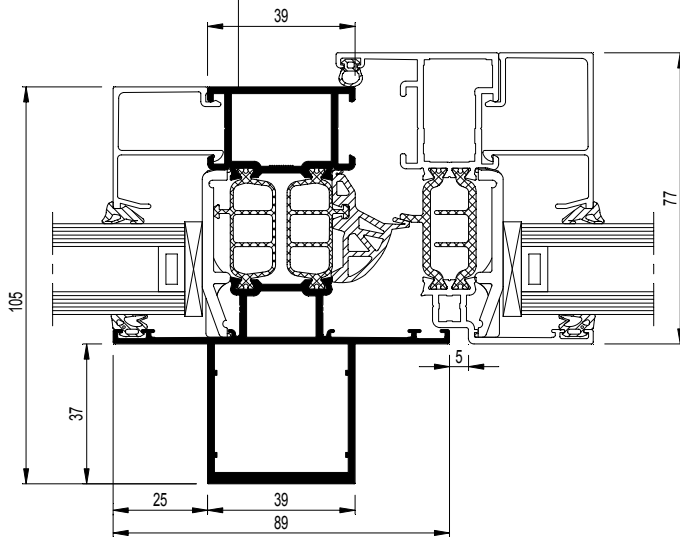


CS77-021014.dxf  
 CS77-021014.dwg

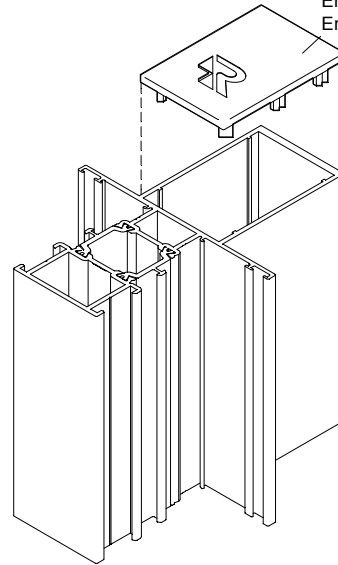


22

008.3100.XX



Einstukken beschikbaar  
 Pièces de finition disponible  
 End parts available  
 Endstücke verfügbar

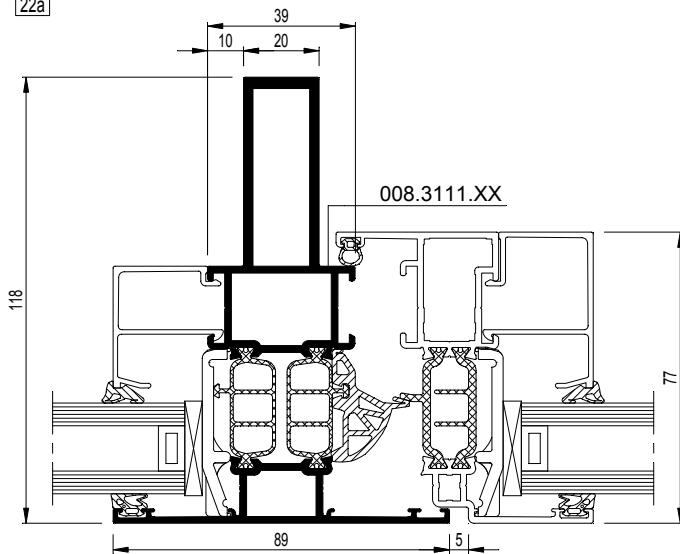


CS77-3d0002.dxf  
 CS77-3d0002.dwg

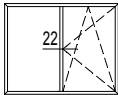
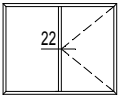
... .dxf  
 ... .dwg



22a

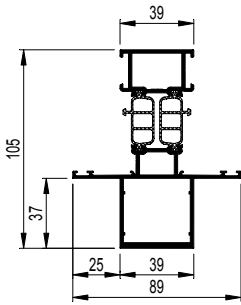


CS77-022008.dxf  
 CS77-022008.dwg



## 008.3100.XX

$I_x = 66.217 \text{ cm}^4$

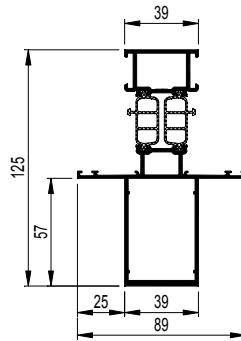


22

CS77-022001.dxf  
 CS77-022001.dwg

## 008.3109.XX

$I_x = 99.312 \text{ cm}^4$

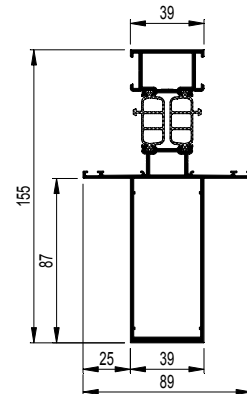


22

CS77-022002.dxf  
 CS77-022002.dwg

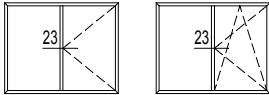
## 008.3110.XX

$I_x = 171.575 \text{ cm}^4$

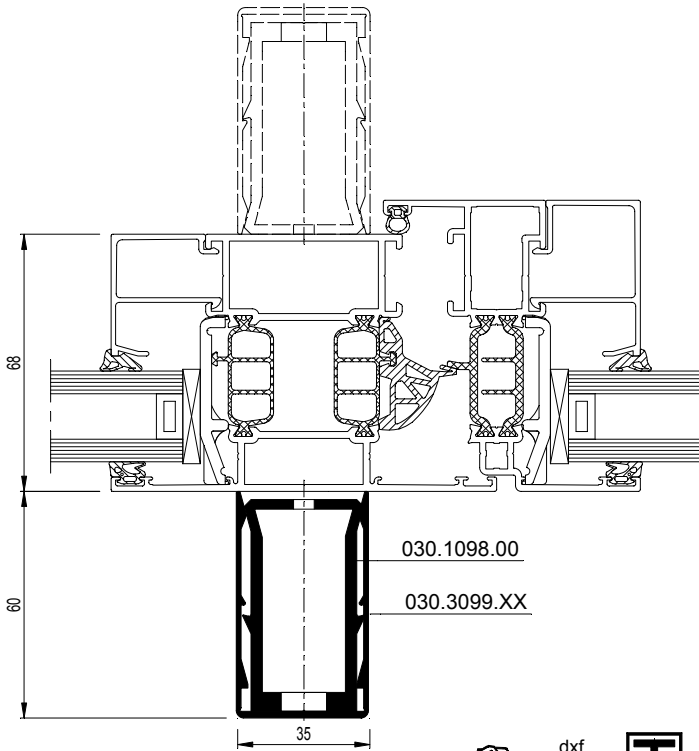


22

CS77-022003.dxf  
 CS77-022003.dwg



23



... .dxf  
 ... .dwg

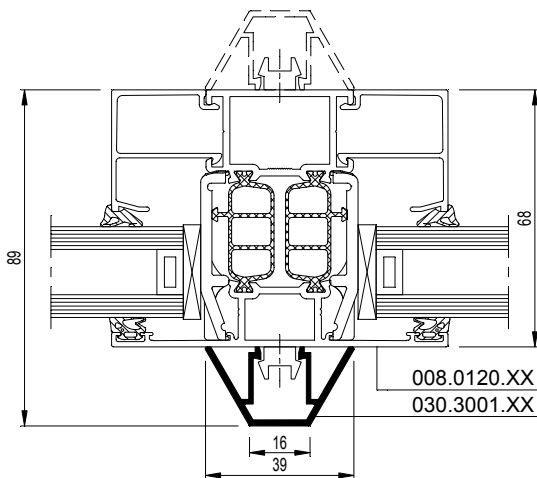


23

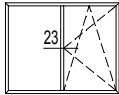
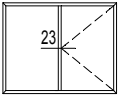
Nota : voor keuze van versteving : zie waarden op blz. 26  
 Note : pour choix de renforcement : voir valeurs page 26  
 Note: For choice of reinforcement, see values on pages 26  
 Nota : für Verstärkungswahl : siehe Werte Seite 26

23

Nota : geen versteving, enkel esthetiek  
 Note : pas de renforcements, seulement esthétique  
 Note: No reinforcement only aesthetics  
 Nota : keine Verstärkung, nur Ästhetik

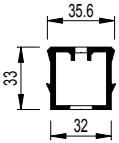


CS77-023002.dxf  
 CS77-023002.dwg



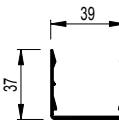
030.1096.00

$I_x = 4.881 \text{ cm}^4$



030.3097.XX

$I_x = 2.767 \text{ cm}^4$



23

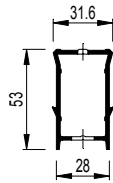
CS77-023007.dxf  
 CS77-023007.dwg

23a

CS77-023008.dxf  
 CS77-023008.dwg

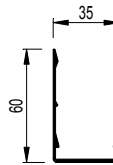
030.1097.00

$I_x = 10.260 \text{ cm}^4$



030.3099.XX

$I_x = 9.625 \text{ cm}^4$



23

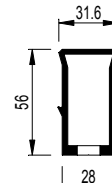
CS77-023004.dxf  
 CS77-023004.dwg

23a

CS77-023006.dxf  
 CS77-023006.dwg

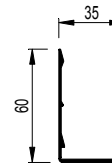
030.1098.00

$I_x = 19.656 \text{ cm}^4$



030.3099.XX

$I_x = 9.625 \text{ cm}^4$



23

CS77-023003.dxf  
 CS77-023003.dwg

23a

CS77-023005.dxf  
 CS77-023005.dwg

Opmerking: - Versteviging van binnenzijde + scharnier is niet mogelijk.

- Bevestiging: om de 300 mm

- Bij horizontale versteviging, gelieve het Reynaers filiaal in uw land te contacteren



Remarque: - Positionnement du renfort à l'intérieur en présence de charnières non possible.

- Fixation: tous les 300 mm

- Pour utilisation comme renfort horizontal, veuillez contacter la succursale Reynaers dans votre pays.

Remark: - Reinforcement of inner side + hinge is not possible in case the inner side of a transom-mullion < 75 mm

- Fixing: every 300 mm

- For horizontal reinforcements, please contact your local Reynaers office.

Anmerkung: - Verstärkung der Innenseite und des Bandes ist unmöglich wenn die Innenseite einer Sprosse < 75 mm

- Befestigung: jede 300 mm

- Bei horizontaler Verstärkung, Bitte kontaktieren Sie Ihre örtliche Reynaers Filiale

 T-profiel Traverse Transom-mullion Sprosse			Zonder versteviging Sans renforcement Without reinforcement Ohne Verstärkung		met 030.1096.00 avec 030.1096.00 with mit		met 030.1097.00 avec 030.1097.00 with mit		met 030.1098.00 avec 030.1098.00 with mit	
			lx cm4	Wx cm3	lx cm4	Wx cm3	lx cm4	Wx cm3	lx cm4	Wx cm3
008.3113.XX 	16.934	4.170	e	39.180	6.553	58.46	9.13	82.38	11.26	
			i	--	--	--	--	--	--	
008.3120.XX 	21.513	5.464	e	47.268	8.376	68.15	11.25	96.04	13.88	
			i	59.989	11.741	86.69	12.78	122.21	19.32	
008.3114.XX 	25.366	6.534	e	53.141	9.766	76.45	12.07	107.62	16.27	
			i	65.326	12.364	92.54	13.29	130.74	20.74	

Opmerking: - Versteving van binnenzijde + scharnier is niet mogelijk.

- Bevestiging: om de 300 mm

- Bij horizontale versteving, gelieve het Reynaers filiaal in uw land te contacteren



Remarque: - Positionnement du renfort à l'intérieur en présence de charnières non possible.

- Fixation: tous les 300 mm

- Pour utilisation comme renfort horizontal, veuillez contacter la succursale Reynaers dans votre pays.

Remark: - Reinforcement of inner side + hinge is not possible in case the inner side of a transom-mullion < 75 mm





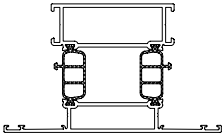
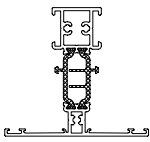
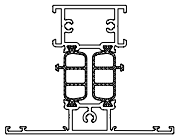
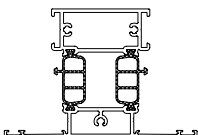
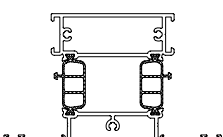
- Fixing: every 300 mm

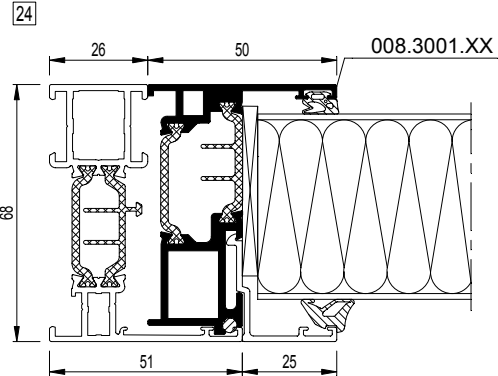
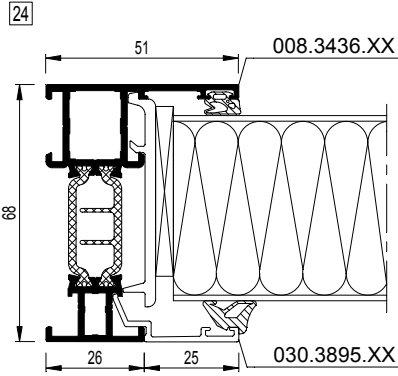
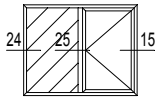
- For horizontal reinforcements, please contact your local Reynaers office.

Anmerkung: - Verstärkung der Innenseite und des Bandes ist unmöglich wenn die Innenseite einer Sprosse < 75 mm

- Befestigung: jede 300 mm

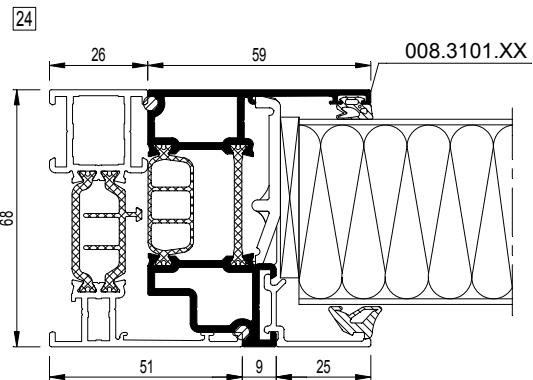
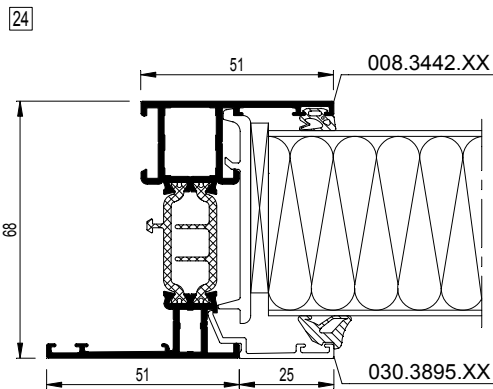
- Bei horizontaler Verstärkung, Bitte kontaktieren Sie Ihre örtliche Reynaers Filiale

 T-profiel Traverse Transom-mullion Sprosse	Zonder versteving Sans renforcement Without reinforcement Ohne Verstärkung			met 030.1096.00		met 030.1097.00		met 030.1098.00		
		met avec with mit		met avec with mit		met avec with mit				
		Ix cm4	Wx cm3		Ix cm4	Wx cm3	Ix cm4	Wx cm3	Ix cm4	Wx cm3
008.3123.XX 		29.190	7.591	e	58.699	11.133	83.38	12.76	117.13	18.36
					i	70.408	12.971	98.81	13.84	139.67
008.3813.XX 		18.551	4.714	e	42.836	7.372	63.28	10.18	89.15	12.51
					i	--	--	--	--	--
008.3820.XX 		23.537	6.081	e	50.949	9.272	73.67	11.76	103.91	15.50
					i	62.528	12.026	89.00	12.97	125.72
008.3814.XX 		27.358	7.146	e	56.603	10.650	80.77	12.47	113.73	17.62
					i	67.737	12.646	95.49	13.54	135.10
008.3823.XX 		31.168	8.208	e	61.936	11.990	87.37	13.13	122.72	19.93
					i	72.701	13.250	101.59	14.09	143.65



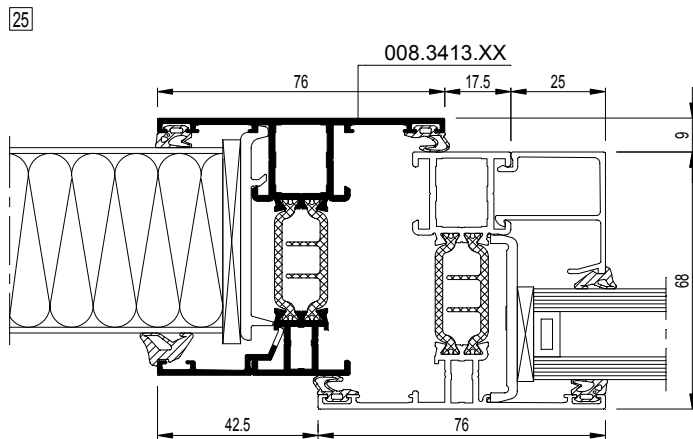
☞ ... .dxf  
 ... .dwg

CS77-024006.dxf  
 CS77-024006.dwg



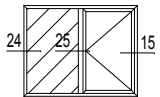
CS77-024005.dxf  
 CS77-024005.dwg

CS77-024007.dxf  
 CS77-024007.dwg



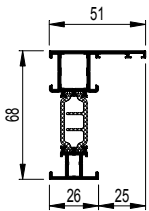
☞ ... .dxf  
 ... .dwg





## 008.3436.XX

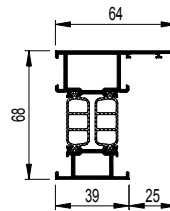
$I_x = 13.809 \text{ cm}^4$



[24] CS77-024001.dxf  
 CS77-024001.dwg

## 008.3483.XX

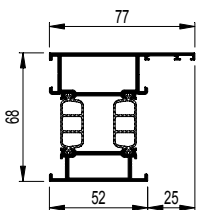
$I_x = 18.534 \text{ cm}^4$



[24] CS77-024002.dxf  
 CS77-024002.dwg

## 008.3425.XX

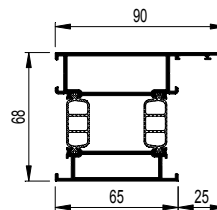
$I_x = 22.492 \text{ cm}^4$



[24] CS77-024003.dxf  
 CS77-024003.dwg

## 008.3440.XX

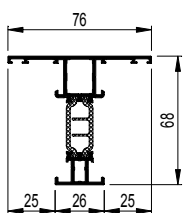
$I_x = 26.396 \text{ cm}^4$



[24] CS77-024004.dxf  
 CS77-024004.dwg

## 008.3413.XX

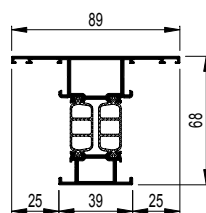
$I_x = 15.605 \text{ cm}^4$



[25] CS77-025001.dxf  
 CS77-025001.dwg

## 008.3416.XX

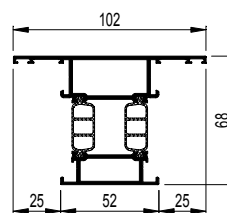
$I_x = 20.652 \text{ cm}^4$



[25] CS77-025002.dxf  
 CS77-025002.dwg

## 008.3414.XX

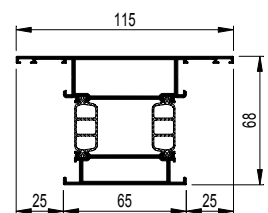
$I_x = 24.804 \text{ cm}^4$



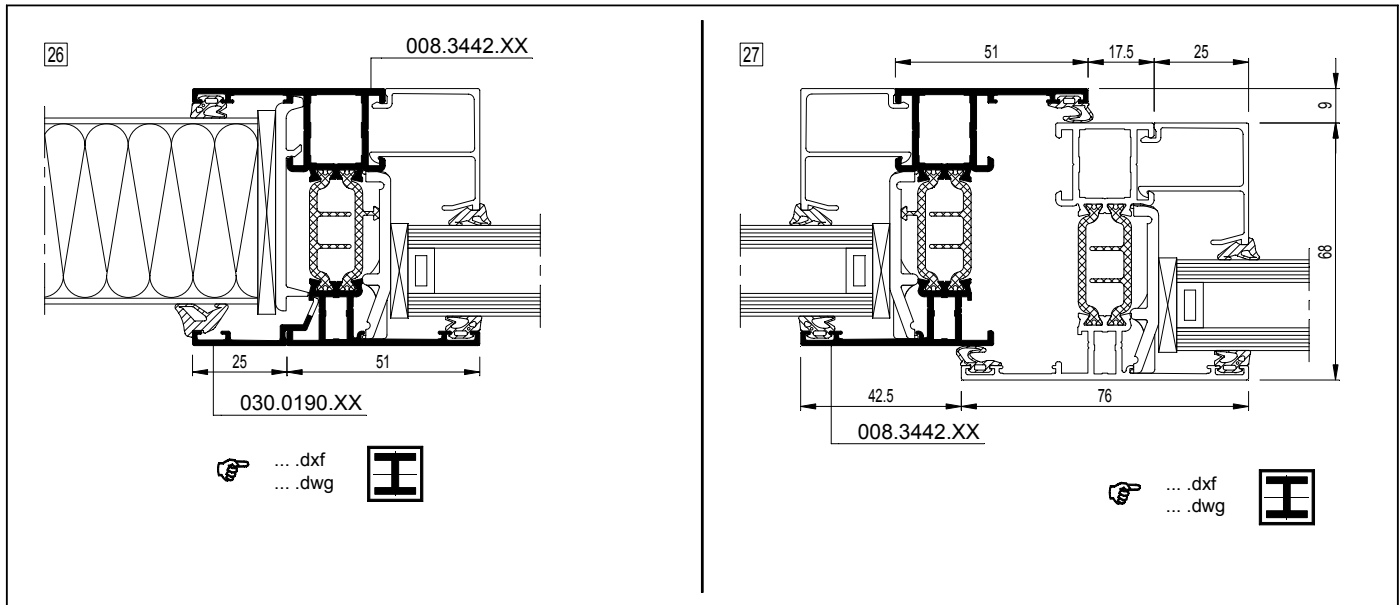
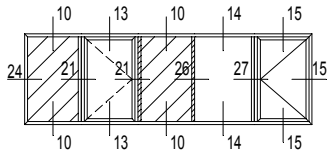
[25] CS77-025003.dxf  
 CS77-025003.dwg

## 008.3423.XX

$I_x = 28.853 \text{ cm}^4$

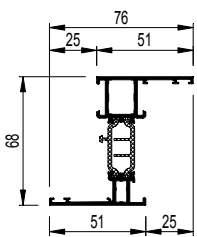


[25] CS77-025004.dxf  
 CS77-025004.dwg



## 008.3442.XX

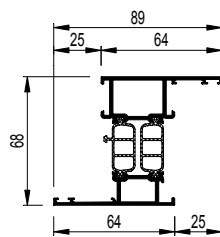
$I_x = 17.81 \text{ cm}^4$



- [26] CS77-026001.dxf  
CS77-026001.dwg
- [27] CS77-027001.dxf  
CS77-027001.dwg

## 008.3443.XX

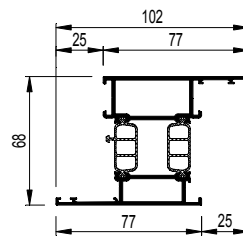
$I_x = 22.297 \text{ cm}^4$



- [26] CS77-026003.dxf  
CS77-026003.dwg
- [27] CS77-027003.dxf  
CS77-027003.dwg

## 008.3451.XX

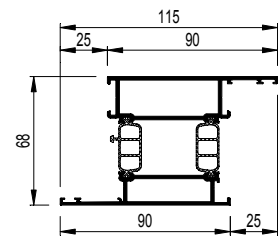
$I_x = 26.103 \text{ cm}^4$



- [26] CS77-026002.dxf  
CS77-026002.dwg
- [27] CS77-027002.dxf  
CS77-027002.dwg

## 008.3444.XX

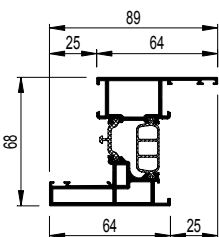
$I_x = 29.905 \text{ cm}^4$



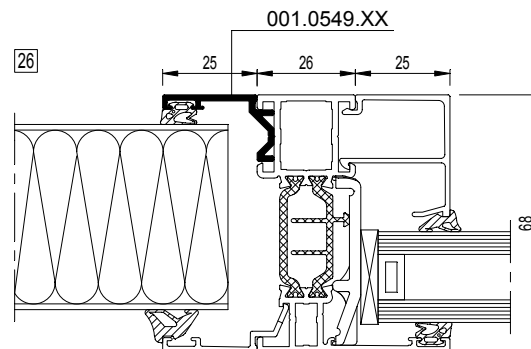
- [26] CS77-026004.dxf  
CS77-026004.dwg
- [27] CS77-027004.dxf  
CS77-027004.dwg

## 008.0541.XX

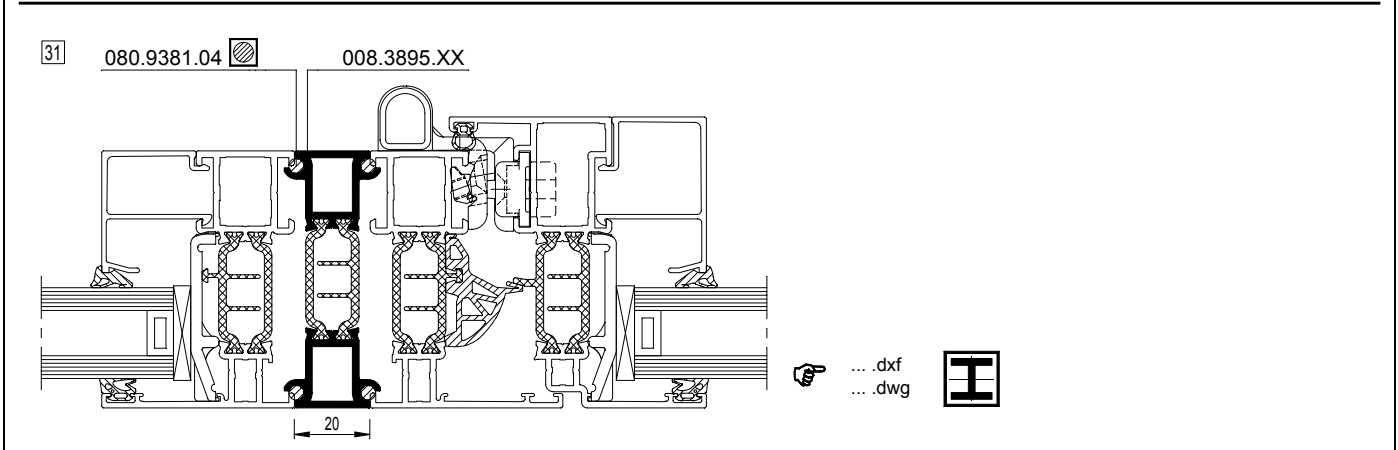
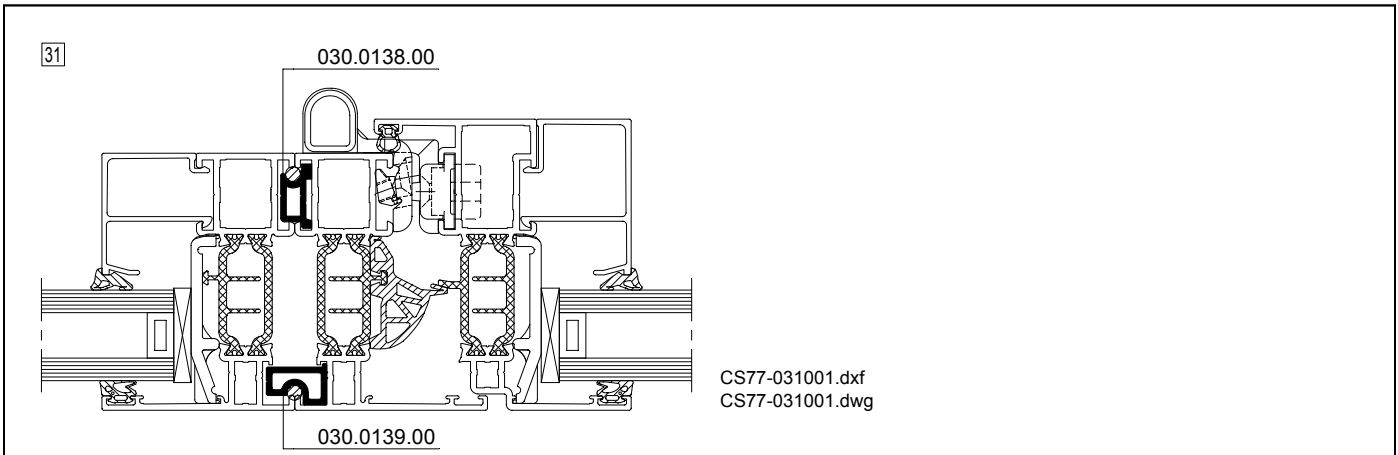
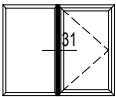
$I_x = 25.312 \text{ cm}^4$



- [15] CS77-015009.dxf  
CS77-015009.dwg

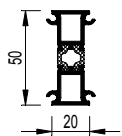


- CS77-026005.dxf  
CS77-026005.dwg



001.0895.XX

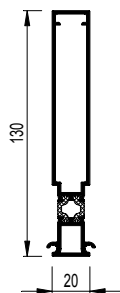
$I_x = 6.969 \text{ cm}^4$



31 CS77-031002.dxf  
 CS77-031002.dwg

006.1971.XX

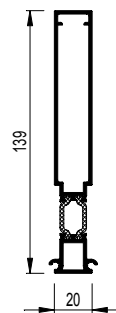
$I_x = 78.845 \text{ cm}^4$



31 CS77-031006.dxf  
 CS77-031006.dwg

006.1972.XX

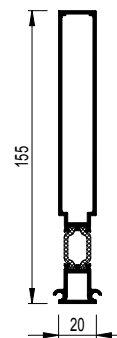
$I_x = 90.480 \text{ cm}^4$



31 CS77-031007.dxf  
 CS77-031007.dwg

006.0371.XX

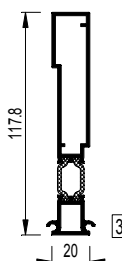
$I_x = 120.097 \text{ cm}^4$



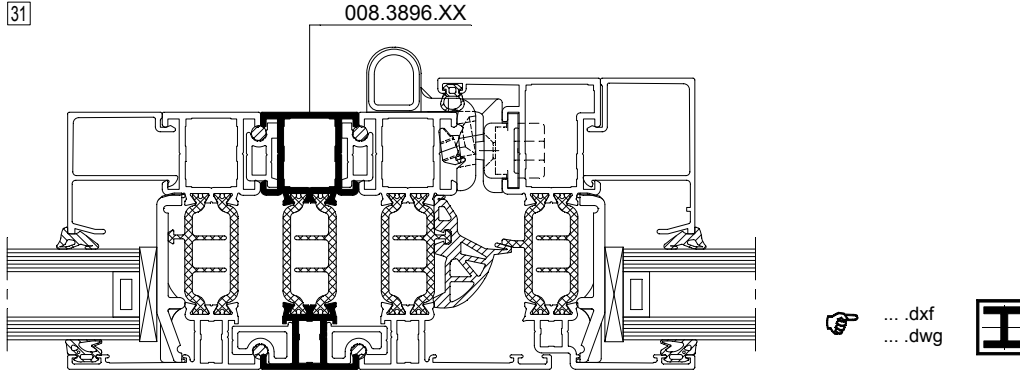
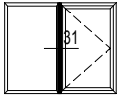
31 CS77-031005.dxf  
 CS77-031005.dwg

005.1837.XX

$I_x = 58.021 \text{ cm}^4$

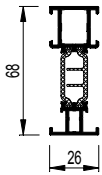


31 CS77-031003.dxf  
 CS77-031003.dwg



## 008.3896.XX

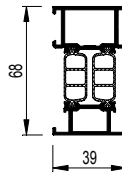
$I_x = 11.467 \text{ cm}^4$



CS77-031008.dxf  
 CS77-031008.dwg

## 008.3893.XX

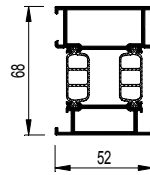
$I_x = 19.914 \text{ cm}^4$



CS77-031009.dxf  
 CS77-031009.dwg

## 008.3897.XX

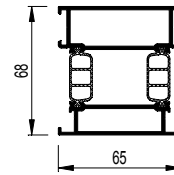
$I_x = 27.480 \text{ cm}^4$



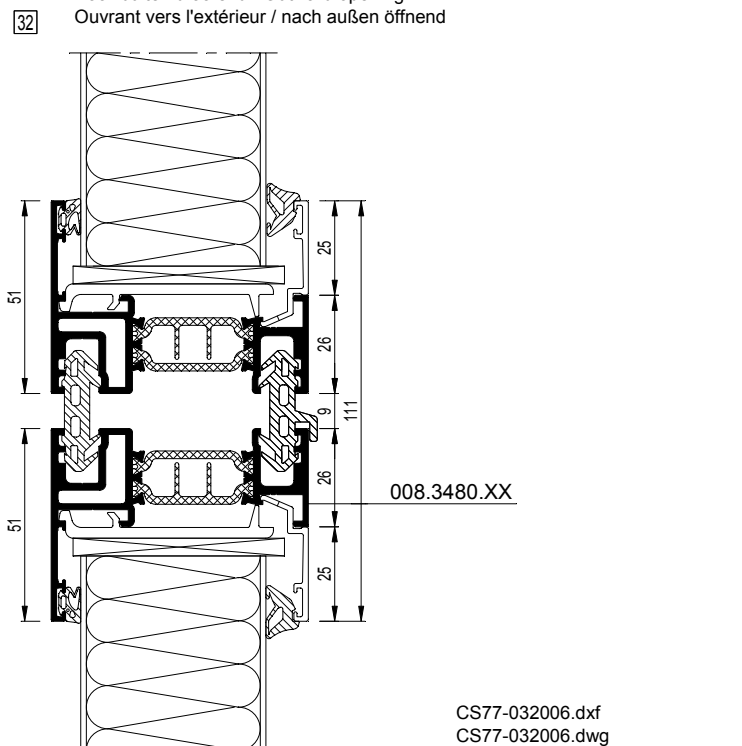
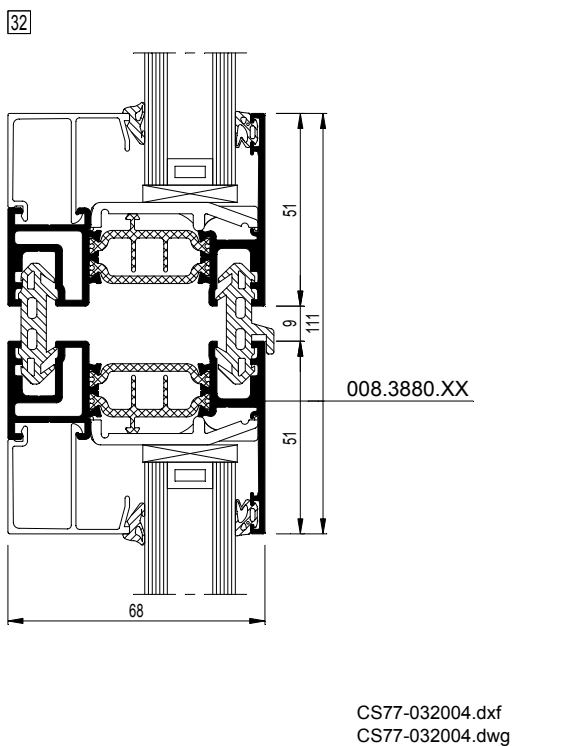
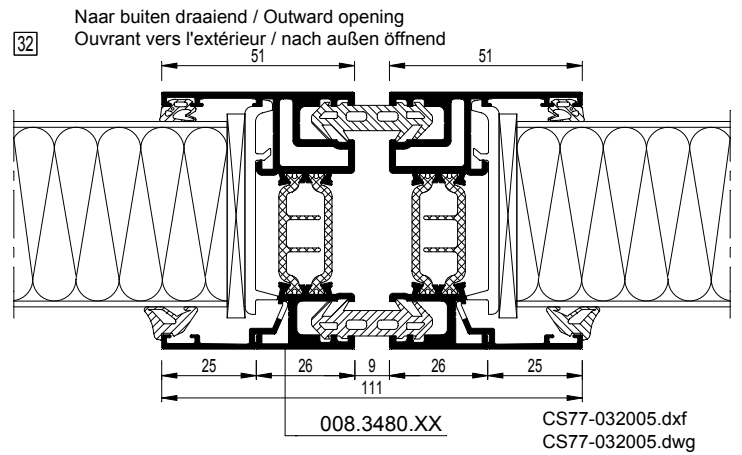
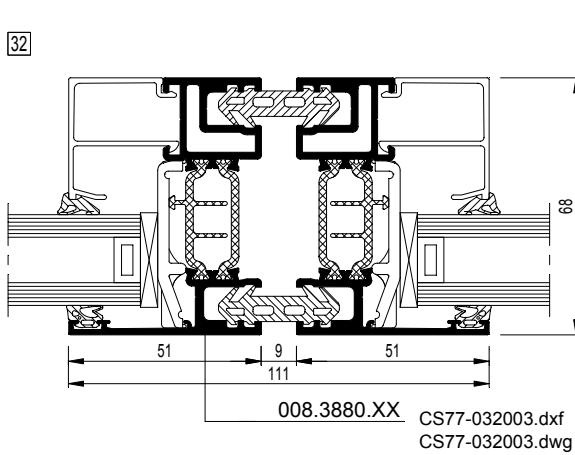
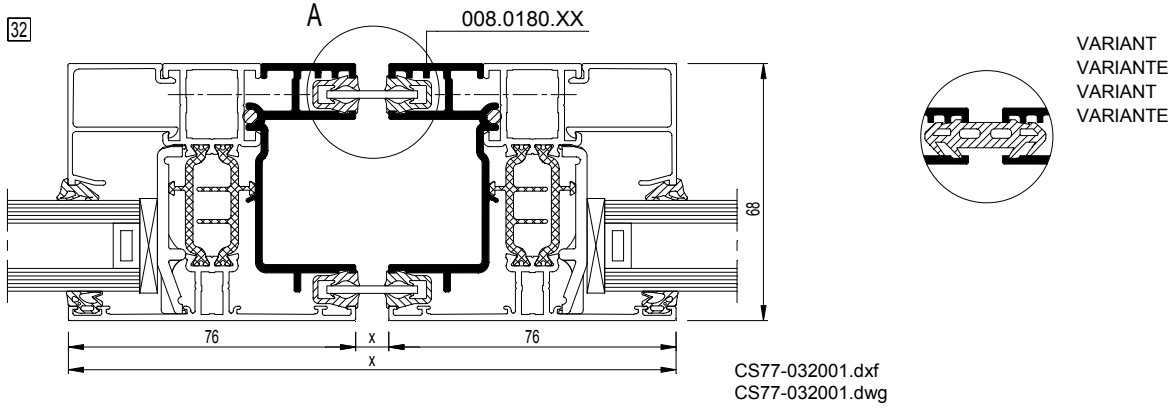
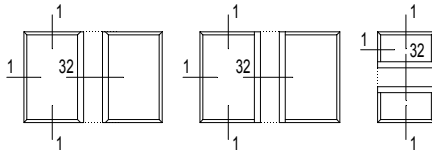
CS77-031010.dxf  
 CS77-031010.dwg

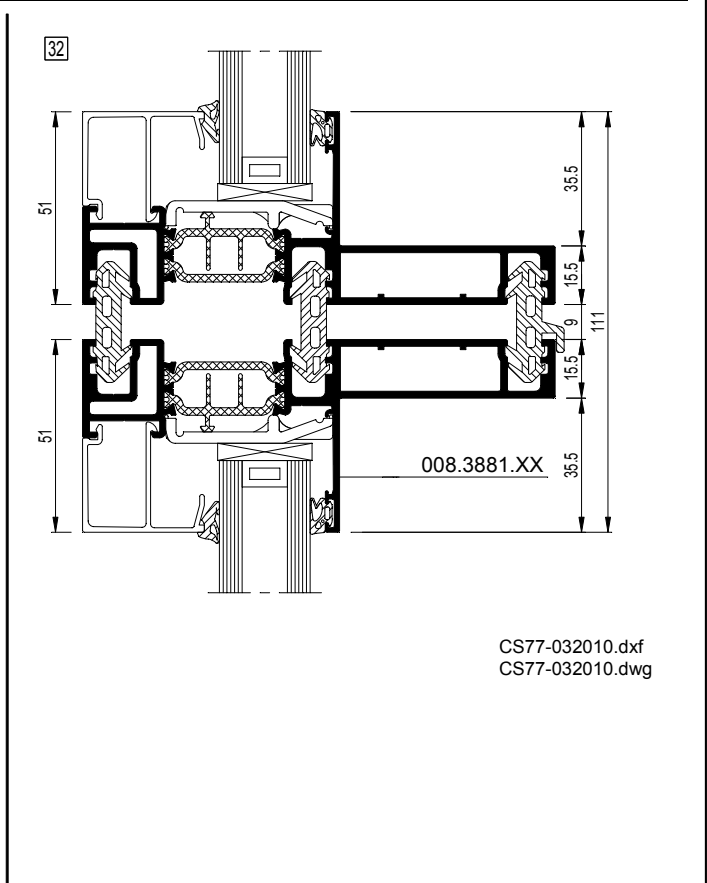
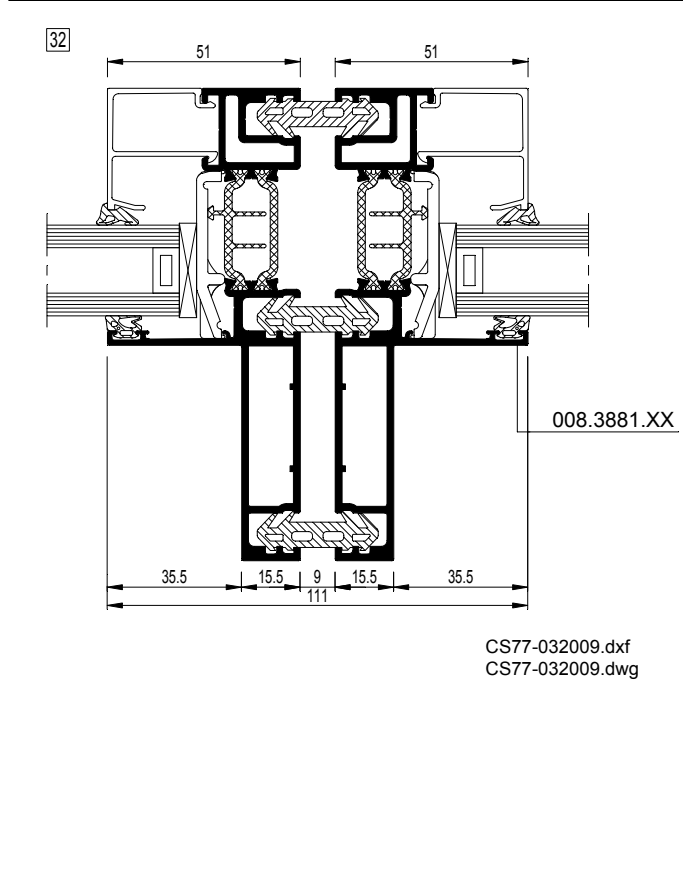
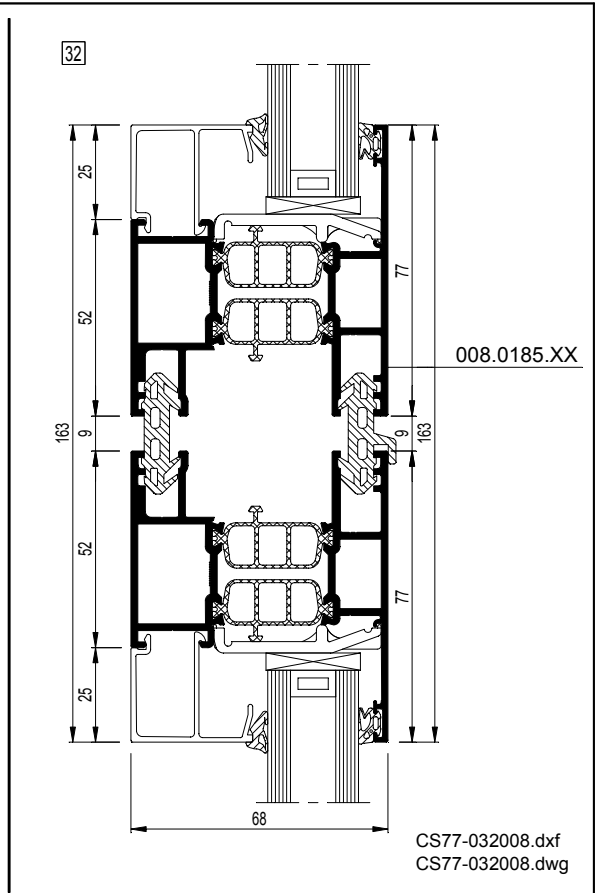
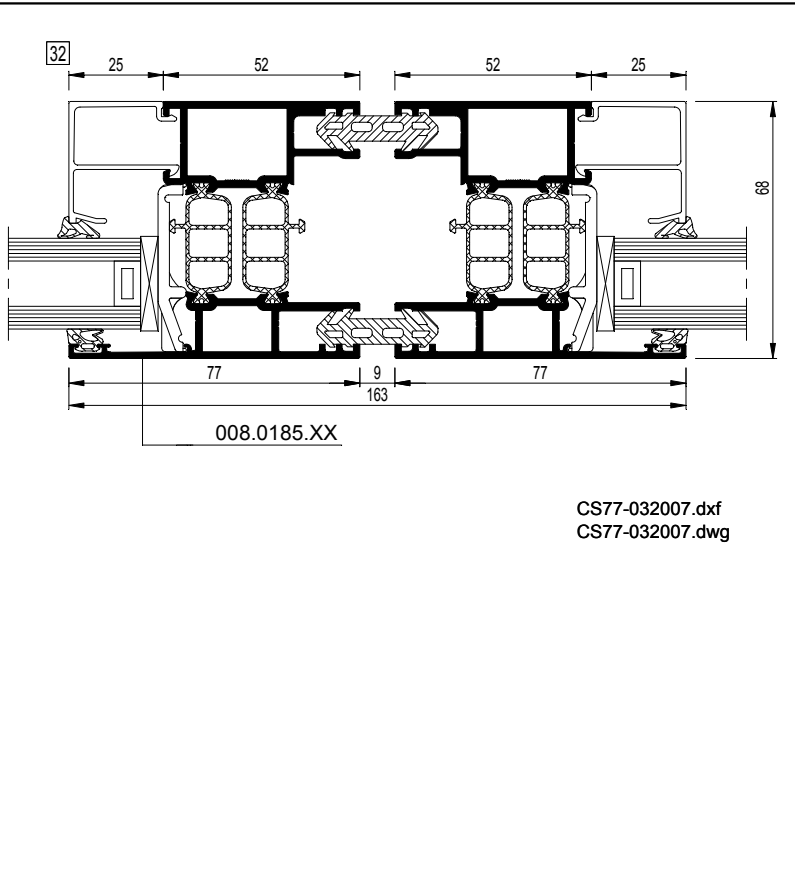
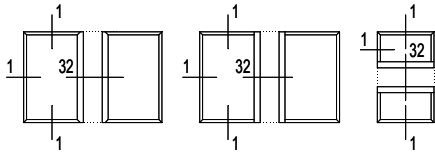
## 008.3894.XX

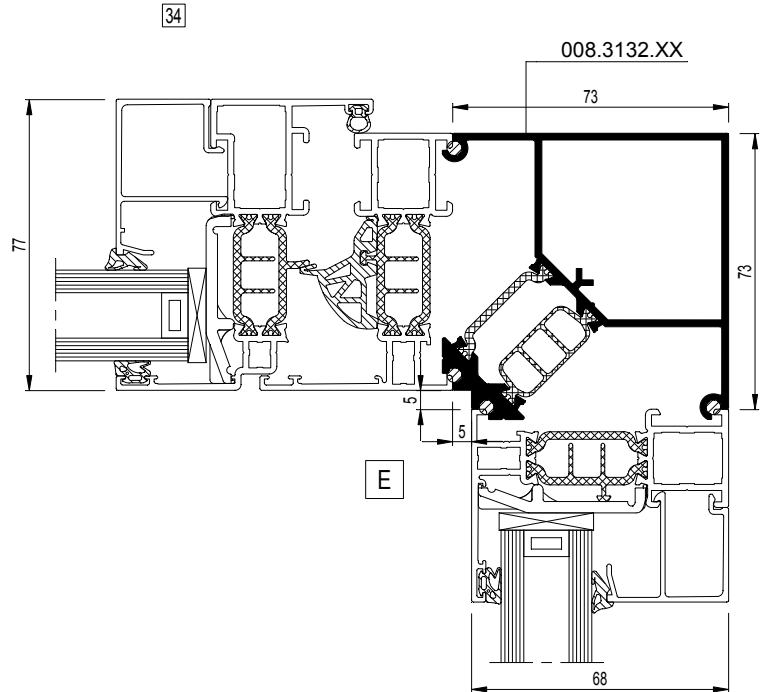
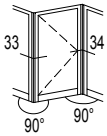
$I_x = 29.84 \text{ cm}^4$



