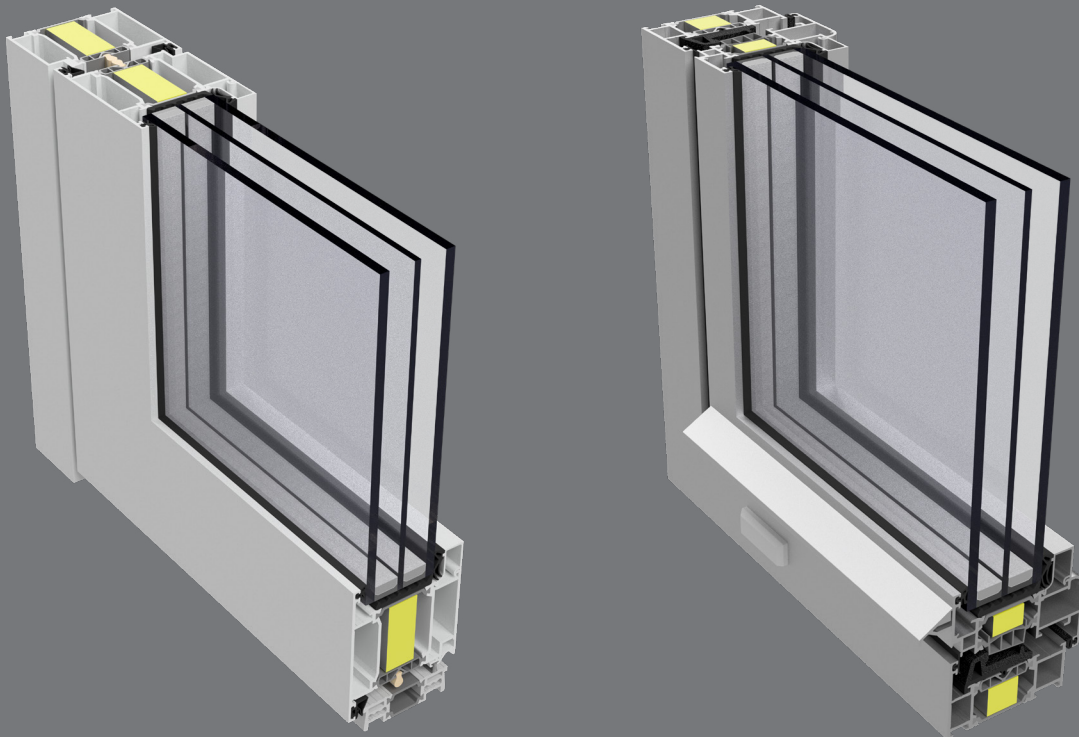




Tehokkaasti eristetty ovi- ja ikkunajärjestelmä

LK78X

Highly insulated
doors and windows



Tehokkaasti eristetty ovi- ja ikkunajärjestelmä LK78X

Highly insulated doors and windows

Käyttökohteita

- Ulos- ja sisäänaukeavat käyntiovet
- Liukuovet
- Kiinteät ikkunat
- Sisään- ja ulosaukeavat ikkunat

Ominaisuuksia

- Lämpöeristetty alumiininen ovi- ja ikkunajärjestelmä
- Erinomainen lämmöneristävyys. Ikkunan ja oven U-arvo jopa alle 0.8 W/m²K
- Profiliien pintakäsittelynä on yleensä anodisointi tai jauhemaalalaus. Runkoprofilien ulko- ja sisäpuoli voidaan tehdä erivärisiksi.
- Runkosyvyys 78 mm. Runkojen leveydet 30...150 mm
- Voidaan käyttää joko pinta- tai putkisaranoita
- Käytettävän eristyslasipaketin tai umpiosan vahvuus 23...60 mm.
- LK78X-järjestelmän ovet ja ikkunat voidaan liittää helposti P50L-julkisivujärjestelmään.
- Tarvittaessa voidaan tehdä myös uusia profilimuotoja nopeasti ja edullisin kustannuksin.
- Vähäinen huollon tarve eliniän aikana. Täysin kierrätettävissä
- Toimii kaikissa sääolosuhteissa
- CE-merkittävässä SFS-EN 14351-1 +A1 mukaan
- Mahdollisuus murtosuojaaluokkaan RC3 (SFS-EN 1627)

Applications

- Outward and inward opening doors
- Sliding doors
- Fixed windows
- Inward and outward opening windows

Features

- Highly insulated aluminium door and window system
- Window and door U-value even under 0.8 W/m²K
- Frame depths 78 mm. Frame widths 30...150 mm
- Thickness of IGU or panels 23...60 mm
- Doors with surface mounted or butt hinges
- Powder coated or anodized surface treatment. Different finishes of inside and outside possible.
- New profile shapes can be produced quickly when necessary with low costs
- Minimal care and maintenance required. Completely recyclable.
- High resistance to any weather conditions
- CE- marking according to EN 14351-1 +A1
- Burglar resistance class up to RC3 according to DIN EN 1627

Purso Oy vastaa tämän tuotekatalogin sovellustapojen toimivuudesta, mutta muista sovellustavoista vain erikseen sovittaessa. Vastuu rakenteiden valmistuksen ja asennuksen valvonnasta ei kuulu Purso Oy:lle.

Purso Oy guarantees the function of the applications described in this catalogue. Other applications are guaranteed only by separate agreement. Purso Oy does not take responsibility for control of the installations.

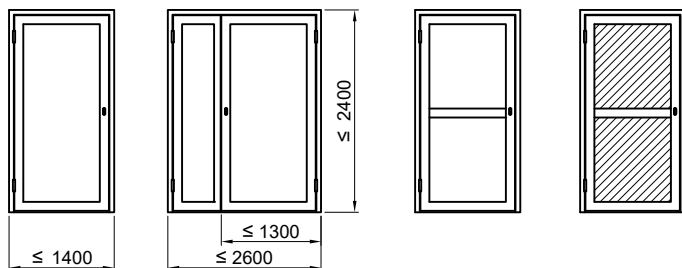
**LK78X OVI- JA IKKUNAJÄRJESTELMÄ
LK78X SYSTEM OF DOORS AND WINDOWS**

Ovityypit Type of doors	1.1
Ikkunatyypit Type of window	1.2
Ulosavautuva ovi Outward opening door	2.1
Sisäännavautuva ovi Inward opening door	2.2
Ovi yläpielellä Door with fanlight	2.3
Ovi sivupielellä Door with side window	2.4
Ovi sivu- ja yläpielellä Door with side and	2.5
Ovi P50L julkisivujärjestelmässä Door in P50L curtain wall	2.6
Liukuovi Sliding door	2.7
Ovien vaakajaot Doors horizontal	2.8
Ovien potkuosat Doors	2.9
RC3 ulosavautuva murtosuojaovi RC3 outward opening burglar resistance door	3.1
RC3 sisäännavautuva murtosuojaovi RC3 inward opening burglar resistance door	3.2
Ovien vapaat kulkuaukot Doors clear dimension	4
Sisäännavautuva ikkuna Inward opening window	5.1
Ulosavautuva ikkuna Outward opening window	5.2
Kiinteä ikkuna Fixed window	5.3
Liittäminen rakennusrunkoon, esimerkkejä Mounting to building frame, examples	6
U-arvoja U-values	7
Ominaisuudet/ luokitus SFS-EN 14351-1 +A1 mukaan Properties/ classification accordance to EN 14351-1 +A1	8
Profililit Profiles	9

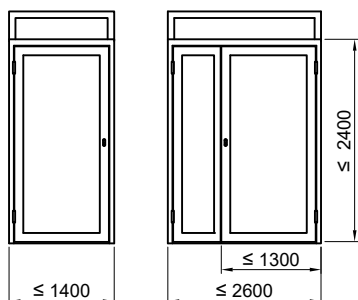
Liituskappaleet, tarvikkeet Joining pieces, accessories	10
Helat ja saranat Fittings and hinges	11
Lasituslistojen ja tiivisteiden valinta Selecting glazing beads and sealings	12

OVITYYPIT TYPE OF DOORS

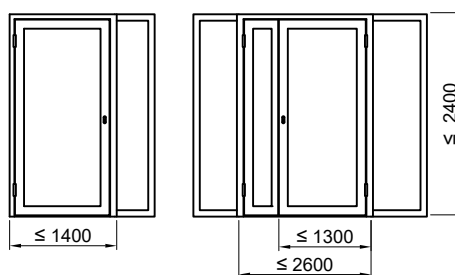
2.1, 2.2 YKSI- JA KAKSILEHTINEN OVI ULOS- TAI SISÄÄNAUKEAVANA
2.1, 2.2 DOOR OUTWARD AND INWARD OPENING



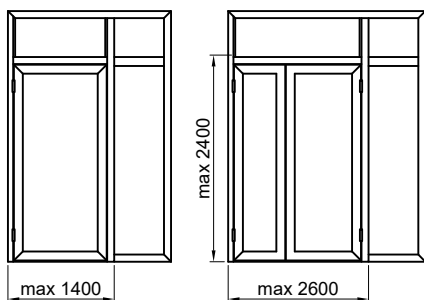
2.3 OVI YLÄPIEILELLÄ
2.3 DOOR WITH FANLIGHT



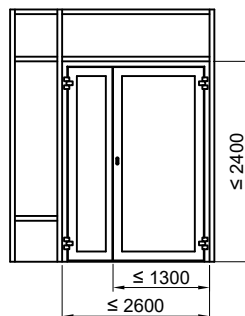
2.4 OVI SIVUPIEILELLÄ
2.4 DOOR WITH SIDE WINDOW



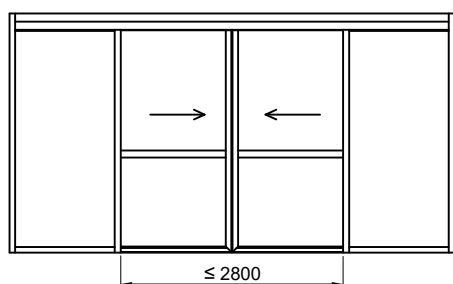
2.5 OVI YLÄ- JA SIVUPIEILELLÄ
2.5 DOOR WITH SIDE AND



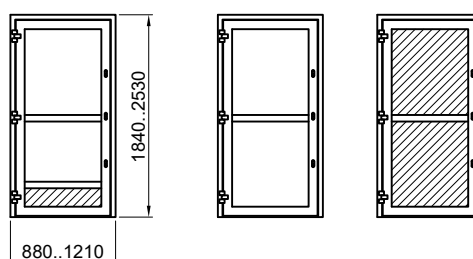
2.6 OVI P50L JULKISIVUJÄRJESTELMÄSSÄ
2.6 DOOR IN P50L CURTAIN WALL



2.7 LIUKUOVI
2.7 SLIDING DOOR

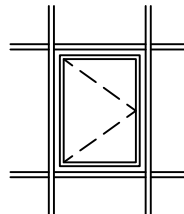
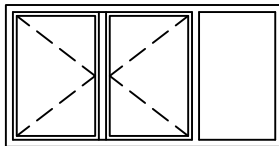
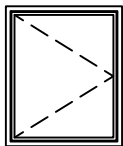


3.1, 3.2 RC3 MURTOSUOJA OVI
3.1, 3.2 RC3 DOOR

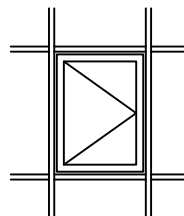
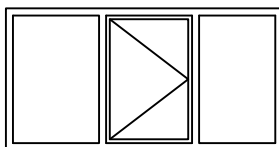
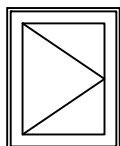


IKKUNATYYPIT TYPE OF WINDOWS

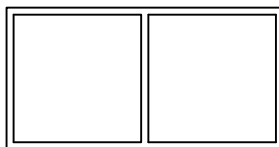
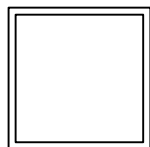
5.1 SISÄÄNAUKEAVA IKKUNA 5.1 INWARD OPENING WINDOW



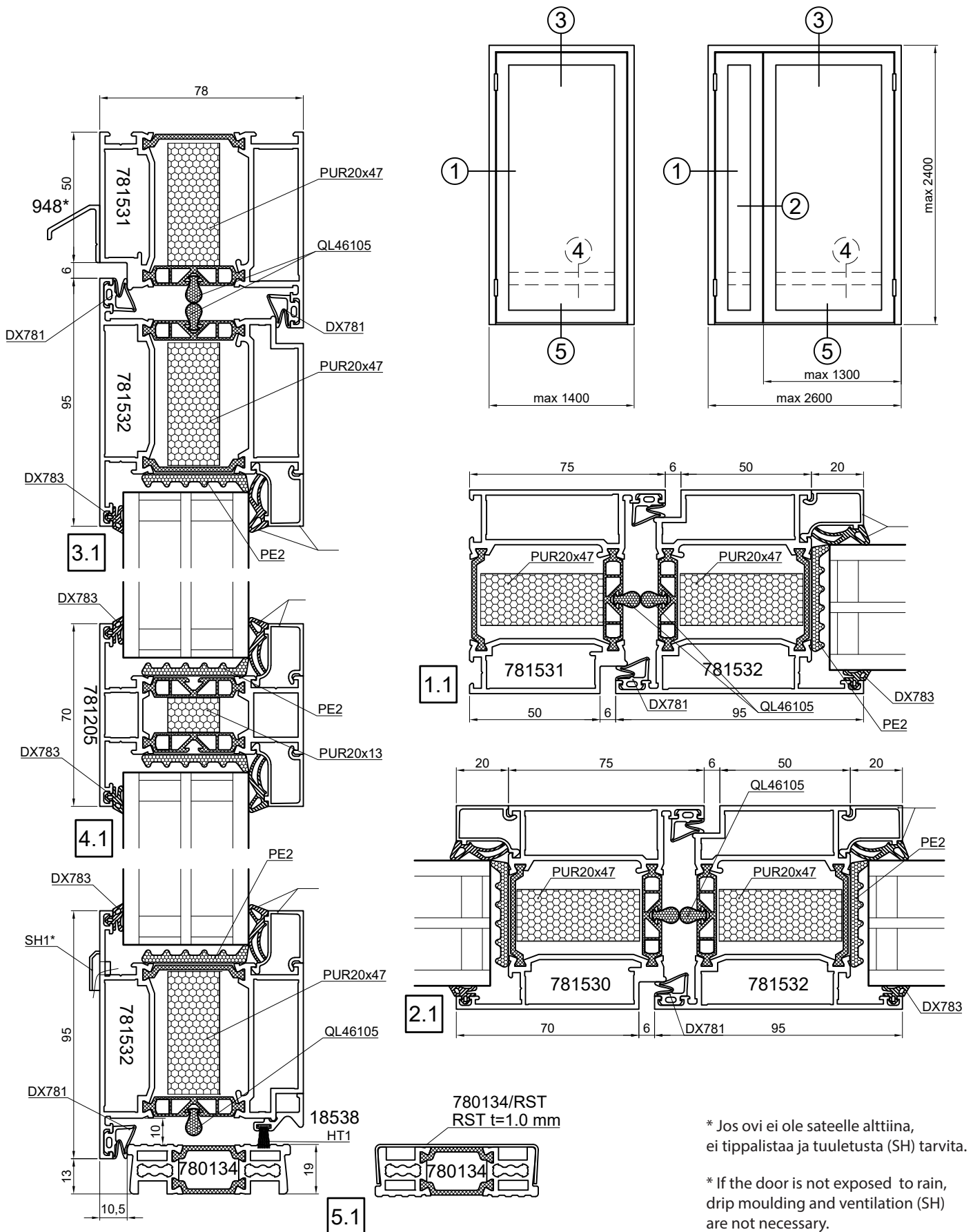
5.2 ULOSAUKEAVA IKKUNA 5.2 OUTWARD OPENING WINDOW



5.3 KIIINTEÄ IKKUNA 5.3 FIXED WINDOW



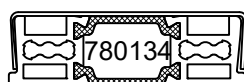
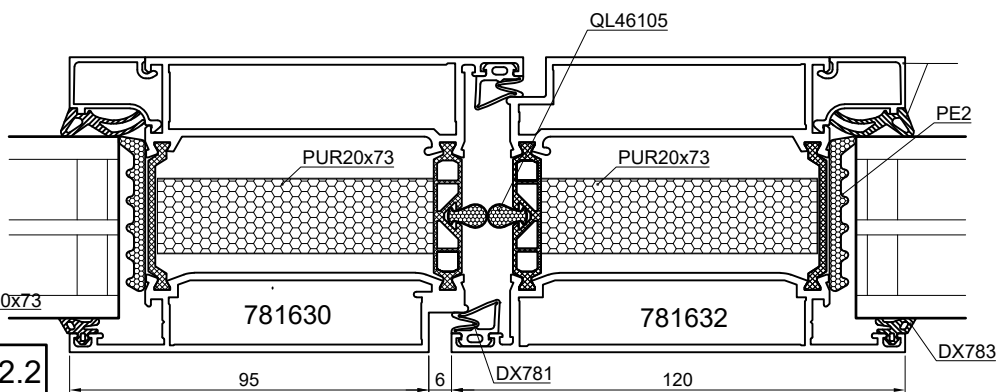
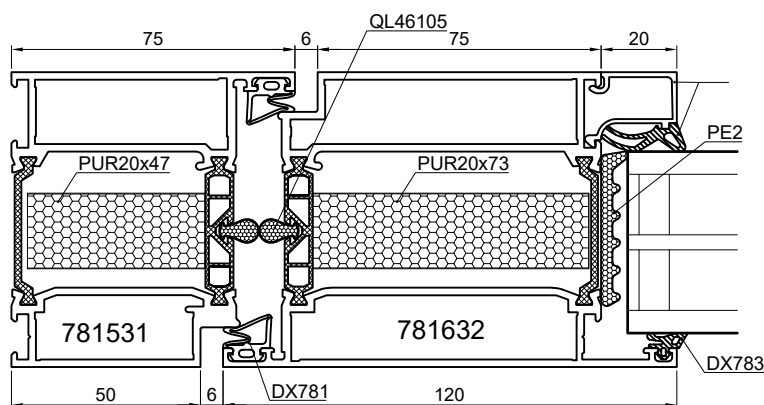
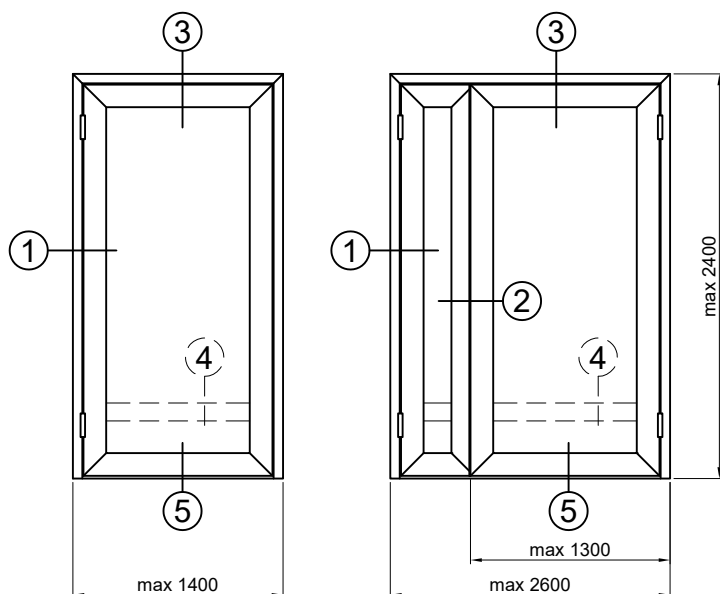
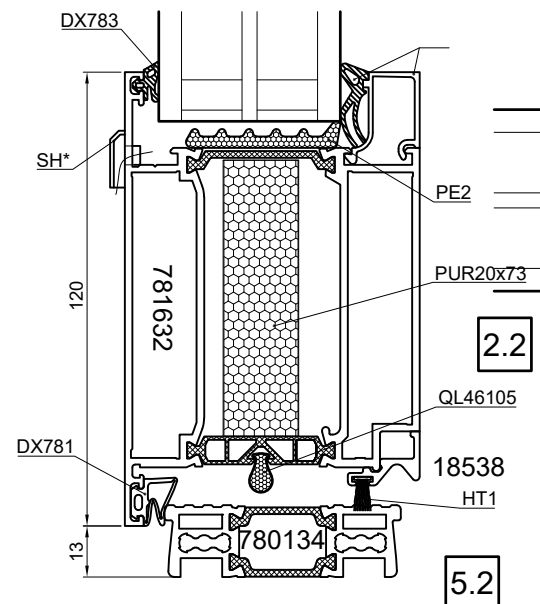
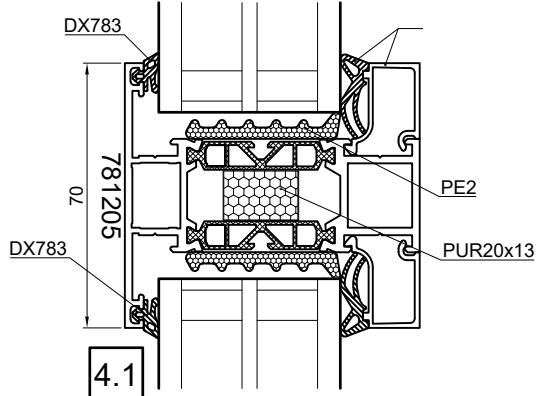
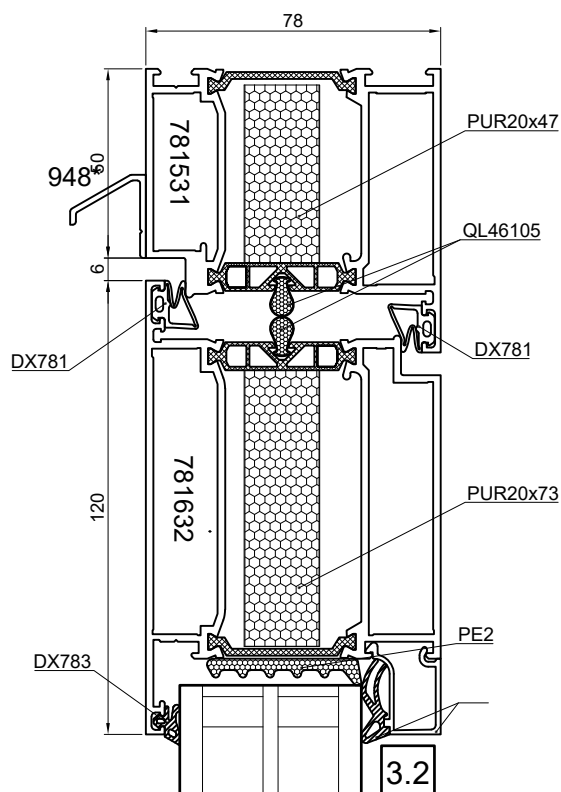
LK78X ULOSAUKEAVA OVI
LK78X OUTWARD OPENING DOOR



* Jos ovi ei ole sateelle alttiina, ei tippalistaa ja tuuletusta (SH) tarvita.

* If the door is not exposed to rain, drip moulding and ventilation (SH) are not necessary.

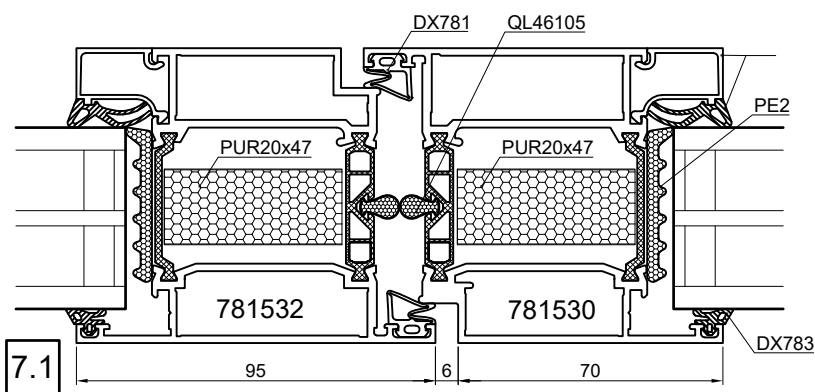
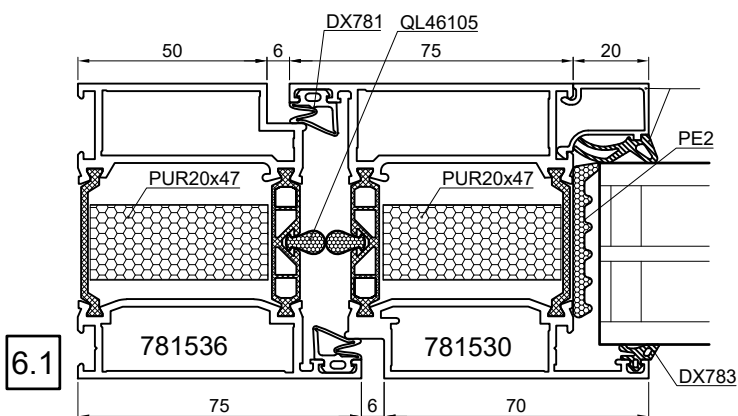
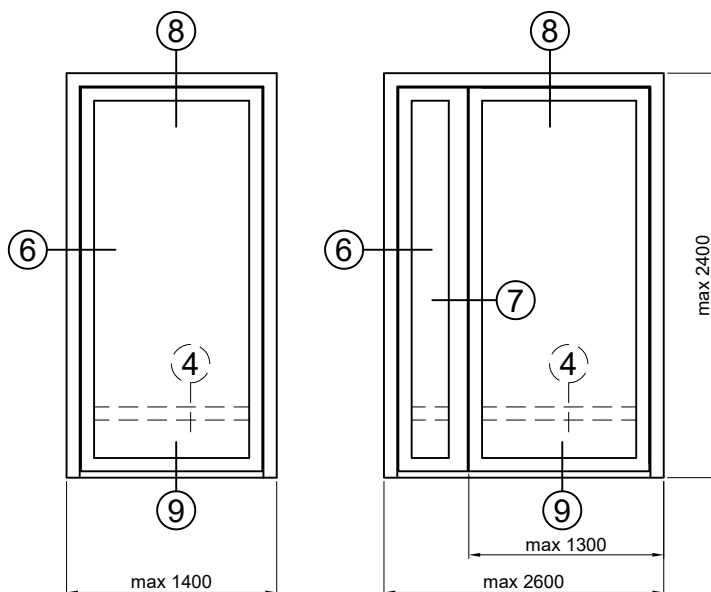
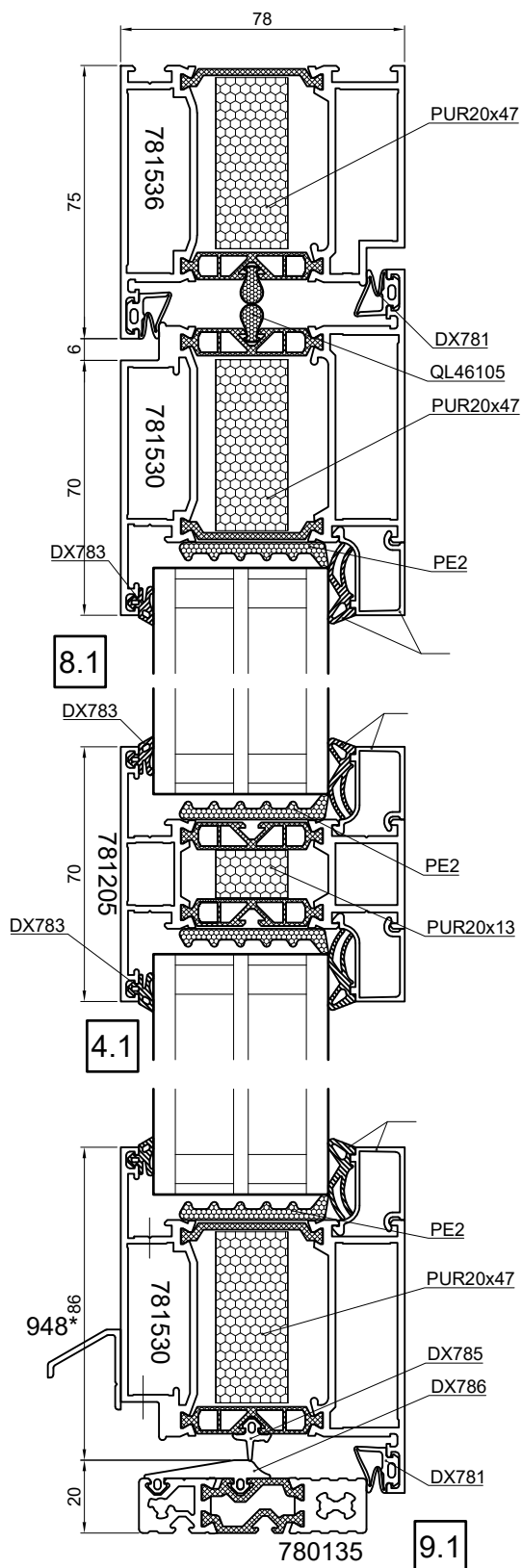
LK78X ULOSAUKEAVA OVI, LEVEÄ PUITE 781632
LK78X OUTWARD OPENING DOOR, LEAF 781632



* Jos ovi ei ole sateelle alttiina, ei tippalistaa ja tuuletusta (SH) tarvita.

* If the door is not exposed to rain, drip moulding and ventilation (SH) are not necessary.

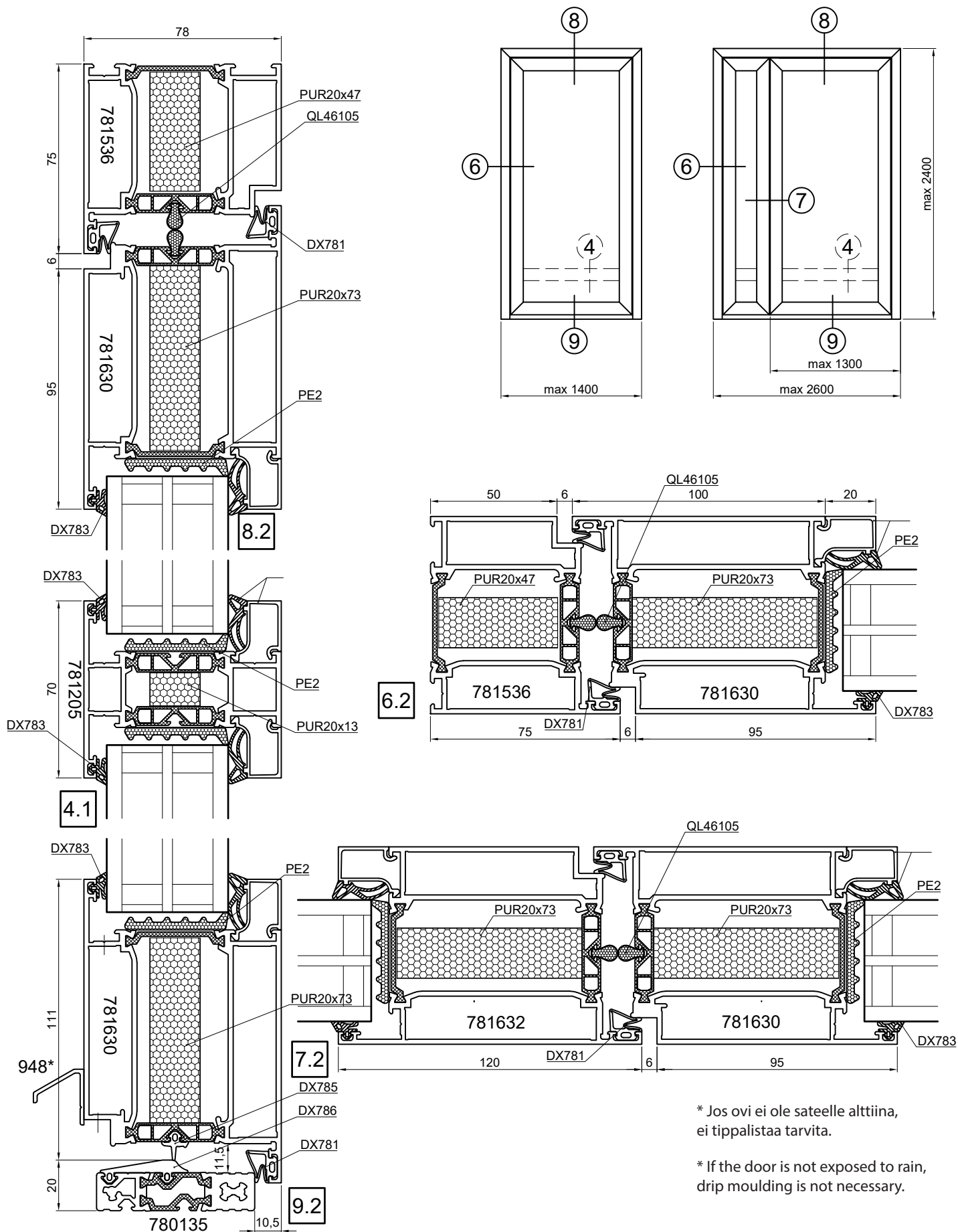
LK78X SISÄÄNAUKEAVA OVI
LK78X INWARD OPENING DOOR



* Jos ovi ei ole sateelle alttiina, ei tippalistaa tarvita.

