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PULL&SLIDE DOOR and WINDOW SYSTEM

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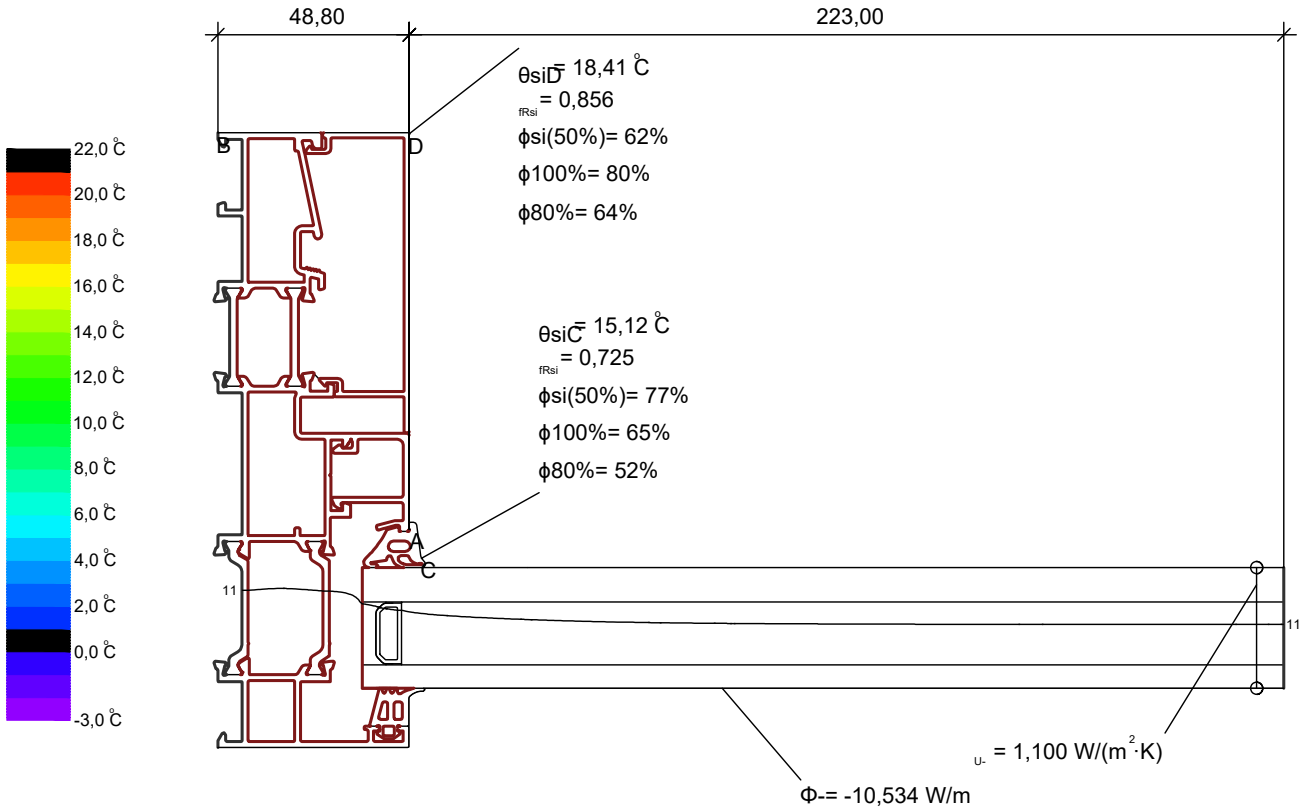
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PULL&SLIDE DOOR and WINDOW SYSTEM

THERMAL CALCULATIONS and PERFORMANCE

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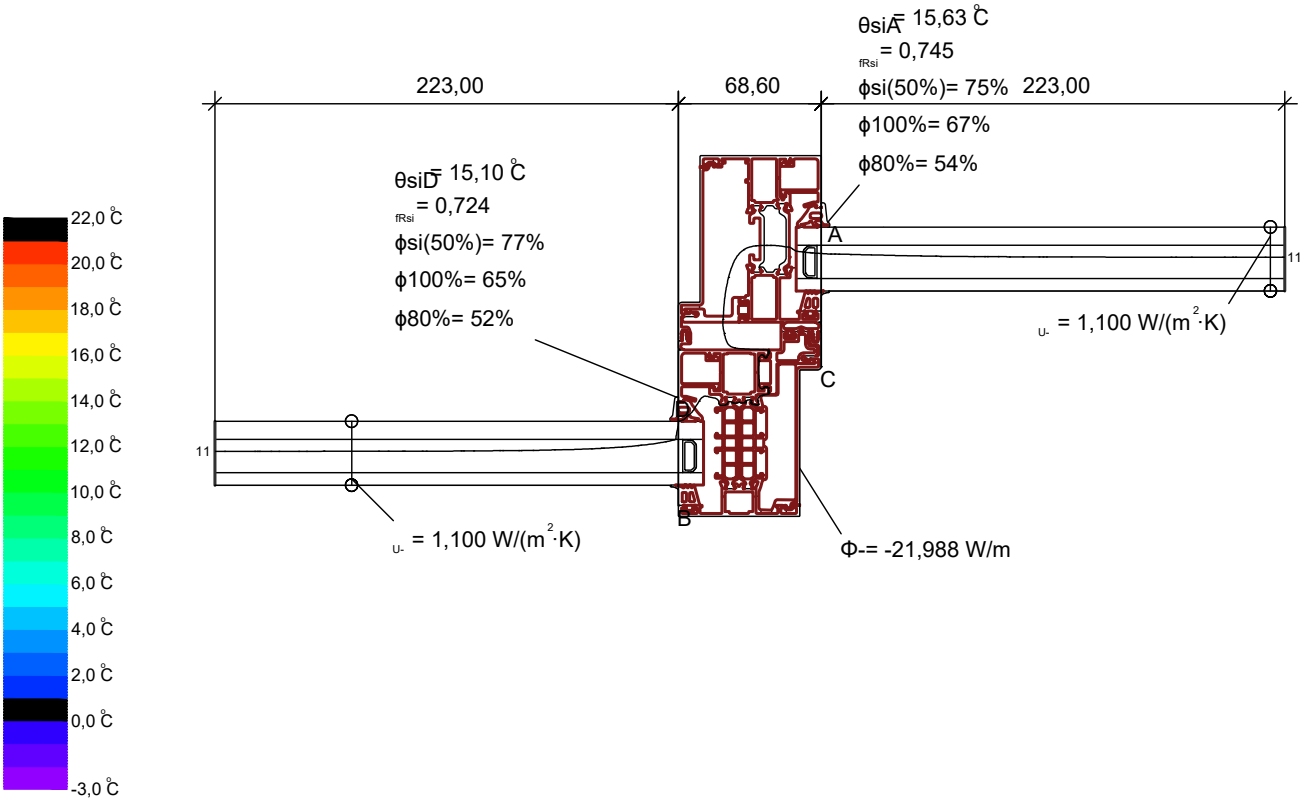
PULL&SLIDE DOOR and WINDOW SYSTEM



$$U_{TJ\,A,B} = \frac{\frac{\Phi}{\Delta T} - U_g \cdot bg}{bf} = \frac{\frac{10,534}{25,000} - 1,100 \cdot 0,223}{0,049} = 3,61\ W/(m^2 \cdot K)$$

Material	λ[W/(m·K)]	ε
Aluminium (Si Alloys)	160,000	0,900
Butyl (isobutene), hot-melt	0,240	
EPDM (ethylene propylene diene monomer)	0,250	0,900
Stainless steel, SGG	15,000	
Gasfilling(1)	0,022	
Polyamid 6.6 with 25% glass fibre	0,300	0,900
Polysulfide	0,400	0,900
SAN 35% glass fiber	0,160	
Silica gel (desiccant)	0,130	
Soda lime glass	1,000	0,900
Unventilated air cavity	anisotropic	

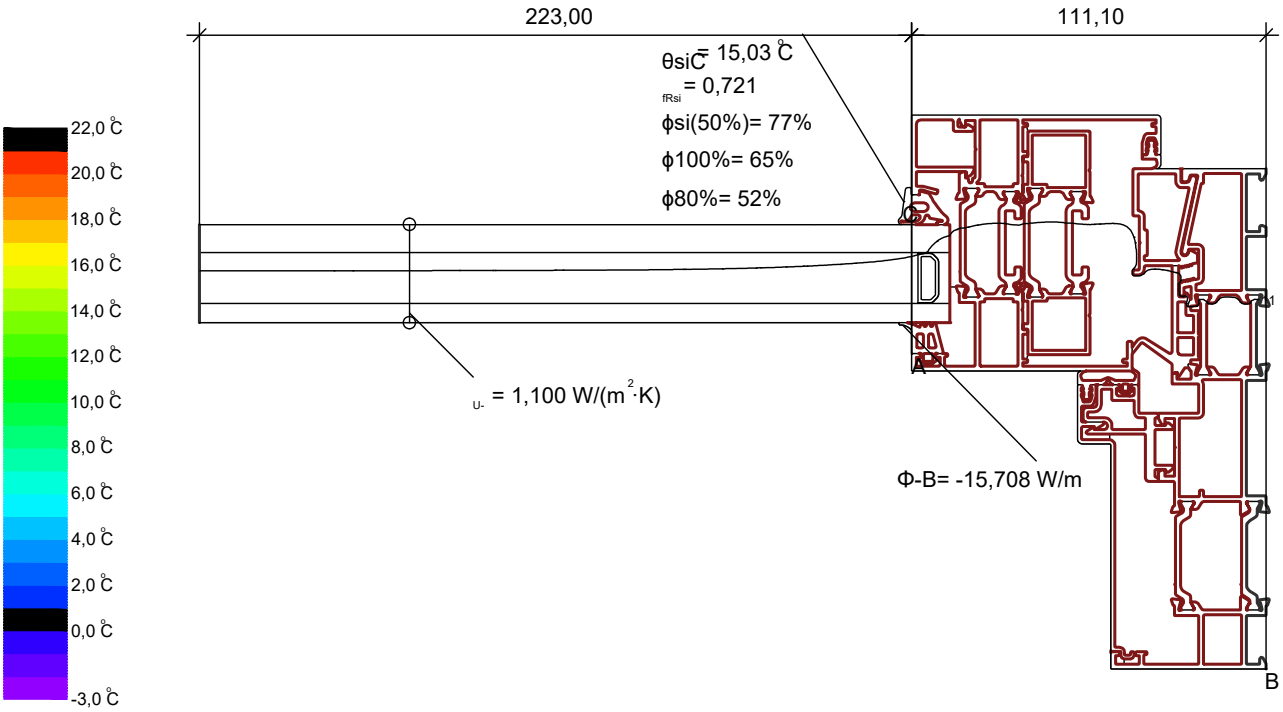
Boundary Condition	q[W/m²]	θ[°C]	R[(m²·K)/W]	ε
Epsilon 0.9				0,900
Exterior, frame		-3,000	0,040	
Interior, frame, normal		22,000	0,130	
Interior, frame, reduced		22,000	0,200	
Symmetry/Model section	0,000			



$$U_{UTJ} = \frac{\frac{\Phi}{\Delta T} - U_{g1} \cdot b_{g1} - U_{g2} \cdot b_{g2}}{b_f} = \frac{\frac{21,988}{25,000} - 1,100 \cdot 0,223 - 1,100 \cdot 0,223}{0,069} = 5,67 \text{ W/(m}^2\text{K)}$$

Material	λ[W/(m·K)]	ε
Aluminium (Si Alloys)	160,000	0,900
Butyl (isobutene), hot-melt	0,240	
EPDM (ethylene propylene diene monomer)	0,250	0,900
Stainless steel, SGG	15,000	
Gasfilling(1)	0,022	
Polyamid 6.6 with 25% glass fibre	0,300	0,900
Polysulfide	0,400	0,900
SAN 35% glass fiber	0,160	
Silica gel (desiccant)	0,130	
Soda lime glass	1,000	0,900
Unventilated air cavity	anisotropic	

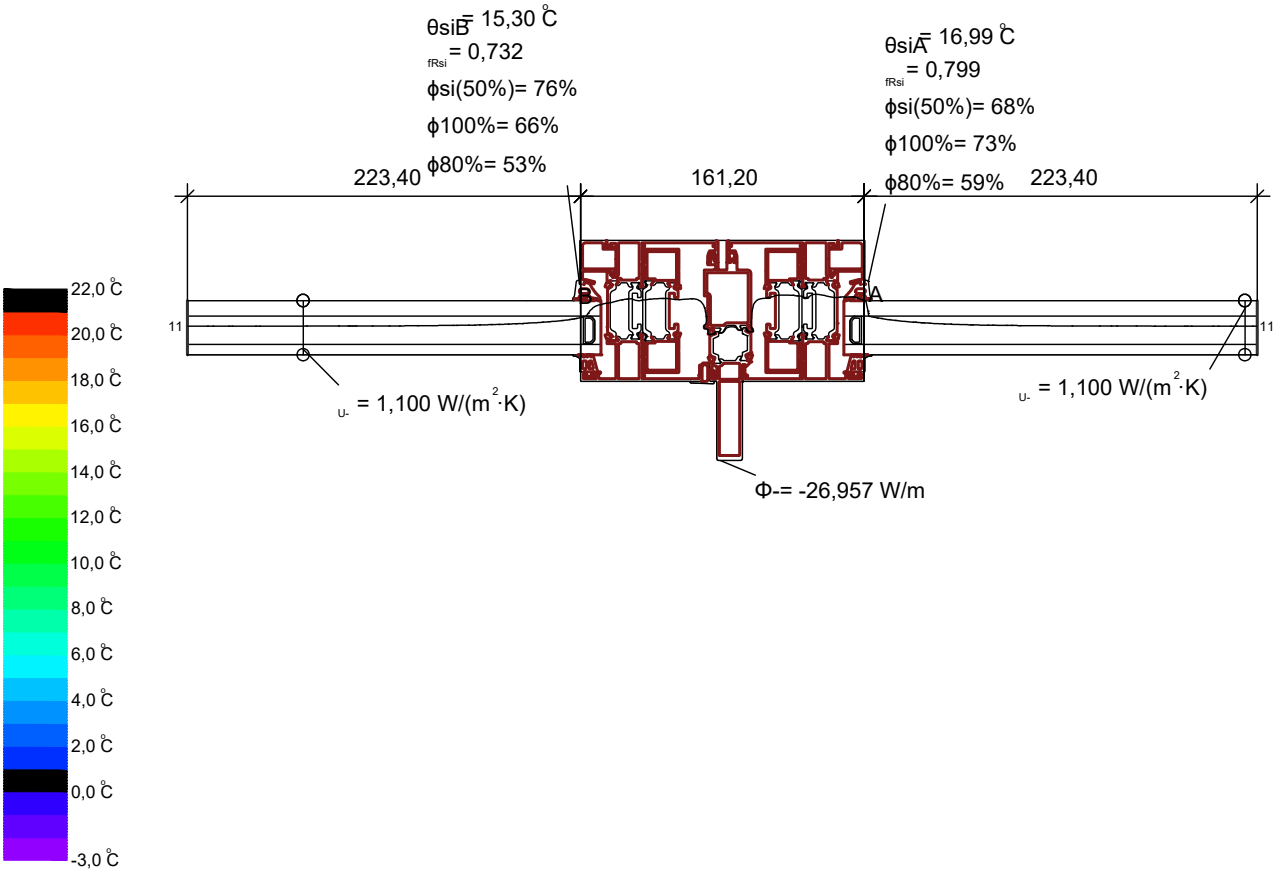
Boundary Condition	q[W/m²]	θ[°C]	R[(m²·K)/W]	ε
Epsilon 0.9				0,900
Exterior, frame		-3,000	0,040	
Interior, frame, normal		22,000	0,130	
Interior, frame, reduced		22,000	0,200	
Symmetry/Model section	0,000			



$$U_{TJ\,A,B} = \frac{\frac{\Phi}{\Delta T} - Ug \cdot bg}{bf} = \frac{\frac{15{,}708}{25{,}000} - 1{,}100 \cdot 0{,}223}{0{,}111} = 3{,}45\ W/(m^2 \cdot K)$$