CS77-031011.dxf  
 CS77-031011.dwg

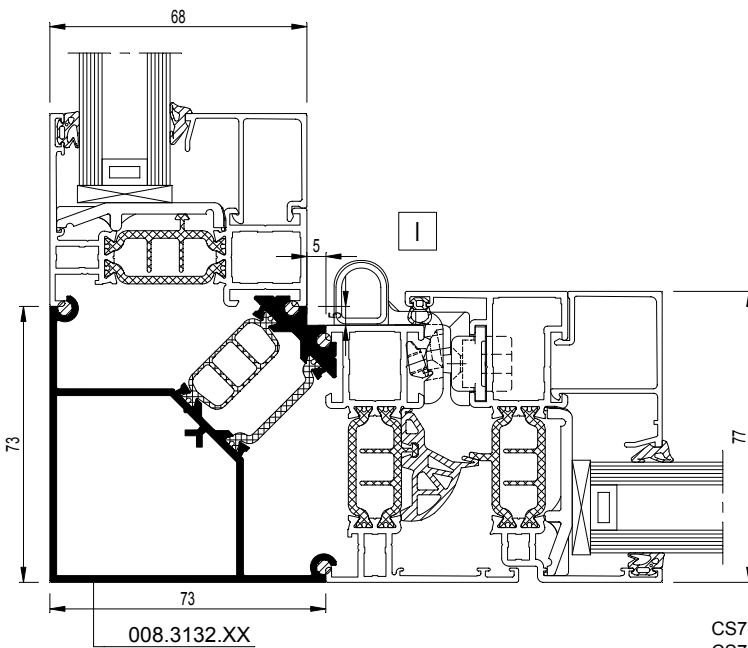




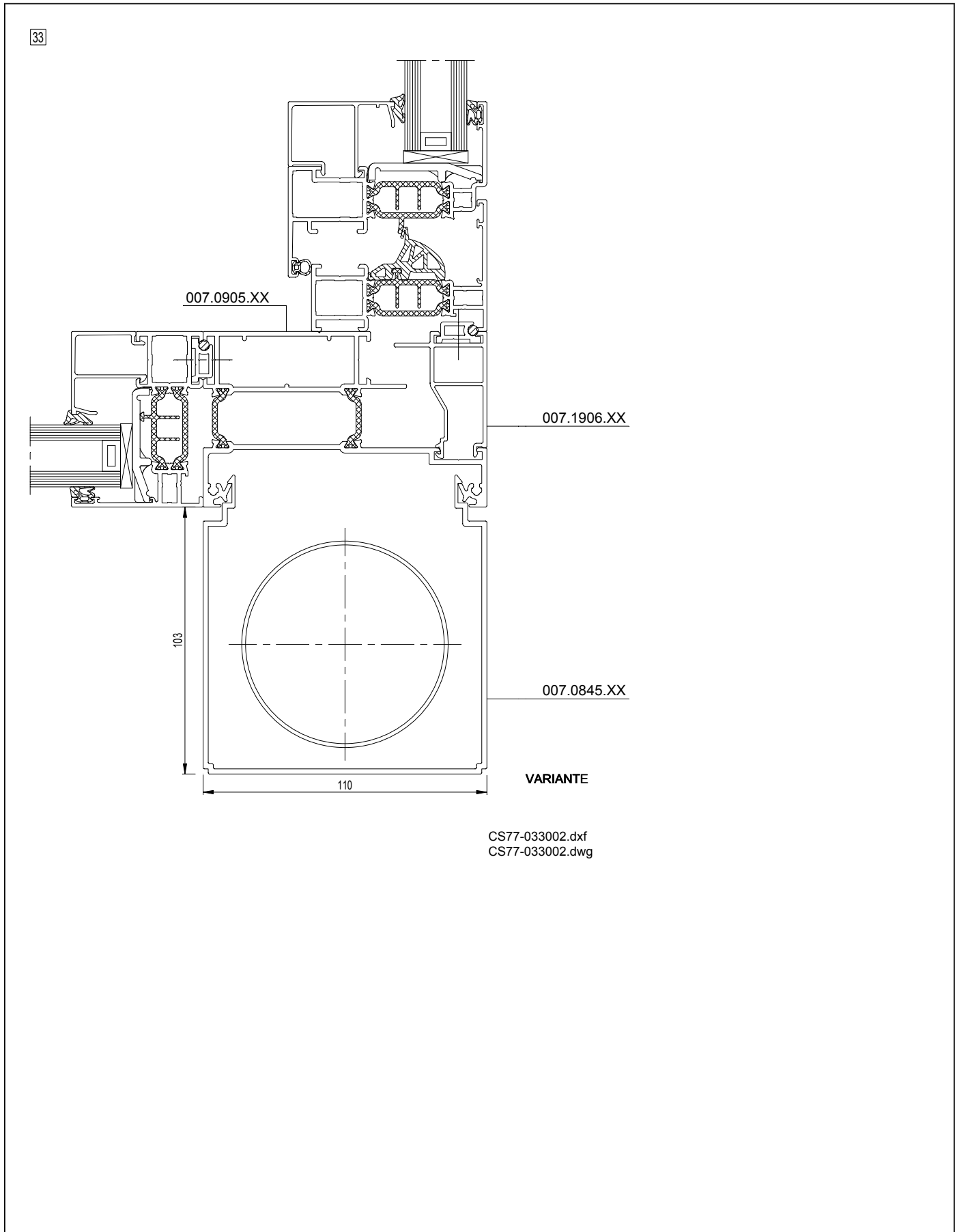
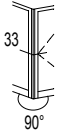


CS77-034001.dxf  
 CS77-034001.dwg

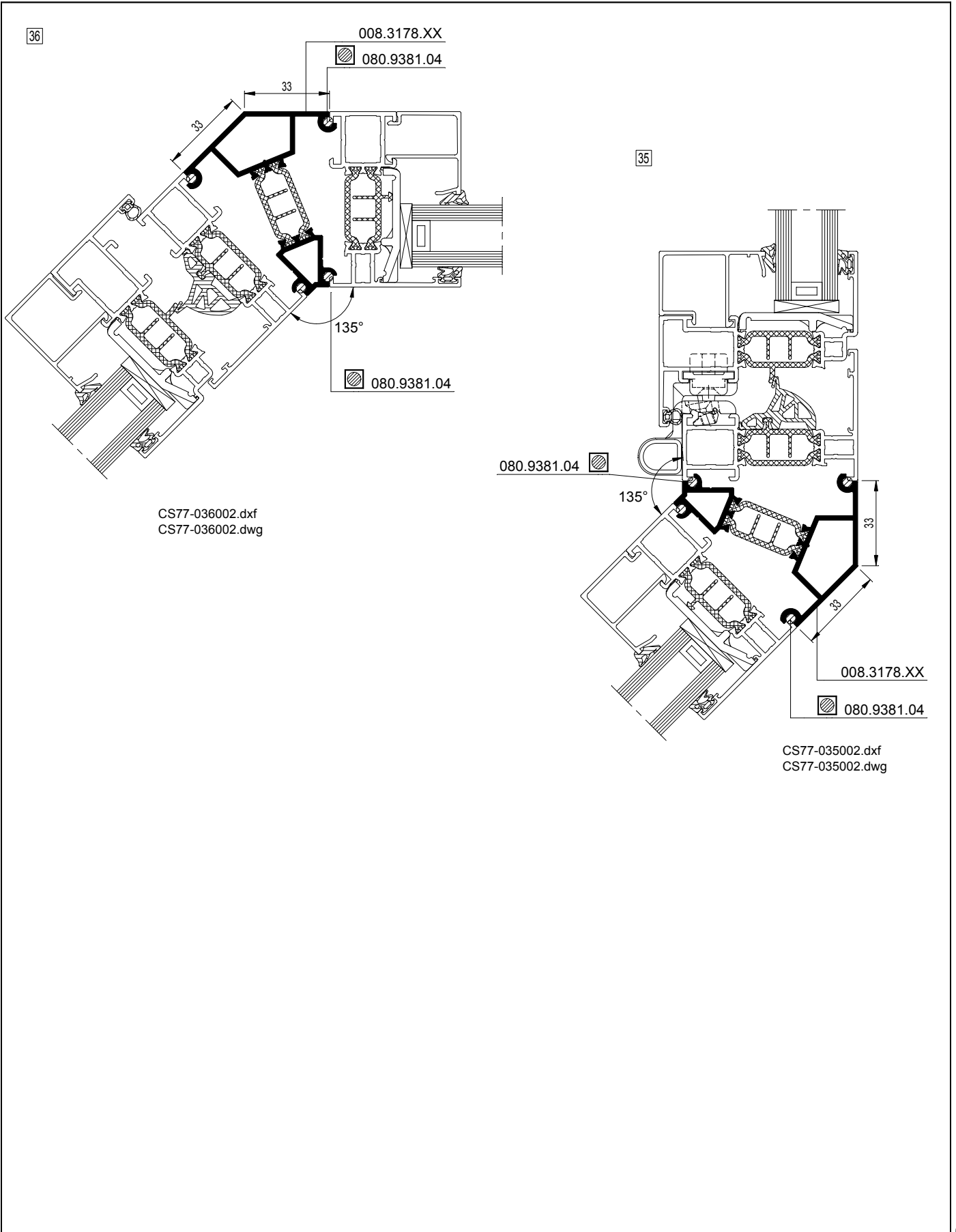
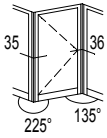
33

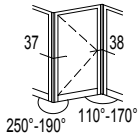


CS77-033001.dxf  
 CS77-033001.dwg

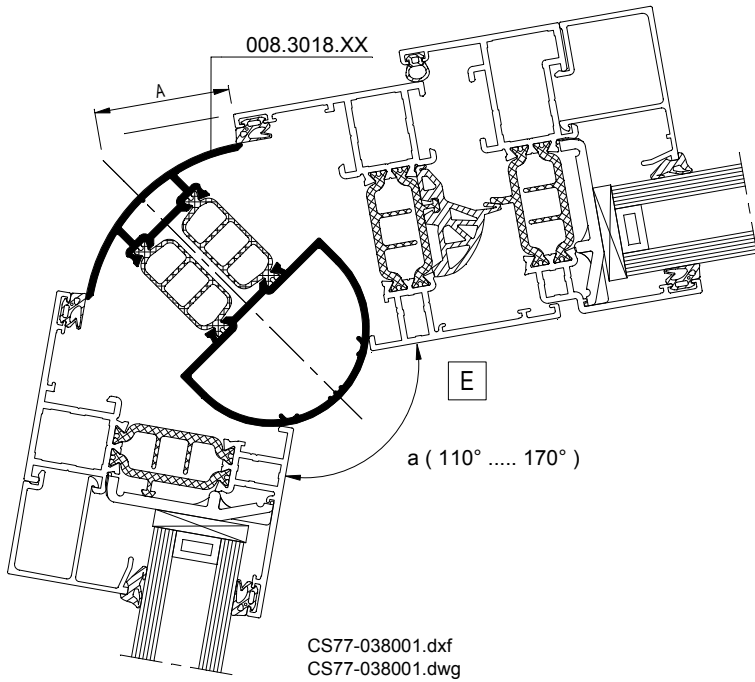




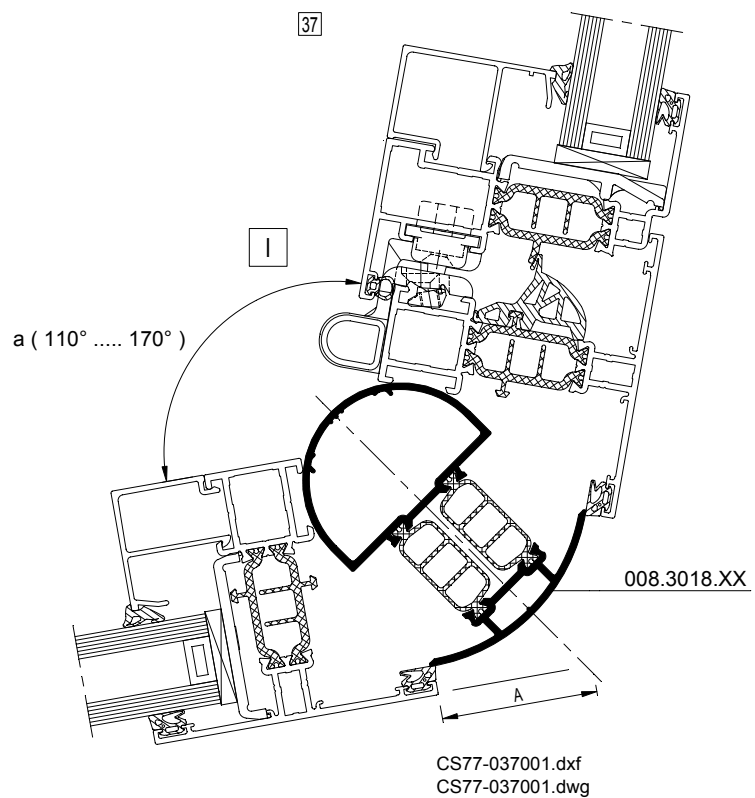




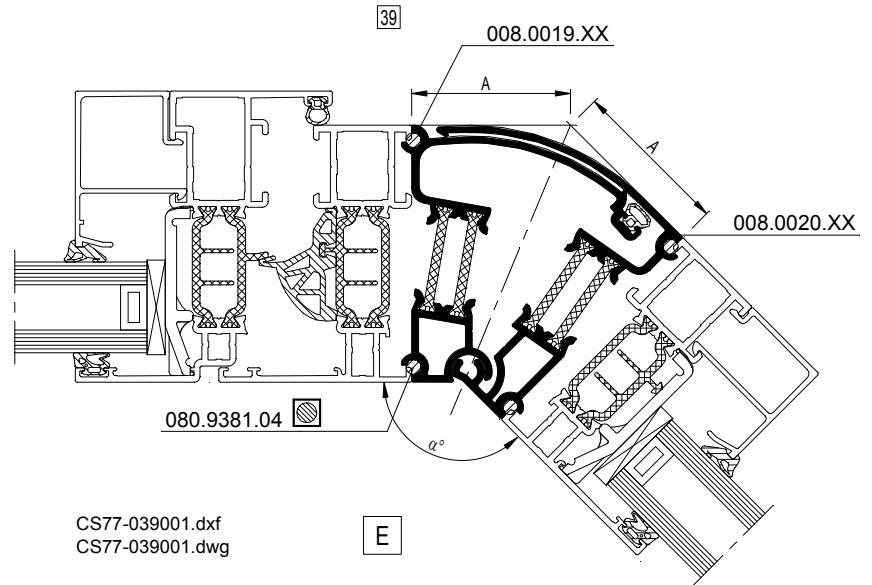
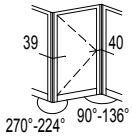
38



37

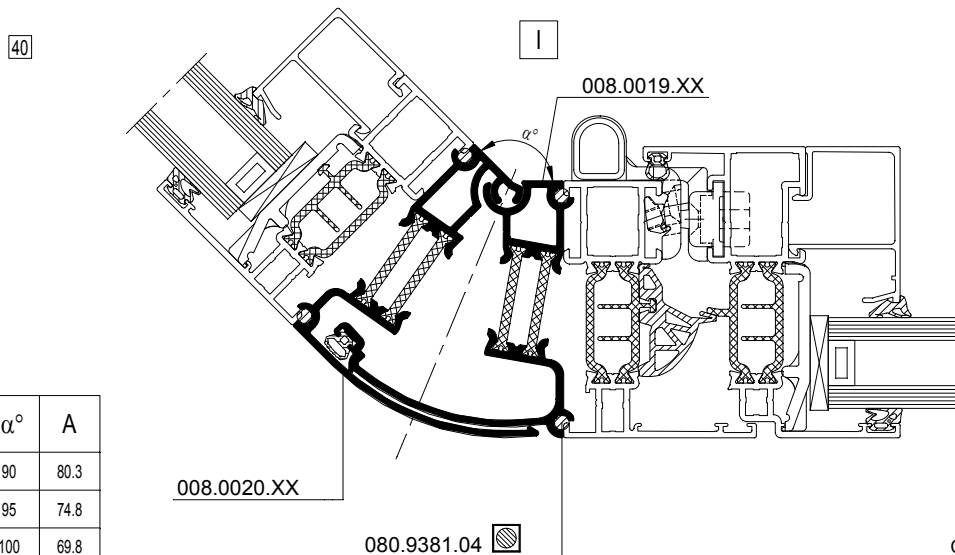


a	A
170°	4
160°	8
150°	12.5
140°	17
130°	22
120°	27.5
110°	33.5



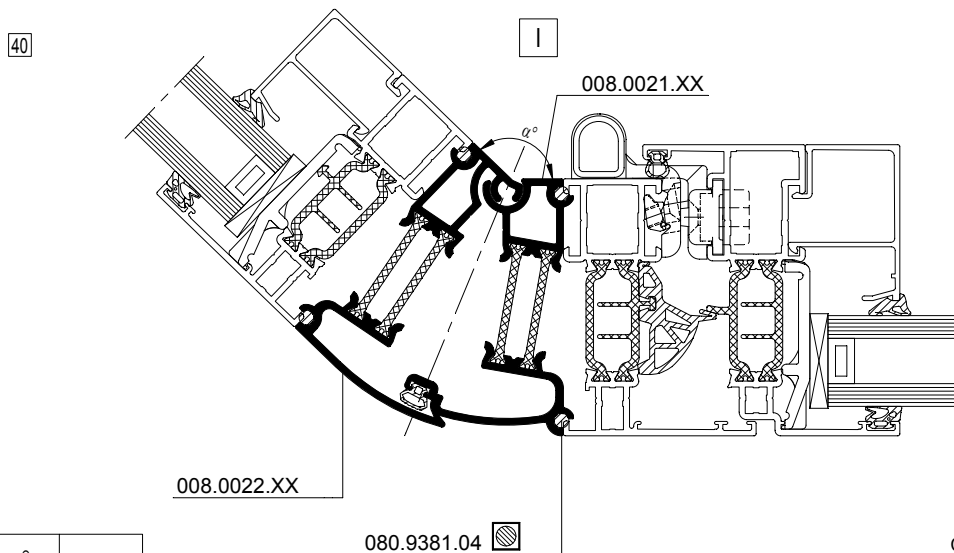
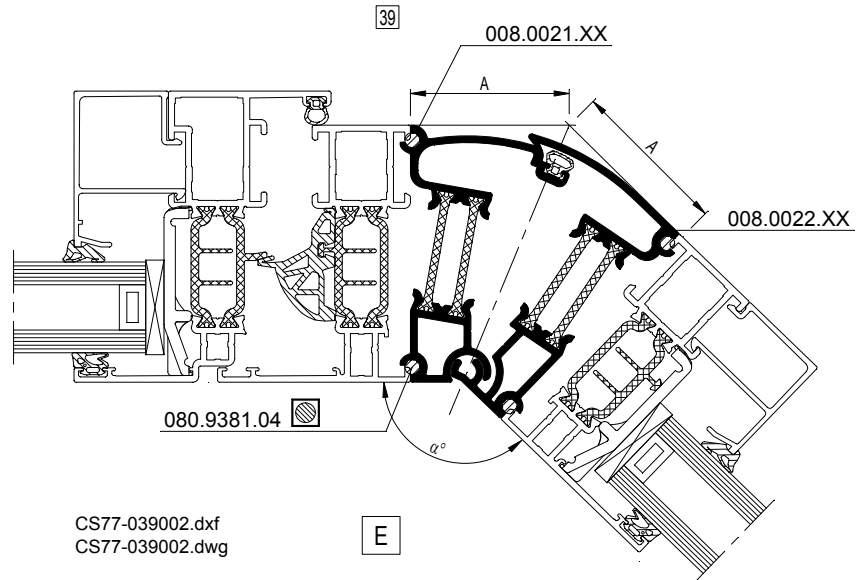
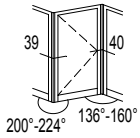
CS77-039001.dxf  
 CS77-039001.dwg

E



$\alpha^\circ$	A
90	80.3
95	74.8
100	69.8
105	65.2
110	60.8
115	56.7
120	52.8
125	49.1
130	45.5
135	42.1
max.136°	41.5

CS77-040001.dxf  
 CS77-040001.dwg



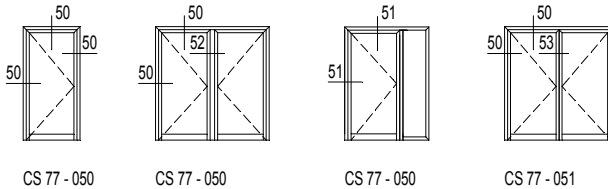
$\alpha^\circ$	A
136	41.3
140	38.7
145	35.5
150	32.5
155	29.5
max.160	26.5

## CS 77 (doors)



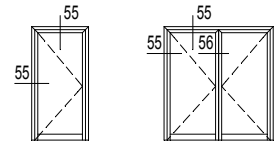
### 5 Doors inward opening

Inward opening doors



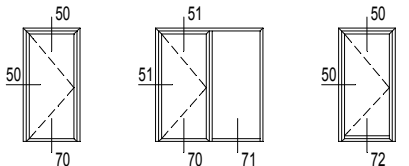
CS 77 - 050 CS 77 - 050 CS 77 - 050 CS 77 - 051

... with window profiles



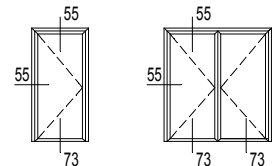
CS 77 - 053 CS 77 - 053

Inward opening doors with vent crimped all round



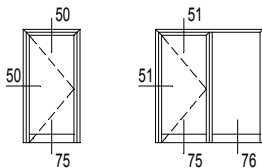
CS 77 - 054 CS 77 - 054 CS 77 - 055

... with window profiles



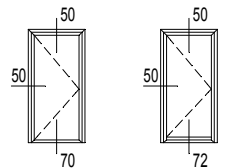
CS 77 - 053 CS 77 - 053

Doors with transom-mullions



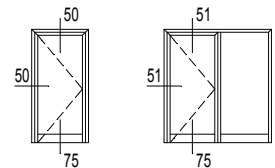
CS 77 - 056 CS 77 - 056

Doors with watertight connection profile



CS 77 - 054 CS 77 - 055

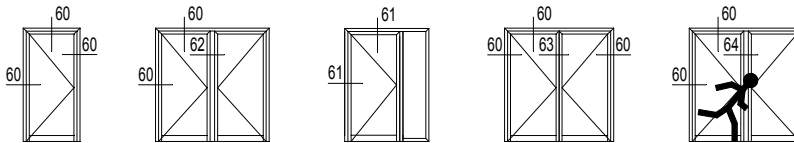
Doors with bottom rail door



CS 77 - 057 CS 77 - 057

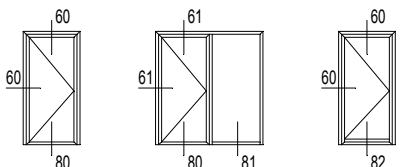
### 6 Doors outward opening

Outward opening doors



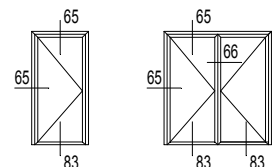
CS 77 - 060 CS 77 - 060 CS 77 - 060 CS 77 - 061 CS 77 - 061

Outward opening doors with vent crimped all round



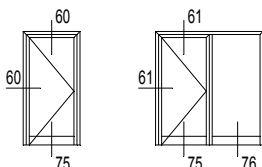
CS 77 - 064 CS 77 - 064 CS 77 - 064

... with window profiles



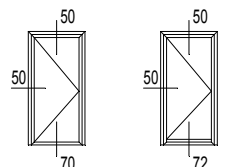
CS 77 - 063 CS 77 - 063

Doors with transom-mullions



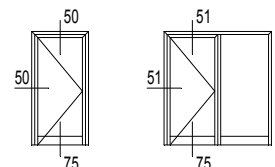
CS 77 - 056 CS 77 - 056

Doors with watertight connection profile

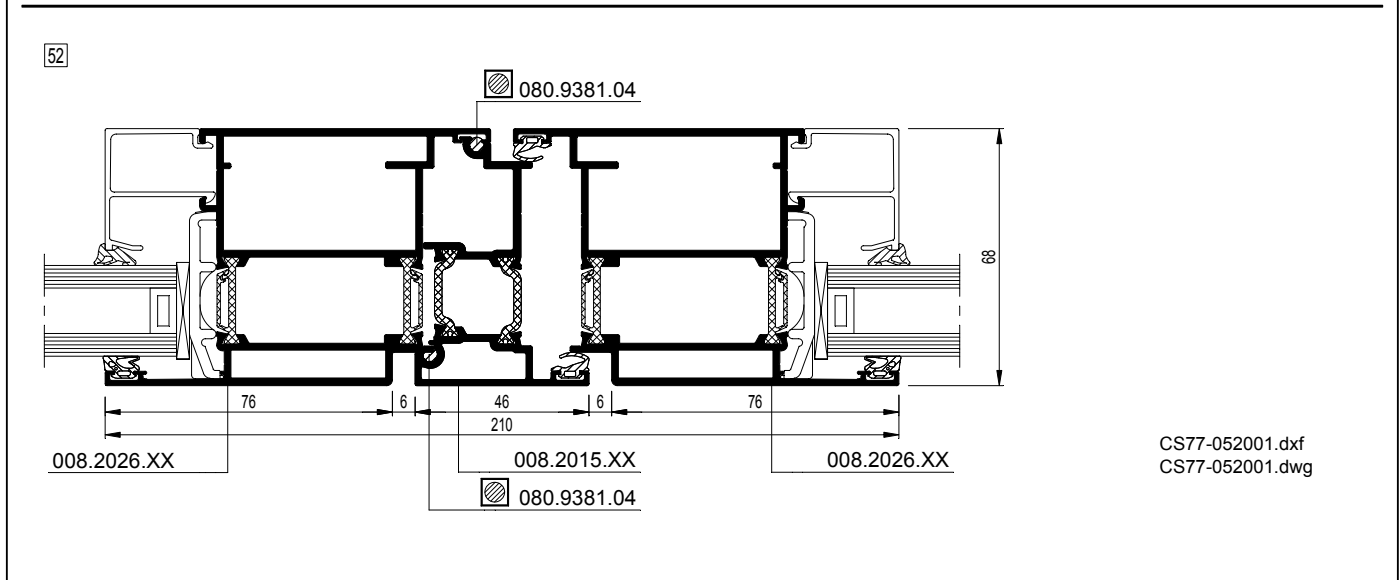
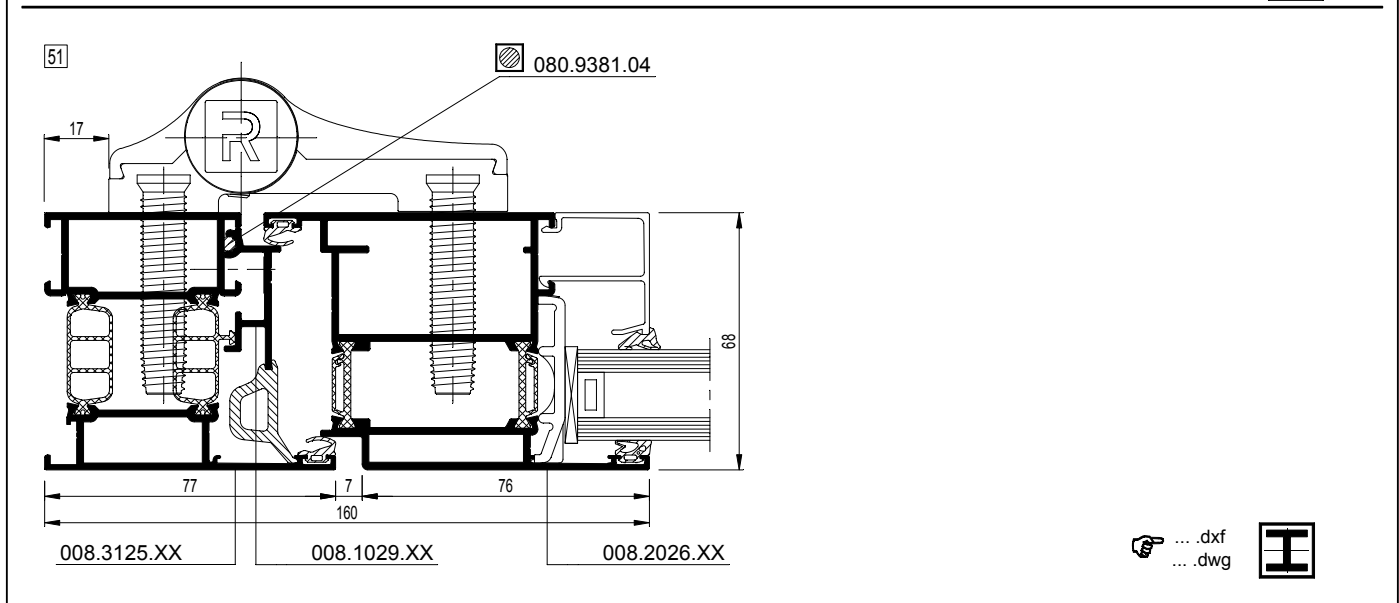
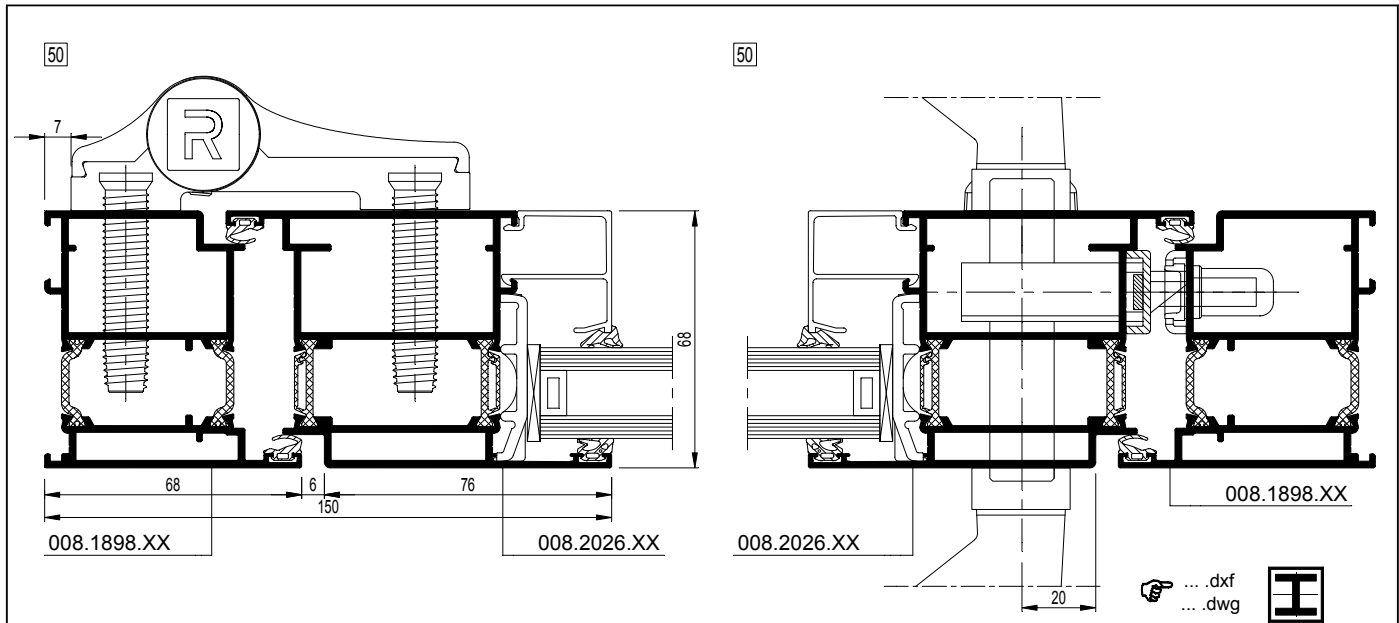
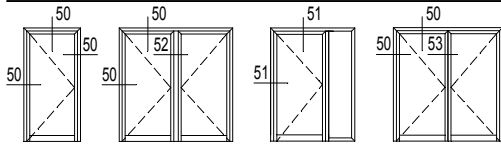


CS 77 - 064 CS 77 - 065

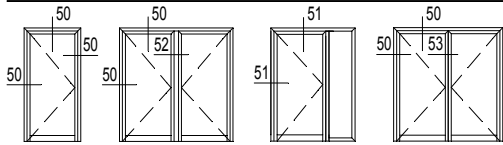
Doors with bottom rail door



CS 77 - 057 CS 77 - 057

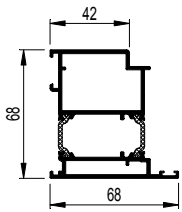


CS77-052001.dxf  
 CS77-052001.dwg



008.1898.XX

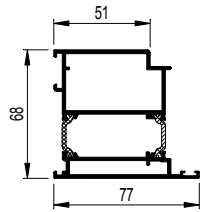
lx = 28.044 cm<sup>4</sup>



50 CS77-050001.dxf  
 CS77-050001.dwg

008.0598.XX

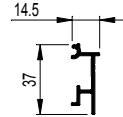
lx = 31.523 cm<sup>4</sup>



50 CS77-050002.dxf  
 CS77-050002.dwg

008.1029.XX

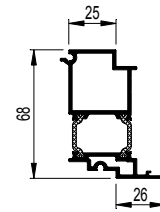
lx = 1.460 cm<sup>4</sup>



51 CS77-051001.dxf  
 CS77-051001.dwg

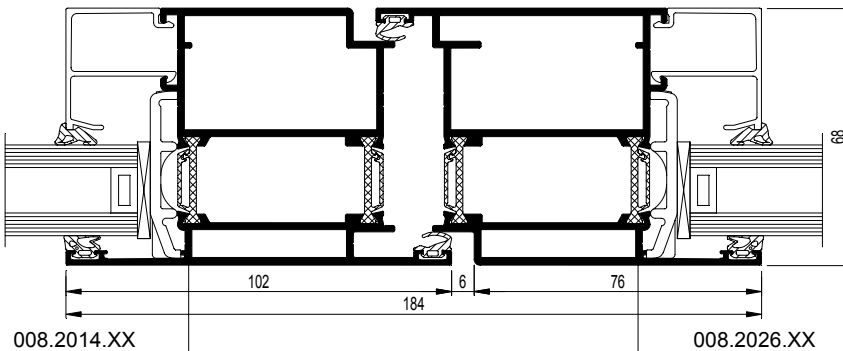
008.2027.XX

lx = 19.146 cm<sup>4</sup>



51 CS77-051002.dxf  
 CS77-051002.dwg

53 ZT



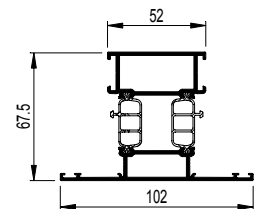
008.2014.XX

008.2026.XX

CS77-053001.dxf  
 CS77-053001.dwg

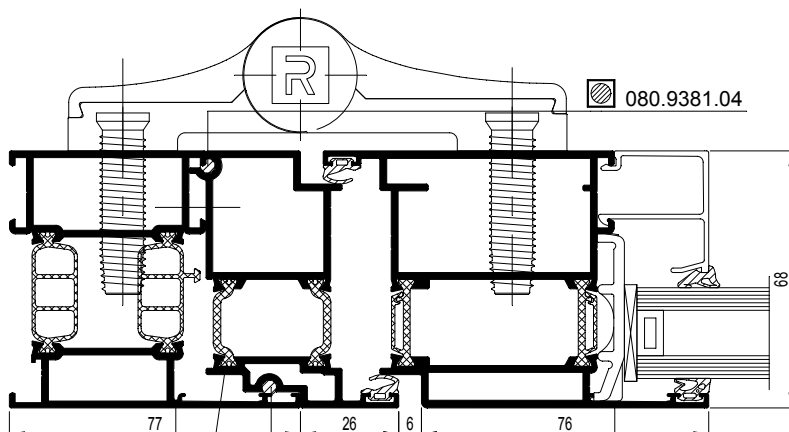
008.3114.XX

lx = 31.671 cm<sup>4</sup>



51 CS77-051003.dxf  
 CS77-051003.dwg

51



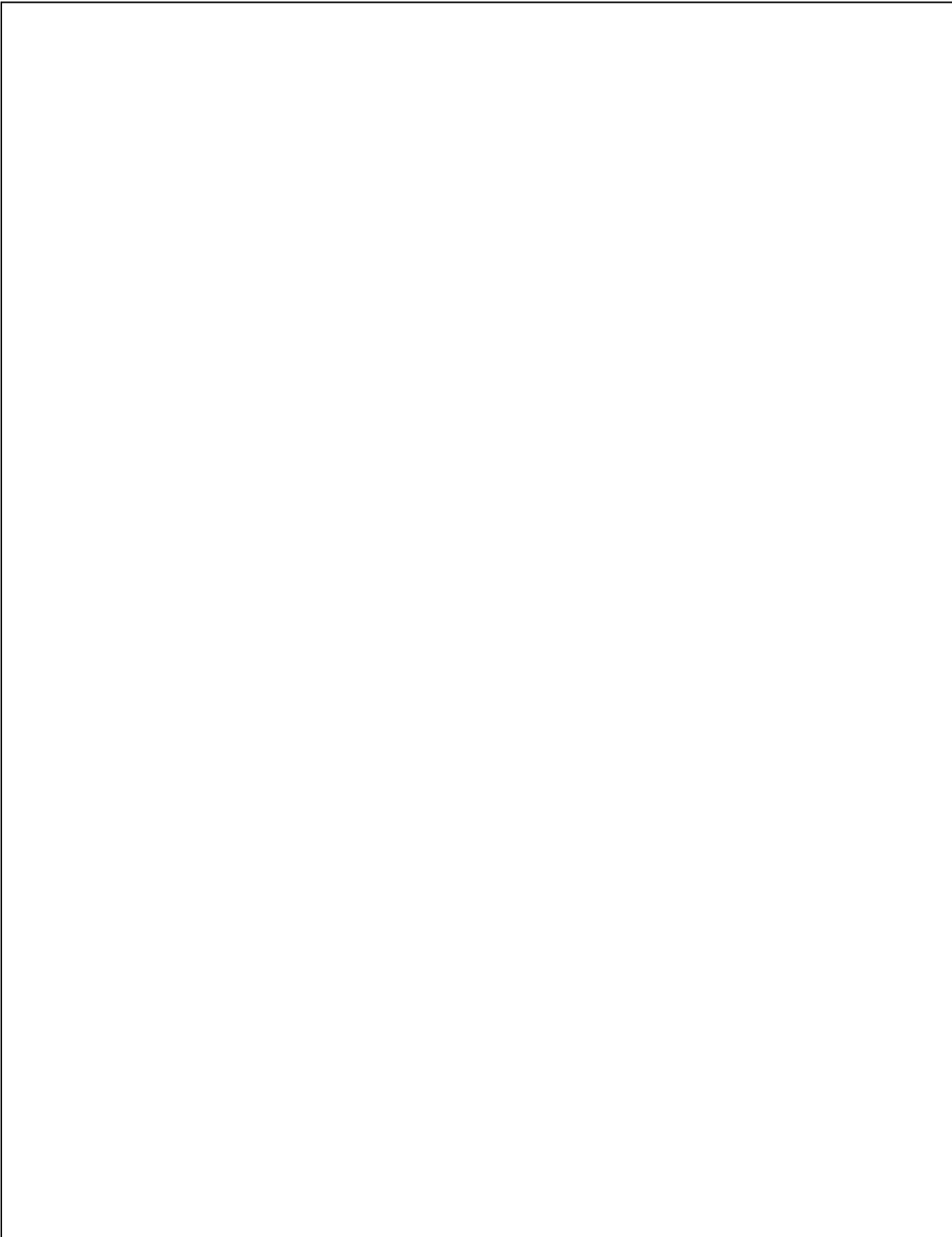
008.3125.XX

008.2026.XX

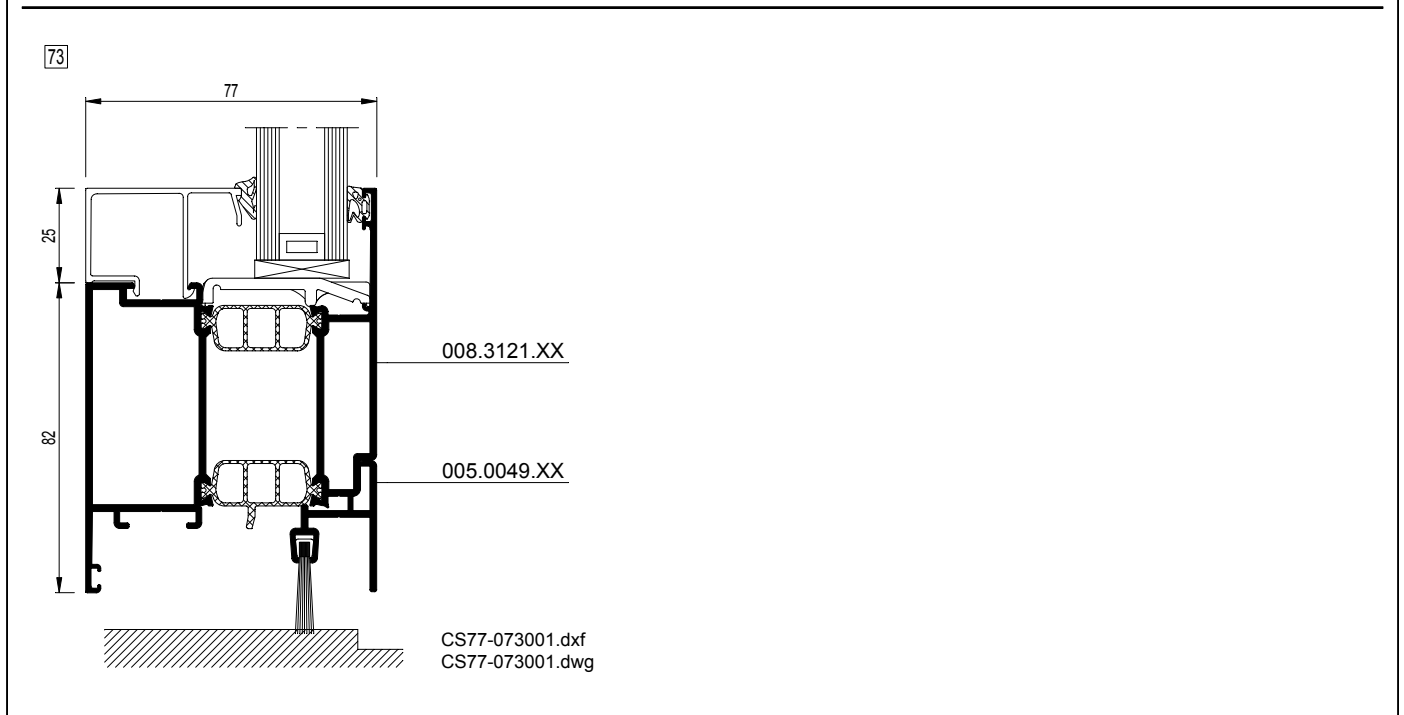
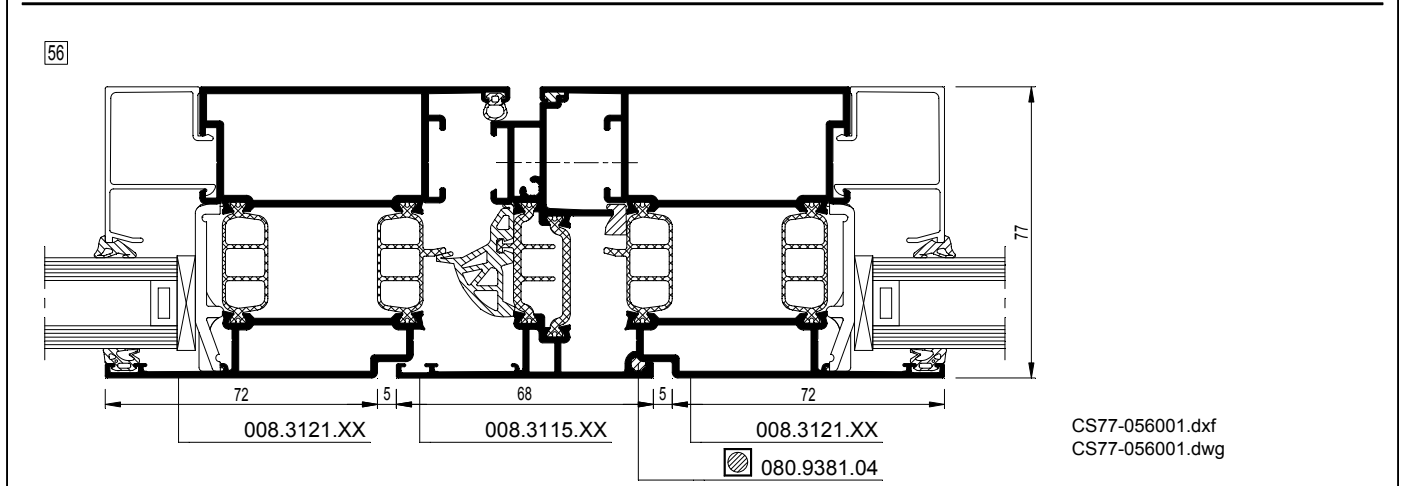
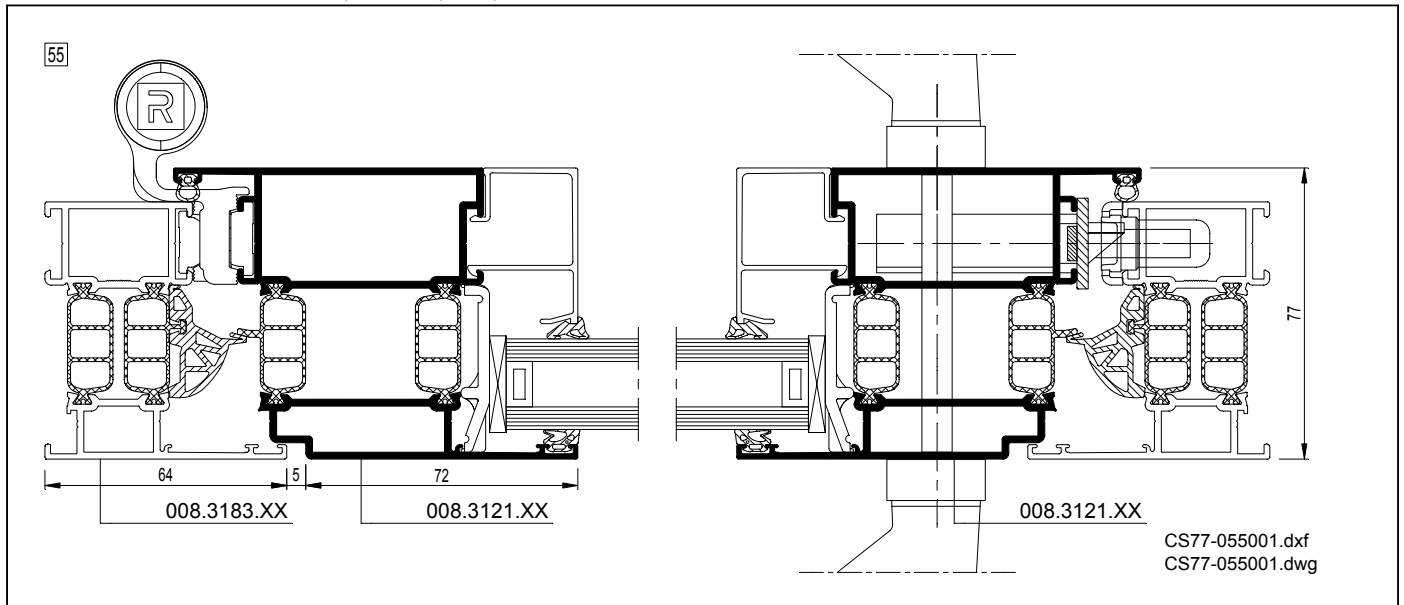
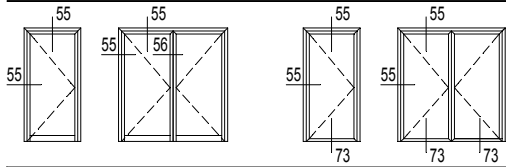
008.2027.XX

