PURSO®

Lämpöeristetty ovi- ja ikkunasarja

Highly insulated doors and windows

LK78X

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
- Profiilien pintakäsittelynä on yleensä anodisointi tai jauhemaalaus.
- Runkoprofiilien 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 profiilimuotoja nopeasti ja edullisin kustannuksin.
- Vähäinen huollon tarve eliniän aikana. Täysin kierrätettävissä
- Toimii kaikissa sääolosuhteissa
- CE-merkittävissä SFS-EN 14351-1 +A1 mukaan
- Mahdollisuus murtosuojaluokkaan 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 maintanance required. Completely recyclable.
- High resistance to any weather conditions
- CE- marking according to EN 14351-1 +A1
- Burglar resistance class upp to RC3 according to 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 quarantees the function of the applications described in this catalogue. Other applications are quaranteed only by separate agreement. Purso Oy does not take responsibility for control of the installations.

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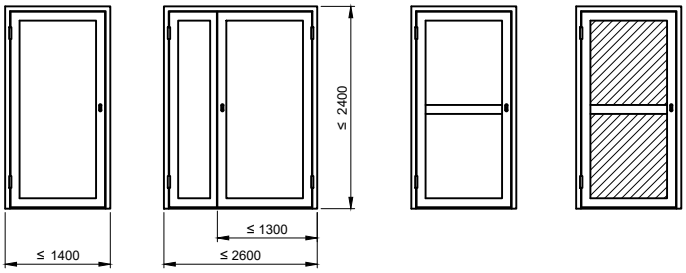
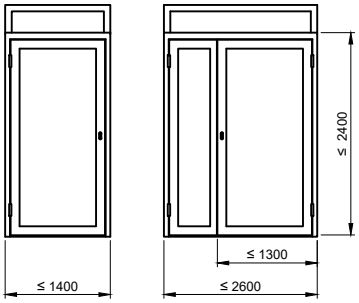
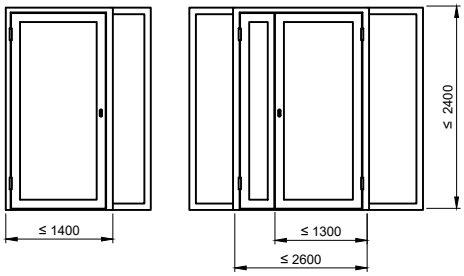
2.1, 2.2 YKSI- JA KAKSILEHTINEN OVI ULOS- TAI SISÄÄNAUKEAVANA
2.1, 2.2 DOOR OUTWARD AND INWARD OPENING



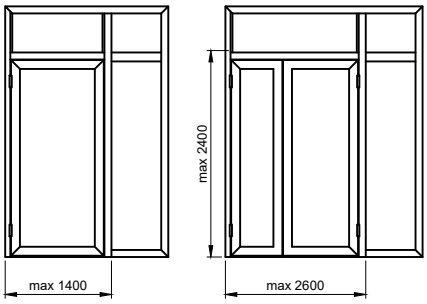
2.3 OVI YLÄPIELELLÄ
2.3 DOOR WITH FANLIGHT



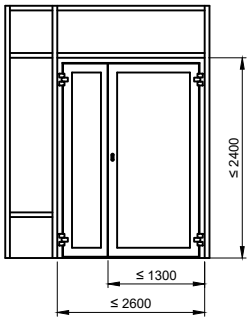
2.4 OVI SIVUPIELELLÄ
2.4 DOOR WITH SIDE WINDOW



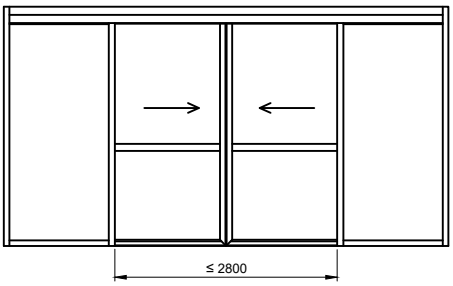
2.5 OVI YLÄ- JA SIVUPIELELLÄ
2.5 DOOR WITH SIDE AND



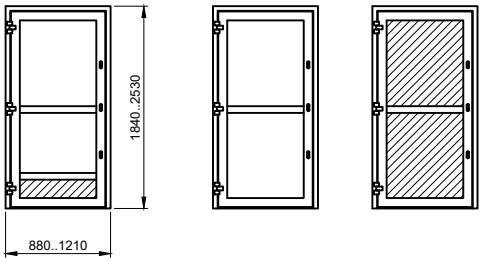
2.6 OVI P50L JULKISIVUJÄRJESTELMÄSSÄ
2.6 DOOR IN P50L CURTAIN WALL



2.7 LIUKUOVI
2.7 SLIDING DOOR

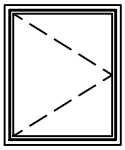
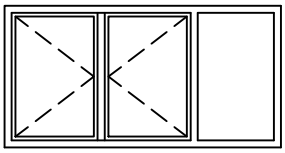
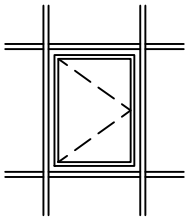


3.1, 3.2 RC3 MURTOSUOJAOVI
3.1, 3.2 RC3 DOOR

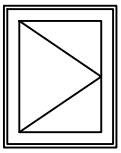
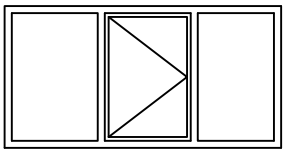
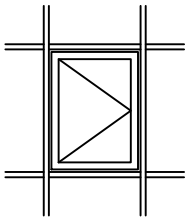


OVITYYPIT
TYPE OF DOORS

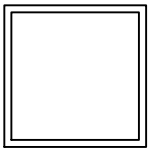
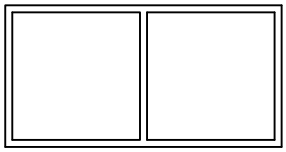
5.1 SISÄÄNAUKEAVA IKKUNA
5.1 INWARD OPENING WINDOW

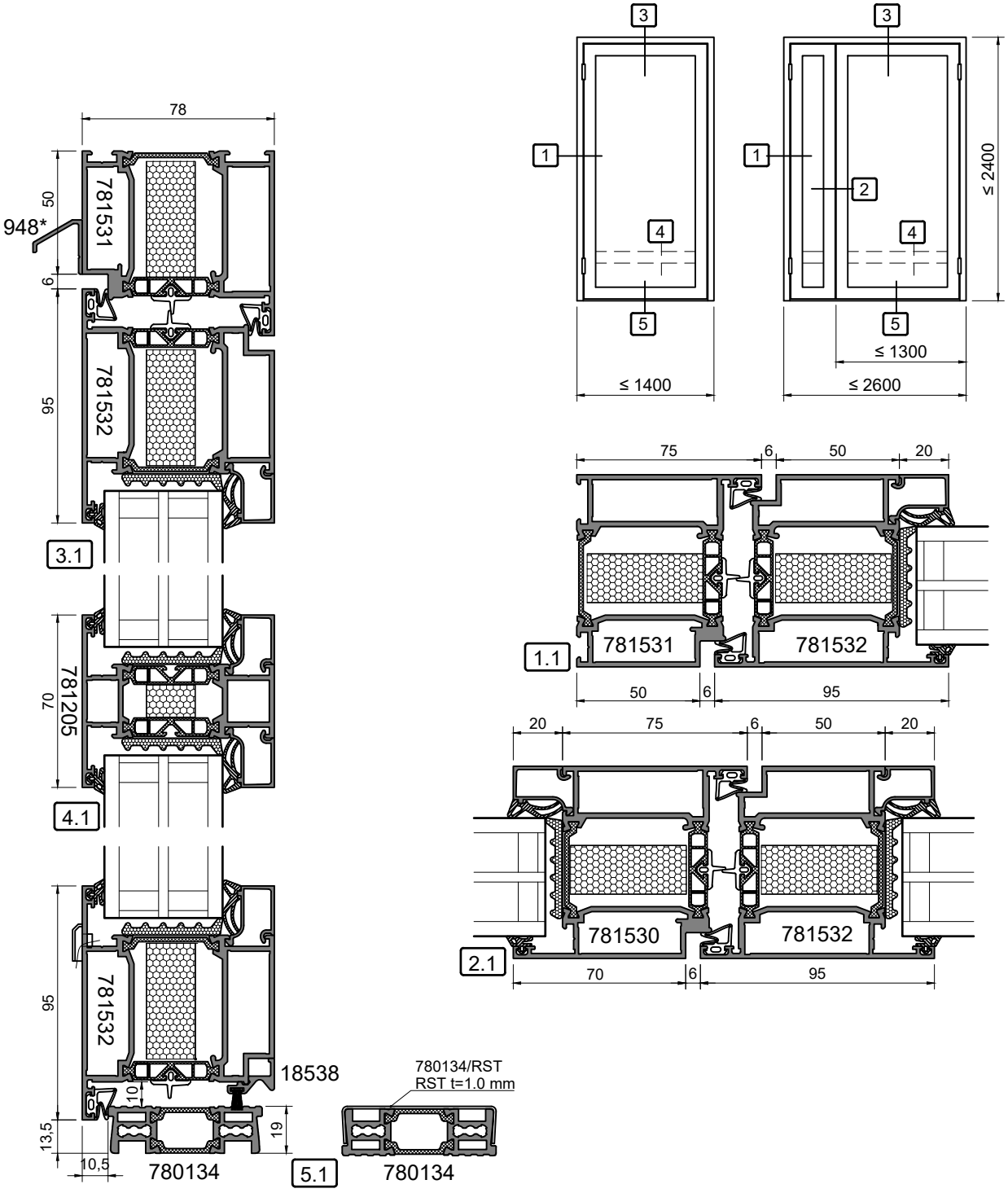
5.2 ULOSAUKEAVA IKKUNA
5.2 OUTWARD OPENING WINDOW