Material	λ[W/(m·K)]	ε
Aluminium (Si Alloys)	160,000	0,900
Butyl (isobutene), hot-melt	0,240	
EPDM (ethylene propylene diene monomer)	0,250	0,900
Stainless steel, SGG	15,000	
Gasfilling(1)	0,022	
Polyamid 6.6 with 25% glass fibre	0,300	0,900
Polysulfide	0,400	0,900
SAN 35% glass fiber	0,160	
Silica gel (desiccant)	0,130	
Soda lime glass	1,000	0,900
Unventilated air cavity	anisotropic	

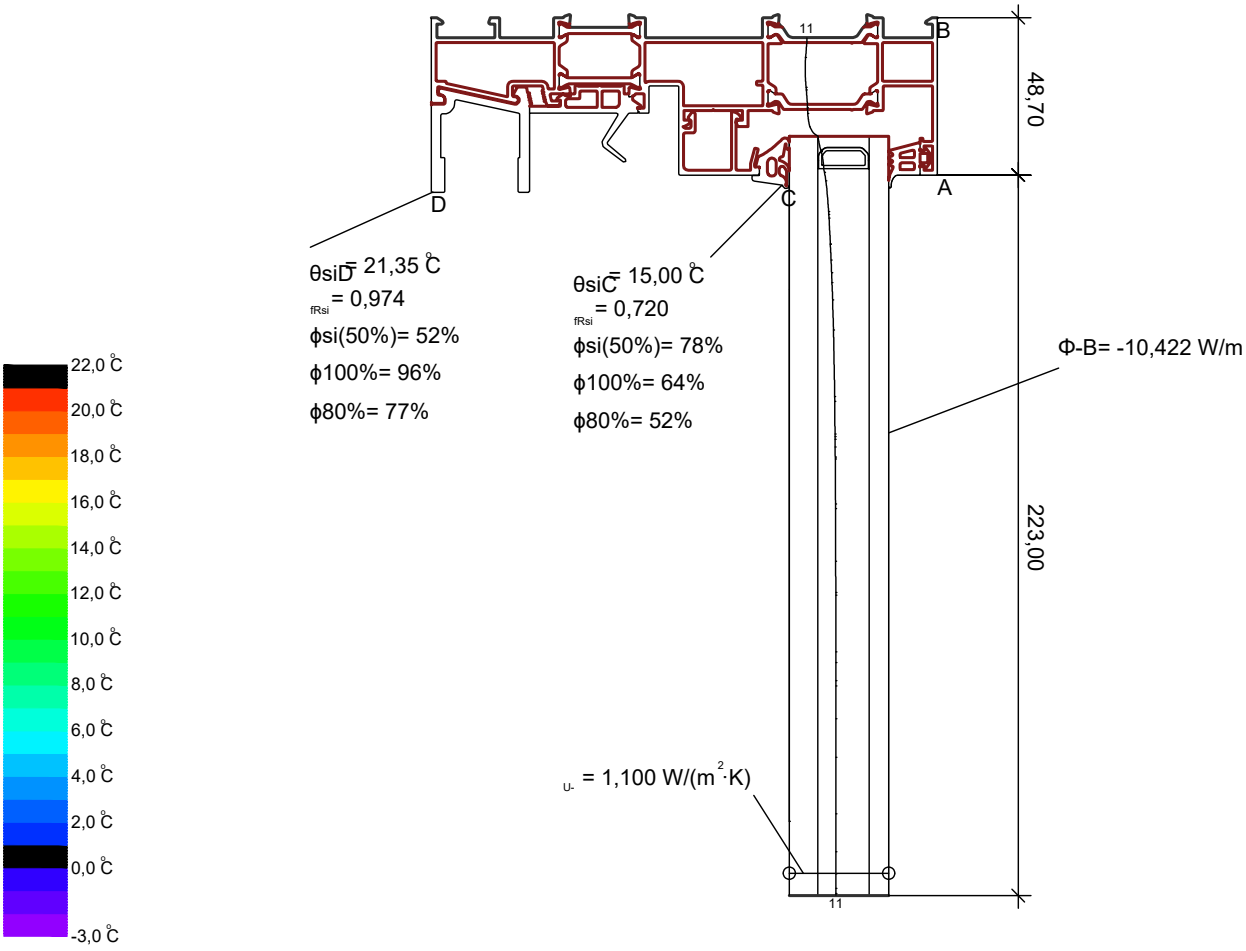
Boundary Condition	q[W/m²]	θ[°C]	R[(m²·K)/W]	ε
Epsilon 0.9				0,900
Exterior, frame		-3,000	0,040	
Interior, frame, normal		22,000	0,130	
Interior, frame, reduced		22,000	0,200	
Symmetry/Model section	0,000			



$$U_{UTJ} = \frac{\frac{\Phi}{\Delta T} - U_{g1} \cdot b_{g1} - U_{g2} \cdot b_{g2}}{b_f} = \frac{\frac{26,957}{25,000} - 1,100 \cdot 0,223 - 1,100 \cdot 0,223}{0,161} = 3,64 \text{ W/(m}^2\text{K)}$$

Material	λ[W/(m·K)]	ε
Aluminium (Si Alloys)	160,000	0,900
Butyl (isobutene), hot-melt	0,240	
EPDM (ethylene propylene diene monomer)	0,250	0,900
Stainless steel, SGG	15,000	
Gasfilling(1)	0,022	
Polyamid 6.6 with 25% glass fibre	0,300	0,900
Polysulfide	0,400	0,900
SAN 35% glass fiber	0,160	
Silica gel (desiccant)	0,130	
Soda lime glass	1,000	0,900
Unventilated air cavity	anisotropic	

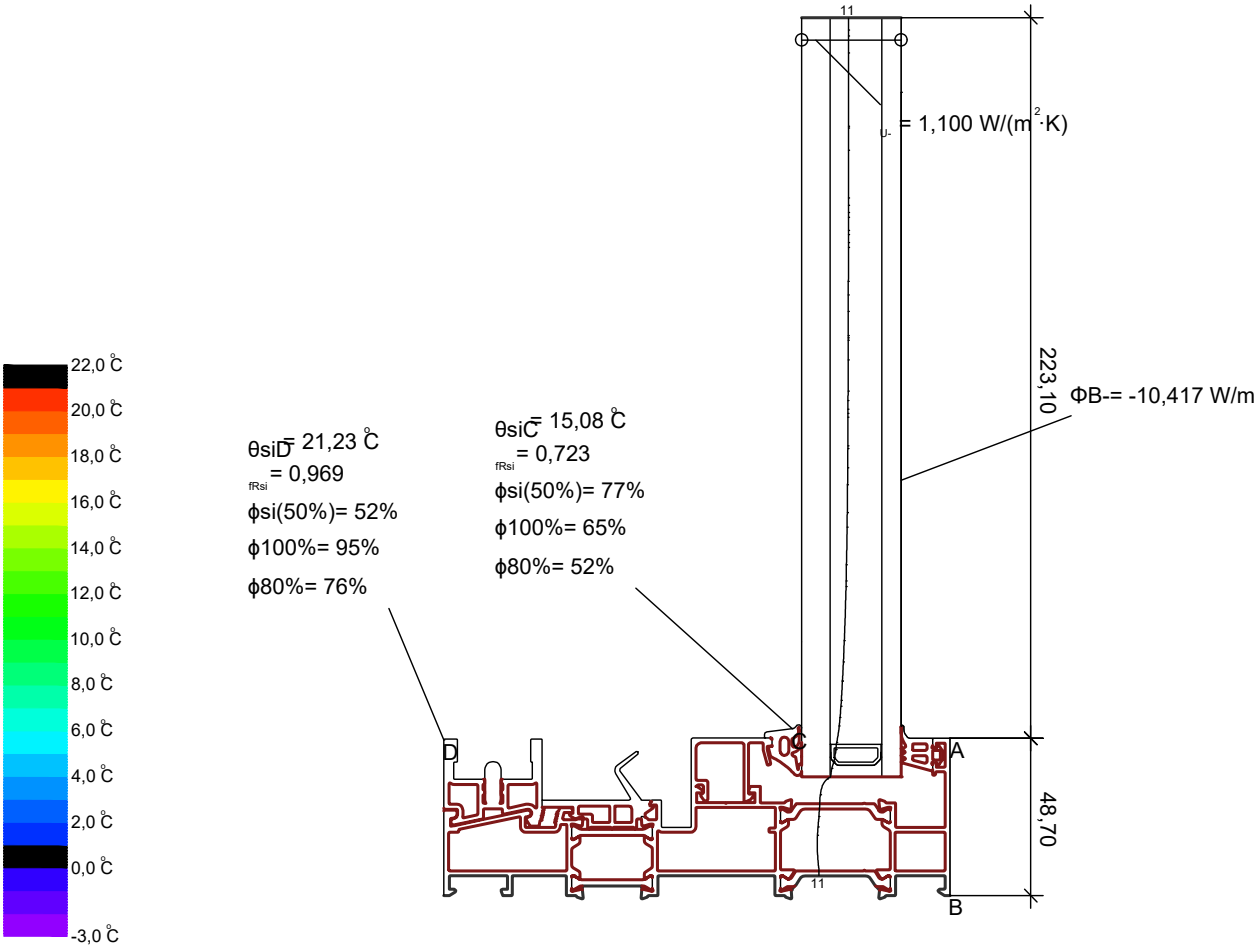
Boundary Condition	q[W/m²]	θ[°C]	R[(m²·K)/W]	ε
Epsilon 0.9				0,900
Exterior, frame		-3,000	0,040	
Interior, frame, normal		22,000	0,130	
Interior, frame, reduced		22,000	0,200	
Symmetry/Model section	0,000			



$$U_{UTJ\ A,B} = \frac{\frac{\Phi}{\Delta T}}{b_f} - U_g \cdot b_g = \frac{\frac{10,422}{25,000} - 1,100 \cdot 0,223}{0,049} = 3,52\ W/(m^2 \cdot K)$$

Material	λ[W/(m·K)]	ε
Aluminium (Si Alloys)	160,000	0,900
Butyl (isobutene), hot-melt	0,240	
EPDM (ethylene propylene diene monomer)	0,250	0,900
Stainless steel, SGG	15,000	
Gasfilling(1)	0,022	
Polyamid 6.6 with 25% glass fibre	0,300	0,900
Polysulfide	0,400	0,900
SAN 35% glass fiber	0,160	
Silica gel (desiccant)	0,130	
Soda lime glass	1,000	0,900
Unventilated air cavity	anisotropic	

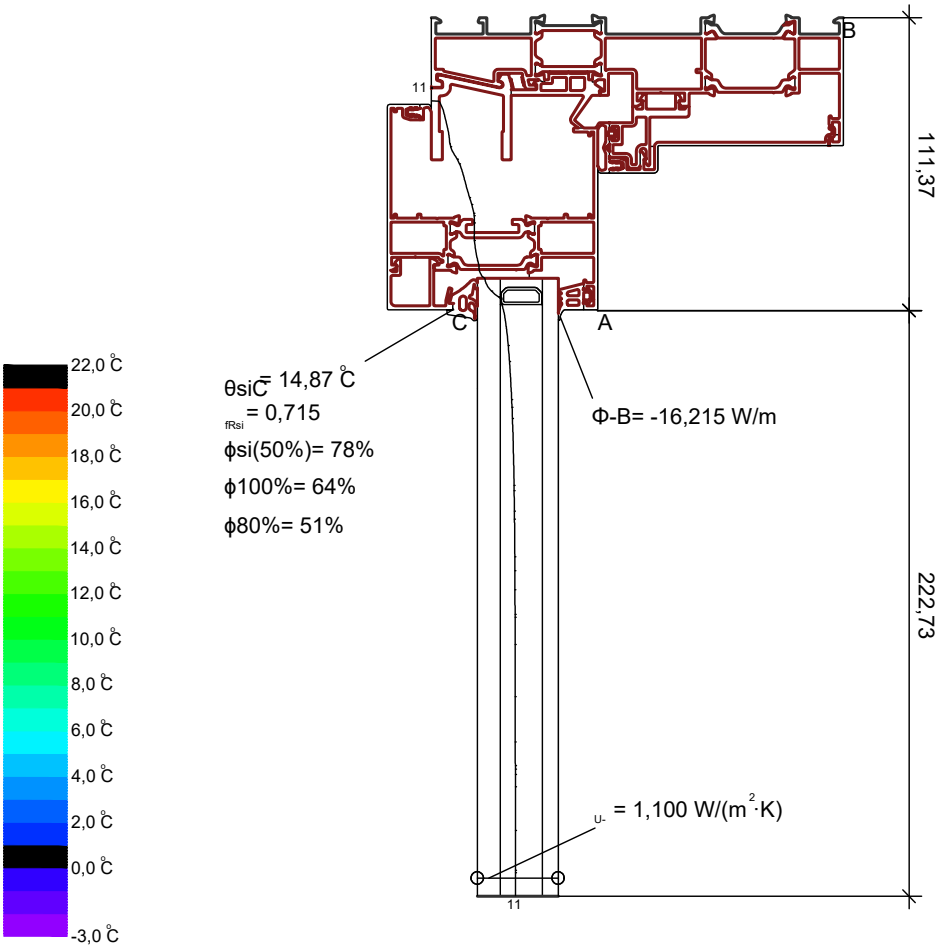
Boundary Condition	q[W/m²]	θ[°C]	R[(m²·K)/W]	ε
Epsilon 0.9				0,900
Exterior, frame		-3,000	0,040	
Interior, frame, normal		22,000	0,130	
Interior, frame, reduced		22,000	0,200	
Symmetry/Model section	0,000			



$$U_{TJ\,A,B} = \frac{\frac{\Phi}{\Delta T} - U_g \cdot bg}{bf} = \frac{\frac{10,417}{25,000} - 1,100 \cdot 0,223}{0,049} = 3,52\ W/(m^2 \cdot K)$$

Material	λ[W/(m·K)]	ε
Aluminium (Si Alloys)	160,000	0,900
Butyl (isobutene), hot-melt	0,240	
EPDM (ethylene propylene diene monomer)	0,250	0,900
Stainless steel, SGG	15,000	
Gasfilling(1)	0,022	
Polyamid 6.6 with 25% glass fibre	0,300	0,900
Polysulfide	0,400	0,900
SAN 35% glass fiber	0,160	
Silica gel (desiccant)	0,130	
Soda lime glass	1,000	0,900
Unventilated air cavity	anisotropic	