080.9381.04

CS77-051002.dxf  
 CS77-051002.dwg

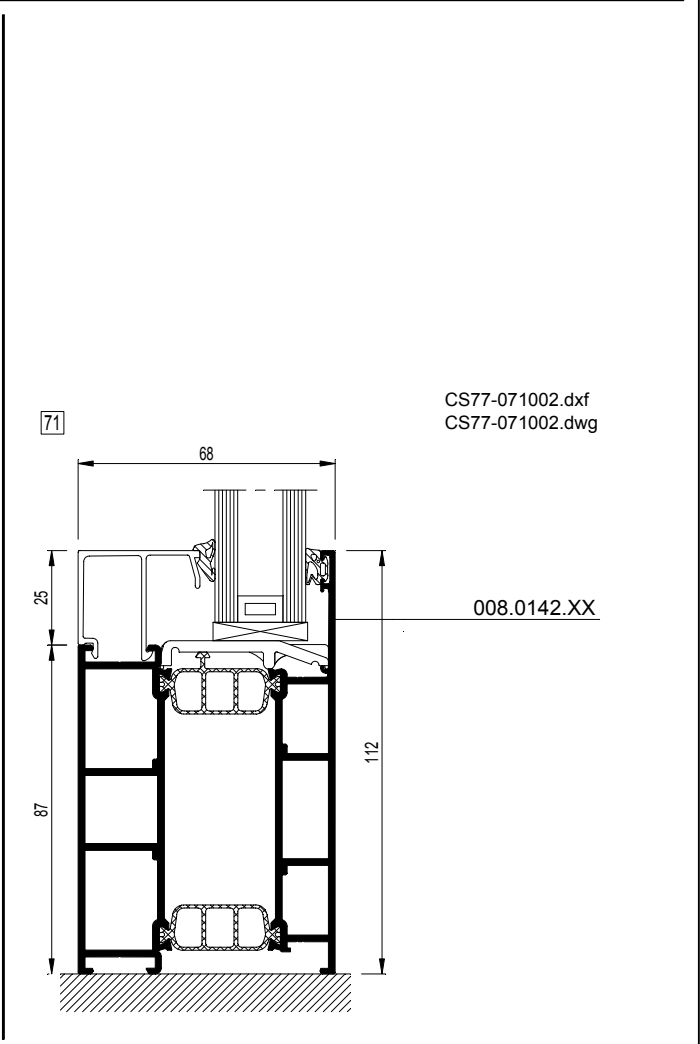
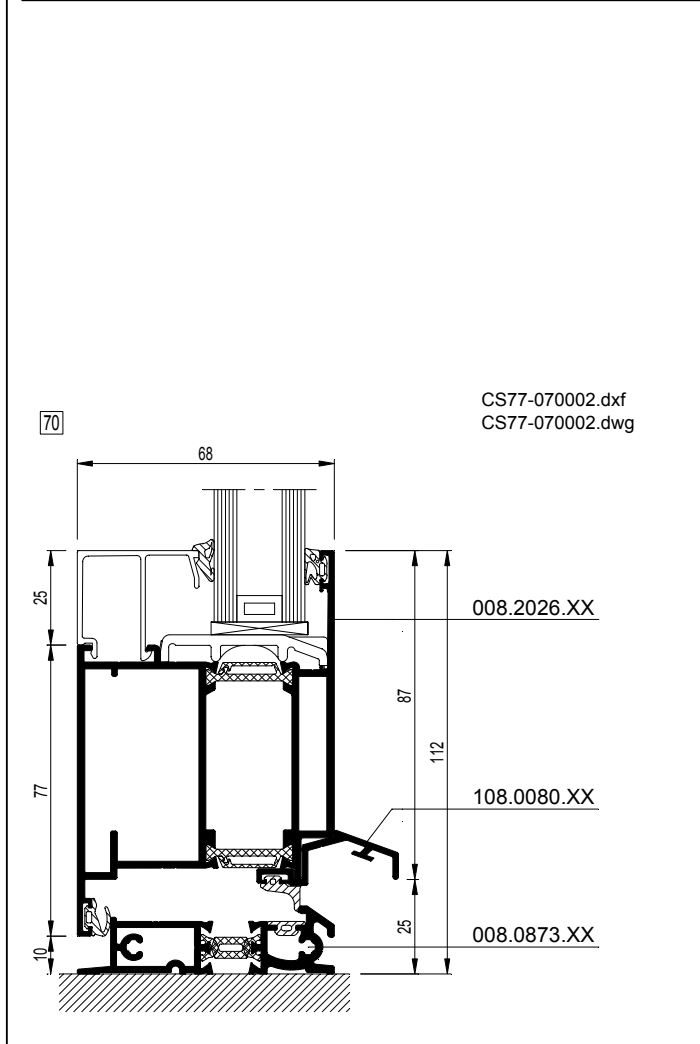
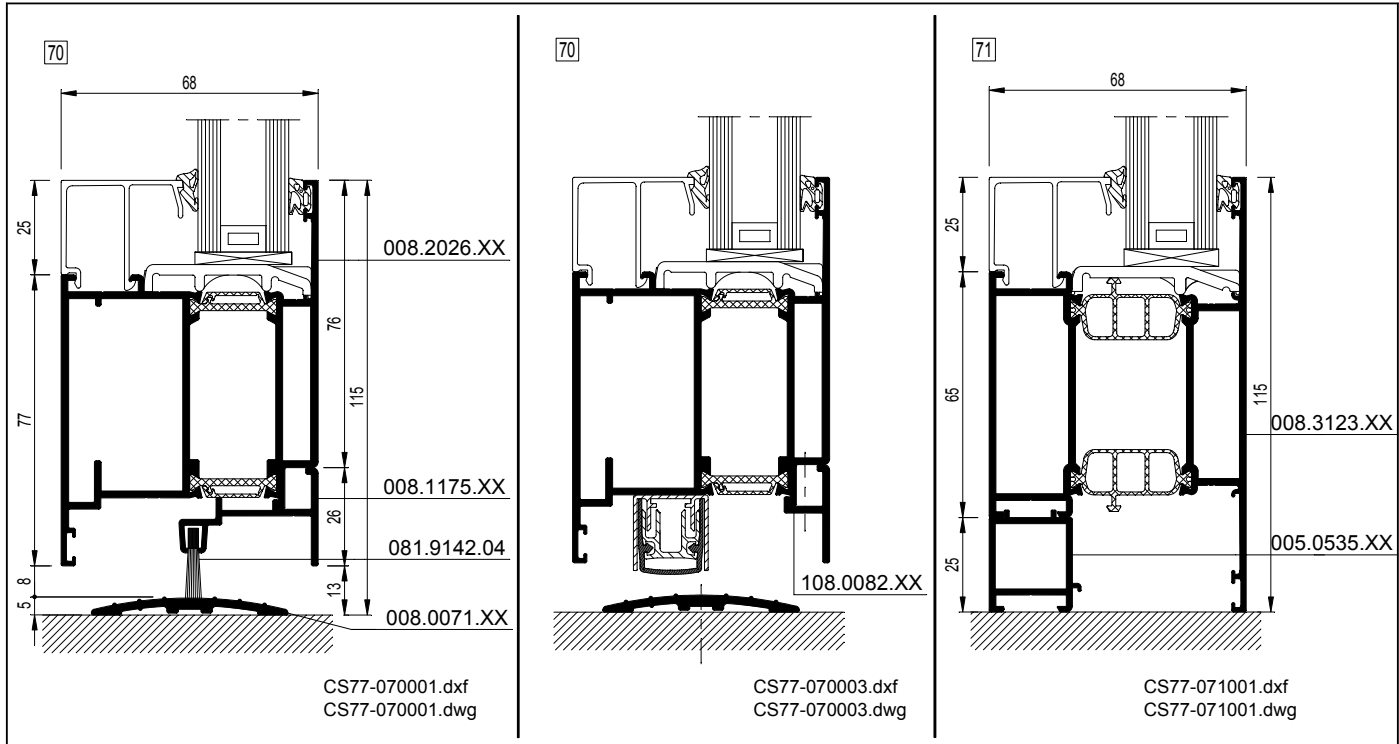
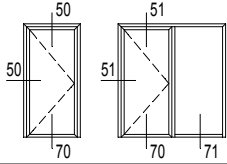






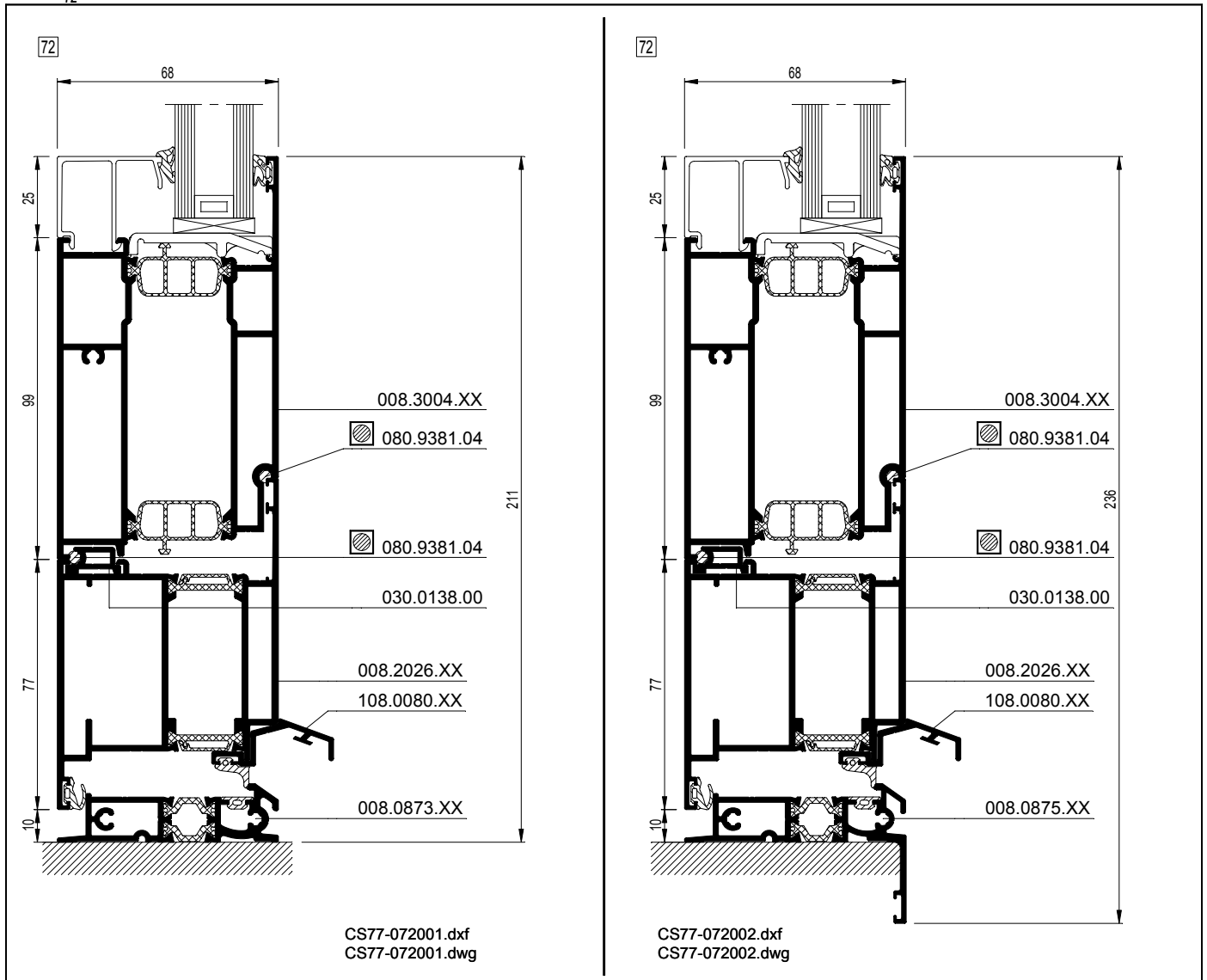
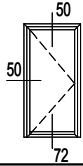
# CS 77

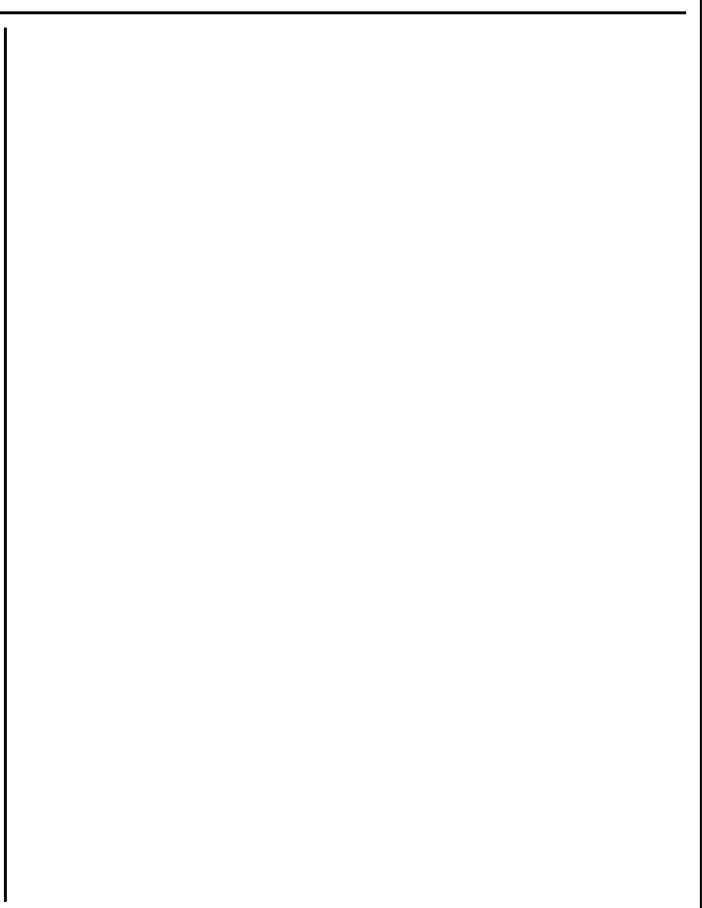
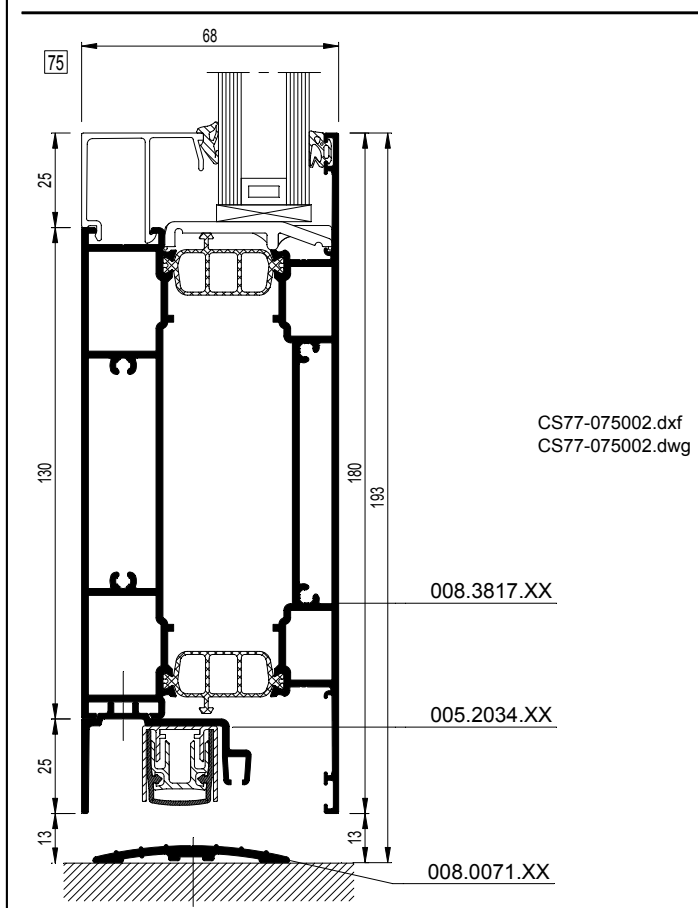
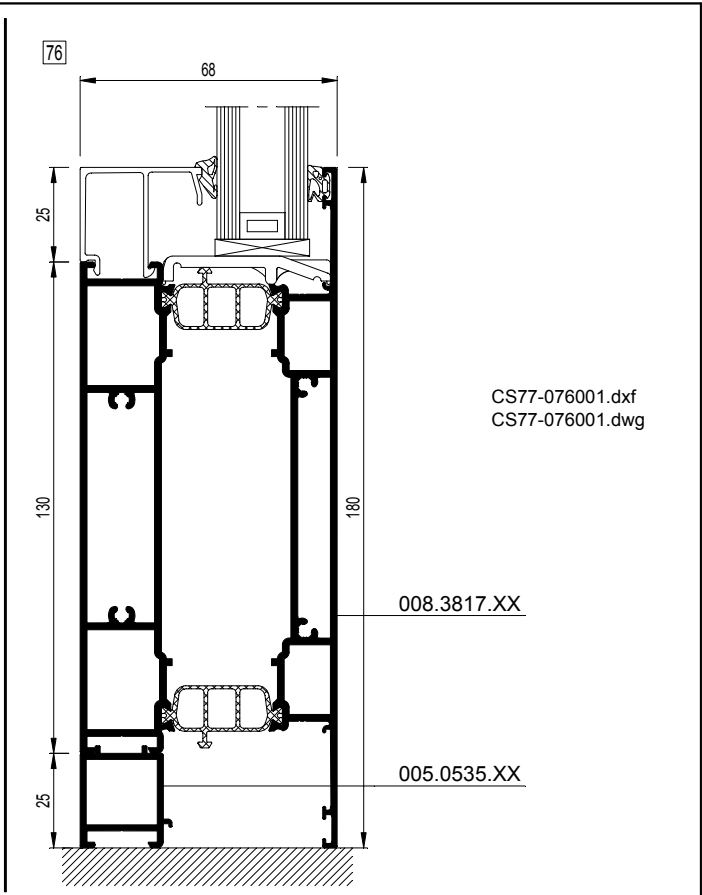
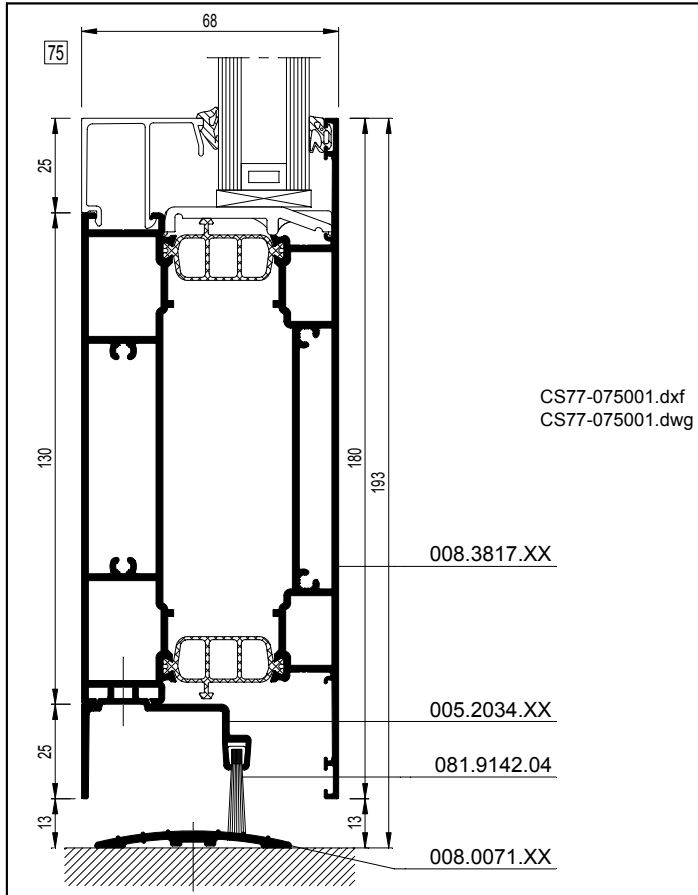
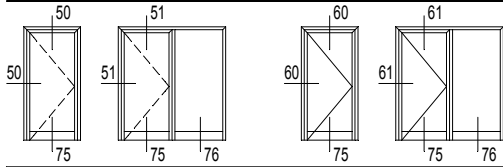
Deuren - Naar binnen draaiende deuren met deurvleugel rondom geperst  
 Portes - Portes ouvrant vers l'intérieur avec ouvrant serti tout autour  
 Doors - Inward opening doors with vent crimped all round  
 Türen - Nach innen öffnende Türen mit rundherum gepresstem Türflügel

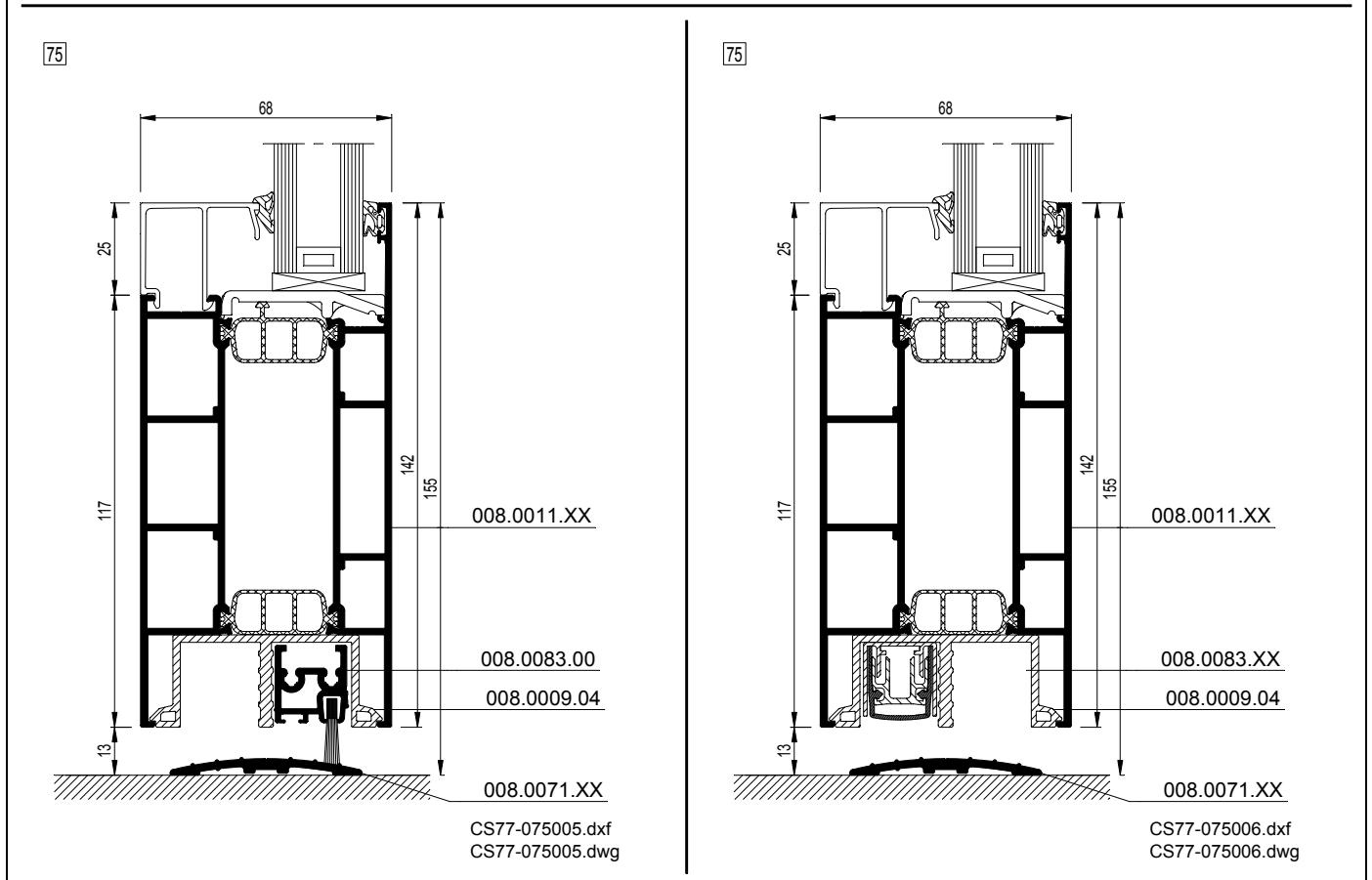
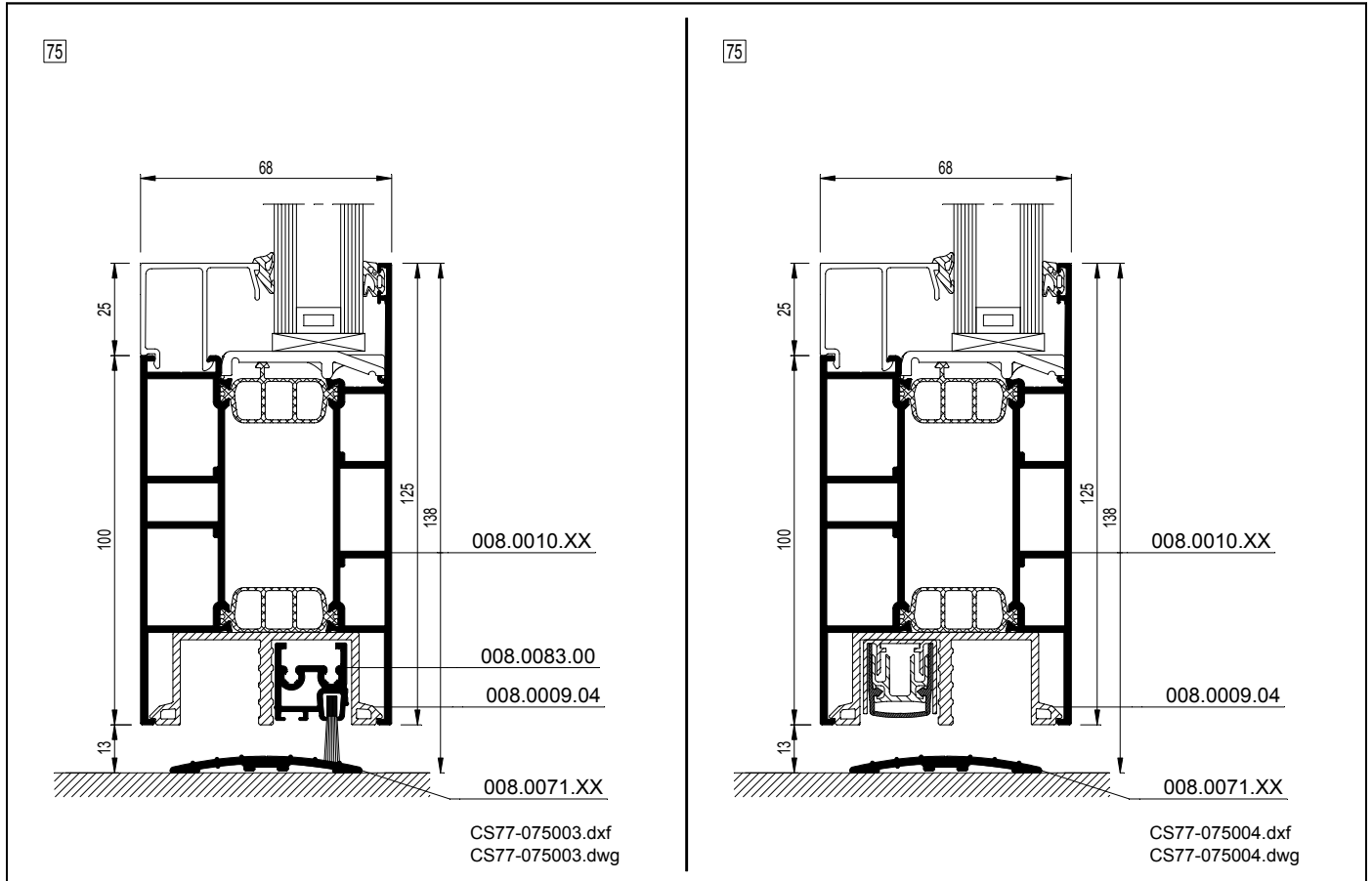
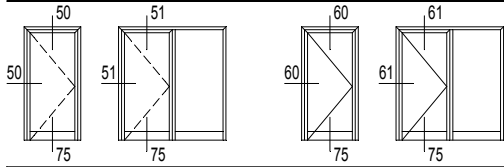


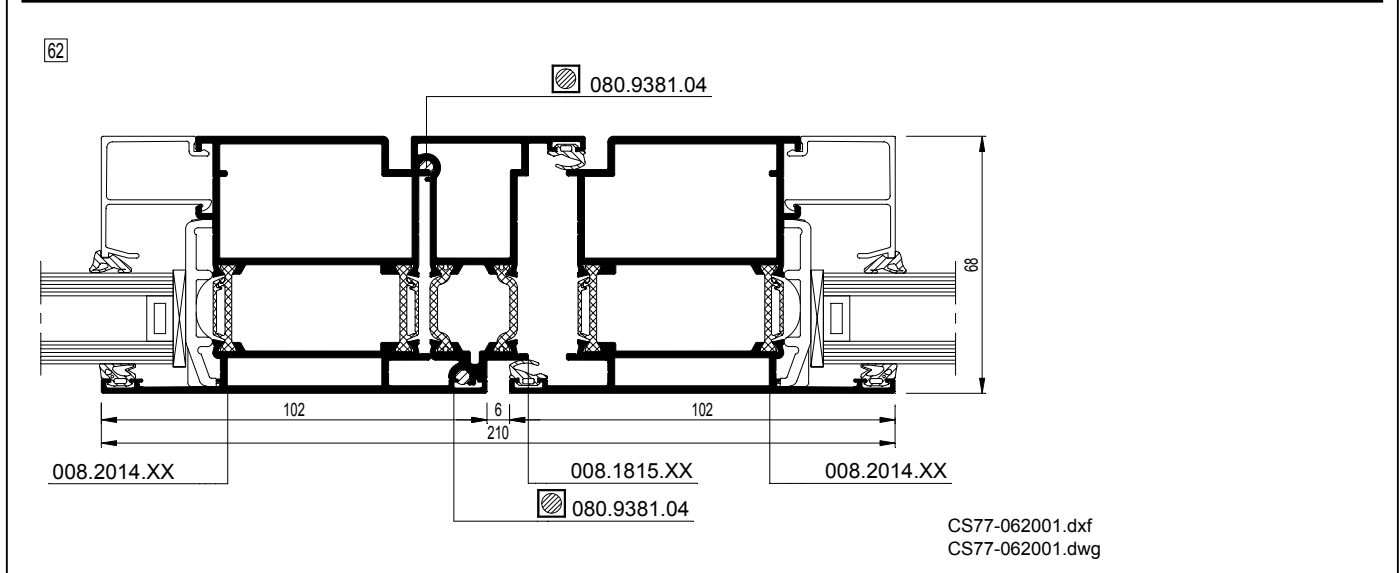
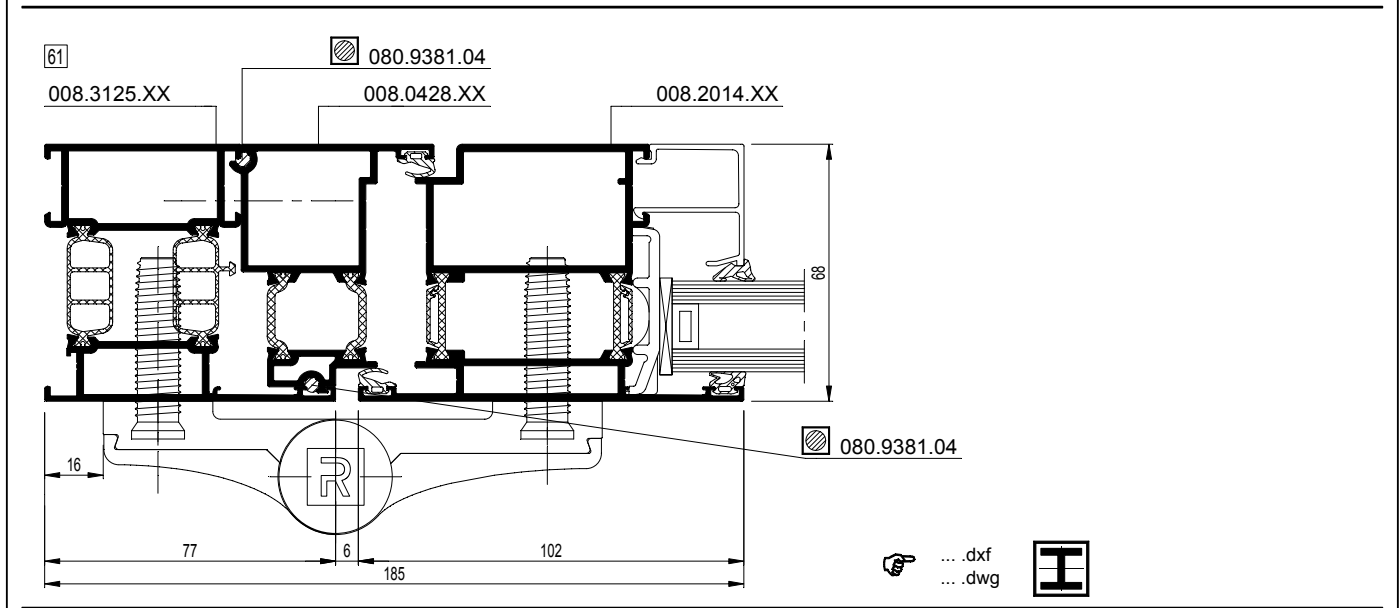
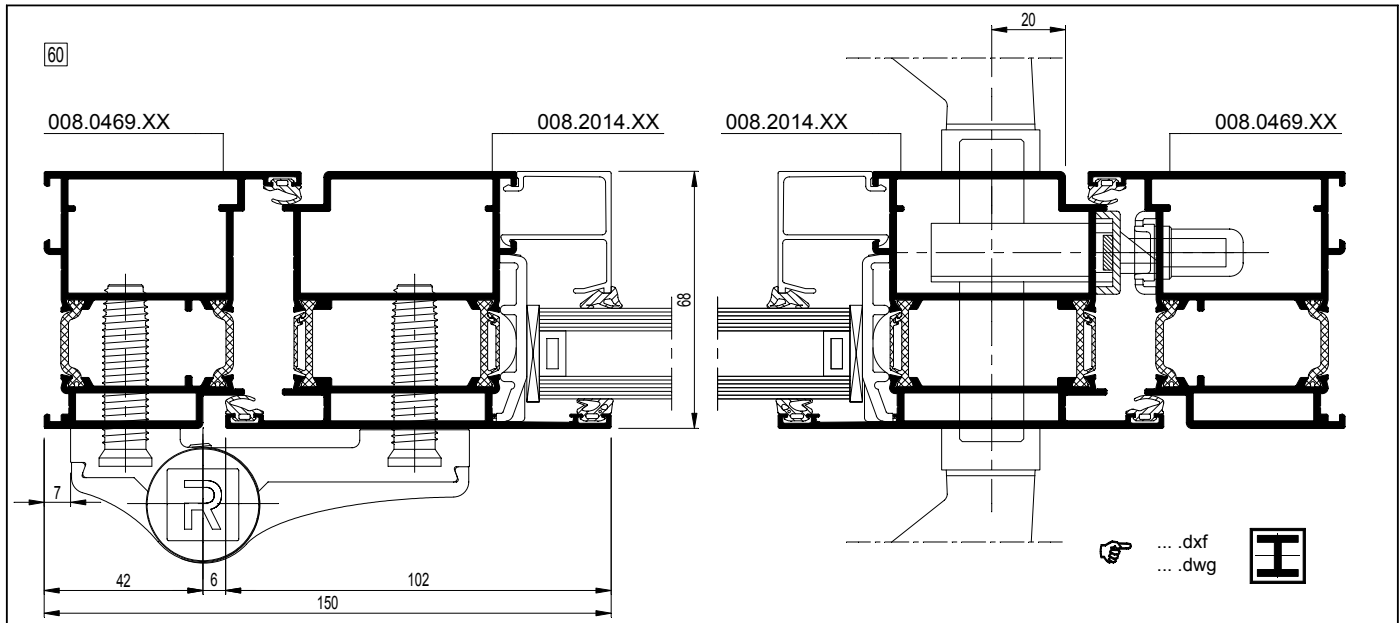
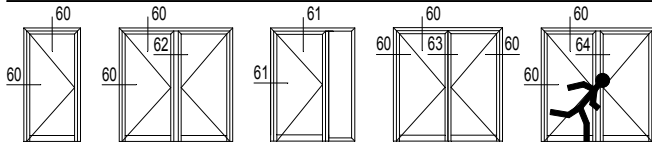
# CS 77

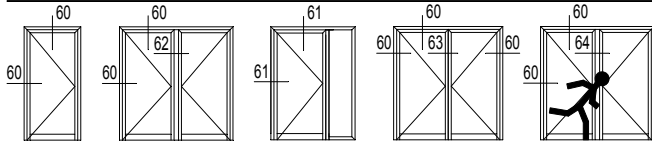
Deuren - Naar binnen draaiende deuren met deurvleugel rondom geperst  
 Portes - Portes ouvrant vers l'intérieur avec ouvrant serti tout autour  
 Doors - Inward opening doors with vent crimped all round  
 Türen - Nach innen öffnende Türen mit rundherum gepresstem Türflügel





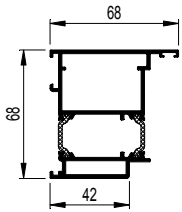






## 008.0469.XX

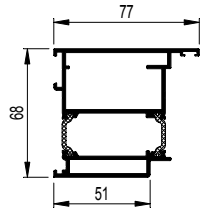
lx = 28.438 cm<sup>2</sup>



60 CS77-060001.dxf  
 CS77-060001.dwg

## 008.0569.XX

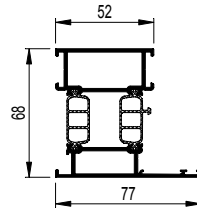
lx = 32.557 cm<sup>2</sup>



60 CS77-060002.dxf  
 CS77-060002.dwg

## 008.3125.XX

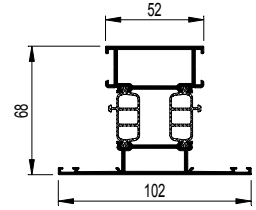
lx = 28.494 cm<sup>2</sup>



60 CS77-061001.dxf  
 CS77-061001.dwg

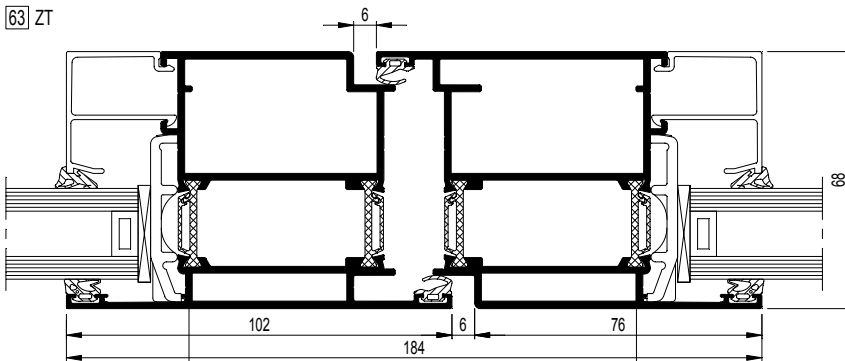
## 008.3114.XX

lx = 31.671 cm<sup>2</sup>



60 CS77-061002.dxf  
 CS77-061002.dwg

63 ZT

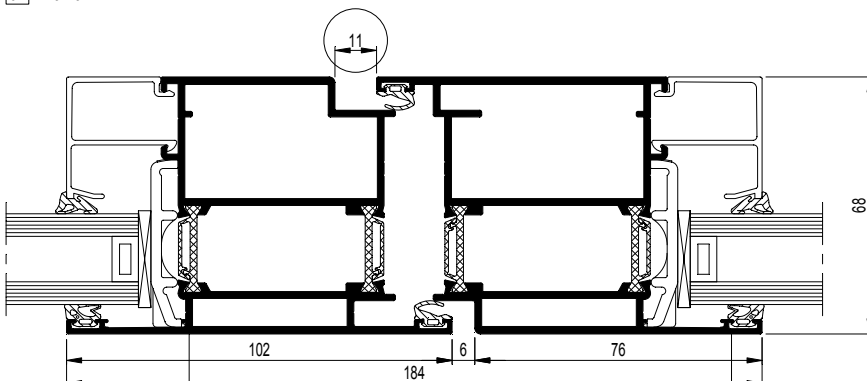


008.2014.XX

008.2026.XX

CS77-063001.dxf  
 CS77-063001.dwg

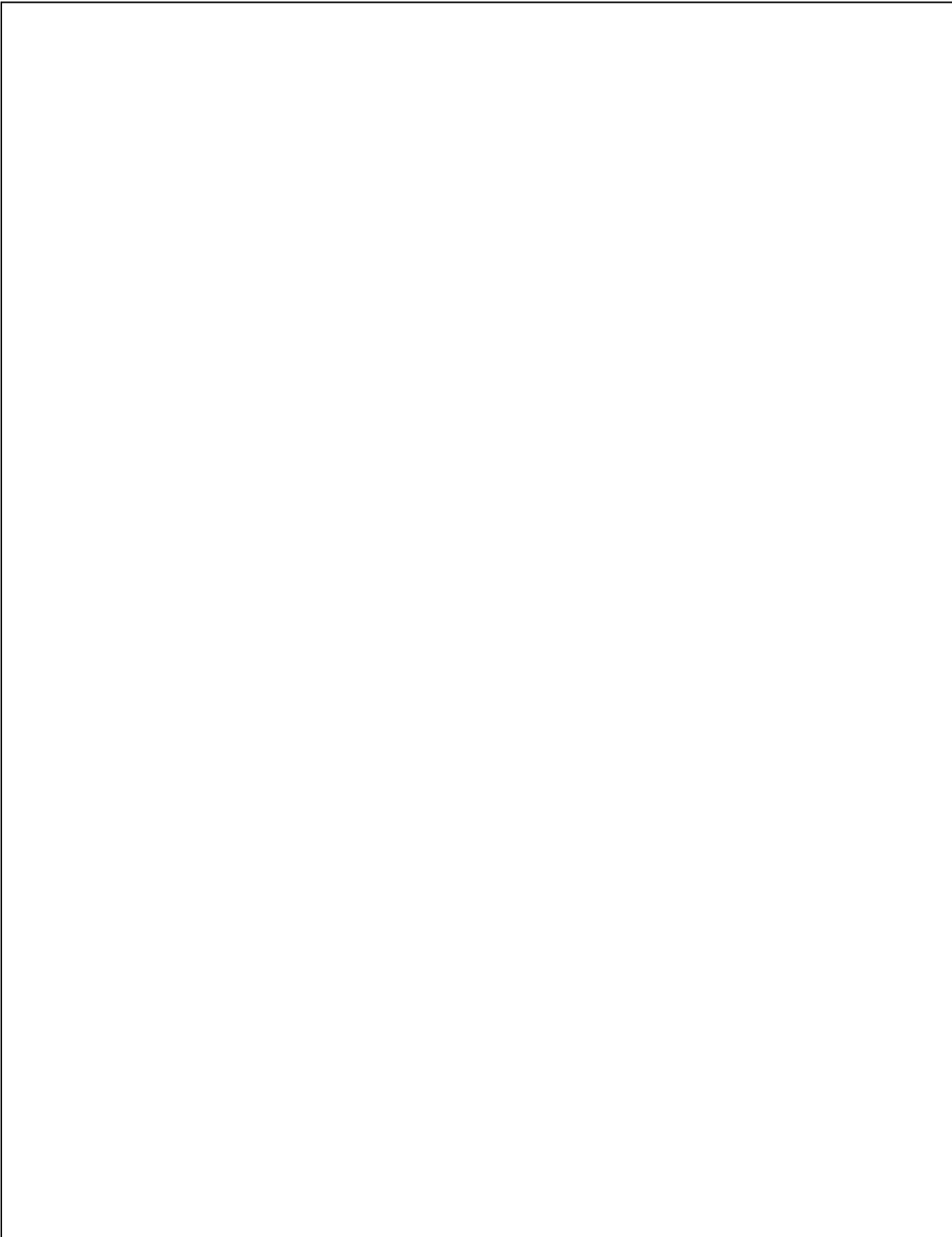
64 Panic



008.1016.XX

008.2026.XX

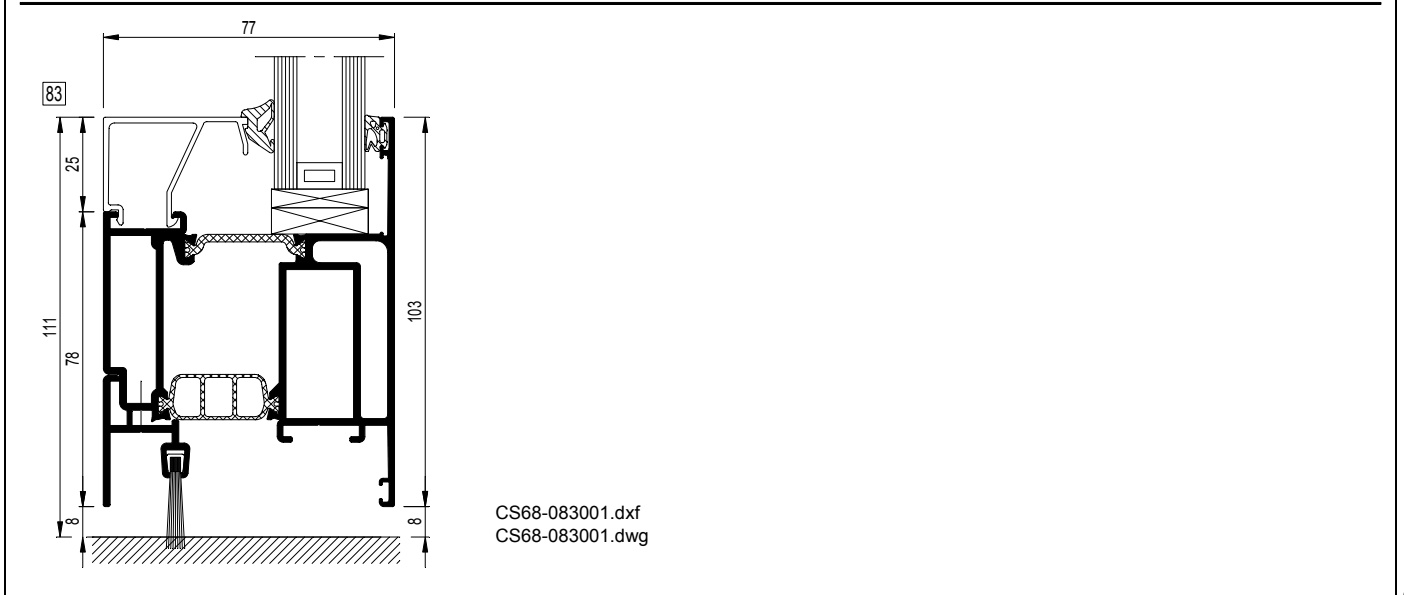
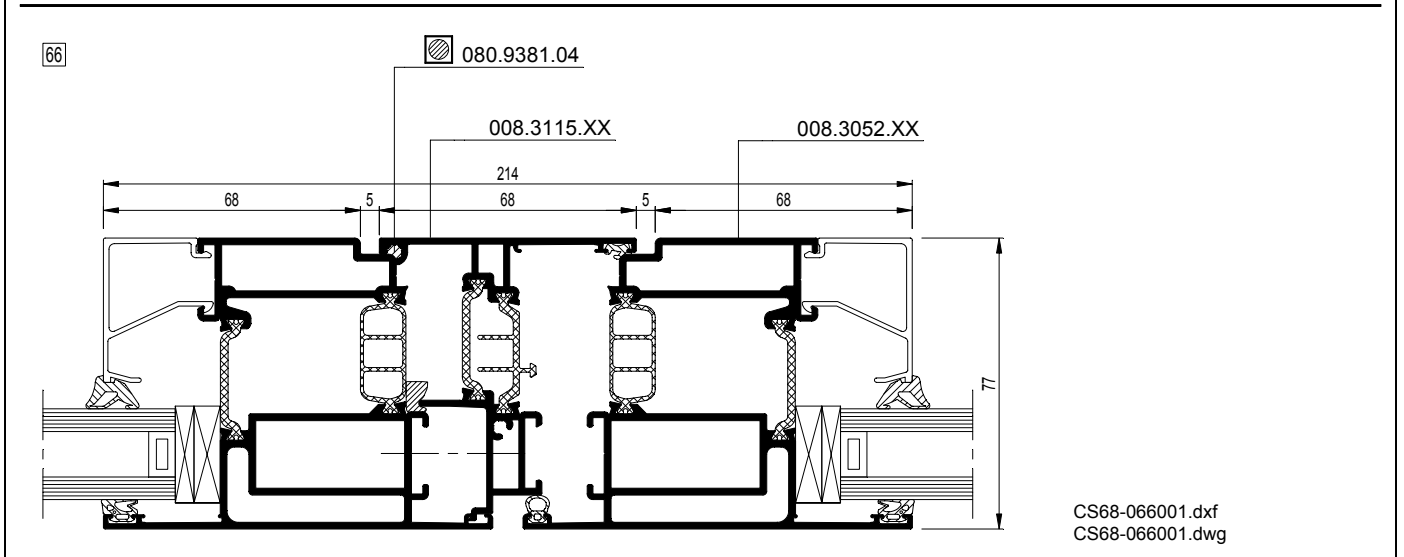
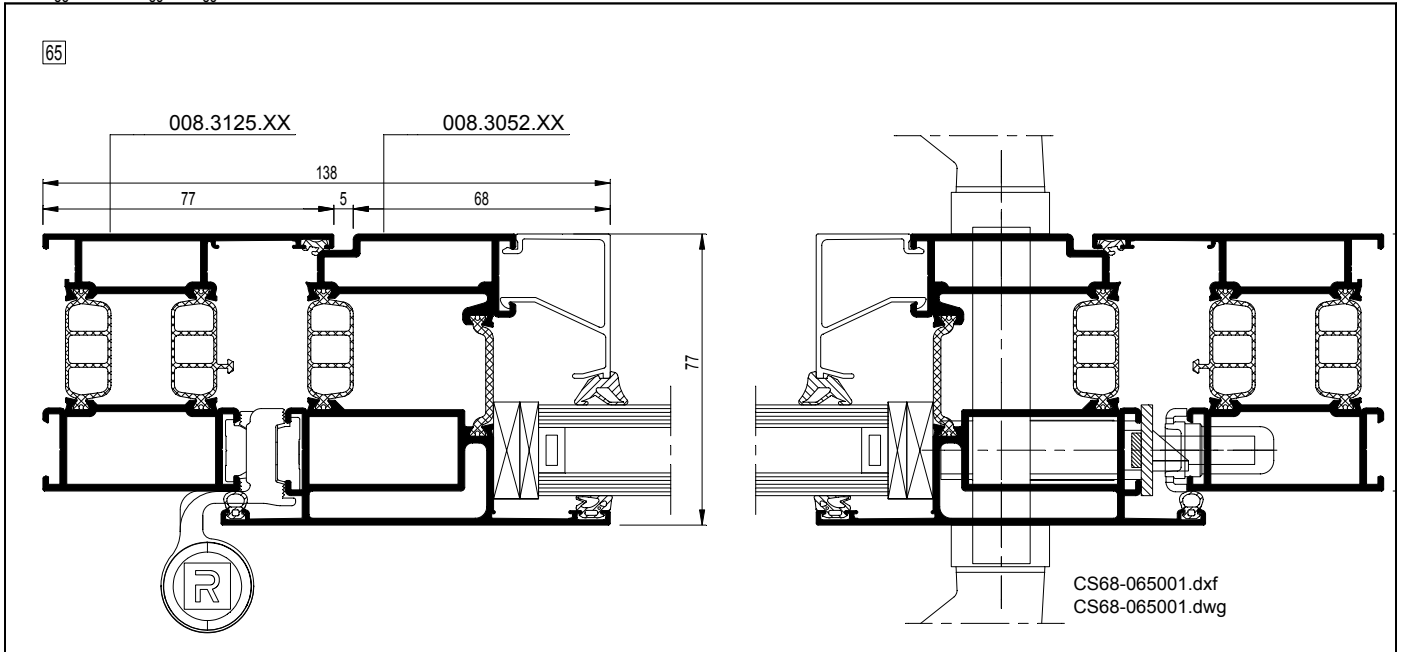
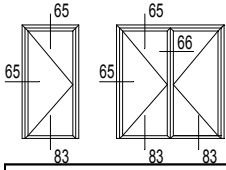
CS77-064001.dxf  
 CS77-064001.dwg