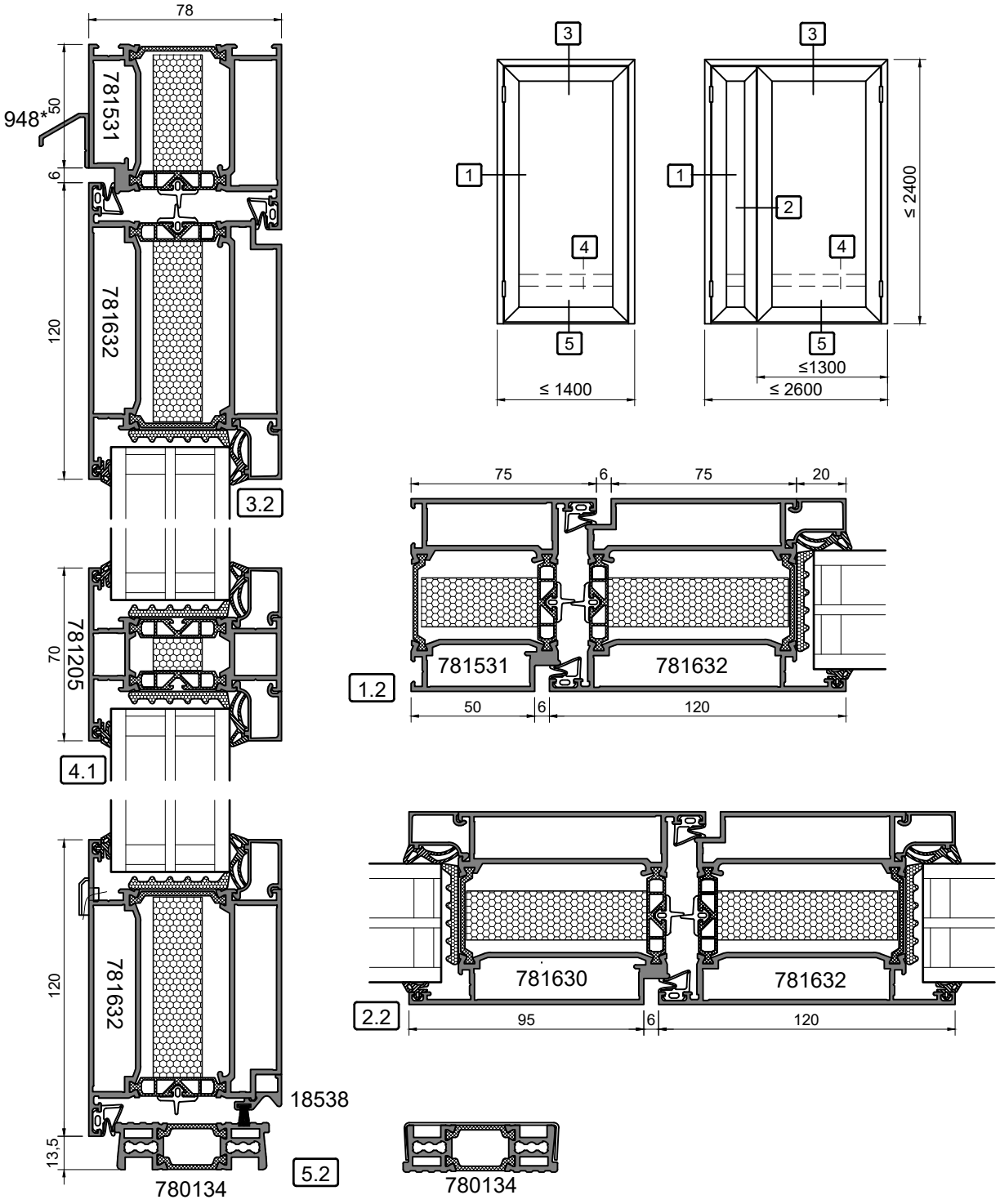
5.3 KIINTEÄ IKKUNA
5.3 FIXED WINDOW

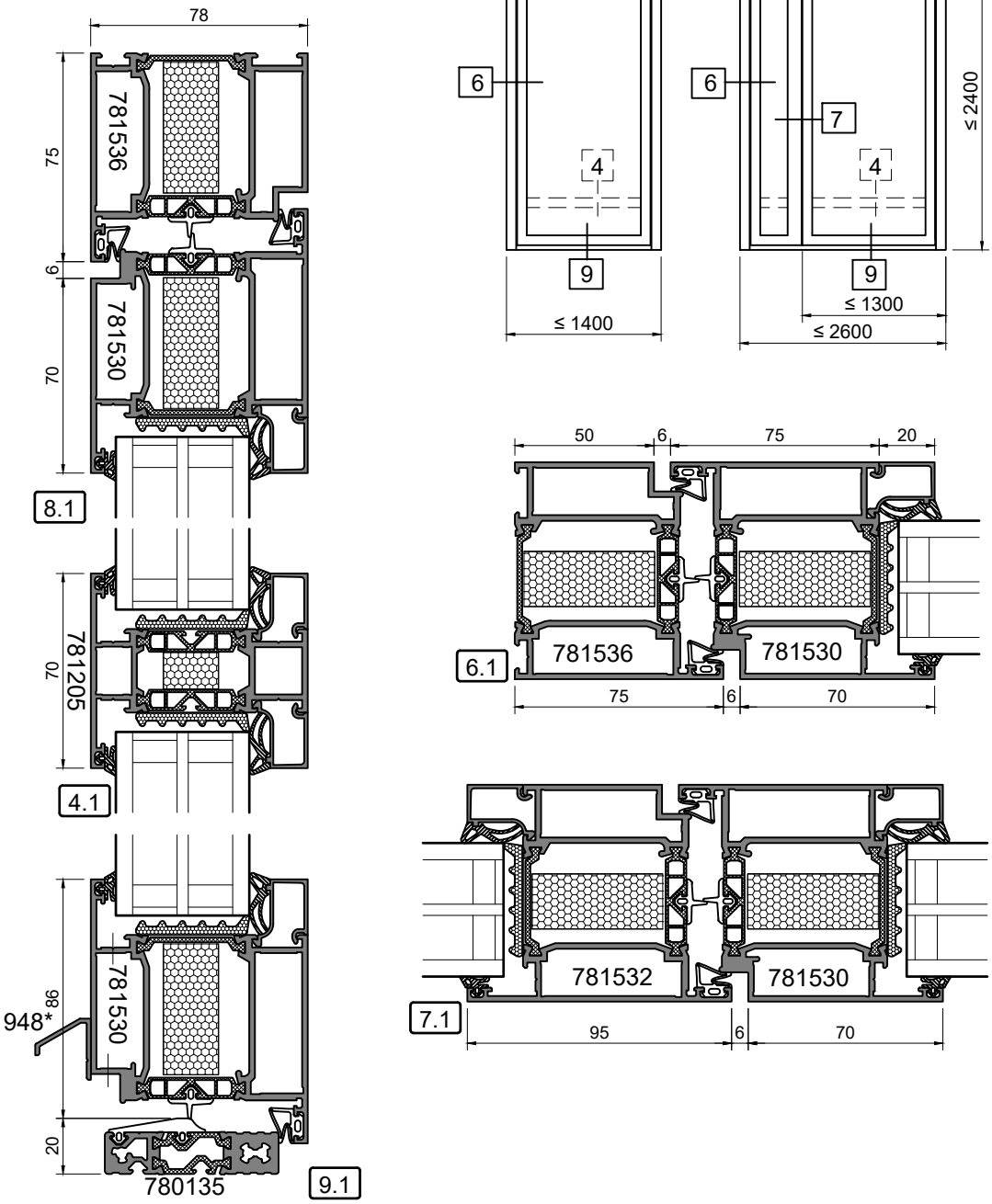
LK78X ULOSAUKEAVA OVI
LK78X OUTWARD OPENING DOOR