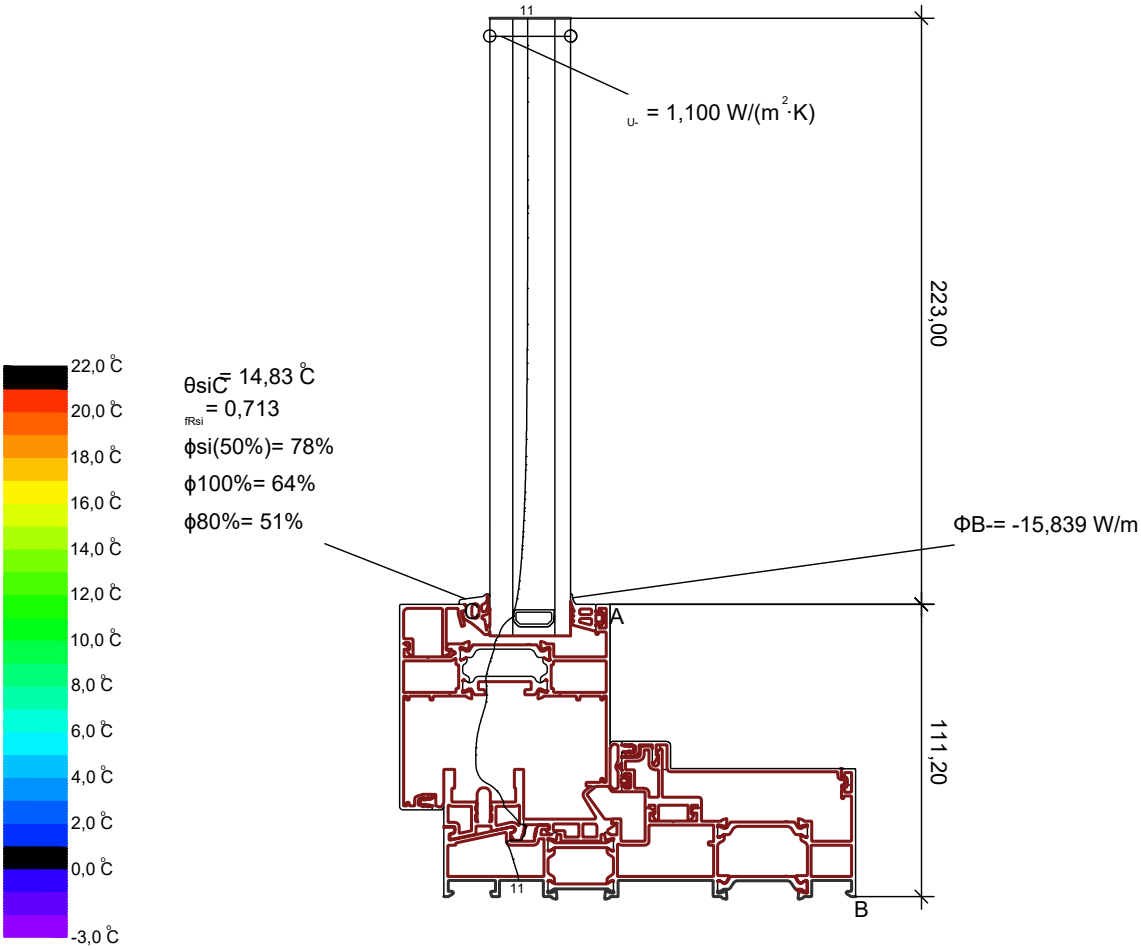
Boundary Condition	q[W/m²]	θ[°C]	R[(m²·K)/W]	ε
Epsilon 0.9				0,900
Exterior, frame		-3,000	0,040	
Interior, frame, normal		22,000	0,130	
Interior, frame, reduced		22,000	0,200	
Symmetry/Model section	0,000			



$$U_{TJ\,A,B} = \frac{\frac{\Phi}{\Delta T}_{-Ug} \cdot bg}{bf} = \frac{\frac{16{,}215}{25{,}000} - 1{,}100 \cdot 0{,}223}{0{,}111} = 3{,}62\ W/(m^2 \cdot K)$$

Material	λ[W/(m·K)]	ε
Aluminium (Si Alloys)	160,000	0,900
Butyl (isobutene), hot-melt	0,240	
EPDM (ethylene propylene diene monomer)	0,250	0,900
Stainless steel, SGG	15,000	
Gasfilling(1)	0,022	
Polyamid 6.6 with 25% glass fibre	0,300	0,900
Polysulfide	0,400	0,900
SAN 35% glass fiber	0,160	
Silica gel (desiccant)	0,130	
Soda lime glass	1,000	0,900
Unventilated air cavity	anisotropic	

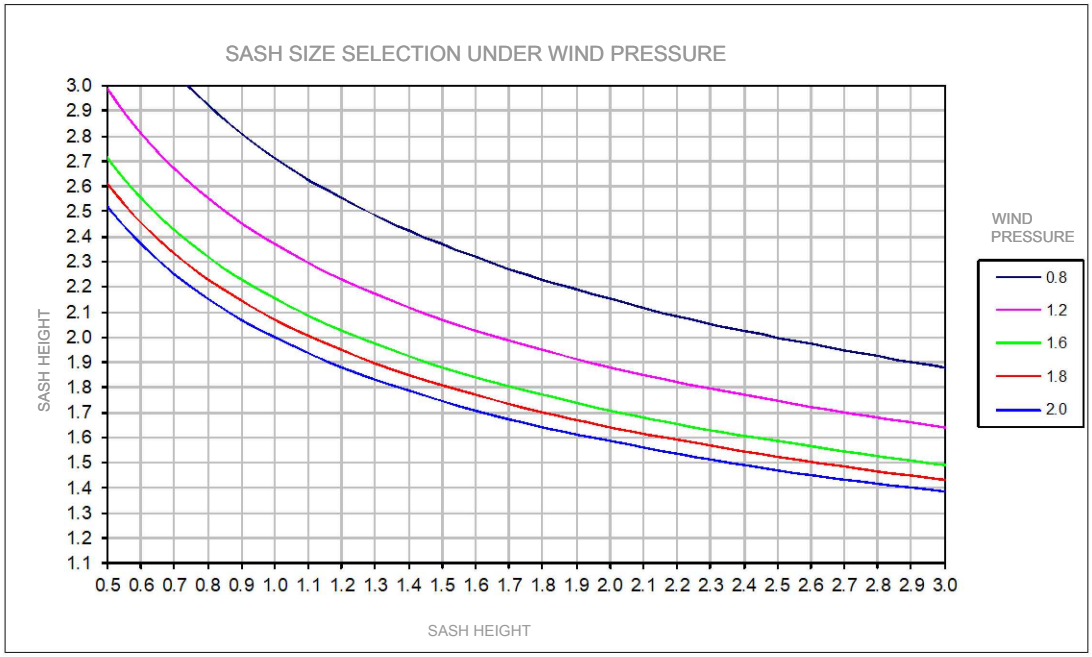
Boundary Condition	q[W/m²]	θ[°C]	R[(m²·K)/W]	ε
Epsilon 0.9				0,900
Exterior, frame		-3,000	0,040	
Interior, frame, normal		22,000	0,130	
Interior, frame, reduced		22,000	0,200	
Symmetry/Model section	0,000			



$$U_{TJ\,A,B} = \frac{\frac{\Phi}{\Delta T}_{-Ug} \cdot bg}{bf} = \frac{\frac{15,839}{25,000} - 1,100 \cdot 0,223}{0,111} = 3,49\ W/(m^2 \cdot K)$$

Material	λ[W/(m·K)]	ε
Aluminium (Si Alloys)	160,000	0,900
Butyl (isobutene), hot-melt	0,240	
EPDM (ethylene propylene diene monomer)	0,250	0,900
Stainless steel, SGG	15,000	
Gasfilling(1)	0,022	
Polyamid 6.6 with 25% glass fibre	0,300	0,900
Polysulfide	0,400	0,900
SAN 35% glass fiber	0,160	
Silica gel (desiccant)	0,130	
Soda lime glass	1,000	0,900
Unventilated air cavity	anisotropic	

Boundary Condition	q[W/m²]	θ[°C]	R[(m²·K)/W]	ε
Epsilon 0.9				0,900
Exterior, frame		-3,000	0,040	
Interior, frame, normal		22,000	0,130	
Interior, frame, reduced		22,000	0,200	
Symmetry/Model section	0,000			

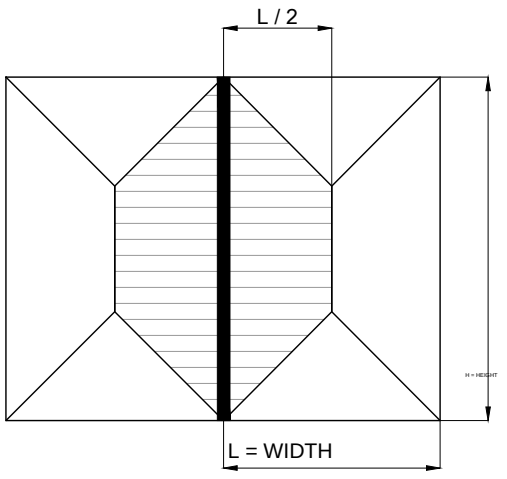


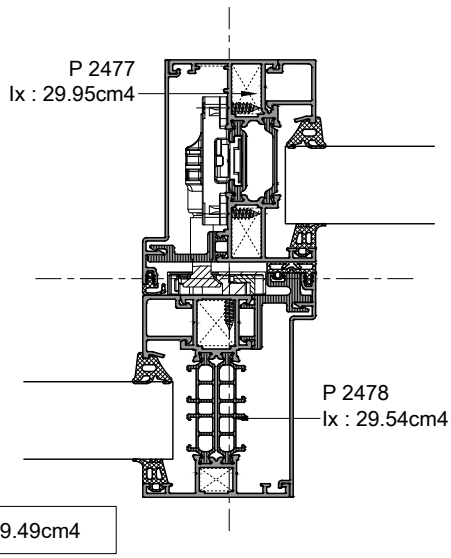
STATICAL DIAGRAM for SASH

SASH WEIGHT : 400kg

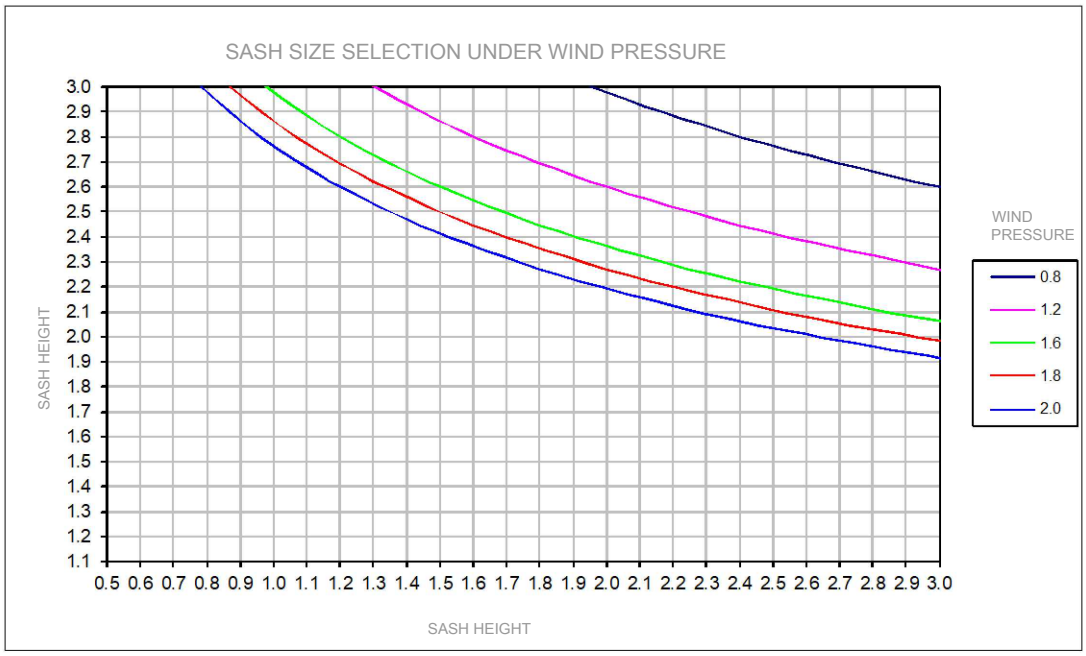
DEFLECTION LIMIT L / 200 or 15mm.
THE LINE SHOW MAXIMUM SIZES FOR THE INDICATE PRESSURE.
VERIFY THAT THE DEFLECTION OF THE SECTION IS COMPATIBLE WITH THE EMPLOYED GLASS.

DIN EN 12210 for the standard building area
Deflection limit L/200 or max. 15mm in accordance with TRLV
Differing deflection limits set by the double glazing manufacturer must be observed.
These statics diagram are intended for preliminary structural calculations and profile selection.
This is not a substitute for a final structural calculation.
Sash sizes below the line are structurally adequate.





TOTAL Ix: 59.49cm4

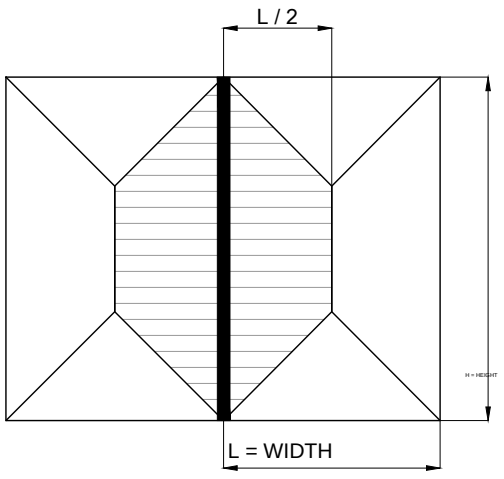


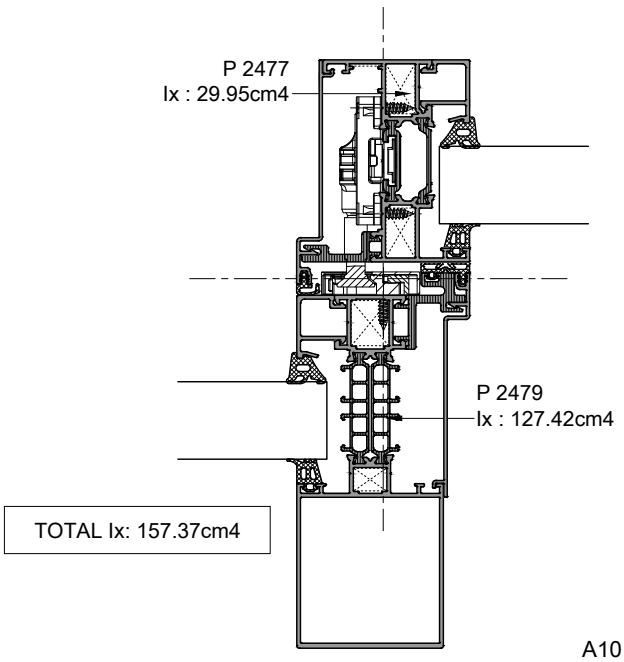
STATICAL DIAGRAM for SASH

SASH WEIGHT : 400kg

DEFLECTION LIMIT L / 200 or 15mm.
THE LINE SHOW MAXIMUM SIZES FOR THE INDICATE PRESSURE.
VERIFY THAT THE DEFLECTION OF THE SECTION IS COMPATIBLE WITH THE EMPLOYED GLASS.

DIN EN 12210 for the standard building area
Deflection limit L/200 or max. 15mm in accordance with TRLV
Differing deflection limits set by the double glazing manufacturer must be observed.
These statics diagram are intended for preliminary structural calculations and profile selection.
This is not a substitute for a final structural calculation.
Sash sizes below the line are structurally adequate.