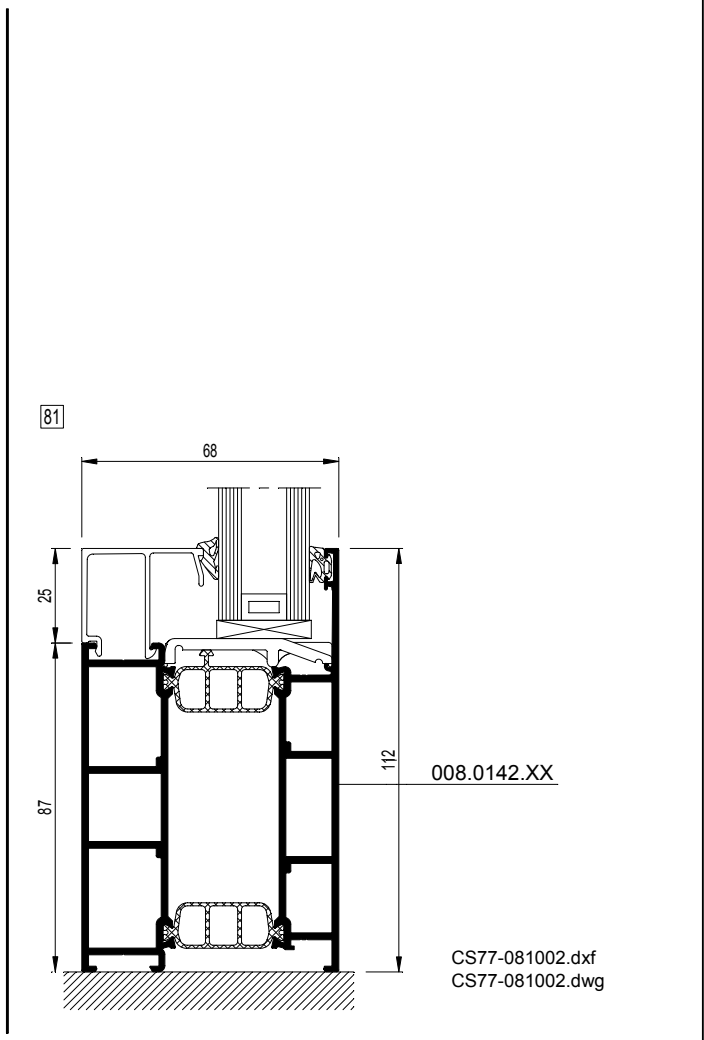
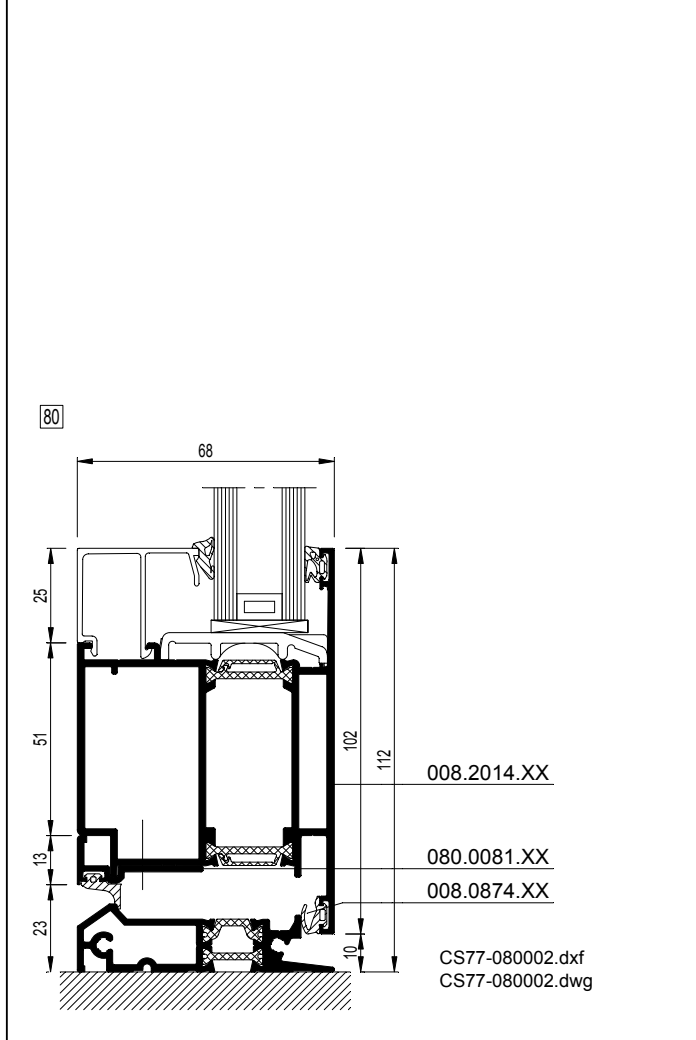
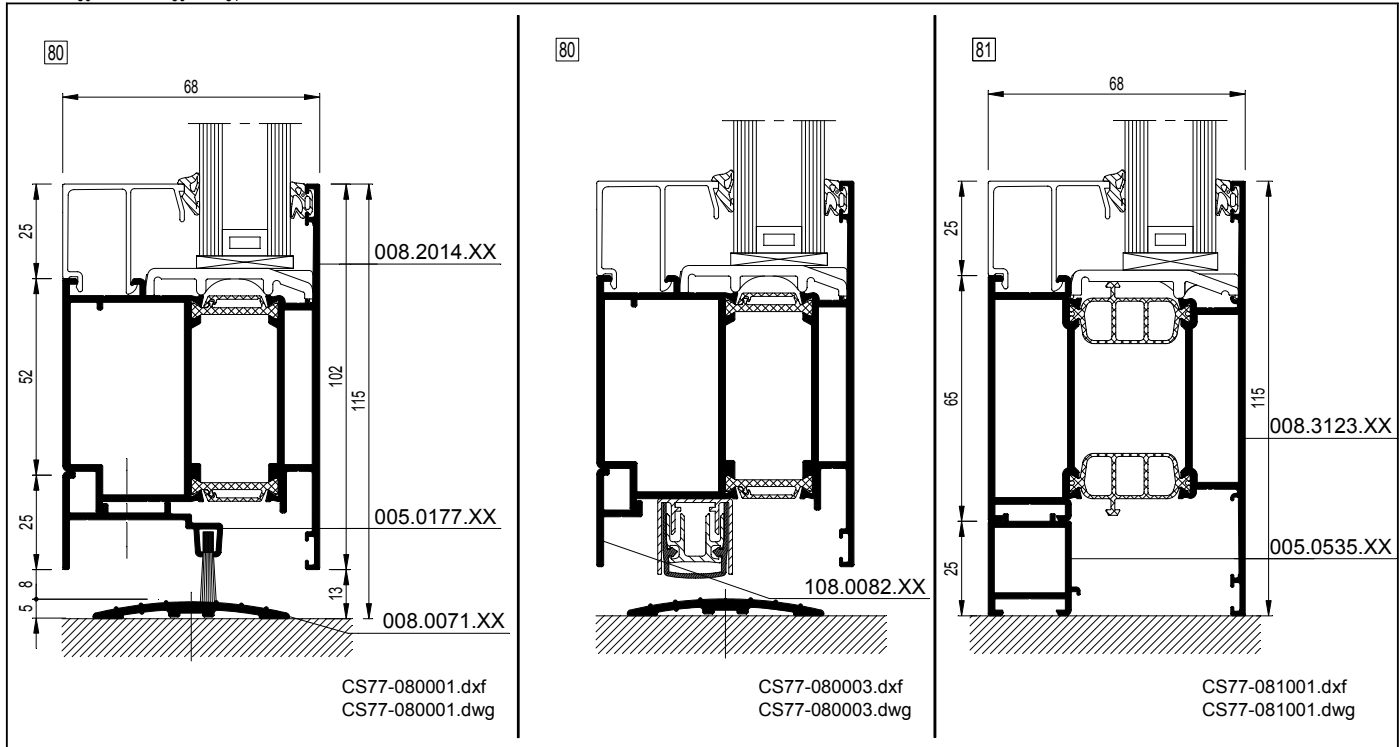
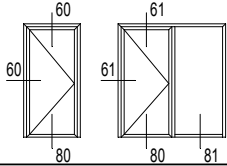
# CS 77

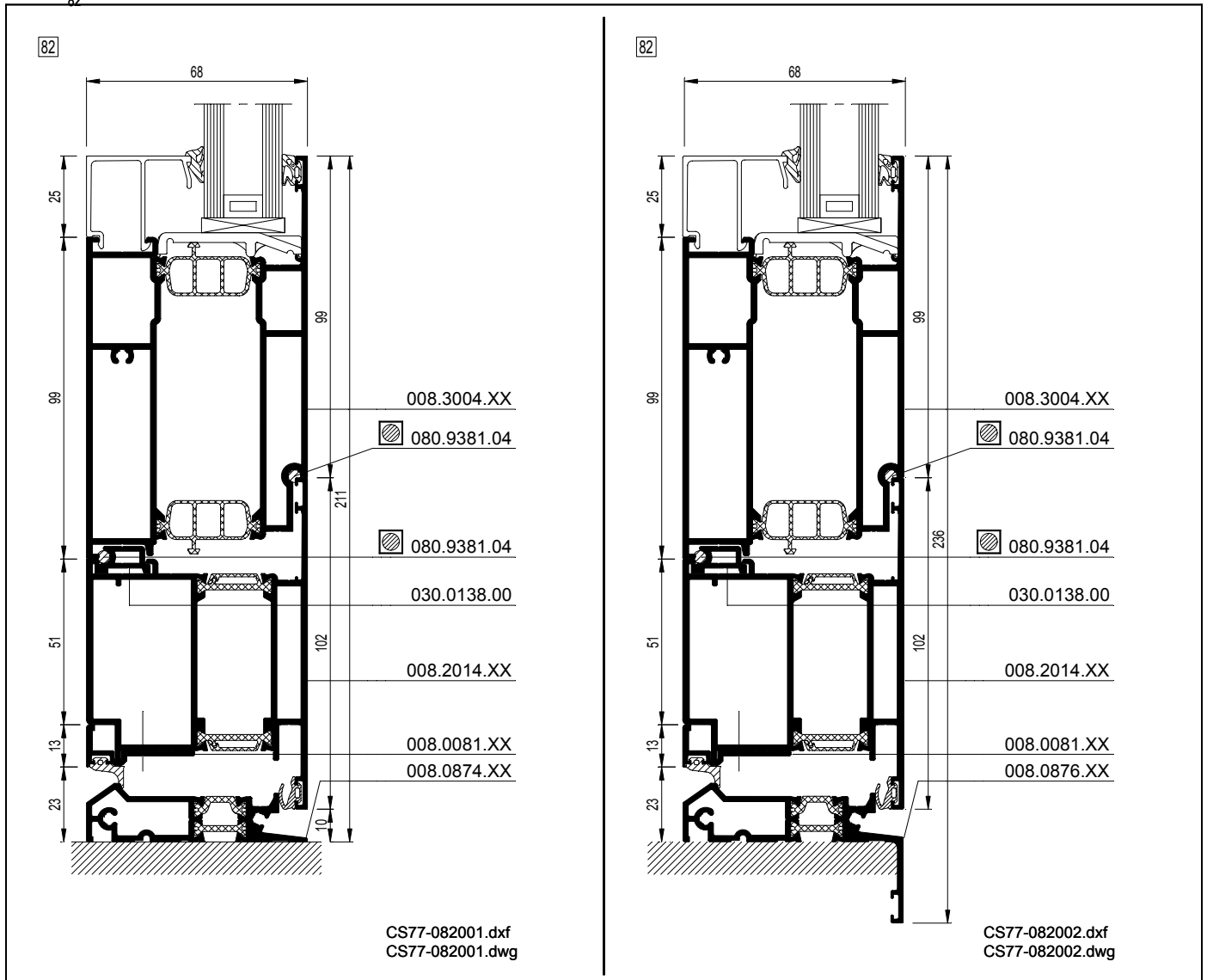
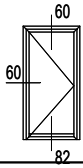
Deuren - Naar binnen draaiende deuren met deurvleugel rondom geperst  
 Portes - Portes ouvrant vers l'extérieur avec ouvrant serti tout autour  
 Doors - Outward opening doors with vent crimped all round  
 Türen - Nach außen öffnende Türen mit rundherum gepresstem Türflügel



# CS 77

Deuren - Naar buiten draaiende deuren met deurleugel rondom geperst  
 Portes - Portes ouvrant vers l'extérieur avec ouvrant serti tout autour  
 Doors - Outward opening doors with vent crimped all round  
 Türen - Nach außen öffnende Türen mit rundherum gepresstem Türflügel



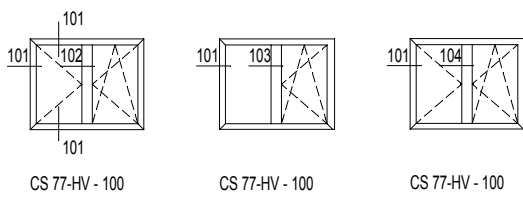
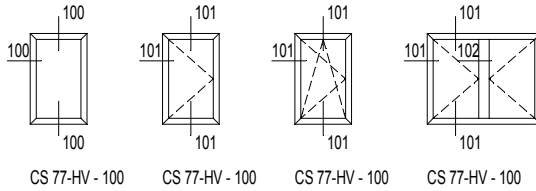




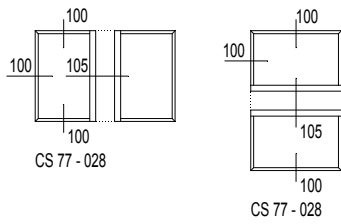


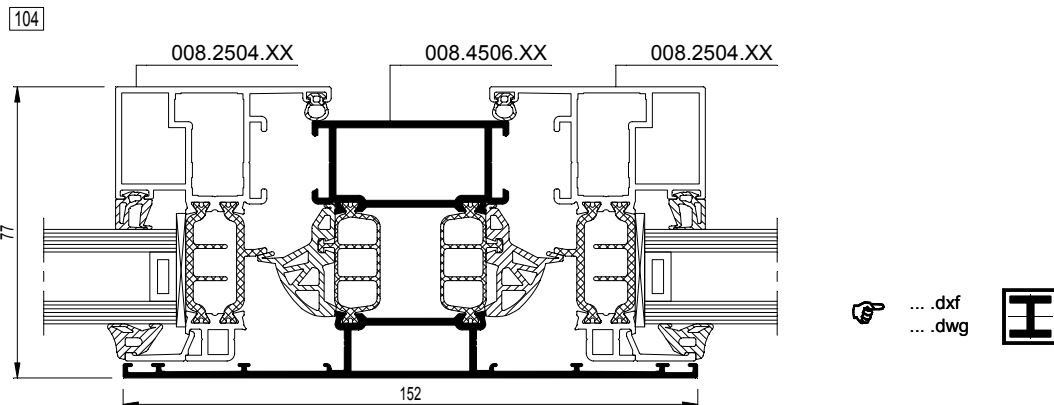
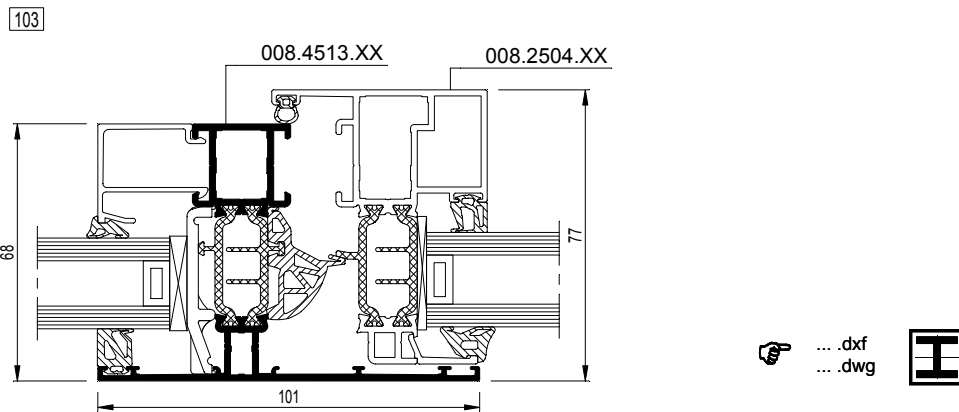
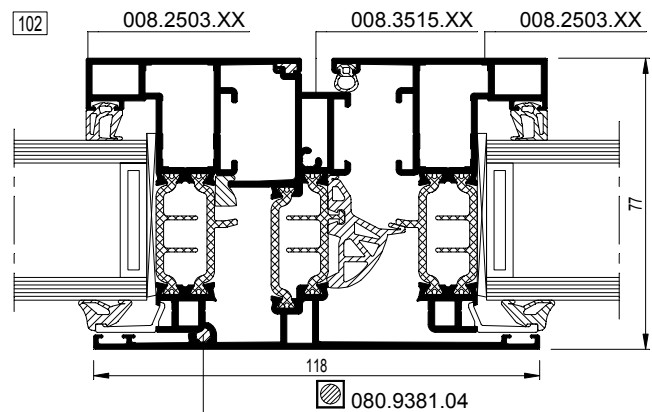
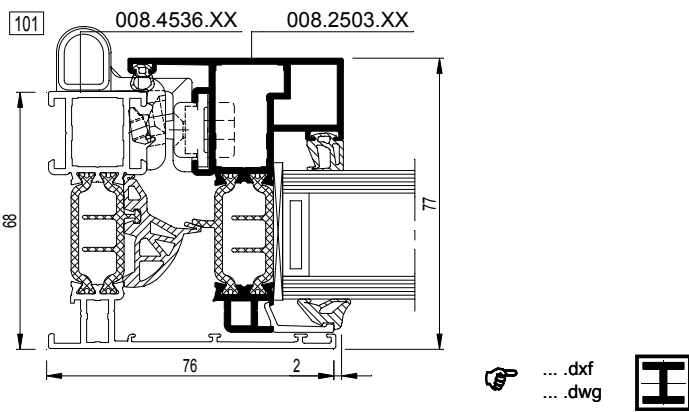
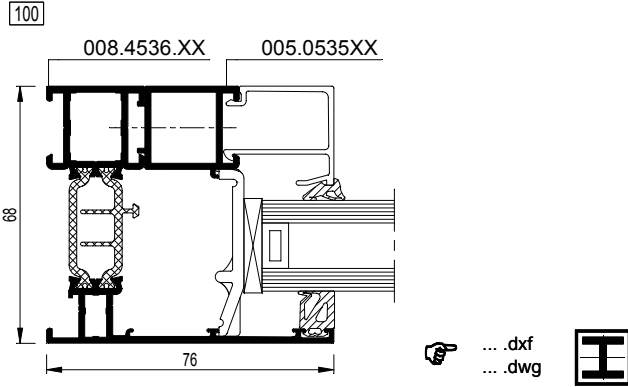
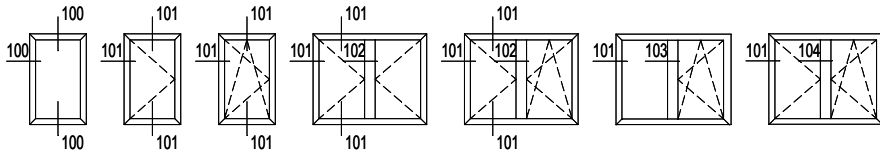
### CS 77 Hidden Vent (CS 77-HV)

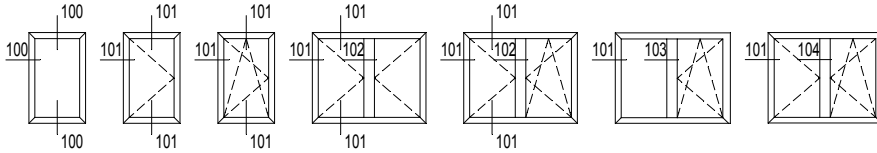
#### Fixed / opening elements



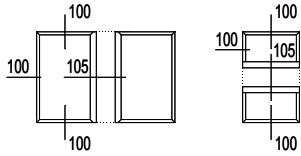
#### Dilatation



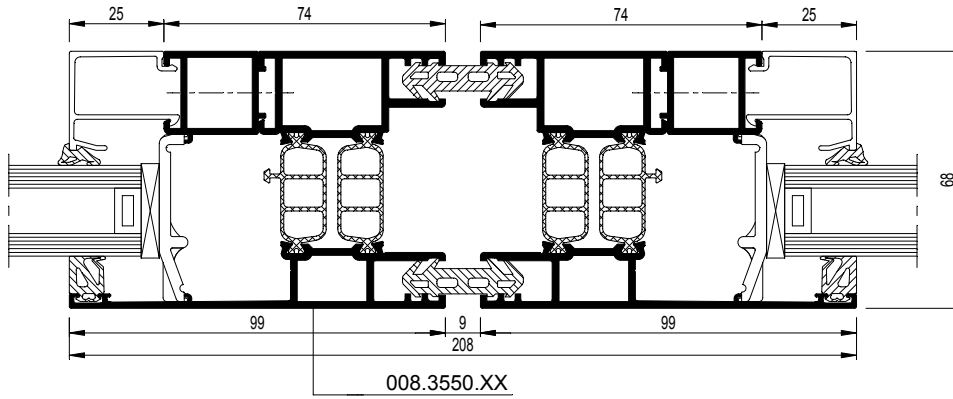




<p><b>008.4536.XX</b></p> <p>lx = 16.902 cm<sup>2</sup></p> <p>100 CS77-100001.dxf CS77-100001.dwg</p>	<p><b>008.4583.XX</b></p> <p>lx = 21.515 cm<sup>2</sup></p> <p>100 CS77-100003.dxf CS77-100003.dwg</p>	<p><b>008.3525.XX</b></p> <p>lx = 25.267 cm<sup>2</sup></p> <p>100 CS77-100004.dxf CS77-100004.dwg</p>
<p><b>008.2502.XX</b></p> <p>lx = 14.344 cm<sup>2</sup></p> <p>101 CS77-101001.dxf CS77-101001.dwg 102 CS77-102001.dxf CS77-102001.dwg</p>	<p><b>008.2503.XX</b></p> <p>lx = 14.170 cm<sup>2</sup></p> <p>101 CS77-101002.dxf CS77-101002.dwg 102 CS77-102002.dxf CS77-102002.dwg</p>	<p><b>008.2504.XX</b></p> <p>lx = 14.109 cm<sup>2</sup></p> <p>101 CS77-101003.dxf CS77-101003.dwg 102 CS77-102003.dxf CS77-102003.dwg</p>
<p><b>008.2499.XX</b></p> <p>lx = 15.942 cm<sup>2</sup></p> <p>101 CS77-101004.dxf CS77-101004.dwg 102 CS77-102004.dxf CS77-102004.dwg</p>	<p><b>008.2500.XX</b></p> <p>lx = 15.996 cm<sup>2</sup></p> <p>101 CS77-101005.dxf CS77-101005.dwg 102 CS77-102005.dxf CS77-102005.dwg</p>	
<p><b>008.4505.XX</b></p> <p>lx = 20.224 cm<sup>2</sup></p> <p>103 CS77-103001.dxf CS77-103001.dwg 104 CS77-104001.dxf CS77-104001.dwg</p>	<p><b>008.4506.XX</b></p> <p>lx = 29.366 cm<sup>2</sup></p> <p>103 CS77-103002.dxf CS77-103002.dwg 104 CS77-104002.dxf CS77-104002.dwg</p>	<p><b>008.4513.XX</b></p> <p>lx = 18.742 cm<sup>2</sup></p> <p>103 CS77-103003.dxf CS77-103003.dwg 100 CS77-100002.dxf CS77-100002.dwg</p>

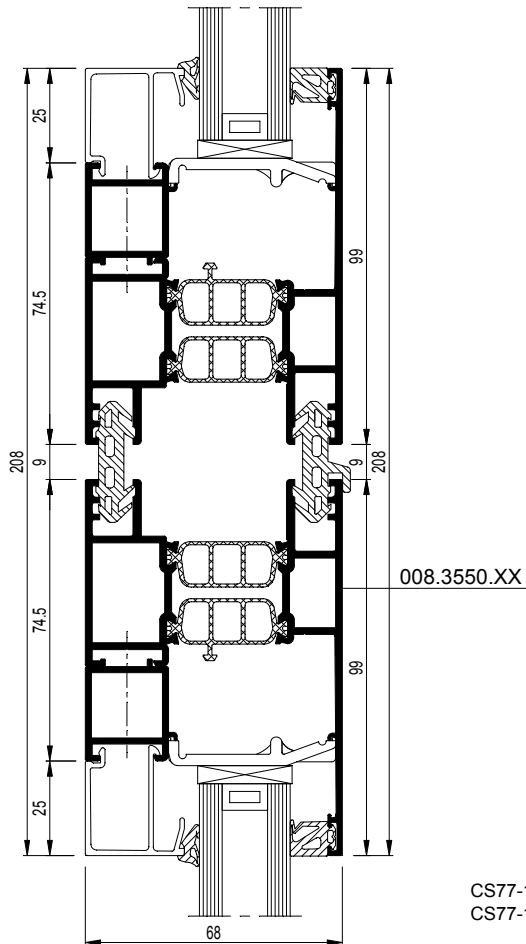


105



CS77-105001.dxf  
 CS77-105001.dwg

105



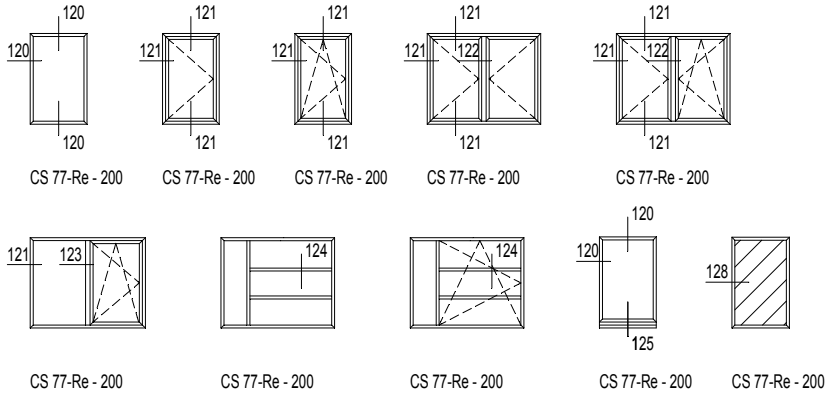
CS77-105002.dxf  
 CS77-105002.dwg



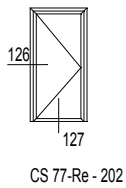


### CS 77 Renaissance (CS 77-Re)

#### Fixed / opening elements

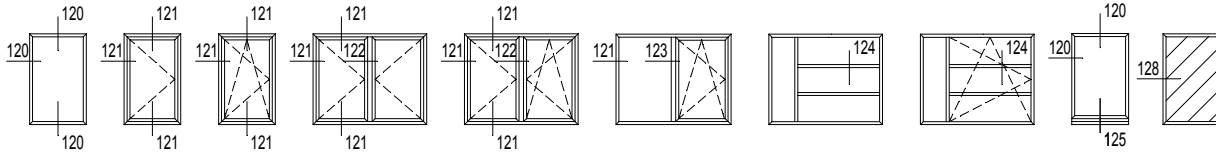


#### Outward opening doors with vent crimped all round



# CS 77-Re

Vaste / opengaande elementen  
 Eléments fixes / ouvrants  
 Fixed / opening elements  
 Feste / öffnende Elemente



**120**

008.3236.XX

... .dxf  
... .dwg

**128**

008.3136.XX

030.0001.XX

CS77-128001.dxf  
CS77-128001.dwg

---

**121**

008.3202.XX

... .dxf  
... .dwg

**122**

080.9382.04

080.9381.04

008.3115.XX

080.9381.04

+ 001.0215.XX

---

**123**

008.3213.XX

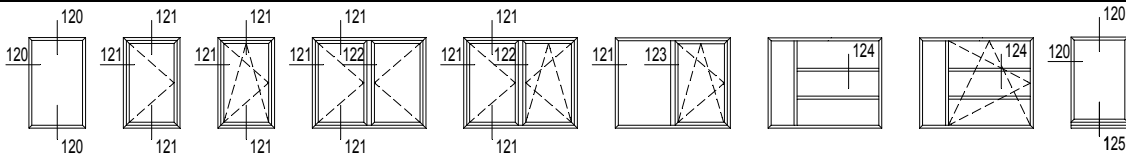
... .dxf  
... .dwg

**124**

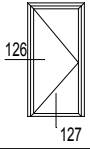
030.0050.XX

030.0051.XX

CS77-124001.dxf  
CS77-124001.dwg



<p><b>008.3236.XX</b></p> <p>lx = 26.389 cm<sup>4</sup></p> <p>120 CS77-120001.dxf CS77-120001.dwg</p>	<p><b>008.3216.XX</b></p> <p>lx = 33.695 cm<sup>4</sup></p> <p>120 CS77-120002.dxf CS77-120002.dwg</p>	<p><b>008.3258.XX</b></p> <p>lx = 90.181 cm<sup>4</sup></p> <p>120 CS77-120003.dxf CS77-120003.dwg</p>
<p><b>008.3202.XX</b></p> <p>lx = 32.637 cm<sup>4</sup></p> <p>121 CS77-121001.dxf CS77-121001.dwg</p> <p>122 CS77-122001.dxf CS77-122001.dwg</p>	<p><b>008.3292.XX</b></p> <p>lx = 43.897 cm<sup>4</sup></p> <p>121 CS77-121002.dxf CS77-121002.dwg</p> <p>122 CS77-122002.dxf CS77-122002.dwg</p>	<p><b>008.3221.XX</b></p> <p>lx = 60.818 cm<sup>4</sup></p> <p>121 CS77-121003.dxf CS77-121003.dwg</p> <p>122 CS77-122003.dxf CS77-122003.dwg</p>
<p><b>008.3213.XX</b></p> <p>lx = 30.464 cm<sup>4</sup></p> <p>123 CS77-123001.dxf CS77-123001.dwg</p>	<p><b>008.3220.XX</b></p> <p>lx = 38.438 cm<sup>4</sup></p> <p>123 CS77-123002.dxf CS77-123002.dwg</p>	



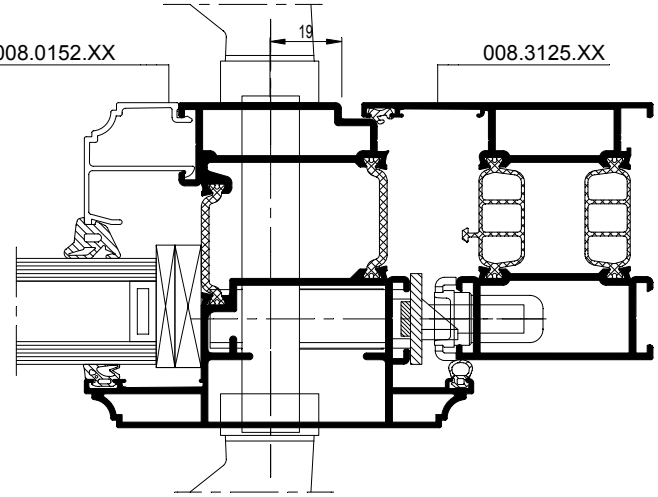
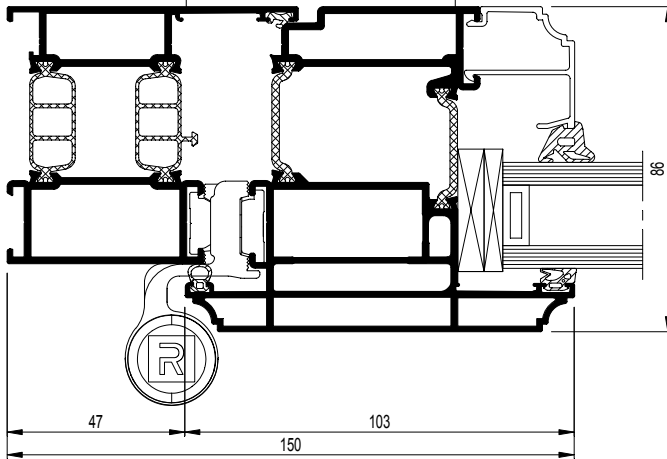
126

008.3125.XX

008.0152.XX

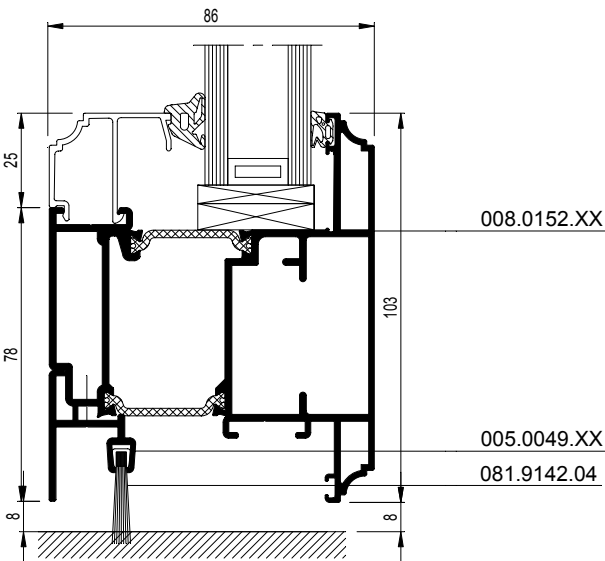
008.0152.XX

008.3125.XX



CS77-126001.dxf  
 CS77-126001.dwg

127

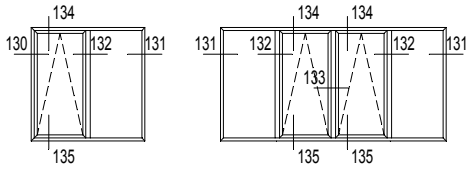


CS77-127001.dxf  
 CS77-127001.dwg



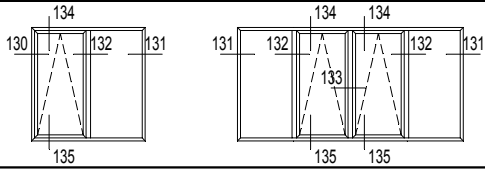
### CS 77 Front (CS 77-Fr)

Sliding-tilt door

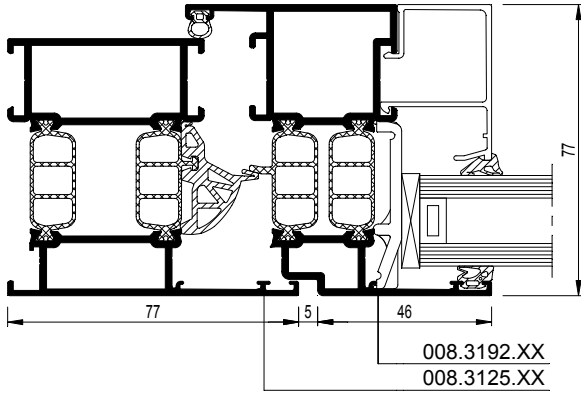


CS 77-Fr - 250  
CS 77-Fr - 251

CS 77-Fr - 250  
CS 77-Fr - 251

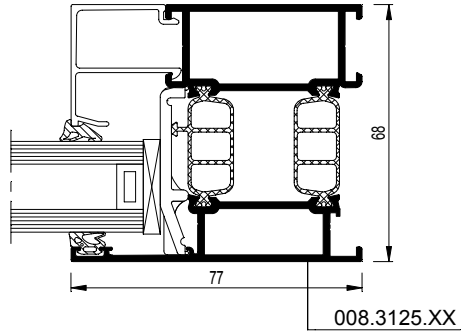


130 11



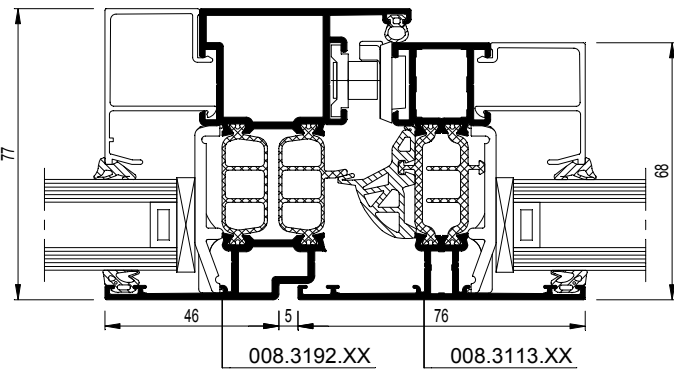
CS77-130001.dxf  
 CS77-130001.dwg

131 1



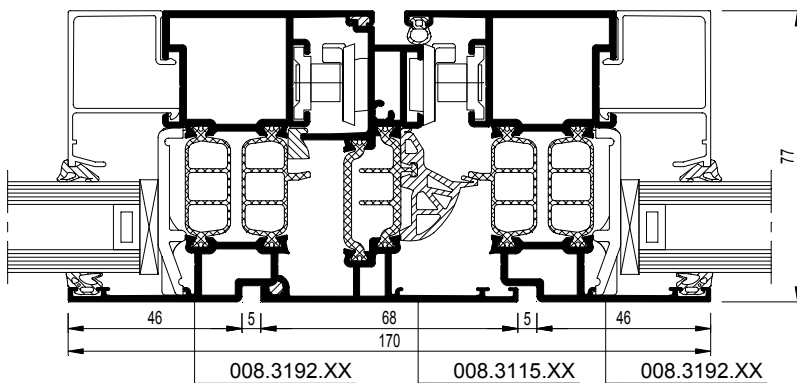
CS77-131001.dxf  
 CS77-131001.dwg

132 21

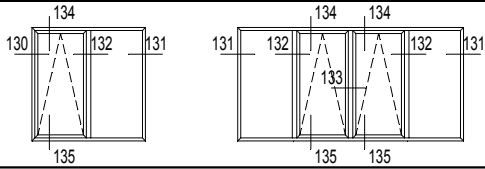


CS77-132001.dxf  
 CS77-132001.dwg

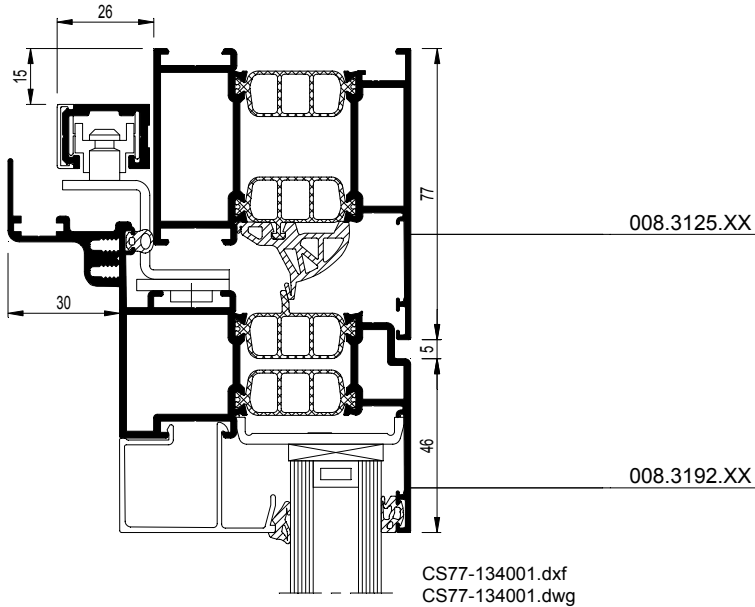
133 12



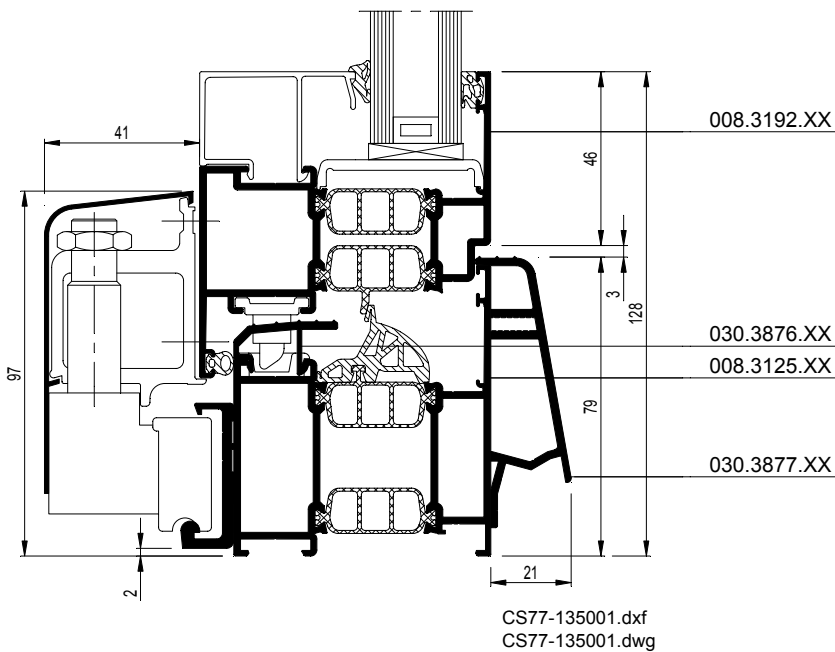
CS77-133001.dxf  
 CS77-133001.dwg

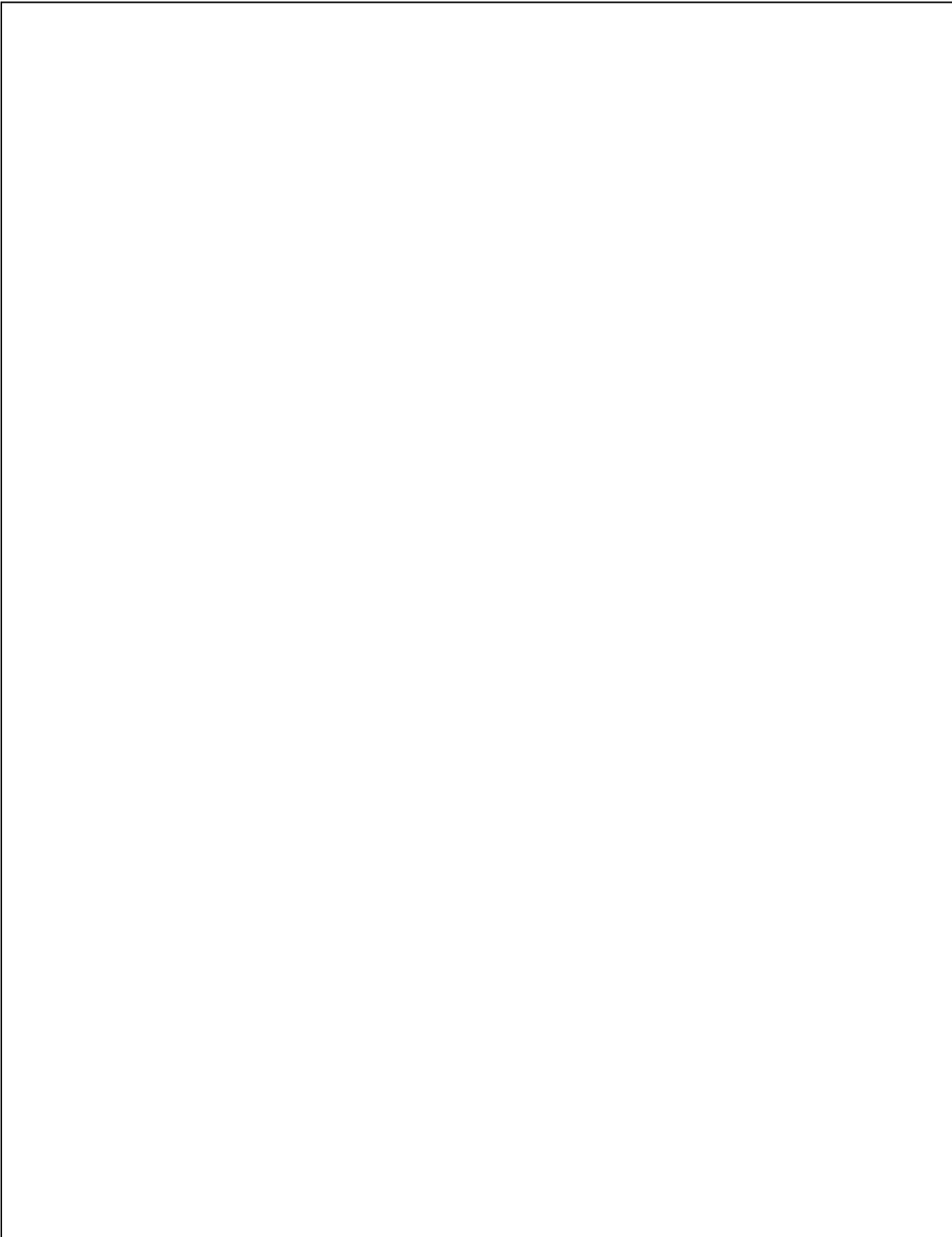


134



135





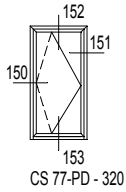


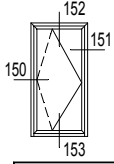


## CS 77 Pivot Door (CS 77-PD)

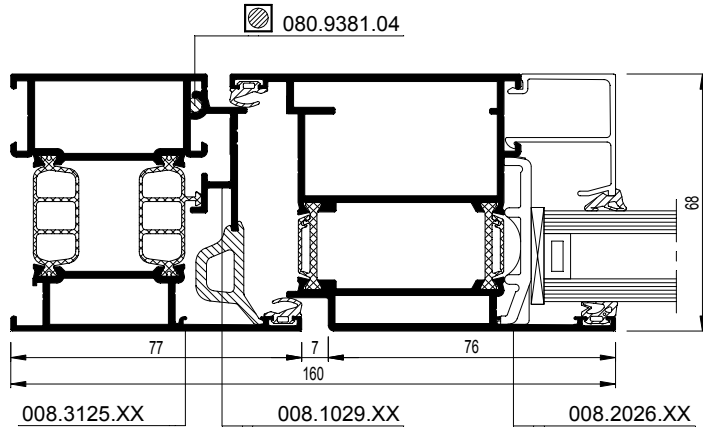
### 1 Doors

Pivot door



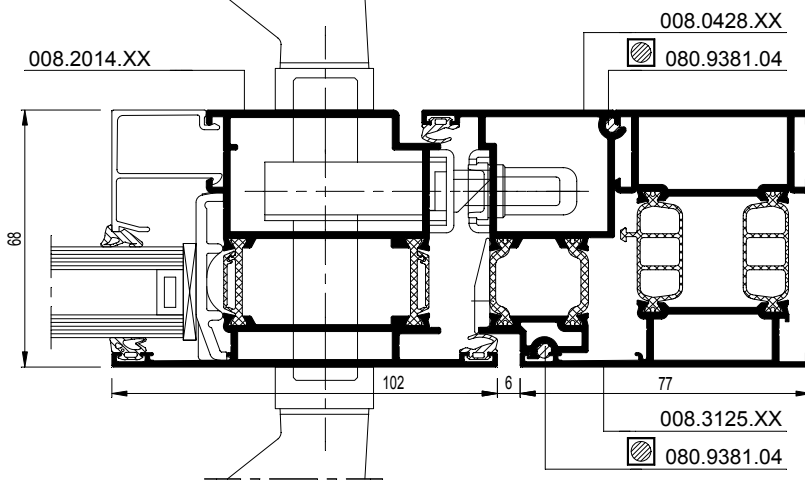


150



CS77-150001.dxf  
CS77-150001.dwg

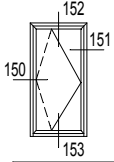
151



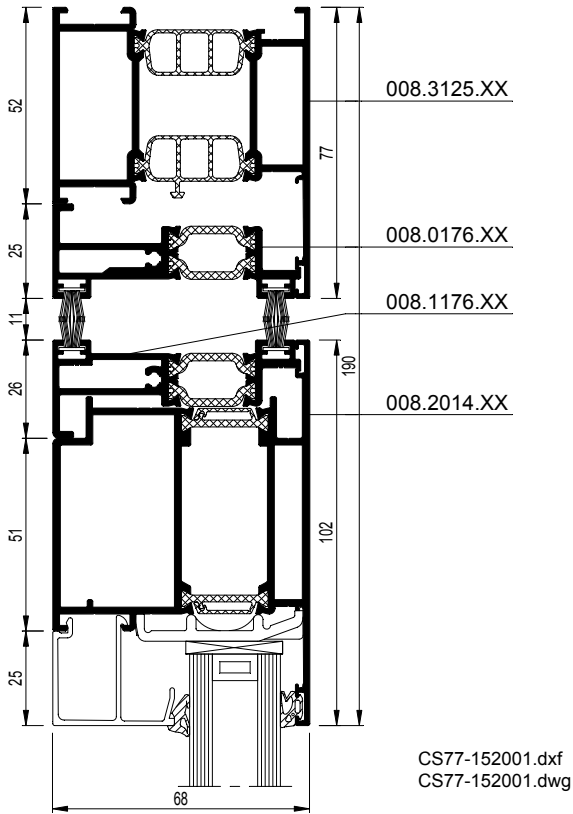
CS77-151001.dxf  
CS77-151001.dwg

# CS 77-PD

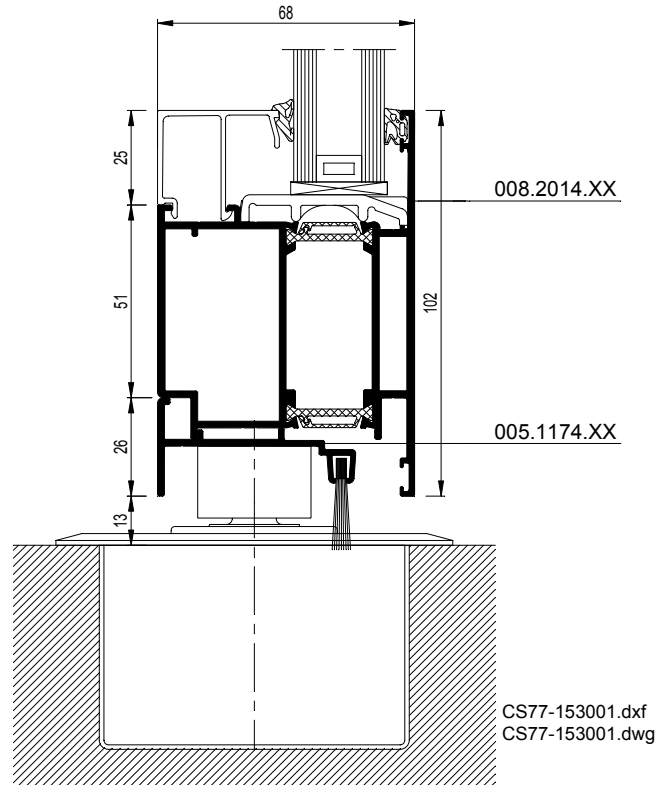
Deuren - Pivotdeur  
Portes - Porte pivotante  
Doors - Pivot door  
Türen - Schwingtür