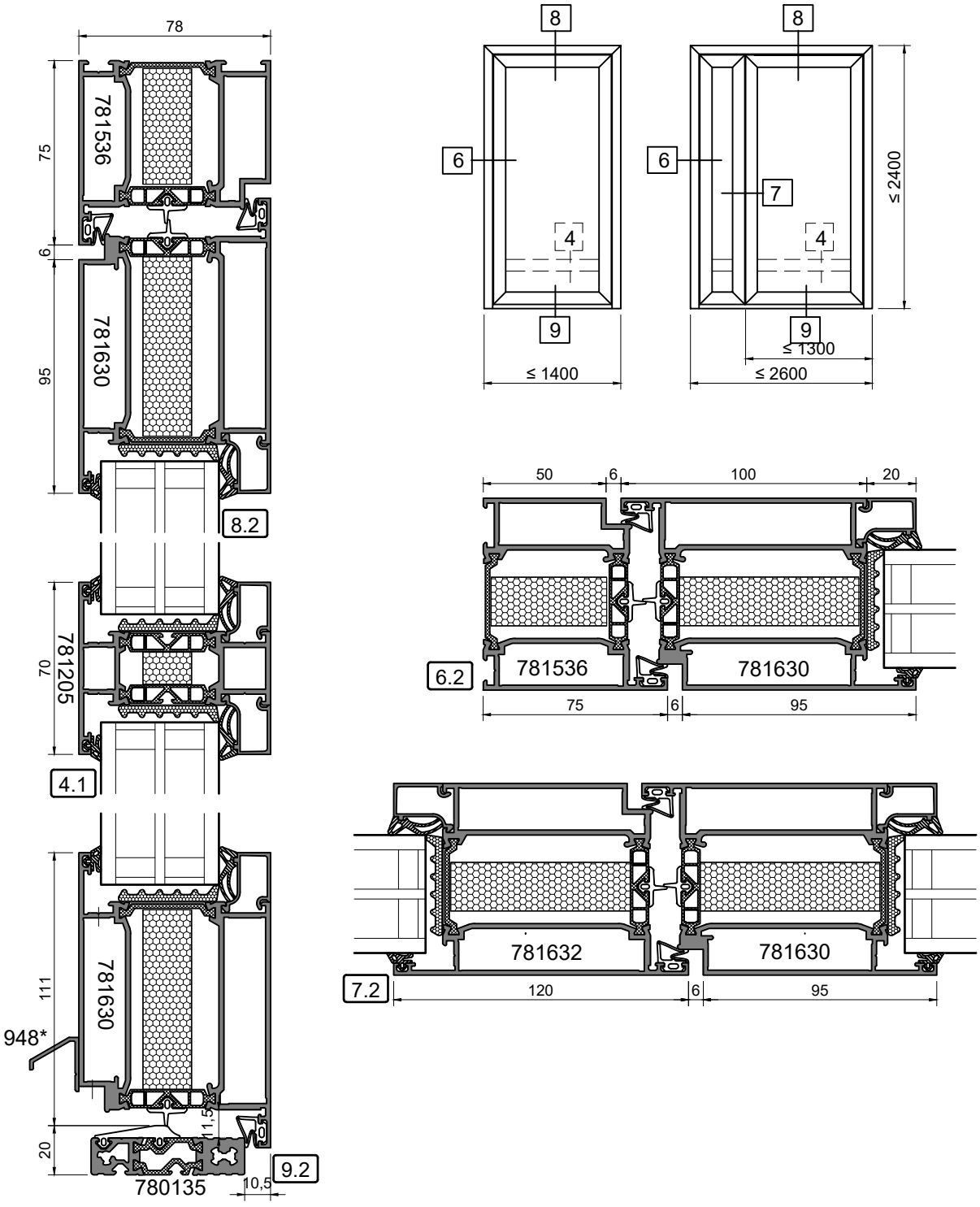
LK78X ULOSAUKEAVA OVI, LEVEÄ PUITE 781632
LK78X OUTWARD OPENING DOOR, LEAF 781632



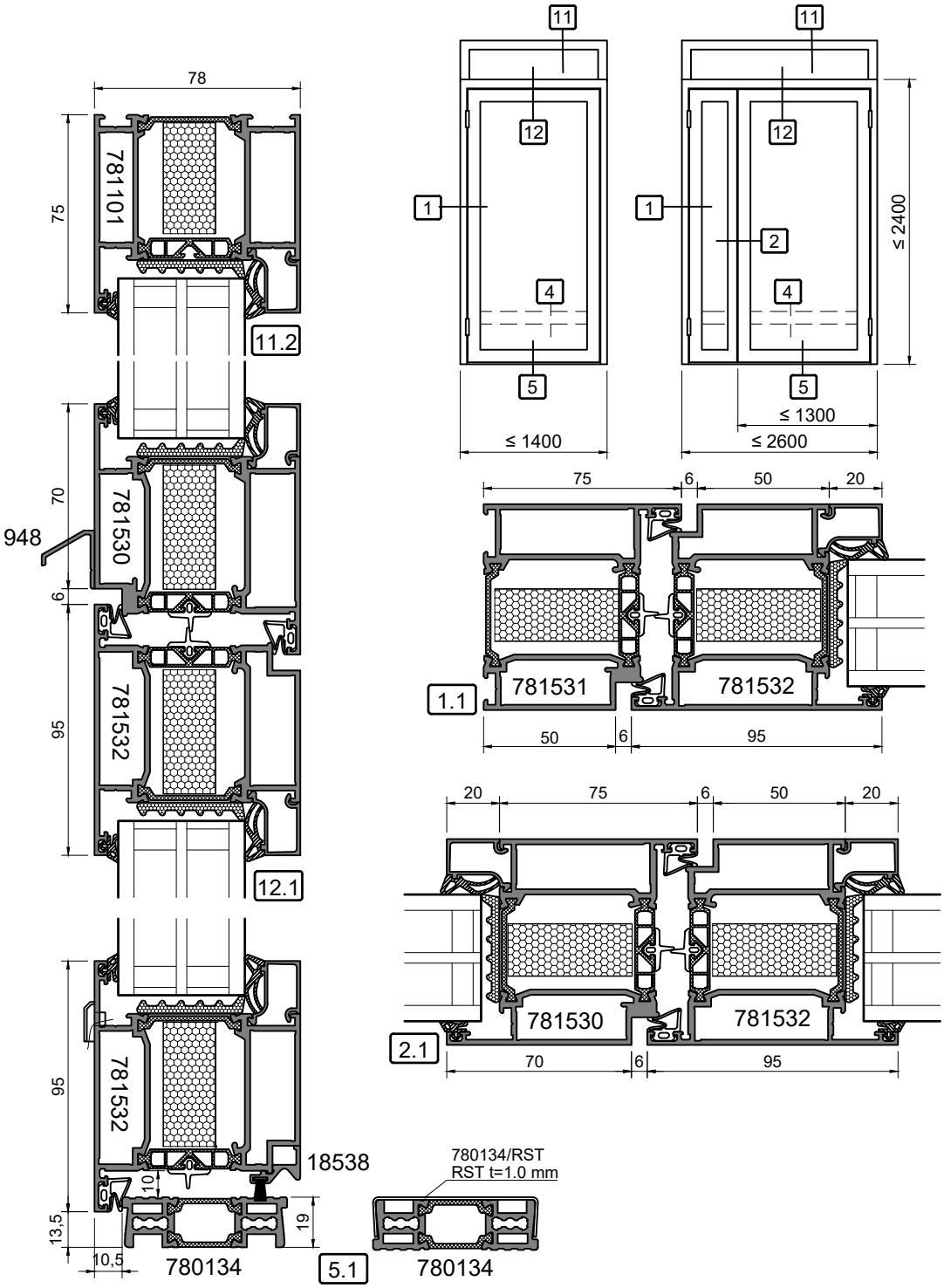
LK78X SISÄÄNAUKEAVA OVI
LK78X INWARD OPENING DOOR