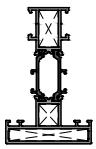
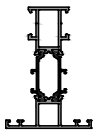
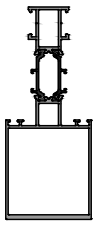
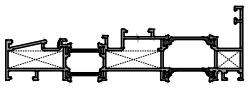
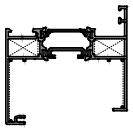


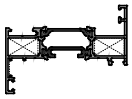
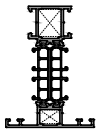
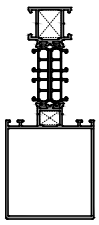
TOTAL Ix: 157.37cm4

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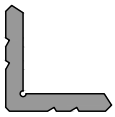
PULL&SLIDE DOOR and WINDOW SYSTEM

ALUMINIUM PROFILES

PROFILE SECTION	PROFILE NO	DIE NO	PROFILE DESCRIPTION	WEIGHT
	P 2193	18092 + 18280	mullion profile	1,770kg/mt
	P 2405	18092 + 18907	mullion profile	1,425kg/mt
	P 2407	18092 + 18906	mullion profile	2,405kg/mt
	P 2194	19658 + 19659 + 19660	frame profile	2,470kg/mt
	P 2476	19663 + 19664	sash profile	1,620kg/mt

PROFILE SECTION	PROFILE NO	DIE NO	PROFILE DESCRIPTION	WEIGHT
	P 2477	19661 + 19662	sash profile	1,365kg/mt
	P 2478	19665 + 19666	mullion profile	1,415kg/mt
	P 2479	19665 + 19667	mullion profile	2,200kg/mt
	P 1020	12769	rod profile	0,105kg/mt
	P 2480	19669 + 19670	double sash adepter profile	1,510kg/mt
	P 2481	19671 + 19671	sash adepter profile	0,880kg/mt
	P 2482	19676	closing profile	0,420kg/mt

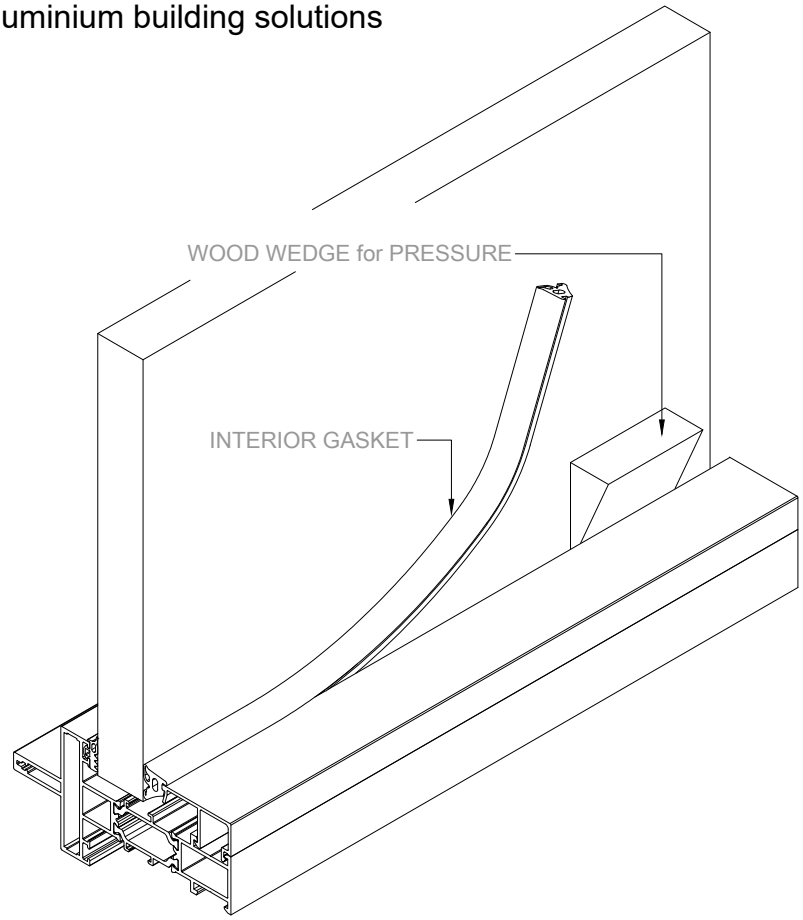
PROFILE SECTION	PROFILE NO	DIE NO	PROFILE DESCRIPTION	WEIGHT
	P 2483	19675	closing profile	0,460kg/mt
	P 2484	19672	bottom rail profile	0,690kg/mt
	P 2485	19673	top rail profile	0,765kg/mt
	P 2486	19674	side rail profile	0,485kg/mt
	P 2487	19677	finishing profile	0,120kg/mt
	P 2488	19678	rail profile	0,170kg/mt
	P 2180		12,5mm glazing bead profile	0,240kg/mt
	P 2181	18279	18,5mm glazing bead profile	0,285kg/mt
	P 2182	18096	25mm glazing bead profile	0,295kg/mt
	P 2183		30,5mm glazing bead profile	0,320kg/mt

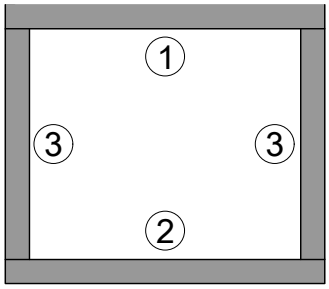
PROFILE SECTION	PROFILE NO	DIE NO	PROFILE DESCRIPTION	WEIGHT
	P 2184		36,5mm glazing bead profile	0,340kg/mt
	P 1163	4292	corner cleat profile	3,750kg/mt

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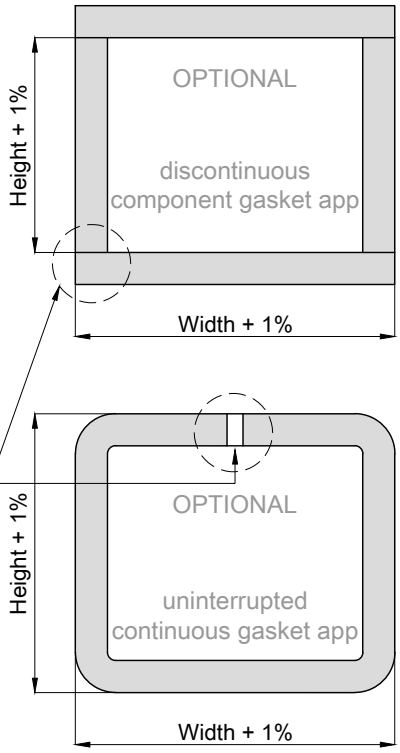
PULL&SLIDE DOOR and WINDOW SYSTEM

GLAZING ASSEMBLY





GLAZING BEAD ASSEMBLY SEQUENC



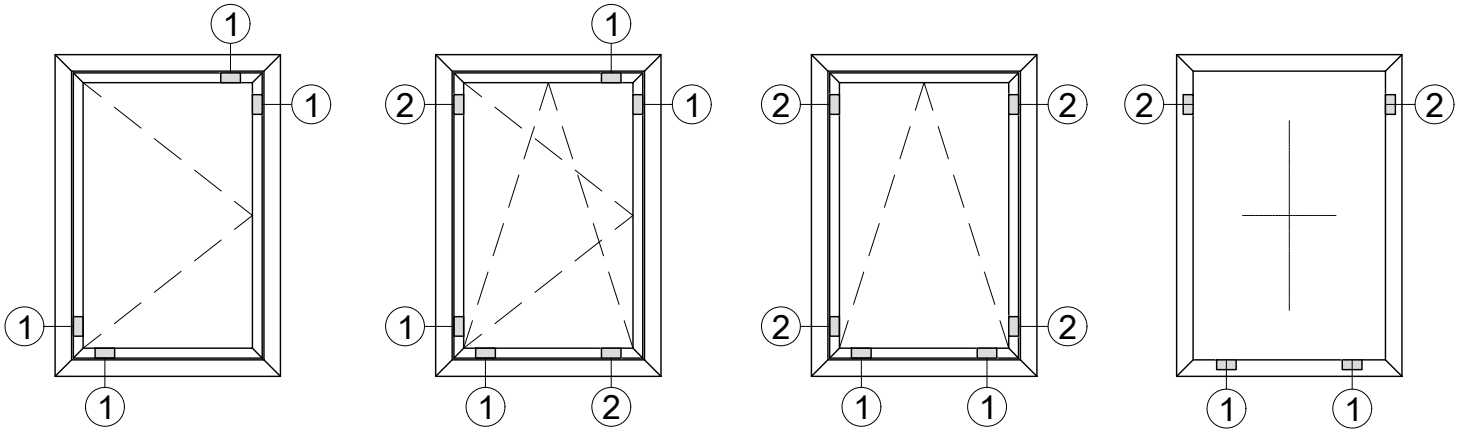
GASKET JOINT ON THE TOP,
BOND WITH EPDM GLUE.

① GLASS CLEATS

The assembly of glass reinforcement pieces has been showed at the top schemetically.The gap distance to the corner should be, the 5/1 or 10/1 of the sash size.

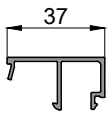
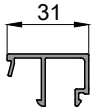
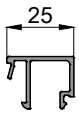
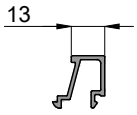
② DISTANCE ADJUSTMENT PIECE

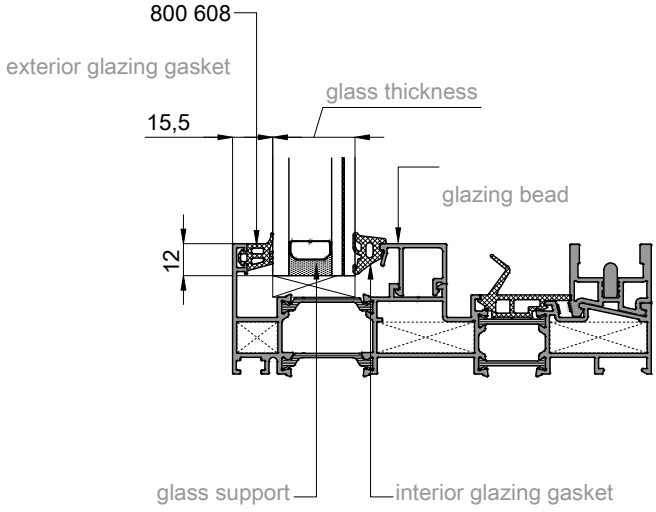
Distance adjustment pieces stabilize the glass in the frame at the true pozition.Put the distance adjustment piece between glass and profile without using force.



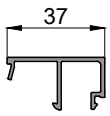
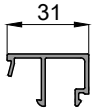
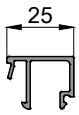
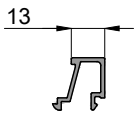
① GLASS CLEAT ② ADJUSTMENT PIECE

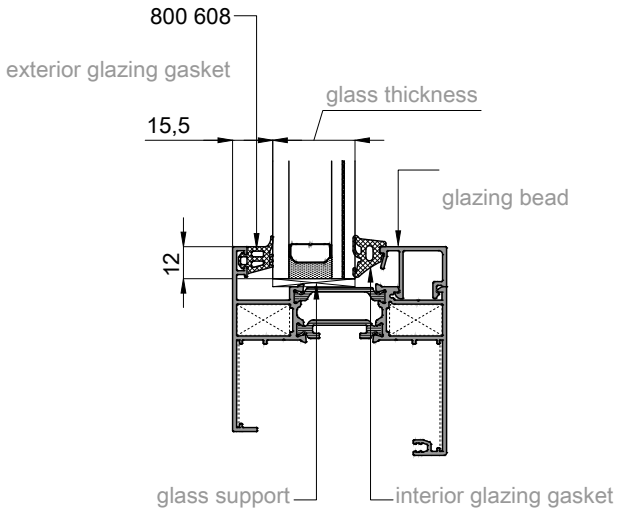
THE PANE MUST BE SHIMMED IN THE SASH SO THAT THE SASH OPERATES WITHOUT ADJUSTMENT OF THE HARDWARE.

glass thickness	glazing bead		glazing gasket	
	profile section	code	section	code
18mm	P 2184 (37mm) 			800 278 (10mm)
20mm				800 277 (8mm)
22mm				800 271 (6mm)
24mm	P 2183 (31mm) 			800 278 (10mm)
26mm				800 277 (8mm)
28mm				800 271 (6mm)
30mm	P 2182 (25mm) 			800 278 (10mm)
32mm				800 277 (8mm)
34mm				800 271 (6mm)
36mm	P 2181 (19mm) 			800 278 (10mm)
38mm				800 277 (8mm)
40mm				800 271 (6mm)
42mm	P 2180 (13mm) 			800 278 (10mm)
44mm				800 277 (8mm)
46mm				800 271 (6mm)



selection tables promise a first planning.
Please keep the glass and gasket tolerances in mind.

glass thickness	glazing bead		glazing gasket	
	profile section	code	section	code
18mm	P 2184 (37mm) 			800 278 (10mm)
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38mm				800 277 (8mm)
40mm				800 271 (6mm)
42mm	P 2180 (13mm) 			800 278 (10mm)
44mm				800 277 (8mm)
46mm				800 271 (6mm)

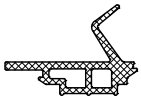


selection tables promise a first planning.
Please keep the glass and gasket tolerances in mind.

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PULL&SLIDE DOOR and WINDOW SYSTEM

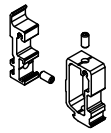
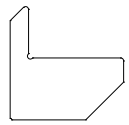
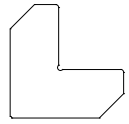
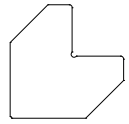
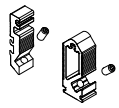
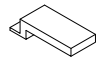
GASKETS

GASKET SECTION	GASKET NO	MATERIAL	GASKET DESCRIPTION	PACKAGE
	800 271	EPDM	interior glazing gasket	185mt/pk 0,081kg/mt
	800 277	EPDM	8mm interior glazing gasket	165mt/pk 0,092kg/mt
	800 278	EPDM	10mm interior glazing gasket	115mt/pk 0,130kg/mt
	800 608	EPDM	exterior glazing gasket	144mt/pk 0,104kg/mt
	800 640	EPDM	overlap gasket for sash	167mt/pk 0,090kg/mt
	800 641	EPDM	overlap gasket for sash	357mt/pk 0,042kg/mt
	800 642	EPDM	overlap gasket for frame	69mt/pk 0,216kg/mt
	800 643	EPDM	overlap gasket for double sash	230mt/pk 0,065kg/mt
	800 645	EPDM	finishing insulation gasket	165mt/pk 0,091kg/mt
	800 234	EPDM	∅4 oring gasket	500mt/pk 0,017kg/mt

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PULL&SLIDE DOOR and WINDOW SYSTEM

ACCESSORIES

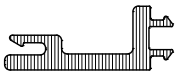
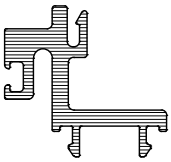
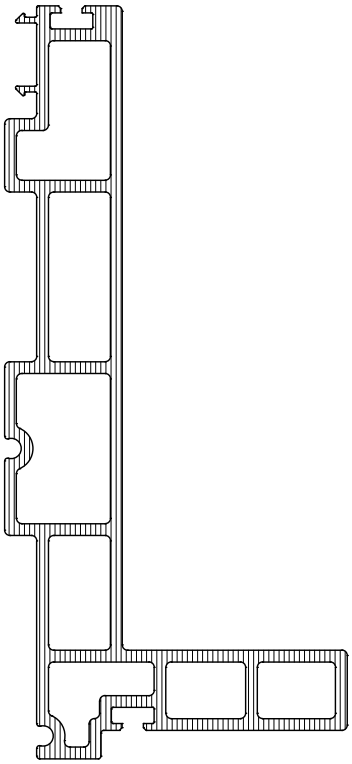
ACCESSORIES SHAPE	ACCESS. NO	ACCESSORIES DESCRIPTION	QUANTITY
	700 686	T connection bracket for frame and mullion	50 pieces
	700 451	weep hole cap	50 pieces
	701 185	0,8mm stainless steel corner angle	100 pieces
	701 186	0,8mm stainless steel corner angle	100 pieces
	701 187	0,8mm stainless steel corner angle	100 pieces
	701 188	T connection bracket for frame and mullion	50 pieces
	701 189	T connection foam for frame and mullion	50 pieces
	701 190	T connection foam for frame and mullion	50 pieces
	701 191	T connection foam for frame and mullion	50 pieces
	701 192	injection clip for finishing angle	100 pieces