* If the door is not exposed to rain, drip moulding is not necessary.

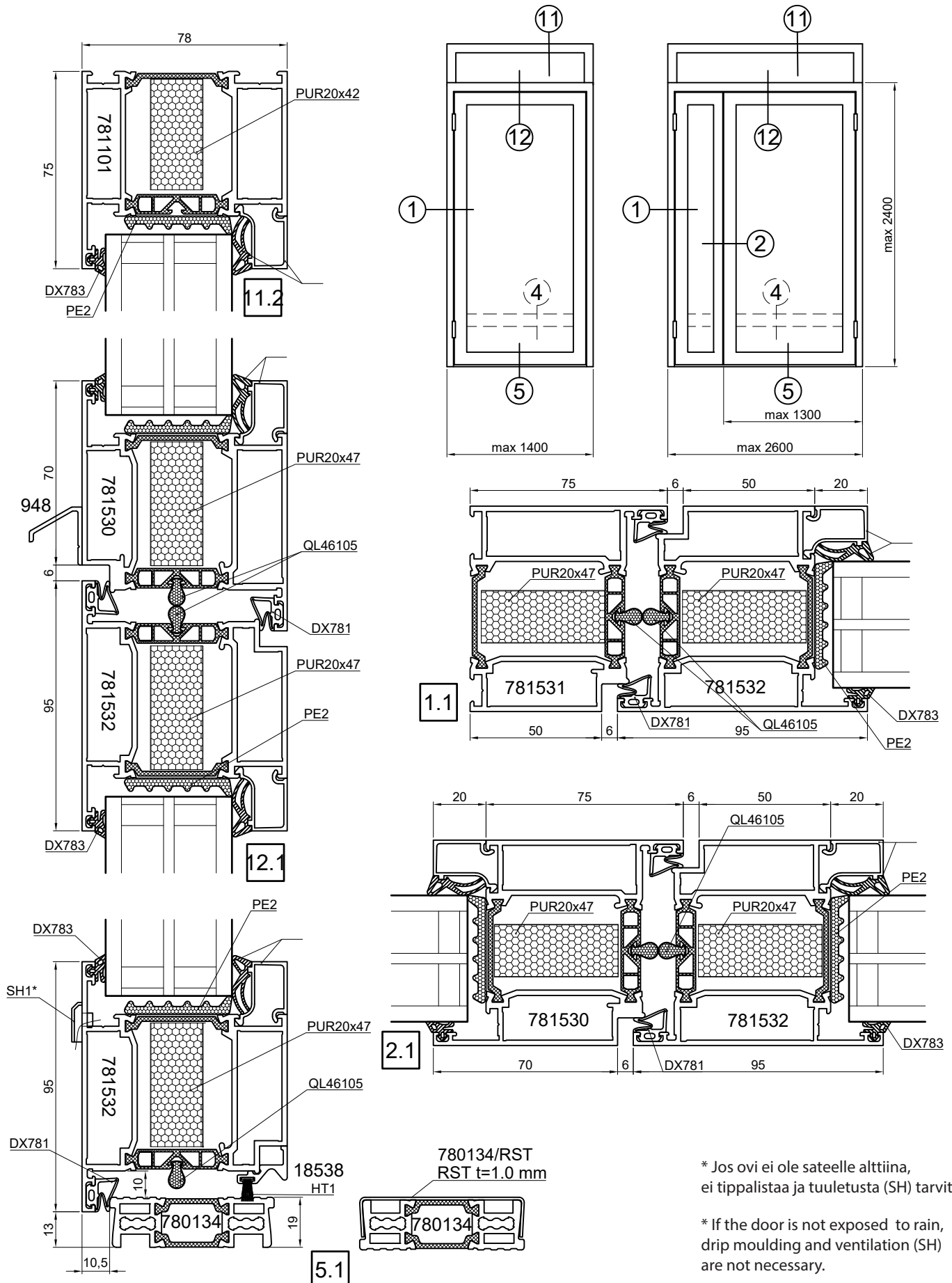
LK78X SISÄÄNAUKEAVA OVI, LEVEÄ PUITE 781630
LK78X INWARD OPENING DOOR, LEAF 781630



* Jos ovi ei ole sateelle alttiina,
ei tippalistaa tarvita.

* If the door is not exposed to rain, drip moulding is not necessary.

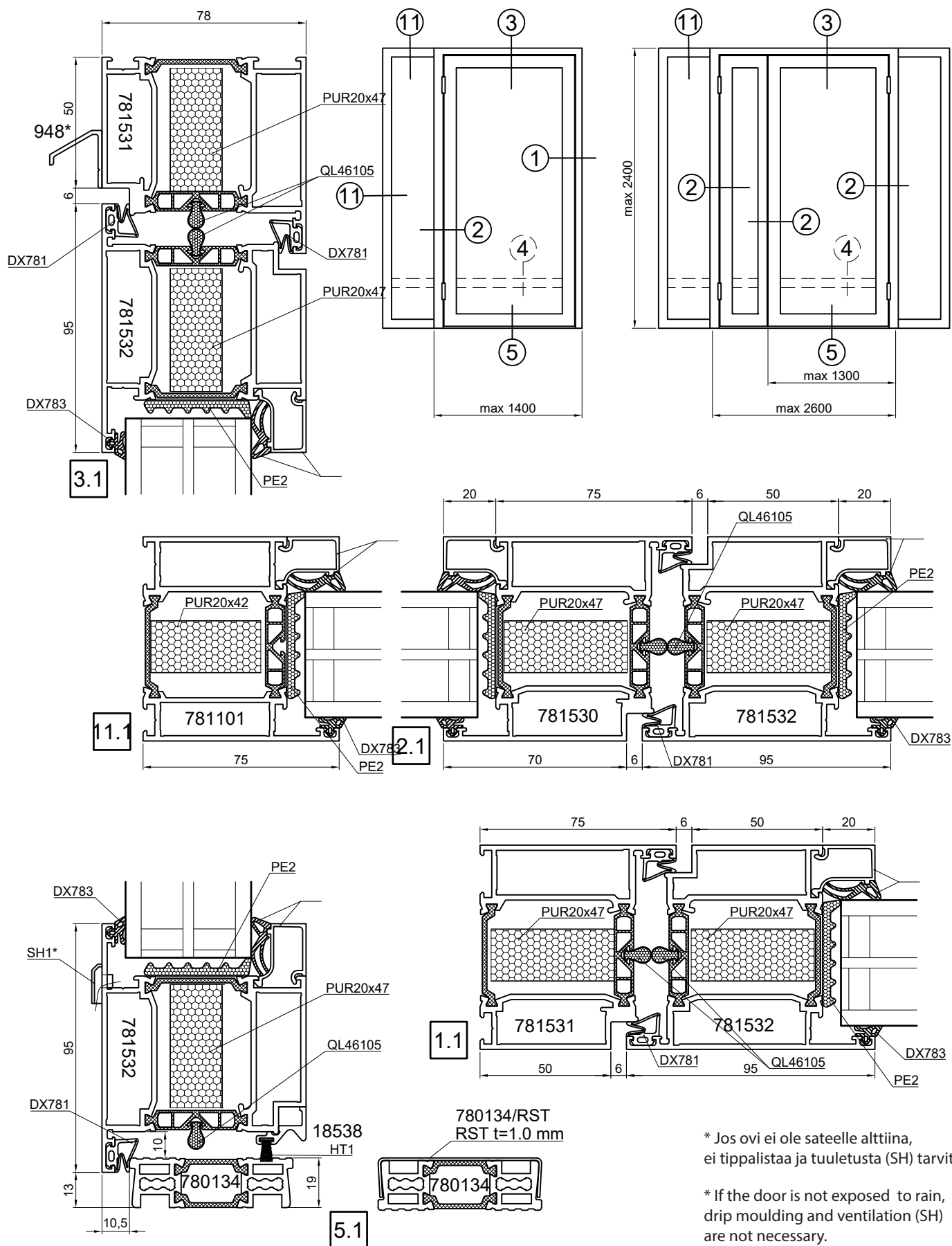
LK78X OVI YLÄPIELELLÄ
LK78X DOOR



* Jos ovi ei ole sateelle alttiina, ei tippalistaa ja tuuletusta (SH) tarvita.

* If the door is not exposed to rain, drip moulding and ventilation (SH) are not necessary.

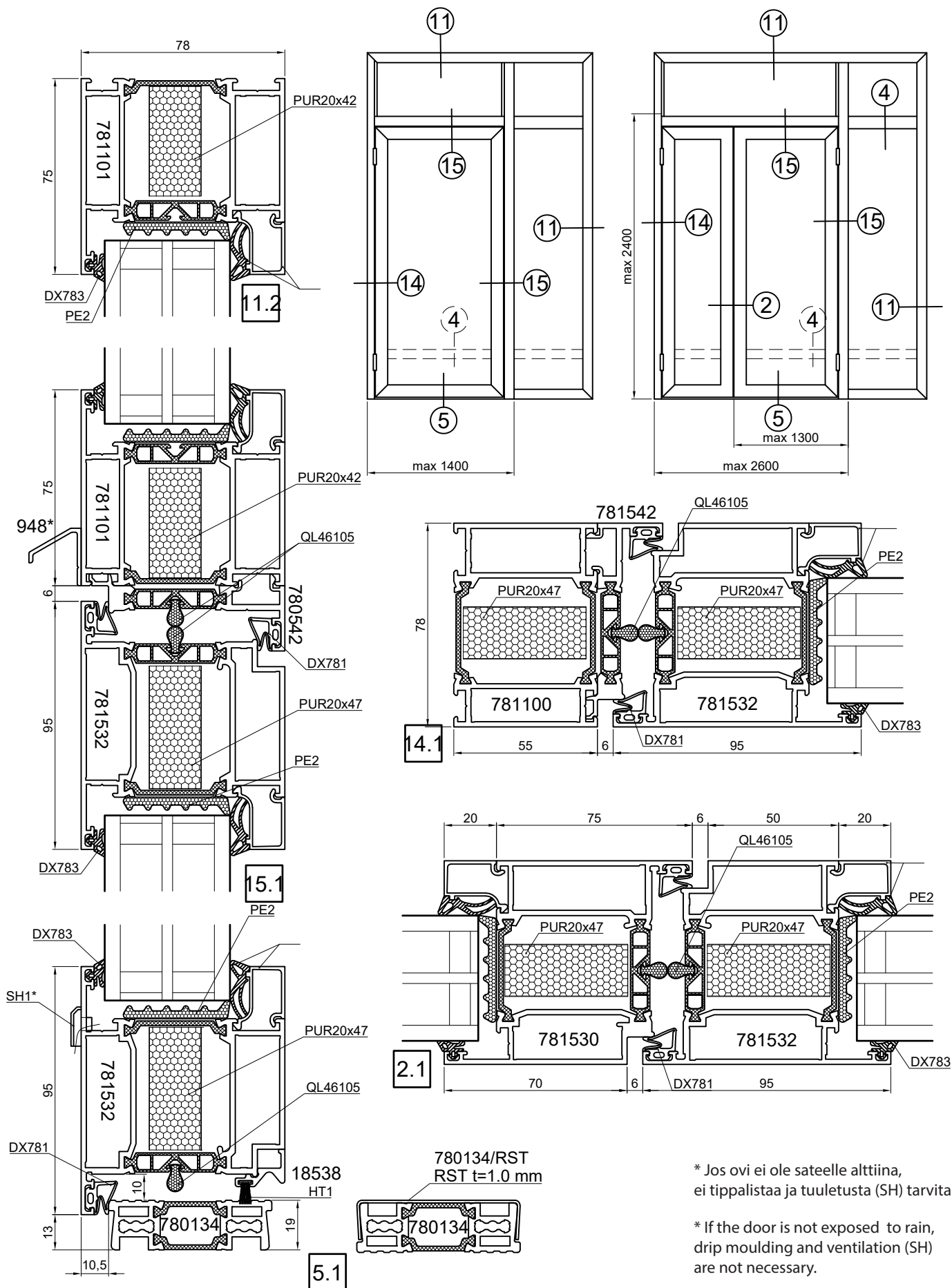
LK78X OVI SIVUPIELELLÄ
LK78X DOOR



* Jos ovi ei ole sateelle alttiina, ei tippalistaa ja tuuletusta (SH) tarvita.

* If the door is not exposed to rain, drip moulding and ventilation (SH) are not necessary.

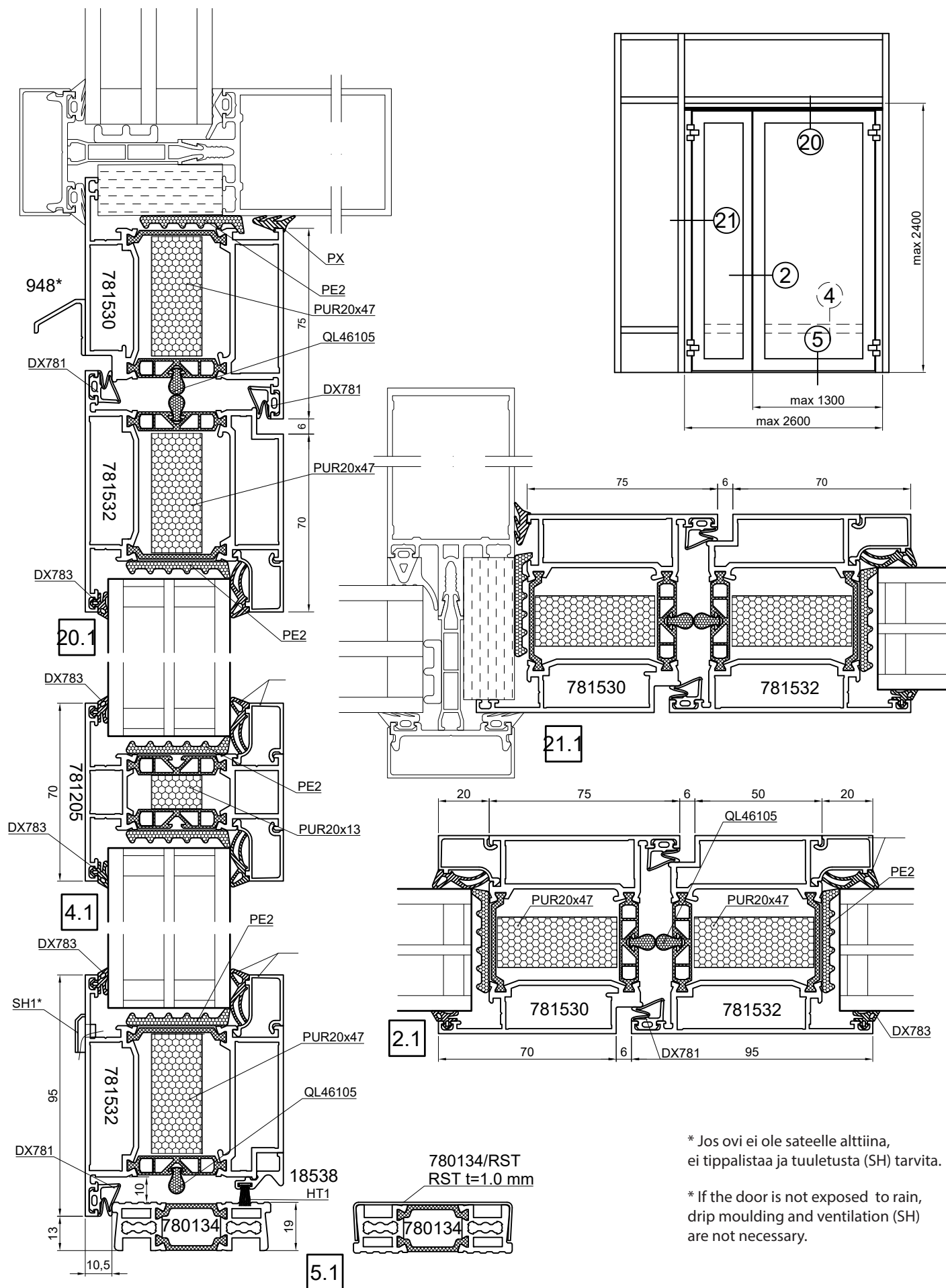
LK78X OVI YLÄ- JA SIVUPIEILELLÄ
LK78X DOOR



* Jos ovi ei ole sateelle alttiina, ei tippalistaa ja tuuletusta (SH) tarvita.

* If the door is not exposed to rain, drip moulding and ventilation (SH) are not necessary.

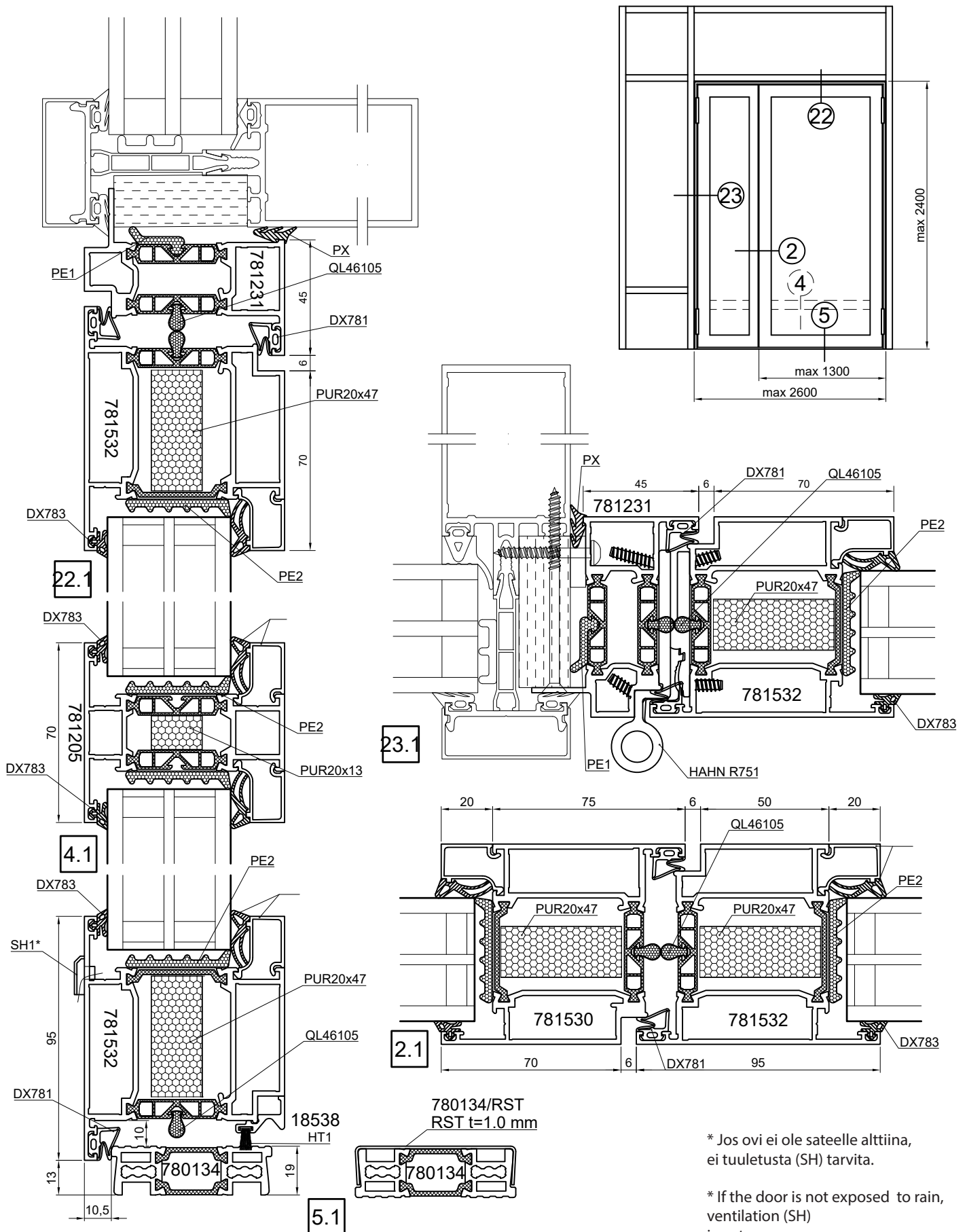
LK78X OVI P50L JULKISIVUSSA
LK78X DOOR IN P50L CURTAIN WALL



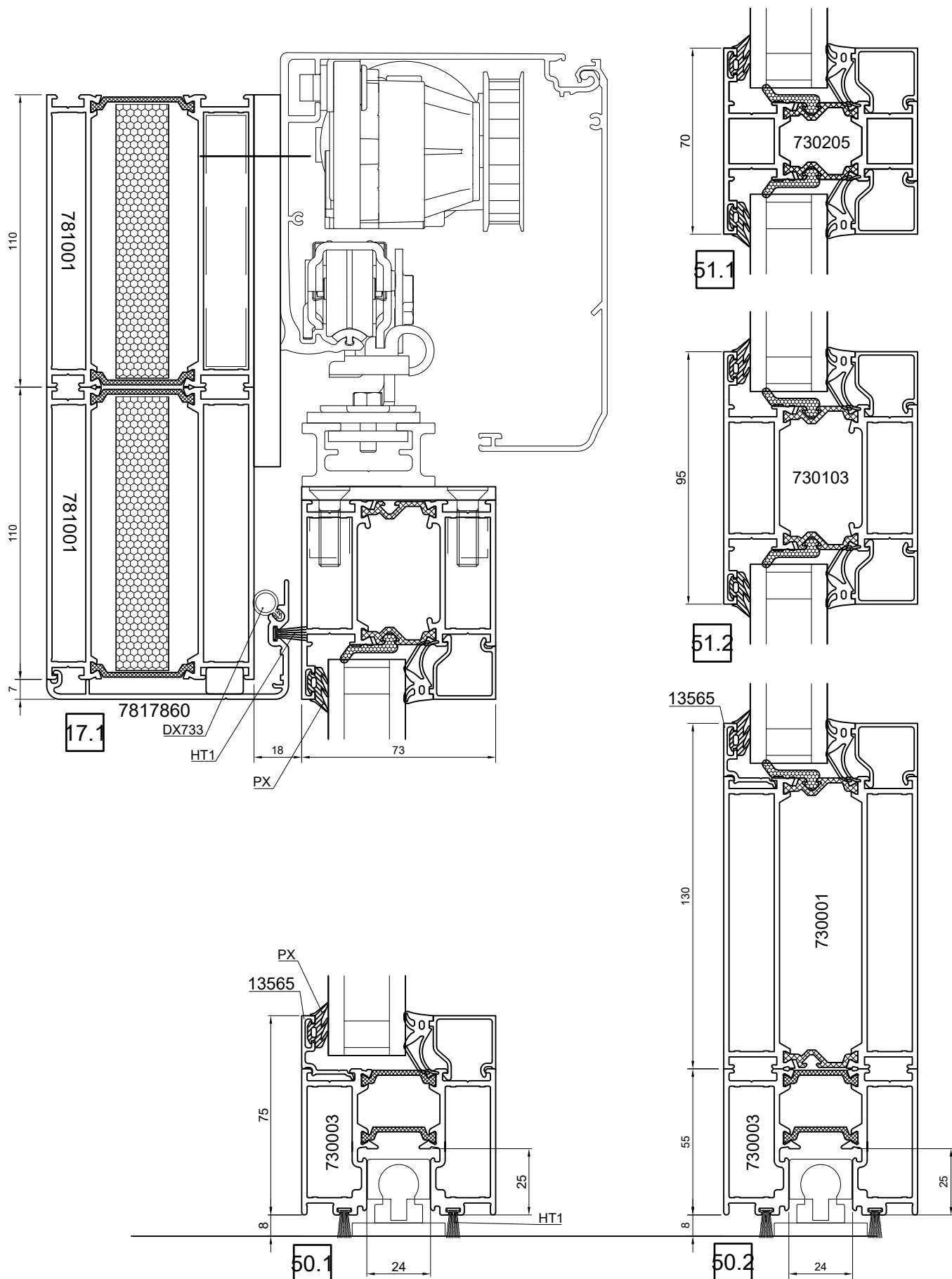
* Jos ovi ei ole sateelle alttiina,
ei tippalistaa ja tuuletusta (SH) tarvita.

* If the door is not exposed to rain, drip moulding and ventilation (SH) are not necessary.

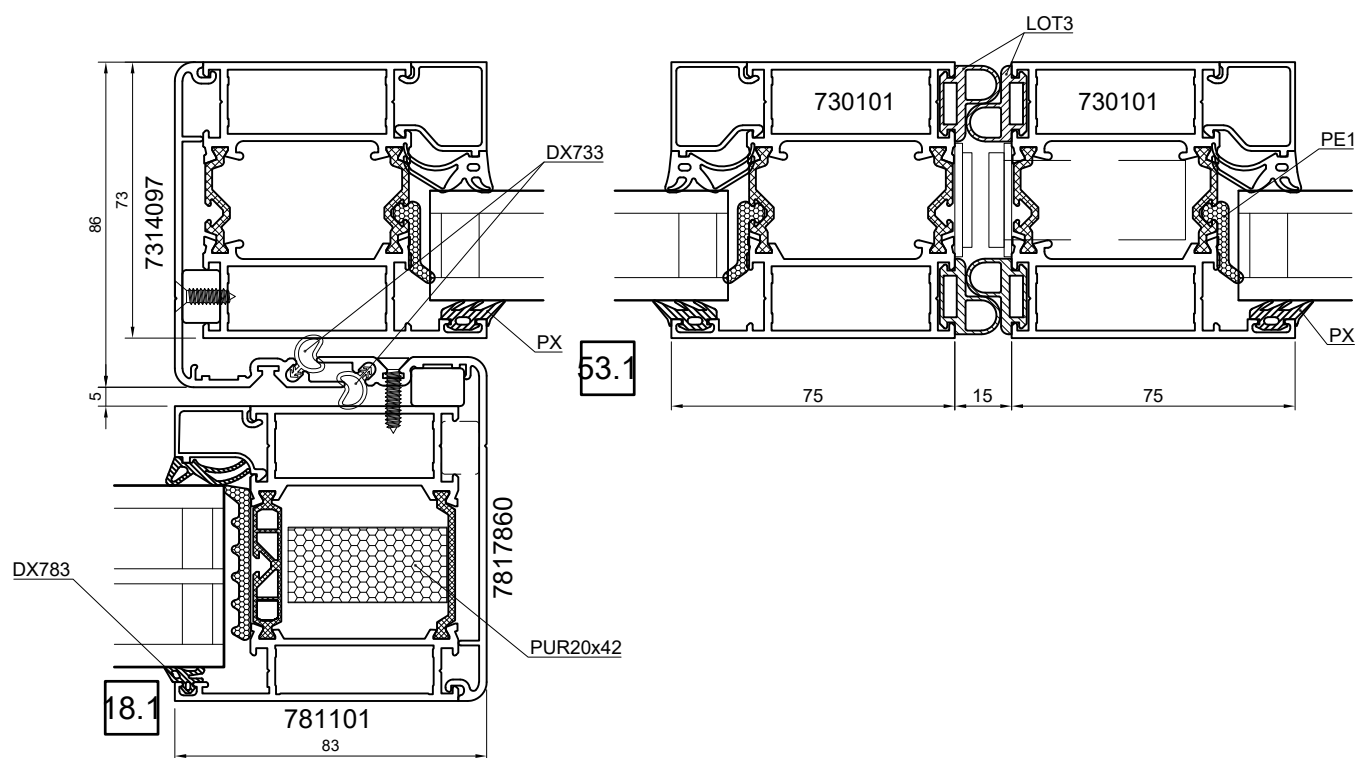
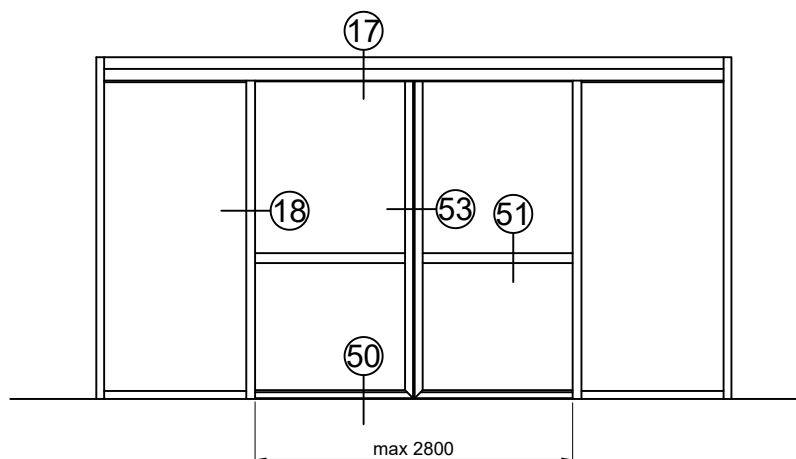
LK78X OVI P50L JULKISIVUSSA, KARMI 781231
LK78X DOOR IN P50L CURTAIN WALL, FRAME 781231



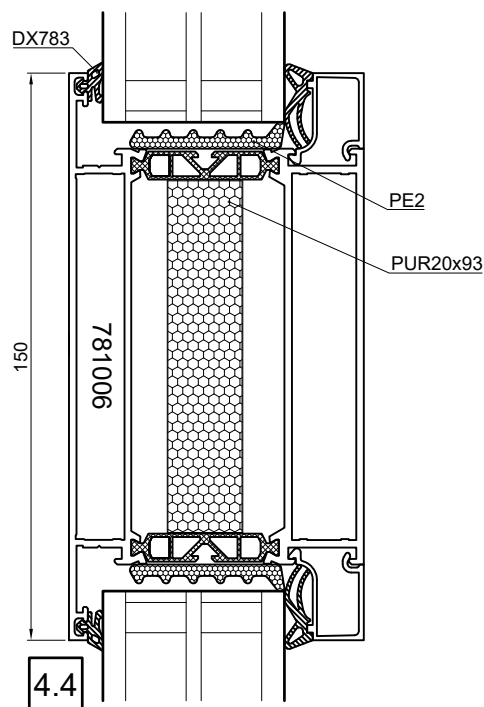
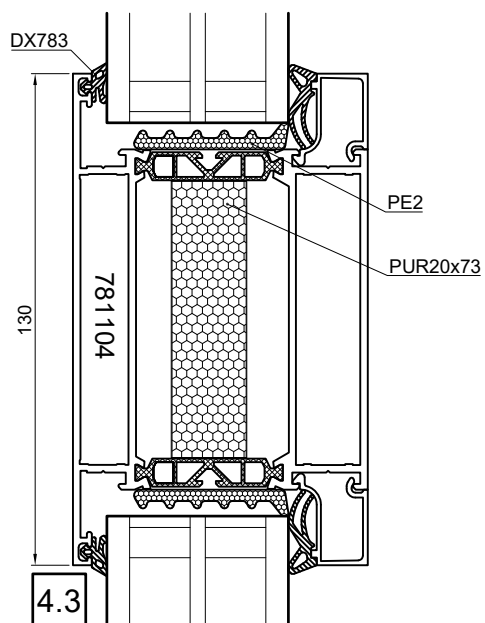
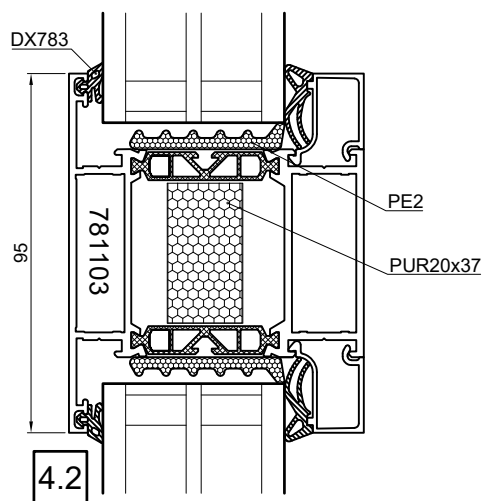
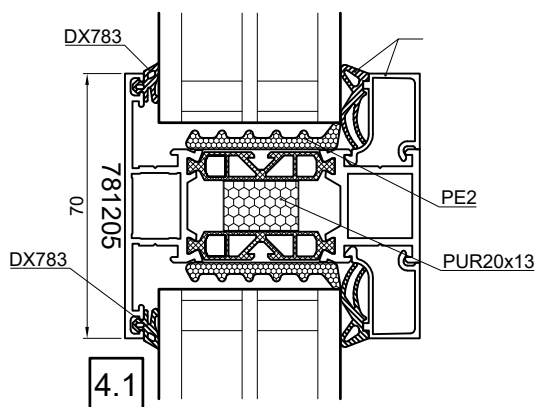
LK73 LIUKUOVI ASSA ABLOY SL500 KONEISTOLLA
LK73 SLIDING DOOR WITH ASSA ABLOY SL500 OPERATOR