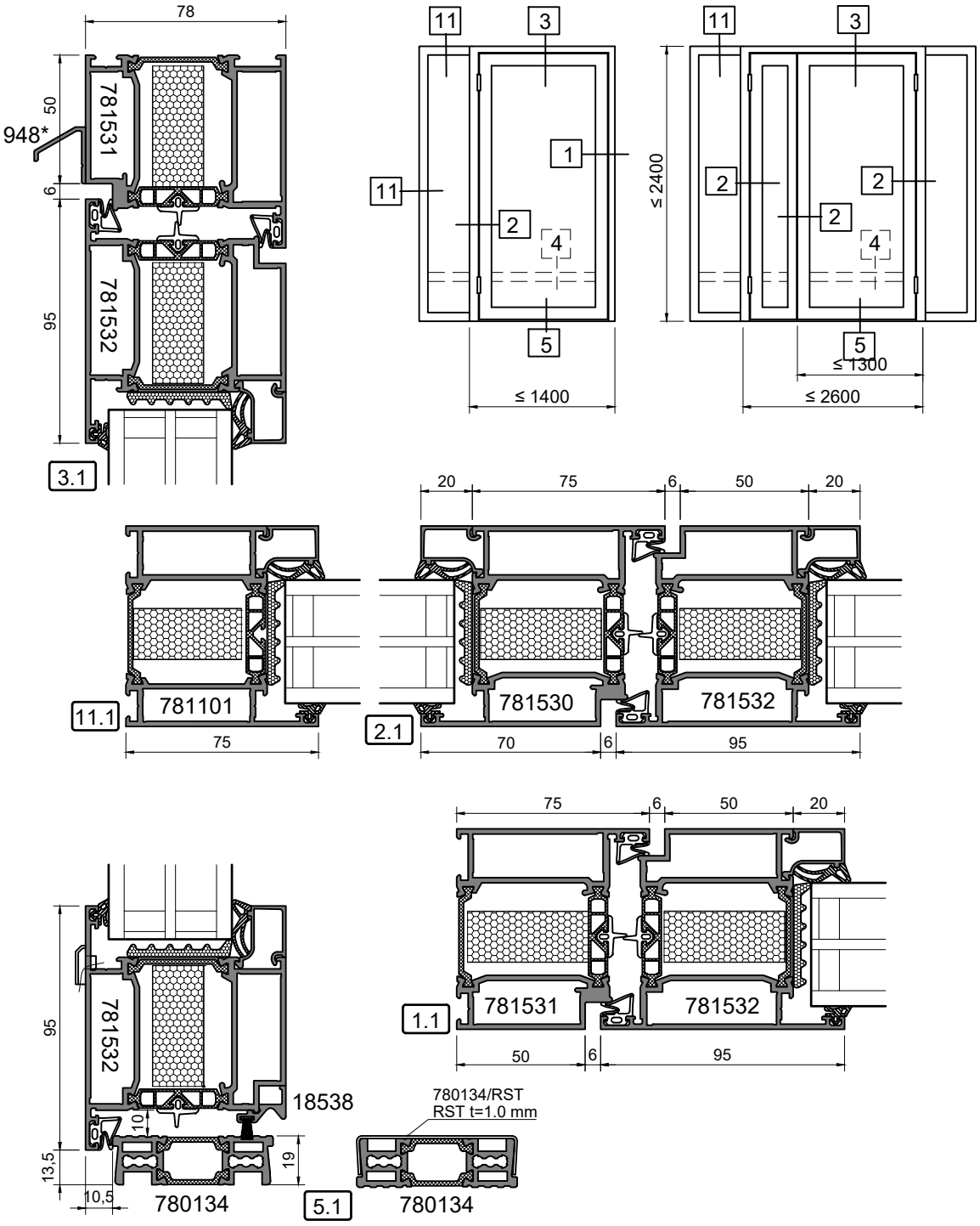
LK78X SISÄÄNAUKEAVA OVI, LEVEÄ PUITE 781630
LK78X INWARD OPENING DOOR, LEAF 781630