ACCESSORIES SHAPE	ACCESS. NO	ACCESSORIES DESCRIPTION	QUANTITY
∩	701 193	Stainless Steel Rail	30mt 3mt X 10pieces

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PULL&SLIDE DOOR and WINDOW SYSTEM

PVC PROFILES

PROFILE SECTION	PROFILE NO	MATERIAL	PROFILE DESCRIPTION	PACKAGE
	600 495	polyamide	thermal insulation profile for interlock	6mt 25ad/pk 0,180kg/mt
	600 496	polyamide	thermal insulation profile for frame	6mt 25ad/pk 0,295kg/mt
	600 498	PVC	sliding window system subframe insulation profile	6mt 25ad/pk 1,625kg/mt

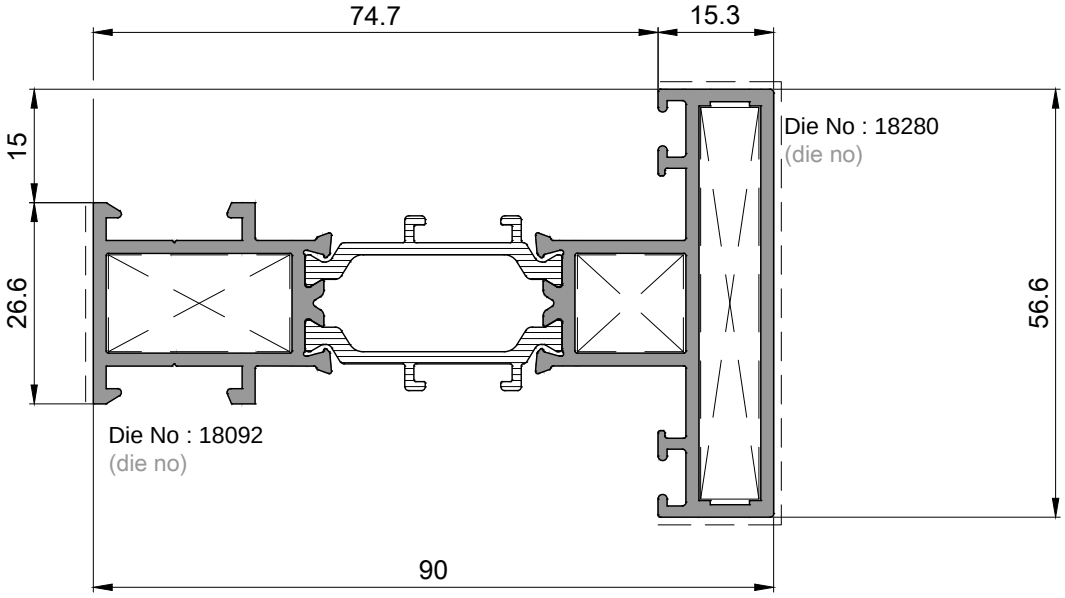
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PULL&SLIDE DOOR and WINDOW SYSTEM