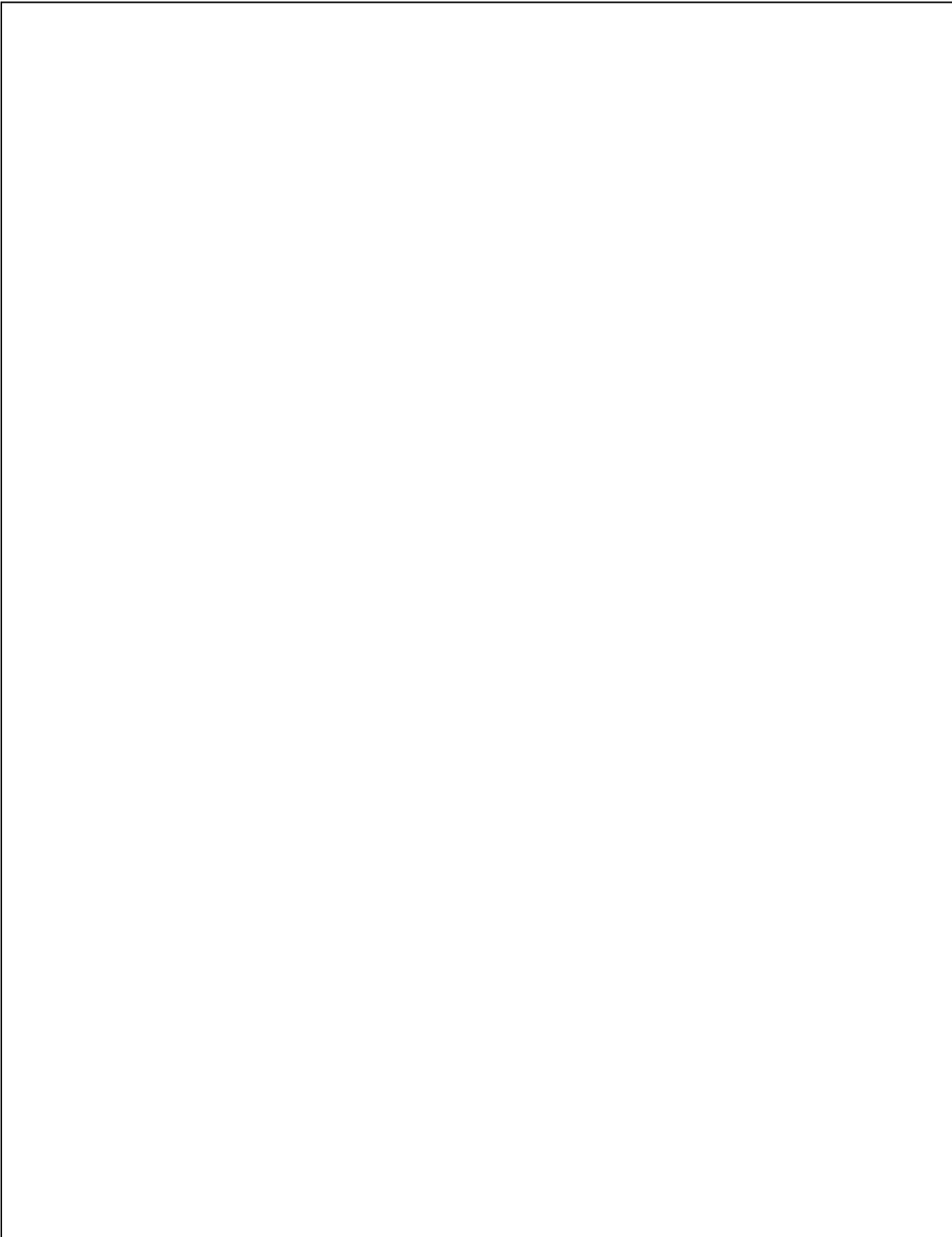


152



153

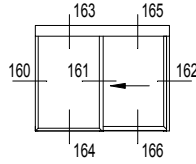




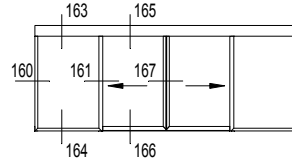


### CS 77 Automatic Sliding Door (CS 77-AD)

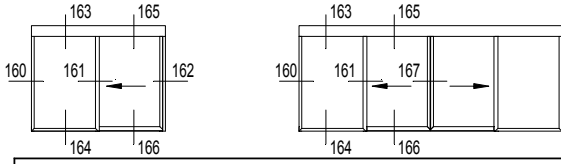
#### Automatic sliding door



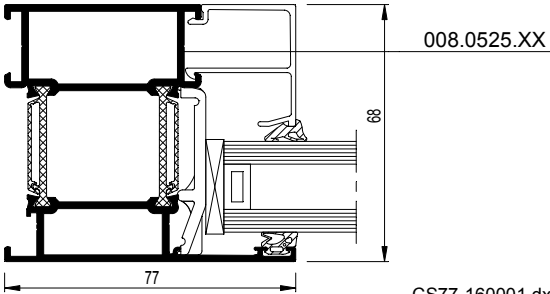
CS 77-AD - 340



CS 77-AD - 340

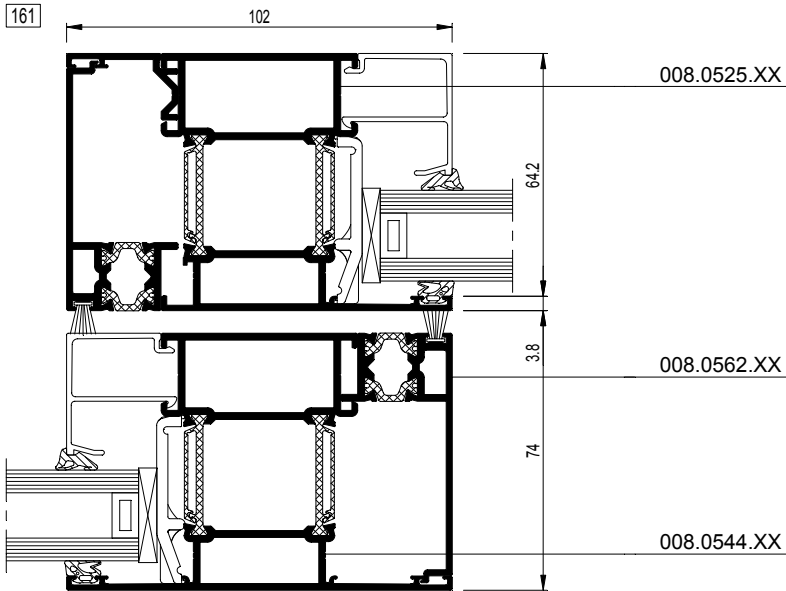


160



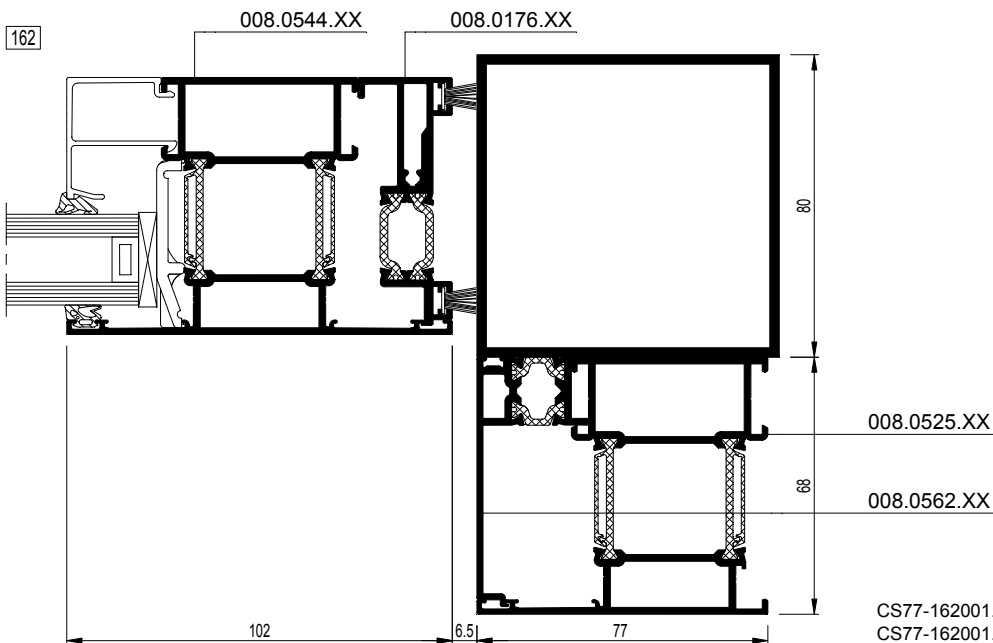
CS77-160001.dxf  
 CS77-160001.dwg

161

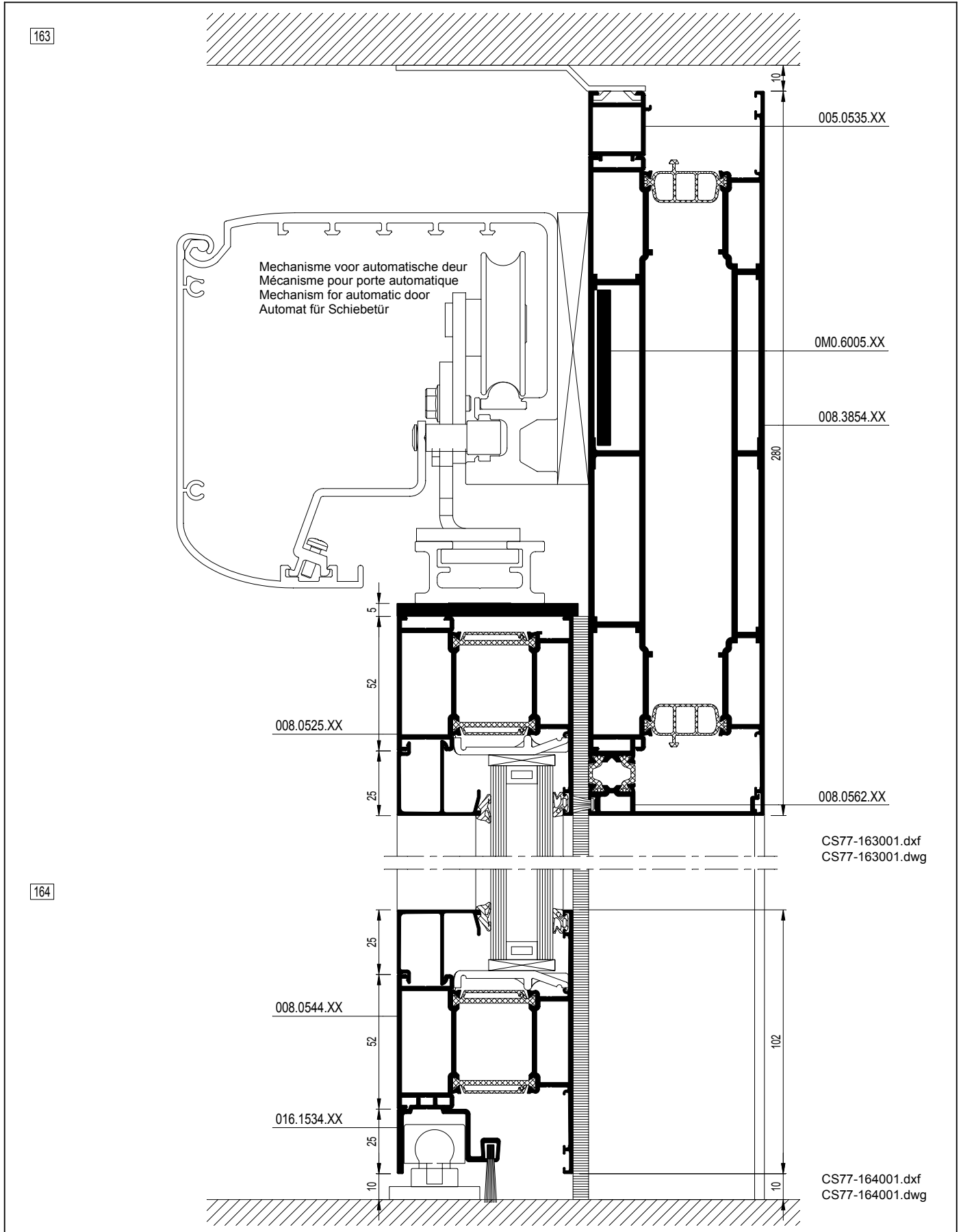
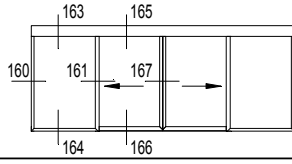
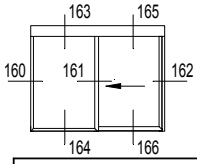


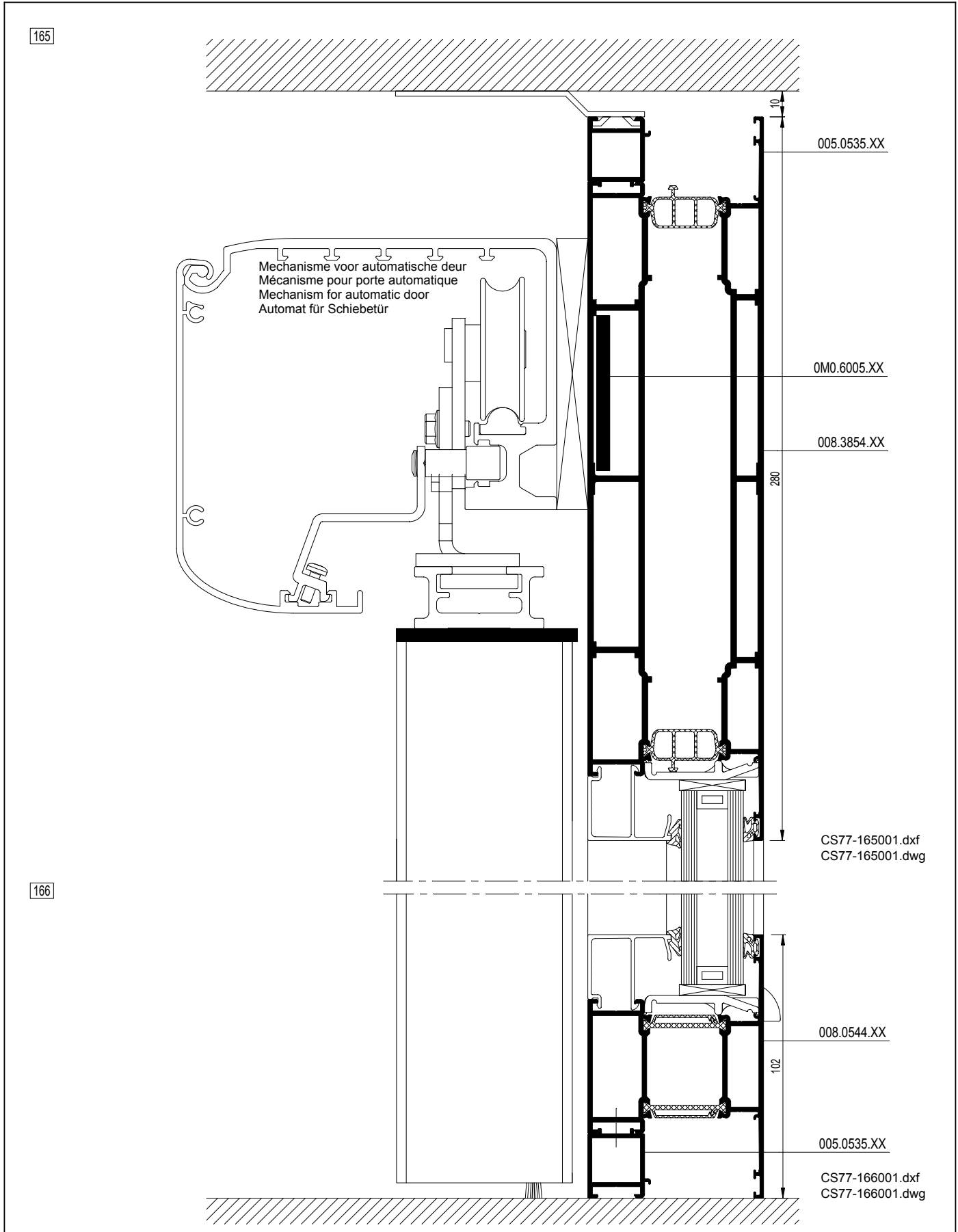
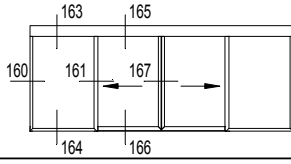
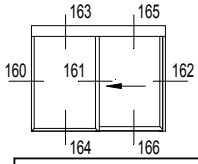
CS77-161001.dxf  
 CS77-161001.dwg

162



CS77-162001.dxf  
 CS77-162001.dwg

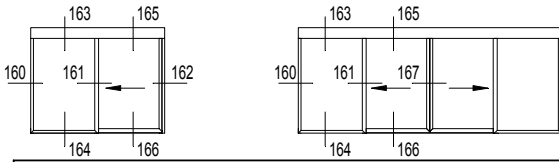




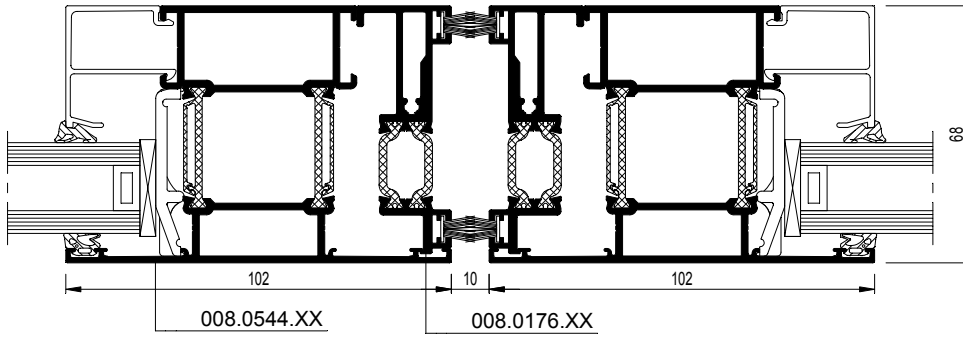


# CS 77-AD

Automatische schuifdeuren  
Portes coulissantes automatiques  
Automatic sliding door  
Automatische Schiebetüren



167



CS77-167001.dxf  
CS77-167001.dwg



### CS 77 Bullet Proof (CS 68-BP)

#### Overview test reports



FB4

CS 77-BP - 400



FSG

CS 77-BP - 400



FB6

CS 77-BP - 401



KALASHNIKOV

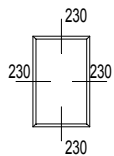
CS 77-BP - 401

#### Tested glass specifications

CS 77-BP - 403

## 1 Fixed elements

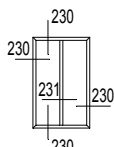
#### Outer frames



CS 77-BP - 406

## 2 Composed elements

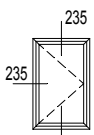
#### Transom-mullion



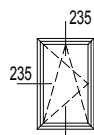
CS 77-BP - 407

## 3 Opening elements

#### Inward opening windows



CS 77-BP - 408



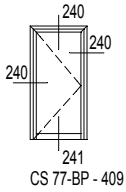
CS 77-BP - 409



### Doors

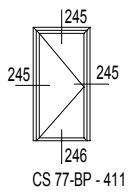
#### 4 Doors inward opening

Inward opening doors



#### 5 Doors outward opening

Outward opening doors



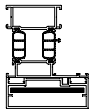
## TEST CENTER



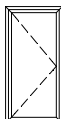
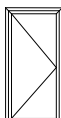
TNO-DELFT (Nederland/Les Pays-Bas/die Niederlanden/The Netherlands)  
KMS-BRUSSEL (België/La Belgique/Belgien/Belgium)

## CLASS

### FB4

CALIBER : .357 MAGNUM  
.44 REM. MAGNUM

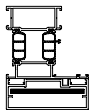




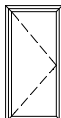
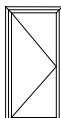
TYPE OF ELEMENT	STANDARD	REPORT NUMBER	CERT. DIMENSIONS	RESULTS
	EN 1522/EN 1523	040546-03/17-06/17	ELEMENT : - GLASS : BR4 - 43 mm	APPROVED
	EN 1522/EN 1523	040546-03/17-06/17	ELEMENT : - GLASS : BR4 - 43 mm	APPROVED
	EN 1522/EN 1523	05BP55-58	ELEMENT : - GLASS : BR4 - 43 mm	APPROVED
	EN 1522/EN 1523	040553-07/14-11/17	ELEMENT : - GLASS : BR4 - 43 mm	APPROVED

## CLASS

### FSG

CALIBER : 12/70



TYPE OF ELEMENT	STANDARD	REPORT NUMBER	CERT. DIMENSIONS	RESULTS
	EN 1522/EN 1523	04BP2077	ELEMENT : - GLASS : SG2 - 47 mm	APPROVED
	EN 1522/EN 1523	04BP2078	ELEMENT : - GLASS : SG2 - 47 mm	APPROVED
	EN 1522/EN 1523	04BP2083	ELEMENT : - GLASS : SG2 - 47 mm	APPROVED
	EN 1522/EN 1523	04BP2080	ELEMENT : - GLASS : SG2 - 47 mm	APPROVED

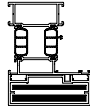
## TEST CENTER



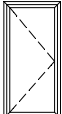
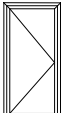
TNO-DELFT (Nederland/Les Pays-Bas/die Niederlanden/The Netherlands)  
KMS-BRUSSEL (België/La Belgique/Belgien/Belgium)

## CLASS

### FB6

CALIBER : 5.56x45  
7.62x51

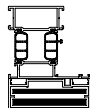




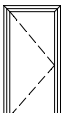
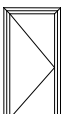
TYPE OF ELEMENT	STANDARD	REPORT NUMBER	CERT. DIMENSIONS	RESULTS
	EN 1522/EN 1523	04BP2073-74	ELEMENT : - GLASS : BR6 - 47 mm	APPROVED
	EN 1522/EN 1523	04BP2071-75	ELEMENT : - GLASS : BR6 - 47 mm	APPROVED
	EN 1522/EN 1523	04BP2072-85	ELEMENT : - GLASS : BR6 - 47 mm	APPROVED
	EN 1522/EN 1523	05BP59-60	ELEMENT : - GLASS : BR6 - 47 mm	APPROVED

## CLASS

### KALASHNIKOV

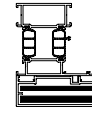
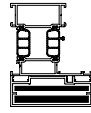
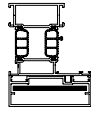
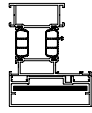
CALIBER : 7.62x39



TYPE OF ELEMENT	STANDARD	REPORT NUMBER	CERT. DIMENSIONS	RESULTS
	EN 1522/EN 1523	04BP2079	ELEMENT : - GLASS : BR6 - 47 mm	APPROVED
	EN 1522/EN 1523	04BP2084	ELEMENT : - GLASS : BR6 - 47 mm	APPROVED
	EN 1522/EN 1523	04BP2076	ELEMENT : - GLASS : BR6 - 47 mm	APPROVED
	EN 1522/EN 1523	040553-04/14	ELEMENT : - GLASS : BR6 - 47 mm	APPROVED

## TEST CENTER

TNO-DELFT (Nederland/Les Pays-Bas/die Niederlanden/The Netherlands)  
 KMS-BRUSSEL (België/La Belgique/Belgien/Belgium)



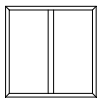
TYPE OF ELEMENT

FB4

FSG

FB6

Kalashnikov

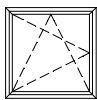
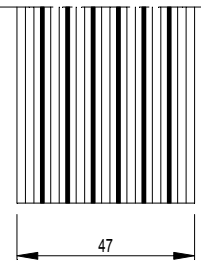
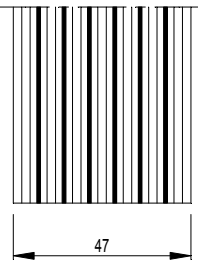
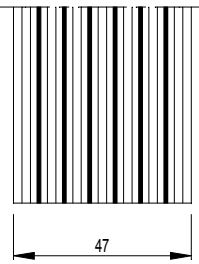
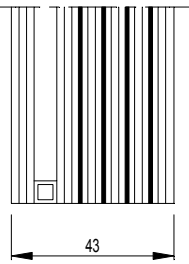


BR4

SG2

BR6

BR6

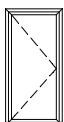
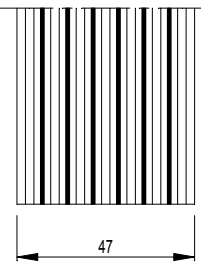
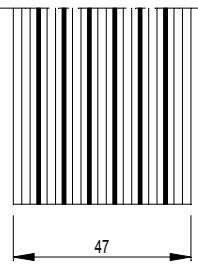
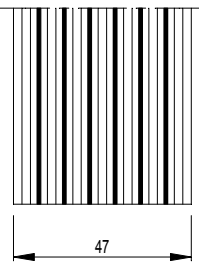
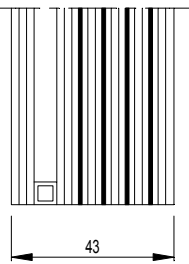


BR4

SG2

BR6

BR6

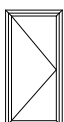
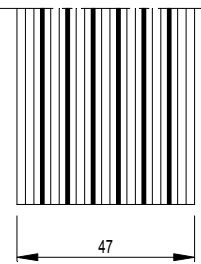
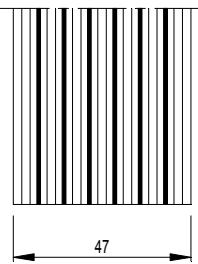
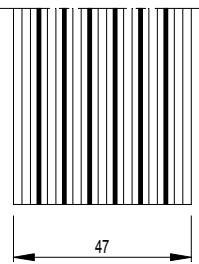
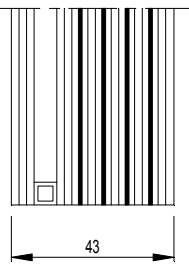


BR4

SG2

BR6

BR6

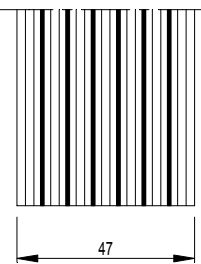
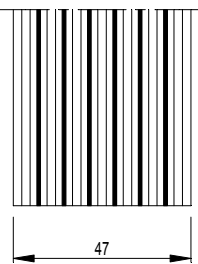
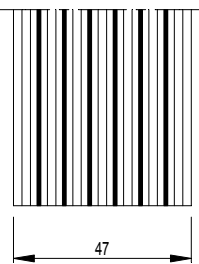
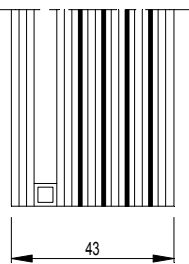


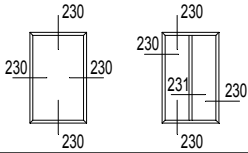
BR4

SG2

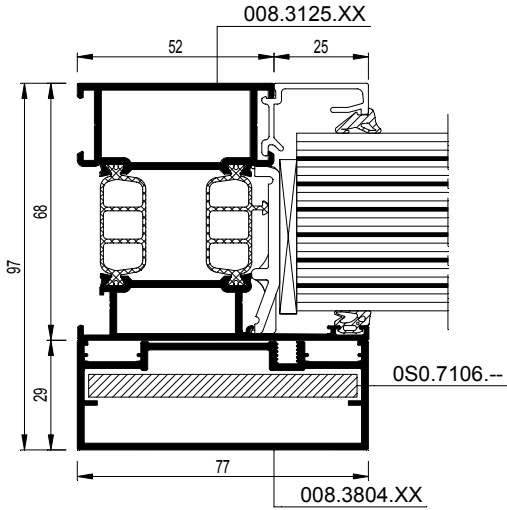
BR6

BR6



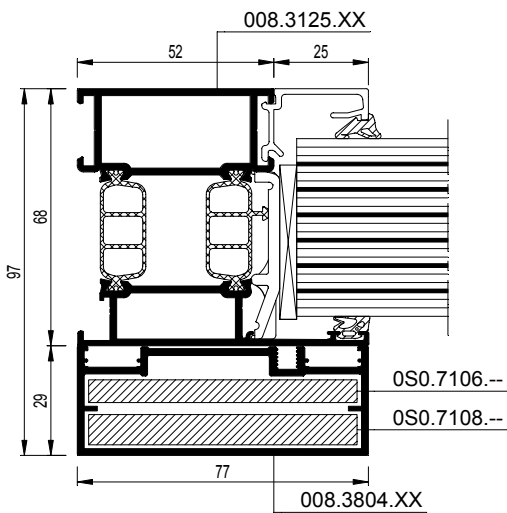


230 KLASSE FB4 & FSG  
 CLASSE FB4 & FSG  
 CLASS FB4 & FSG  
 KLASSE FB4 & FSG

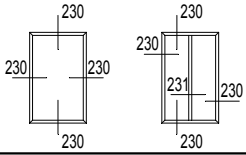


CS77-230001.dxf  
 CS77-230001.dwg

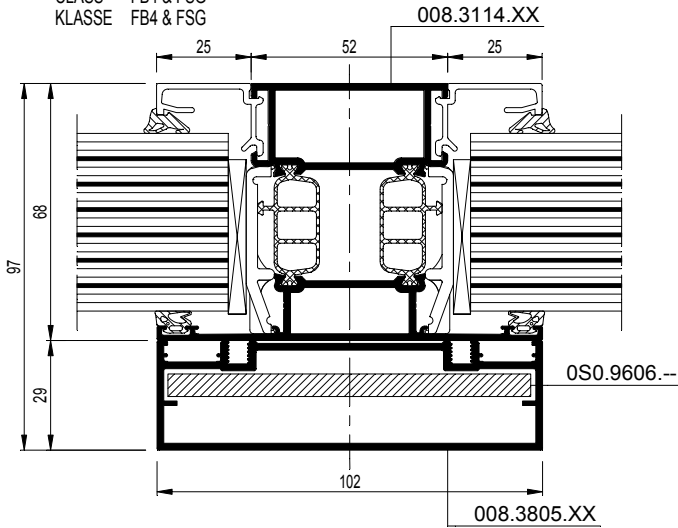
230 KLASSE FB6 & Kalashnikov  
 CLASSE FB6 & Kalashnikov  
 CLASS FB6 & Kalashnikov  
 KLASSE FB6 & Kalashnikov



CS77-230002.dxf  
 CS77-230002.dwg

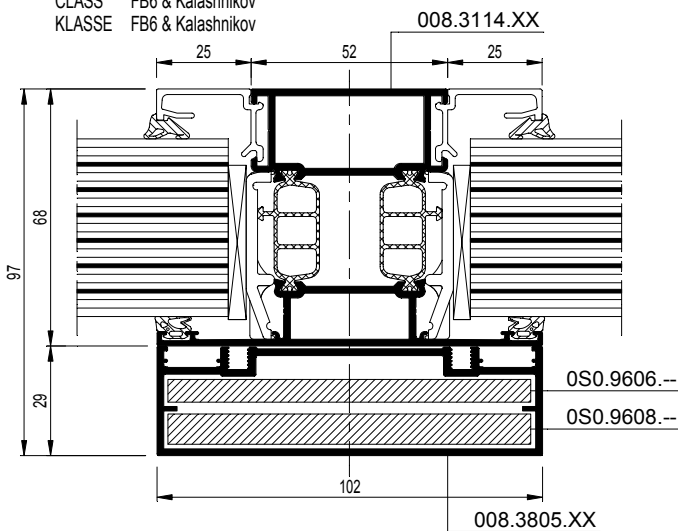


231 KLASSE FB4 & FSG  
 CLASSE FB4 & FSG  
 CLASS FB4 & FSG  
 KLASSE FB4 & FSG



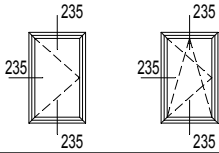
CS77-231001.dxf  
 CS77-231001.dwg

231 KLASSE FB6 & Kalashnikov  
 CLASSE FB6 & Kalashnikov  
 CLASS FB6 & Kalashnikov  
 KLASSE FB6 & Kalashnikov

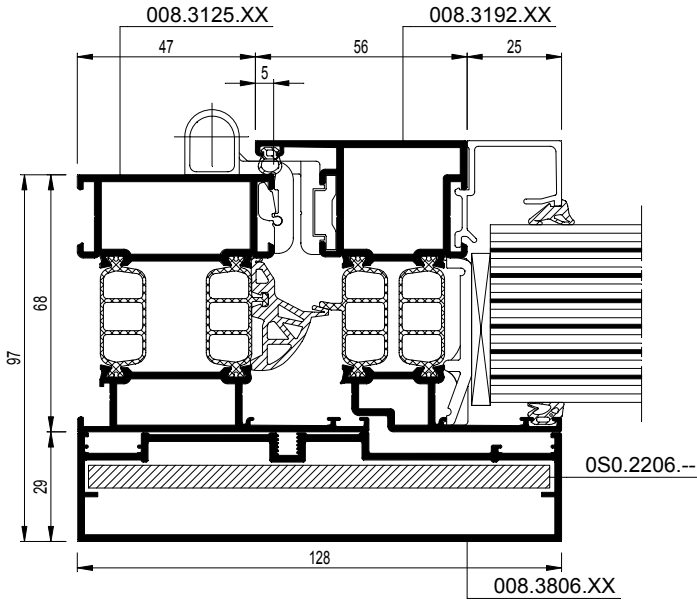


CS77-231002.dxf  
 CS77-231002.dwg



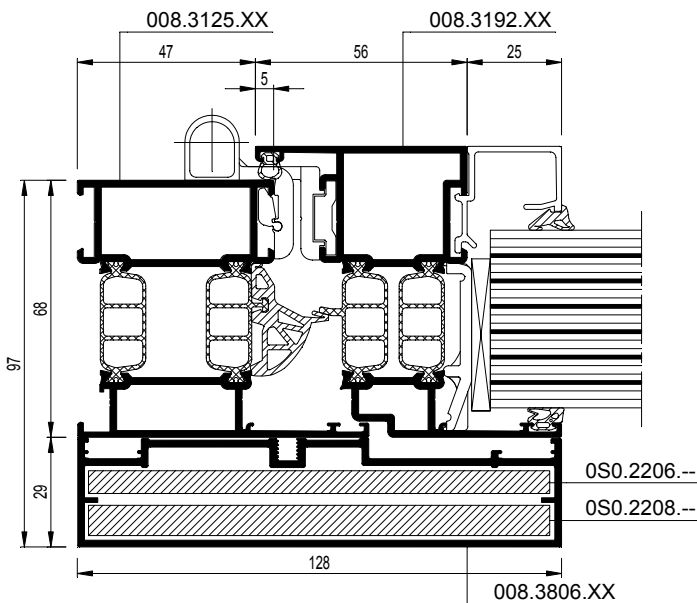


235 KLASSE FB4 & FSG  
 CLASSE FB4 & FSG  
 CLASS FB4 & FSG  
 KLASSE FB4 & FSG

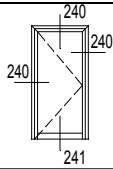


CS77-235001.dxf  
 CS77-235001.dwg

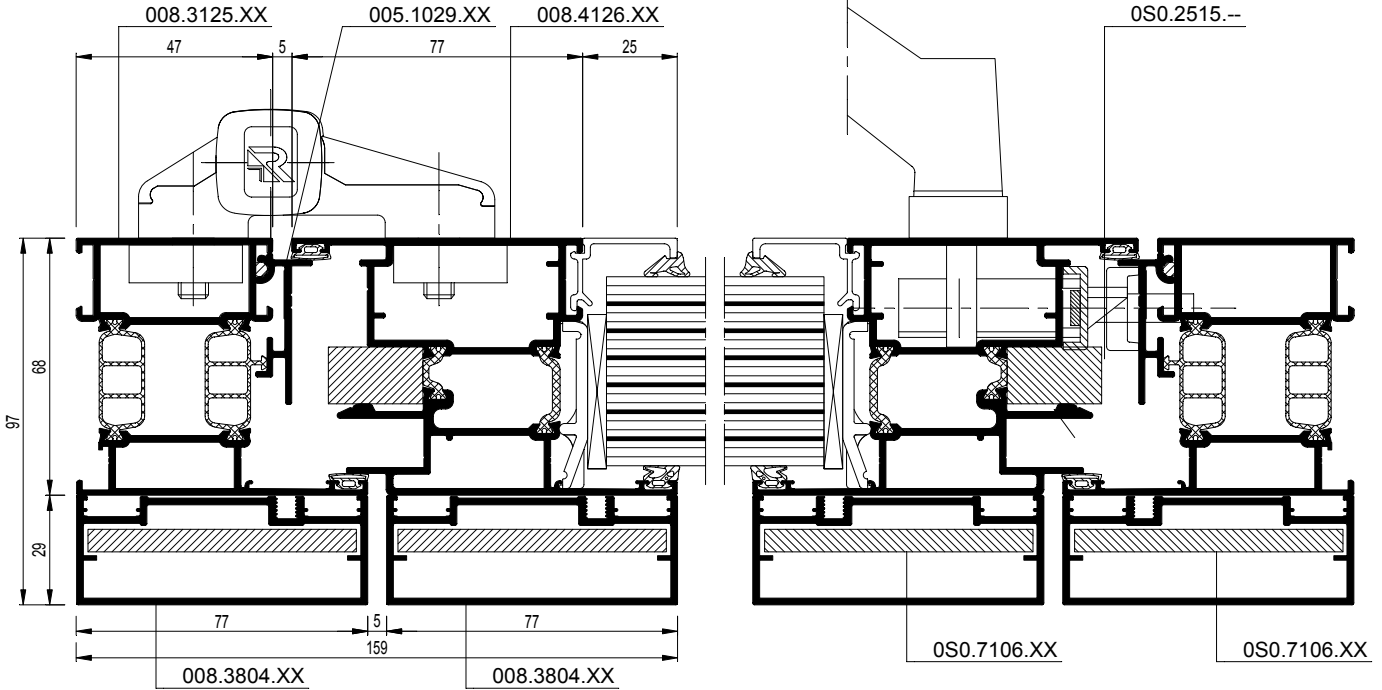
235 KLASSE FB6 & Kalashnikov  
 CLASSE FB6 & Kalashnikov  
 CLASS FB6 & Kalashnikov  
 KLASSE FB6 & Kalashnikov



CS77-235002.dxf  
 CS77-235002.dwg

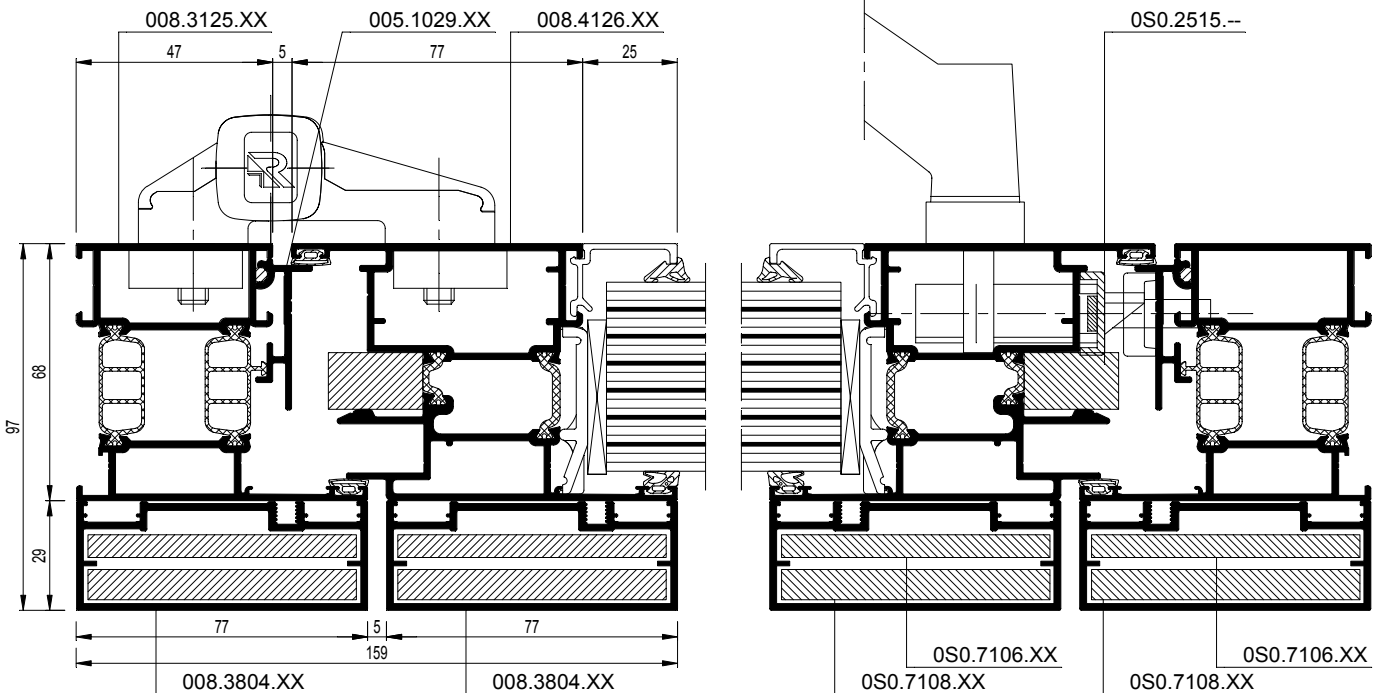


240 KLASSE FB4 & FSG  
 CLASSE FB4 & FSG  
 CLASS FB4 & FSG  
 KLASSE FB4 & FSG

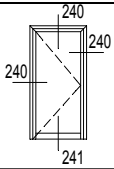


CS77-240001.dxf  
 CS77-240001.dwg

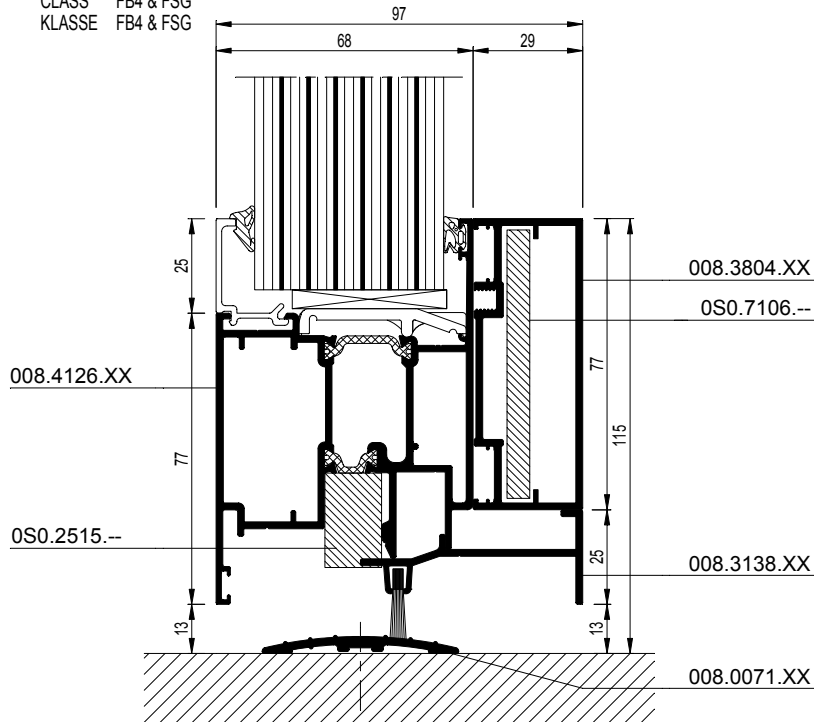
240 KLASSE FB6 & Kalashnikov  
 CLASSE FB6 & Kalashnikov  
 CLASS FB6 & Kalashnikov  
 KLASSE FB6 & Kalashnikov



CS77-240002.dxf  
 CS77-240002.dwg

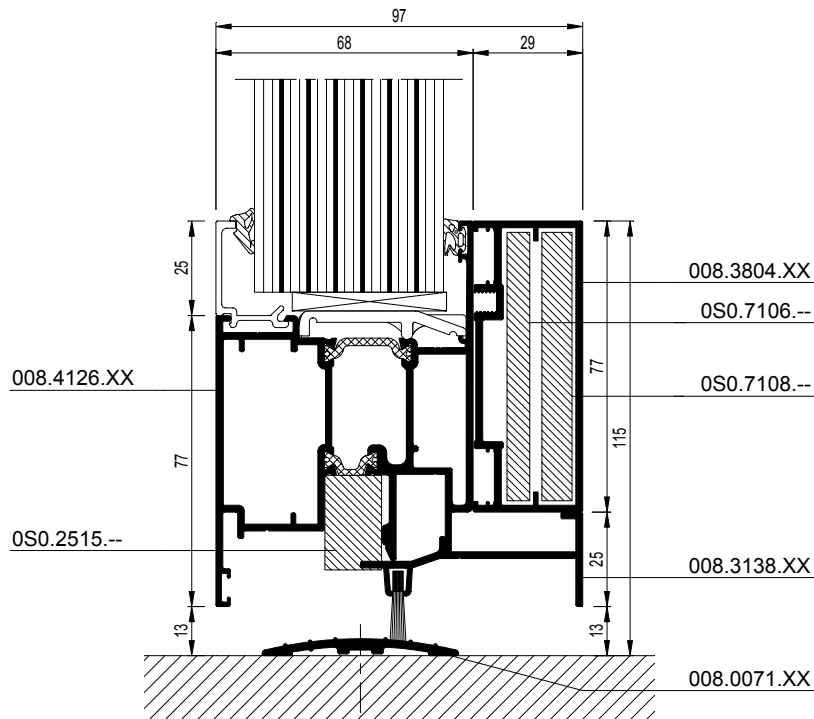


241 KLASSE FB4 & FSG  
 CLASSE FB4 & FSG  
 CLASS FB4 & FSG  
 KLASSE FB4 & FSG

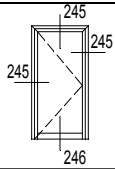


CS77-241001.dxf  
 CS77-241001.dwg

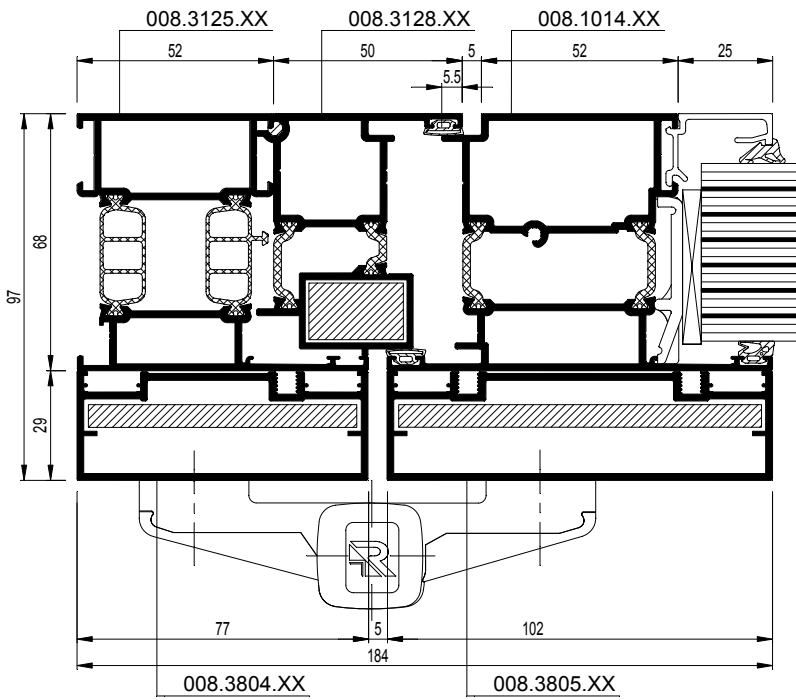
241 KLASSE FB6 & Kalashnikov  
 CLASSE FB6 & Kalashnikov  
 CLASS FB6 & Kalashnikov  
 KLASSE FB6 & Kalashnikov



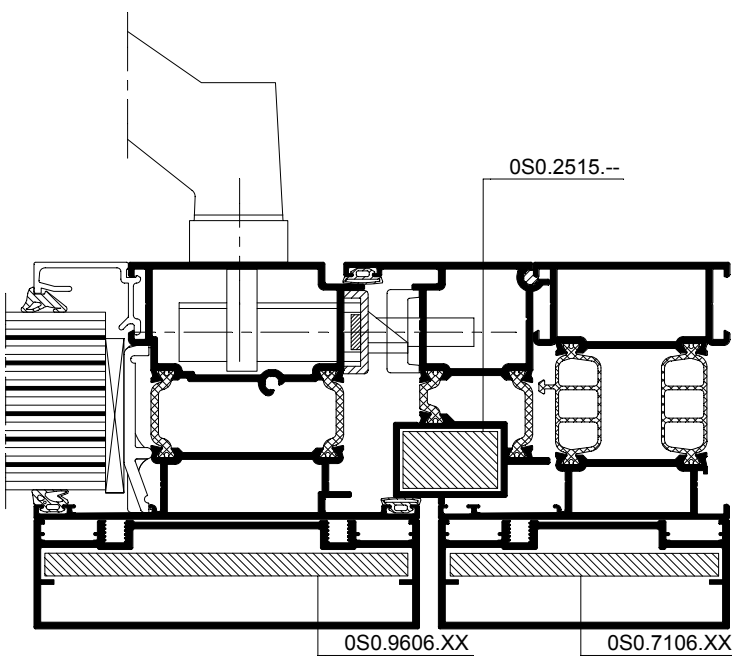
CS77-241002.dxf  
 CS77-241002.dwg



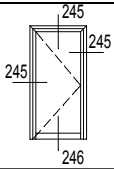
245 KLASSE FB4 & FSG  
 CLASSE FB4 & FSG  
 CLASS FB4 & FSG  
 KLASSE FB4 & FSG