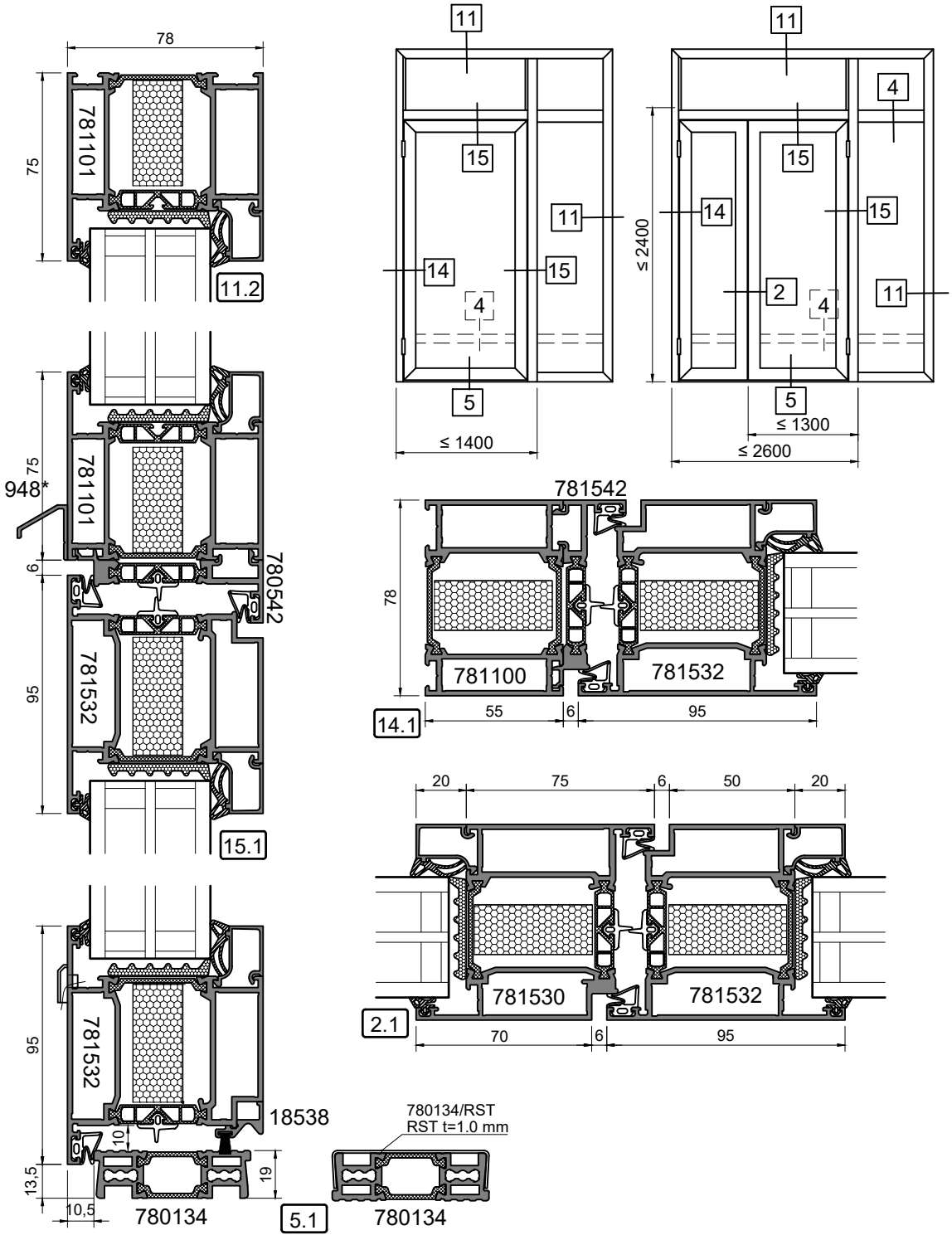
LK78X OVI YLÄPIELELLÄ
LK78X DOOR



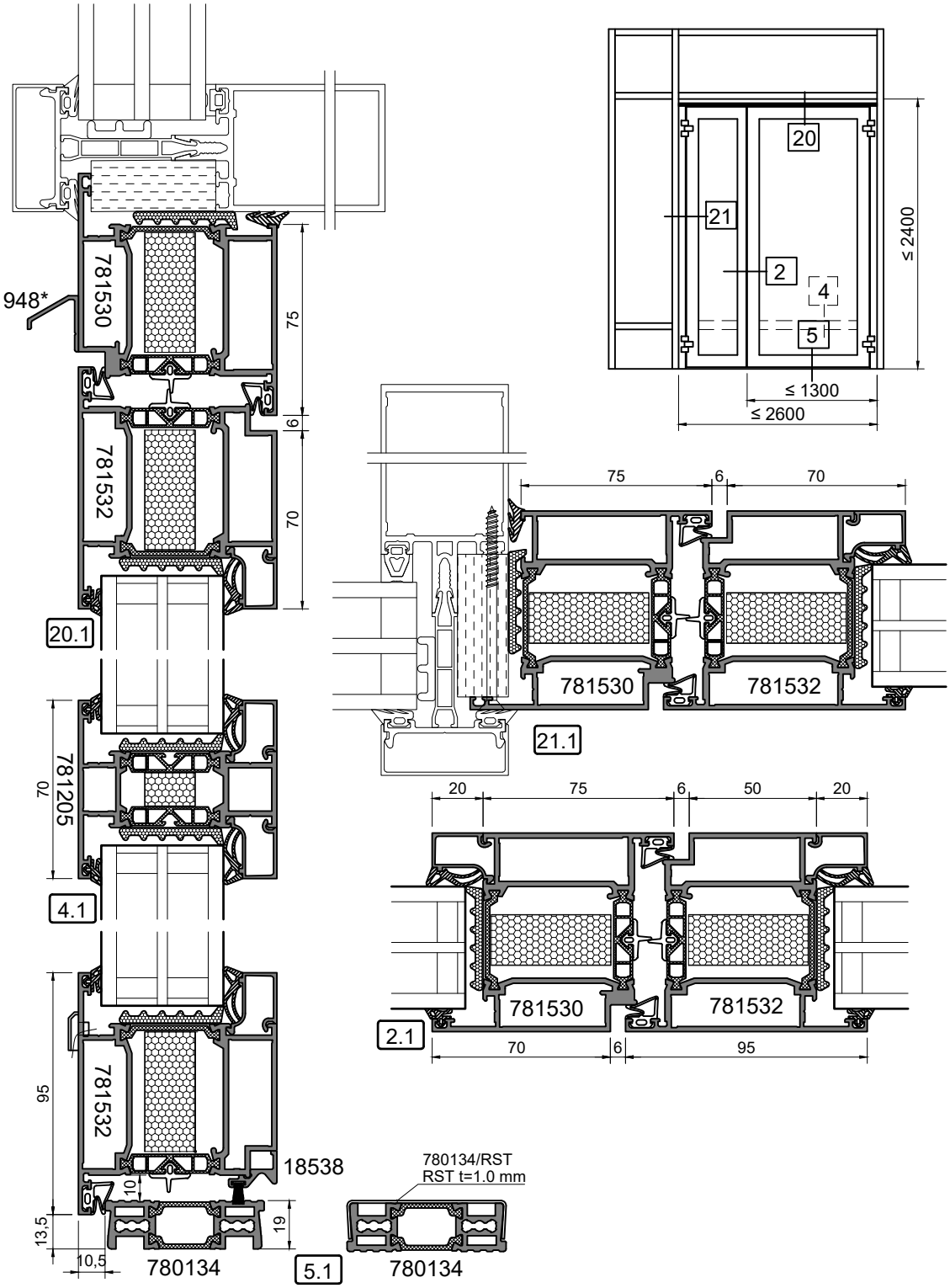
LK78X OVI SIVUPIELELLÄ
LK78X DOOR



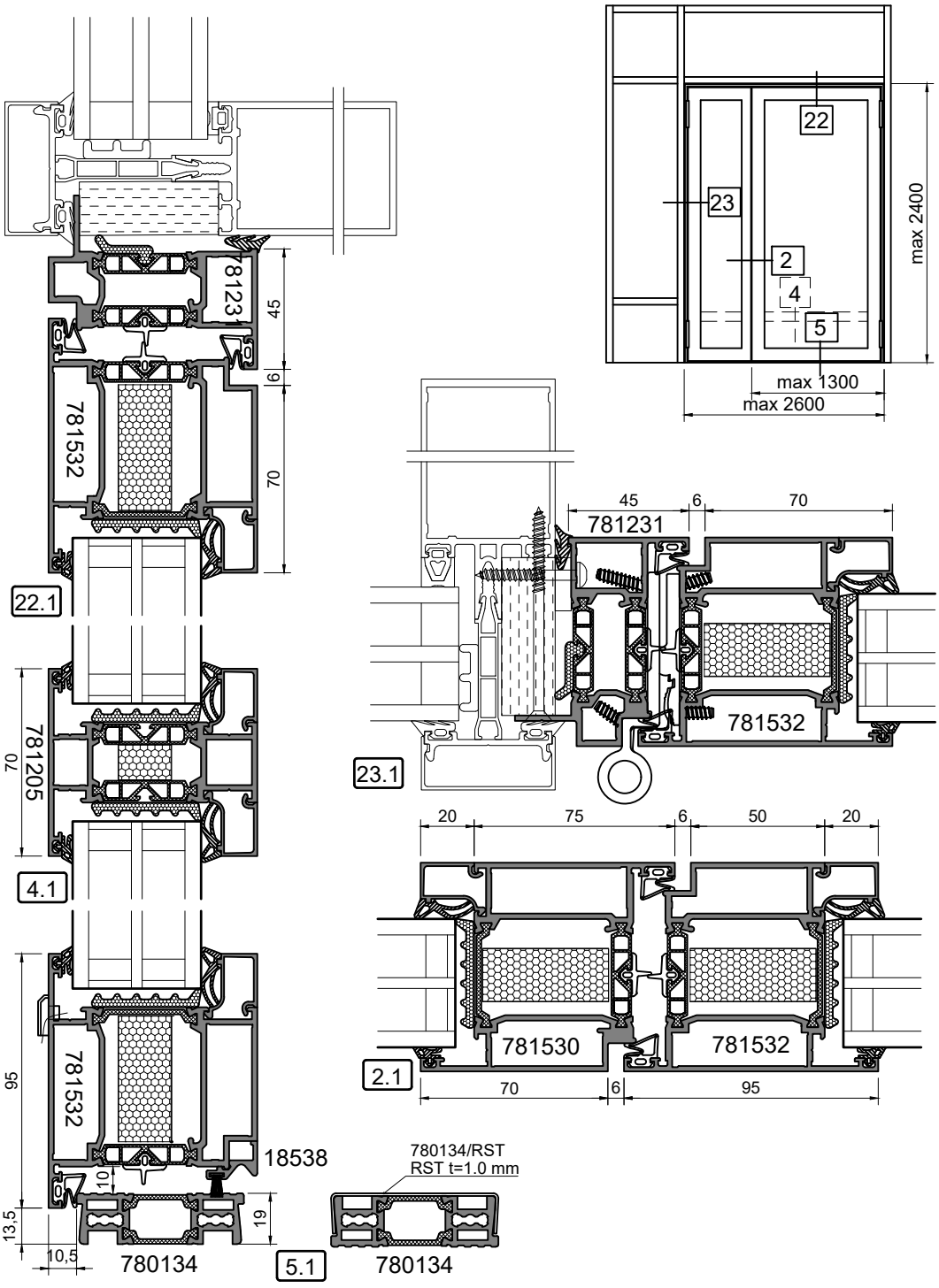
LK78X OVI YLÄ- JA SIVUPIELELLÄ
LK78X DOOR