FULL SCALE PROFILES

P 2193

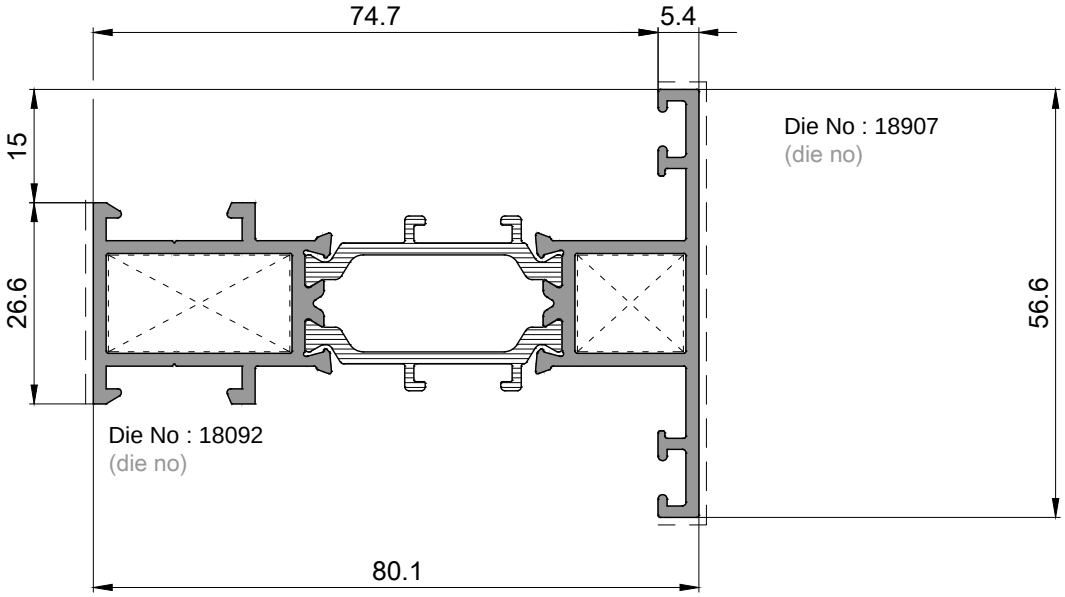
Frame Profile
1,770kg/mt



Ix	Iy
43.82 cm4	10.73 cm4

P 2405

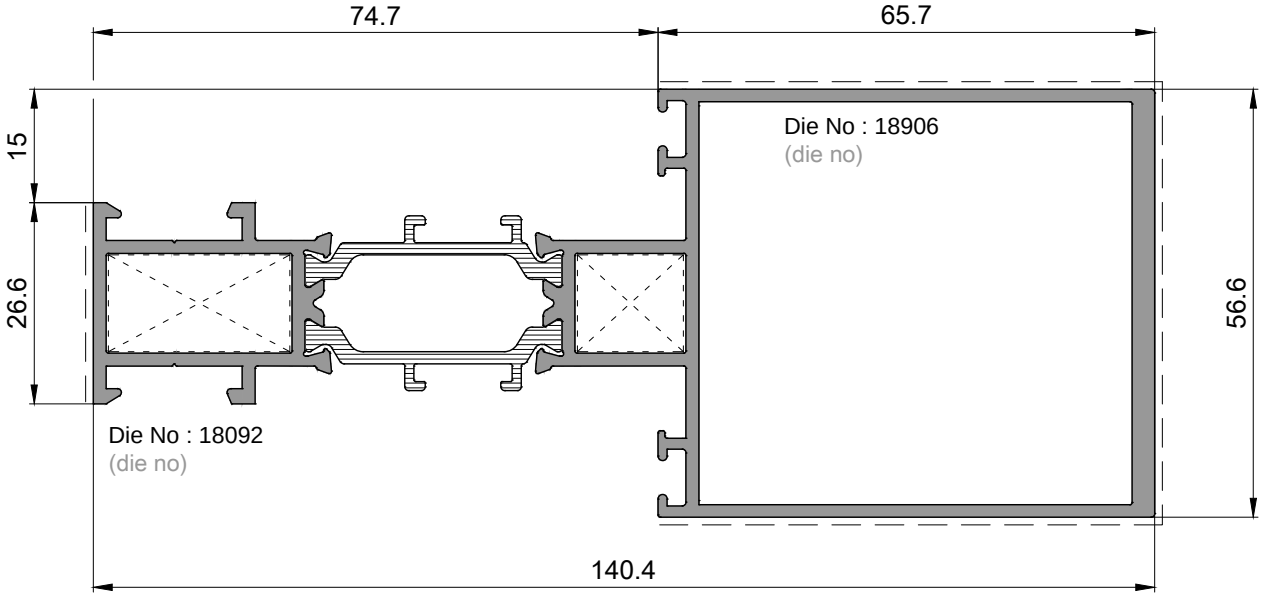
Mullion Profile
1,425kg/mt



Ix	Iy
30.33 cm4	5.90 cm4

P 2407

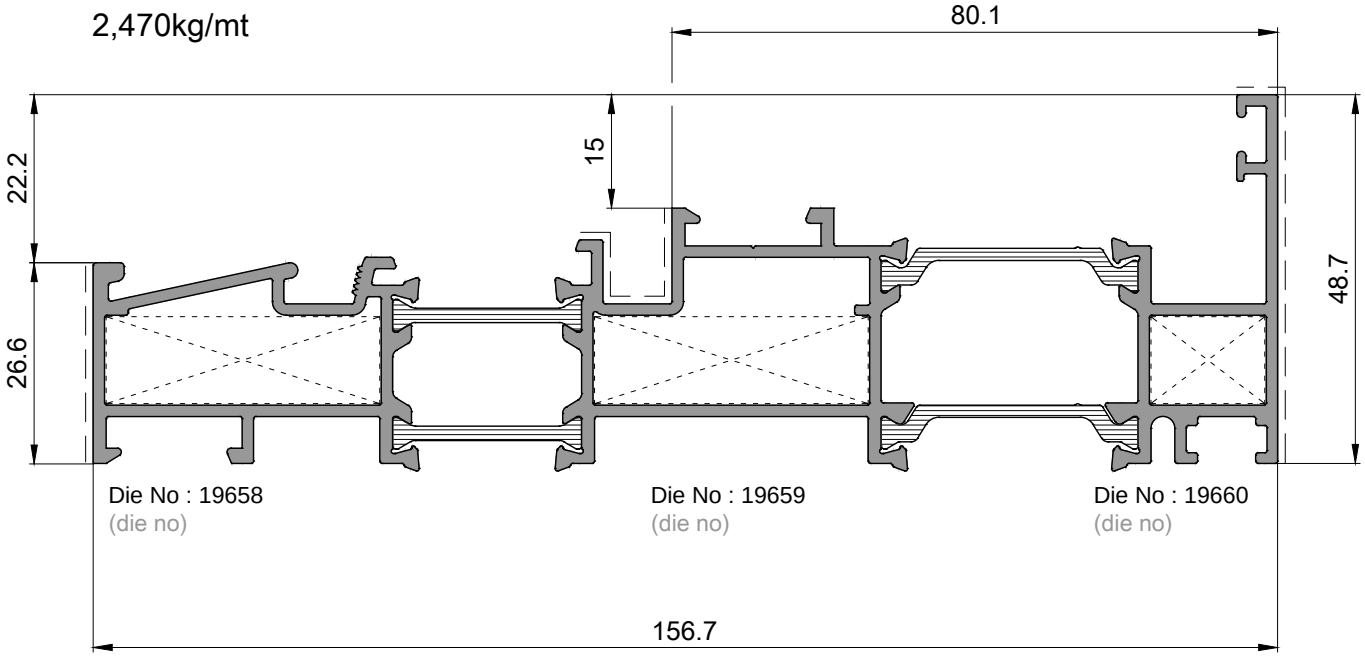
Mullion Profile
2,405kg/mt



Ix	Iy
129.96 cm4	24.83 cm4

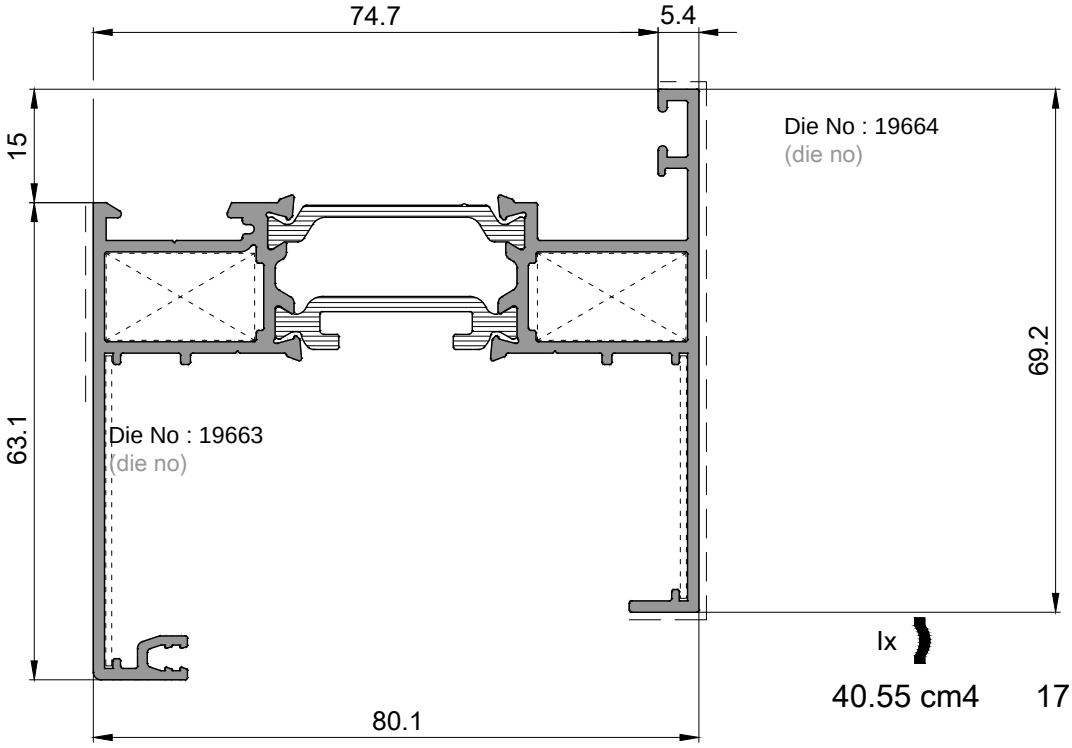
P 2475

Frame Profile
2,470kg/mt



P 2476

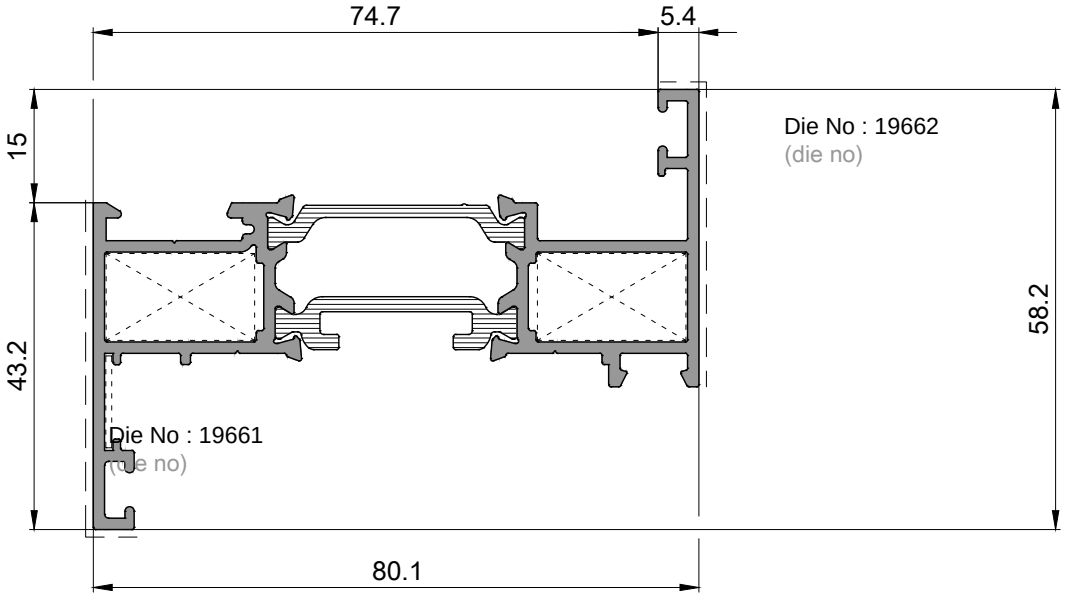
Sash Profile
1,620kg/mt



Ix	Iy
40.55 cm4	17.68 cm4

P 2477

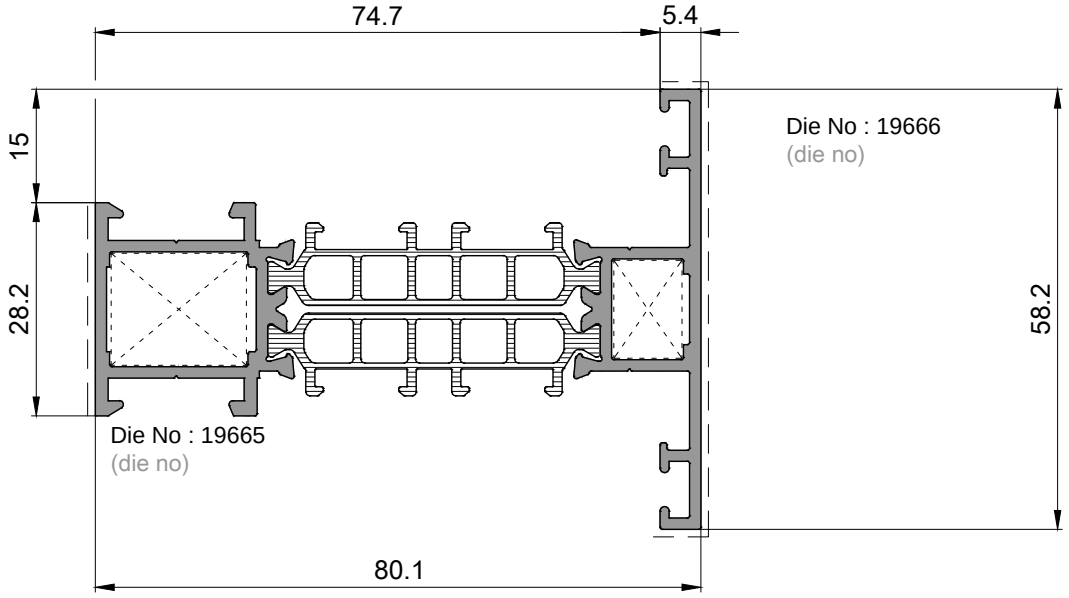
Sash Profile
1,365kg/mt



Ix	Iy
29.95 cm4	4.72 cm4

P 2478

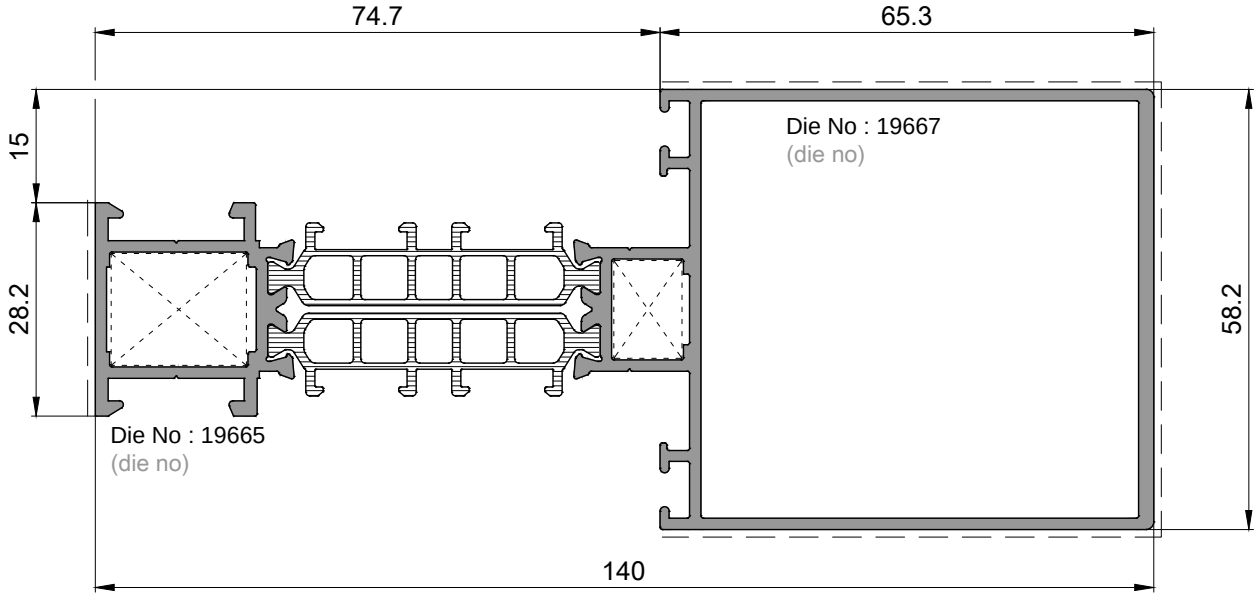
Mullion Profile
1,415kg/mt



Ix	Iy
29.54 cm4	5.90 cm4

P 2479

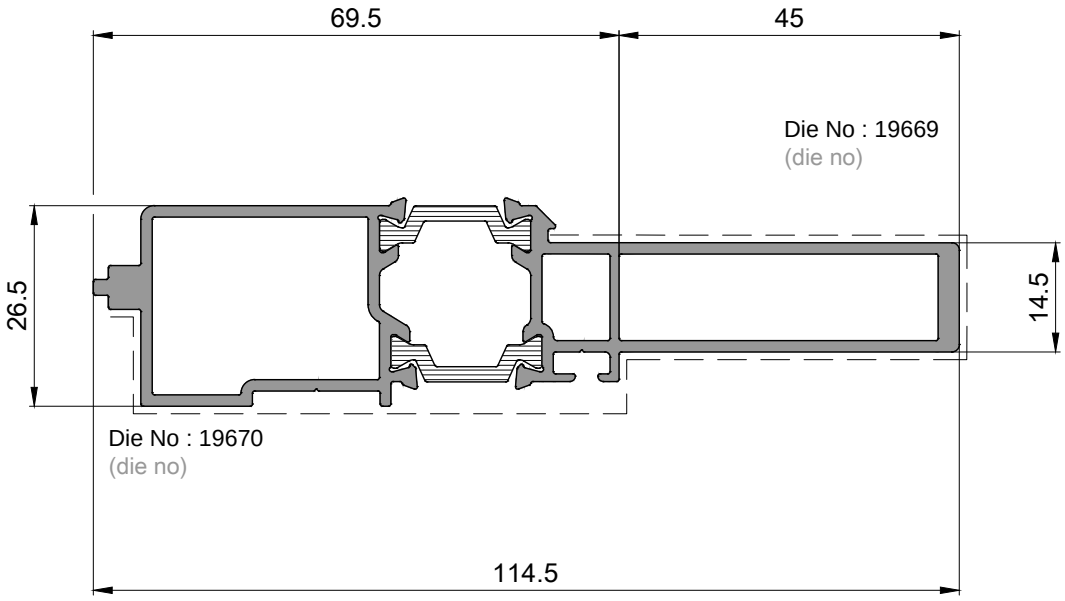
Mullion Profile
2,200kg/mt



Ix	Iy
127.42 cm4	24.95 cm4

P 2480

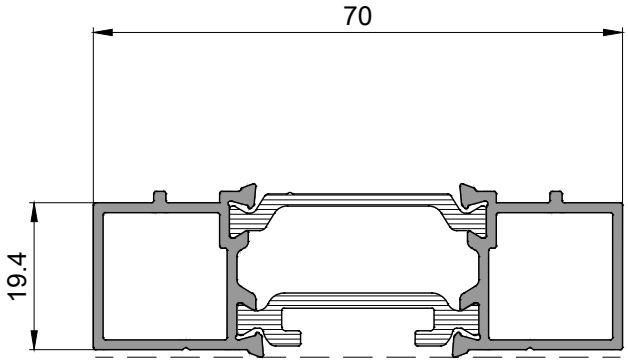
Adepter Profile
1,510kg/mt



Ix	Iy
45.67 cm4	3.17 cm4

P 2481

Adepter Profile
0,880kg/mt

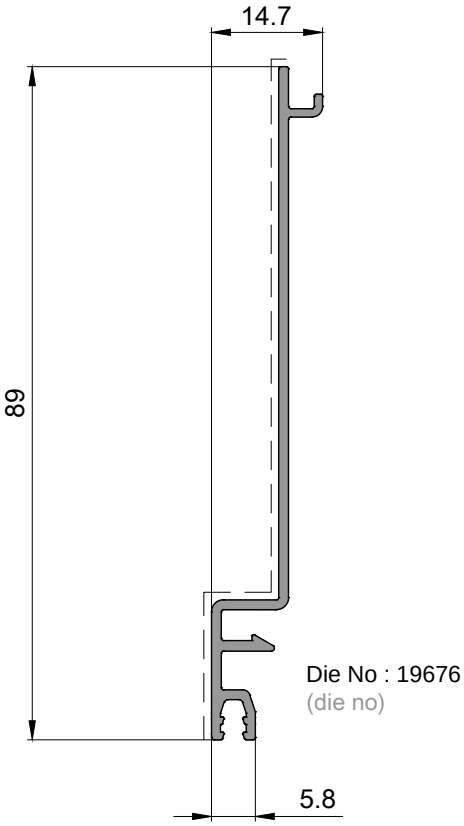


Die No : 19671
(die no)

Die No : 19671
(die no)

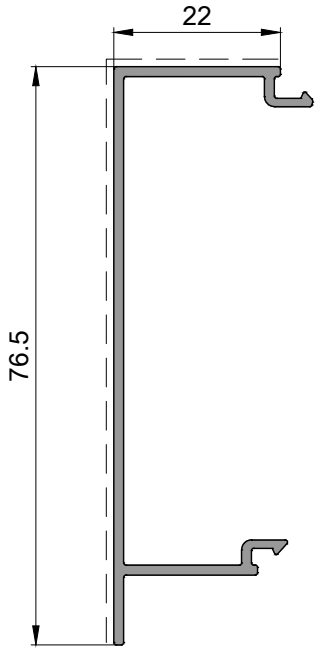
Ix	Iy
10.91 cm4	1.39 cm4

P 2482
Closing Profile
0,420kg/mt



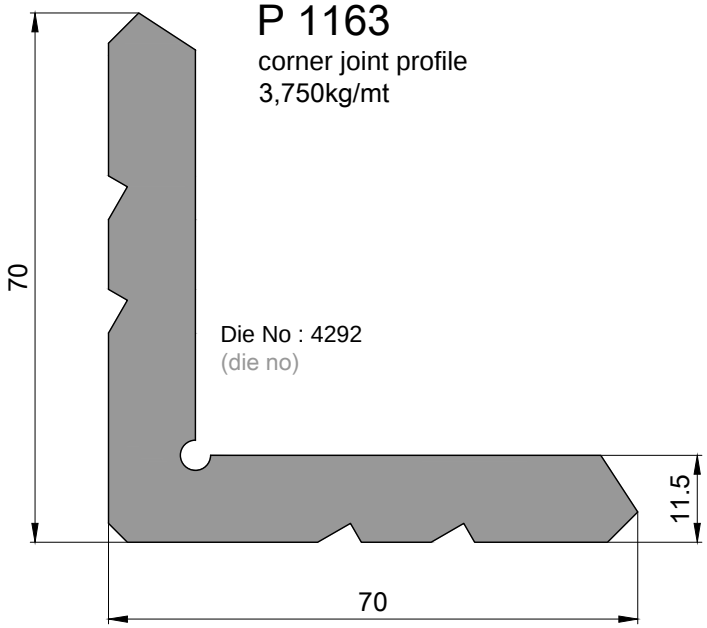
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(die no)

P 2483
Closing Profile
0,460kg/mt



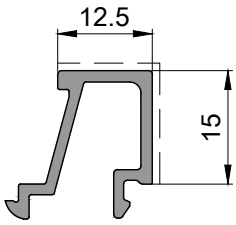
Die No : 19675
(die no)

P 1163
corner joint profile
3,750kg/mt

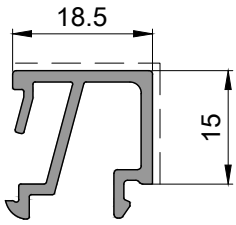


Die No : 4292
(die no)

P 2180
glazing bead profile
0,240kg/mt

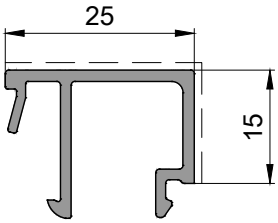


P 2181
glazing bead profile
0,285kg/mt



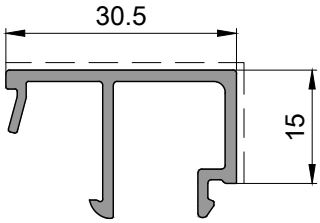
Die No : 18279

P 2182
glazing bead profile
0,295kg/mt

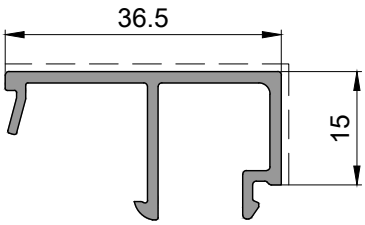


Die No : 18096

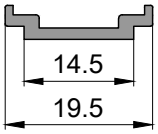
P 2183
glazing bead profile
0,320kg/mt



P 2184
glazing bead profile
0,340kg/mt



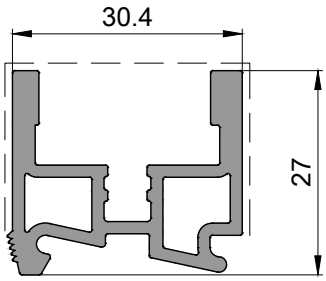
P 1020
rodprofile
0,105kg/mt



Die No : 12769
(die no)

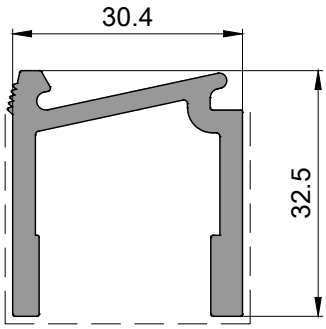
eloxal - anodising

P 2484
bottom rail profile
0,690kg/mt



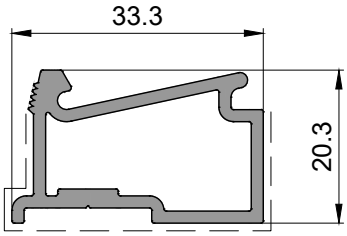
Die No : 19672
(die no)

P 2485
top rail profile
0,765kg/mt



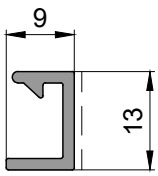
Die No : 19673
(die no)

P 2486
side rail profile
0,485kg/mt



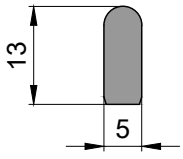
Die No : 19674
(die no)

P 2487
Finishing profile
0,120kg/mt



Die No : 19677
(die no)