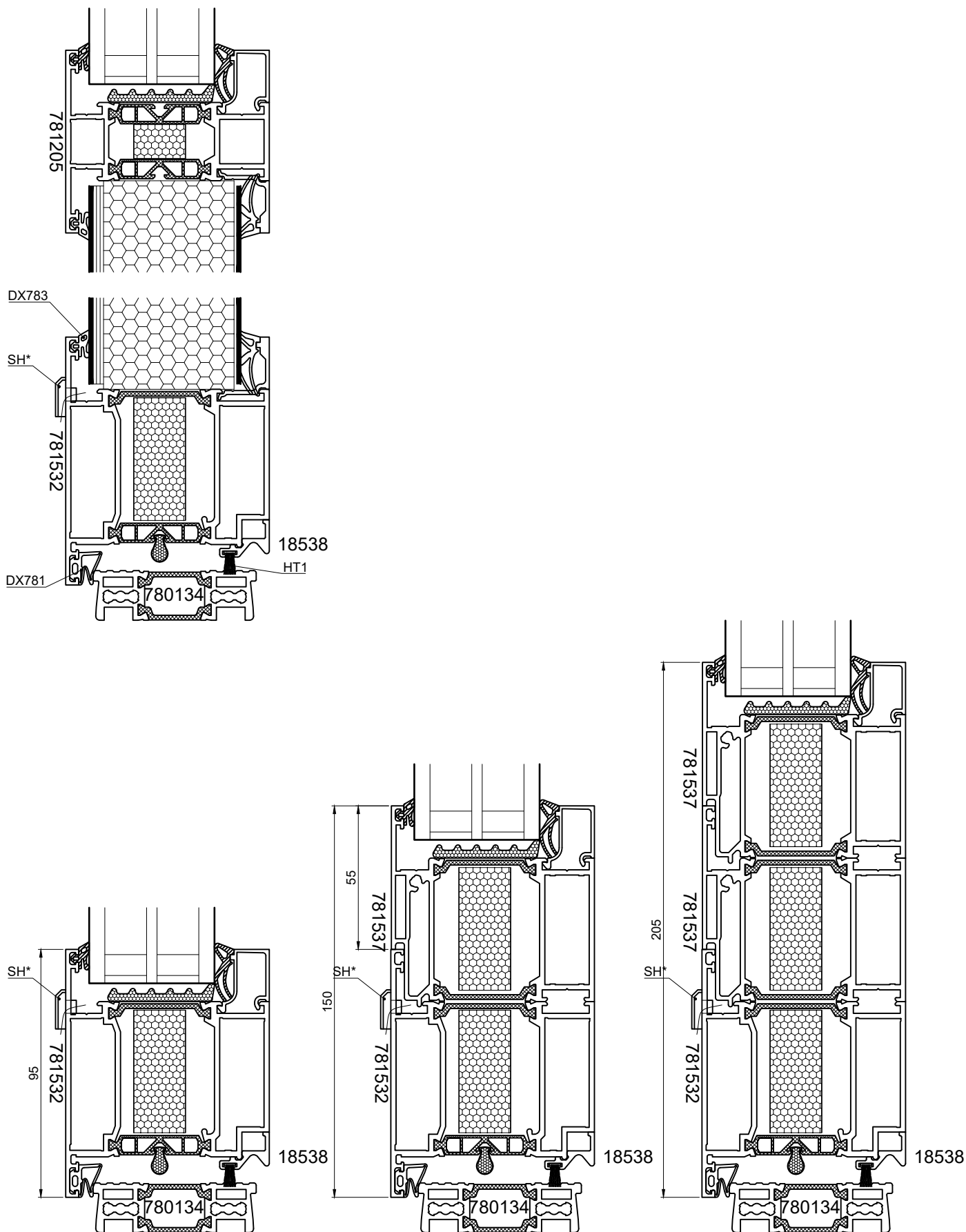
LK73 LIUKUOVI ASSA ABLOY SL500 KONEISTOLLA
LK73 SLIDING DOOR WITH ASSA ABLOY SL500 OPERATOR



LK78X OVEN VAAKAJAOT
LK78X DOOR HORIZONTAL FRAME



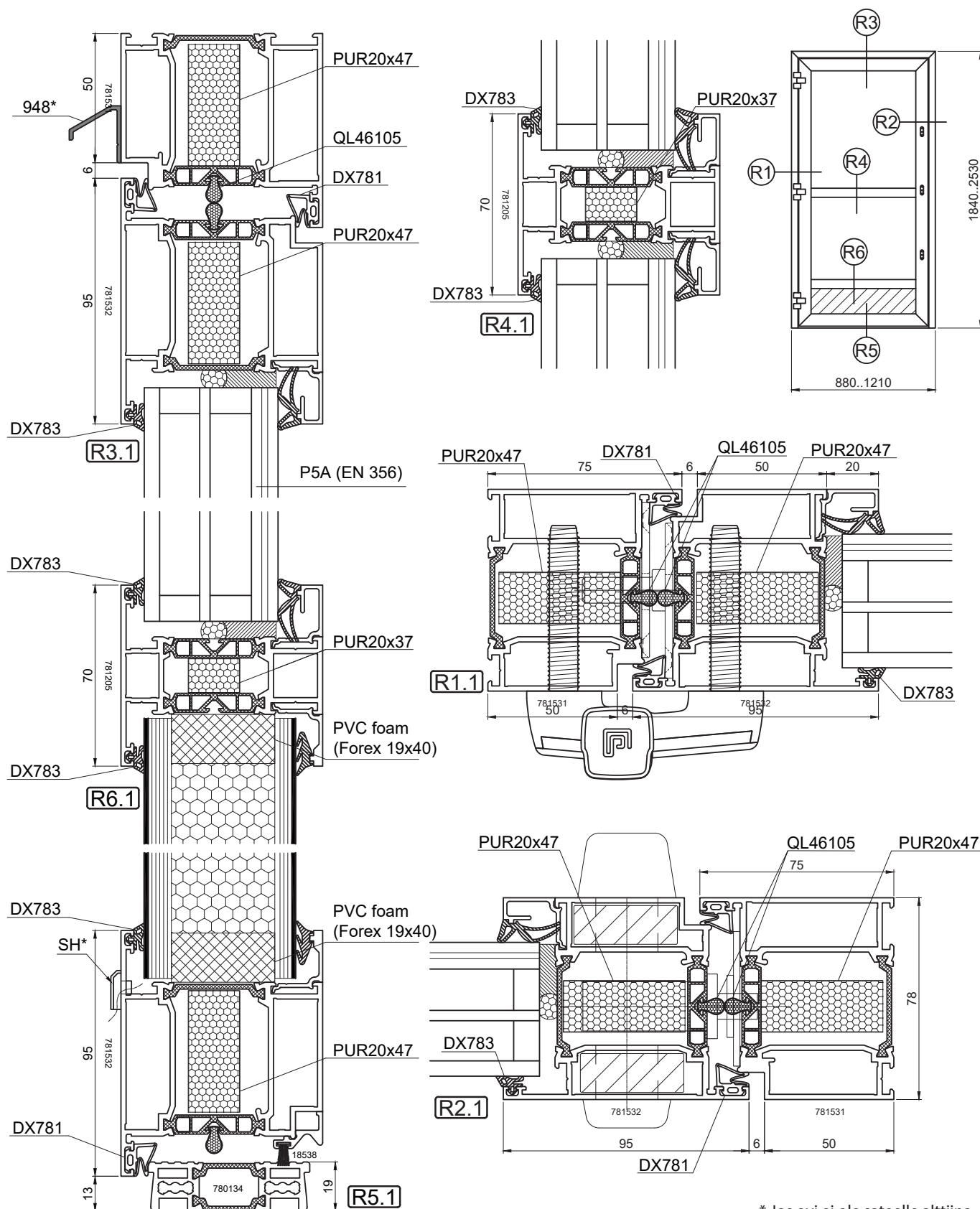
LK78X OVEN POTKUOSA
LK78X BOTTOM OF THE DOOR



* Jos ovi ei ole sateelle alttiina,
ei tippalistaa ja tuuletusta (SH) tarvita.

* If the door is not exposed to rain,
drip moulding and ventilation (SH)
are not necessary.

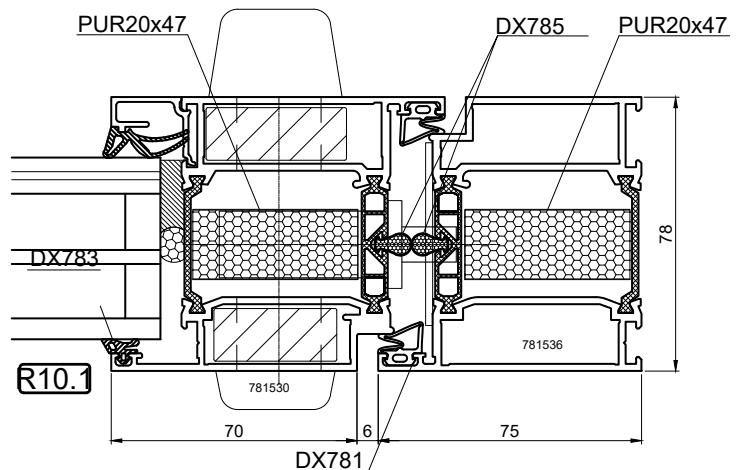
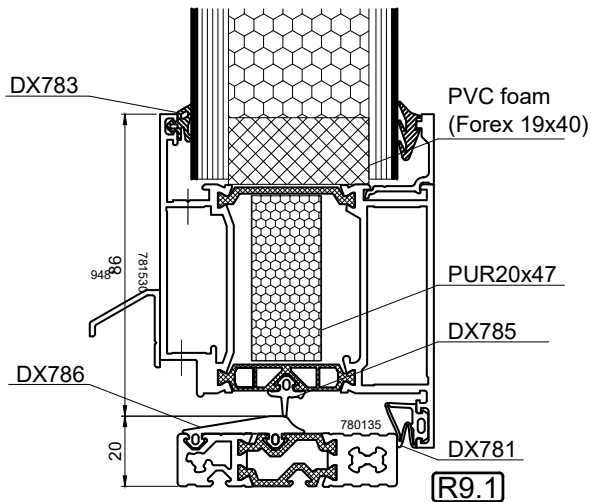
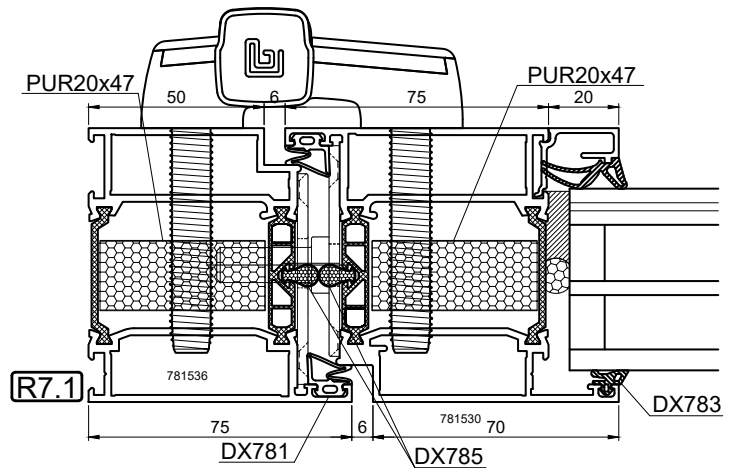
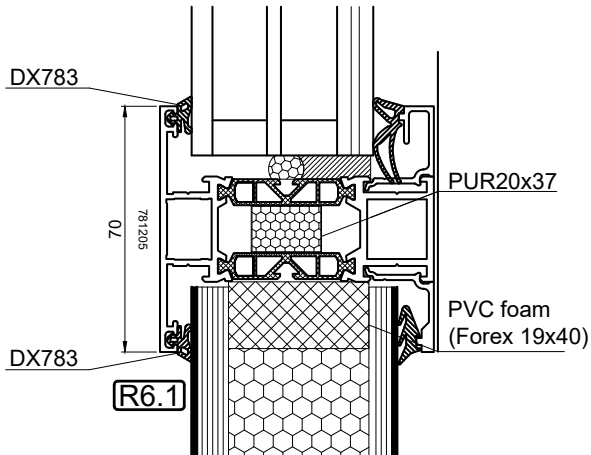
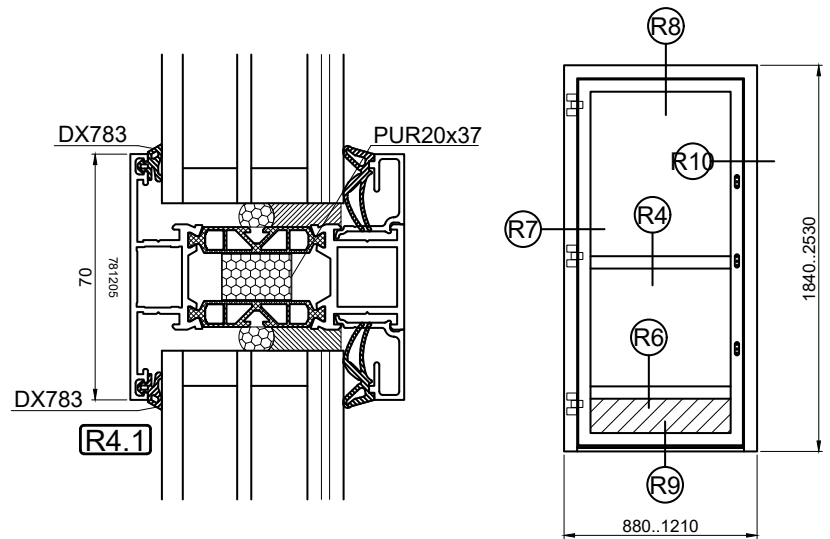
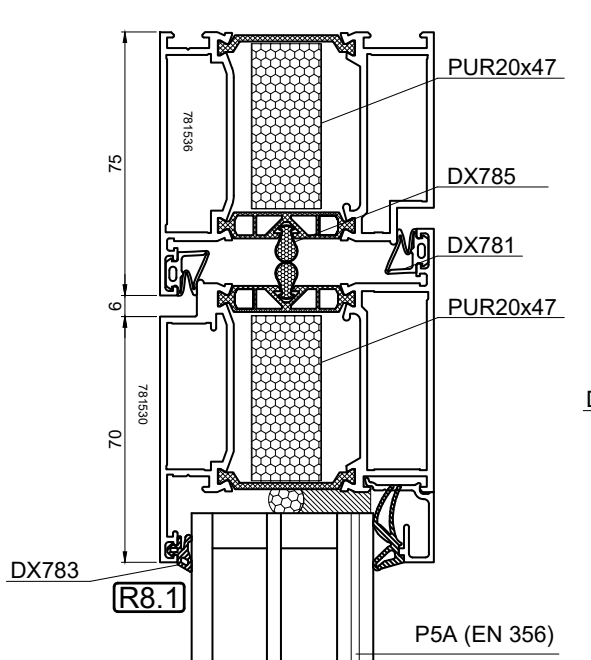
LK78X RC3 ULOSAUKEAVA MURTOSUOJA-OVI
LK78X RC3 OUTWARD OPENING DOOR



* Jos ovi ei ole sateelle alttiina,
ei tippalistaa ja tuuletusta (SH) tarvita.

* If the door is not exposed to rain, drip moulding and ventilation (SH) are not necessary.

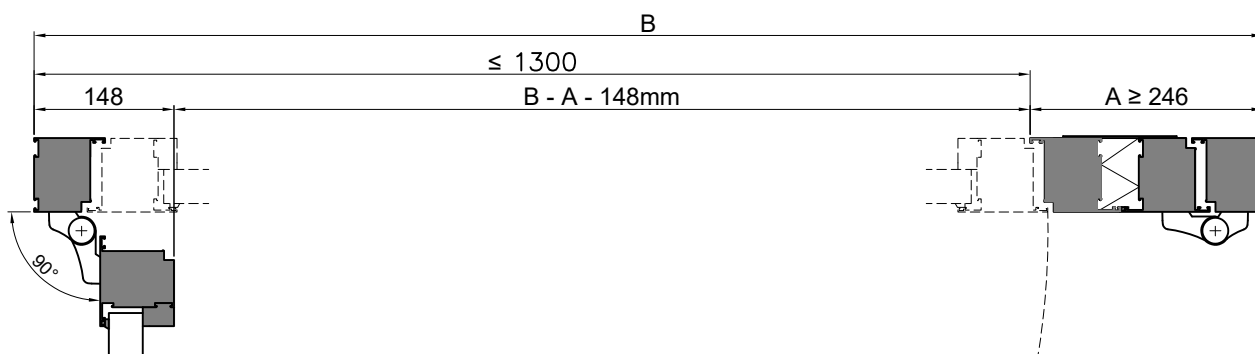
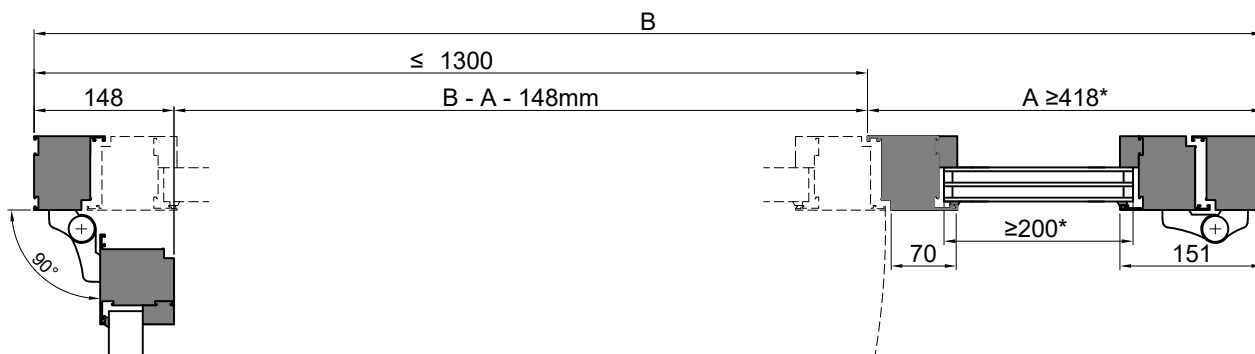
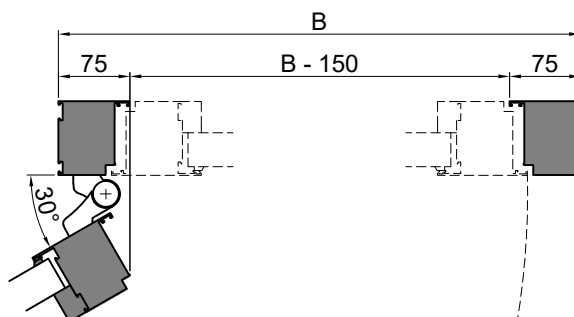
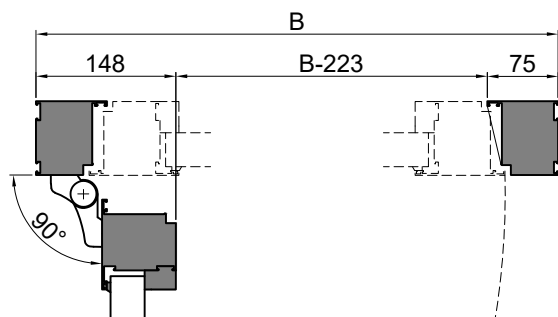
LK78X RC3 SISÄÄNAUKEAVA MURTOSUOJA-OVI
LK78X RC3 INWARD OPENING DOOR



* Jos ovi ei ole sateelle alttiina, ei tippalistaa tarvita.

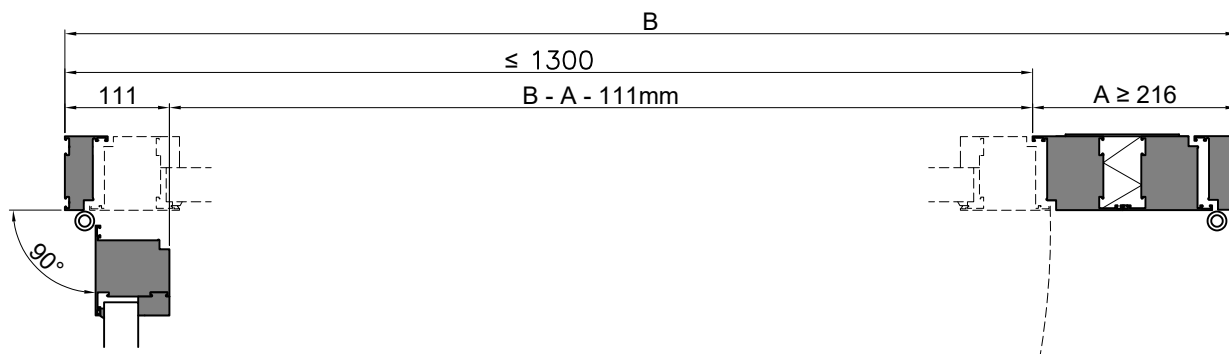
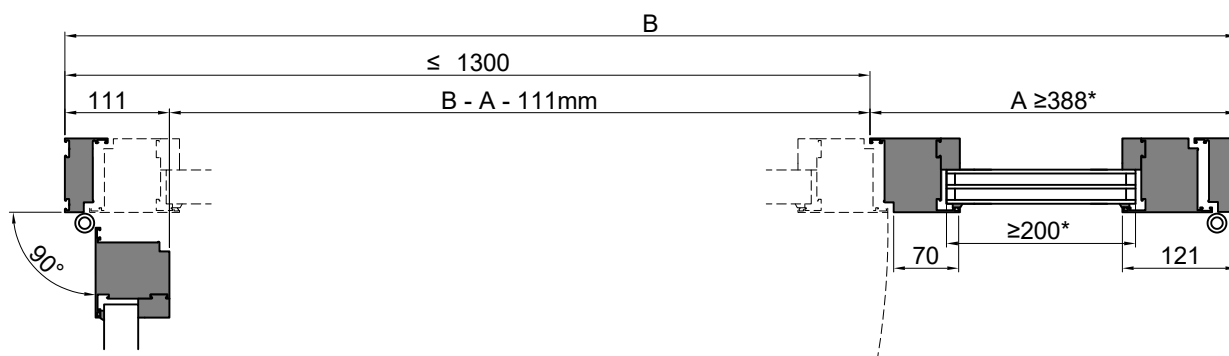
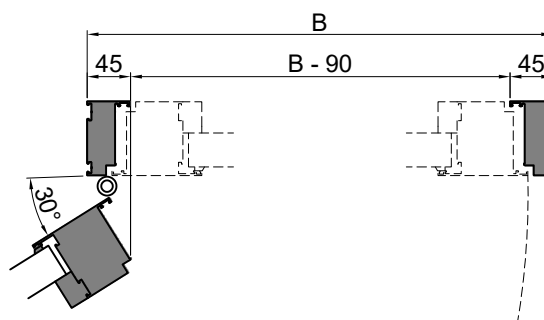
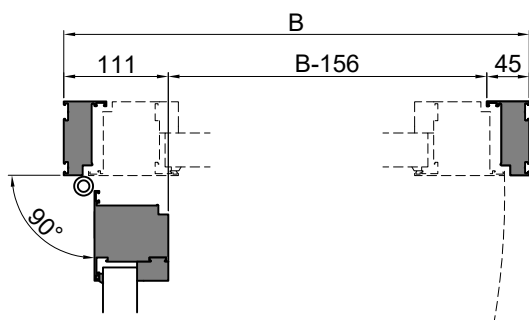
* If the door is not exposed to rain, drip moulding is not necessary.

VAPAAT KULKUAUKOT, KARMI 781531
CLEAR DIMENSION, FRAME 781531



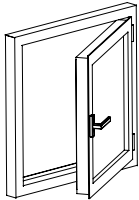
* Suositus
* Recommendation

VAPAAT KULKUAUKOT, KARMI 781231, 781232
 CLEAR DIMENSION, FRAME 781231, 781232



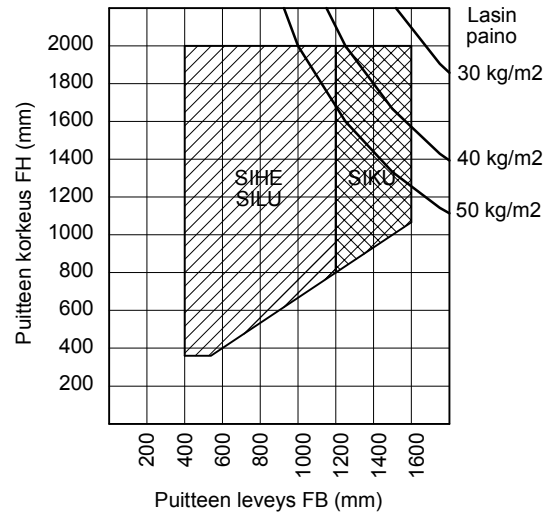
LK78X SISÄÄNAUKEAVAT IKKUNAT LK78X INWARD OPENING WINDOWS

SIVUSARANOITU IKKUNA SIDE HUNG WINDOW

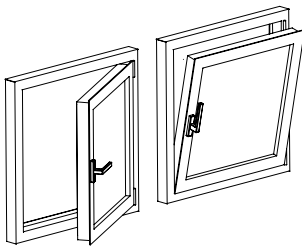


Ikkunan mittasuhte FB/FH < 1.5
Ikkunan enimmäispaino 100 kg
Max. width/ height ratio FB/FH < 1.5
Max. sash weight 100 kg

Puitteen/ Sash				
Leveys FB Widht	Korkeus FH Heigth	Helasarja Hardware	Painike Handle	Saranat Hinges
400 - 1200	360 - 2000	4200SIHE	SIPA	FASA
400 - 1200	350 - 2000	4200SILU	Vakio	FASA
1200 - 1600	800 - 2000	4200SIHE + 4200SIKU	SIPA	FASA



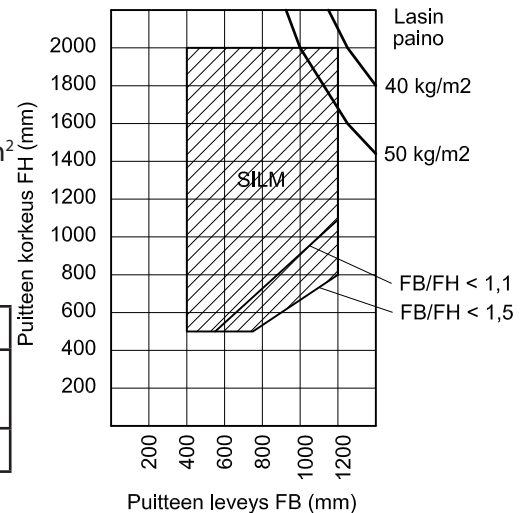
SIVU/ALASARANOITU IKKUNA TILT AND TURN WINDOW



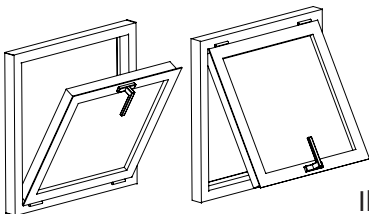
Ikkunan mittasuhte:
Max. width/ height ratio:
FB/FH < 1.5, lasi/ glass ≤ 30 kg/m²
FB/FH < 1.1, lasi/ glass 30..50 kg/m²

Ikkunan enimmäispaino 100 kg
Max. sash weight 100 kg

Puitteen/ Sash				
Leveys FB Widht	Korkeus FH Heigth	Helasarja Hardware	Painike Handle	Saranat Hinges
400 - 1200	550 - 2000	5200SILM	SIPA	5200SILM

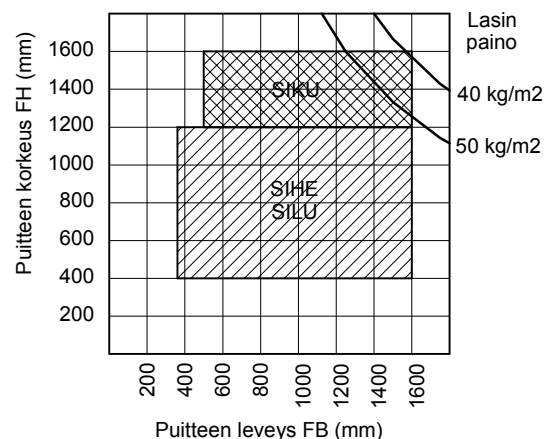


ALA- TAI YLÄSARANOITU BOTTOM OR TOP HUNG WINDOW



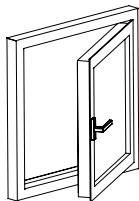
Ikkunan enimmäispaino 100 kg
Max. sash weight 100 kg

Puitteen/ Sash				
Leveys FB Widht	Korkeus FH Heigth	Helasarja Hardware	Painike Handle	Saranat Hinges
360 - 1600	400 - 1200	4200SIHE	SIPA	FASA
350 - 1600	400 - 1200	4200SILU	Vakio	FASA
500 - 1600	1200 - 1600	4200SIHE + 4200SIKU	SIPA	FASA



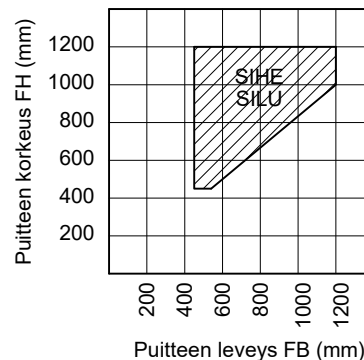
LK78X SISÄÄNAUKEAVAT IKKUNAT LK78X INWARD OPENING WINDOWS

SIVUSARANOITU IKKUNA, PILOSARANAT SIDE HUNG WINDOW, CONCEALED HINGE

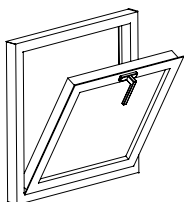


Ikkunan mittasuhte FB/FH < 1.2
Max. width/ height ratio FB/FH < 1.2
Ikkunan enimmäispaino 100 kg
Max. sash weight 100 kg

Puitteen/ Sash				
Leveys FB Width	Korkeus FH Height	Helasarja Hardware	Painike Handle	Saranat Hinges
450 - 1200	360 - 1200	4200SIHE	SIPA	MAGIS- HL/HR
450 - 1200	350 - 1200	4200SILU	Vakio	MAGIS- HL/HR

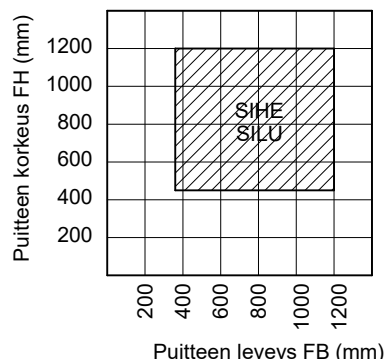


ALASARANOITU IKKUNA, PILOSARANAT BOTTOM HUNG WINDOW, CONCEALED HINGE

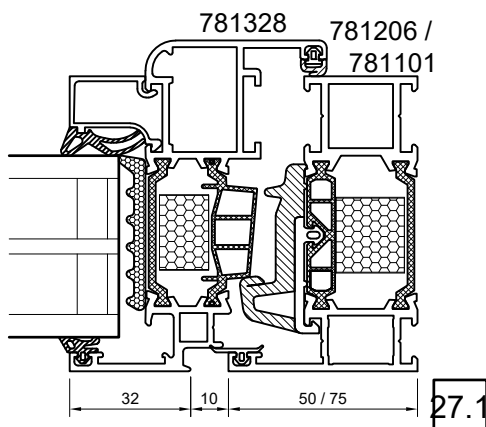
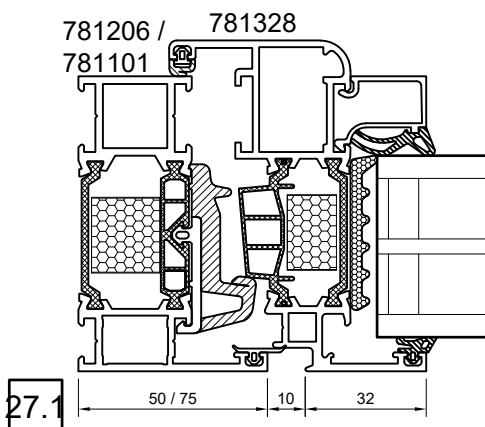
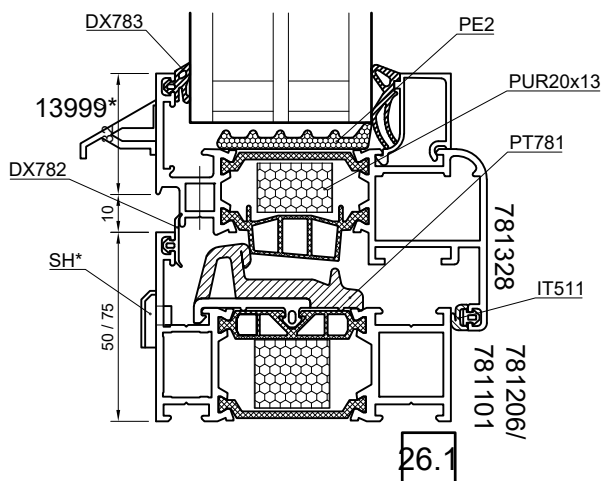
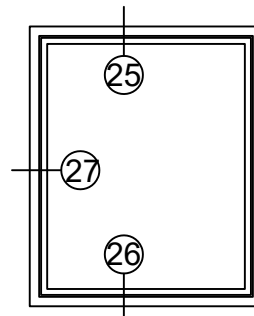
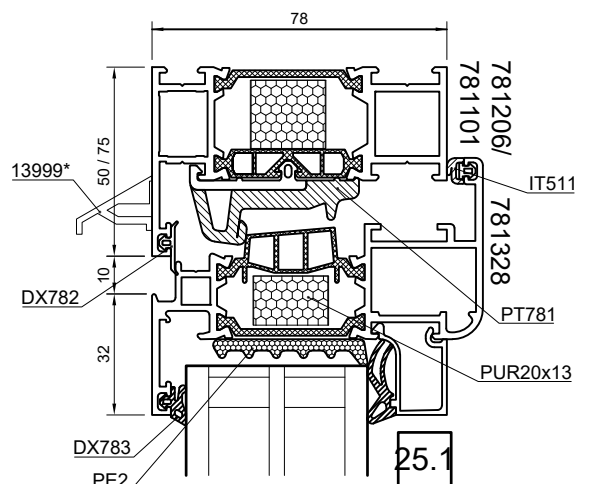