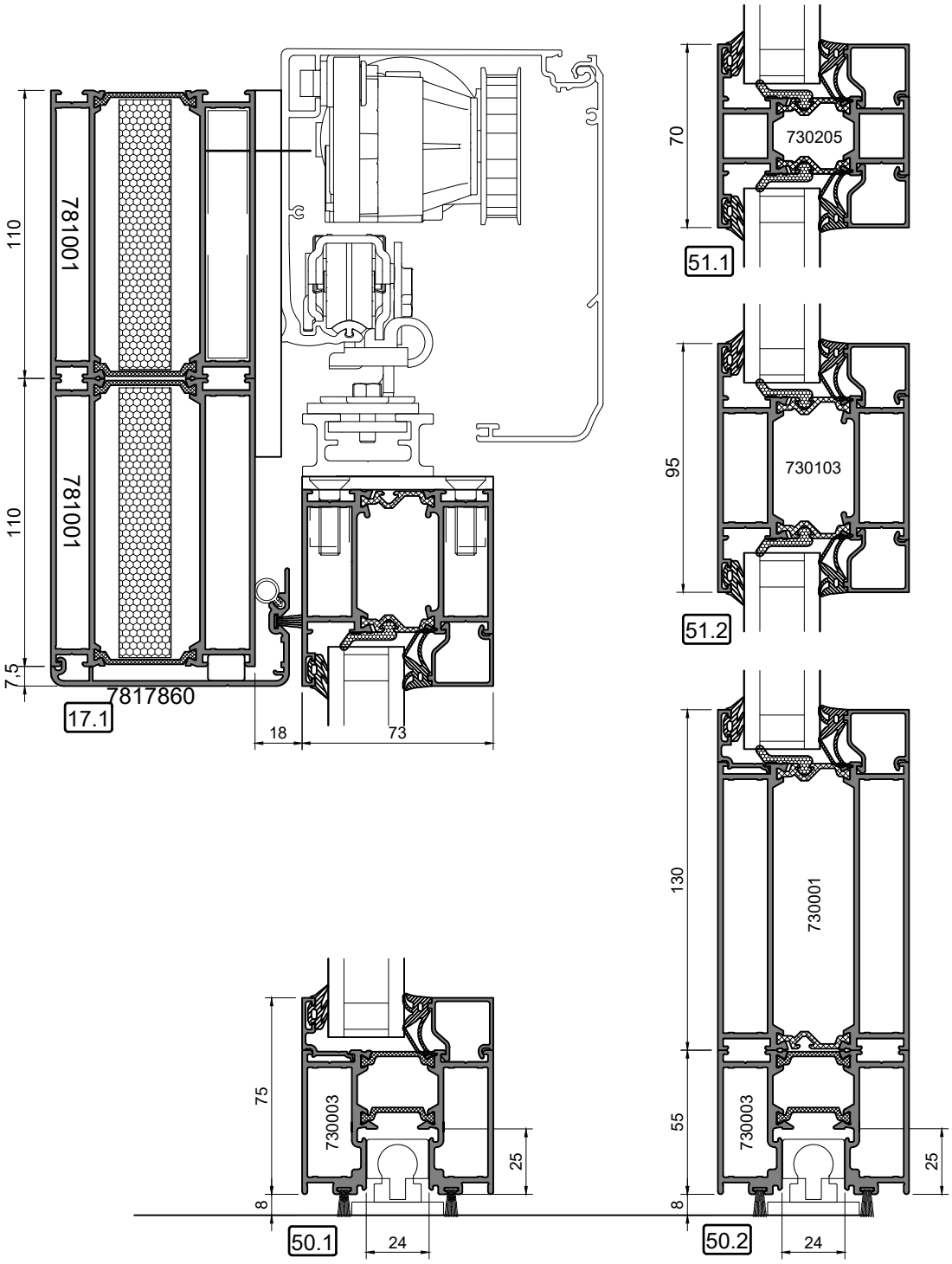
LK78X OVI P50L JULKISIVUSSA
LK78X DOOR IN P50L CURTAIN WALL



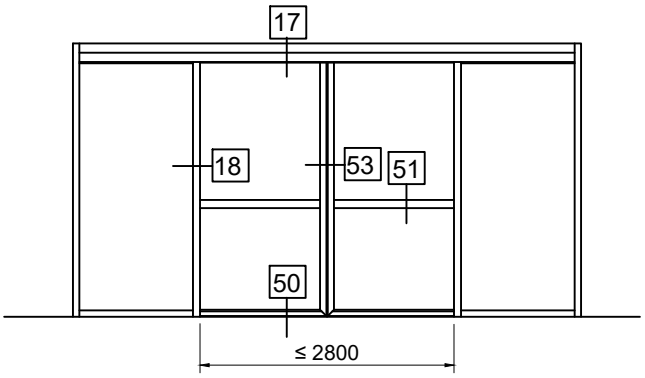
LK78X OVI P50L JULKISIVUSSA, KARMI 781231
LK78X DOOR IN P50L CURTAIN WALL, FRAME 781231

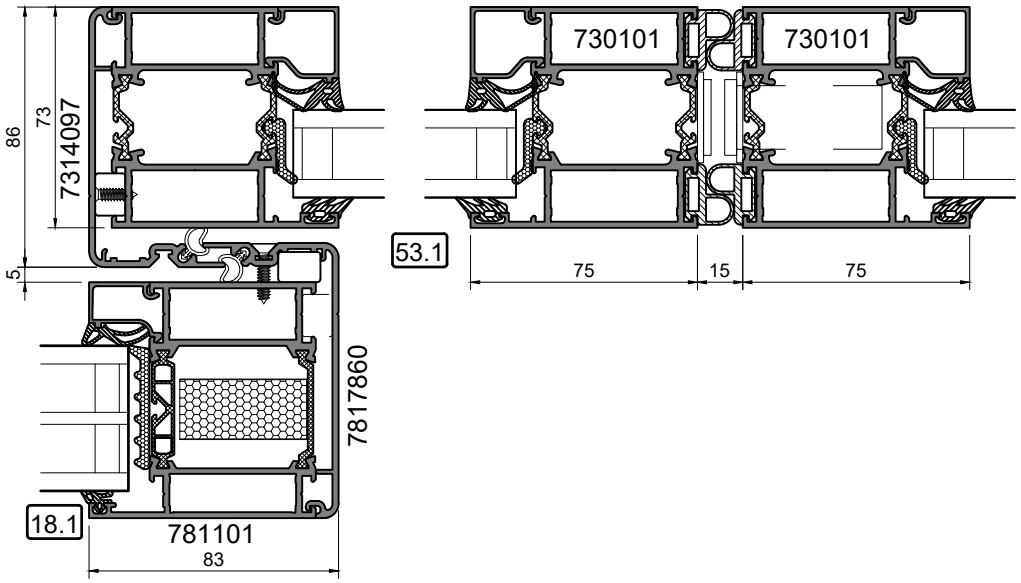


LK73 LIUKUOVI ASSA ABLOY SL500 KONEISTOLLA
LK73 SLIDING DOOR WITH ASSA ABLOY SL500 OPERATOR

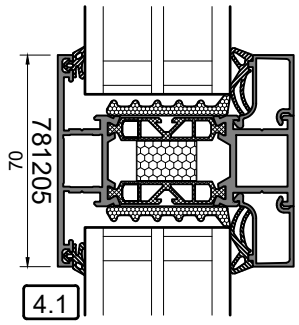


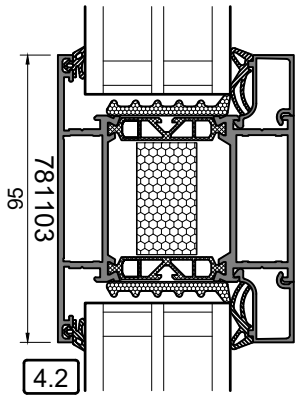
LK73 LIUKUOVI ASSA ABLOY SL500 KONEISTOLLA
LK73 SLIDING DOOR WITH ASSA ABLOY SL500 OPERATOR