P 2488
Rail Profile
0,170kg/mt

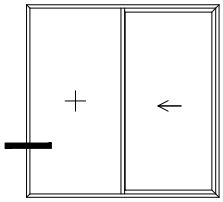


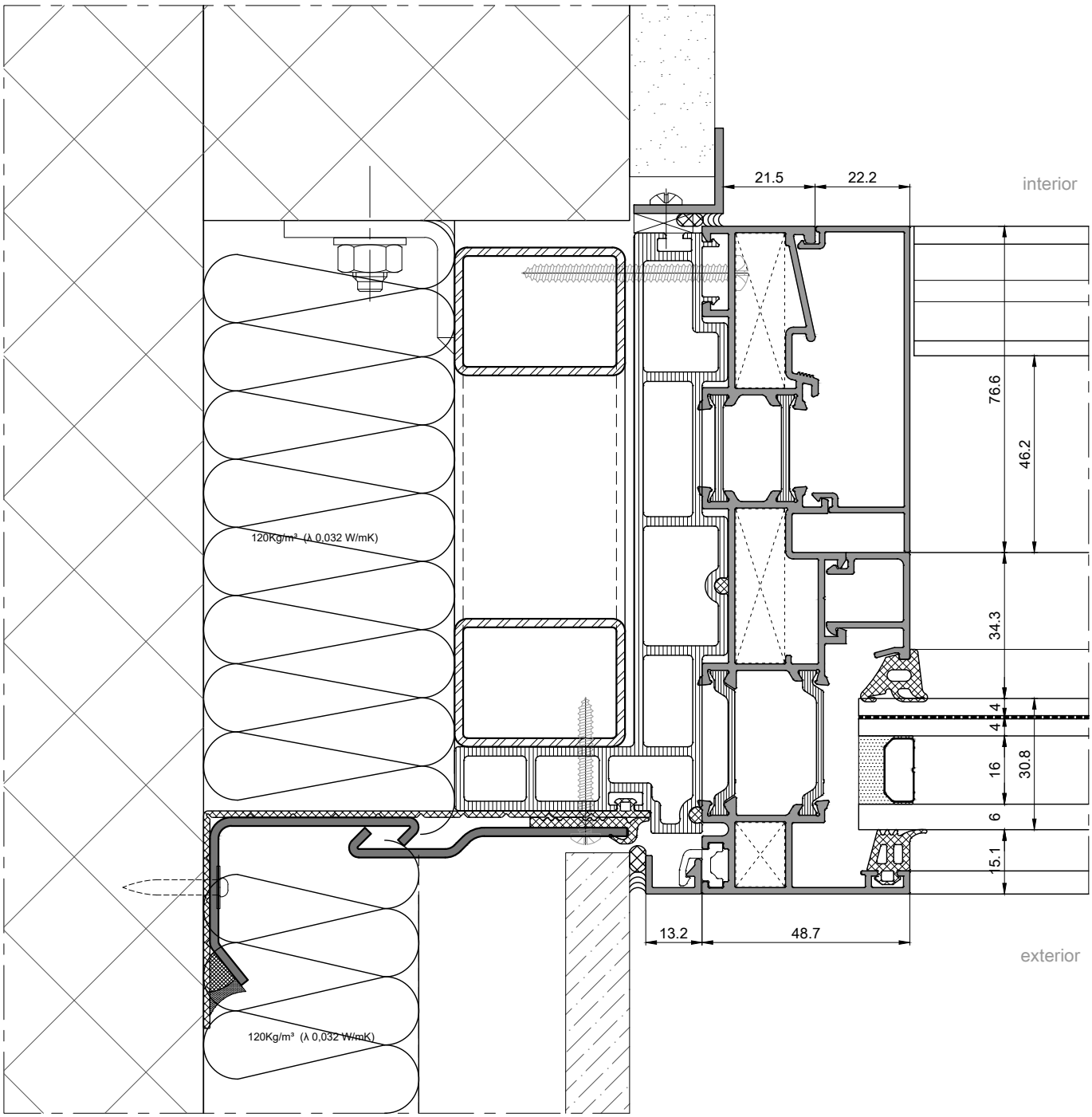
Die No : 19678
(die no)

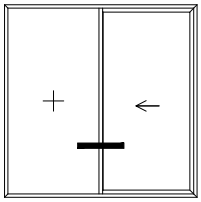
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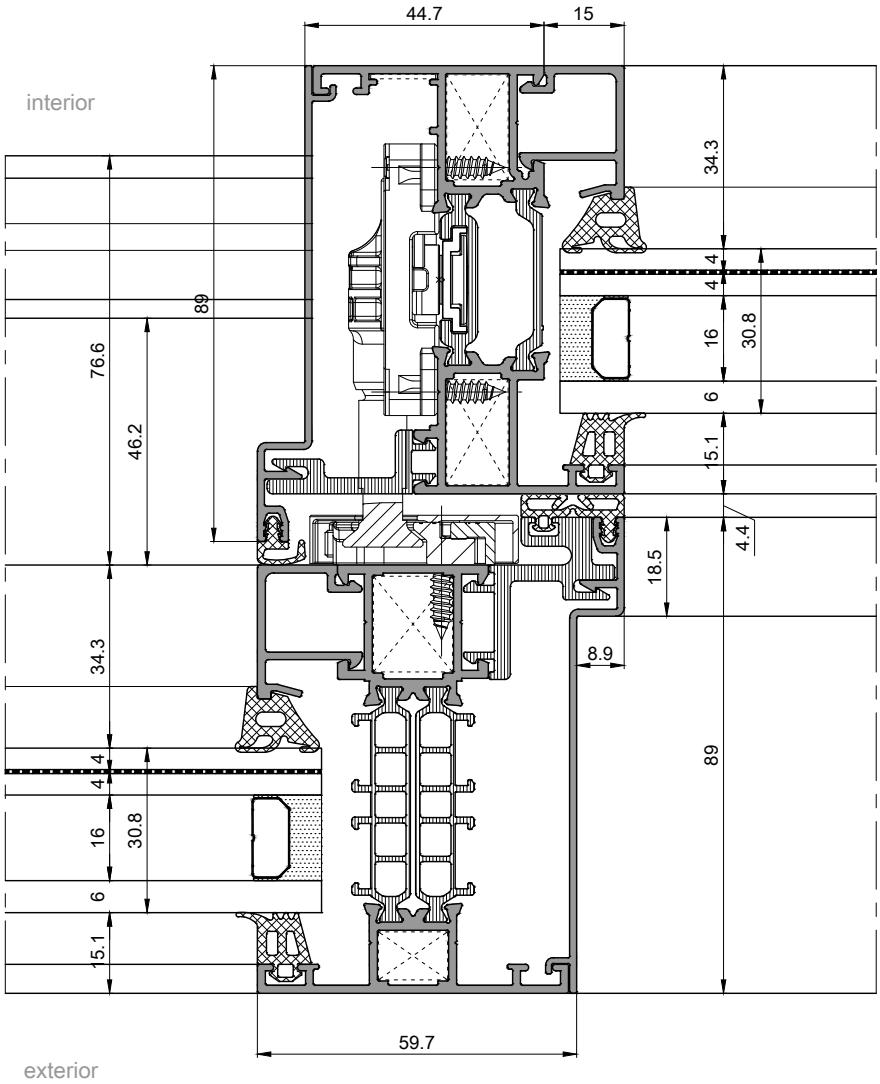
PULL&SLIDE DOOR and WINDOW SYSTEM