Ikkunan enimmäispaino 100 kg
Max. sash weight 100 kg

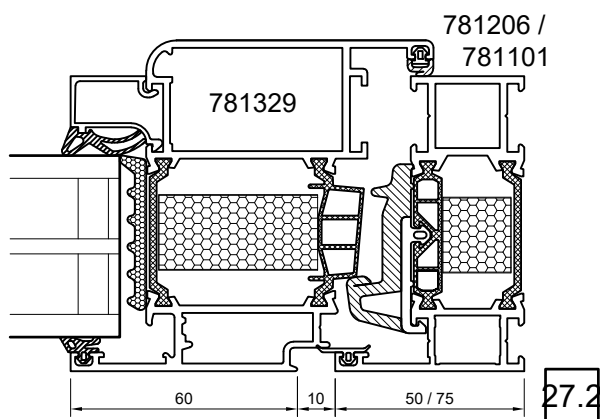
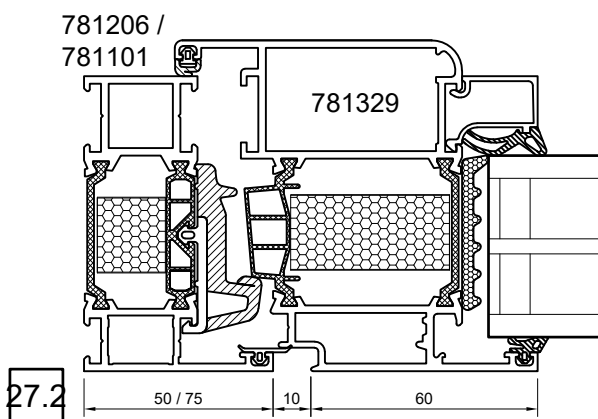
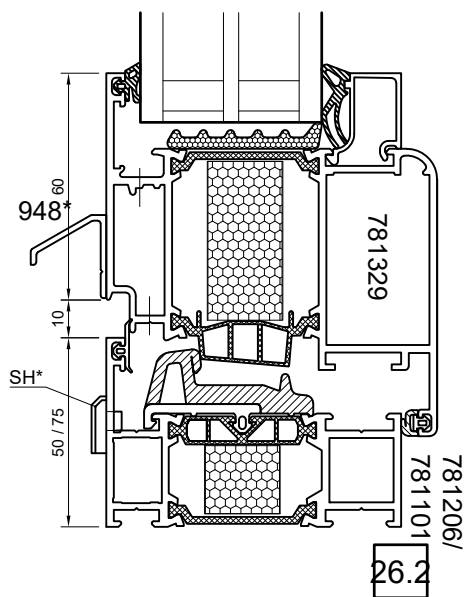
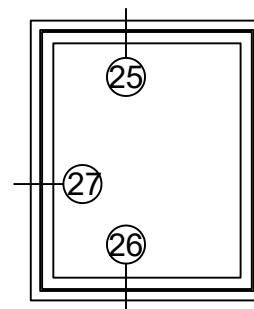
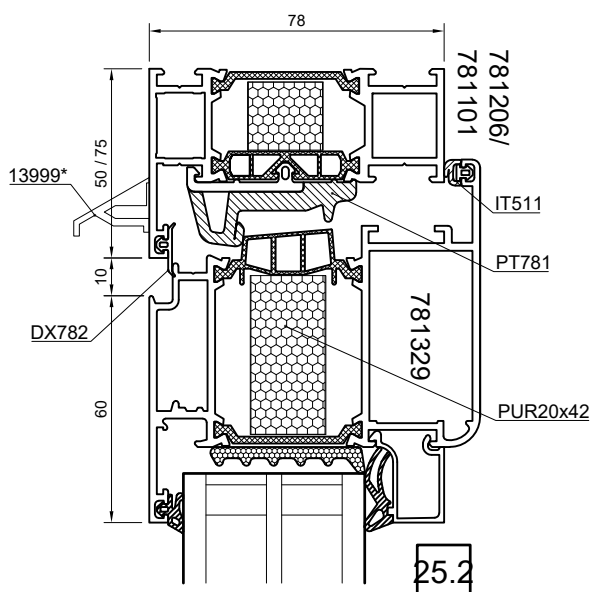
Puitteen/ Sash				
Leveys FB Width	Korkeus FH Height	Helasarja Hardware	Painike Handle	Saranat Hinges
360 - 1200	450 - 1200	4200SIHE	SIPA	MAGIS- BH
350 - 1200	450 - 1200	4200SILU	Vakio	MAGIS- BH



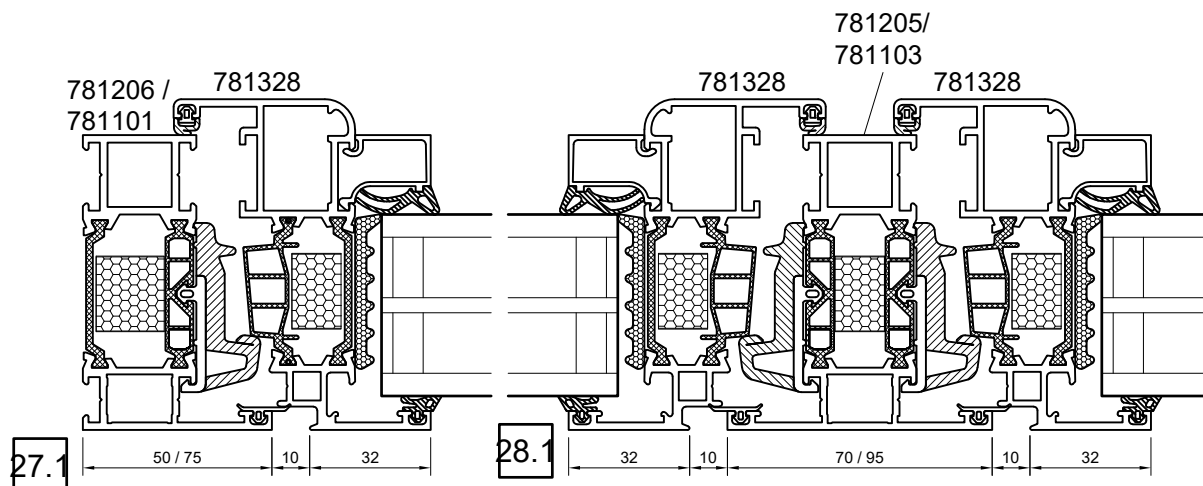
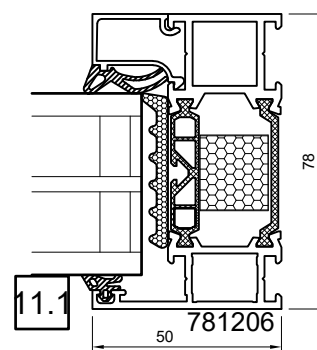
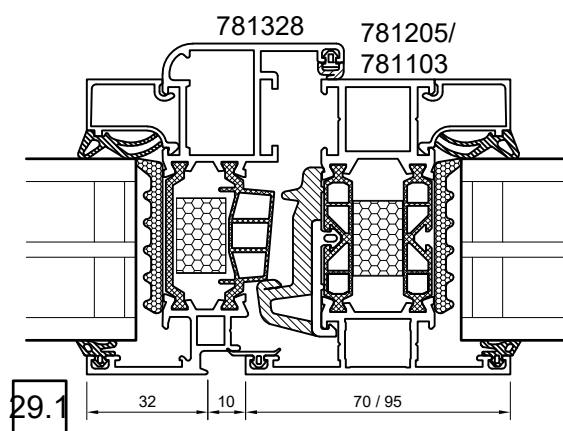
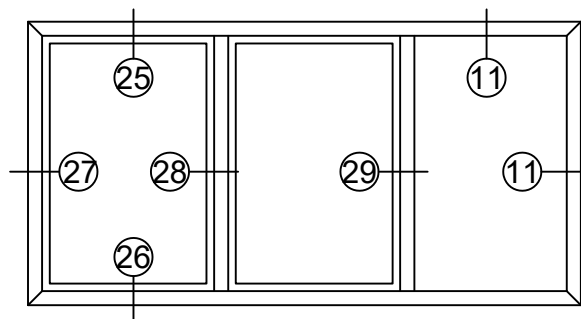
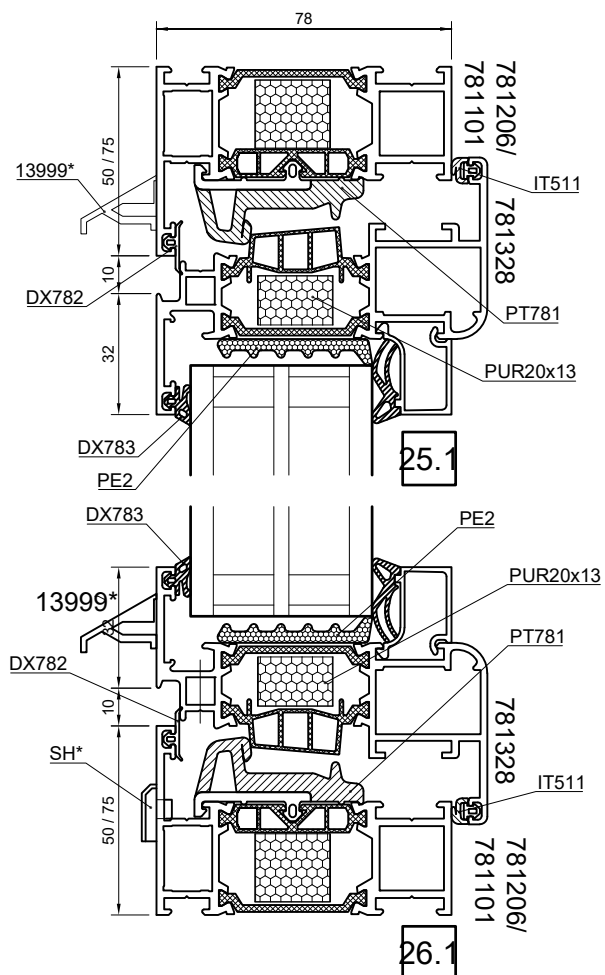
LK78X SISÄÄNAUKEAVA IKKUNA, PUIITE 781328
LK78X INWARD OPENING WINDOW, SASH 781328



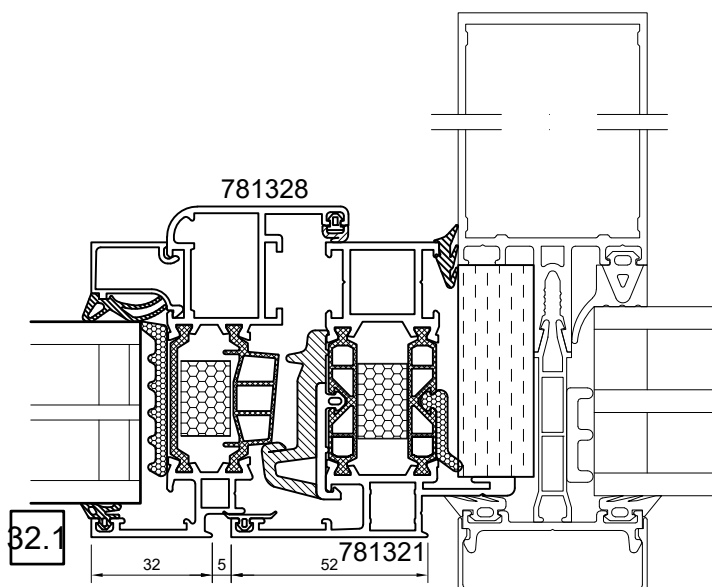
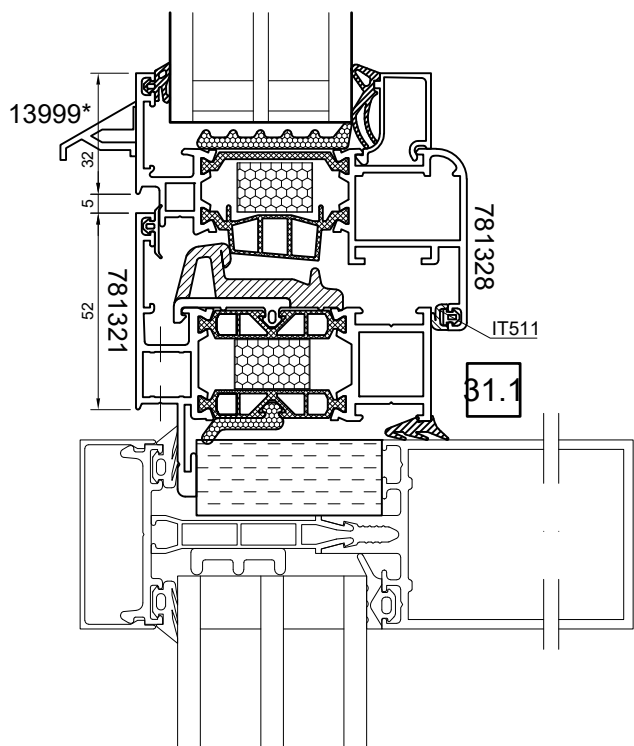
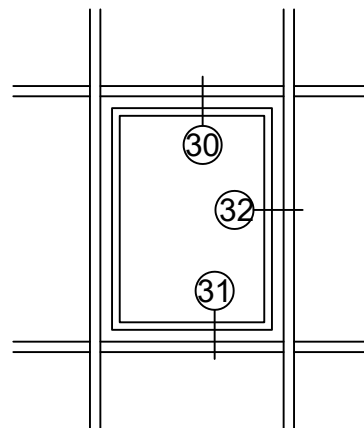
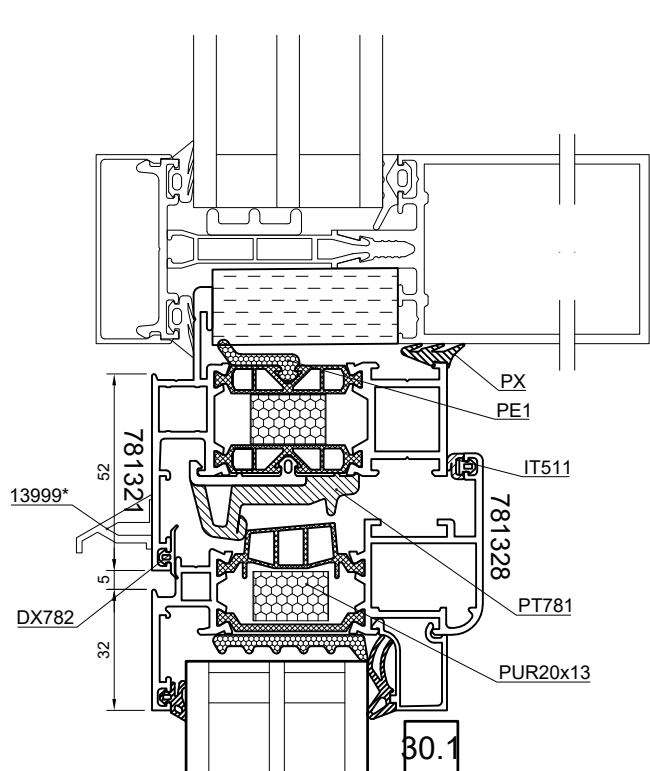
LK78X SISÄÄNAUKEAVA IKKUNA, PUITE 781329
LK78X INWARD OPENING WINDOW, SASH 781329



LK78X SISÄÄNAUKEAVA IKKUNA
LK78X INWARD OPENING WINDOW

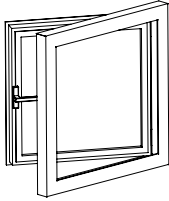


LK78X SISÄÄNAUKEAVA IKKUNA P50L JULKISIVUSSA
LK78X INWARD OPENING WINDOW IN P50L FASADE



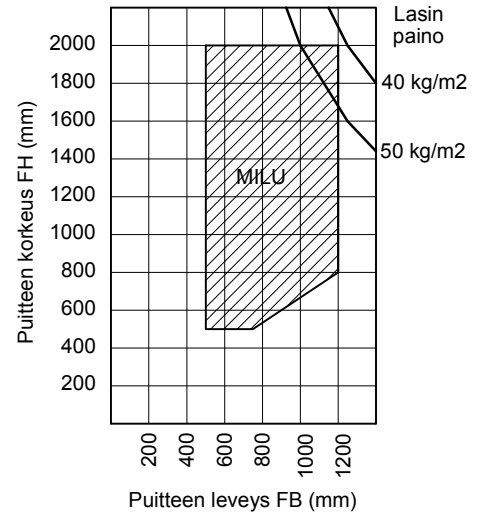
LK78X ULOSAUKEAVAT IKKUNAT LK78X OUTWARD OPENING WINDOWS

SIVUSARANOITU IKKUNA SIDE HUNG WINDOW

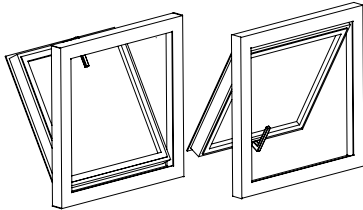


Ikkunan mittasuhte FB/FH < 1.5
Ikkunan enimmäispaino 100 kg
Max. width/ height ratio FB/FH < 1.5
Max. sash weight 100 kg

Puitteen/ Sash				
Leveys FB Width	Korkeus FH Height	Helasarja Hardware	Painike Handle	Saranat Hinges
500 - 1200	500 - 2000	4200MILU	FUPA	FASA

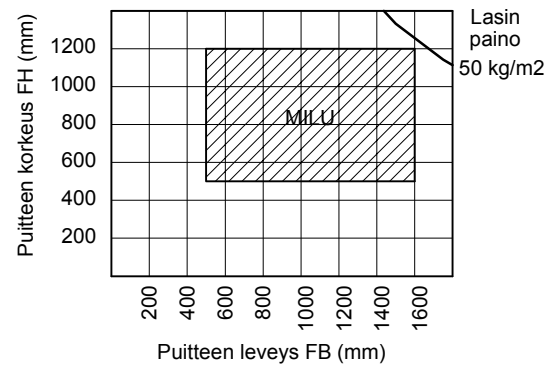


ALA- TAI YLÄSARANOITU IKKUNA BOTTOM OR TOP HUNG WINDOW



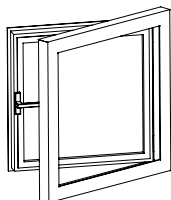
Ikkunan enimmäispaino 100 kg
Max. sash weight 100 kg

Puitteen/ Sash				
Leveys FB Width	Korkeus FH Height	Helasarja Hardware	Painike Handle	Saranat Hinges
500 - 1600	500 - 1200	4200MILU	FUPA	FASA



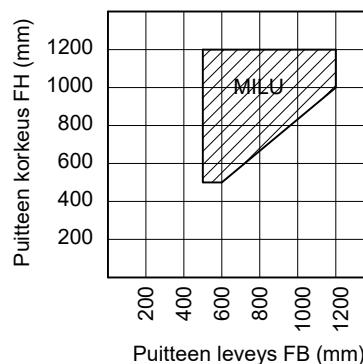
LK78X ULOSAUKEAVAT IKKUNAT LK78X OUTWARD OPENING WINDOWS

SIVUSARANOITU, PILOSARANAT SIDE HUNG WINDOW, CONCEALED HINGE

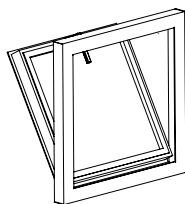


Ikkunan mittasuhte $FB/FH < 1.2$
Ikkunan enimmäispaino 80 kg
Max. width/ height ratio $FB/FH < 1.5$
Max. sash weight 100 kg

Puitteen/ Sash				
Leveys FB Width	Korkeus FH Height	Helasarja Hardware	Painike Handle	Saranat Hinges
500 - 1200	500 - 1200	4200MILU	FUPA	MAGIS- HL/HR

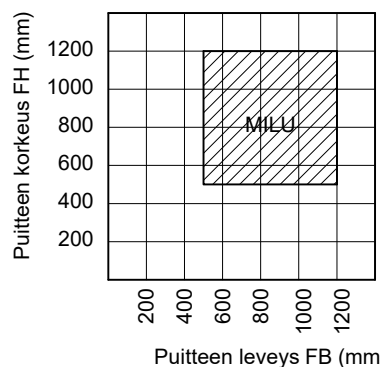


ALASARANOITU, PILOSARANAT BOTTOM HUNG WINDOW, CONCEALED HINGE

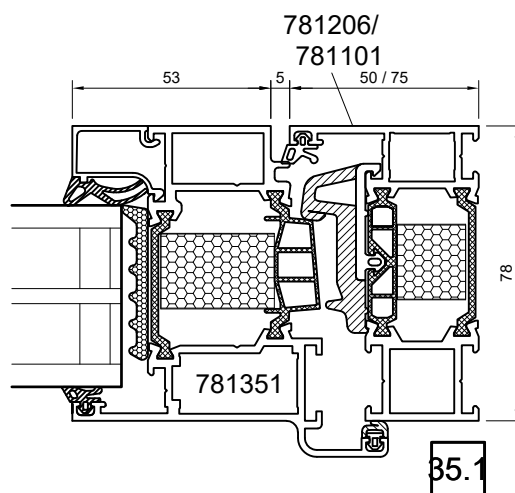
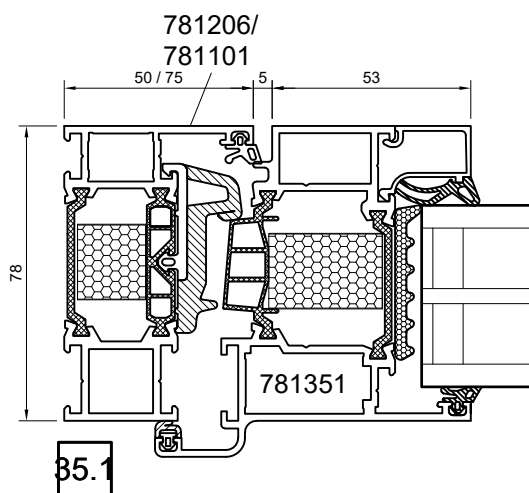
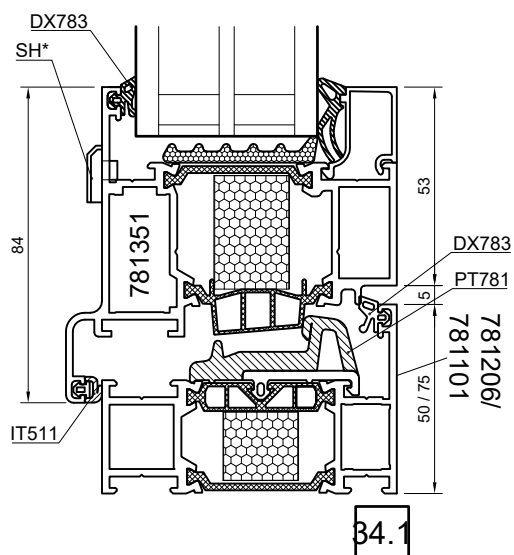
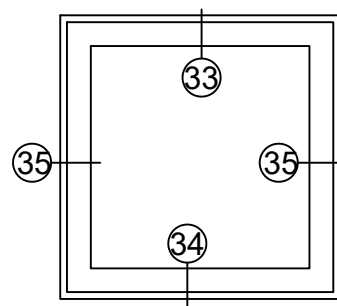
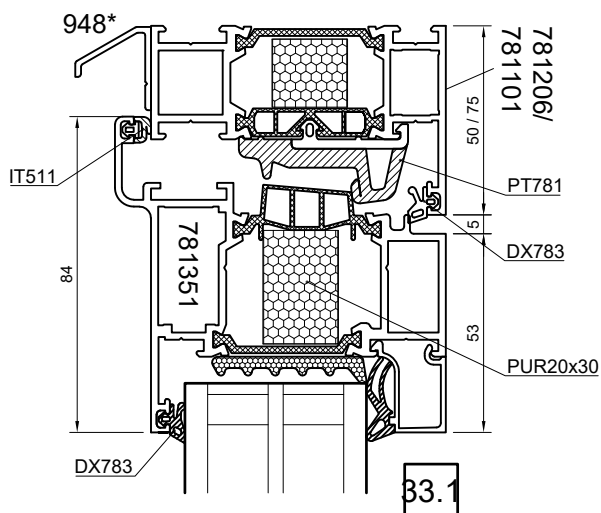


Ikkunan enimmäispaino 100 kg
Max. sash weight 100 kg

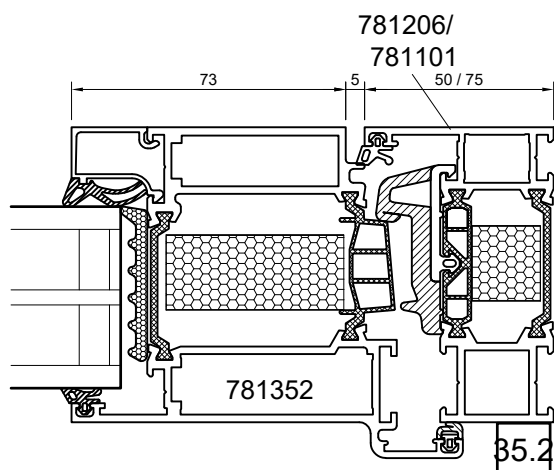
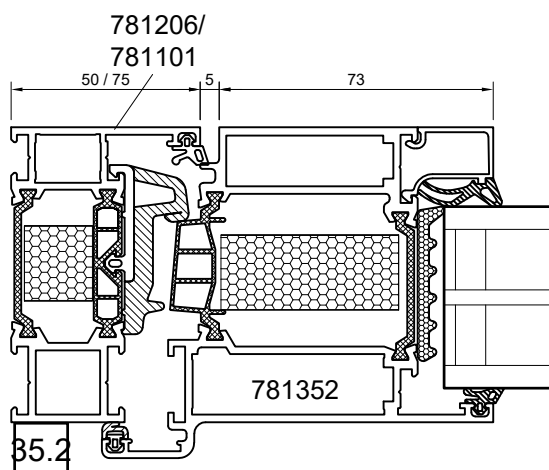
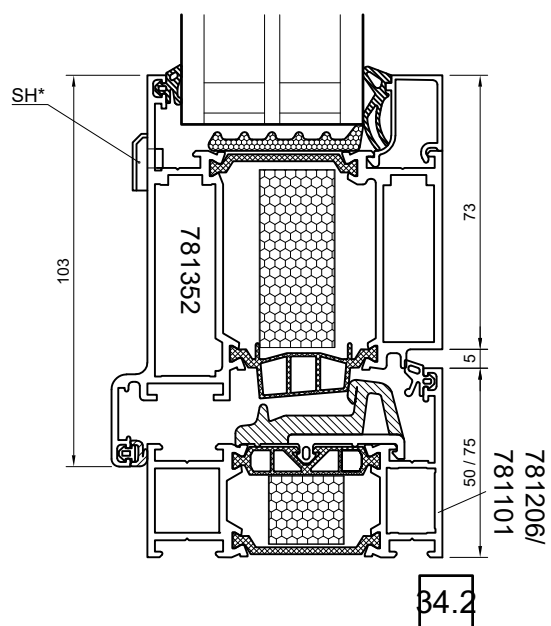
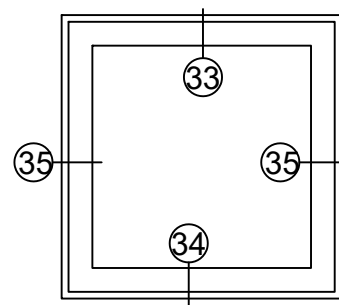
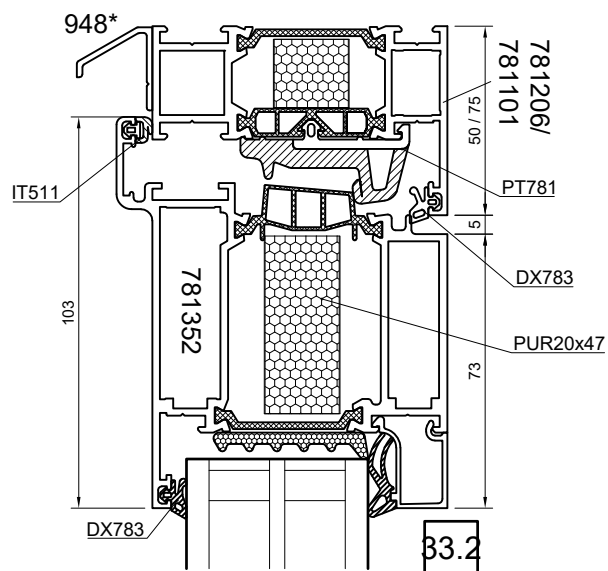
Puitteen/ Sash				
Leveys FB Width	Korkeus FH Height	Helasarja Hardware	Painike Handle	Saranat Hinges
500 - 1200	500 - 1200	4200MILU	FUPA	MAGIS- BH



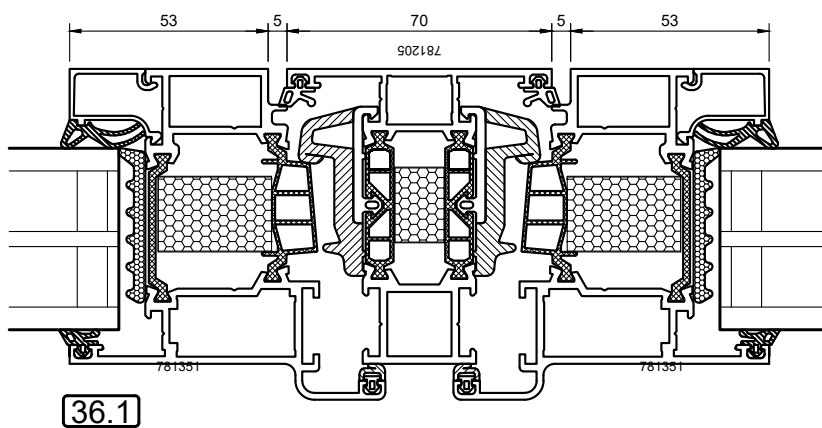
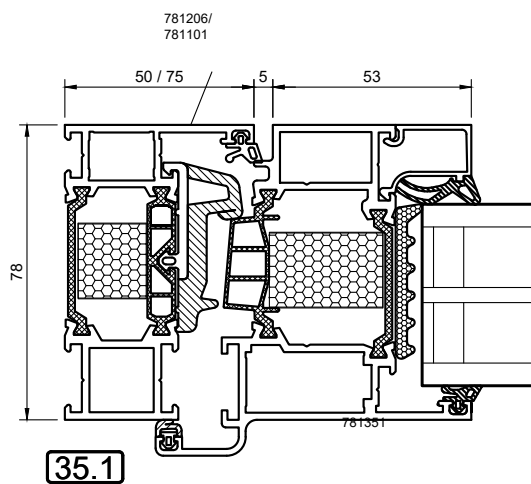
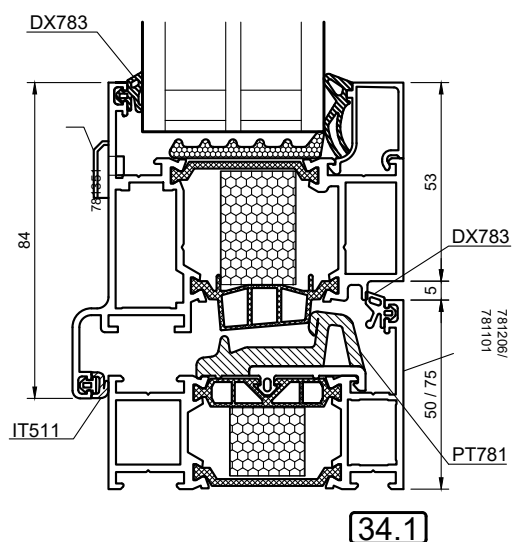
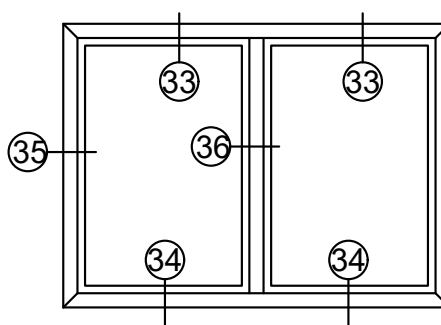
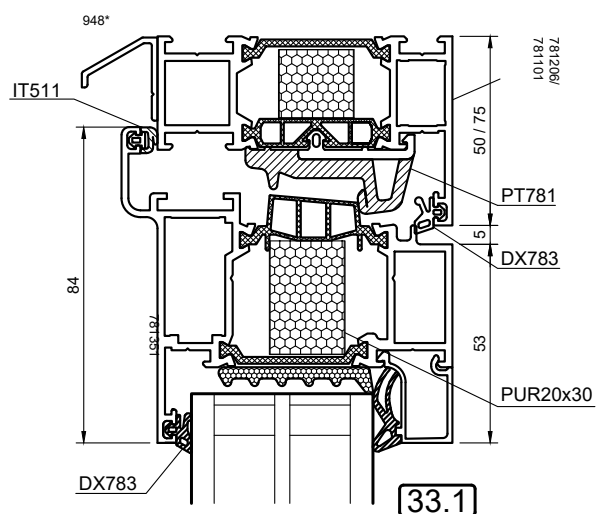
LK78X ULOSAUKEAVA IKKUNA, PUITE 781351
LK78X OUTWARD OPENING WINDOW, SASH 781351