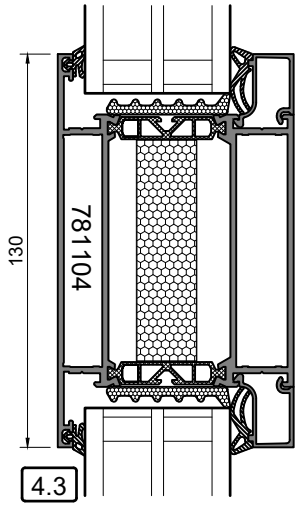


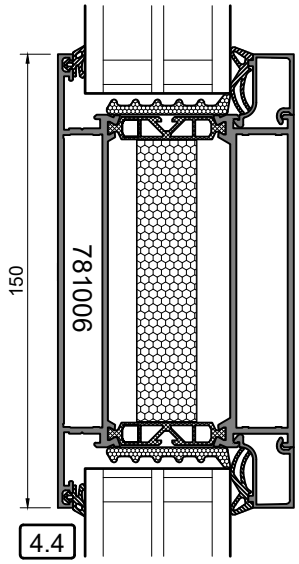


LK78X OVEN VAAKAJAOT
LK78X DOOR HORIZONTAL FRAME

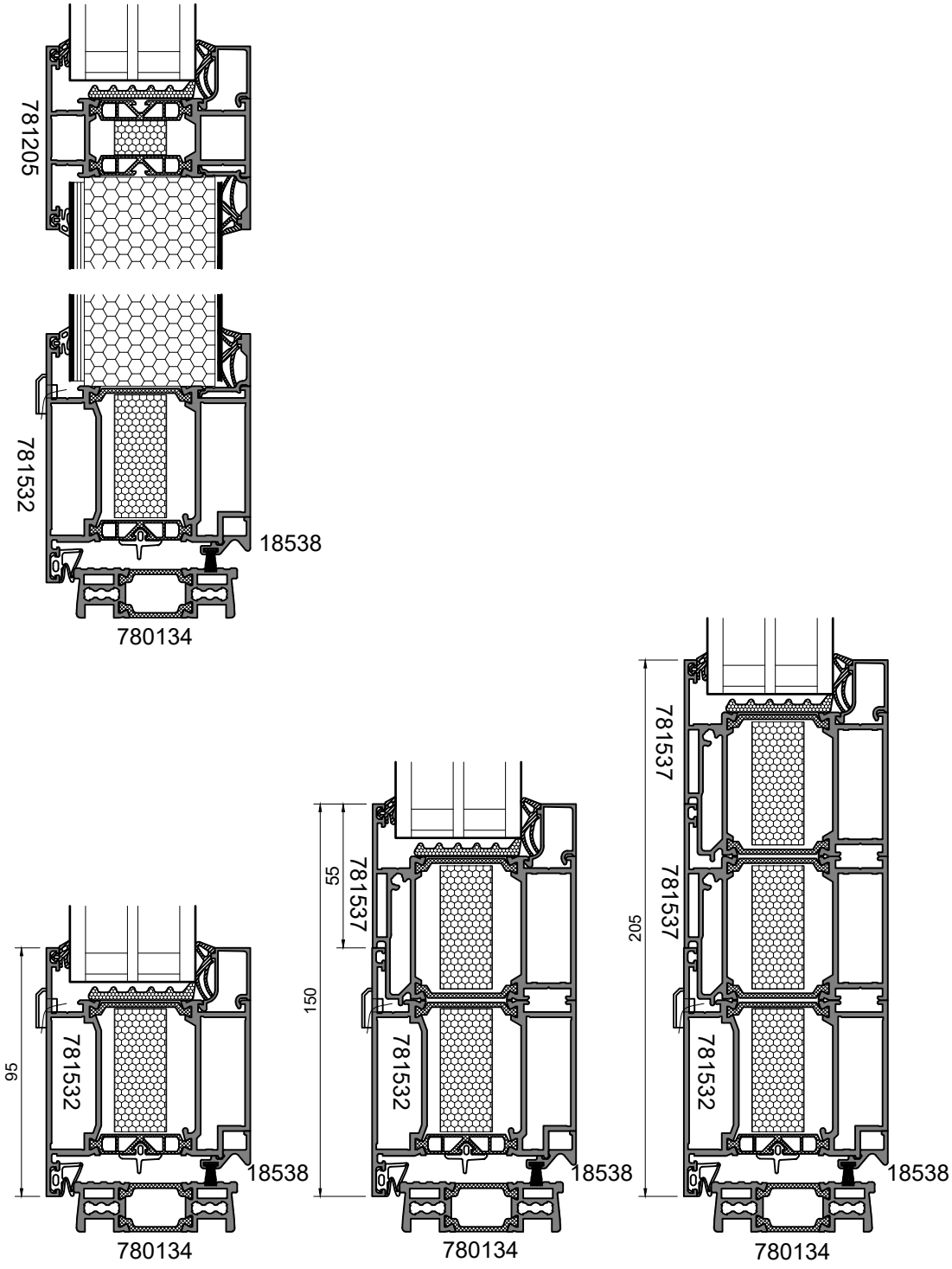




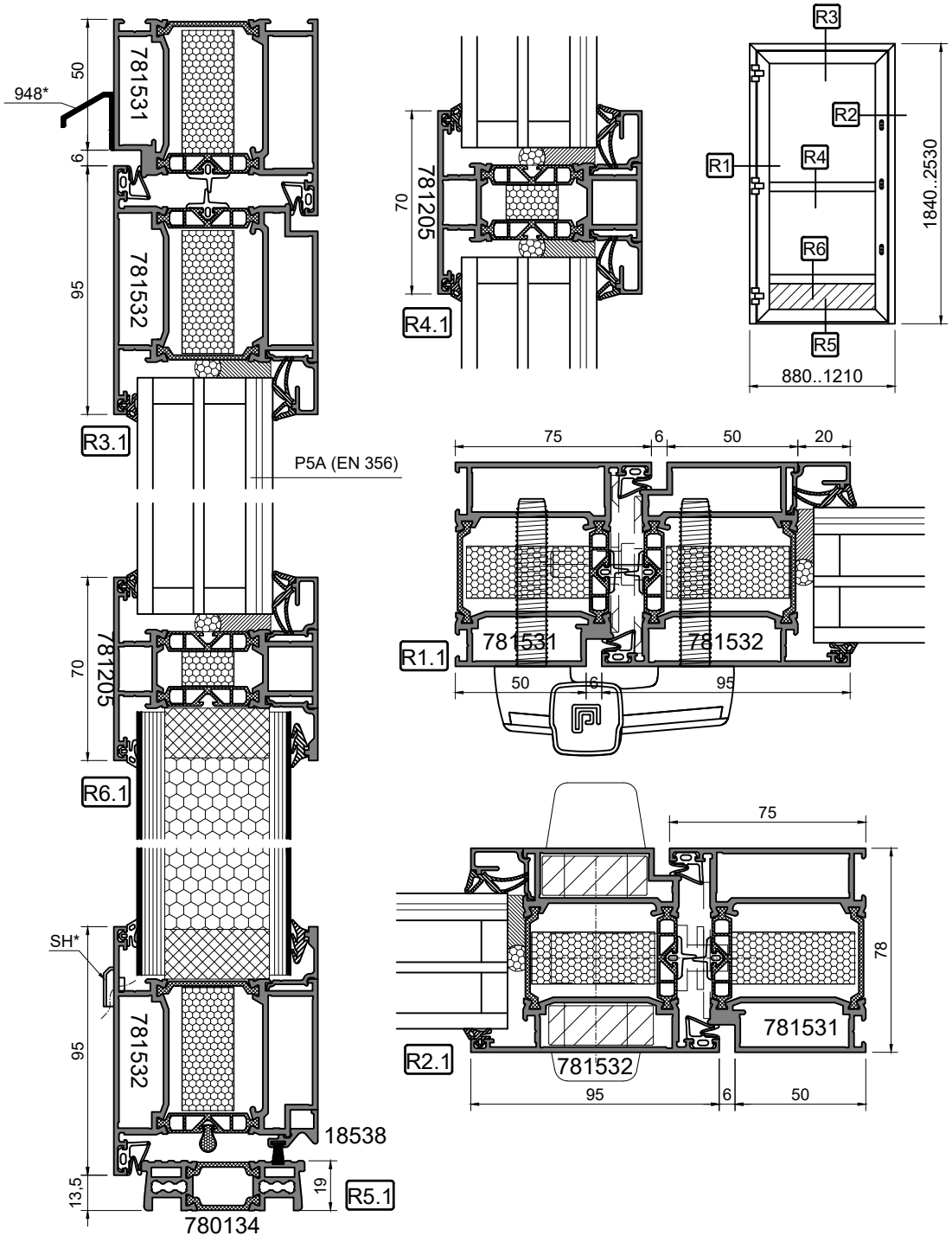




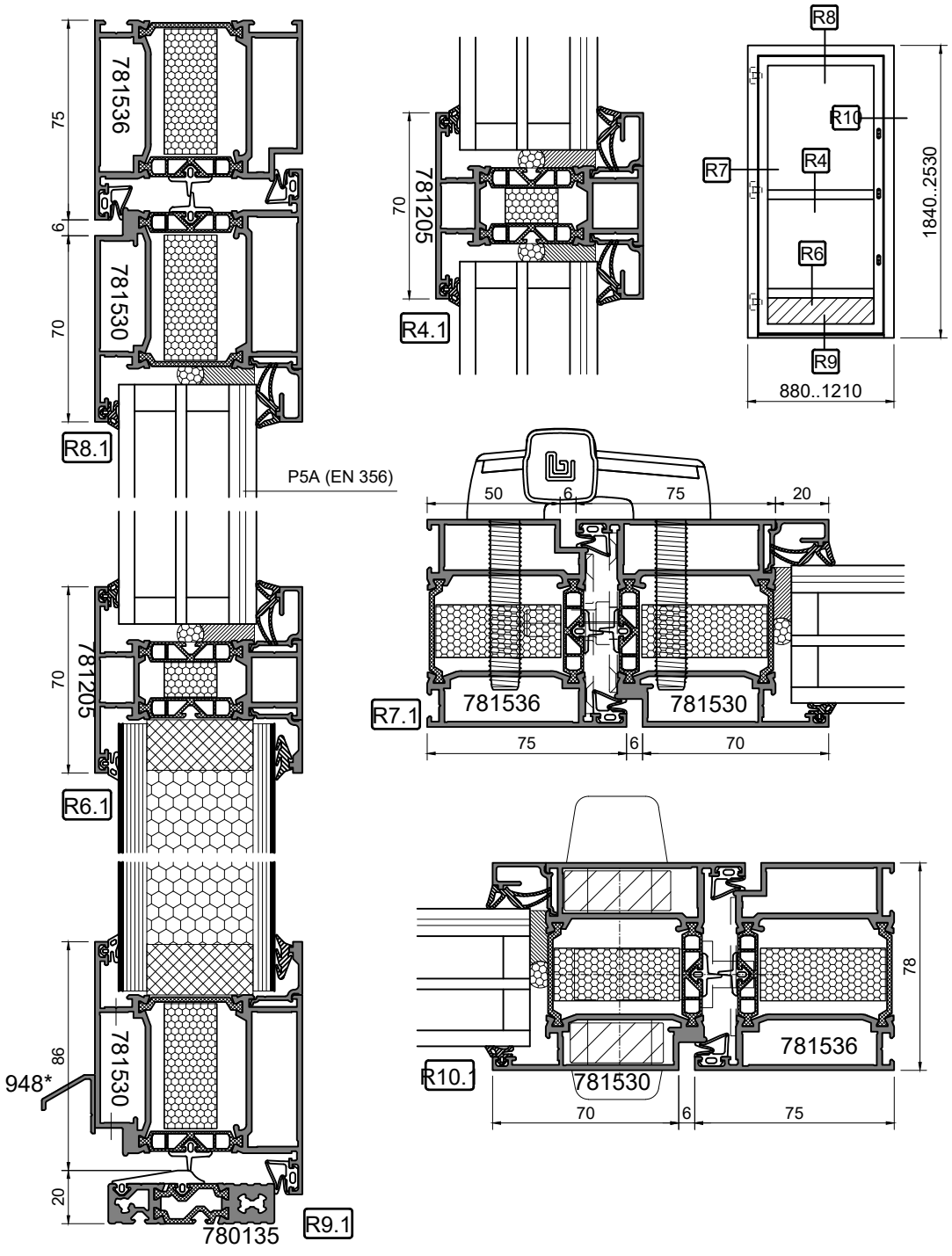
LK78X OVEN POTKUOSA
LK78X BOTTOM OF THE DOOR



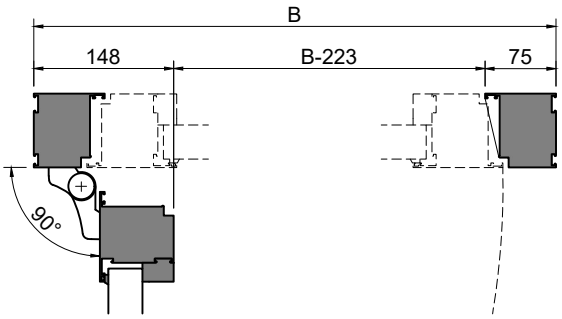
LK78X RC3 ULOSAUKEAVA MURTOSUOJA-OVI