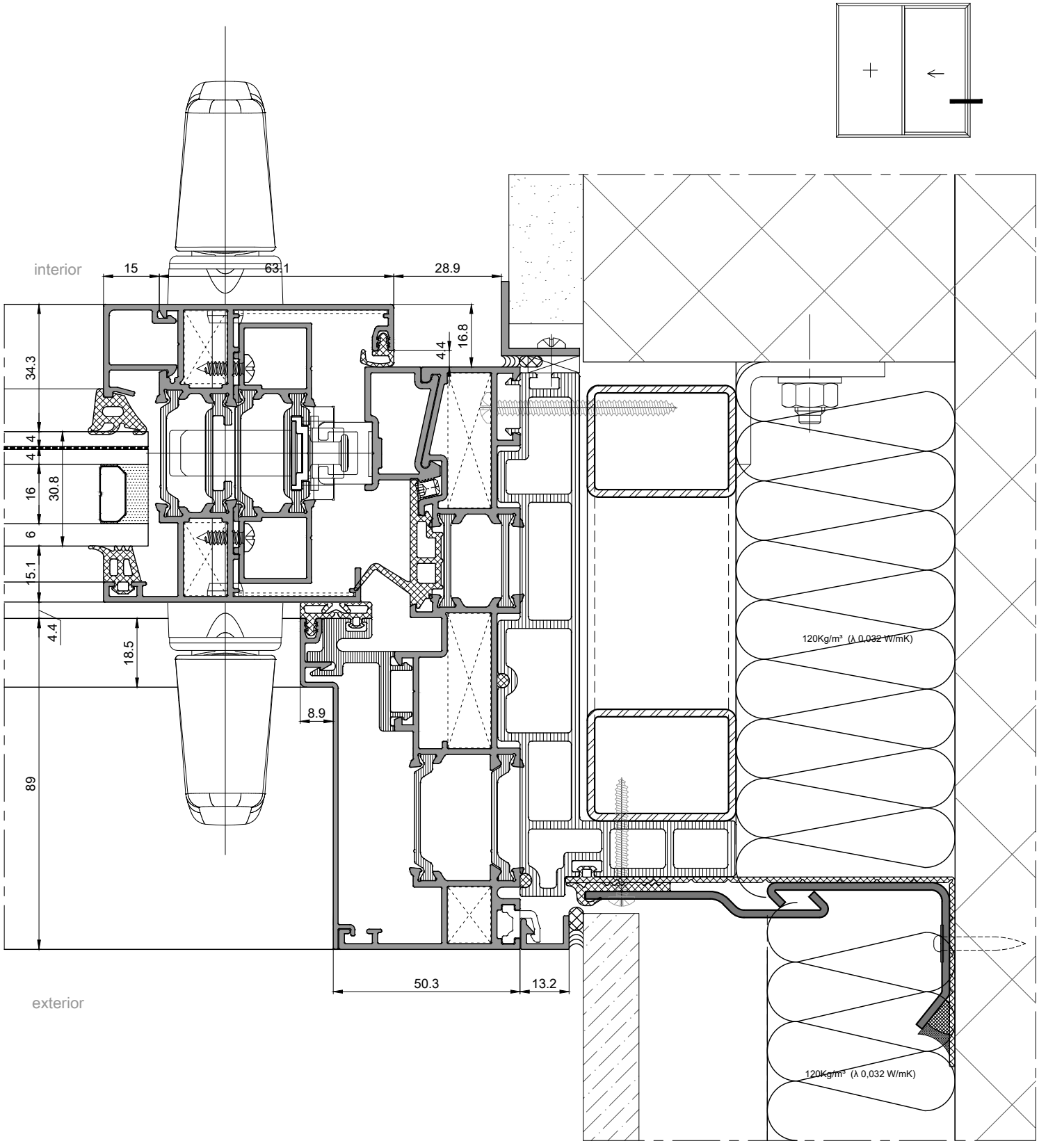
PRINCIPAL SECTIONS

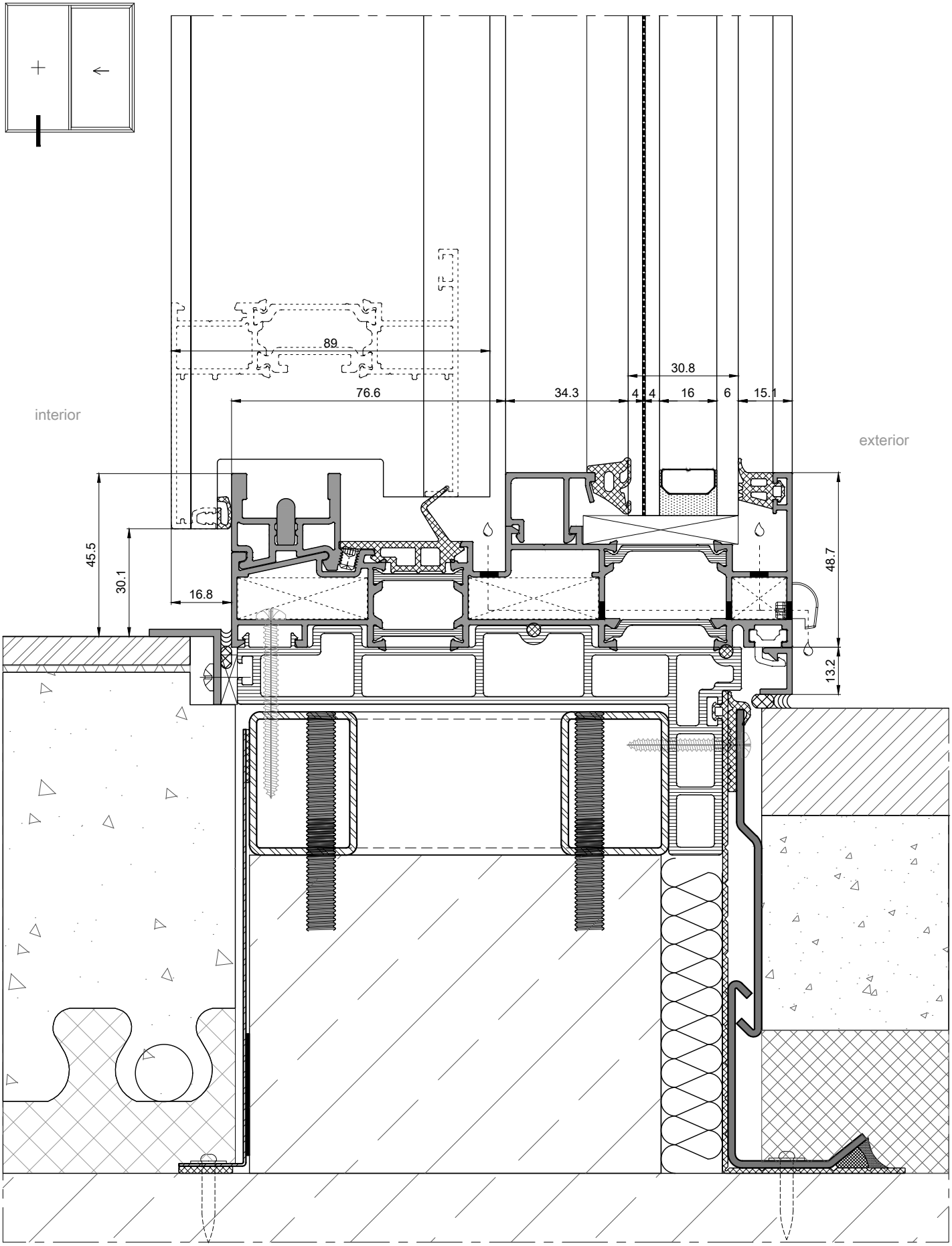


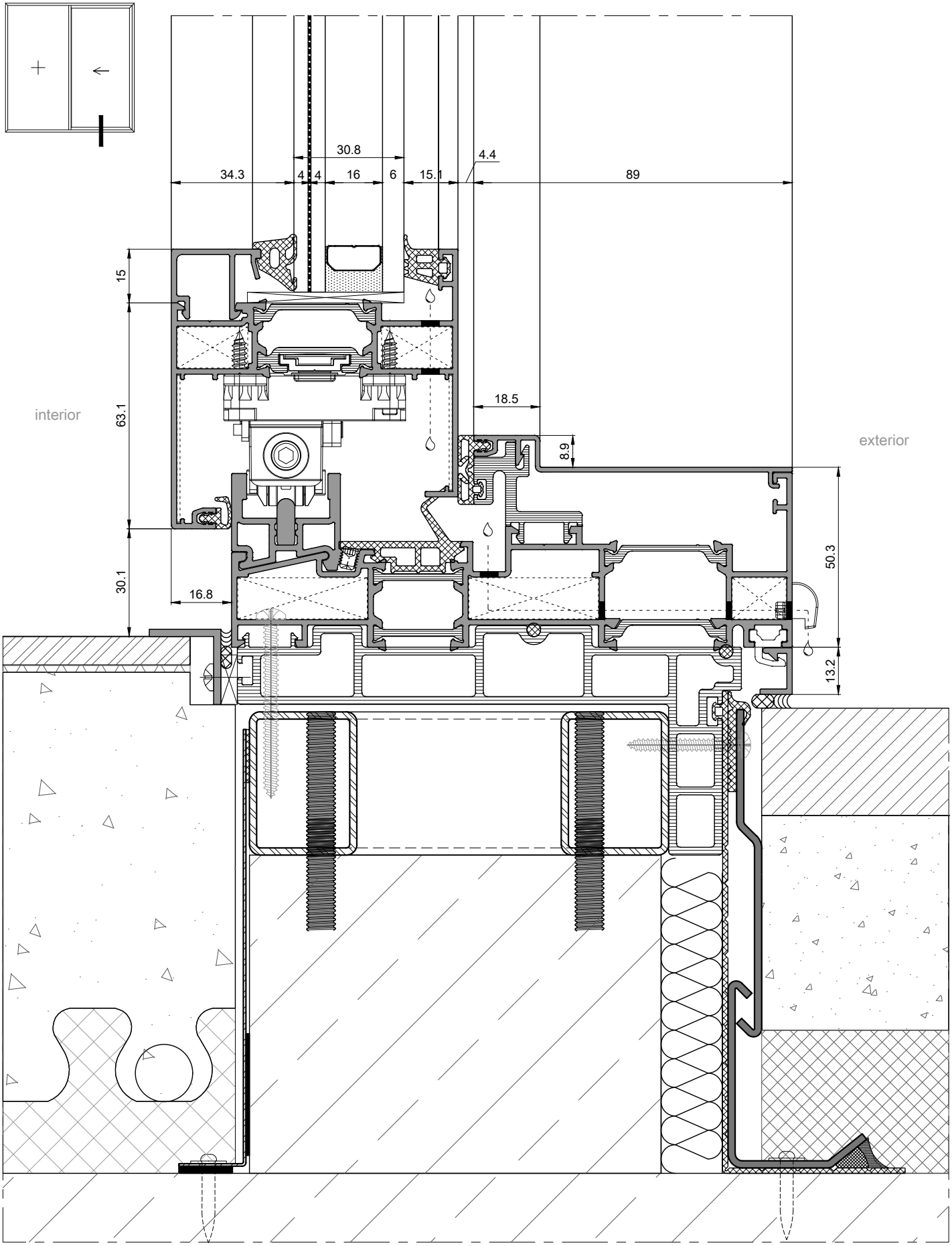

21.5
22.2
interior
76.6
46.2
34.3
4
16
30.8
6
15.1
13.2
48.7
exterior
120Kg/m³ (λ 0,032 W/mK)
120Kg/m³ (λ 0,032 W/mK)

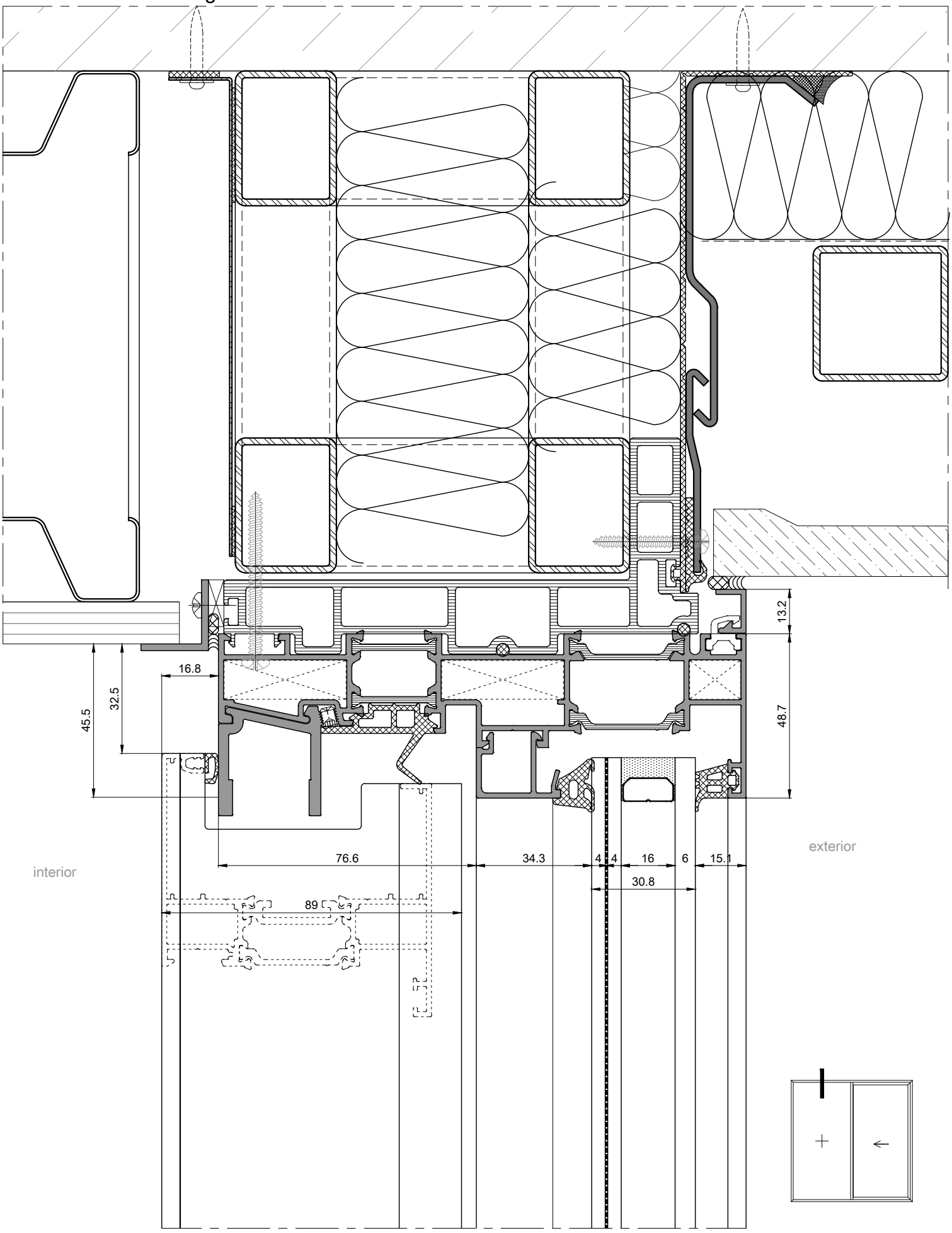


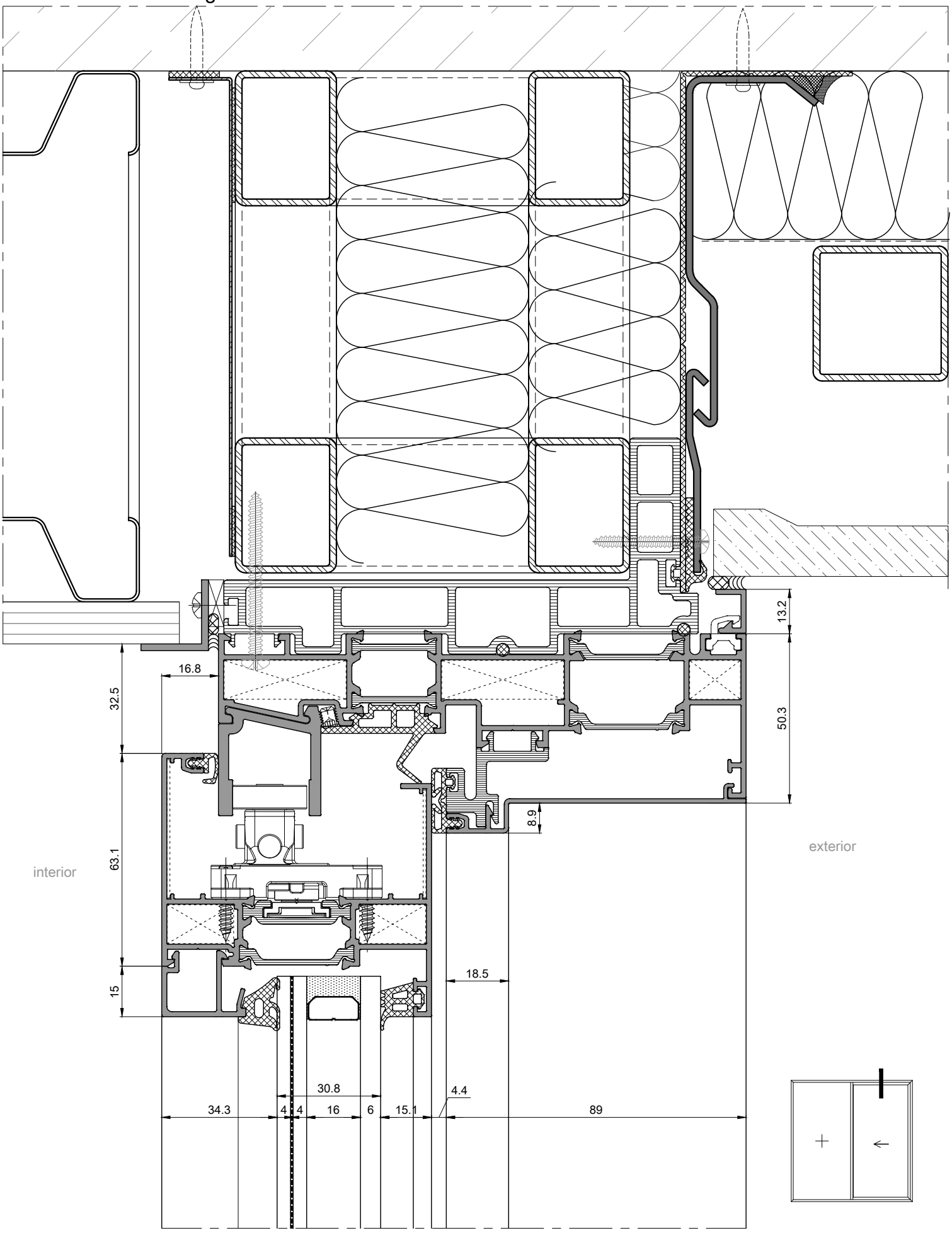

44.7
15
interior
34.3
4
4
16
30.8
6
15.1
4.4
18.5
8.9
89
89
76.6
46.2
34.3
4
4
16
30.8
6
15.1
59.7
exterior

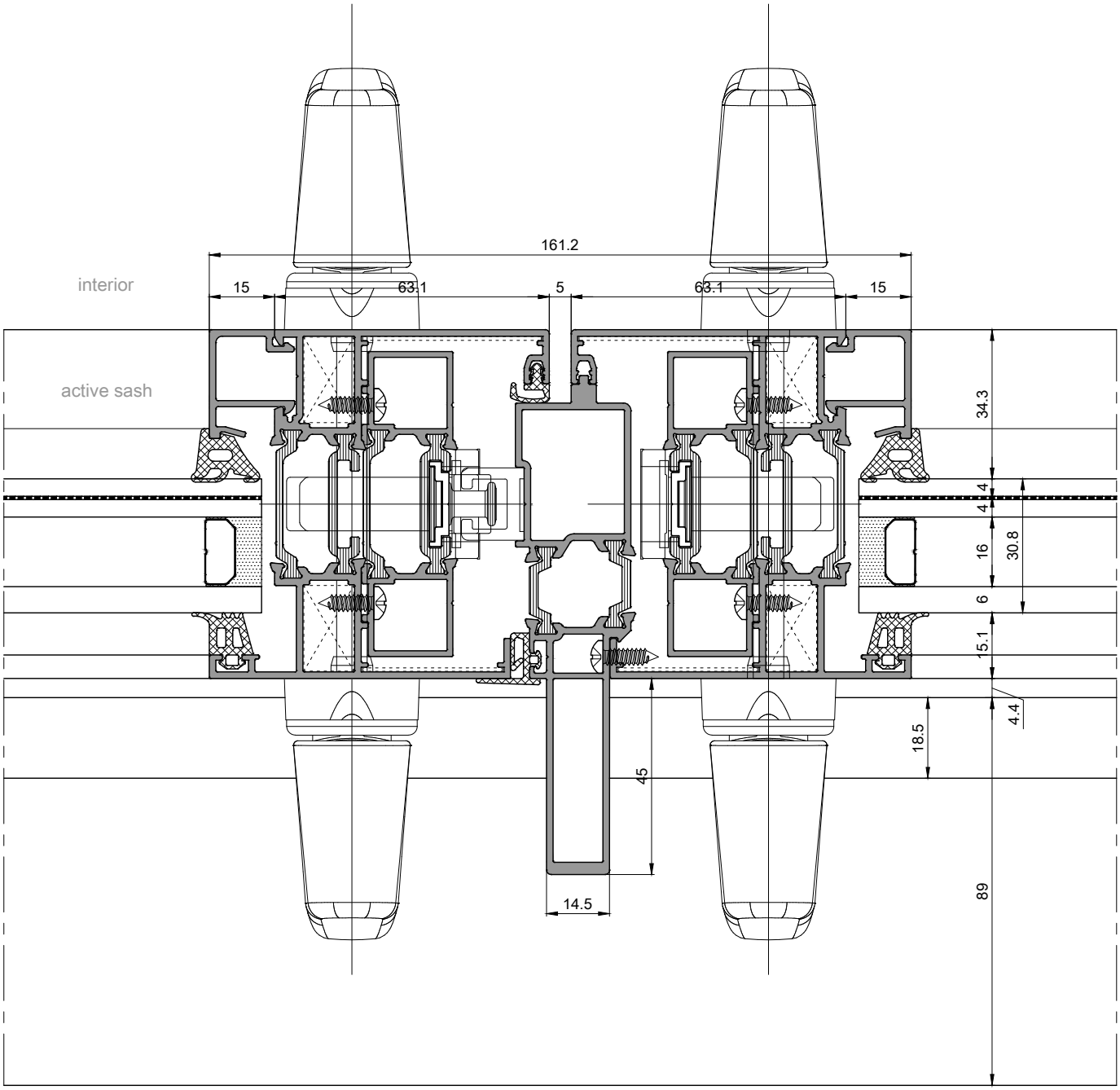

interior
15
63.1
28.9
16.8
4.4
34.3
4.4
16
30.8
6
15.1
4.4
18.5
8.9
89
50.3
13.2
exterior
120Kg/m³ (λ 0,032 W/mK)
120Kg/m³ (λ 0,032 W/mK)


interior
exterior
89
76.6
34.3
30.8
4
4
16
6
15.1
45.5
30.1
16.8
48.7
13.2


30.8
34.3
4
4
16
6
15.1
4.4
89
15
63.1
30.1
16.8
18.5
8.9
50.3
13.2
interior
exterior


16.8
32.5
45.5
13.2
48.7
interior
exterior
76.6
34.3
4
4
16
6
15.1
30.8
89


13.2
50.3
16.8
32.5
8.9
63.1
interior
exterior
18.5
15
30.8
4.4
34.3
4
4
16
6
15.1
89


161.2
interior
15
63.1
5
63.1
15
active sash
34.3
4
4
16
30.8
6
15.1
4.4
18.5
45
89
14.5
exterior

active sash