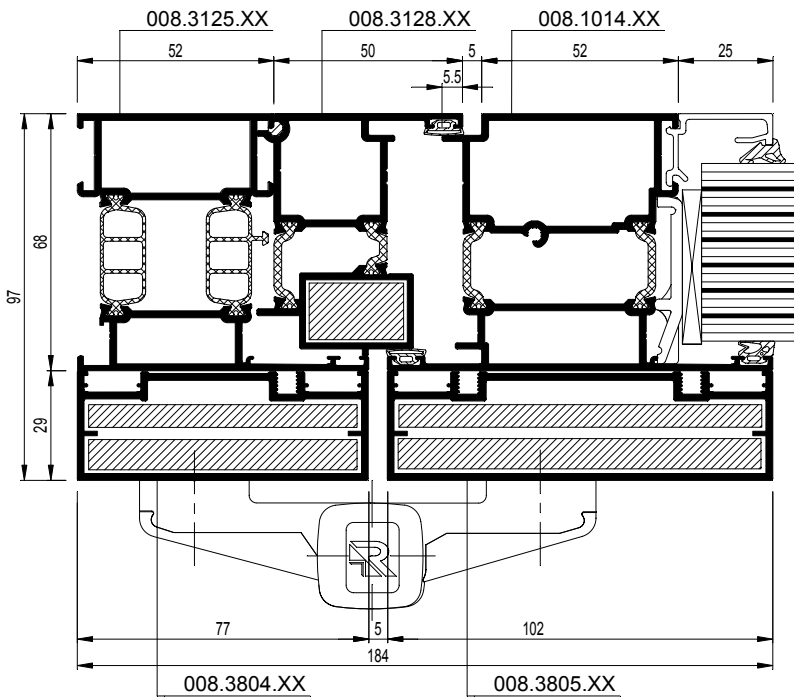
CS77-245001.dxf  
 CS77-245001.dwg



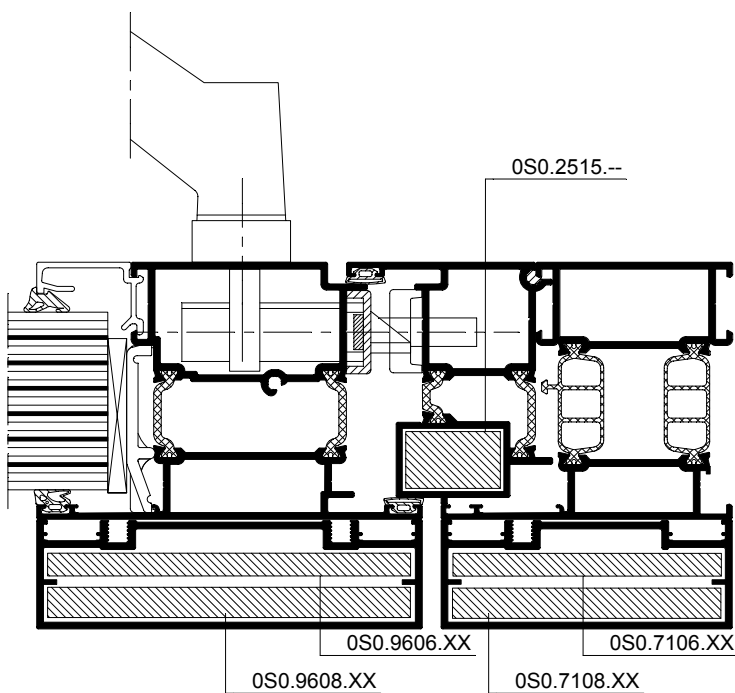
CS77-245001.dxf  
 CS77-245001.dwg



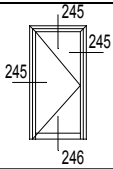
245 KLASSE FB4 & FSG  
 CLASSE FB4 & FSG  
 CLASS FB4 & FSG  
 KLASSE FB4 & FSG



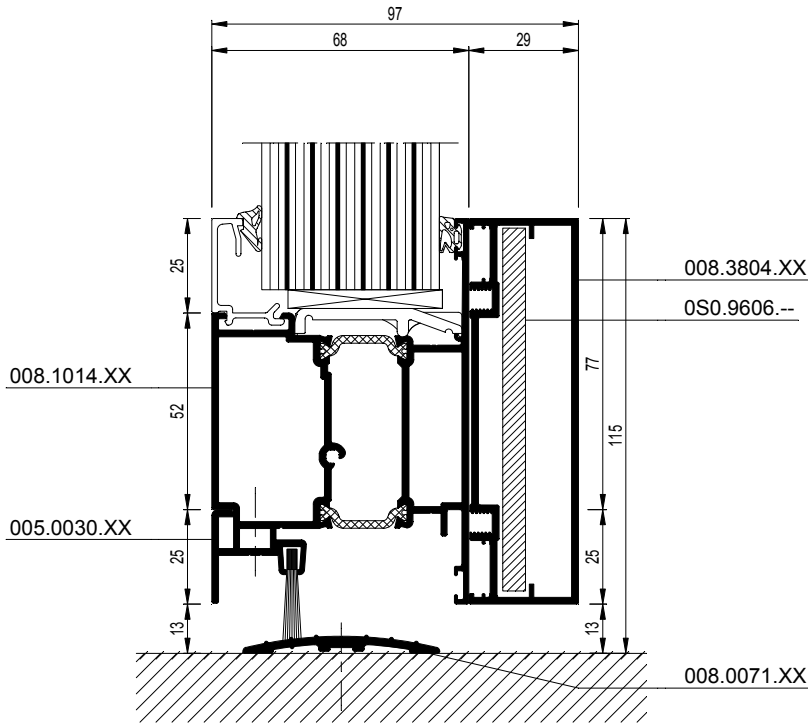
CS77-245002.dxf  
 CS77-245002.dwg



CS77-245002.dxf  
 CS77-245002.dwg

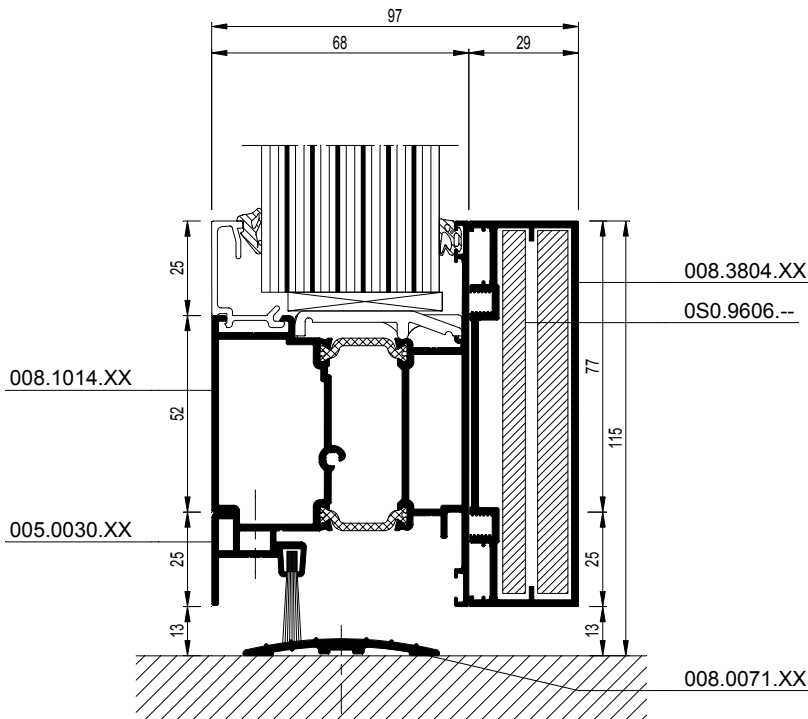


246 KLASSE FB4 & FSG  
 CLASSE FB4 & FSG  
 CLASS FB4 & FSG  
 KLASSE FB4 & FSG



CS77-246001.dxf  
 CS77-245001.dwg

246 KLASSE FB6 & Kalashnikov  
 CLASSE FB6 & Kalashnikov  
 CLASS FB6 & Kalashnikov  
 KLASSE FB6 & Kalashnikov



CS77-246002.dxf  
 CS77-246002.dwg



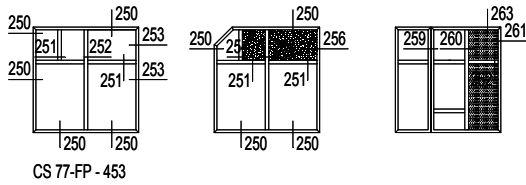
### CS 77 Fire Proof EI 60 (CS 77-FP EI 60)

#### Overview test reports

CS 77-FP - 450

#### 1 Fixed elements

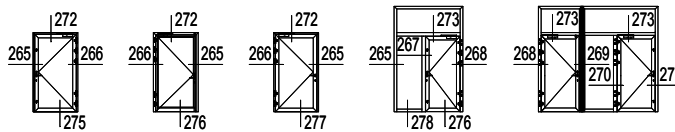
##### Combined fixed window



CS 77-FP - 453

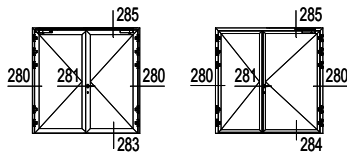
#### 2 Opening elements

##### Door outward opening



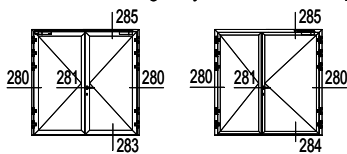
CS 77-FP - 453

##### Z-T Door outward opening



CS 77-FP - 462

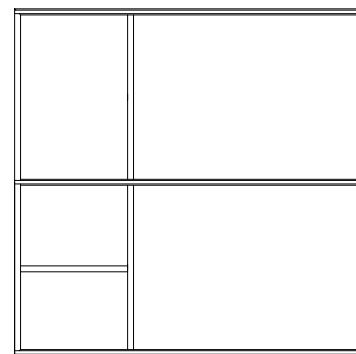
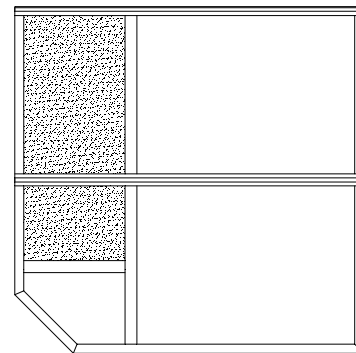
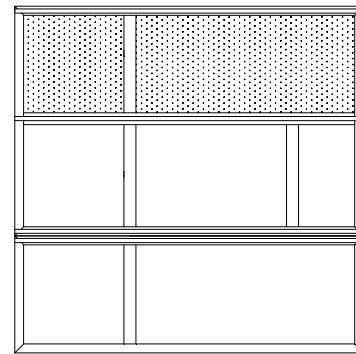
##### Double emergency door outward opening



CS 77-FP - 464

Fire classification following En 13501-2 glazed partitions : 2008- Efectis- R0933

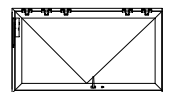
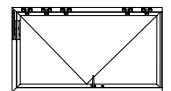
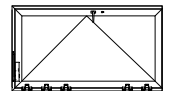
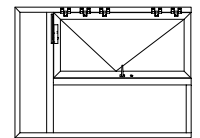
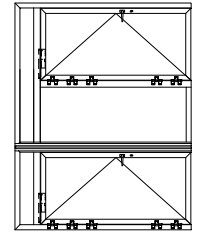
CS 77-FP EI60 Test program REYNAERS ALUMINIUM NV		TEST 1 (60)	TEST 2 (60)	TEST 3 (60)
technical file	glazed partition	glazed partition	glazed partition	glazed partition
fire side - glazing beads	SAM07-1412_EFEC	TF080604-DB-REYNAERS	TF080709-DB-REYNAERS	TF080709-DB-REYNAERS
dimension outer frame B x H (mm)	2960 x 2980	2960 x 2980	2960 x 2980	2960 x 2980
supporting construction	low density, concrete	low density, aerated concrete 675kg/m <sup>3</sup>	high density, concrete	high density, concrete
fixation method	method A, anchors	method B, fisher plug SH8120RT and FUR screw 6.3 x 200mm and 6.3 x 150mm	method B, plugs	method B, plugs
test date	11/01/2008	4/06/2008	8/08/2008	8/08/2008
laboratory	EFFECTIS Netherlands	EFFECTIS Netherlands	EFFECTIS Netherlands	IFT Nürnberg
standard	EN 1364-1	EN 1364-1	EN 1364-1	EN 1364-1
result (time)	60min	62min 1, 69min E	60min E, 59min, EI EI60 ok for glass, not ok for panels	60min E, 59min, EI EI60 ok for glass, not ok for panels
test report nr	2008-Efectis-R0171Rev.1	2008-Efectis-R0648		271 36 177
class, Report nr	2008-Efectis-R0172	2008-Efectis-R0652		
fire resistant classification	E60-EI60-EW/60	E60-EI60-EW/60		
field of application	up to 3.00m height	up to 4.00m height		
Infill 1	PLKINGTON, Pyrostop 60/101, 23mm	PLKINGTON, Pyrostop 60/101, 23mm	AGC, pyrobel 60/25 EG, 45mm	AGC, pyrobel 60/25 EG, 45mm
Infill 2	1394 x 1907mm, 2.65m <sup>2</sup>	652 x 904mm, 0.59m <sup>2</sup>	886 x 894, 0.79m <sup>2</sup>	886 x 894, 0.79m <sup>2</sup>
Infill 3	1394 x 1907mm, 2.65m <sup>2</sup>	1392x1900mm, 2.64m <sup>2</sup>	AGC, pyrobel 60/25 EG, 45mm	AGC, pyrobel 60/25 EG, 45mm
Infill 4	654 x 907mm, 0.59m <sup>2</sup>	1392x1900mm, 2.64m <sup>2</sup>	PANEL PROMATECT H 25 + (2 X 2,5)	PANEL PROMATECT H 25 + (2 X 2,5)
Infill 5	680 x 907mm, 0.62m <sup>2</sup>	IQ panel ECLIPS, type IQpr36, 44mm	AGC, pyrobel 60/25 EG, 45mm	AGC, pyrobel 60/25 EG, 45mm
Infill 6	1394 x 907mm, 1.26m <sup>2</sup>	IQ panel ECLIPS, type IQpr36, 44mm	875 X 1914, 1.67m <sup>2</sup>	875 X 1914, 1.67m <sup>2</sup>
Infill 7			AGC, pyrobel 60/25 EG, 45mm	AGC, pyrobel 60/25 EG, 45mm
reinforcement profile configuration	YES, one side	YES, both sides	YES, both sides	YES, both sides





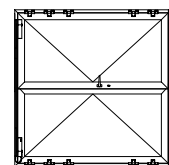
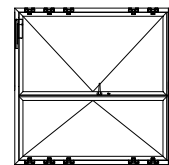
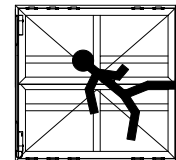
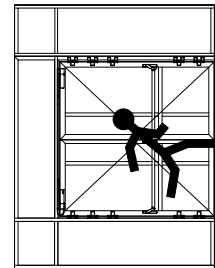
## Fire classification following En 13501-2 doors : 2008- Efectis- R0934

	TEST 4.1 (60) single door	TEST 4.2 (60) single door	TEST 4.3 (60) single door	TEST 4.3 (60) combined single door	TEST 6 (60) 2 times Single leaf door
technical file opening	TF080515-DB-REYNAERS-EI60	TF080515-DB-REYNAERS-EI60	TF080901-DB-REYNAERS-EI60	TF070308_DB_Reynaers	TF080630-DB-REYNAERS
fire side	towards the fire	towards the fire	towards the fire	away from fire	towards the fire
dimension outer frame B x H (mm)	1396 x 2353	1396 x 2353	1396 x 2658mm	2000 x 2700	3474 x 2700mm
dimension door leaf B x H (mm)	1300 x 2300	1300 x 2300	1300 x 2600	1000 x 2100	1300 x 2300mm
total opening	1260 x 2285	1260 x 2285	1260 x 2590	960 x 2085	1260 x 2285mm
supporting construction	low density 150mm 675kg/m³	low density 150mm 675kg/m³	low density 150mm, 675kg/m³	flexible construction	low density 150mm
fixation method	method A, anchors	method A, anchors	method B, FUR 10x 160mm +FISHER plugs 10mm	method B, HECO screws	method B, FUHR screws
test date	26/11/2007	15/09/2008	10/9/2008	7/03/2008	30/06/2008
laboratory	EFFECTIS Netherlands	EFFECTIS Netherlands	EFFECTIS Netherlands	ITB Poland	EFFECTIS Netherlands
standard	EN 1634-1:2000	EN 1634-1:2000	EN 1634-1:2000	EN 1634-1:2000	EN 1634-1:2000
result (time)	63min	EI1 53min, EI2 66min	71min EI2 53min EI1	61min	61min
test report nr	2008-Efectis-R0165rev.1	2008-Efectis-R0647	2008-Efectis-R0656	No. 1019.5/07	2008-Efectis-R0649
class. Report nr	2008-Efectis-R0166	2008-Efectis-R0651	2008-Efectis-R0657	EI1	2008-Efectis-R0653
fire resistant classification	E60 -EI160-EI260-EW60	E60, EI1 45, EI2 60, EW60	E60, EI1 45, EI2 60, EW60	EI60, EI1 60, EI2 60, EW60	EI60, EI1 60, EI2 60, EW60
field of application	= +15% B or H, +20% surface	= +15% B or H, +20% surface	= +15% B or H, +20% surface	= +15% B or H, +20% surface	= +15% B or H, +20% surface
infill 1	AGC, pyrobel 25MF, 25mm	PILKINGTON, Pyrostop 60/101, 23mm	PILKINGTON, Pyrostop 60/181, 40mm	PILKINGTON, Pyrostop 60/101, 23mm	PILKINGTON, Pyrostop 60/101, 23mm
infill 2	1136 x 2136mm, 2.43m²	1136 x 2136mm, 2.43m²	1136 x 2436mm, 2.77m²	2136 x 936mm, 2m²	936 x 2136mm, 2m²
infill 3	-	-	-	2274 x 672mm, 1.53m²	936 x 2136mm, 2m²
infill 4	-	-	-	PILKINGTON, Pyrostop 60/201, 27mm	PILKINGTON, Pyrostop 60/101, 23mm
infill 5	-	-	-	250 x 1886mm, 0.47m²	2274 x 880mm, 2.0m²
supplier hinges	Dr Hahn	Dr Hahn	Dr Hahn	Dr Hahn	Dr Hahn
reference hinges	065.6380.XX, A851_Y453	065.6380.XX, A851_Y453	065.6380.XX, A851_Y453	065.6381.XX	065.6381.XX
supplier locking device active leaf	WILKA	BKS	WILKA	WILKA	BKS ; WILKA
ref locking device active leaf	061.7302.ZC, M835 2Q56N0L	061.7841.--, B1838 0211/0212	061.7303.ZC, M835 2Q56N0L	061.7302.ZC, M835 2Q56N0L	061.7843.--, B1838 0814 ; 061.7303.ZC, M835 2Q56N0L
supplier locking device passive leaf	-	-	-	-	electrical receiver BKS: 061.6291.--; B 92430013
ref locking device passive leaf	-	-	-	-	-
supplier handle active leaf	SOBINCO	BKS	SOBINCO	SOBINCO	BKS ; SOBINCO
ref handle active leaf	061.7230.XX, 822-140	061.6431.--, B 7125 5205	061.7230.XX, 822-140	061.7230.XX, 822-140	061.6433.--, B 7125 5208 ; 061.7230.XX, 822-140
supplier handle passive leaf	-	-	-	-	-
ref handle passive leaf	-	-	-	-	-
bottom door	brush, 081.9141.04	automatic doorgasket, 081.9050.--	threshold	brush, 081.9141.04	brush, 081.9141.04 and automatic doorgasket, 081.9041.--
supplier doorcloser	GEZE	GEZE	GEZE	GEZE	GEZE
ref doorcloser	065.7581.14, TS 5000	065.7581.14, TS 5000	065.7581.14, TS 5000	065.7581.14, TS 5000	065.7581.14, TS 5000
reinforcement profile configuration	NO	NO	NO	NO	YES



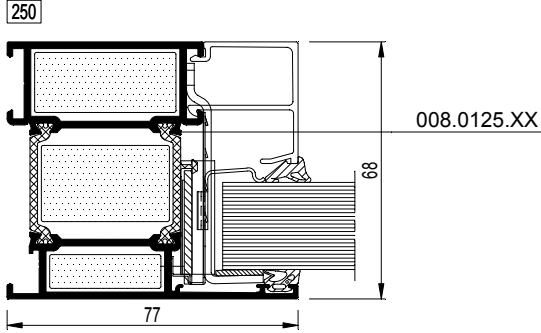
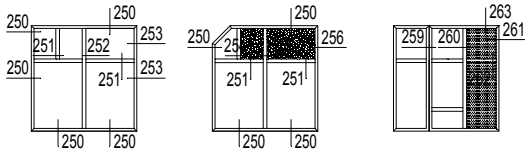
## Fire classification following En 13501-2 doors : 2008- Efectis- R0934

CS 77-FP EI60 Test program REYNAERS ALUMINIUM NV	TEST 7 (60)	TEST 8 (60)	TEST 9 (60)	TEST 10 (60)
	<b>double door</b>	<b>double door</b>	<b>double door panic EN1179</b>	<b>double door panic EN1125</b>
technical file opening	SAM07-2211_ITB	TF060308-DB-REYNAERS	TF080313-DB-REYNAERS-EI60	TF080813_DB_REYNAERS
fire side	outward opening	outward opening	outward opening	outward opening
dimension outer frame B x H (mm)	away from fire	towards the fire	away from fire	towards the fire
dimension door leaf B x H (mm)	2300 x 2396 (2x1396) x 2300	2353 x 2366mm (1010 + 1310) x 2305	2320 x 2363mm (2x1396) x 2300	3940 x 2985mm (2x1150) x 2305
total opening	2164 x 2285mm	2164 x 2285mm	2164 x 2285mm	2260 x 2285
supporting construction	low density 150mm	flexible construction	flexible construction	associated supp. Construction, double door in glazed wall
fixation method	method A, anchors	method A, anchors	method B, HECO TOPIX 6x120 screws	method B, FUR 10 x 160 T A4 and FUR 8 x 120 T A4
test date	22/11/2007	6/03/2008	18/04/2008	13/08/2008
laboratory	ITB Poland	ITB Poland	IFT GmbH	EFFECTIS Netherlands
standard	EN 1634-1:2000	EN 1634-1:2000	EN 1634-1:2000	EN 1634-1:2000
result (time)	68min EN, 61,5min DIN	59min » 60min		66min
test report nr	No. 1019:1/07	No. 1019.4/07	271_35444	2008-Efectis-R0650
class. report nr	EI1	EI2		2008-Efectis-R0654
fire resistant classification			classification E60 - EW60	E60, EI 45, EI2 60, EW 60
field of application				
infill 1	PILKINGTON, Pyrostop 60/101, 23mm	AGC, pyrobel 60/25 EG, 45mm (30.4-9-6)	AGC, pyrobel 60/25 EG, 45mm	PILKINGTON, Pyrostop 60/101, 23mm
infill 2	996 x 2136, 2.13m²	846 x 2136mm, 1.81m²	4x (638 x 1037), 4x(0.66)m²	673 x 1385mm, 0.93m²
infill 3	996 x 2136, 2.13m²	AGC, pyrobel 60/25 EG, 45mm (30.4-9-6)	AGC, pyrobel 60/25 EG, 45mm	673 x 689mm, 0.46m²
infill 4		1146 x 2136mm, 2.45m²	4x (248 x 1037), 4x(0.26)m²	261 x 1385mm, 0.36m²
infill 5				645 x 2274mm, 1.47m²
supplier hinges	Dr Hahn	Dr Hahn	Simonswerk	Dr Hahn
reference hinges	065.6380.XX, A851_Y453	065.6380.XX, A851_Y453	065.6387.XX,	065.6381.XX + 065.6382.XX
supplier locking device active leaf	BKS	BKS	BKS,	BKS, panic EN1125
ref locking device active leaf	061.7840-.., 1838	061.7840-.., 1838	061.7844-.. BF 7789	061.7844-..
supplier locking device passive leaf	-	-	BKS, 1890	BKS, panic EN1125
ref locking device passive leaf	-	-	061.6612.ZC	061.6612.ZC
supplier handle active leaf	BKS	BKS	BKS,	BKS,
ref handle active leaf	061.6431-.., B 7125 5205	061.6431-.., B 7125 5205	061.6431-..	061.6428-.. + 061.6431-..
supplier handle passive leaf	-	-	BKS,	BKS,
ref handle passive leaf	-	-	061.6430-..	061.6425-.. + 061.6421.XX, B7125 5203
bottom door	automatic doorgasket, 081.9050-..	brush, 081.9141.04	automatic doorgasket, 081.9050-..	brush, 081.9141.04
supplier doorcloser	GEZE	GEZE	GEZE	GEZE
ref doorcloser	065.7583.14, TS 5000IS	065.7583.14, TS 5000IS	065.7583.14, TS 5000IS	065.7583.14, TS 5000IS
reinforcement profile	NO	NO	NO	YES

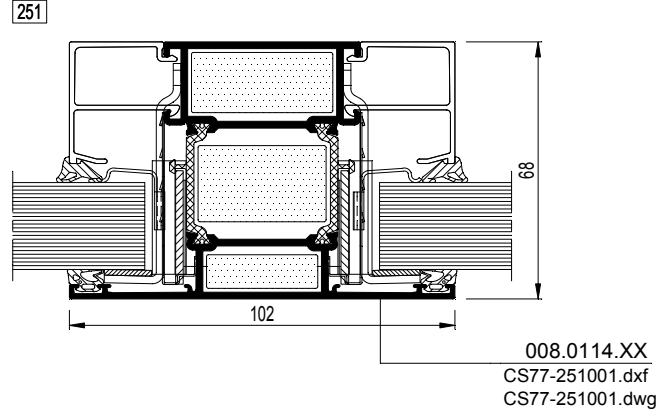


# CS 77-FP EI 60

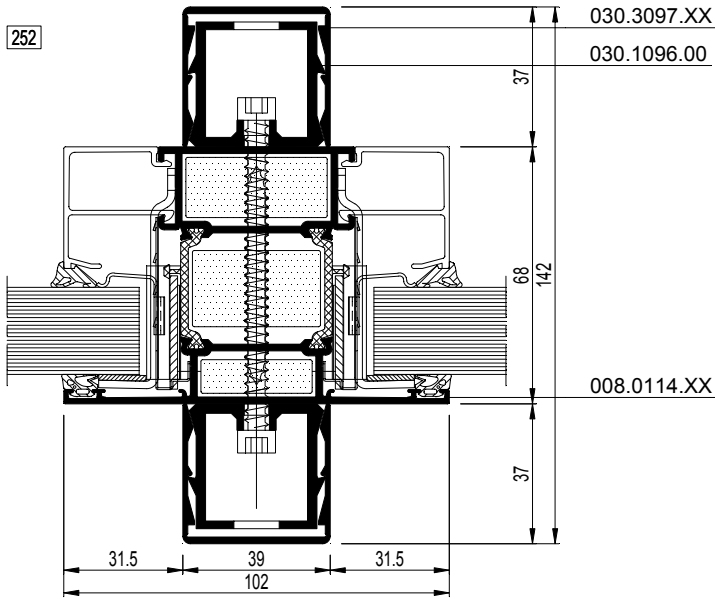
Vaste elementen - Samengesteld vast raam  
 Eléments fixes - Fenêtre fixe composée  
 Fixed elements - Combined fixed window  
 Feste Elemente - Kombinierte Festverglasung



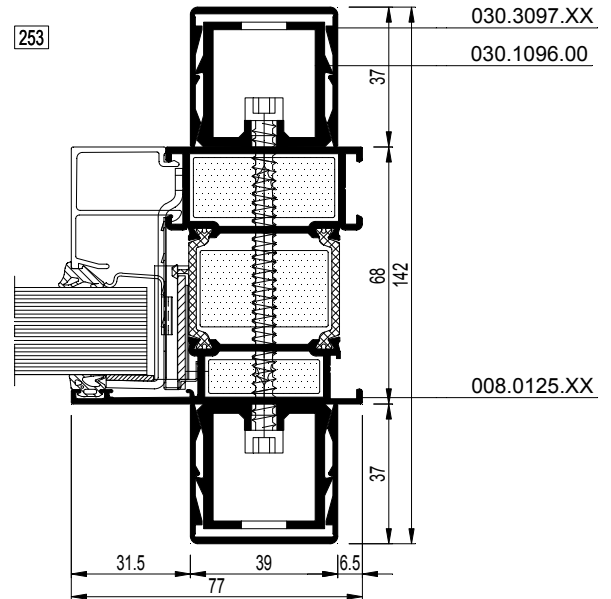
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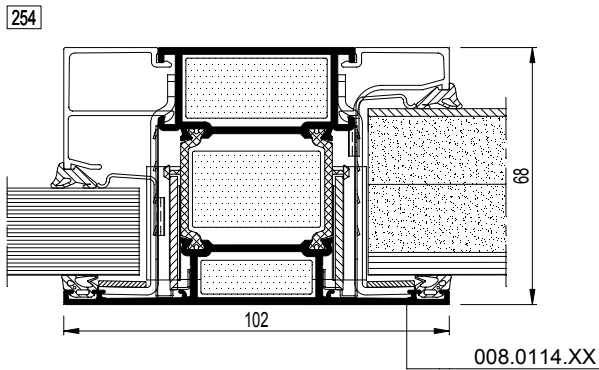
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CS77-252001.dxf  
 CS77-252001.dwg



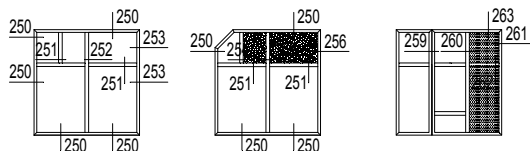
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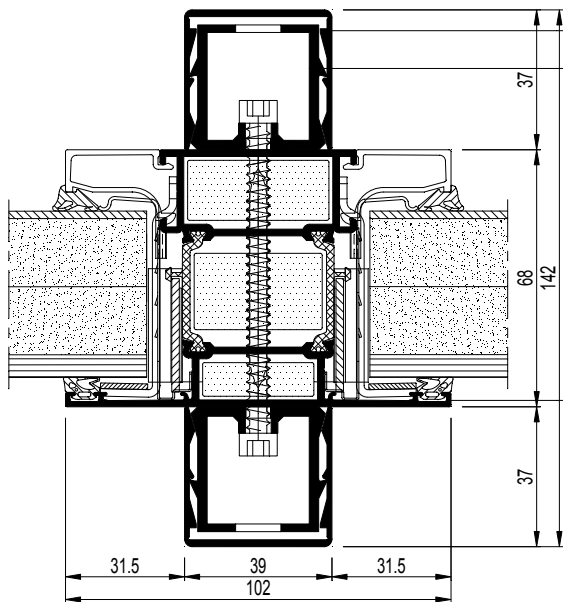
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 CS77-254001.dwg

# CS 77-FP EI 60

Vaste elementen - Samengesteld vast raam  
 Eléments fixes - Fenêtre fixe composée  
 Fixed elements - Combined fixed window  
 Feste Elemente - Kombinierte Festverglasung



255

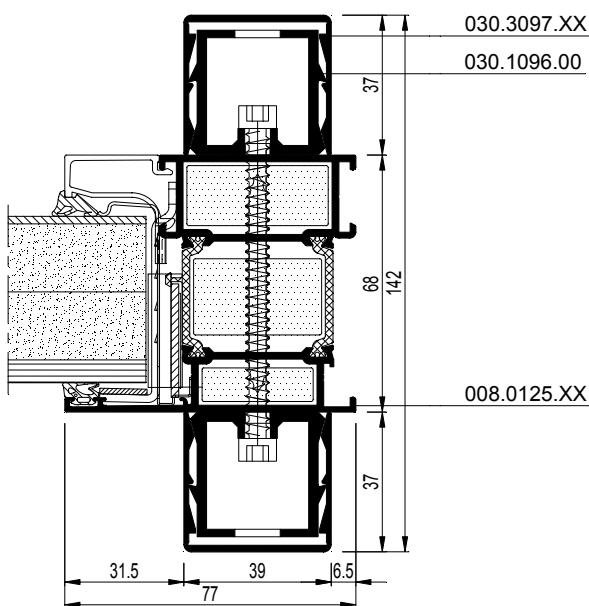


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030.1096.00

008.0114.XX

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CS77-255001.dwg

256

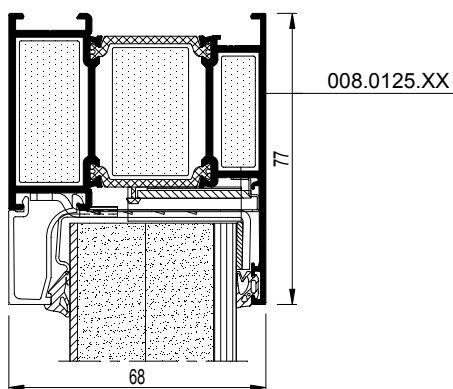


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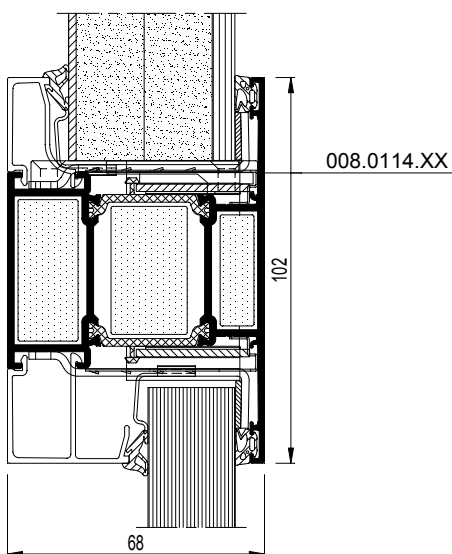
257



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CS77-257001.dwg

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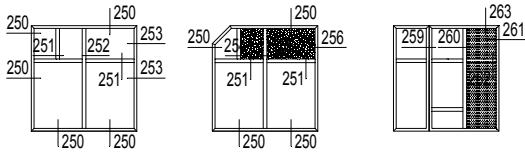


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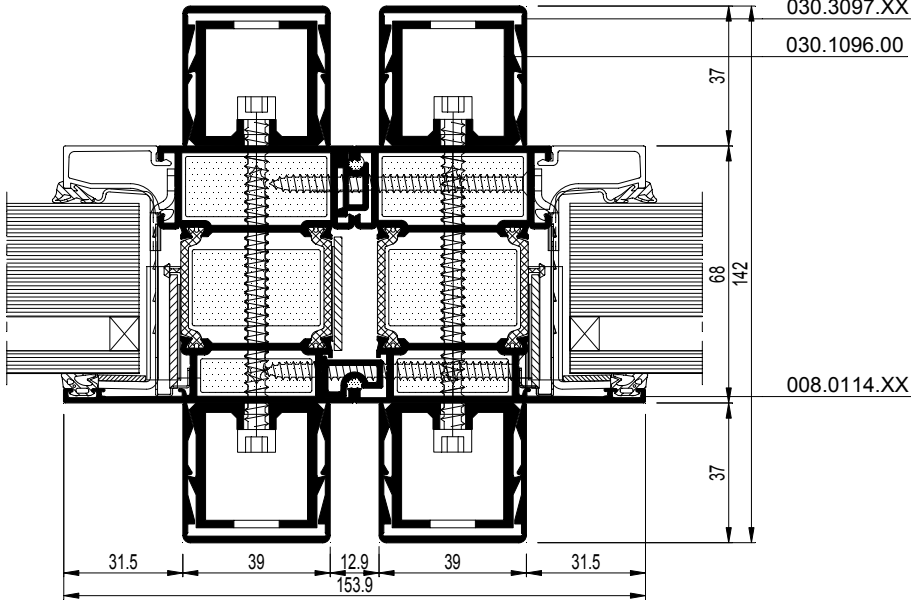
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CS77-258001.dwg

# CS 77-FP EI 60

Vaste elementen - Samengesteld vast raam  
 Eléments fixes - Fenêtre fixe composée  
 Fixed elements - Combined fixed window  
 Feste Elemente - Kombinierte Festverglasung

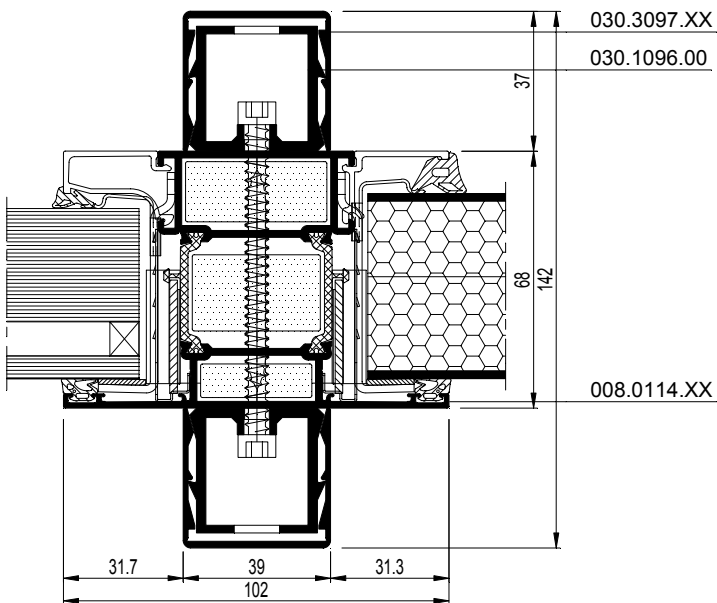


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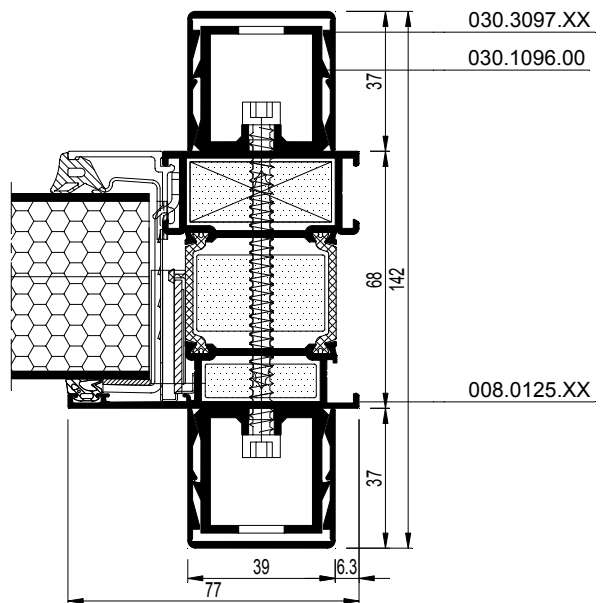
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260



CS77-260001.dxf  
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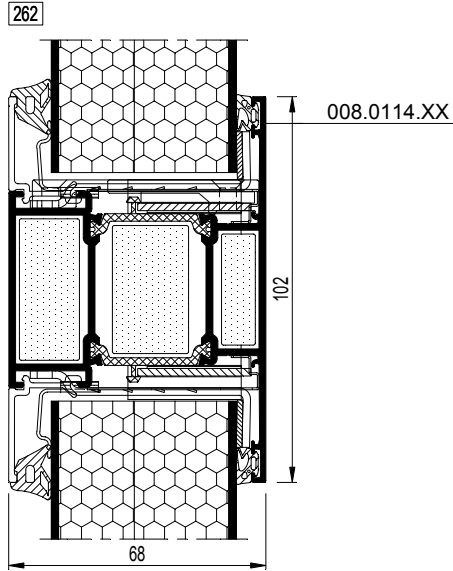
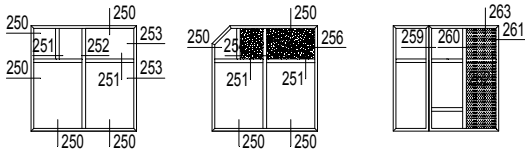
261



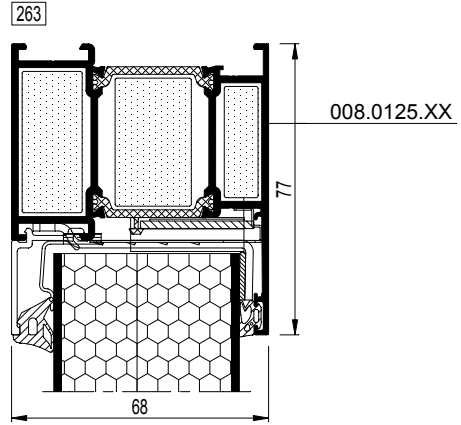
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 CS77-261001.dwg

# CS 77-FP EI 60

Vaste elementen - Samengesteld vast raam  
 Eléments fixes - Fenêtre fixe composée  
 Fixed elements - Combined fixed window  
 Feste Elemente - Kombinierte Festverglasung



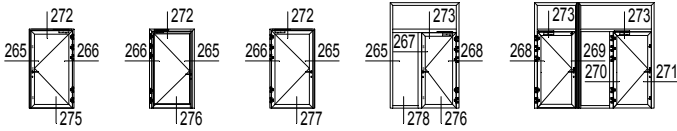
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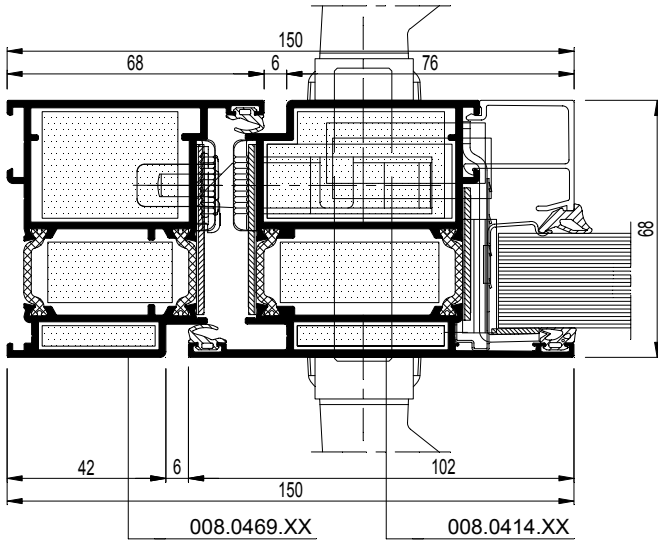
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 CS77-263001.dwg

# CS 77-FP EI 60

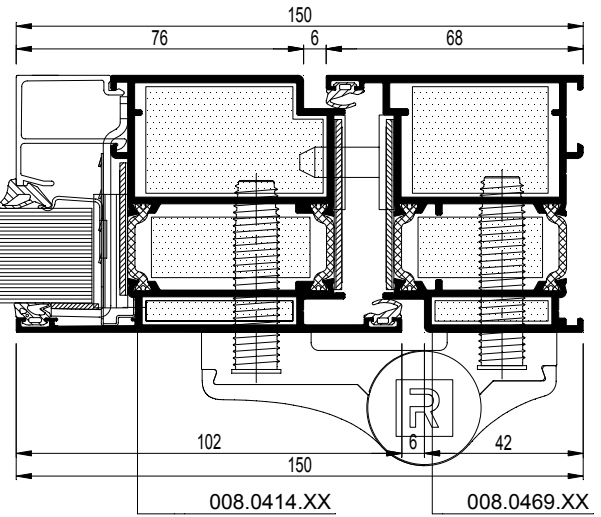
Opengaande elementen - Deur naar buiten draaiend  
 Éléments ouvrants - Porte ouvrant vers l'extérieur  
 Opening elements - Door outward opening  
 Öffnende Elemente - Tür nach aussen öffnend



265



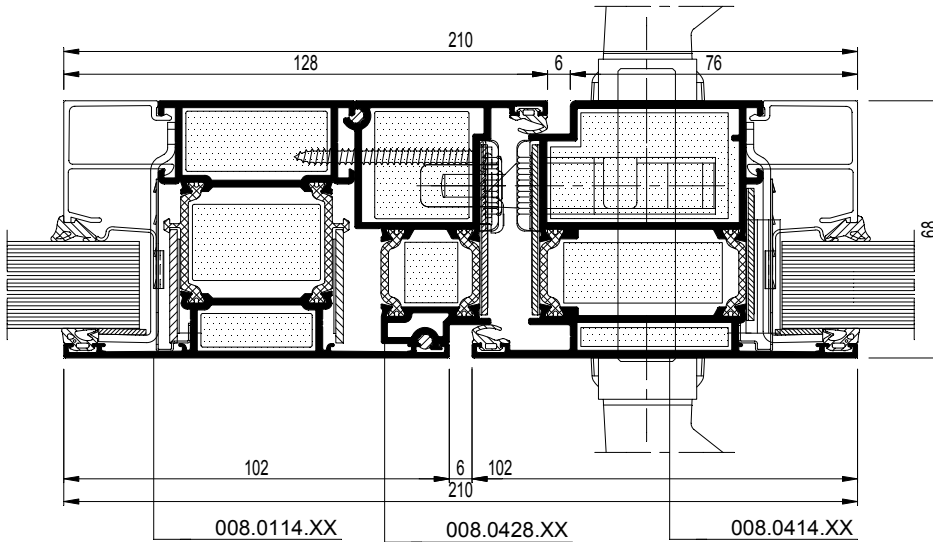
266



CS77-265001.dxf  
 CS77-265001.dwg

CS77-266001.dxf  
 CS77-266001.dwg

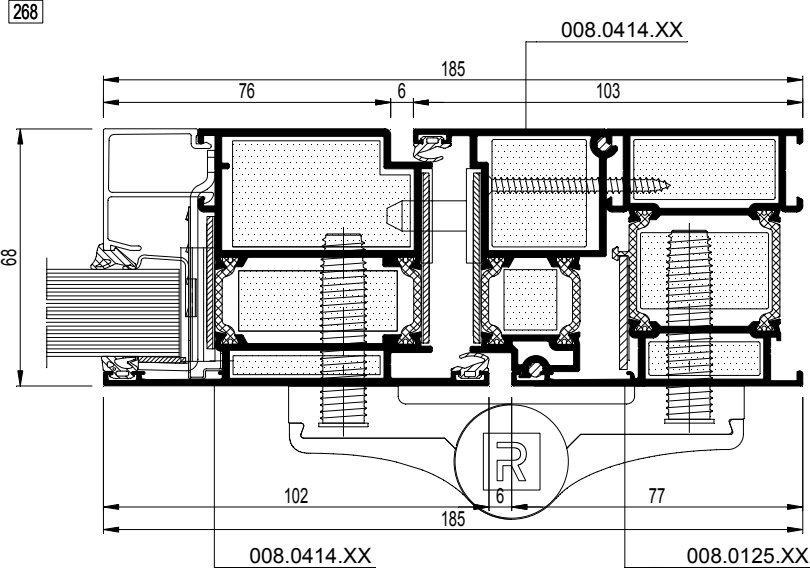
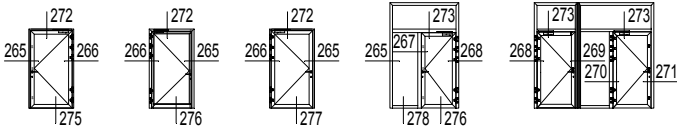
267



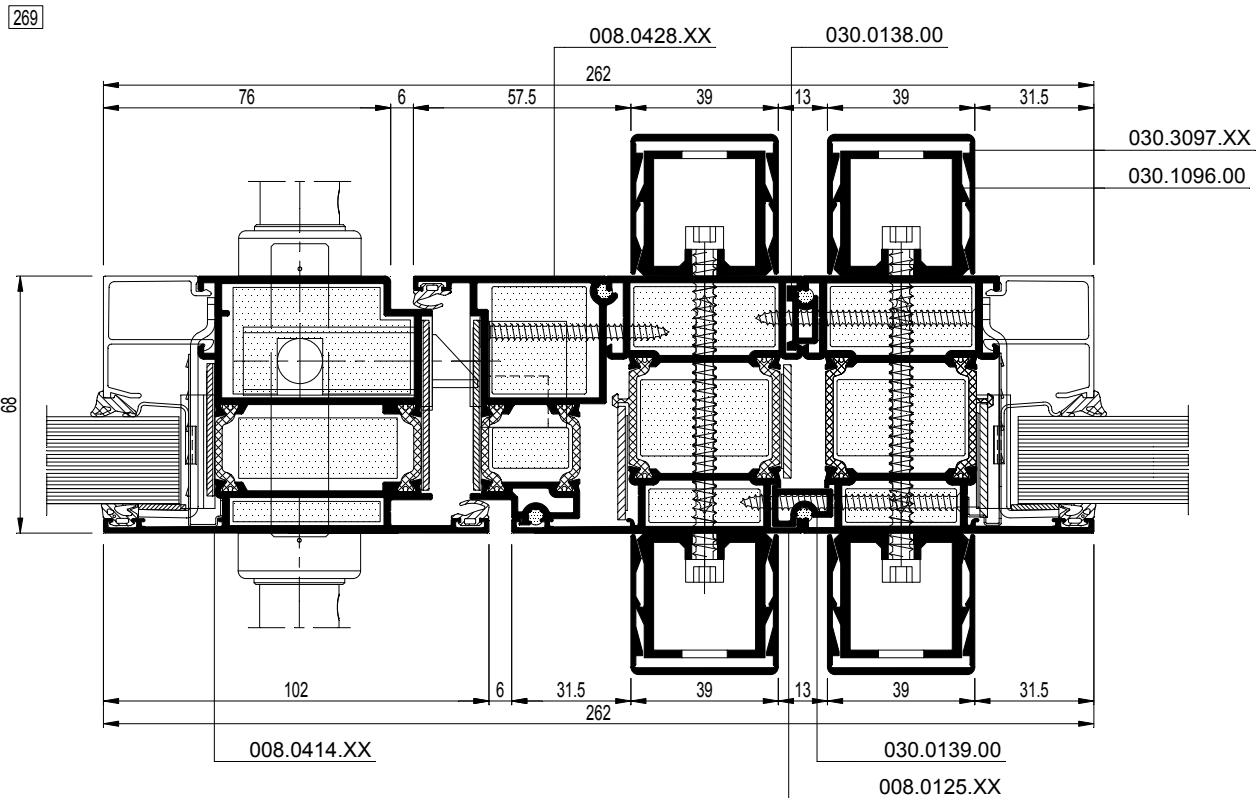
CS77-267001.dxf  
 CS77-267001.dwg

# CS 77-FP EI 60

Opengaande elementen - Deur naar buiten draaiend  
 Eléments ouvrants - Porte ouvrant vers l'extérieur  
 Opening elements - Door outward opening  
 Öffnende Elemente - Tür nach aussen öffnend



CS77-268001.dxf  
 CS77-268001.dwg

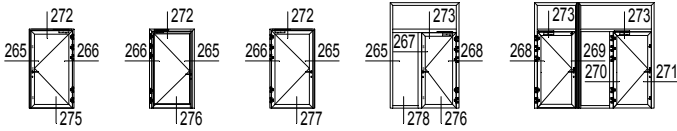


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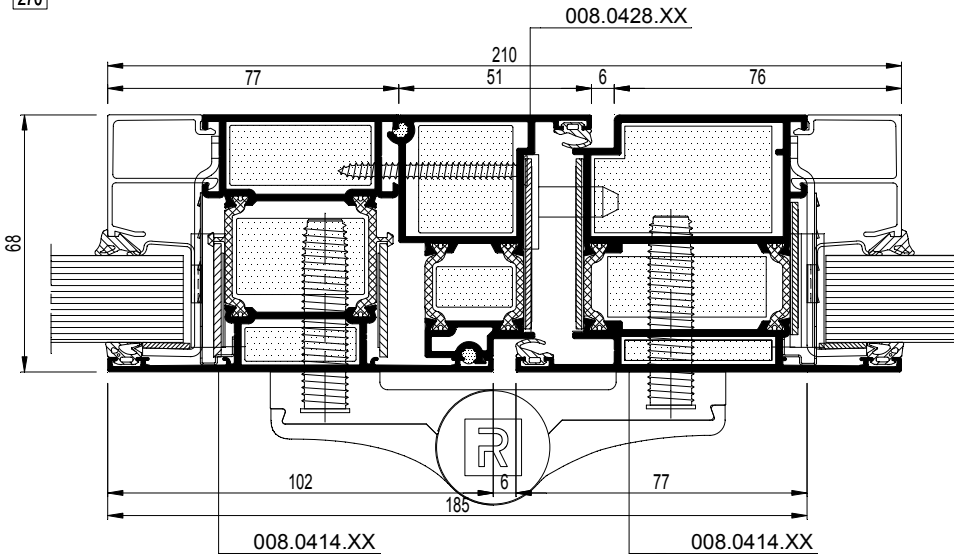