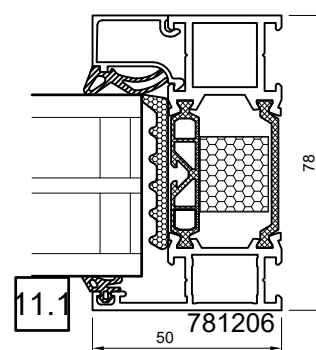
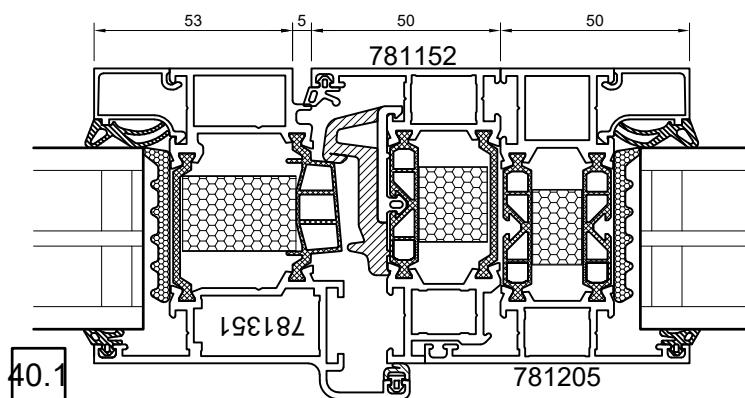
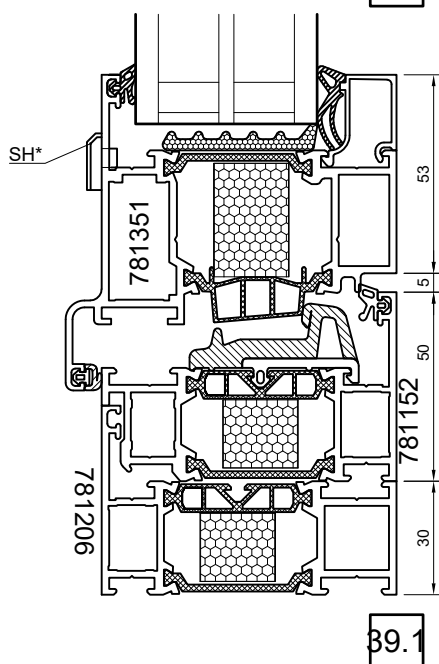
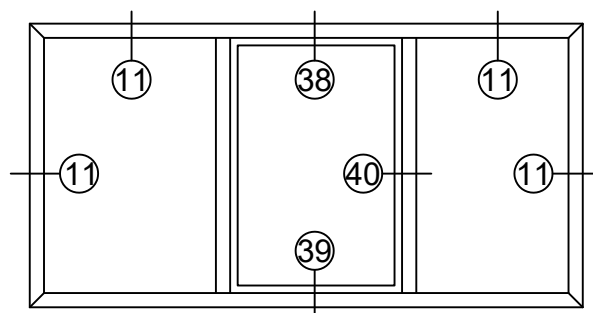
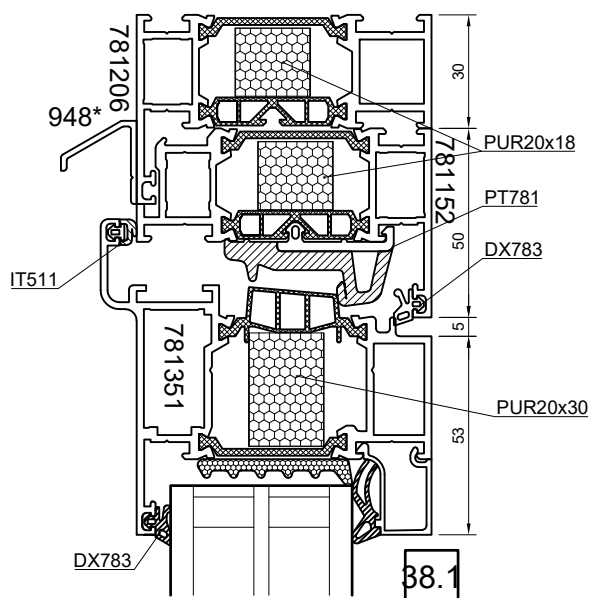
LK78X ULOSAUKEAVA IKKUNA, LEVEÄ PUITE 781352
LK78X OUTWARD OPENING WINDOW, SASH 781352



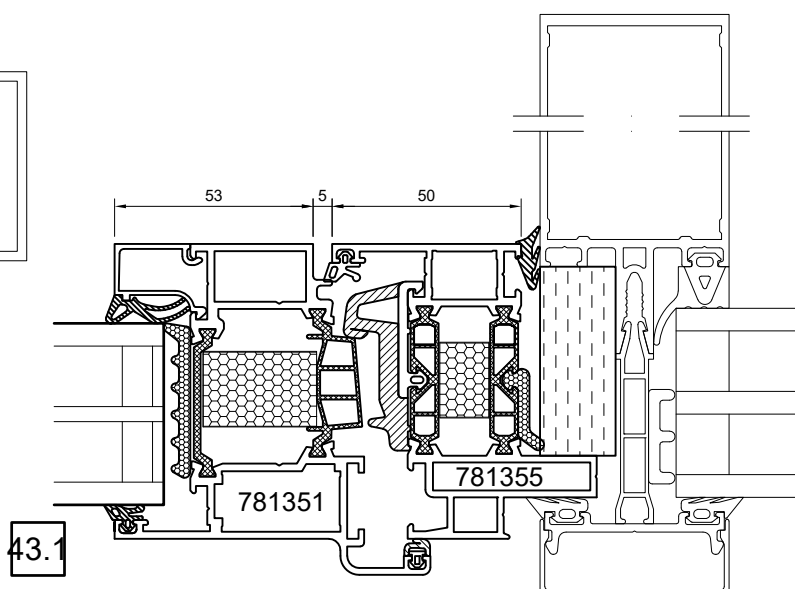
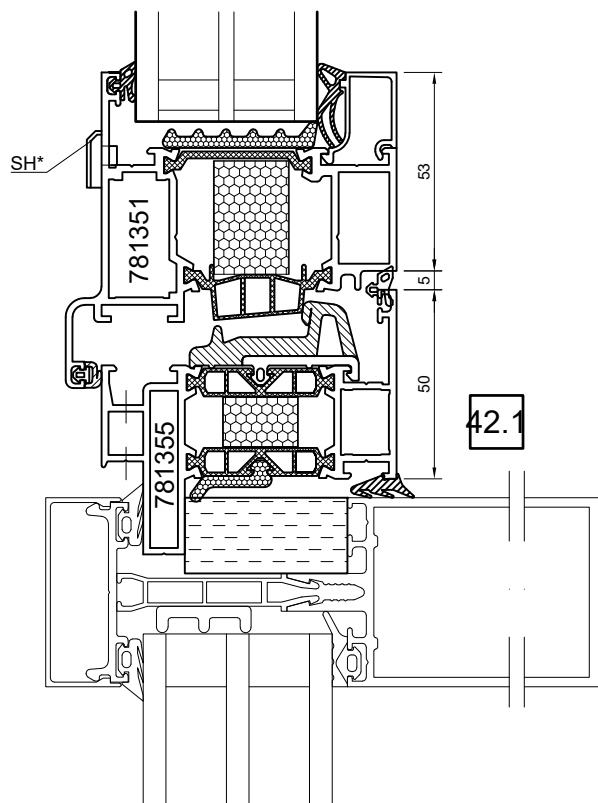
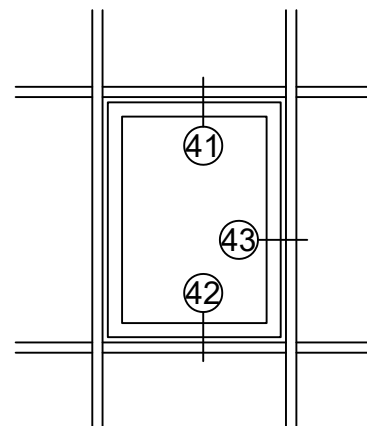
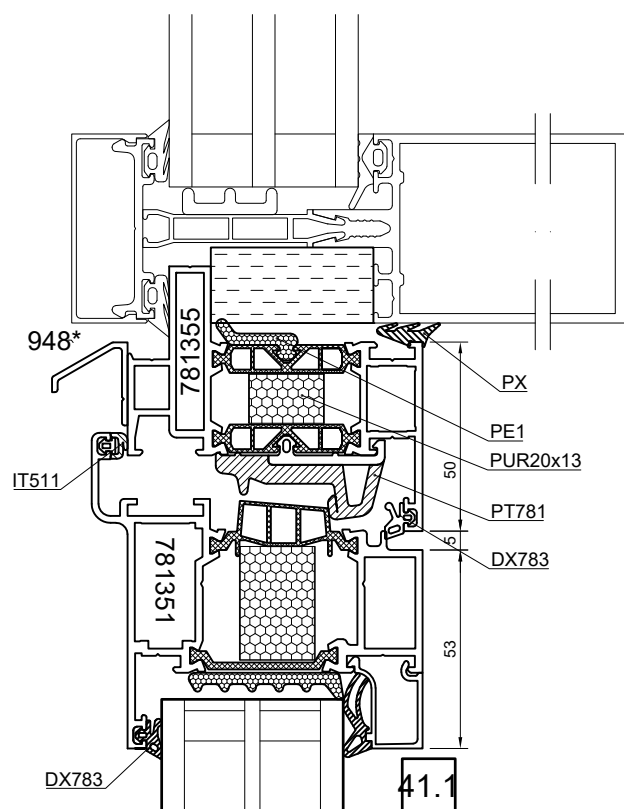
LK78X ULOSAUKEAVA IKKUNA
LK78X OUTWARD OPENING WINDOW



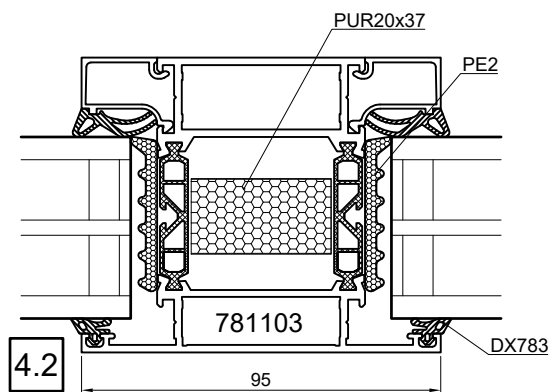
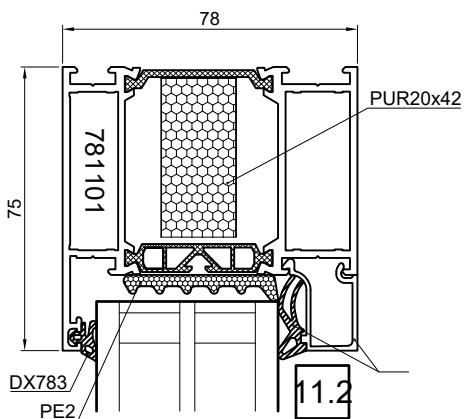
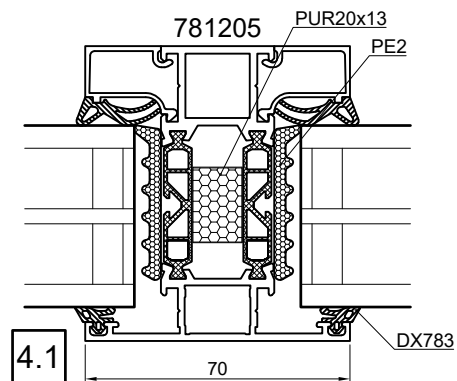
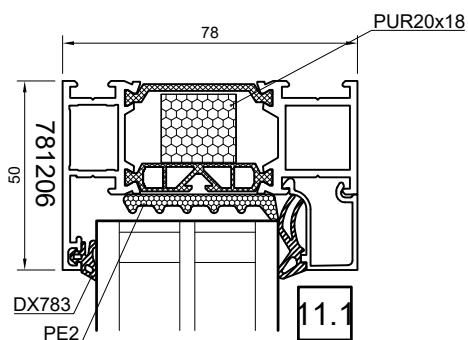
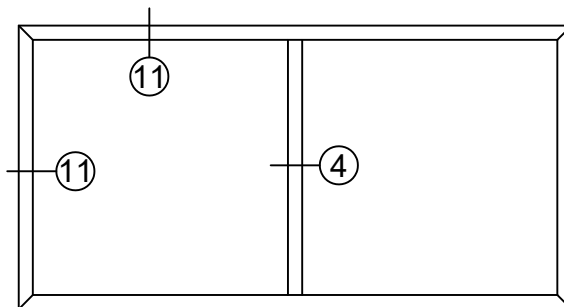
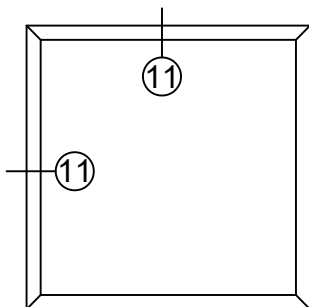
LK78X ULOS AUKEAVA IKKUNA IKKUNANAUHASSA
LK78X OUTWARD OPENING WINDOW IN WINDOW STRIP



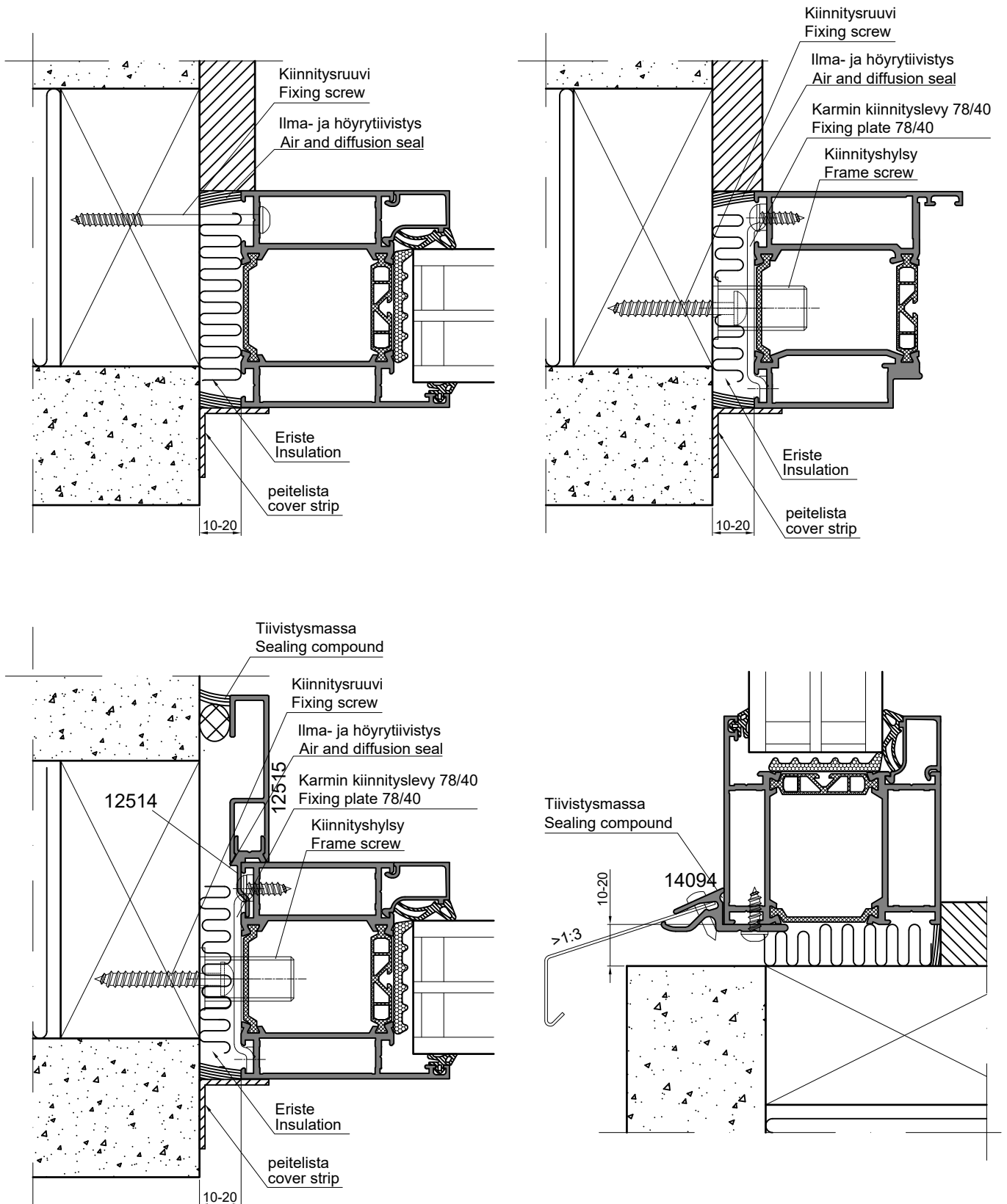
LK78X ULOSAUKEAVA IKKUNA P50L JULKISIVUSSA
LK78X OUTWARD OPENING WINDOW IN P50L FASADE



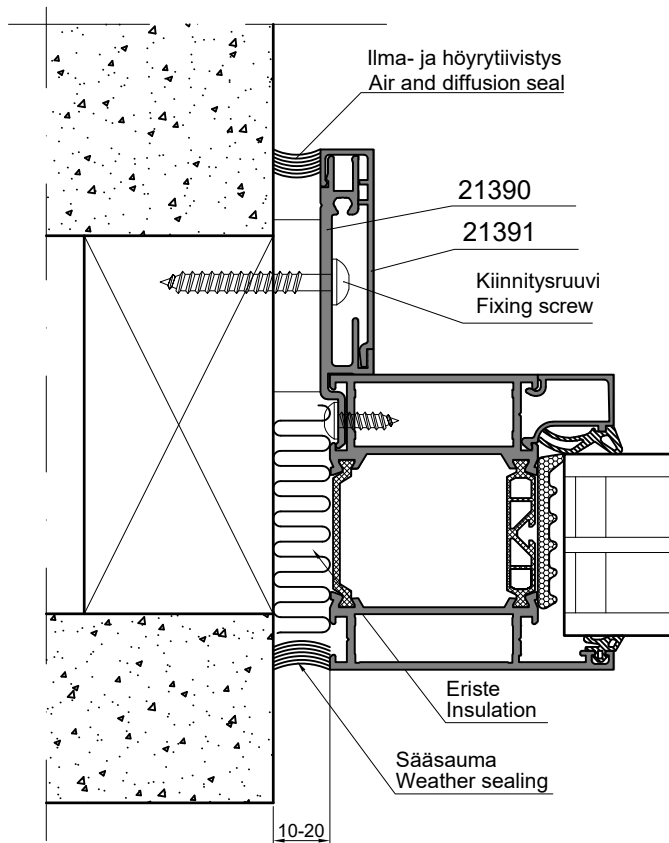
LK78X KIINTEÄ IKKUNA
LK78X FIXED WINDOW



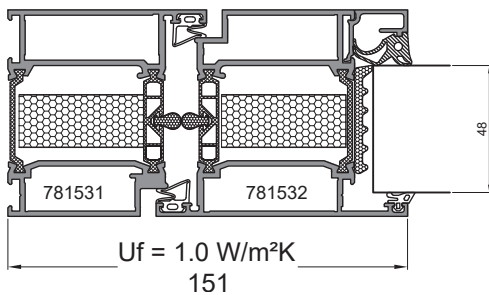
LIITTÄMINEN RAKENNUSRUNKOON, ESIMERKKEJÄ MOUNDING TO BUILDING FRAME, EXAMPLES



LIITTÄMINEN RAKENNUSRUNKOON, ESIMERKKEJÄ MOUNDING TO BUILDING FRAME, EXAMPLES



LK78X OVEN U_D -ARVOJA LK78X DOOR U_D -VALUES



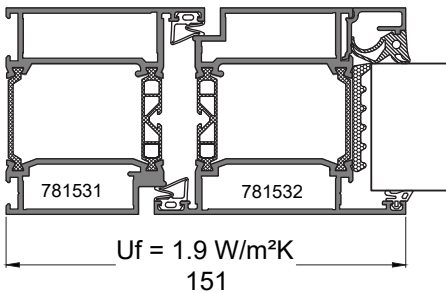
1-lehtinen ovi / 1-leaf door (1230 x 2180)
Profiilit 781531/781532, 781536/781530

1-lehtinen ovi / 1-leaf door (1230 x 2180) Profiilit 781531/781532, 781536/781530		Lasin U _g -arvo Glass U _g -value W/m²K					
Eristyslasin välilista IGU spacer	Lisäkonduktanssi ψ _g Linear thermal transmittance ψ _g	0,5	0,6	0,7	0,8	0,9	1,0
		Oven U _D -arvo Door U _D -value				W/m²K	
TPS	0,038 W/mK	0,77	0,84	0,90	0,97	1,0	1,1
RST t=0.18	0,066 W/mK	0,83	0,90	0,96	1,0	1,1	1,2
Alumiini t=0.3	0,106 W/mK	0,92	0,98	1,0	1,1	1,2	1,2

2-lehtinen ovi / 2-leaf door (2000 x 2180)
Profiilit 781531/781532, 781536/781530

2-lehtinen ovi / 2-leaf door (2000 x 2180) Profiilit 781531/781532, 781536/781530		Lasin U _g -arvo Glass U _g -value W/m²K					
Eristyslasin välilista IGU spacer	Lisäkonduktanssi ψ _g Linear thermal transmittance ψ _g	0,5	0,6	0,7	0,8	0,9	1,0
		Oven U _D -arvo Door U _D -value				W/m²K	
TPS	0,038 W/mK	0,79	0,86	0,92	0,99	1,1	1,1
RST t=0.18	0,066 W/mK	0,86	0,92	0,99	1,1	1,1	1,2
Alumiini t=0.3	0,106 W/mK	0,96	1,0	1,1	1,2	1,2	1,3

LK78Xe OVEN U_D -ARVOJA LK78Xe DOOR U_D -VALUES



1-lehtinen ovi / 1-leaf door (1230 x 2180)
Profiilit 781531/781532, 781536/781530

1-lehtinen ovi / 1-leaf door (1230 x 2180) Profiilit 781531/781532, 781536/781530		Lasin U _g -arvo Glass U _g -value W/m²K					
Eristyslasin välilista IGU spacer	Lisäkonduktanssi ψ _g Linear thermal transmittance ψ _g	0,5	0,6	0,7	0,8	0,9	1,0
		Oven U _D -arvo Door U _D -value W/m²K					
TPS	0,038 W/mK	1,1	1,1	1,2	1,3	1,3	1,4
RST t=0.18	0,066 W/mK	1,1	1,2	1,3	1,3	1,4	1,4
Alumiini t=0.3	0,106 W/mK	1,2	1,3	1,3	1,4	1,5	1,5

2-lehtinen ovi / 2-leaf door (2000 x 2180)
Profiilit 781531/781532, 781536/781530

2-lehtinen ovi / 2-leaf door (2000 x 2180) Profiilit 781531/781532, 781536/781530		Lasin U _g -arvo Glass U _g -value W/m²K					
Eristyslasin välilista IGU spacer	Lisäkonduktanssi ψ _g Linear thermal transmittance ψ _g	0,5	0,6	0,7	0,8	0,9	1,0
		Oven U _D -arvo Door U _D -value				W/m²K	
TPS	0,038 W/mK	1,1	1,1	1,2	1,3	1,3	1,4
RST t=0.18	0,066 W/mK	1,1	1,2	1,3	1,3	1,4	1,5
Alumiini t=0.3	0,106 W/mK	1,2	1,3	1,4	1,4	1,5	1,6

Yksilehtisen oven (1230x 2180 mm) taulukoituja U_D -arvoja voidaan käyttää oven pinta-alan ollessa $\leq 3,6 \text{ m}^2$.

Parioven (2000x 2180 mm) taulukoituja U_D -arvoja voidaan käyttää ovien yhteispinta-alan ollessa $> 3,6 \text{ m}^2$.

Tarkemmat projektikohtaiset laskennat tehtävä erikseen.

Tabulated U_D -values can be used for single leaf door (1230x 2180 mm) when the door size $\leq 3,6 \text{ m}^2$.

Tabulated U_D -values can be used for double leaf door (2000x 2180 mm) when the door size $> 3,6 \text{ m}^2$.

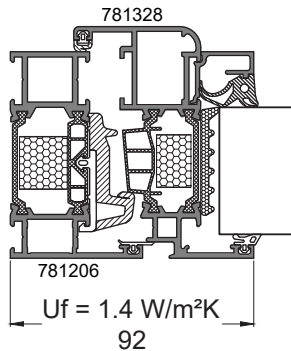
Specific values according to project are declared separately.

Karmirakenteen lämmönläpäisykertoimet (U_f) ovat määritetty standardin EN ISO 10077-2:2017mukaan.

The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

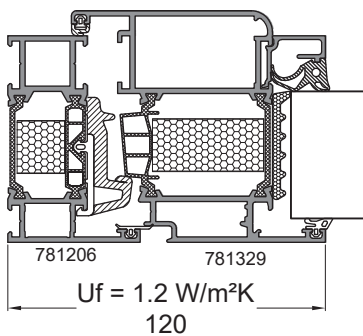
LK78X SISÄÄNAUKEAVAN IKKUNAN U_w -ARVOJA

LK78X INWARD OPENING WINDOW U_w -VALUES



Profiilit / Profiles 781206/ 781328
Ikkunan koko 1230x1480 / Size 1230x 1480

Eristyslasin välilista IGU spacer	Lisäkonduktanssi ψ_g Linear thermal transmittance ψ_g	Lasin U_g -arvo Glass U_g -value						W/m²K	
		0,5	0,6	0,7	0,8	0,9	1,0		
		Ikkunan U_w -arvo Window U_w -value						W/m²K	
TPS	0,038 W/mK	0,83	0,90	0,98	1,1	1,1	1,2		
RST t=0.18	0,066 W/mK	0,90	0,97	1,0	1,1	1,2	1,3		
Alum. t=0.3	0,106 W/mK	1,0	1,1	1,2	1,2	1,3	1,4		

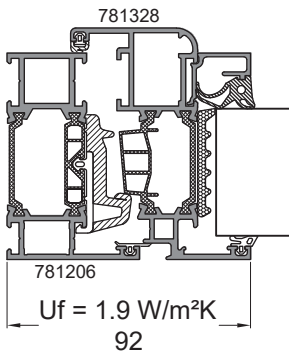


Profiilit / Profiles 781206/ 781329
Ikkunan koko 1230x1480 / Size 1230x 1480

Eristyslasin välilista IGU spacer	Lisäkonduktanssi ψ_g Linear thermal transmittance ψ_g	Lasin U_g -arvo Glass U_g -value						W/m²K	
		0,5	0,6	0,7	0,8	0,9	1,0		
		Ikkunan U_w -arvo Window U_w -value						W/m²K	
TPS	0,038 W/mK	0,82	0,89	0,96	1,0	1,1	1,2		
RST t=0.18	0,066 W/mK	0,89	0,96	1,0	1,1	1,2	1,2		
Alum. t=0.3	0,106 W/mK	0,99	1,1	1,1	1,2	1,3	1,3		

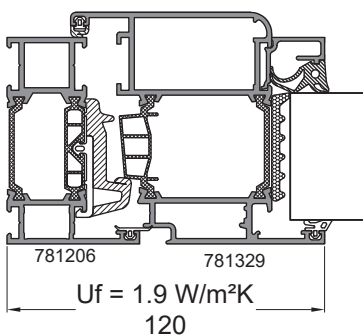
LK78Xe SISÄÄNAUKEAVAN IKKUNAN U_w -ARVOJA

LK78Xe INWARD OPENING WINDOW U_w -VALUES



Profiilit 781206 / 781328
Ikkunan koko 1230x1480 / Size 1230x 1480

Eristyslasin välilista IGU spacer	Lisäkonduktanssi ψ_g Linear thermal transmittance ψ_g	Lasin U_g -arvo Glass U_g -value						W/m²K	
		0,5	0,6	0,7	0,8	0,9	1,0		
		Ikkunan U_w -arvo Window U_w -value						W/m²K	
TPS	0,038 W/mK	0,96	1,0	1,1	1,2	1,3	1,3		
RST t=0.18	0,066 W/mK	1,0	1,1	1,2	1,3	1,3	1,4		
Alum. t=0.3	0,106 W/mK	1,1	1,2	1,3	1,4	1,4	1,5		



Profiilit 781206/ 781329
Ikkunan koko 1230x1480 / Size 1230x 1480

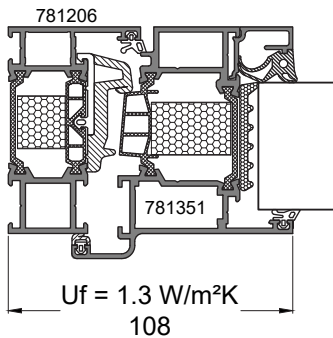
Eristyslasin välilista IGU spacer	Lisäkonduktanssi ψ_g Linear thermal transmittance ψ_g	Lasin U_g -arvo Glass U_g -value						W/m²K	
		0,5	0,6	0,7	0,8	0,9	1,0		
		Ikkunan U_w -arvo Window U_w -value						W/m²K	
TPS	0,038 W/mK	1,0	1,1	1,2	1,3	1,3	1,4		
RST t=0.18	0,066 W/mK	1,1	1,2	1,3	1,3	1,4	1,5		
Alum. t=0.3	0,106 W/mK	1,2	1,3	1,4	1,4	1,5	1,6		

Tarkemmat projektikohtaiset laskennat tehtävä tarvittaessa erikseen.
Specific values according to project are declared separately.

Karmirakenteen lämmönläpäisykertoimet (U_f) ovat määritetty standardin EN ISO 10077-2:2017mukaan.
The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

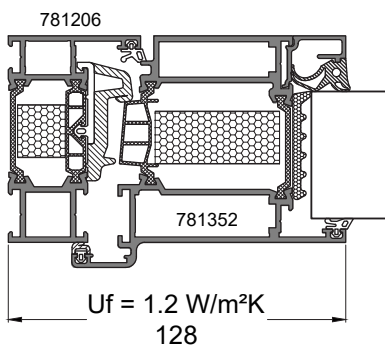
LK78X ULOSAUKEAVAN IKKUNAN U_w -ARVOJA

LK78X OUTWARD OPENING WINDOW U_w -VALUES



Profiilit / Profiles 781206/ 781351
Ikkunan koko 1230x1480 / Size 1230x 1480

Profiilit / Profiles 781206/ 781351 Ikkunan koko 1230x1480 / Size 1230x 1480		Lasin U _g -arvo Glass U _g -value						W/m²K
Eristyslasin välilista IGU spacer	Lisäkonduktanssi ψ _g Linear thermal transmittance ψ _g	0,5	0,6	0,7	0,8	0,9	1,0	
		Ikkunan U _w -arvo Window U _w -value				W/m²K		
TPS	0,038 W/mK	0,83	0,90	0,97	1,0	1,1	1,2	
RST t=0.18	0,066 W/mK	0,90	0,97	1,0	1,1	1,2	1,3	
Alumiini t=0.3	0,106 W/mK	1,0	1,1	1,1	1,2	1,3	1,4	

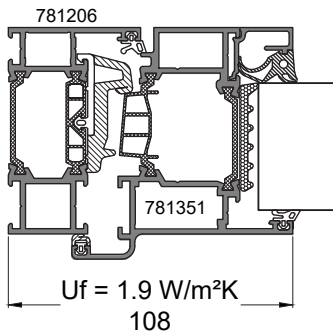


Profiilit / Profiles 781206/ 781352
Ikkunan koko 1230x1480 / Size 1230x 1480

Profiilit / Profiles 781206/ 781352 Ikkunan koko 1230x1480 / Size 1230x 1480		Lasin U _g -arvo Glass U _g -value W/m²K					
Eristyslasin välilista IGU spacer	Lisäkonduktanssi ψ _g Linear thermal transmittance ψ _g	0,5	0,6	0,7	0,8	0,9	1,0
		Ikkunan U _w -arvo Window U _w -value				W/m²K	
TPS	0,038 W/mK	0,83	0,90	0,96	1,0	1,1	1,2
RST t=0.18	0,066 W/mK	0,90	0,97	1,0	1,1	1,2	1,2
Alumiini t=0.3	0,106 W/mK	1,0	1,1	1,1	1,2	1,3	1,3

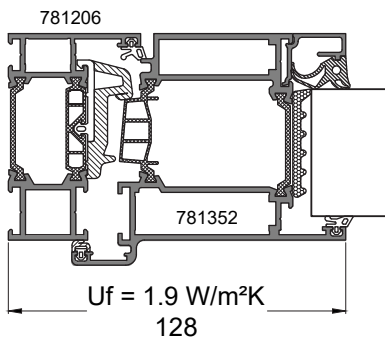
LK78Xe ULOSAUKEAVAN IKKUNAN U_w -ARVOJA

LK78Xe OUTWARD OPENING WINDOW U_w -VALUES



Profiilit / Profiles 781206/ 781351
Ikkunan koko 1230x1480 / Size 1230x 1480

Profiilit / Profiles 781206/ 781351 Ikkunan koko 1230x1480 / Size 1230x 1480		Lasin U _g -arvo Glass U _g -value						W/m²K
Eristyslasin välilista IGU spacer	Lisäkonduktanssi ψ _g Linear thermal transmittance ψ _g	0,5	0,6	0,7	0,8	0,9	1,0	W/m²K
		Ikkunan U _w -arvo Window U _w -value						
TPS	0,038 W/mK	1,0	1,1	1,2	1,2	1,3	1,4	
RST t=0.18	0,066 W/mK	1,1	1,1	1,2	1,3	1,4	1,4	
Alumiini t=0.3	0,106 W/mK	1,2	1,1	1,3	1,4	1,5	1,5	



Profiilit / Profiles 781206/ 781352
Ikkunan koko 1230x1480 / Size 1230x 1480

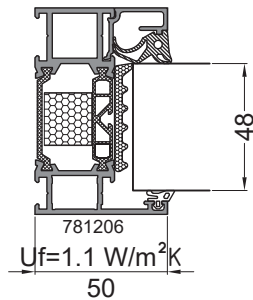
Profiilit / Profiles 781206/ 781352 Ikkunan koko 1230x1480 / Size 1230x 1480		Lasin U _g -arvo Glass U _g -value						W/m²K
Eristyslasin välilista IGU spacer	Lisäkonduktanssi ψ _g Linear thermal transmittance ψ _g	0,5	0,6	0,7	0,8	0,9	1,0	
		Ikkunan U _w -arvo Window U _w -value				W/m²K		
TPS	0,038 W/mK	1,1	1,1	1,2	1,3	1,3	1,4	
RST t=0.18	0,066 W/mK	1,1	1,2	1,3	1,3	1,4	1,5	
Alumiini t=0.3	0,106 W/mK	1,2	1,3	1,4	1,4	1,5	1,6	

Tarkemmat projektikohtaiset laskennat tehtävä tarvittaessa erikseen.
Specific values according to project are declared separately.