# CS 77-FP EI 60

Opengaande elementen - Deur naar buiten draaiend  
 Eléments ouvrants - Porte ouvrant vers l'extérieur  
 Opening elements - Door outward opening  
 Öffnende Elemente - Tür nach aussen öffnend

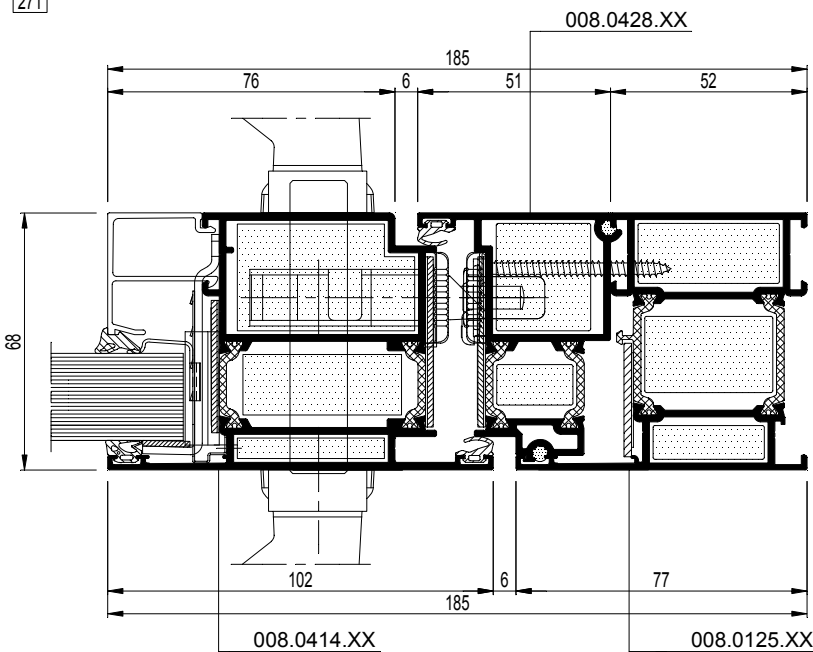


270



CS77-270001.dxf  
 CS77-270001.dwg

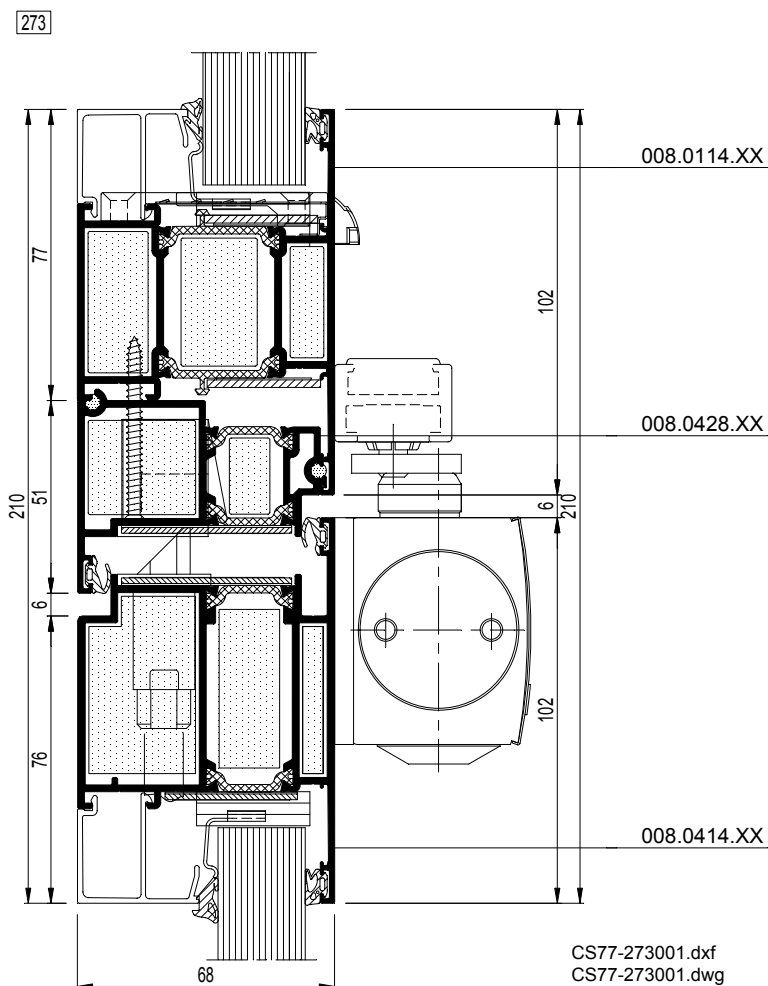
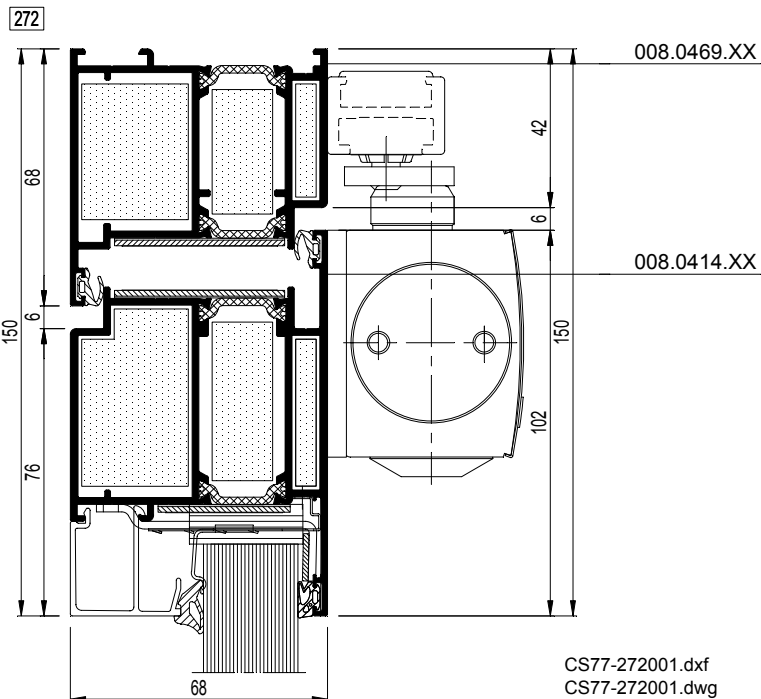
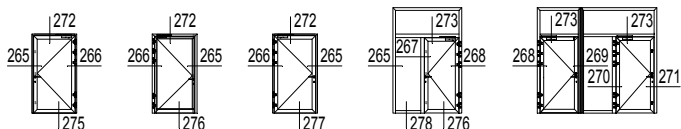
271



CS77-271001.dxf  
 CS77-271001.dwg

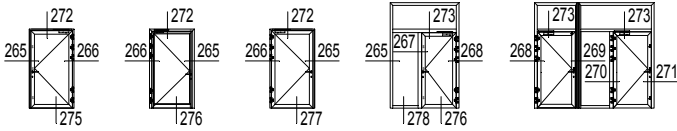
# CS 77-FP EI 60

Opengaande elementen - Deur naar buiten draaiend  
 Éléments ouvrants - Porte ouvrant vers l'extérieur  
 Opening elements - Door outward opening  
 Öffnende Elemente - Tür nach aussen öffnend



# CS 77-FP EI 60

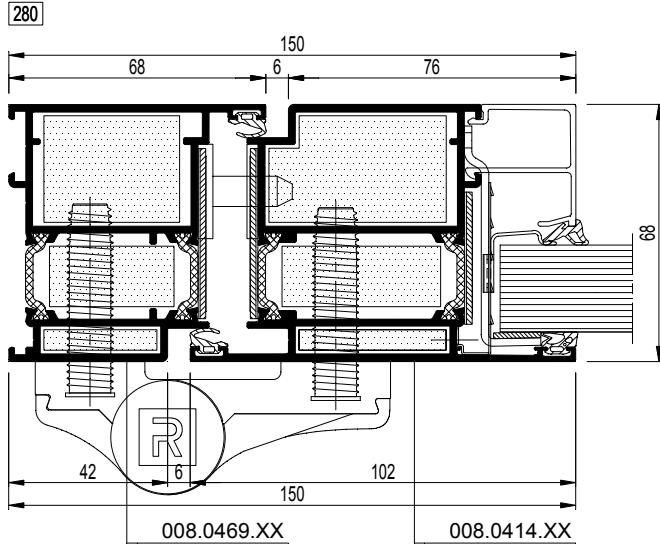
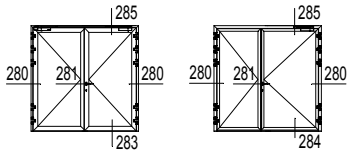
Opengaande elementen - Deur naar buiten draaiend  
 Eléments ouvrants - Porte ouvrant vers l'extérieur  
 Opening elements - Door outward opening  
 Öffnende Elemente - Tür nach aussen öffnend



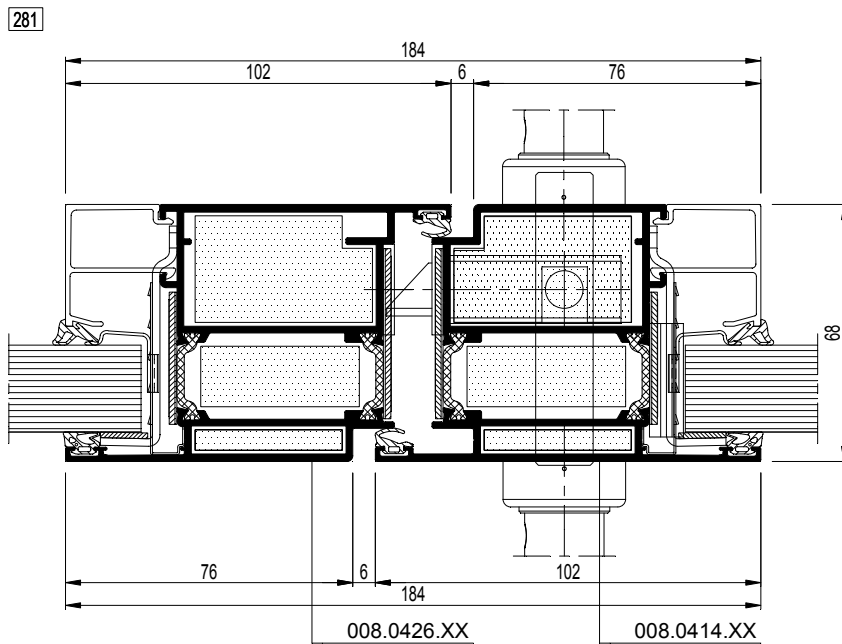
<p><b>275</b></p> <p>008.0414.XX 108.0030.XX</p> <p>CS77-275001.dxf CS77-275001.dwg</p>	<p><b>276</b></p> <p>008.0414.XX 108.0082.XX</p> <p>CS77-276001.dxf CS77-276001.dwg</p>
<p><b>277</b></p> <p>008.2014.XX 008.0874.XX</p> <p>CS77-277001.dxf CS77-277001.dwg</p>	<p><b>278</b></p> <p>008.0125.XX</p> <p>CS77-278001.dxf CS77-278001.dwg</p>

# CS 77-FP EI 60

Opengaande elementen - Z-T deur naar buitendraaiend  
 Éléments ouvrants - Porte Z-T ouvrant vers l'extérieur  
 Opening elements - Z-T Door outward opening  
 Öffnende Elemente - Z-T Tür nach aussen öffnend



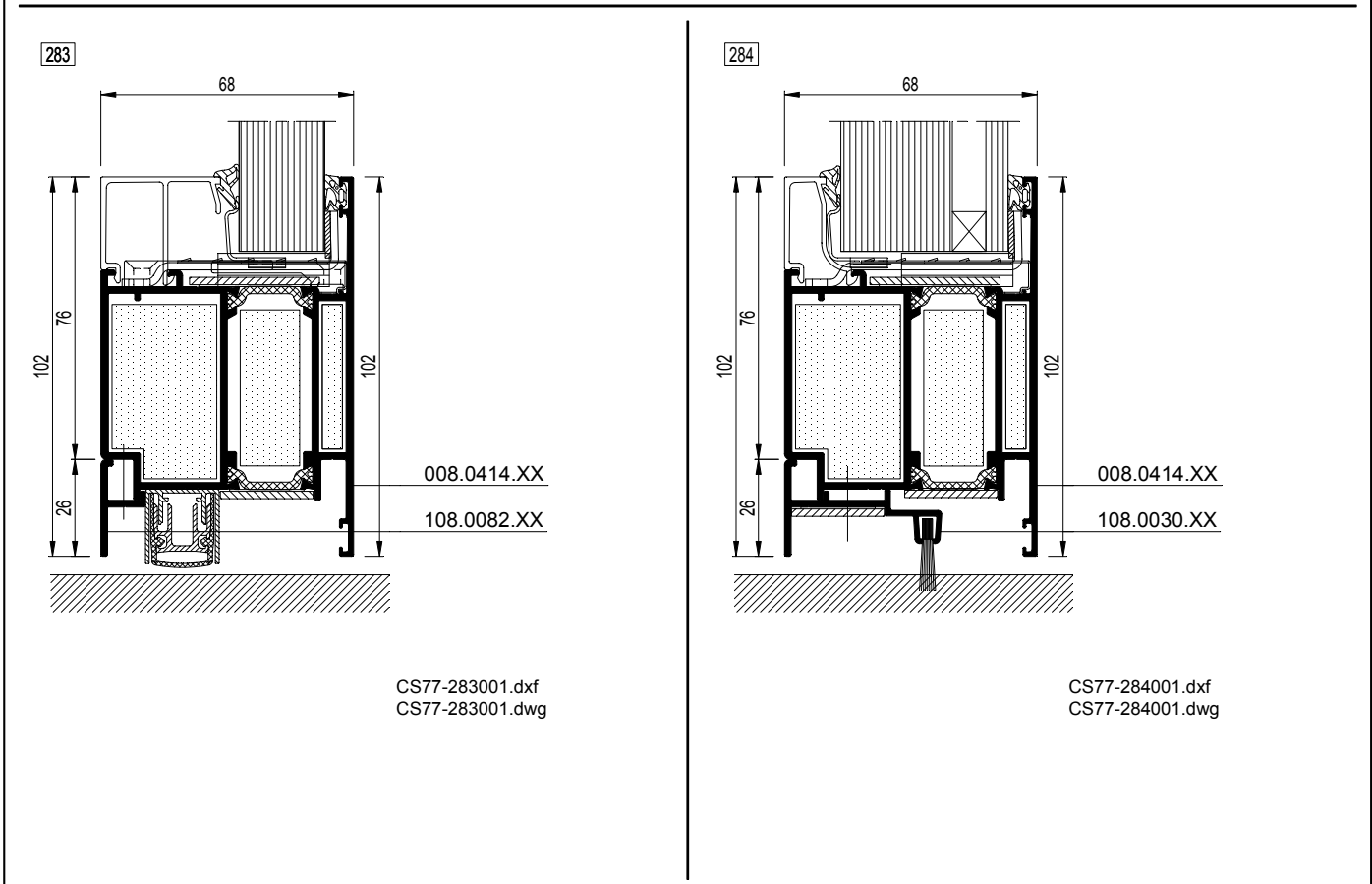
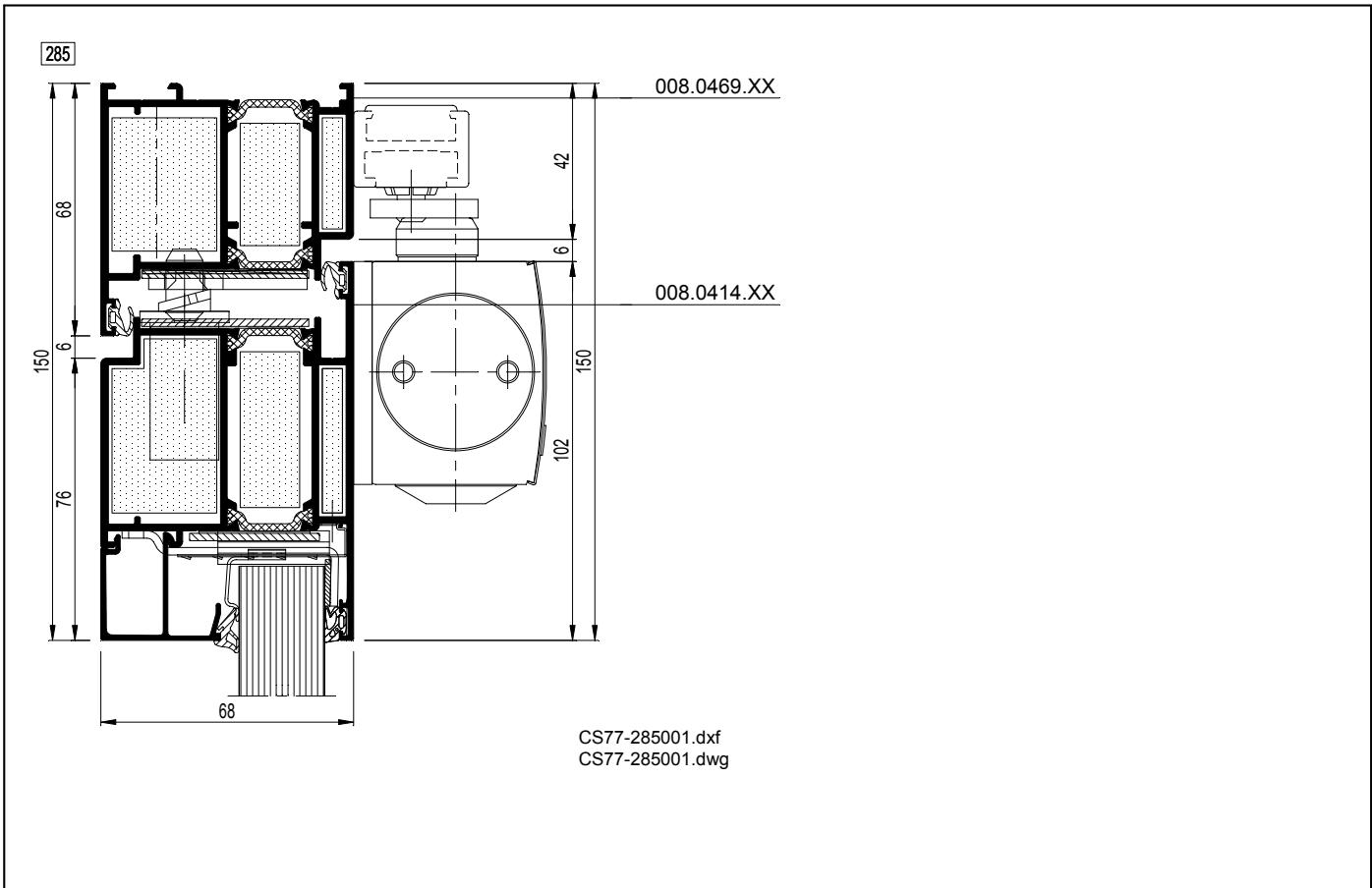
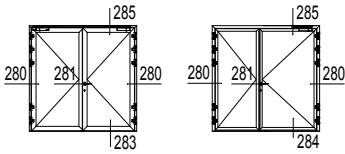
CS77-280002.dxf  
 CS77-280002.dwg



CS77-281001.dxf  
 CS77-281001.dwg

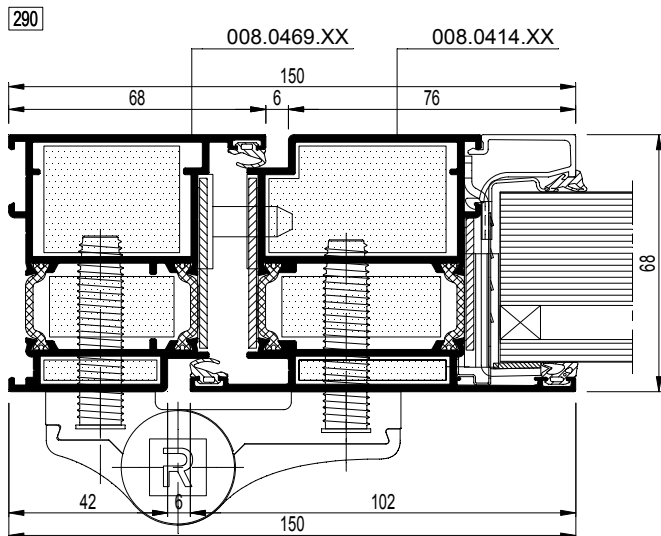
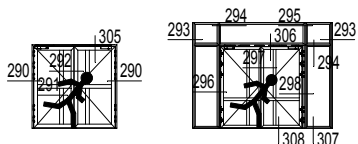
# CS 77-FP EI 60

Opengaande elementen - Z-T deur naar buitendraaiend  
 Eléments ouvrants - Porte Z-T ouvrant vers l'extérieur  
 Opening elements - Z-T Door outward opening  
 Öffnende Elemente - Z-T Tür nach aussen öffnend

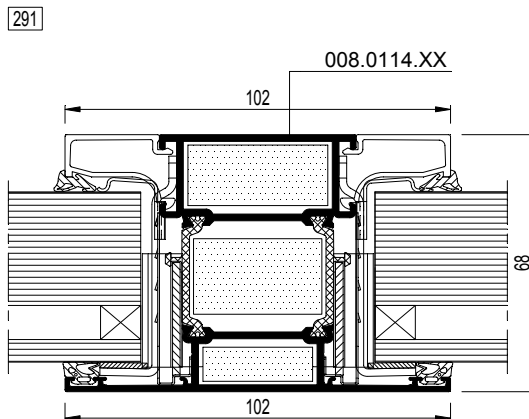


# CS 77-FP EI 60

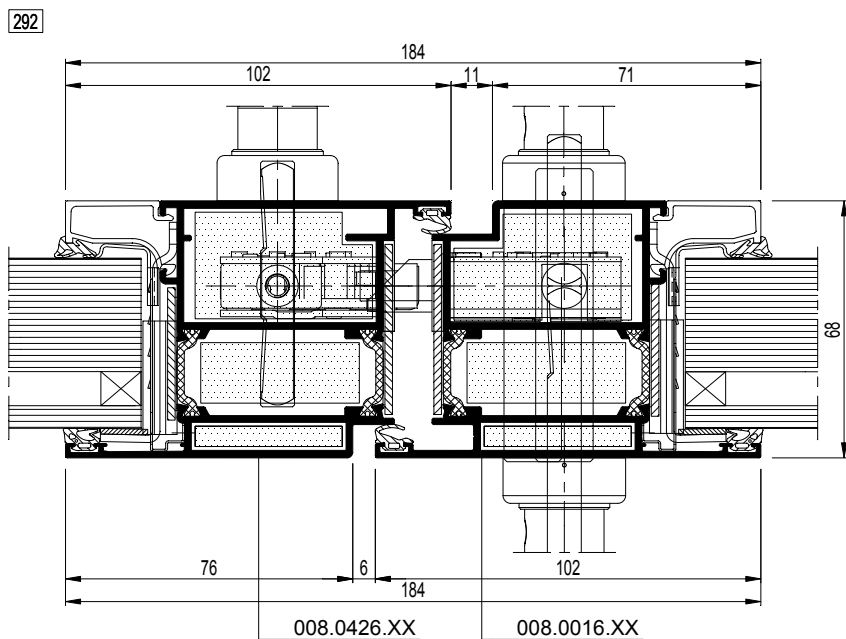
Opengaande elementen - Dubbele nooddeur naar buitendraaiend  
 Eléments ouvrants - Porte de secours double ouvrant vers l'ext.  
 Opening elements - Double emergency door outward opening  
 Öffnende Elemente - Zweiflügelige nottür nach aussen oeffn.



CS77-290001.dxf  
 CS77-290001.dwg



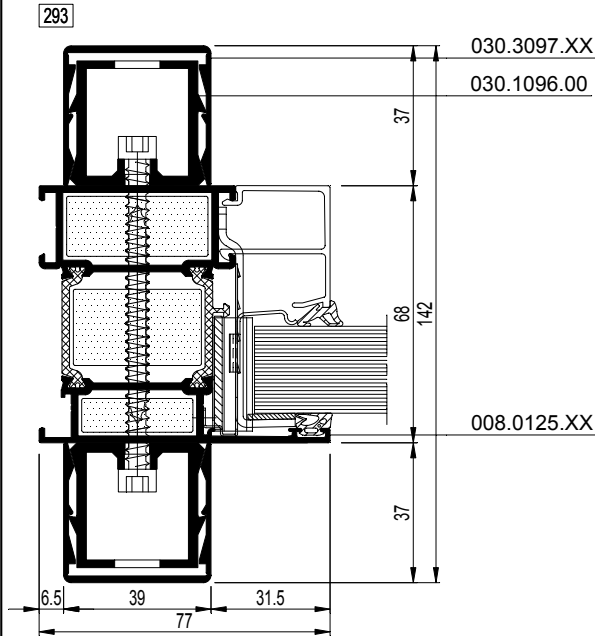
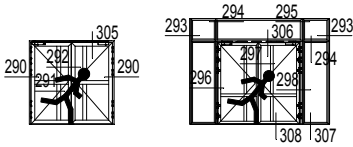
CS77-291001.dxf  
 CS77-291001.dwg



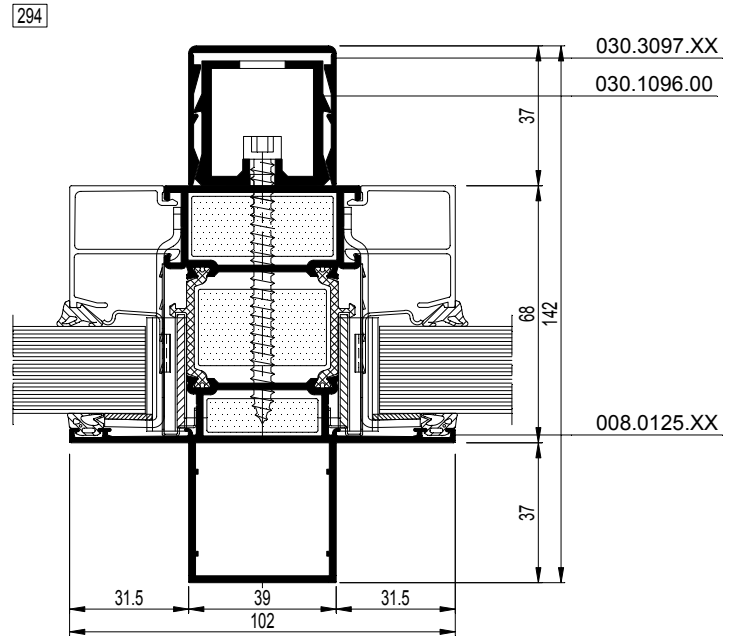
CS77-292001.dxf  
 CS77-292001.dwg

# CS 77-FP EI 60

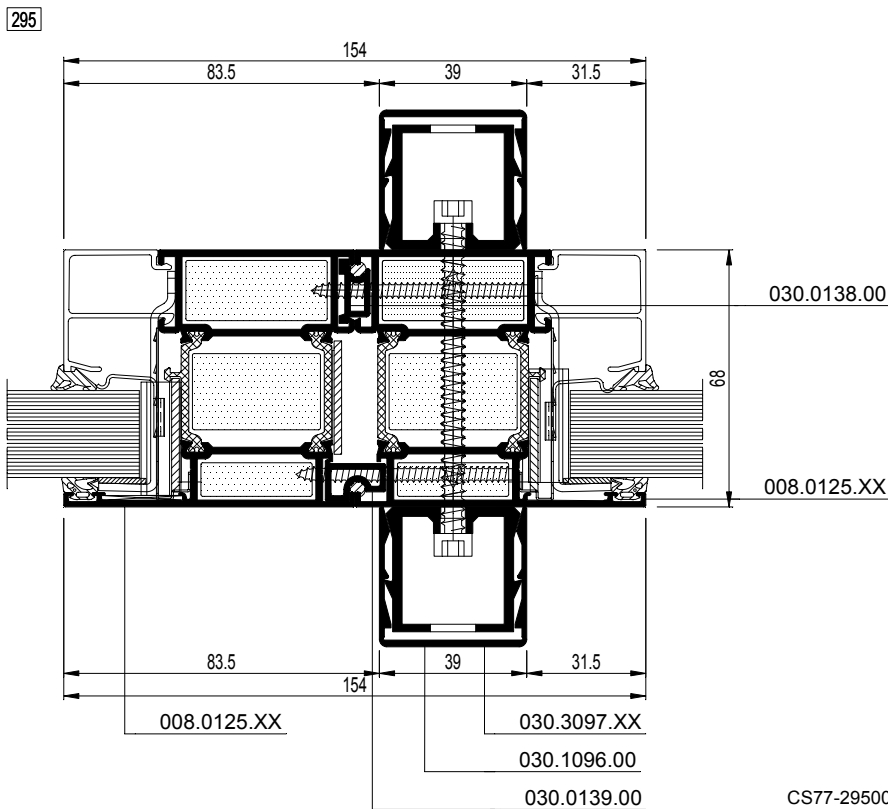
Opengaande elementen - Dubbele nooddeur naar buitendraaiend  
 Éléments ouvrants - Porte de secours double ouvrant vers l'ext.  
 Opening elements - Double emergency door outward opening  
 Öffnende Elemente - Zweiflügelige nottür nach aussen oeffn.



CS77-293001.dxf  
 CS77-293001.dwg



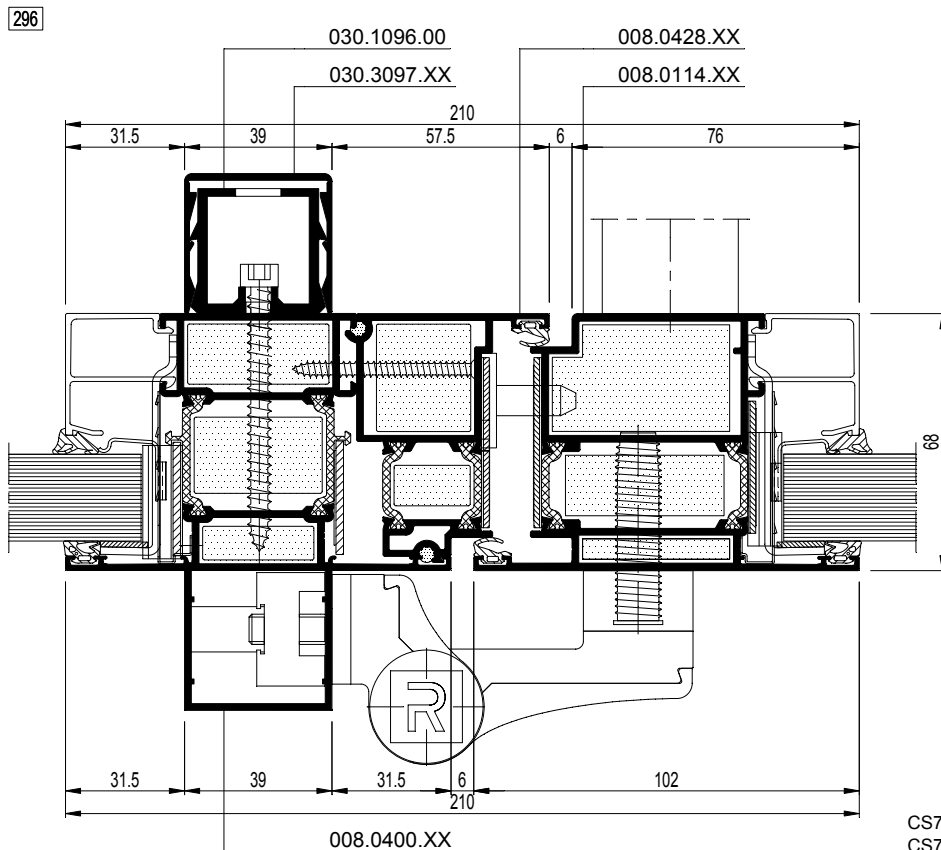
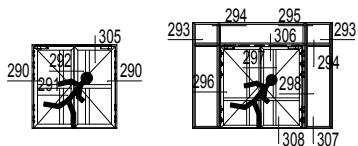
CS77-294001.dxf  
 CS77-294001.dwg



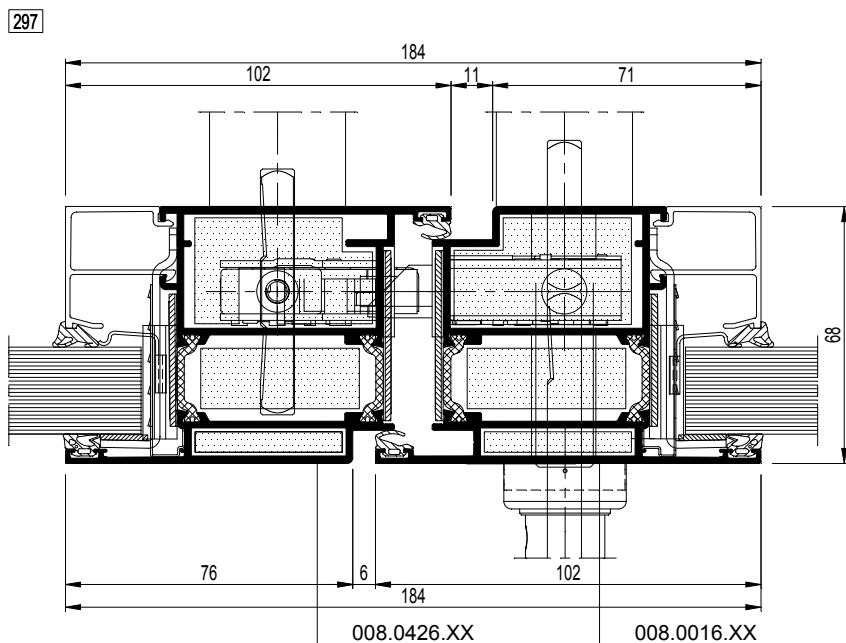
CS77-295001.dxf  
 CS77-295001.dwg

# CS 77-FP EI 60

Opengaande elementen - Dubbele nooddeur naar buitendraaiend  
 Éléments ouvrants - Porte de secours double ouvrant vers l'ext.  
 Opening elements - Double emergency door outward opening  
 Öffnende Elemente - Zweiflügelige nottür nach aussen öffn.



CS77-296001.dxf  
 CS77-296001.dwg

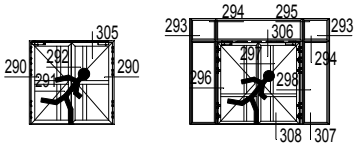


CS77-297001.dxf  
 CS77-297001.dwg

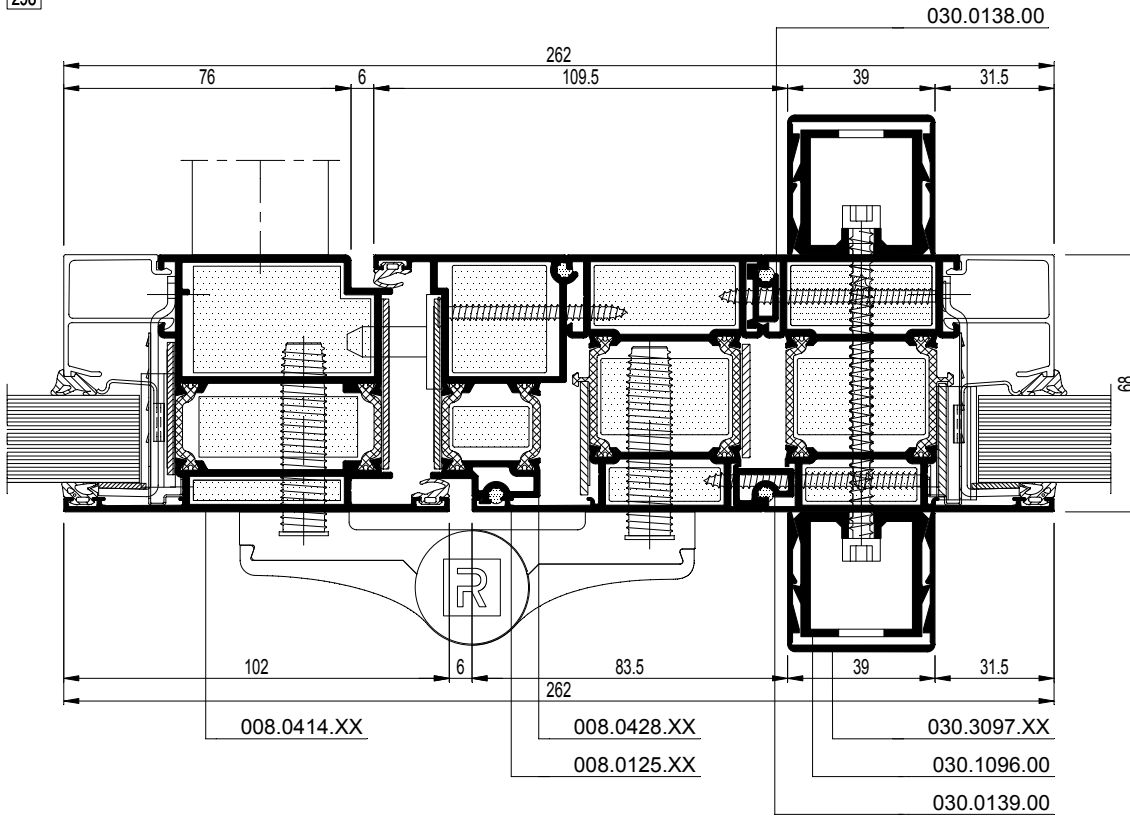


# CS 77-FP EI 60

Opengaande elementen - Dubbele nooddeur naar buitendraaiend  
 Eléments ouvrants - Porte de secours double ouvrant vers l'ext.  
 Opening elements - Double emergency door outward opening  
 Öffnende Elemente - Zweiflügelige nottür nach aussen oeffn.



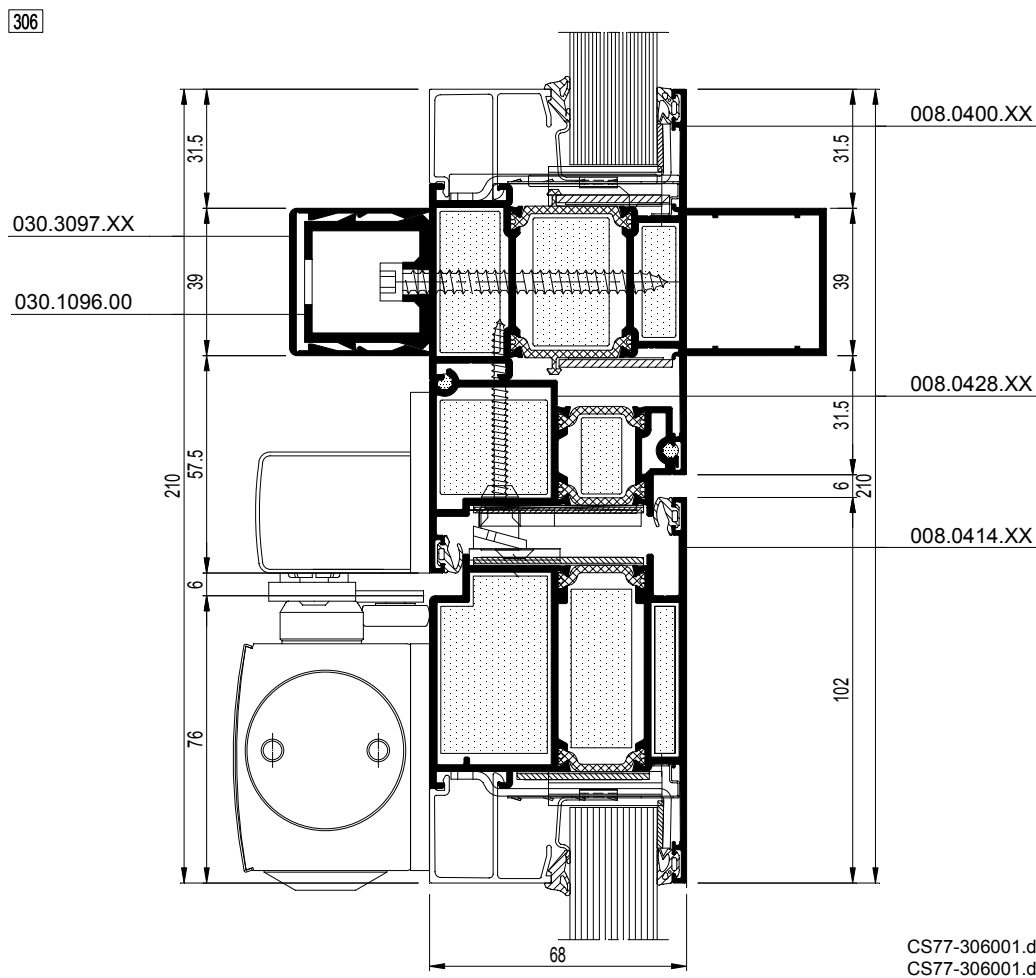
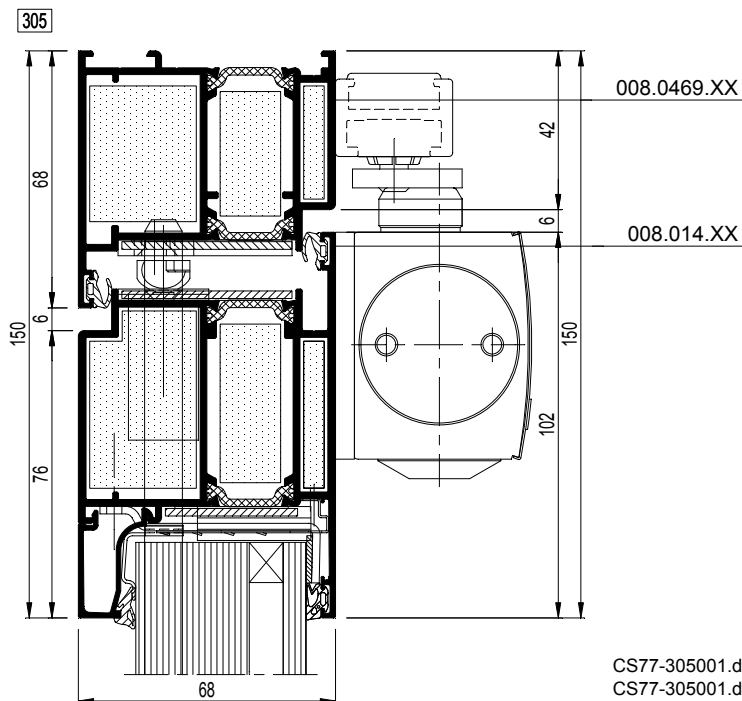
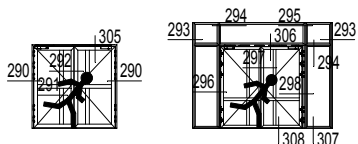
298



CS77-298001.dxf  
 CS77-298001.dwg

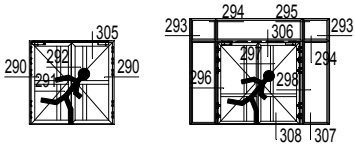
# CS 77-FP EI 60

Opengaande elementen - Dubbele nooddeur naar buitendraaiend  
 Eléments ouvrants - Porte de secours double ouvrant vers l'ext.  
 Opening elements - Double emergency door outward opening  
 Öffnende Elemente - Zweiflügelige nottür nach aussen oeffn.

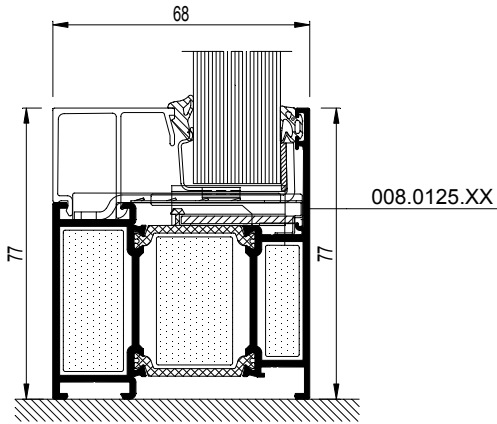


# CS 77-FP EI 60

Opengaaende elementen - Dubbele nooddeur naar buitendraaiend  
 Eléments ouvrants - Porte de secours double ouvrant vers l'ext.  
 Opening elements - Double emergency door outward opening  
 Öffnende Elemente - Zweiflügelige nottür nach aussen oeffn.