Karmirakenteen lämmönläpäisykertoimet (U_f) ovat määritetty standardin EN ISO 10077-2:2017 mukaan.
The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

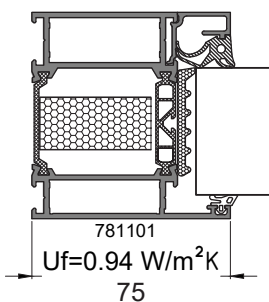
LK78X KIINTEÄN IKKUNAN U_w -ARVOJA

LK78X FIXED WINDOW U_w -VALUES



Profiili / Profile 781206
Ikkunan koko 1230x1480 / Size 1230x 1480

Eristyslasin välilista IGU spacer	Lisäkonduktanssi ψ_g Linear thermal transmittance ψ_g	Lasin U_g -arvo Glass U_g -value						W/m²K	
		0,5	0,6	0,7	0,8	0,9	1,0		
		Ikkunan U_w -arvo Window U_w -value						W/m²K	
TPS	0,038 W/mK	0,69	0,78	0,86	0,95	1,0	1,1		
RST t=0.18	0,066 W/mK	0,77	0,85	0,94	1,0	1,1	1,2		
Alumiini t=0.3	0,106 W/mK	0,88	0,96	1,0	1,1	1,2	1,3		

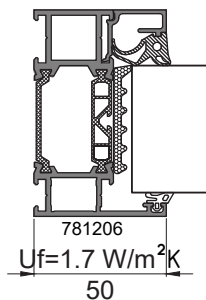


Profiili / Profile 781101
Ikkunan koko 1230x1480 / Size 1230x 1480

Eristyslasin välilista IGU spacer	Lisäkonduktanssi ψ_g Linear thermal transmittance ψ_g	Lasin U_g -arvo Glass U_g -value						W/m²K	
		0,5	0,6	0,7	0,8	0,9	1,0		
		Ikkunan U_w -arvo Window U_w -value						W/m²K	
TPS	0,038 W/mK	0,69	0,77	0,85	0,93	1,0	1,1		
RST t=0.18	0,066 W/mK	0,77	0,85	0,93	1,0	1,1	1,2		
Alumiini t=0.3	0,106 W/mK	0,87	0,95	1,0	1,1	1,2	1,3		

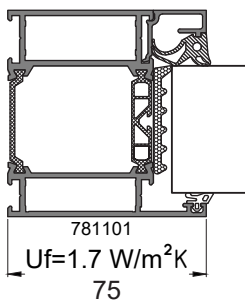
LK78Xe KIINTEÄN IKKUNAN U_w -ARVOJA

LK78Xe FIXED WINDOW U_w -VALUES



Profiili / Profile 781206
Ikkunan koko 1230x1480 / Size 1230x 1480

Eristyslasin välilista IGU spacer	Lisäkonduktanssi ψ_g Linear thermal transmittance ψ_g	Lasin U_g -arvo Glass U_g -value						W/m²K	
		0,5	0,6	0,7	0,8	0,9	1,0		
		Ikkunan U_w -arvo Window U_w -value						W/m²K	
TPS	0,038 W/mK	0,78	0,86	0,95	1,0	1,1	1,2		
RST t=0.18	0,066 W/mK	0,85	0,94	1,0	1,1	1,2	1,3		
Alumiini t=0.3	0,106 W/mK	0,96	1,1	1,1	1,2	1,3	1,4		



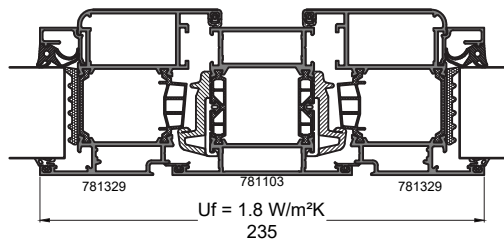
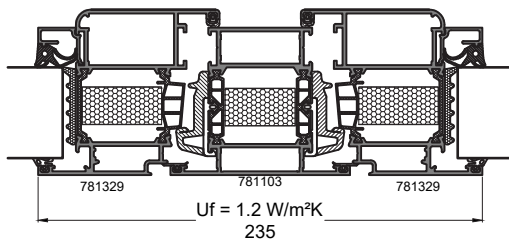
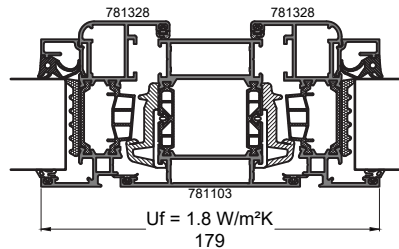
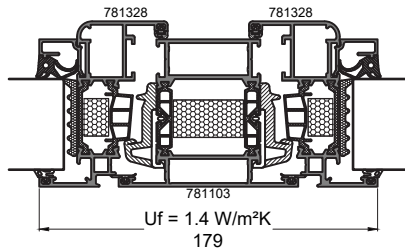
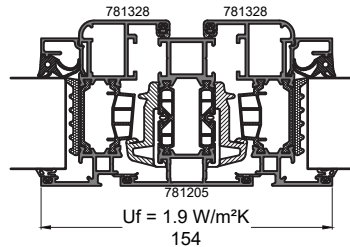
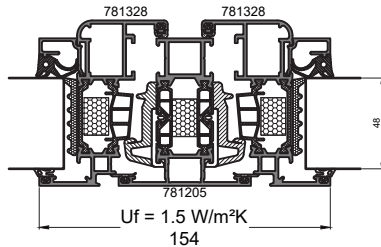
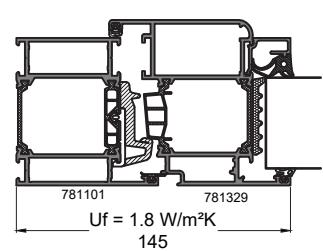
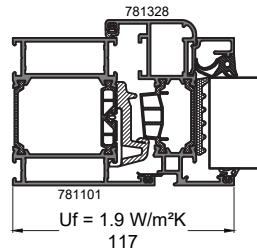
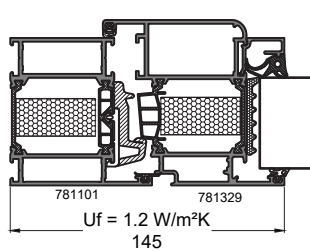
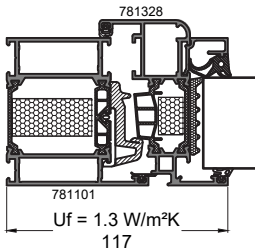
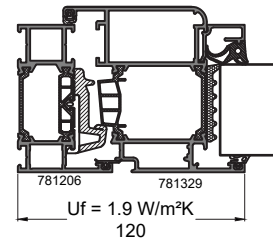
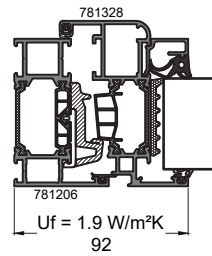
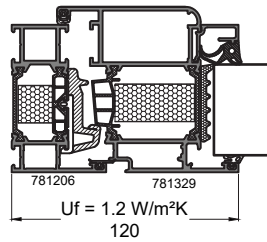
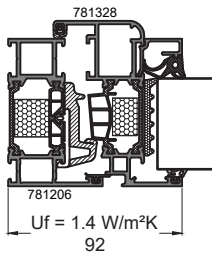
Profiili / Profile 781101
Ikkunan koko 1230x1480 / Size 1230x 1480

Eristyslasin välilista IGU spacer	Lisäkonduktanssi ψ_g Linear thermal transmittance ψ_g	Lasin U_g -arvo Glass U_g -value						W/m²K	
		0,5	0,6	0,7	0,8	0,9	1,0		
		Ikkunan U_w -arvo Window U_w -value						W/m²K	
TPS	0,038 W/mK	0,85	0,93	1,0	1,1	1,2	1,2		
RST t=0.18	0,066 W/mK	0,93	1,0	1,1	1,2	1,2	1,3		
Alumiini t=0.3	0,106 W/mK	1,0	1,1	1,2	1,3	1,3	1,4		

Tarkemmat projektikohtaiset laskennat tehtävä tarvittaessa erikseen.
Specific values according to project are declared separately.

Karmirakenteen lämmönläpäisykertoimet (U_f) ovat määritetty standardin EN ISO 10077-2:2017mukaan.
The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

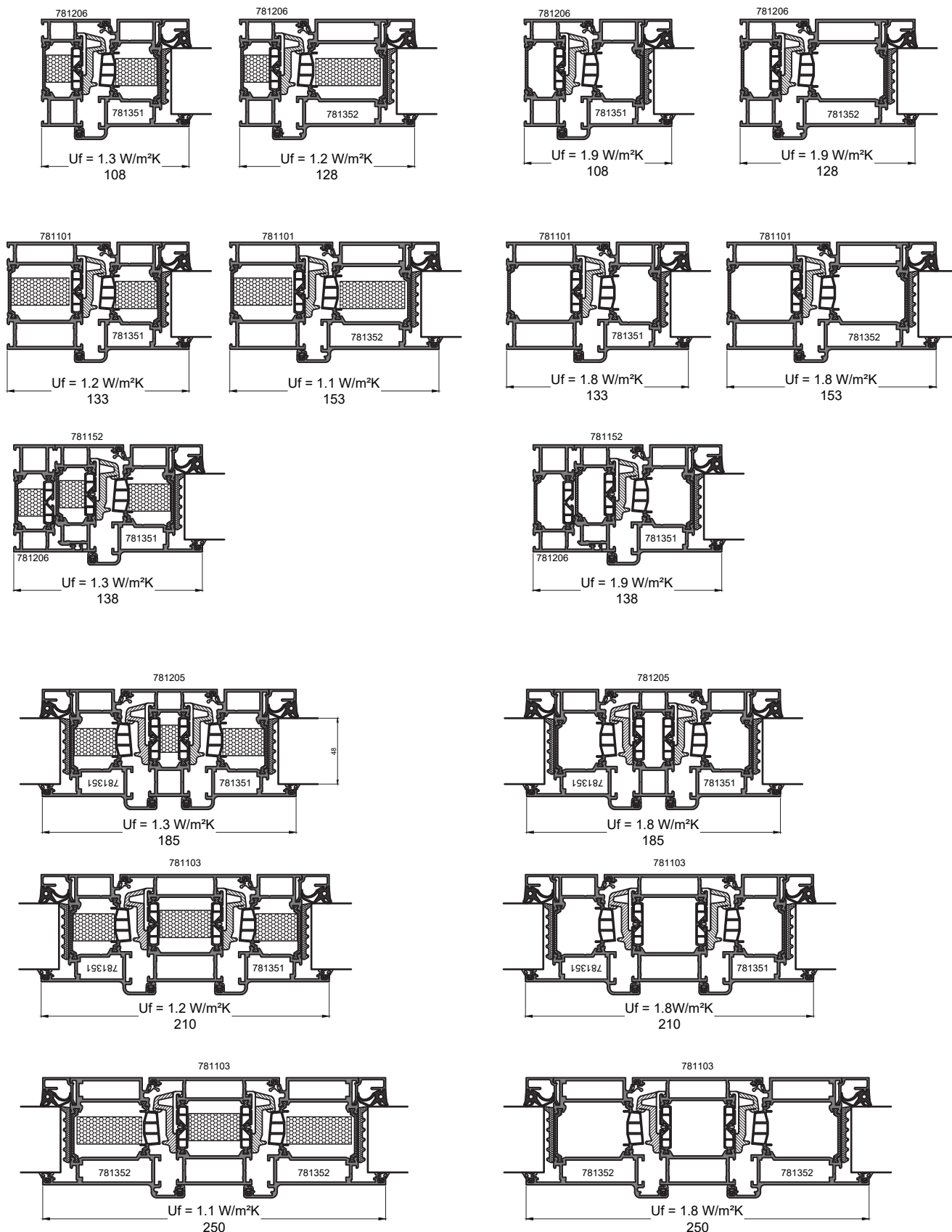
LK78X IKKUNAPROFIILEIDEN U_f -ARVOJA
LK78X WINDOW PROFILES U_f -VALUES



Karmirakenteen lämmönläpäisykertoimet U_f on määritetty standardin SFS-EN ISO 10077-2:2017 mukaan
The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

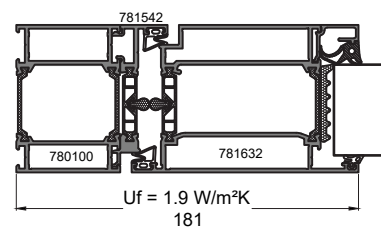
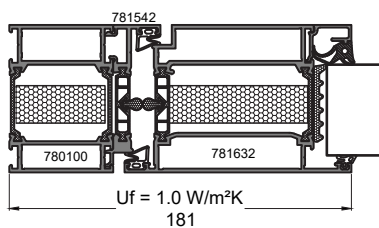
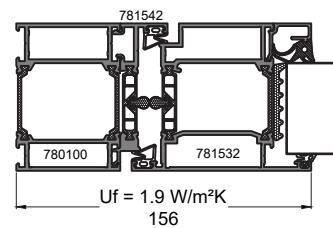
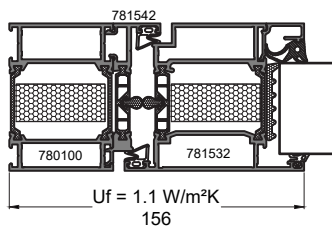
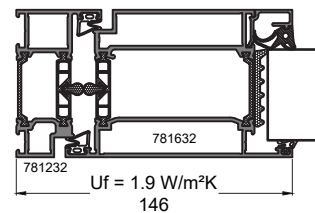
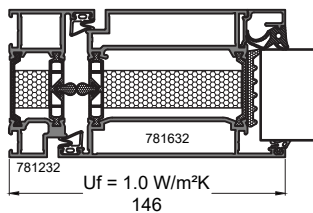
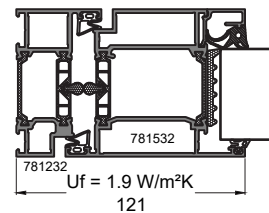
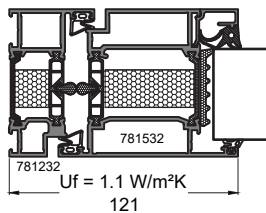
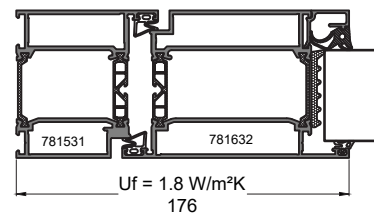
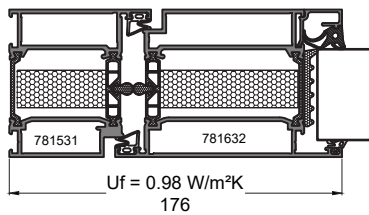
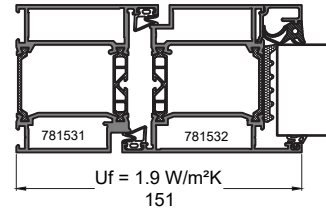
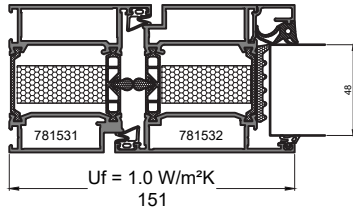
LK78X IKKUNAPROFIILEIDEN U_f -ARVOJA

LK78X WINDOW PROFILES U_f -VALUES



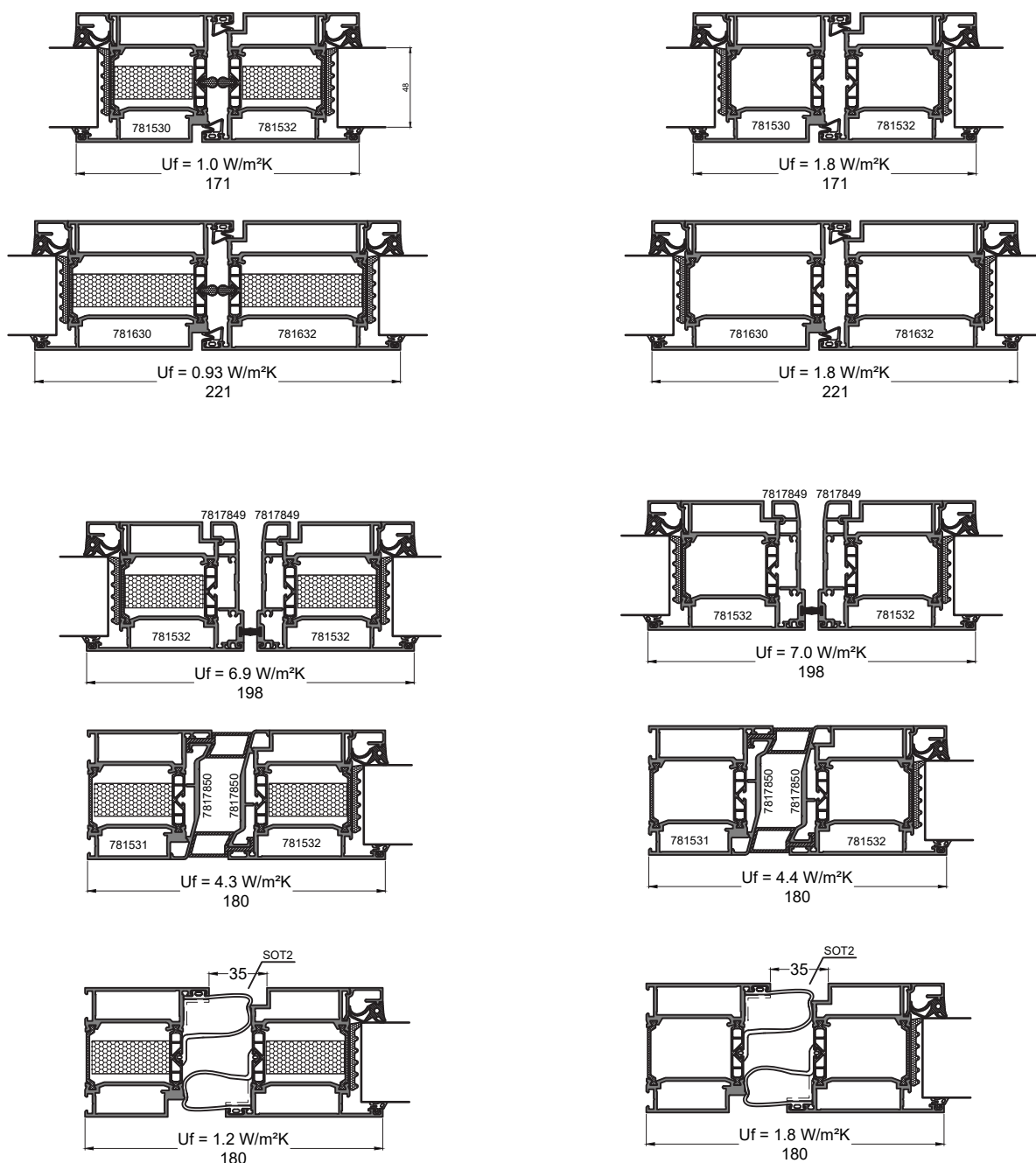
Karmirakenteen lämmönläpäisykertoimet U_f on määritetty standardin SFS-EN ISO 10077-2:2017 mukaan
The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

LK78X OVIPROFIILEIDEN U_f -ARVOJA LK78X DOOR PROFILES U_f -VALUES



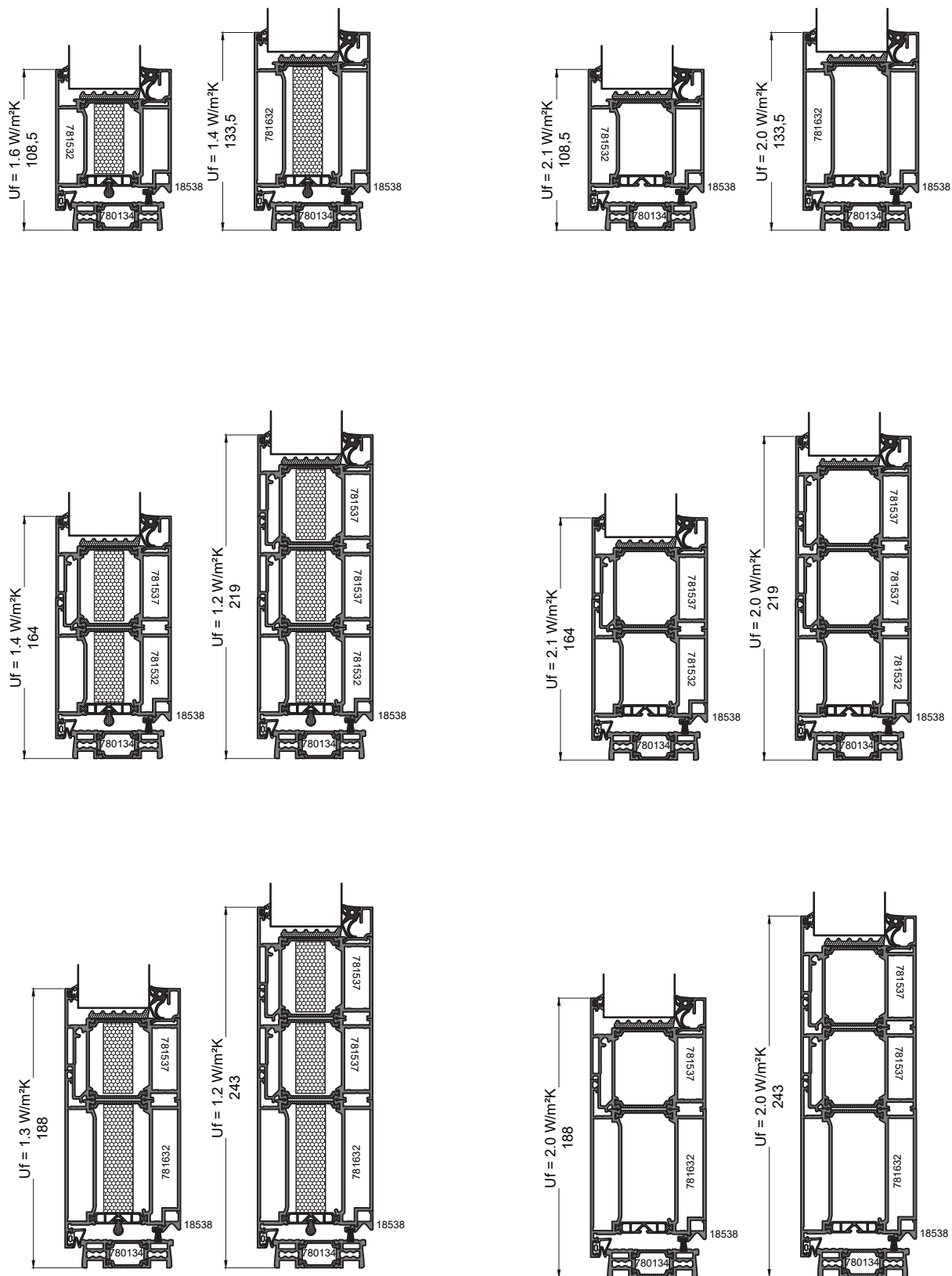
Karmirakenteen lämmönläpäisykertoimet U_f on määritetty standardin SFS-EN ISO 10077-2:2017 mukaan
The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

LK78X IKKUNAPROFIILEIDEN U_f -ARVOJA LK78X WINDOW PROFILES U_f -VALUES



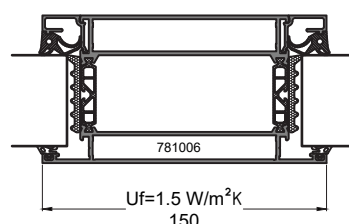
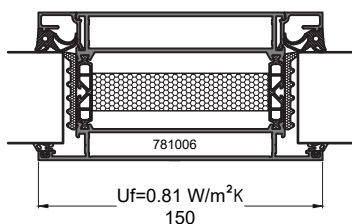
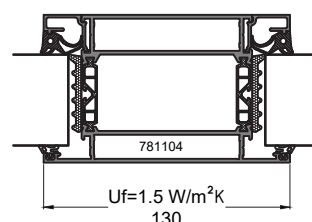
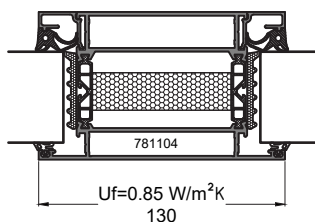
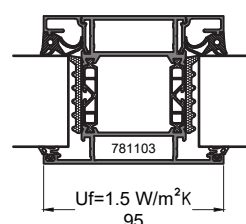
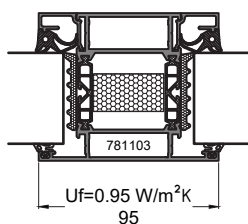
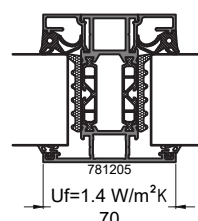
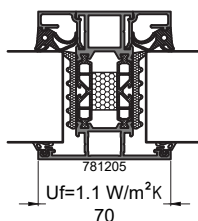
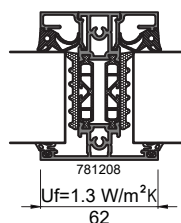
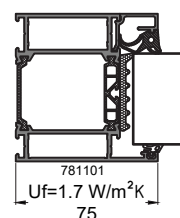
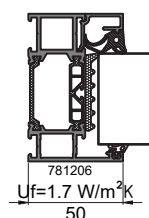
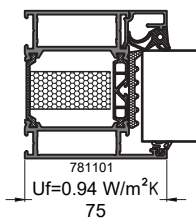
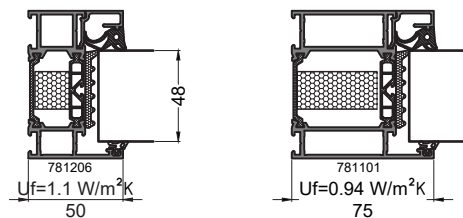
Karmirakenteen lämmönläpäisykertoimet U_f on määritetty standardin SFS-EN ISO 10077-2:2017 mukaan
The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

LK78X OVI-PROFIILEIDEN U_f -ARVOJA
LK78X DOOR PROFILES U_f -VALUES



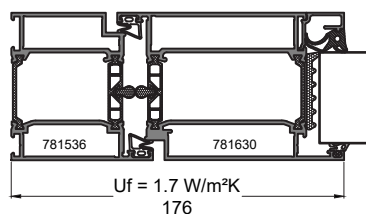
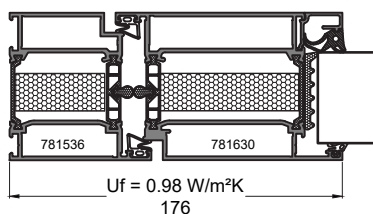
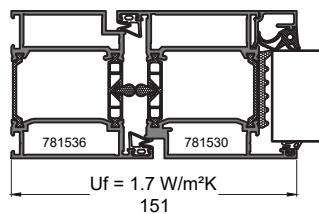
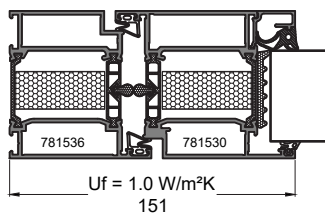
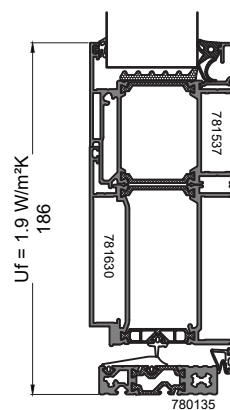
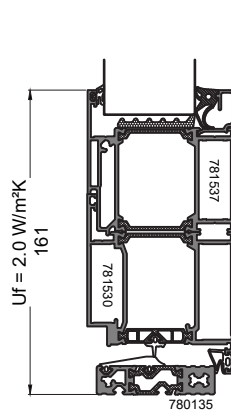
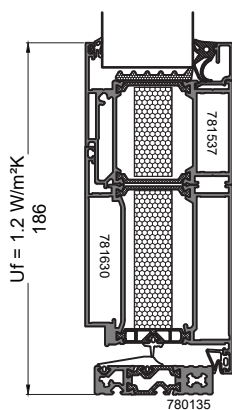
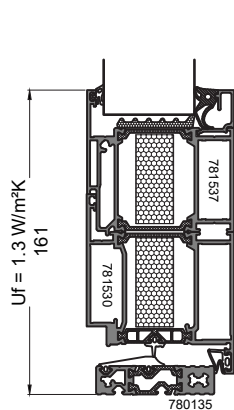
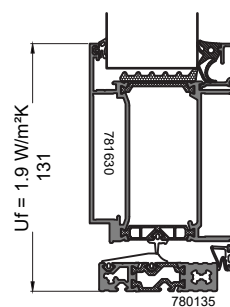
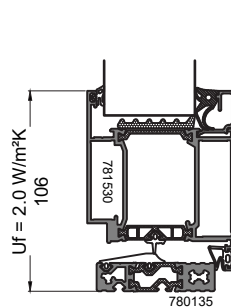
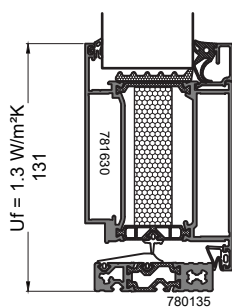
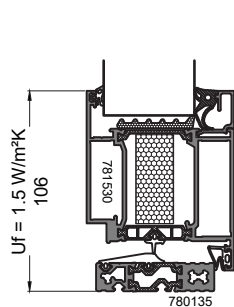
Karmirakenteen lämmönläpäisykertoimet U_f on määritetty standardin SFS-EN ISO 10077-2:2017 mukaan
The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

LK78X RUNKOPROFIILEIDEN U_f -ARVOJA LK78X FRAME PROFILES U_f -VALUES



Karmirakenteen lämmönläpäisykertoimet U_f on määritetty standardin SFS-EN ISO 10077-2:2017 mukaan
The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

LK78X OVIPROFIILEIDEN U_f -ARVOJA
LK78X DOOR PROFILES U_f -VALUES



Karmirakenteen lämmönläpäisykertoimet U_f on määritetty standardin SFS-EN ISO 10077-2:2017 mukaan
 The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

**OMINAISUUDET/ LUOKITUS SFS-EN 14351-1 +A1 MUKAISESTI
PROPERTIES/ CLASSIFICATION ACCORDANCE TO EN 14351-1 +A1**

Ominaisuus Properties	LK78X ovi LK78X door			LK78X pariovi LK78X double leaf door		
Tuulenpaineen kestävyys ¹⁾ Resistance to wind load ¹⁾ (EN 12210)	C3 (1200 Pa, ≤1/300)			C3 (1200 Pa, ≤1/300)		
Sateenpitävyys ²⁾ Watertightness ²⁾ (EN 12208)	5A (ulosauk./ Outward) 9A (sis.auk./ Inward)			6A (ulosauk./ Outward) 7A (sis.auk./ Inward)		
Äänitekniset ominaisuudet ^{2) 3) 4)} Acoustic performance ^{2) 3) 4)} (EN ISO 717-1)	R_w 41dB ⁴⁾	R_w+C 40dB ⁴⁾	R_w+C_{tr} 38dB ⁴⁾	R_w 41dB ⁴⁾	R_w+C 40dB ⁴⁾	R_w+C_{tr} 39dB ⁴⁾
Lämmönläpäisykerroin (U _D) ³⁾ Thermal transmittance (U _D) ³⁾ (EN ISO 10077-2)	≥ 0,78 W/m²K			≥ 0,80 W/m²K		
Ilmanpitävyys ²⁾ Air permeability ²⁾ (EN 12207)	4 (ulosauk./ Outward) 4 (sis.auk./ Outward)			3 (ulosauk./ Outward) 2 (sis.auk./ Inward)		
Murronkestävyys ⁵⁾ Burglar resistance ⁵⁾ (EN 1627)	RC3					

HUOM! Taulukon arvot pätevät yksilehtisille oville 990x 2090 mm ja parioville 1520x 2090 mm pl.
lämmönläpäisykerroin, jossa arvot laskettu standardikokoisille lasioville (1230x 2180 mm ja 2000x 2180 mm)

¹⁾ Elementin koko: yksilehtiset ≤ 2,1 m², pariovet ≤ 3,2 m²

²⁾ Elementin koko: yksilehtiset ≤ 3,1 m², pariovet ≤ 4,8 m²

³⁾ Projektiokohtaiset arvot määritettävä erikseen

⁴⁾ Lasi/ umpiosa, kts. LK78-tuotepassi

⁵⁾ Ei CE-merkinnän piirissä. (Ei tuotestandardin EN 14351-1 taulukossa ZA.1).

Oven koko: 880 .. 1210 x 1840 .. 2530mm, erikoisrakenne

NOTE! Values in the table apply for single leaf door 990x 2090 mm and double leaf door 1520x 2090 mm excl. thermal transmittance which is calculated for standard size door (1230x 2180 mm and 2000x 2180 mm)

¹⁾ Element size: single leaf door ≤ 2,1 m², double leaf door ≤ 3,2 m²

²⁾ Element size: single leaf door ≤ 3,1 m², double leaf door ≤ 4,8 m²

³⁾ Values according to project are declared separately

⁴⁾ Glass/ Infill panel, see LK78-Product pass

⁵⁾ Is not part of the CE marking. Does not belong in the standard EN 14351-1, table ZA.1.

Element size: 880 .. 1210 x 1840 .. 2530mm, special construction

**OMINAISUUDET/ LUOKITUS SFS-EN 14351-1 +A1 MUKAISESTI
PROPERTIES/ CLASSIFICATION ACCORDANCE TO EN 14351-1 +A1**

Ominaisuus Properties	LK78X Kiinteä ikkuna LK78X Fixed window			LK78X Sisäänaukeava ikkuna LK78X Inward opening window			LK78X Ulosaukeava ikkuna LK78X Outward opening window		
Tuulenpaineen kestävyys Resistance to wind load (EN 12210)	C5 ^{1b)} (2000 Pa)			C5 ^{1b)} (≤1/300, 2000 Pa)			C3 ^{1a)} (≤1/300, 1200 Pa)		
Sateenpitävyys Watertightness (EN 12208)	E1350 ²⁾ E1200 ^{2b)}			E1350 ²⁾ E1200 ^{2b)}			E750 ²⁾		
Äänitekniset ominaisuudet ^{2) 3) 4)} Acoustic performance ^{2) 3) 4)} (EN ISO 717-1)	R_w 44dB ⁴⁾	$R_w + C$ 43dB ⁴⁾	$R_w + C_{tr}$ 41dB ⁴⁾	R_w 40dB ⁴⁾	$R_w + C$ 39dB ⁴⁾	$R_w + C_{tr}$ 35dB ⁴⁾	R_w 41dB ⁴⁾	$R_w + C$ 39dB ⁴⁾	$R_w + C_{tr}$ 36dB ⁴⁾
Lämmönläpäisykerroin (U_w) ³⁾ Thermal transmittance (U_w) ³⁾ (EN ISO 10077-2)	≥ 0,70 W/m²K			≥ 0,84 W/m²K			≥ 0,84 W/m²K		
Ilmanpitävyys Air permeability (EN 12207)	4 ^{2b)}			4 ^{2b)}			4 ²⁾		

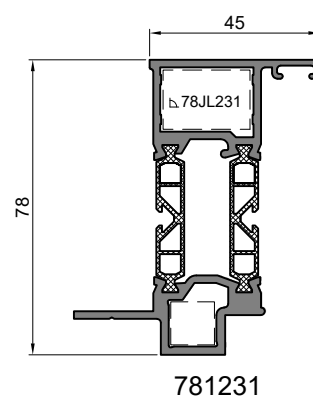
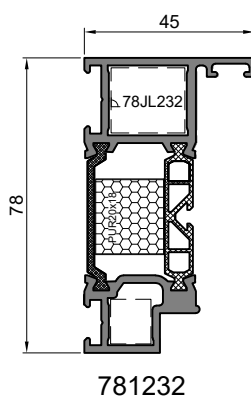
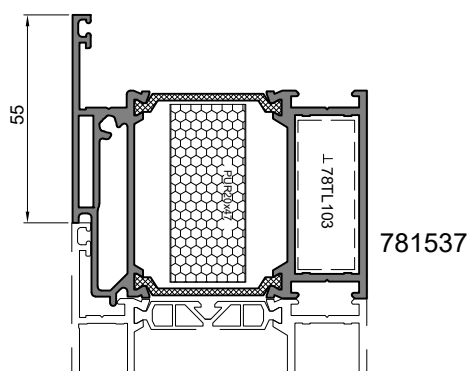
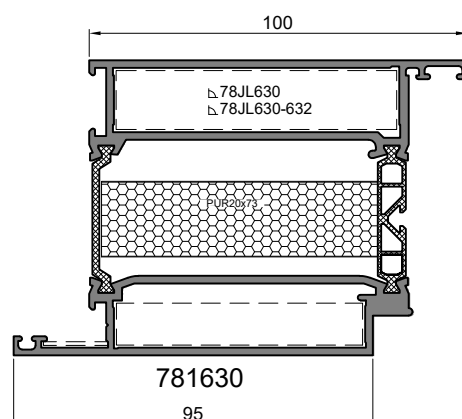
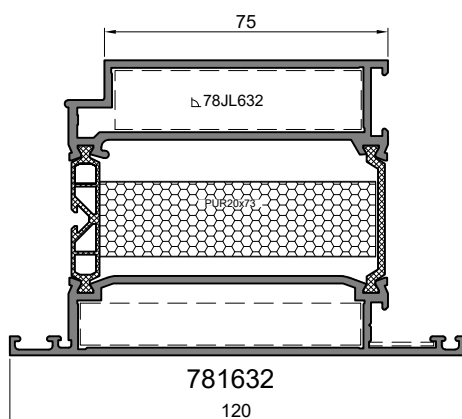
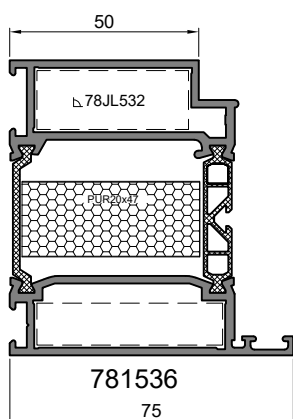
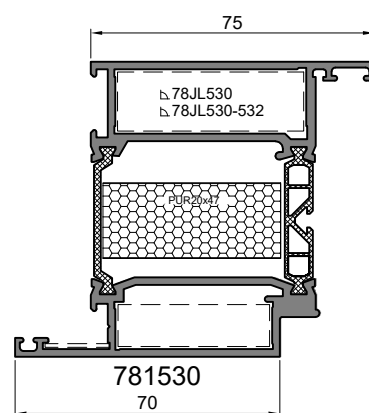
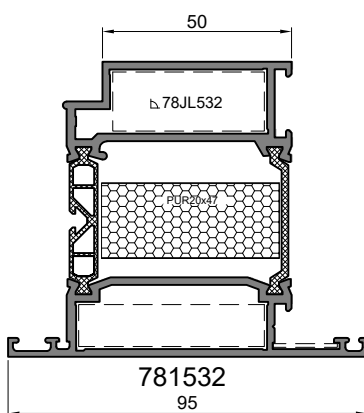
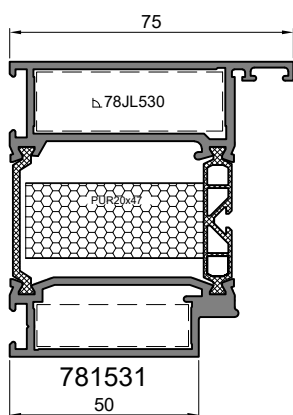
HUOM!

- ^{1a)} Elementin koko ≤ 1230x1480mm
^{1b)} Elementin koko ≤ 1720x2110mm
²⁾ Elementin koko ≤ 2,7 m²
^{2b)} Elementin koko ≤ 5,4 m²
³⁾ Projektikohtaiset arvot määritettävä erikseen
⁴⁾ Lasi/ umpiosa, kts. LK78X-tuotepassi

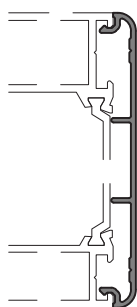
NOTE! Values in the table apply for standard size window (1230x 1480 mm)

- ^{1a)} Element size ≤ 1230x1480mm
^{1b)} Element size ≤ 1720x2110mm
²⁾ Element size ≤ 2,7 m²
^{2b)} Element size ≤ 5,4 m²
³⁾ Values according to project are declared separately
⁴⁾ Glass/ Infill panel, see LK78X-Product pass

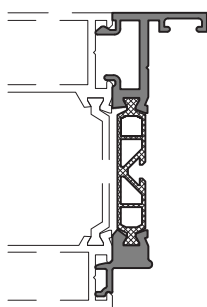
**OVI PROFILIT
DOOR PROFILES**



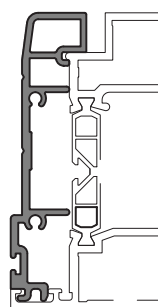
**OVI PROFILIT
DOOR PROFILES**



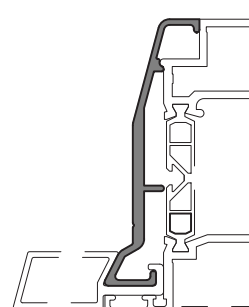
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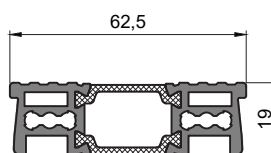
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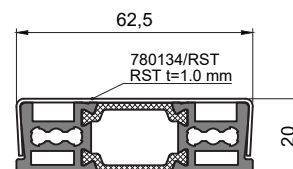
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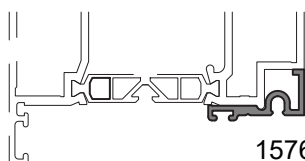
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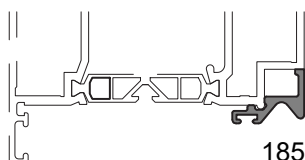
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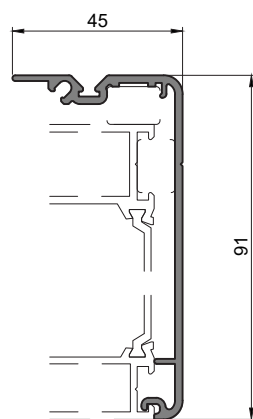
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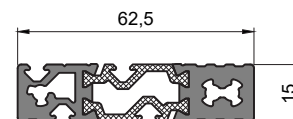
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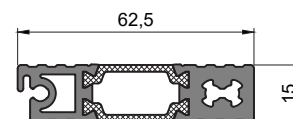
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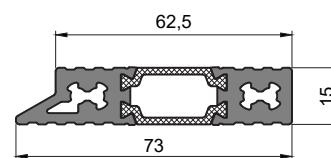
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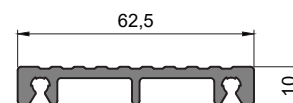
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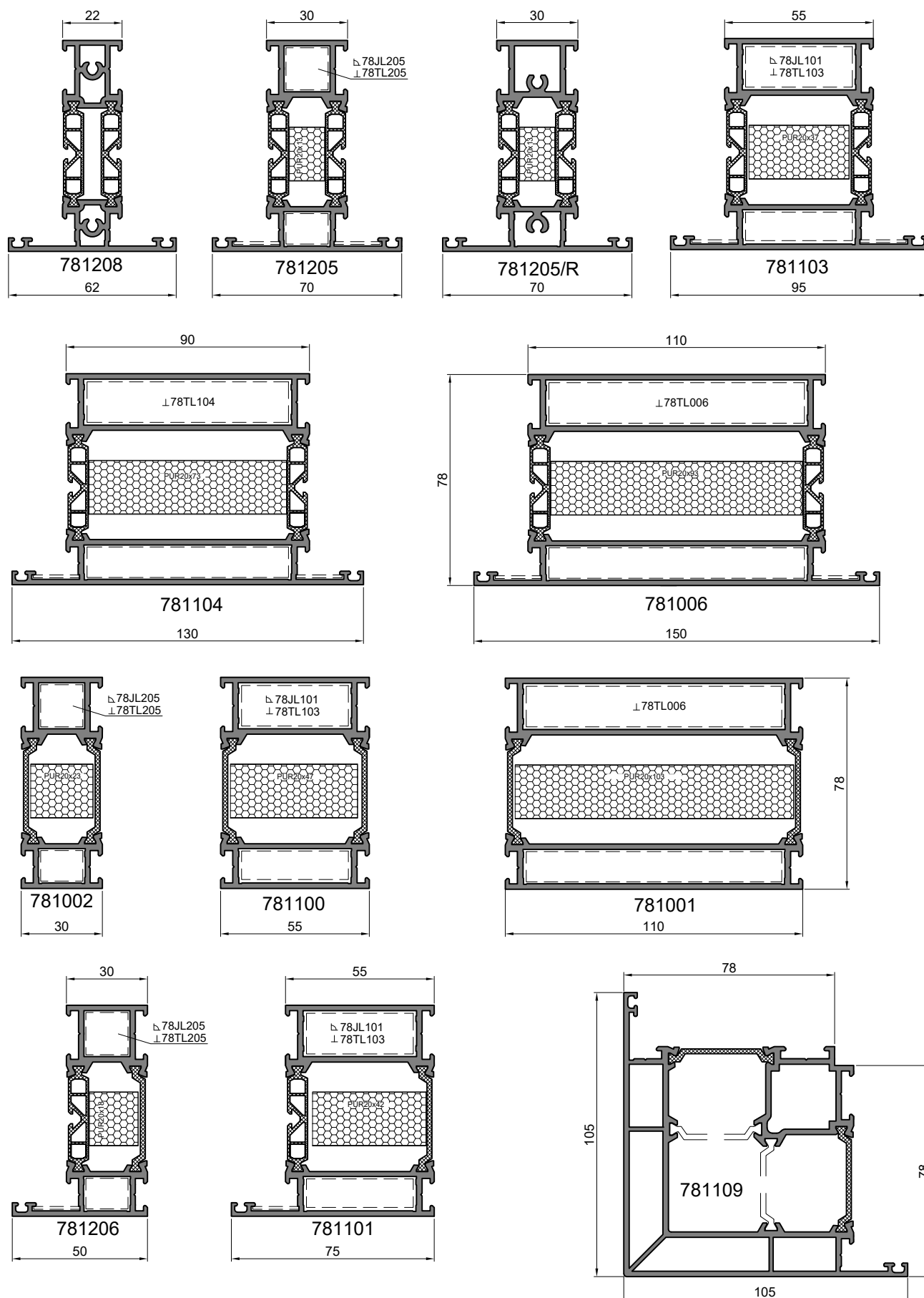


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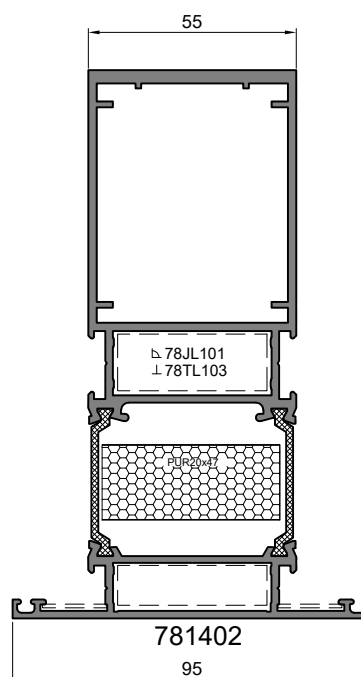
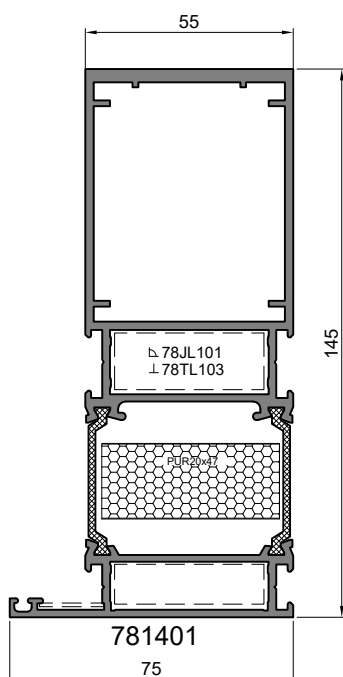
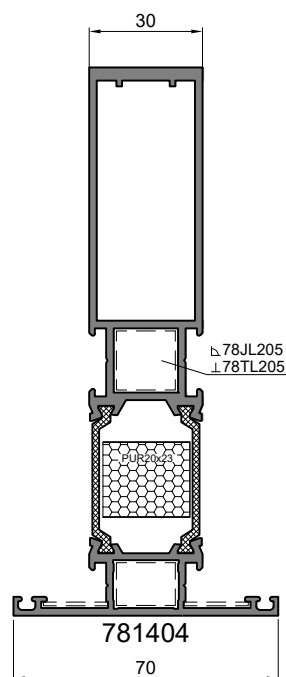
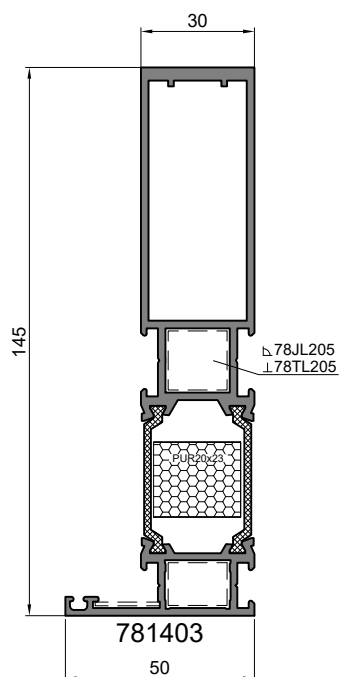


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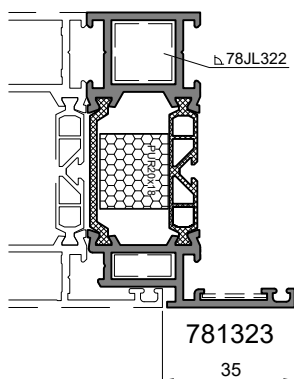
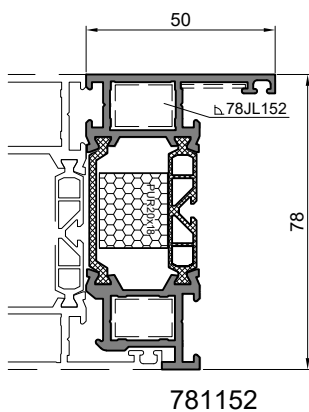
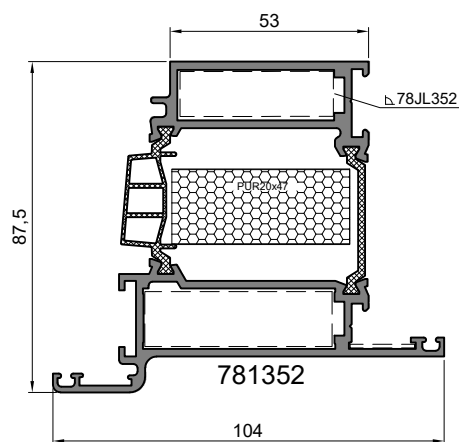
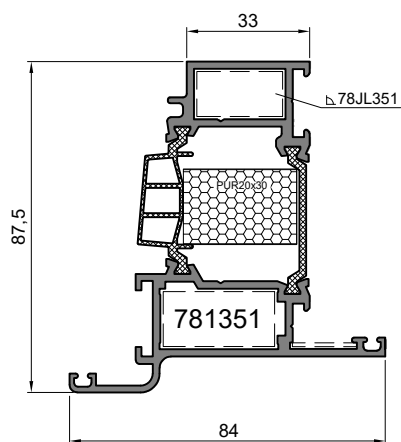
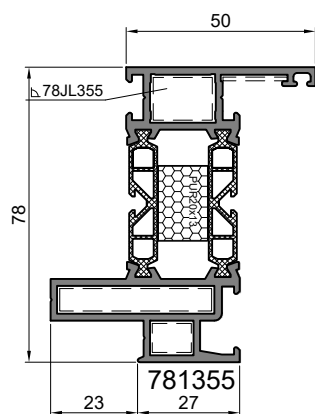
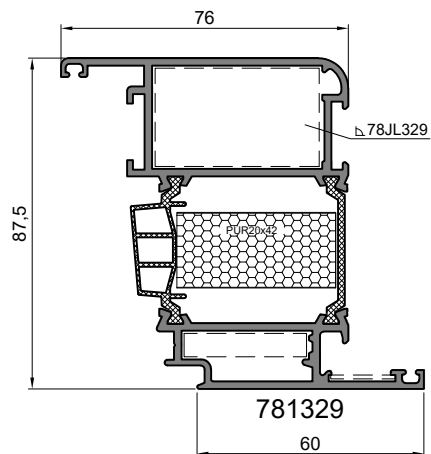
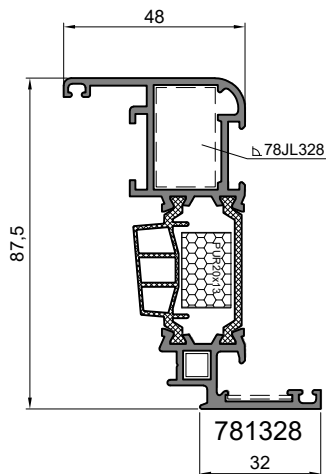
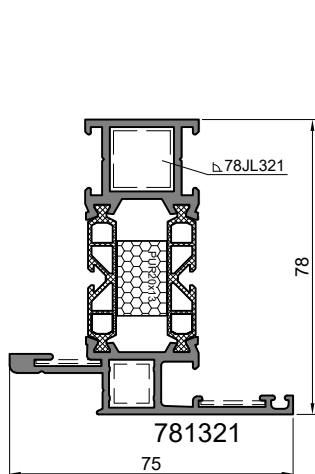
RUNKOPROFIILIT FRAME PROFILES



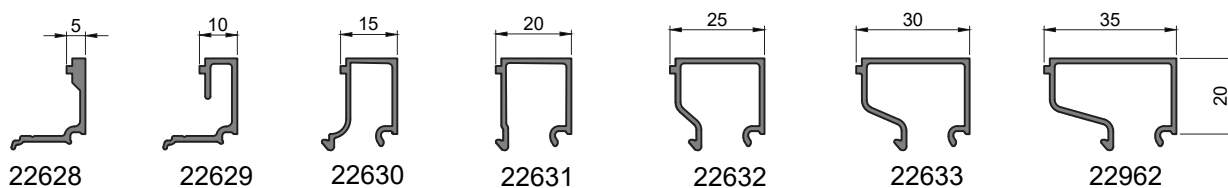
RUNKOPROFIILIT FRAME PROFILES



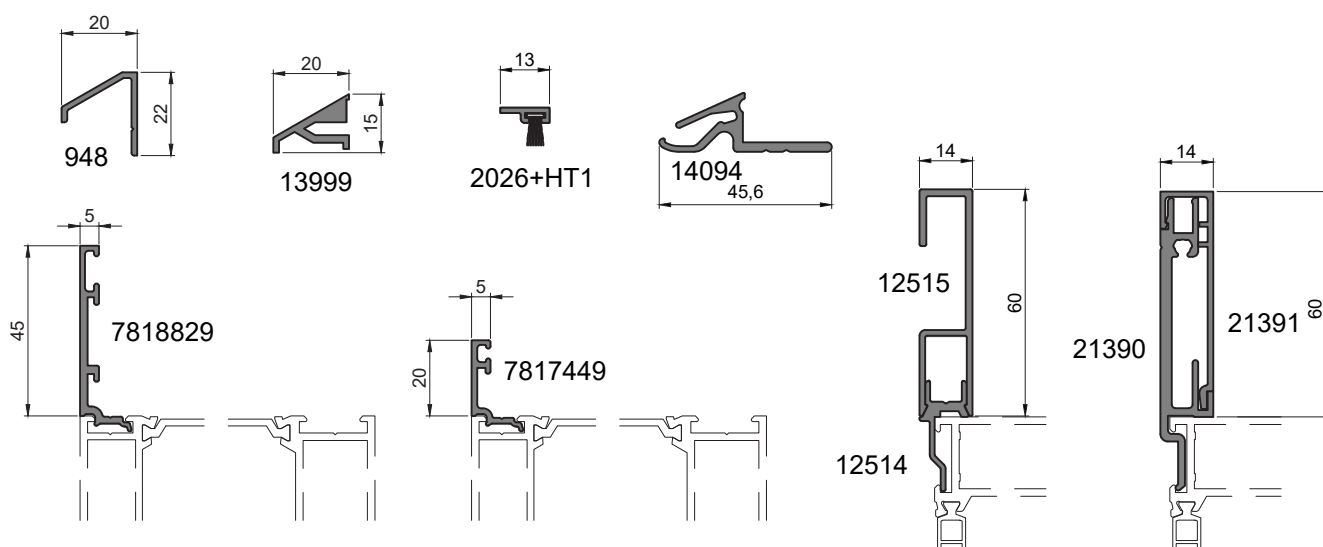
**IKKUNAPROFIILIT
WINDOW PROFILES**



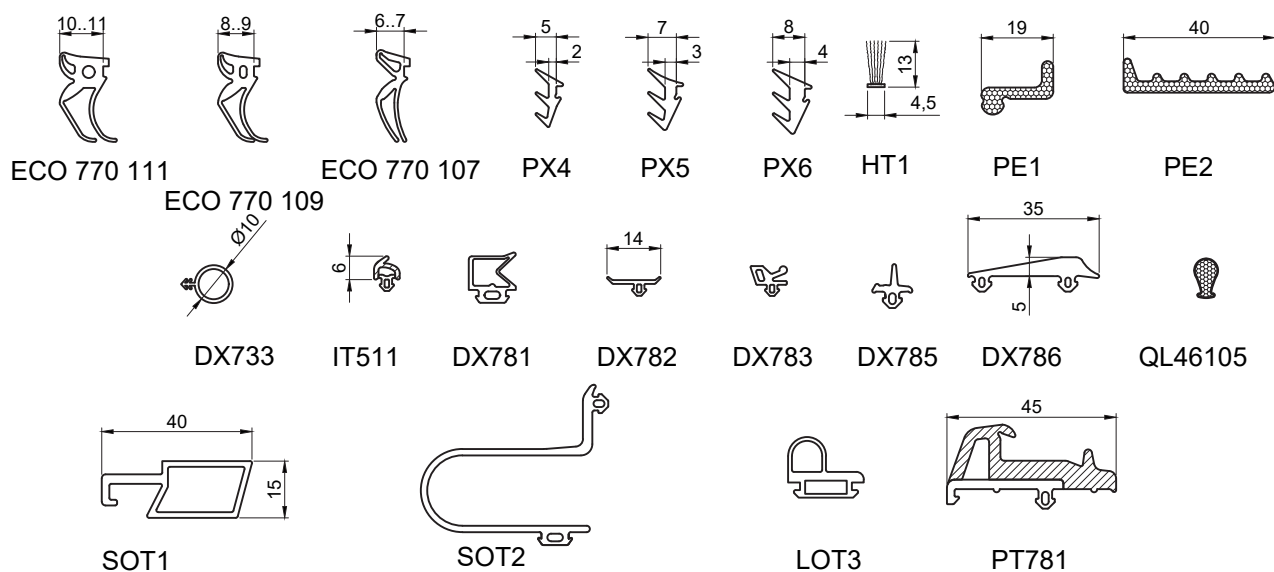
LASITUSLISTAT GLAZING BEADS



LISÄPROFIILIT ADDITIONAL PROFILES



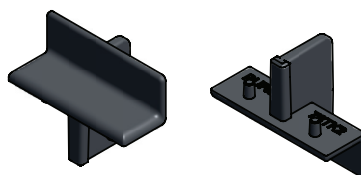
TIIVISTEET SEALINGS



TARVIKKEITA ACCESSORIES

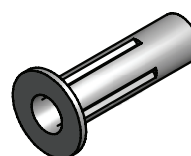
PARIOVEN TIIVISTYSKAPPALE
Symmetrinen, 4kpl/ ovi
Sealing piece for double door 4pcs/door

78TK2



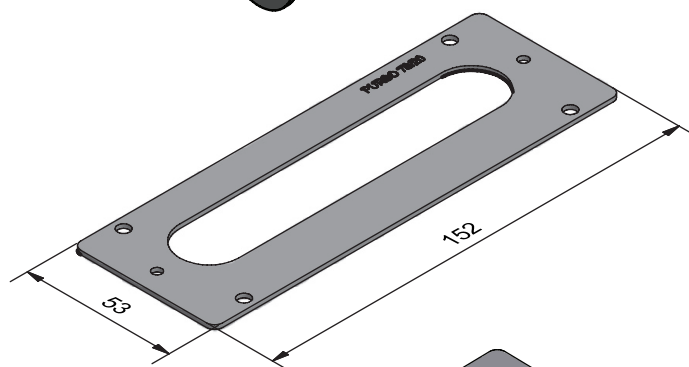
LUKON KIINNITYSNIITTI
Haarautuva sisäkierreniitti
(M5x25), 2kpl/ lukkorunko
Lock fixing clamp

78H/10



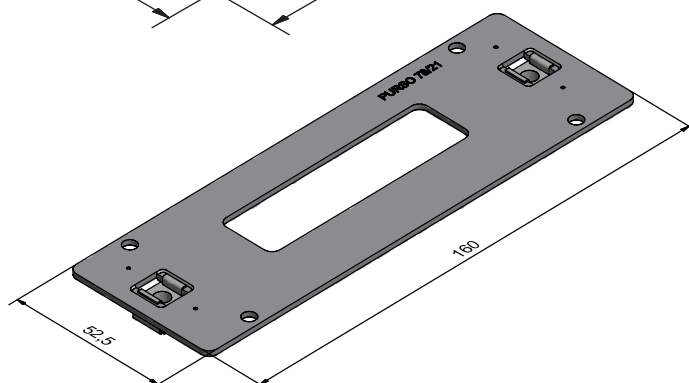
LUKON VASTALEVYN
ALUSLEVY
Base plate for lock counterplate

78/20



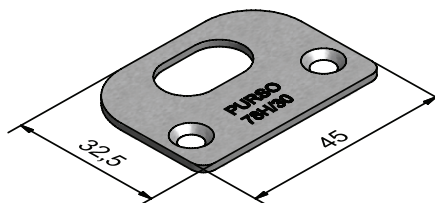
LUKON VASTALEVYN
SÄÄDETTÄVÄ ALUSLEVY
Adjustable base plate for lock
counterplate

78/21



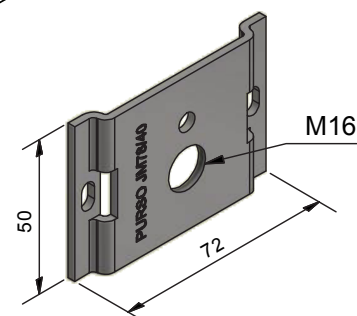
PIKASALVANHELA
Karmi ja kynnys
Fitting piece for quick latch

78H/30



KARMIN KIINNITYSLEVY
Fixing plate for frame

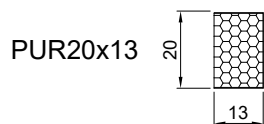
78/40



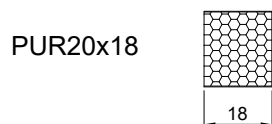
KIINNITYSHYLSY KIINNITYSLEVYYN 78/40
Frame-screws for fixing plate 78/40



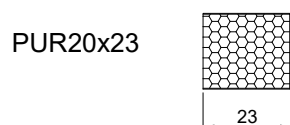
ERISTESOIROT INSULATION BLOCK



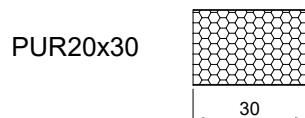
Profileille/ for profiles: 781205, 781205R,
781321, 781328, 781355