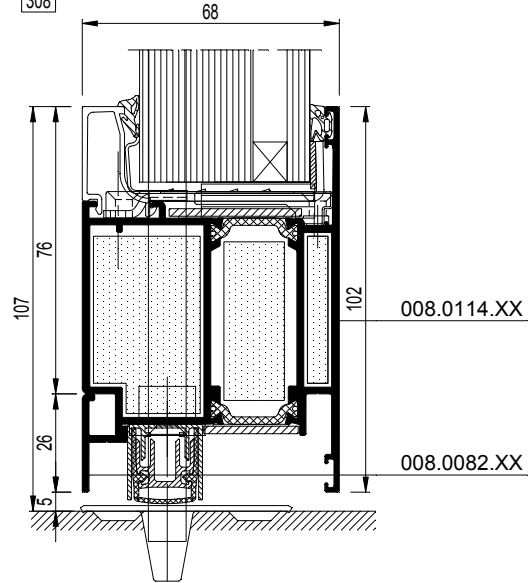


307



CS77-307001.dxf  
 CS77-307001.dwg

308



CS77-308001.dxf  
 CS77-308001.dwg





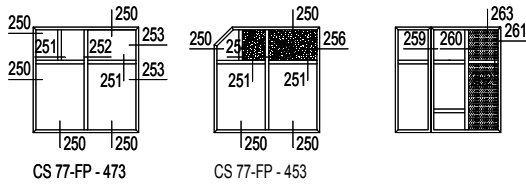
### CS 77 Fire Proof EI 30 (CS 77-FP EI 30)

#### Overview test reports

CS 77-FP - 470

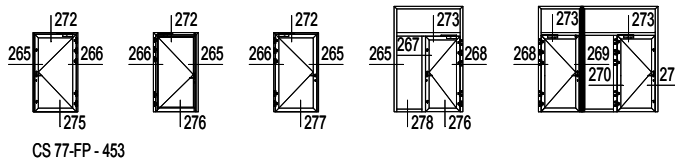
#### 1 Fixed elements

##### Combined fixed window

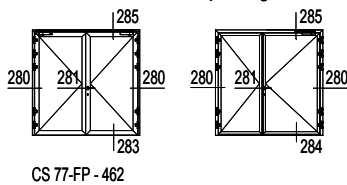


#### 2 Opening elements

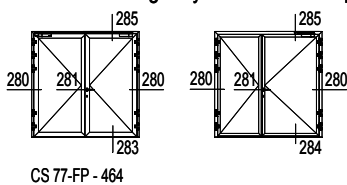
##### Door outward opening



##### Z-T Door outward opening

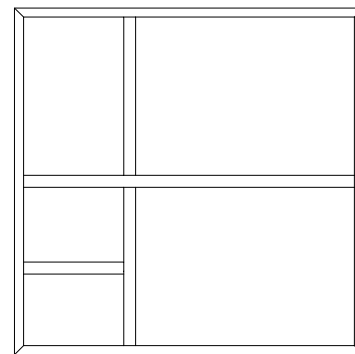
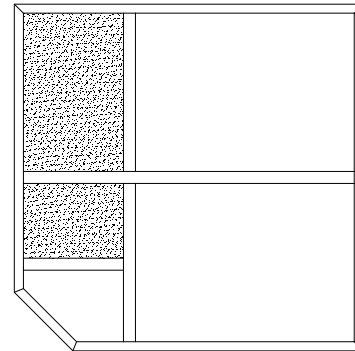
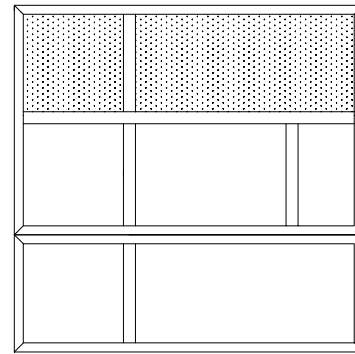


##### Double emergency door outward opening



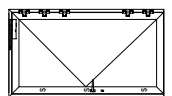
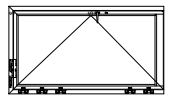
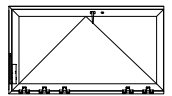
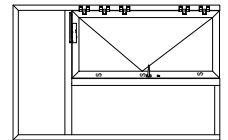
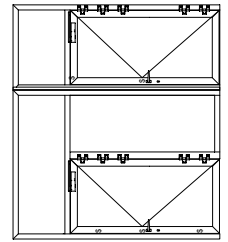
Fire classification following EN 13501-2 glazed partitions : 2008- Efectis- R0935

	TEST 1 (30)	TEST 2 (30)	TEST 3 (30)
	glazed partition	glazed partition	glazed partition
technical file	TF 080805-DB-REYNAERS	TF082609-DB-REYNAERS	TF081008-DB-REYNAERS
fire side - glazing beads	towards fire	away from fire	away from fire
dimension outer frame B x H (mm)	2960 x 2980	2960 x 2980	2960 x 2980
supporting construction	high density, concrete	high density, concrete	low density, 200mm, 800kg/m³
fixation method	method A, anchors	method B, fisher plug SH8120RT and FUR screw 6.3 x 200mm and 6.3 x 150mm	method B, fisher plug SH8120RT and FUR screw 6.3 x 200mm and 6.3 x 150mm
laboratory	EFFECTIS Netherlands	WFR GENT	IFT Nürnberg
standard	EN 1364-1	EN 1364-1	EN 1364-1
test report nr	2008-Efectis-R0798	13520A	271 37149
class. Report nr	2008-Efectis-R0799	-	-
fire resistant classification	E30, EI,30, EW30	E30, EI,30, EW30	E30, EI,30, EW30
infill 1	PILKINGTON, Pyrostop 30/10, 15mm	AGC, Pyrobel 16EG, 21mm	Pilkington Pyrostop 30-25, 32mm
infill 2	652 x 902mm (0.59m²)	652 x 904mm (0.59m²)	886 x 894mm (0.79m²)
infill 3	678 x 902mm (0.61m²)	1392x1900mm (2.64m²)	Pilkington Pyrostop 30-25, 32mm
infill 4	1392 x 902mm (1.26m²)	AGC, Pyrobel 16, 17mm	912 x 894mm (0.82m²)
infill 5	1392 x 1902mm (2.65m²)	AGC, Pyrobel 16EG, 21mm	PANEL (PROMATECT-H 25mm) + (2 x 1,5mm)
infill 6	1392 x 1902mm (2.65m²)	1392x1900mm (2.64m²)	875 X 895mm (0.78m²)
reinforcement profile	NO	NO	NO



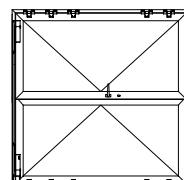
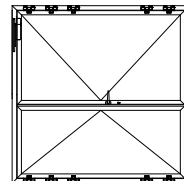
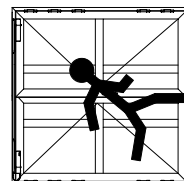
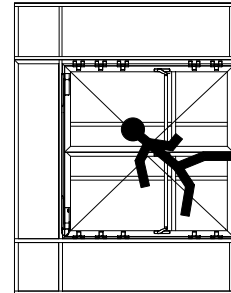
## Fire classification following EN 13501-2 doors : 2008- Efectis- R0936

	TEST 4.1 (30)	TEST 4.2 (30)	TEST 5 (30)	TEST 6 (30)
	<b>single door</b>	<b>single door</b>	<b>combined single door</b>	<b>2 times Single leaf door</b>
technical file	TF080215-DB-REYNAERS-EI30	TF080901-DB-REYNAERS-EI30	TF 080624-DB-Reynaers	TF081209-DB-REYNAERS
opening	outward opening	outward opening	outward opening	outward opening
opening side	away from fire	towards the fire	away from fire	away from fire
dimension outer frame B x H (mm)	1300 x 2353	1396 x 2656	2000 x 2700	3474 x 2980
dimension door leaf B x H (mm)	1204 x 2300	1300 x 2600	1000 x 2100	1100 x 2295 + 1100 x 2300
total opening	1164 x 2285	1260 x 2283	960 x 2085	1060 x 2267 + 1060 x 2285
supporting construction	low density 150mm	low density 150mm, 800kg/m <sup>3</sup>	flexible construction, 100mm	low density 150mm, 800kg/m <sup>3</sup>
fixation method	method A, anchors	method B, screws	method B, HECO Topix screws	method B, screws
laboratory	EFFECTIS Netherlands	EFFECTIS Netherlands	ITB Poland	EFFECTIS Netherlands
standard	EN 1634-1:2000	EN 1634-1:2000	EN 1634-1:2000	EN 1634-1:2000
test report nr	2008-Efectis-R0174 Rev.1	2008-Efectis-R0800	2008-Efectis-R0802	2008-Efectis-R0803
class. Report nr	2008-Efectis-R0175	2008-Efectis-R0801	LP-557-1-08	2008-Efectis-R0803
fire resistant classification	E30 / EI120 / E1230 / EW30	E1 / 30	E1 / 30	E1 / 30 - E45 - EW45
infill 1	PILKINGTON, Pyrostop 30/10, 15mm 1050 x 2136 (2,24m <sup>2</sup> )	AGC, pyrobel 16 EG, 17.3mm 1136 x 2396 (2,72m <sup>2</sup> )	PILKINGTON, Pyrostop 30/10, 15mm 772 x 2074 (1,60m <sup>2</sup> )	PILKINGTON, Pyrostop 30/10, 15mm 936 x 2163 (2,00m <sup>2</sup> )
infill 2	-	-	PILKINGTON, Pyrostop 30/10, 15mm	PILKINGTON, Pyrostop 30/10, 15mm
infill 3	-	-	836 x 1936 (1,62m <sup>2</sup> )	880 x 2274 (2,00m <sup>2</sup> )
infill 4	-	-	1886 x 450 (0,85m <sup>2</sup> )	936 x 2131 (1,98m <sup>2</sup> )
infill 5	-	-	-	PILKINGTON, Pyrostop 30/20, 18mm 2294 x 530 (1,22m <sup>2</sup> )
supplier hinges	Dr Hahn	Dr Hahn	Dr Hahn	Dr Hahn
reference hinges	065.6380.XX	065.6380.XX	065.6381.XX	065.6380.XX
supplier locking device active leaf	WILKA	BKS	WILKA	BKS + WILKA
ref locking device active leaf	061.7302.ZC	061.7840.--	061.7303.ZC	061.7843.-- + 061.7303.ZC
supplier locking device passive leaf	-	-	-	-
ref locking device passive leaf	-	-	-	electrical receiver 061.6291.-- & KABA cylinder (for BKS lock)
supplier handle active leaf	SOBINCO	BKS	SOBINCO	BKS + SOBINCO
ref handle active leaf	061.7230.XX	061.6431.--	061.7230.XX	061.6431.-- + 061.7230.XX
supplier handle passive leaf	-	-	-	-
ref handle passive leaf	-	-	-	-
bottom door	brush, 081.9141.04	German bottom solution with automatic doorgasket 081.9050.--	brush, 081.9141.04	Threshold + automatic doorgasket 081.9050.--
supplier doorcloser	GEZE	GEZE	GEZE	GEZE
ref doorcloser	065.7581.14	065.7581.14	065.7581.14	065.7581.14
reinforcement profile	NO	NO	NO	YES



Fire classification following EN 13501-2 doors : 2008- Efectis- R0936

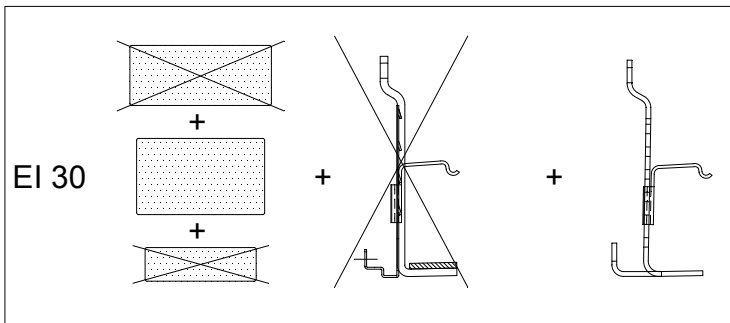
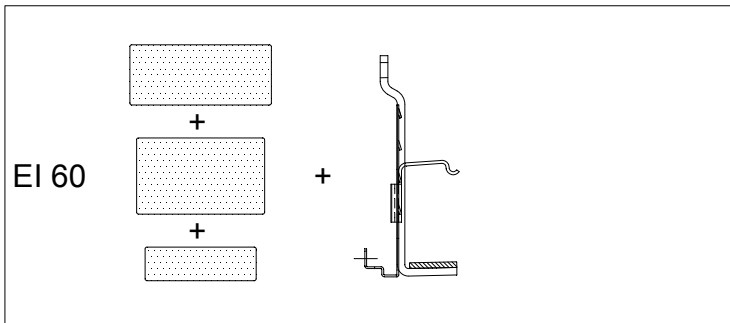
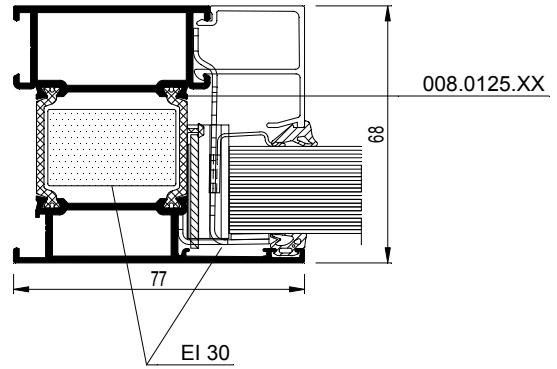
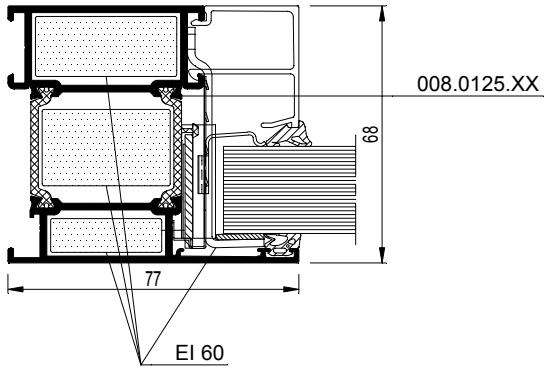
	TEST 7 (30)		TEST 8 (30)		TEST 9 (30)		TEST 10 (30)	
	double door	double door	double door	double door	double door panic EN179	double door panic EN125	double door panic EN125	double door panic EN125
technical file	TF080704-DB-REYNAERS	TF080718-DB-REYNAERS	TF080704-DB-REYNAERS	TF080718-DB-REYNAERS	TF081031-DB-REYNAERS	TF081015-DB-REYNAERS	TF081015-DB-REYNAERS	TF081015-DB-REYNAERS
opening	outward opening	outward opening	outward opening	outward opening	outward opening	outward opening	outward opening	outward opening
opening side	away from fire	towards the fire	towards the fire	away from fire	away from fire	away from fire	away from fire	away from fire
dimension outer frame B x H (mm)	2353 x 2396mm	2353 x 2396mm	2353 x 2396mm	2353 x 2396mm	2300 x 2353mm	3940 x 2985mm	3940 x 2985mm	3940 x 2985mm
dimension door leaf B x H (mm)	(2x1160) x 2300	(1010 + 1310) x 2300	(1010 + 1310) x 2300	(2x1120) x 2300	(2x1120) x 2300	(2x1160) x 2300	(2x1160) x 2300	(2x1160) x 2300
total opening	2260 x 2285	2260 x 2285	2260 x 2285	2164 x 2285mm	2164 x 2285mm	2260 x 2285	2260 x 2285	2260 x 2285
supporting construction	low density 200mm, 800kg/m <sup>3</sup>	low density 200mm, 800kg/m <sup>3</sup>	low density 200mm, 800kg/m <sup>3</sup>	brickwork construction	brickwork construction	associated supp.	associated supp.	Construction, double door in glazed wall
fixation method	method A, anchors 065.6297.00	method A, anchors 065.6297.00	method A, anchors 065.6297.00	method B, FUR 10 x 160 T A4 and FUR 8 x 120 T A4	method B, FUR 10 x 160 T A4 and FUR 8 x 120 T A4	method B, FUR 10 x 160 T A4 and FUR 8 x 120 T A4	method B, FUR 10 x 160 T A4 and FUR 8 x 120 T A4	method B, FUR 10 x 160 T A4 and FUR 8 x 120 T A4
laboratory	ITB Poland	ITB Poland	ITB Poland	Warrington Fire Gent	Warrington Fire Gent	IFT Germany	IFT Germany	IFT Germany
standard	EN 1634-1:2000	EN 1634-1:2000	EN 1634-1:2000	EN 1634-1:2000	EN 1634-1:2000	EN 1634-1:2000	EN 1634-1:2000	EN 1634-1:2000
test report nr	LP-557-2-08	LP-557-3-08	LP-557-3-08	13521A	13521A	271 37150	271 37150	271 37150
class: Report nr								
fire resistant classification	E/I	E/I	E/I	E/I 30, E45, E/W45	E/I 30, E45, E/W45	E/I 30	E/I 30	E/I 30
infill 1	PILKINGTON, Pyrostop 30/10, 15mm	AGC, pyrobel 16 EG, 39mm (16-9.6)	AGC, pyrobel 16 EG, 39mm (16-9.6)	AGC, pyrobel 16EG, 39mm	AGC, pyrobel 16EG, 39mm	PILKINGTON, Pyrostop 30-10, 15mm	PILKINGTON, Pyrostop 30-10, 15mm	PILKINGTON, Pyrostop 30-10, 15mm
infill 2	995 x 2136mm (2,13m <sup>2</sup> )	845 x 2136mm (1,80m <sup>2</sup> )	845 x 2136mm (1,80m <sup>2</sup> )	2x (638 x 1037) - (2x 0,66m <sup>2</sup> )	2x (638 x 1037) - (2x 0,66m <sup>2</sup> )	673 x 1385mm 2x - (2x 0,88m <sup>2</sup> )	673 x 1385mm 2x - (2x 0,88m <sup>2</sup> )	673 x 1385mm 2x - (2x 0,88m <sup>2</sup> )
infill 3	995 x 2136mm (2,13m <sup>2</sup> )	1146 x 2136mm (2,45m <sup>2</sup> )	1146 x 2136mm (2,45m <sup>2</sup> )	2x (248 x 1037) - (2x 0,25m <sup>2</sup> )	2x (248 x 1037) - (2x 0,25m <sup>2</sup> )	261 x 1385mm 2x - (2x 0,36m <sup>2</sup> )	261 x 1385mm 2x - (2x 0,36m <sup>2</sup> )	261 x 1385mm 2x - (2x 0,36m <sup>2</sup> )
infill 4				AGC, pyrobel 16EG, 39mm	AGC, pyrobel 16EG, 39mm	261 x 689mm 2x - (2x 0,18m <sup>2</sup> )	261 x 689mm 2x - (2x 0,18m <sup>2</sup> )	261 x 689mm 2x - (2x 0,18m <sup>2</sup> )
infill 5				AGC, pyrobel 16EG, 39mm	AGC, pyrobel 16EG, 39mm	645 x 2279mm (1,47m <sup>2</sup> )	645 x 2279mm (1,47m <sup>2</sup> )	645 x 2279mm (1,47m <sup>2</sup> )
supplier hinges	Dr Hahn	Dr Hahn	Dr Hahn	SAVIO	SAVIO	645 x 530mm (0,34m <sup>2</sup> )	645 x 530mm (0,34m <sup>2</sup> )	645 x 530mm (0,34m <sup>2</sup> )
reference hinges	065.6380.XX	065.6380.XX	065.6380.XX	Savio	Savio	2352 x 530mm (1,25m <sup>2</sup> )	2352 x 530mm (1,25m <sup>2</sup> )	2352 x 530mm (1,25m <sup>2</sup> )
supplier locking device active leaf	BKS	BKS	BKS	065.6381.XX	065.6381.XX	653 x 2279mm (1,49m <sup>2</sup> )	653 x 2279mm (1,49m <sup>2</sup> )	653 x 2279mm (1,49m <sup>2</sup> )
ref locking device active leaf	061.7841.--	061.7841.--	061.7841.--	065.6381.XX	065.6381.XX	065.6381.XX + 065.6382.XX	065.6381.XX + 065.6382.XX	065.6381.XX + 065.6382.XX
supplier locking device passive leaf	-	-	-	BKS	BKS	BKS, panic EN125	BKS, panic EN125	BKS, panic EN125
ref locking device passive leaf	-	-	-	061.7845.--	061.7845.--	061.7844.--	061.7844.--	061.7844.--
supplier handle active leaf	BKS	BKS	BKS	BKS	BKS	BKS, panic EN125	BKS, panic EN125	BKS, panic EN125
ref handle active leaf	061.6431.--	061.6431.--	061.6431.--	061.6430.--	061.6430.--	061.6612.ZC	061.6612.ZC	061.6612.ZC
supplier handle passive leaf	-	-	-	automatic doorgasket, 08.1.9050.--	automatic doorgasket, 08.1.9050.--	Threshold	Threshold	Threshold
ref handle passive leaf	-	-	-	GEZE	GEZE	GEZE	GEZE	GEZE
bottom door	automatic doorgasket, 081.9041.--	brush, 081.9141.04	brush, 081.9141.04	065.7583.14	065.7583.14	065.7584.14	065.7584.14	065.7584.14
supplier doorcloser	GEZE	GEZE	GEZE	NO	NO	YES	YES	YES
ref doorcloser	065.7583.14	065.7583.14	065.7583.14					
reinforcement profile	NO	NO	NO					

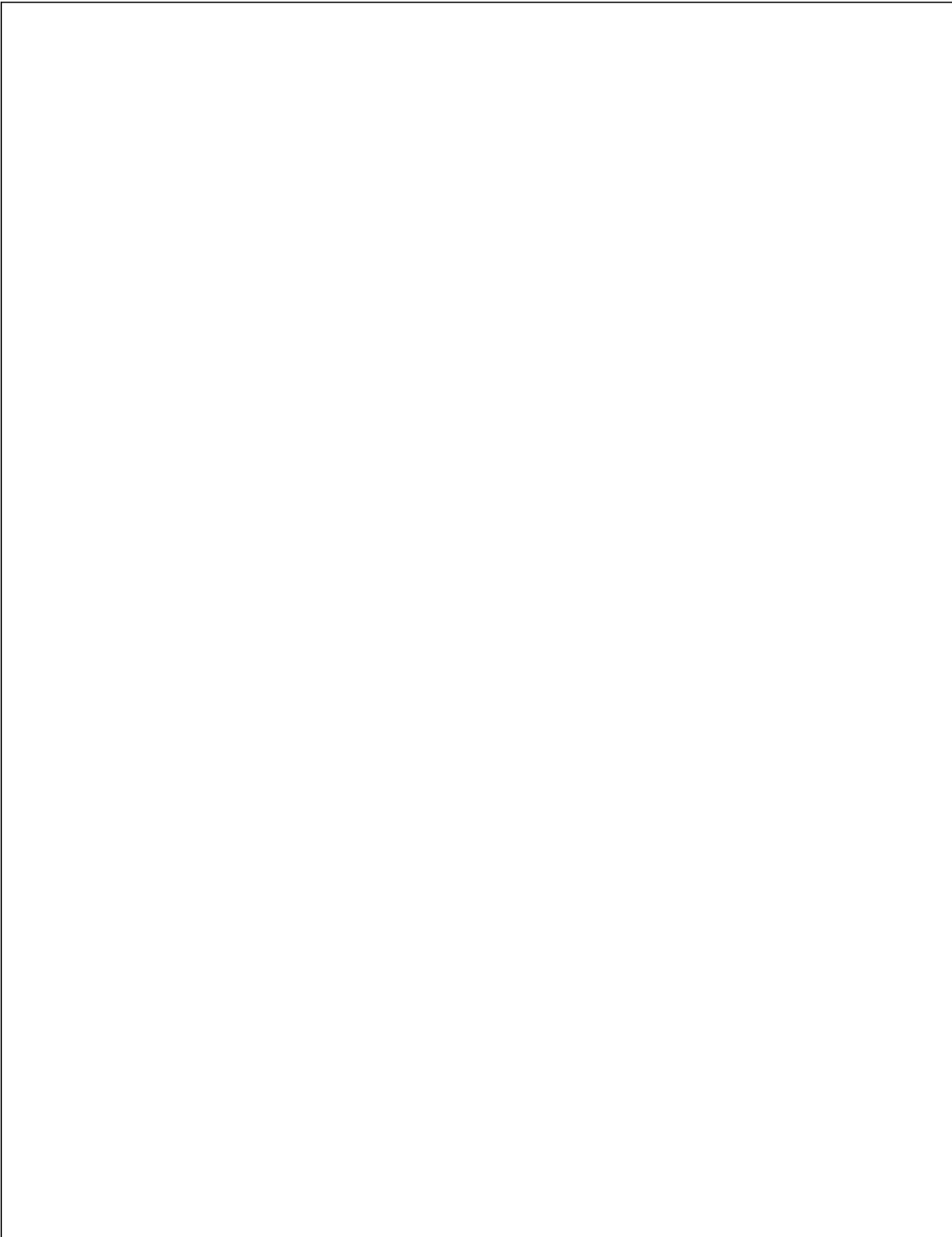




# CS 77-FP EI 30

Samengesteld vast raam  
Fenêtre fixe composée  
Combined fixed window  
Kombinierte Festverglasung





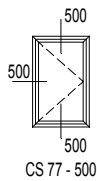


### CS 77 Anti-burglary Proof (CS 77-AP)

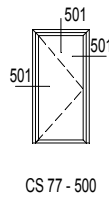
#### Opening elements



##### Windows



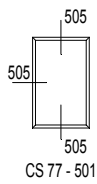
##### Doors



#### Fixed elements

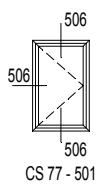


##### Windows

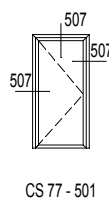


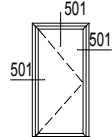
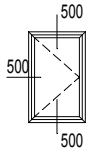
#### Opening elements

##### Windows

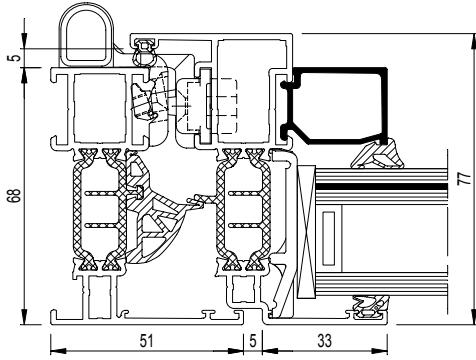


##### Doors



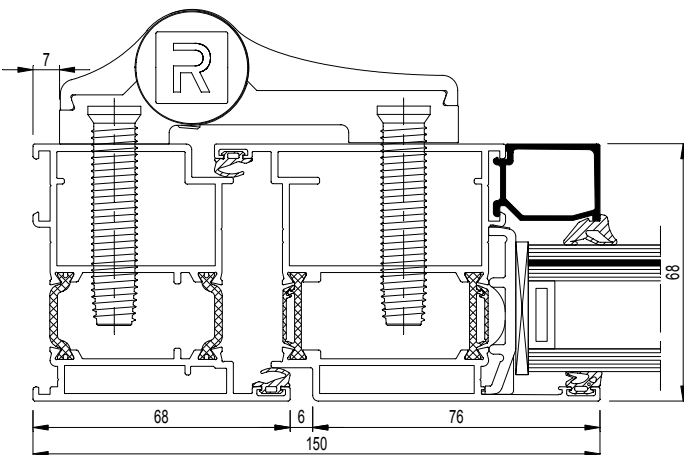


500

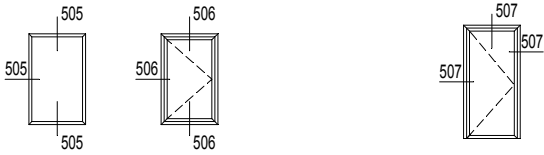


CS77-500001.dxf  
CS77-500001.dwg

501



CS77-501001.dxf  
CS77-501001.dwg



**505**

CS77-505001.dxf  
 CS77-505001.dwg

**506**

CS77-506001.dxf  
 CS77-506001.dwg

Variant 1

CS77-505002.dxf  
 CS77-505002.dwg

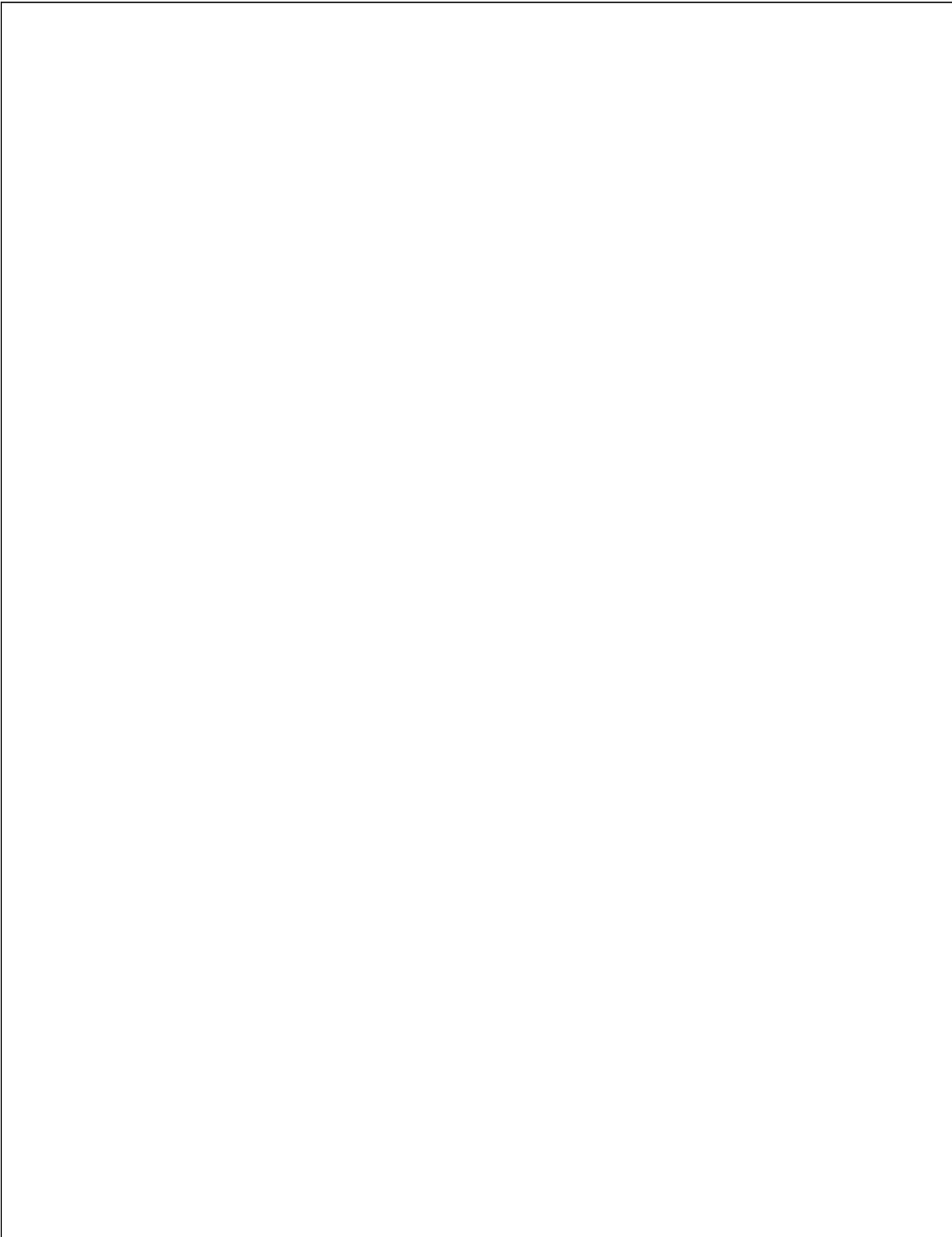
Variant 2

CS77-505003.dxf  
 CS77-505003.dwg

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**507**

CS77-507001.dxf  
 CS77-507001.dwg





### Connections with other systems

CW 50 - CS 77

CW 50 - CS 77-HV

TP 110

TLS 110

CP 155

CR 120

CS 77 - CN002

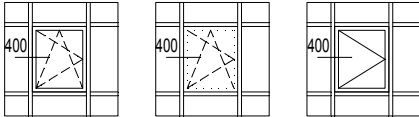
CS 77 - CN002

CS 77 - CN003

CS 77 - CN003

CS 77 - CN004

CS 77 - CN005



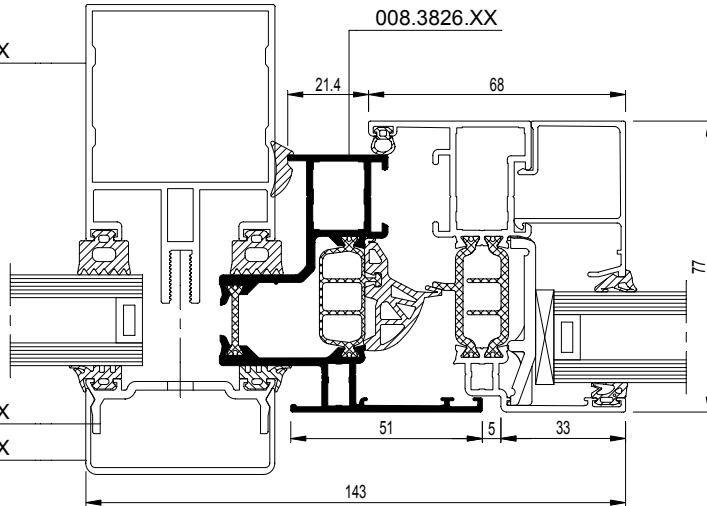
## CW50 - CS77

400

034.1501.XX

034.2534.XX

034.0538.XX



CS77-400001.dxf  
 CS77-400001.dwg

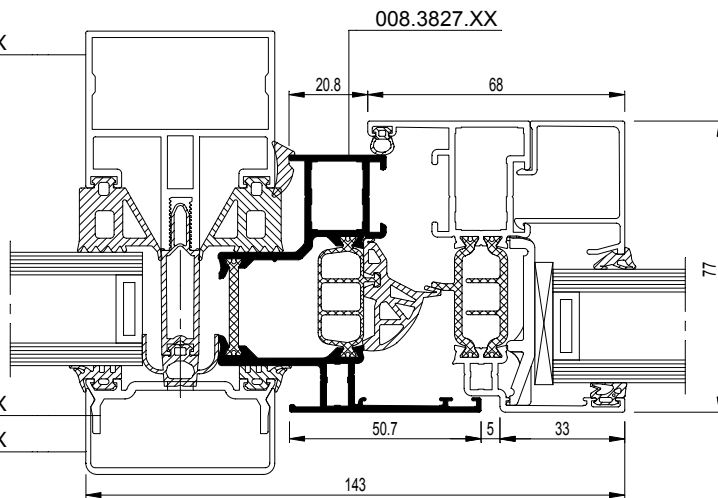
## CW50 - CS77

400

034.1500.XX

034.2534.XX

034.0538.XX



CS77-400002.dxf  
 CS77-400002.dwg

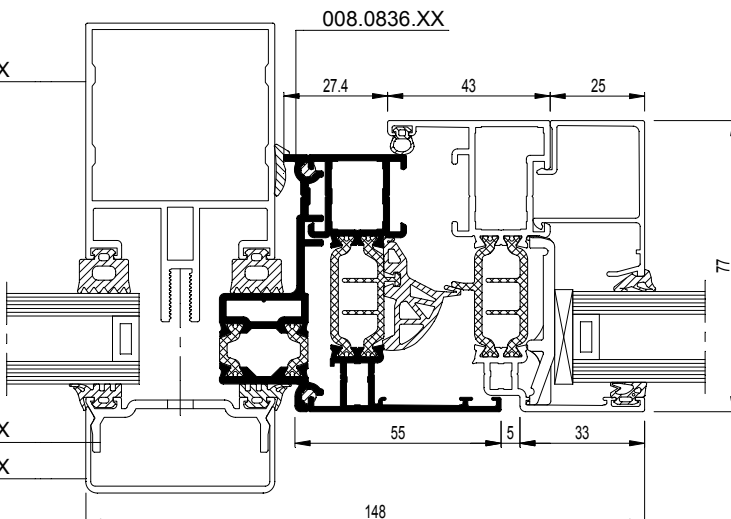
## CW50 - CS77

400

034.1501.XX

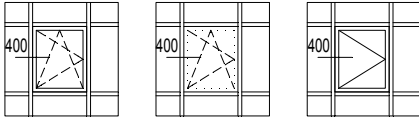
034.2534.XX

034.0538.XX



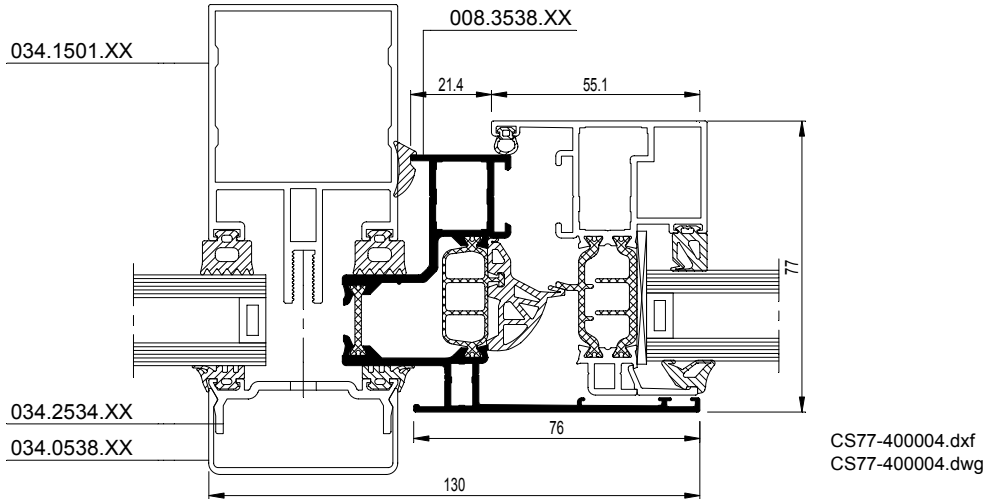
CS77-400003.dxf  
 CS77-400003.dwg





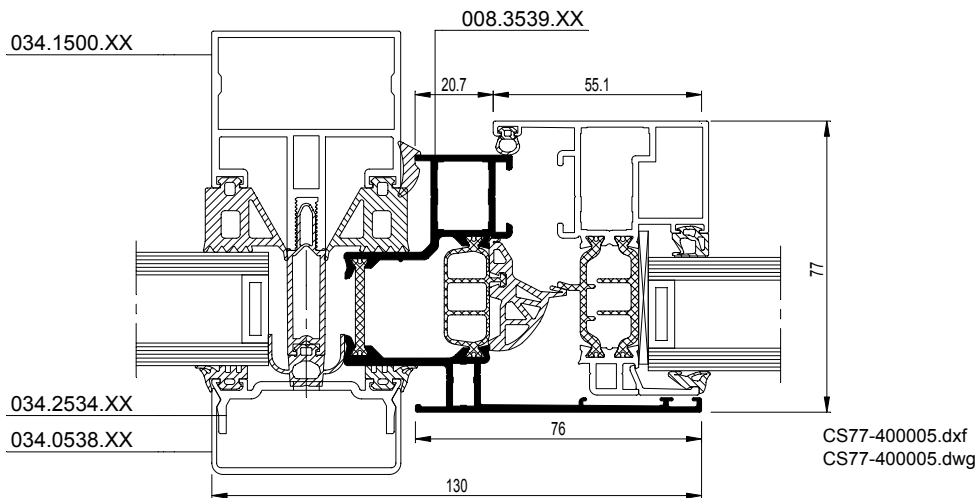
## CW50 - CS77-HV

400



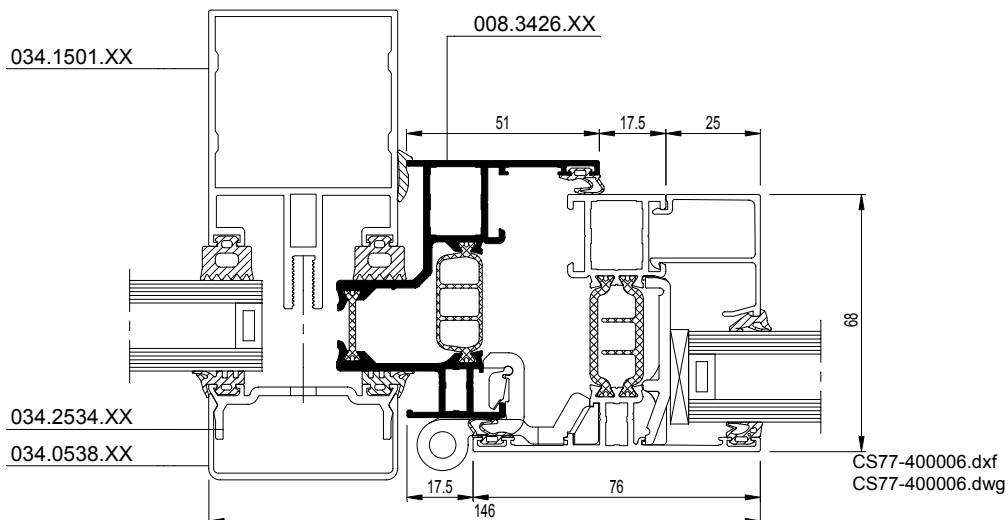
## CW50 - CS77-HV

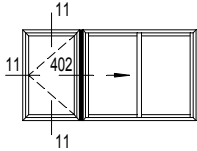
400



## CW50 - CS77

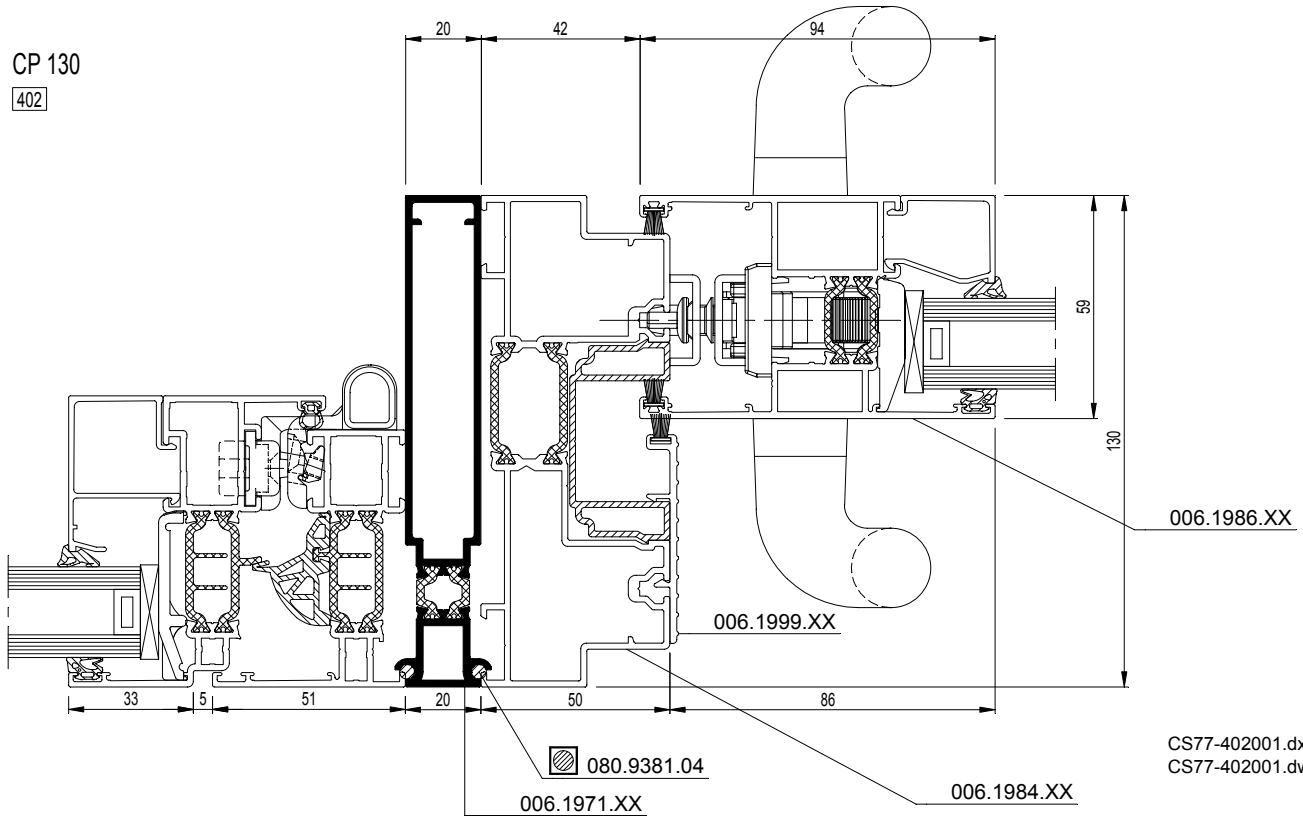
400





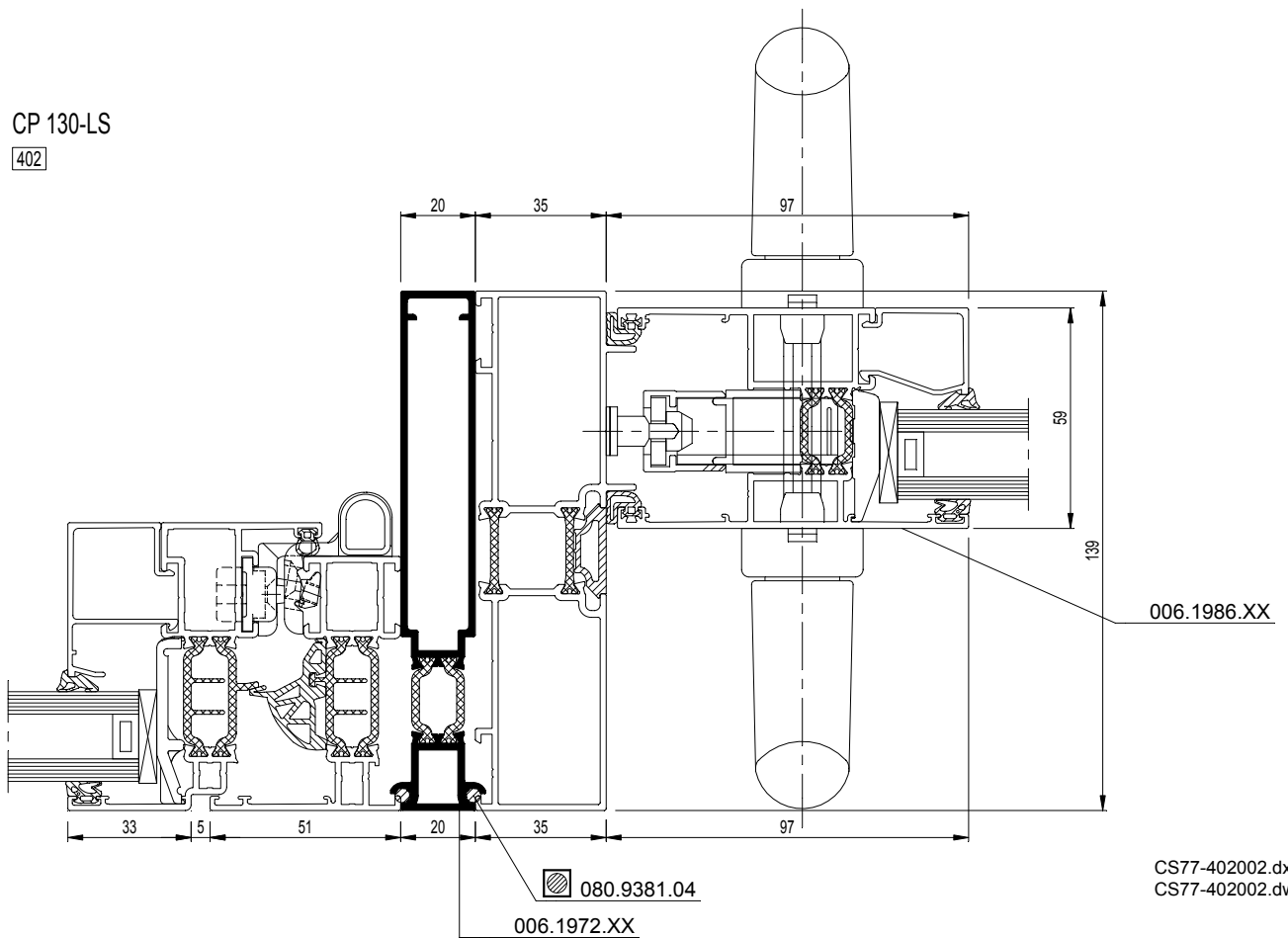
CP 130

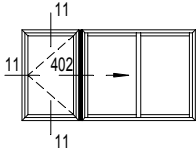
402



CP 130-LS

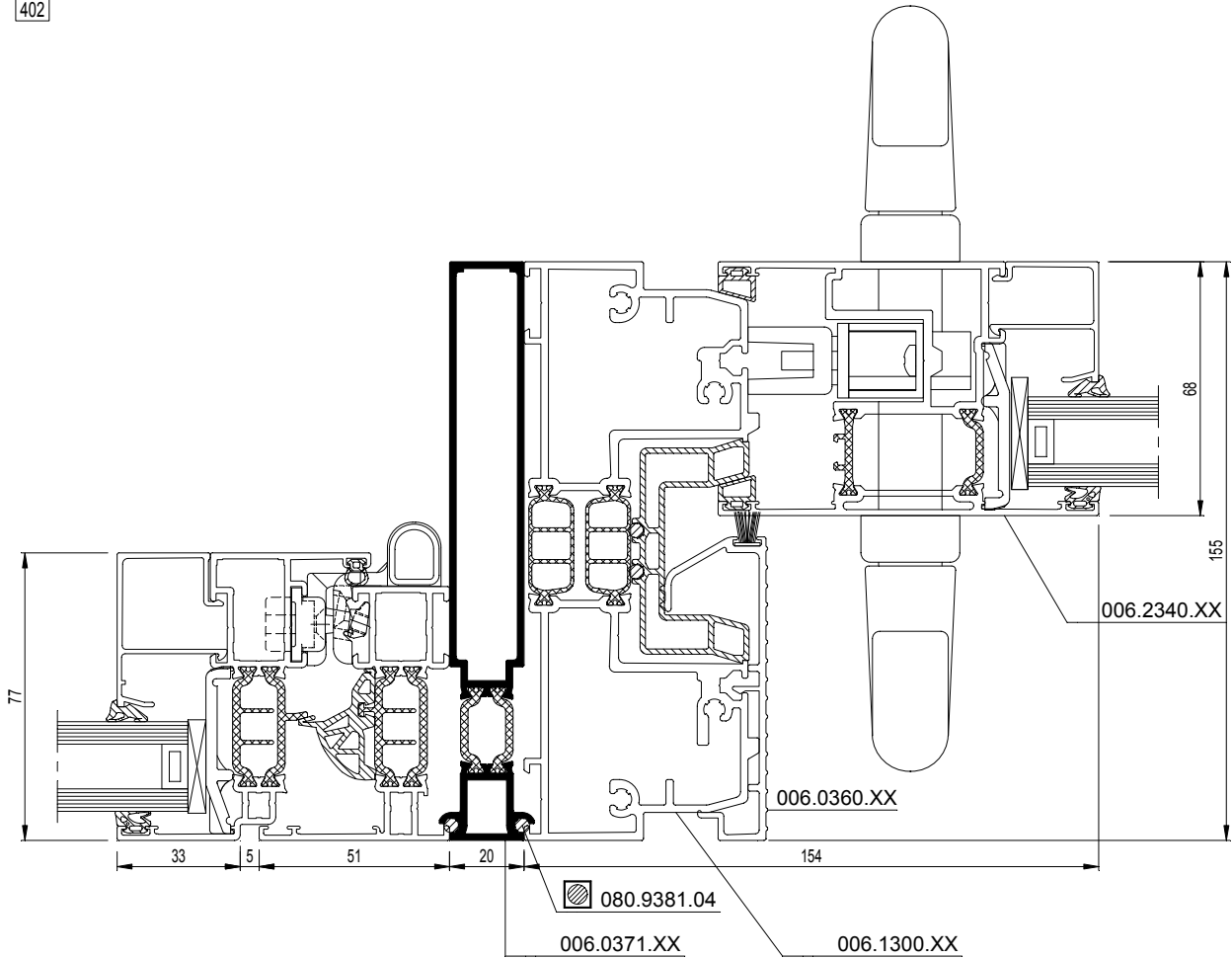
402



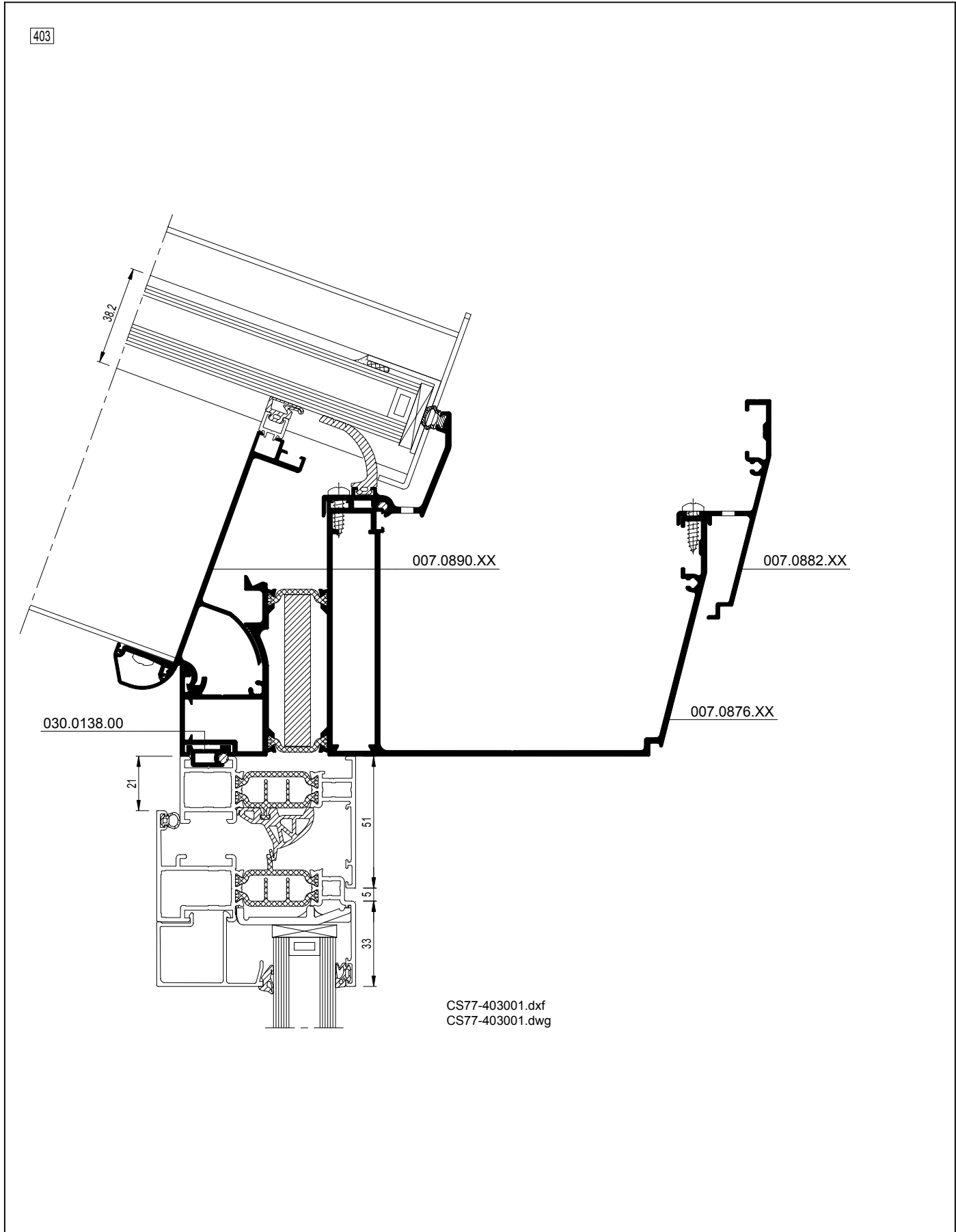
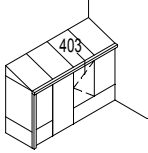


CP 155

402



CS77-402003.dxf  
CS77-402003.dwg



CS77-403001.dxf  
CS77-403001.dwg