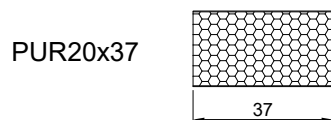
Profileille/ for profiles: 781232, 781206,
781152, 781323



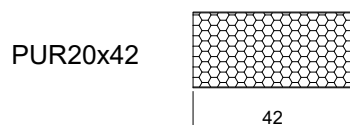
Profileille/ for profiles: 781002, 781403,
781404



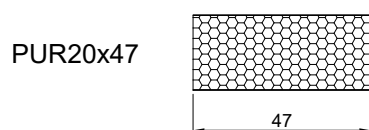
Profileille/ for profiles: 781351



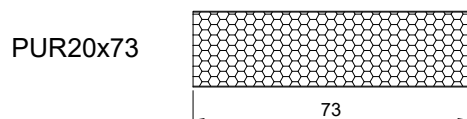
Profileille/ for profiles: 781103



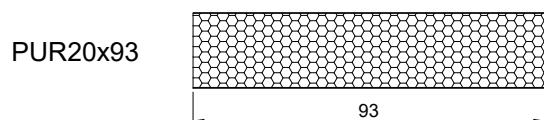
Profileille/ for profiles: 781101, 781329



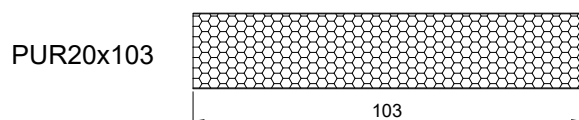
Profileille/ for profiles: 781531, 781532,
781530, 781536, 781537, 781100, 781401,
781402, 781352



Profileille/ for profiles: 781632 781630,
781104



Profileille/ for profiles: 781006



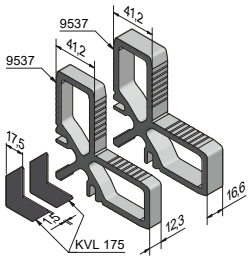
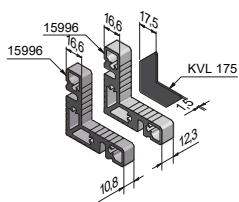
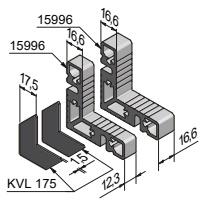
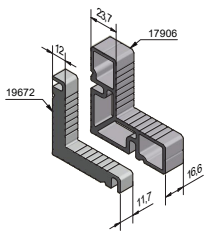
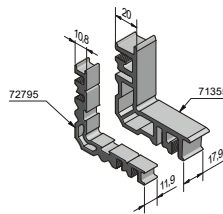
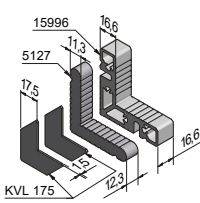
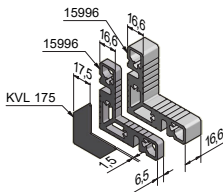
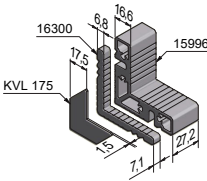
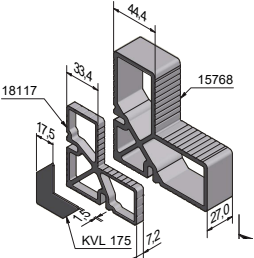
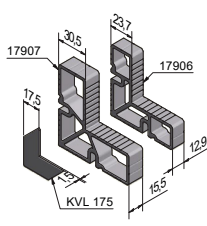
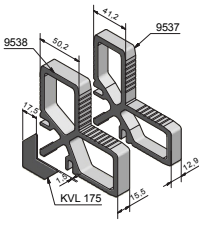
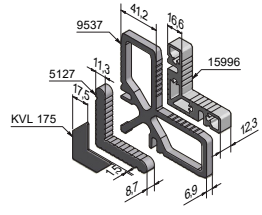
Profileille/ for profiles: 78001

L=1250, 10 kpl/pakkaus, 10 pcs/batch

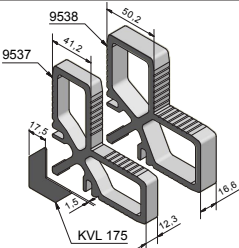
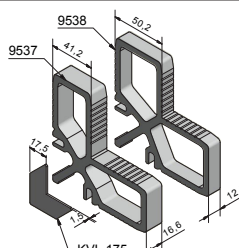
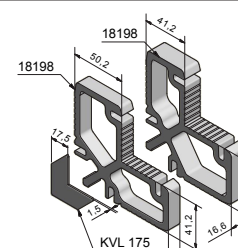
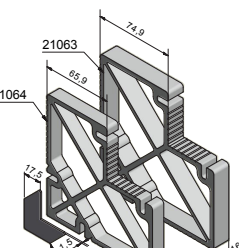
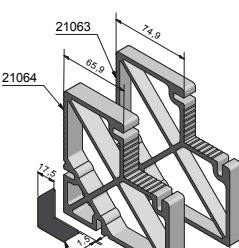
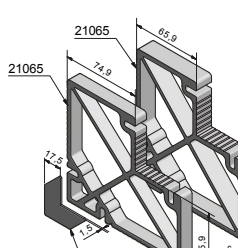
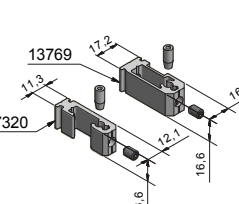
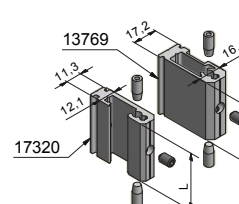
LIITOSKAPPALEET JOINING PIECES

Profili Profile	Jiiriliitoskappale Mitre joint piece	T-liitoskappale T-joint piece
781001	-	78TL006
781002	78JL205	78TL205
781006	-	78TL006
781100	78JL101	78TL103
781101	78JL101	78TL103
781103	78JL101	78TL103
781104	-	78TL104
781109	-	-
781152	78JL152	
781205	78JL205	78TL205
781205/R	-	-
781206	78JL205	78TL205
781208	-	-
781231	78JL231	-
781232	78JL232	-
781321	78JL321	-
781323	78JL322	-
781328	78JL328	-
781329	78JL329	-
781351	78JL351	-
781352	78JL352	-
781355	78JL355	-
781401	78JL101	78TL103
781402	78JL101	78TL103
781403	78JL205	78TL205
781404	78JL205	78TL205
781530	78JL530	-
781530/532	78JL530-532	-
781531	78JL530	-
781532	78JL532	-
781536	78JL532	-
781537	-	78TL103
781630	78JL630	-
781630/632	78JL630-632	-
781632	78JL632	-

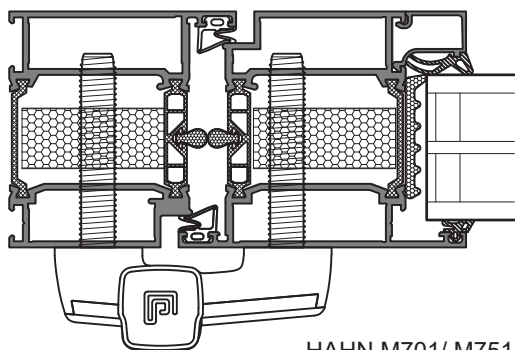
LIITOSKAPPALEET JOINING PIECES

Liitoskappale		Liitoskappale		Liitoskappale	
78JL101		78JL152		78JL205	
	Lukitus kulmapuristimella tai lukitustapein.		Lukitus kulmapuristimella tai lukitustapein.		Lukitus kulmapuristimella tai lukitustapein.
78JL231		78JL232		78JL321	
	Lukitus kulmapuristimella tai lukitustapein.		Lukitus kulmapuristimella tai lukitustapein.		Lukitus kulmapuristimella.
78JL322		78JL328		78JL329	
	Lukitus kulmapuristimella tai lukitustapein.		Lukitus kulmapuristimella.		Lukitus kulmapuristimella tai lukitustapein.
78JL351		78JL352		78JL355	
	Lukitus kulmapuristimella tai lukitustapein.		Lukitus kulmapuristimella tai lukitustapein.		Lukitus kulmapuristimella.

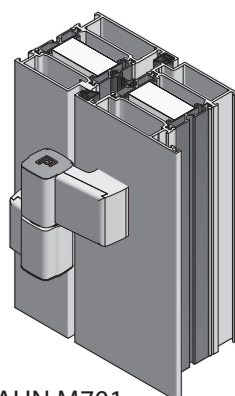
LIITOSKAPPALEET JOINING PIECES

Liitoskappale Joining piece		Liitoskappale Joining piece		Liitoskappale Joining piece	
78JL530		78JL532		78JL530- 532	
	Lukitus kulmapuristimella tai lukitustapein.		Lukitus kulmapuristimella tai lukitustapein.		Lukitus kulmapuristimella tai lukitustapein.
78JL630		78JL632		78JL630- 632	
	Lukitus kulmapuristimella tai lukitustapein.		Lukitus kulmapuristimella tai lukitustapein.		Lukitus kulmapuristimella tai lukitustapein.
78TL205		78TL103 L=41,1 78TL104 L=76,1 78TL006 L=95,6			
	Pidätinruuvit ja lukitustapit tulevat T-liitospalojen mukana		Pidätinruuvit ja lukitustapit tulevat T-liitospalojen mukana		

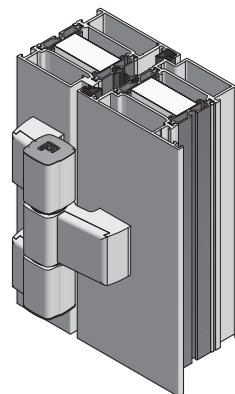
LK78X OVISARANAT
LK78X DOOR HINGES



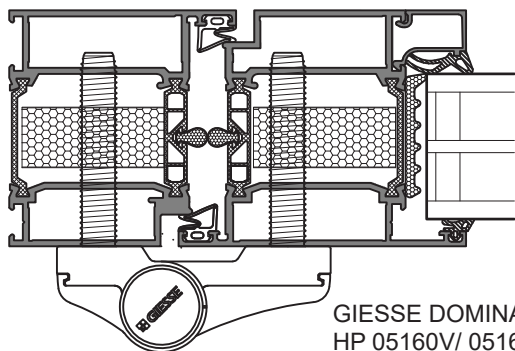
HAHN M701/ M751



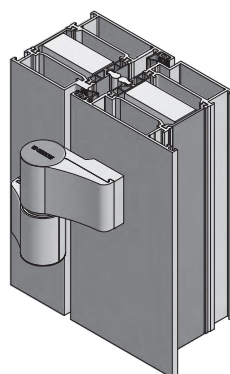
HAHN M701



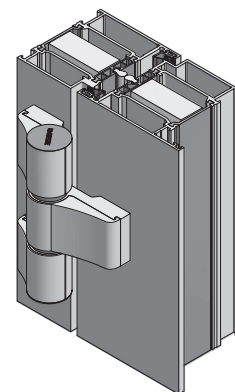
HAHN M751



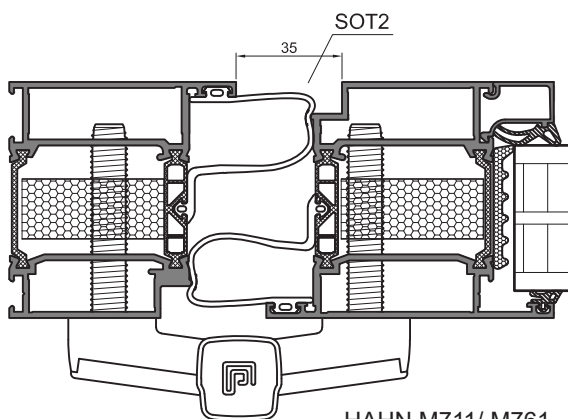
GIESSE DOMINA
HP 05160V/ 05161V



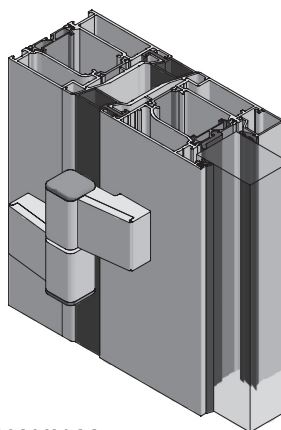
GIESSE DOMINA HP
2-leaf (05160V)



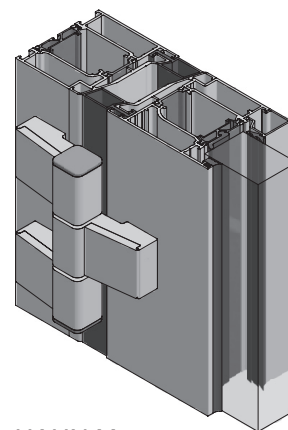
GIESSE DOMINA HP
3-leaf (05161V)



HAHN M711/ M761

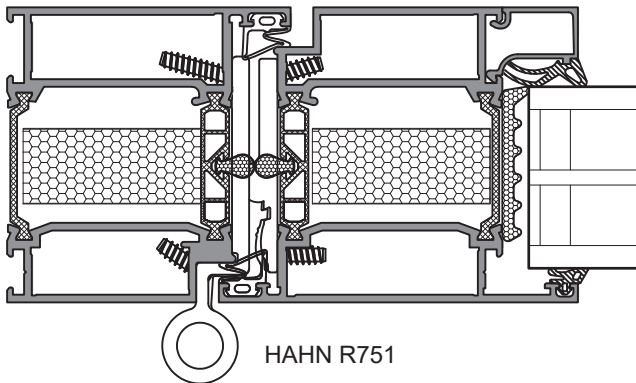


HAHN M711

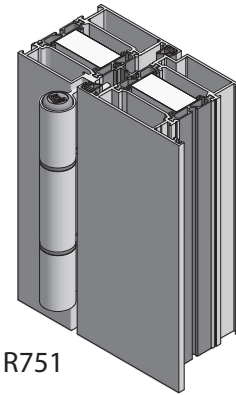


HAHN M761

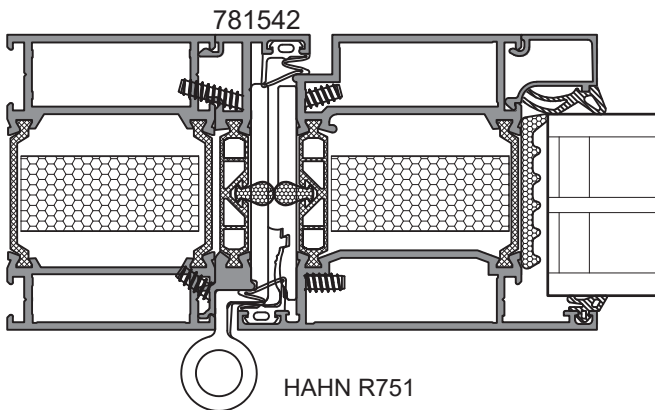
LK78X PUTKISARANA LK78X BUTT HINGES



HAHN R751

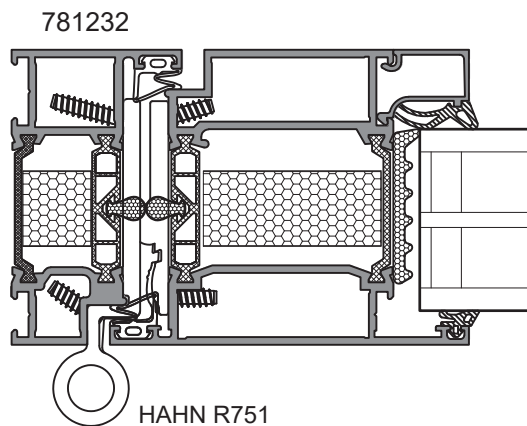


HAHN R751



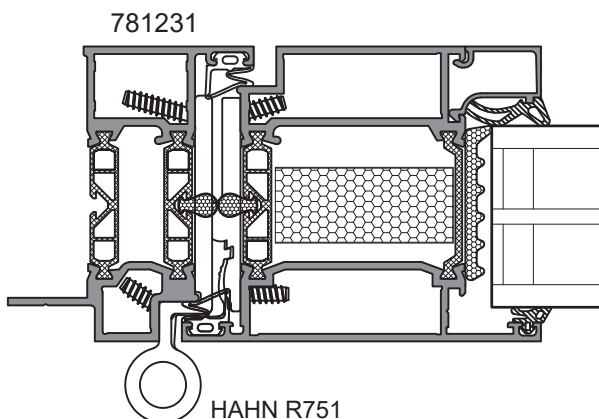
781542

HAHN R751



781232

HAHN R751



781231

HAHN R751

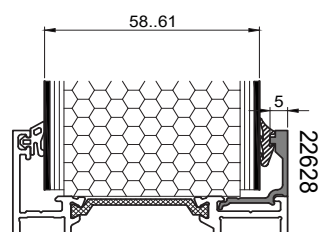
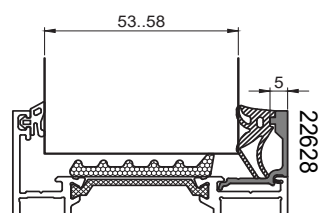
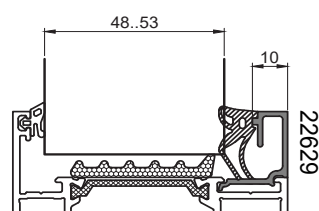
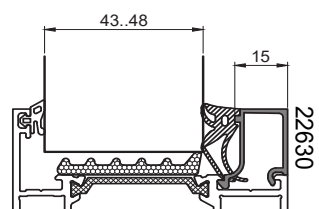
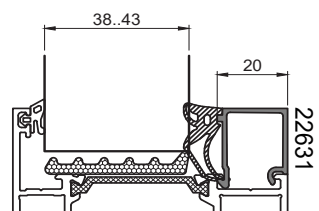
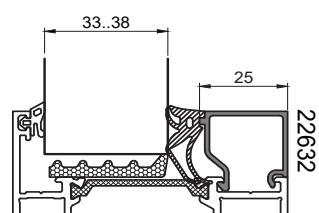
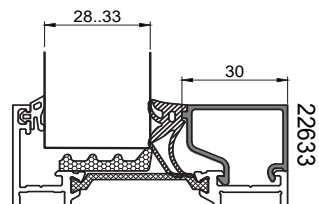
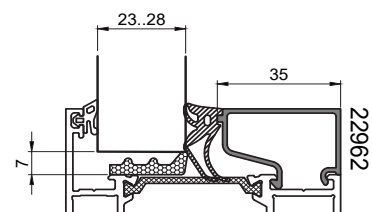
OVILEHDEN (leveys ≤ 1000, korkeus 2000...2300)
SUOSITELTAVAT MAKSIMIPAINOT (kg) ERI SARANOILLA
DOOR LEAVES (width ≤ 1000, height 2000...2300)
RECOMMENDED MAXIMUM WEIGHTS (kg) FOR HINGES

		Käyttökohde/ Application				
Tyypit/ Type	kpl/ pcs	Saranat Hinges	Omakotitalot, yms. Single-family houses etc.	Porraskäytävän ovet, yms. Staircase doors, etc	Porraskäytävän ovet, yms. (Oviautomaattikka) Staircase doors, etc (Door automation)	Koulut, sairaalat, yms. (Oviautomaattikka) Schools, hospitals, etc. (Door automation)
HAHN M701 (2-os)	2	100	—	—	—	—
	3	120	100	—	—	—
HAHN M751 (3-os)	2	120	100	—	—	—
	3	120	120	100	100	100
HAHN M901 (2-os)	2	120	—	—	—	—
	3	140	120	—	—	—
HAHN M951 (3-os)	2	120	120	—	—	—
	3	140	140	120	120	120
HAHN R751	2	120	120	—	—	—
	3	140	120	100	100	100
Giesse DOMINA HP (2-os)	2	120	—	—	—	—
	3	140	120	—	—	—
Giesse DOMINA HP (3-os)	2	120	120	—	—	—
	3	140	140	120	120	120

LASITUSLISTOJEN JA TIIVISTEIDEN VALINTA SELECTING GLAZING BEADS AND SEALINGS

Lasin paksuus Glazing thickness	Lasituslista Glazing bead	Ulkopuolen tiiviste Outer gasket	Sisäpuolen tiiviste Inner gasket
23	22962	DX783	770 111
24	22962	DX783	770 111
25	22962	DX783	770 109
26	22962	DX783	770 109
27	22962	DX783	770 107
28	22962	DX783	770 107
28	22633	DX783	770 111
29	22633	DX783	770 111
30	22633	DX783	770 109
31	22633	DX783	770 109
32	22633	DX783	770 107
33	22633	DX783	770 107
33	22632	DX783	770 111
34	22632	DX783	770 111
35	22632	DX783	770 109
36	22632	DX783	770 109
37	22632	DX783	770 107
38	22632	DX783	770 107
38	22631	DX783	770 111
39	22631	DX783	770 111
40	22631	DX783	770 109
41	22631	DX783	770 109
42	22631	DX783	770 107
43	22631	DX783	770 107
43	22630	DX783	770 111
44	22630	DX783	770 111
45	22630	DX783	770 109
46	22630	DX783	770 109
47	22630	DX783	770 107
48	22630	DX783	770 107
48	22629	DX783	770 111
49	22629	DX783	770 111
50	22629	DX783	770 109
51	22629	DX783	770 109
52	22629	DX783	770 107
53	22629	DX783	770 107
53	22628	DX783	770 111
54	22628	DX783	770 111
55	22628	DX783	770 109
56	22628	DX783	770 109
57	22628	DX783	770 107
58	22628	DX783	770 107

Umpiosan paksuus Panel thickness	Lasituslista Glazing bead	Ulkopuolen tiiviste Outer gasket	Sisäpuolen tiiviste Inner gasket
58	22628	DX783	PX5
59	22628	DX783	PX4
60	22628	DX783	PX4



LASITUSOHJE

Ennen lasittamista varmistetaan, että lasikyntteet, lasilistat ja lasit ovat puhtaat ja kuivat.

Tiivisteiden katkaisussa on huomioitava kutistumisvara, joka on on n. 5 mm metriä kohden. Tiivisteiden nurkka- ja jatkokohdat liimataan ja tiivistetään massalla. Toimittamiemme tiivisteiden materiaali on EPDM-kumia. Kyseiset tiivisteet kestävät erittäin hyvin lämpötilojen vaihtelua, lämpöä ja vanhenemista.

Tiivisteiden asennus suoritetaan seuraavasti:

Ulkopuolen lasitustiiviste sovitetaan profili uraan. Lasin asennuksen jälkeen asennetaan kyntetilan tiiviste PE2. Lasituslistojen asennuksen jälkeen sovitetaan sisäpuolen jälkiasennustiiviste paikoilleen. Jälkiasennustiivisteiden asennusta voidaan helpottaa käyttöön soveltuvalla liukastusaineella.

Kiilaus

Kiilauksen tehtävänä on tukea, keskittää ja kantaa lasi tai umpiolasi puitteessa tai karmissa tarkoitetulla tavalla ja varmistaa ikkunan tai oven pysyminen oikeassa muodossa.

Kiilatyypit:

- kannatuskiilat, jotka siirtävät lasiruudun painon runkoon
- tukikiilat, jotka varmistavat lasiruudun paikallaan pysymisen
- kuljetuskiilat, jotka pitävät lasiruudun oikealla paikalla ikkunaelementissä kuljetuksen aikana.

Kannatuskiilat valmistetaan säätä ja lämpötilan vaihteluja kestävästä muovista, jonka kovuus on 60°-80° Shore A tai muusta vastaavasta materiaalista. Kannatuskiilojen pituus on vähintään 80 mm ja leveys valitaan siten, että kiilat kantavat ja tukevat umpiolasia koko sen paksuudelta. Kannatuskiilojen paksuus on vähintään 5 mm.

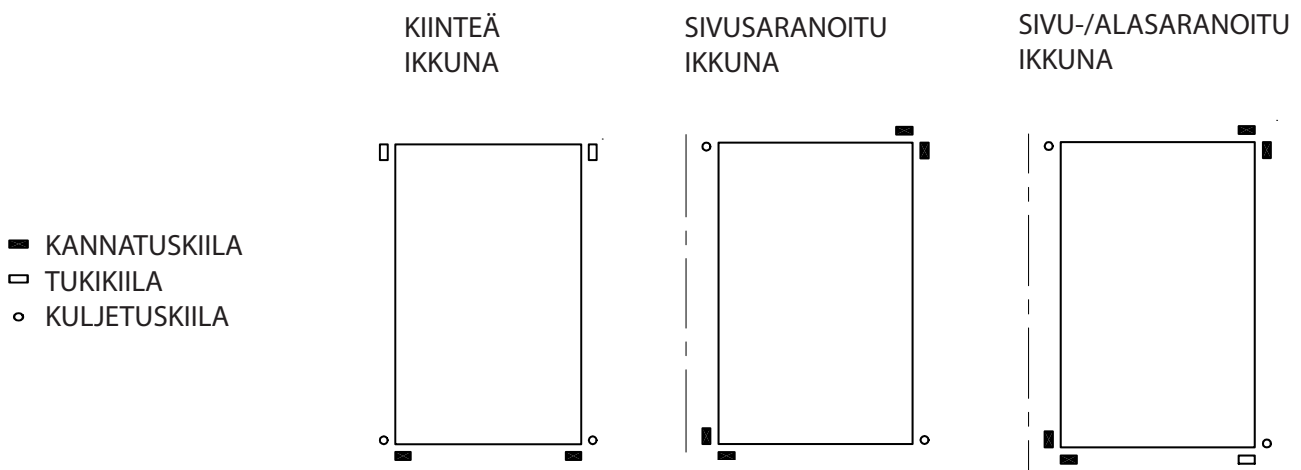
Tuki- ja kuljetuskiilat tulee olla paksuudeltaan joustavia ja ne eivät saa haitata kannatuskiilojen toimintaa. Tukikiilat estävät lasiruudun liikkumisen käytössä. Tuki- ja kuljetuskiilojen pituus on vähintään 50 mm ja leveys sama kuin kannatuskiiloilla.

Kiilojen asennus

Kannatus-, tuki- ja kuljetuskiilojen sijainti on esitetty alla olevissa kuvissa. Kiilat sijoitetaan 50-100 mm:n etäisyydelle umpiolasin nurkista. Tehdaslasituksessa kannatuskiilojen paikat merkitään selvästi karmiin.

Lasituksessa on huomioitava standardin *"SFS-EN 12488 Rakennuslasit. Lasitusuositukset. Lasin asennusohjeet pystysuoriin ja kalteviin rakenteisiin"* ohjeet.

KIILOJEN SIJOITUS



GLAZING INSTRUCTIONS

Before commencing glazing, it must be ensured that glass rebates, glazing beads and glass panes are clean and dry.

Glazing with profile sealing strip

An allowance for shrinkage (ca. 5 mm/m) must be made when cutting lengths of profile sealing strips. Joint are to be glued and sealed with sealing compound. The material of the sealing we provide is EPDM rubber. These profile strips are highly resistant to temperature changes, heat and ageing.

Installation of strips is as follows:

Exterior glazing strips are fitted into the profile groove.

When the glass pane and glazing beads have been installed, retrofit strip is fitted.

A silicone spray or equivalent may be used to facilitate the installation of the retrofit strip.

Padding

Padding is intended to support, centre and bear the glass pane or sealed glazing unit in the casement or frame as designed, and to ensure the permanence of the shape of a window or door.

Pad types:

- bearing pads that transmit the weight on the pane to the frame
- lock pads that hold the pane in place
- transport pads that ensure that the glass pane remains on place in the window element during transport.

Bearing pads are made of plastic (60° to 80° Shore A hardness) or equivalent which is resistant to weather and changes in temperature. The pads min. 80 mm length and of an appropriate width to support the sealed glazing unit across its entire thickness. Bearing pads are to be at least 5 mm thick.

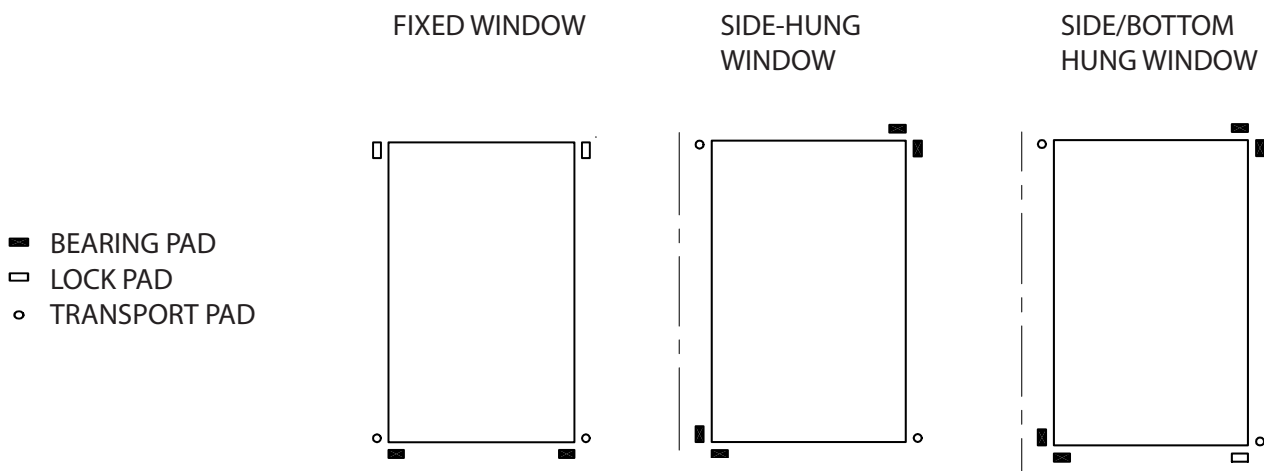
Lock and transport pads are to be of appropriate thickness and must not obstruct functioning of bearing pads. The lock pads prevent the glass pane from moving in use. Lock and transport pads are at least 50 mm long and as wide as bearing pads.

Installation of pads

Positioning of bearing, lock and transport pads is shown in illustration. The pads are placed at a distance of 50 to 100 mm from the corners of sealed glazing units. In factory-glazing the positions of bearing pads are marked clearly on the frame.

The glazing must follow the instructions of standard "EN 12488 Glass in building. Glazing recommendations. Assembly principles for vertical and sloping glazing"

PAD POSITIONING



TEKNISIÄ TIETOJA

Profililit

- alumiiniseos yleensä EN-AW 6063 T5
 - $R_{p0,2} \min = 130 \text{ N/mm}^2$
 - $R_m \min = 175 \text{ N/mm}^2$
 - $E = 70000 \text{ N/mm}^2$
- alumiinirakenteiden suunnittelussa on huomioitava lämpötilan muutoksista aiheutuvat siirtymät
- alumiinin lämpölaajenemiskerroin on $24 \times 10^{-6}/\text{K}$
- profilien muototoleranssit EN 755-9 tai EN 12020-2 mukaan
- seos soveltuu erinomaisesti anodisoitavaksi
- toimituspituus on normaalisti 6,6 m, muut mitat erikoistilauksesta
- lämpökatkon materiaali on polyamidi, joka kestää anodisoinnin ja maalauksen

Profilien pintakäsittely

Anodisointi

Anodisointi on sähkökemiallinen menetelmä, jolla kasvatetaan alumiinin luonnollisen oksidikerroksen paksuutta. Anodisointi muodostaa kovan, mekaanista kulutusta kestävä pinnan, jolla on erinomainen säänkesto.

Jauhemaalaus

Jauhemaalauksessa profiilin pintaan ruiskutetaan pulveri, joka sulatetaan uunissa kestäväksi ja tasaiseksi pinnaksi. Ennen maalausta profileille tehdään esikäsittely, jolla varmistetaan maalin pysyvyys. Normaalisti käytetään RAL-värikartan sävyjä, mutta muutkin sävyt ovat mahdollisia.

Tiivisteet

Materiaali: EPDM-kumi

Väri: musta

TECHNICAL INFORMATION

Profiles

- Aluminium alloy usually EN-AW 6063 T5
 - $R_{p0,2} \min = 130 \text{ N/mm}^2$
 - $R_m \min = 175 \text{ N/mm}^2$
 - $E = 70000 \text{ N/mm}^2$
- Thermal transitions caused by changes in temperature must be taken into account in the design
- Thermal expansion coefficient of aluminium is $24 \times 10^{-6}/\text{K}$
- Shape tolerances of profiles according to EN 755-9 or EN 12020-2
- Alloy is well suited for anodizing
- Delivery length of profiles normally 6,6 m, other lengths available on request
- Material of thermal breaks is polyamide which endures anodizing and powder coating

Surface treatment

Anodizing

Anodizing is an electrochemical method for increasing the thickness of the natural oxide layer of aluminium. Anodizing forms a hard, mechanical wear-resistant surface with excellent weather resistance.

Powder Coating

In powder coating the powder is injected into the surface of the profiles, which then is melted in a furnace into a durable and smooth surface. Before painting, the profiles are pre-processed, in order to ensure the endurance of the coating. Normally profiles are painted with RAL color shades, but other colors are also possible.

Gaskets

Material: EPDM-rubber

Colour: black



Valmistus, myynti ja tekninen neuvonta

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