LK78X RC3 OUTWARD OPENING DOOR

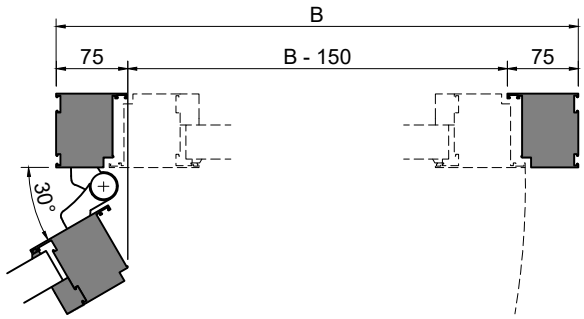


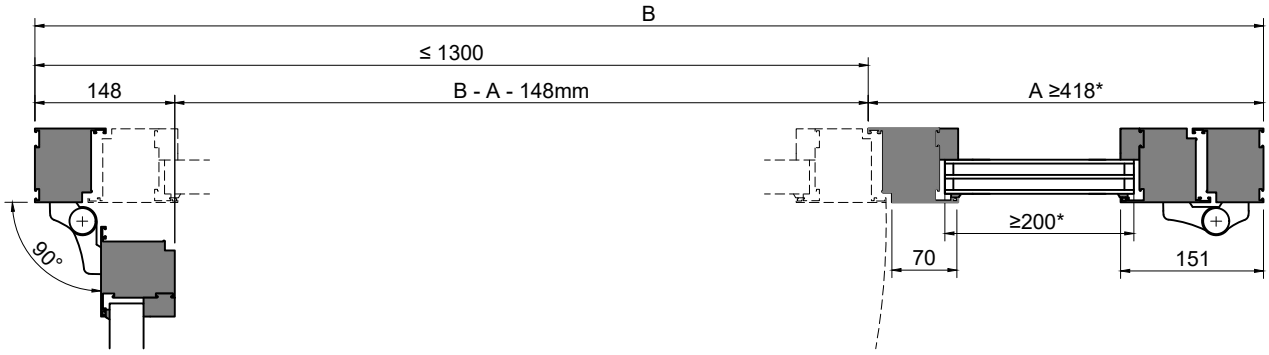
LK78X RC3 SISÄÄNAUKEAVA MURTOSUOJA-OVI
LK78X RC3 INWARD OPENING DOOR

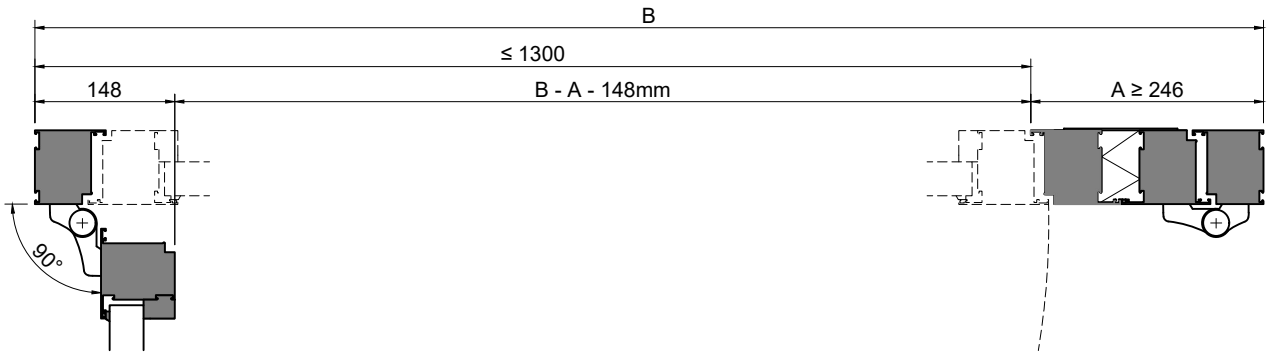


VAPAAT KULKUAUKOT, KARMI 781531
CLEAR DIMENSION, FRAME 781531

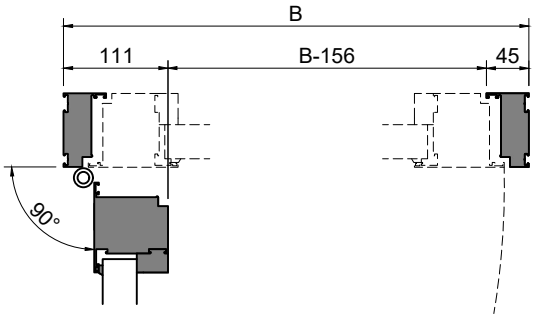


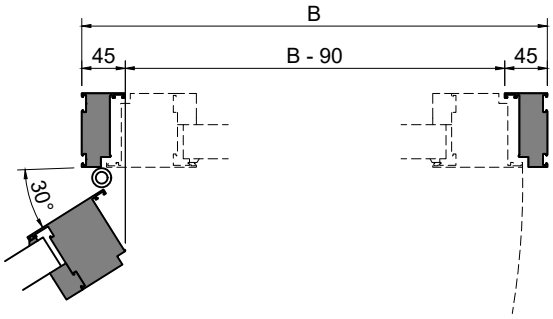


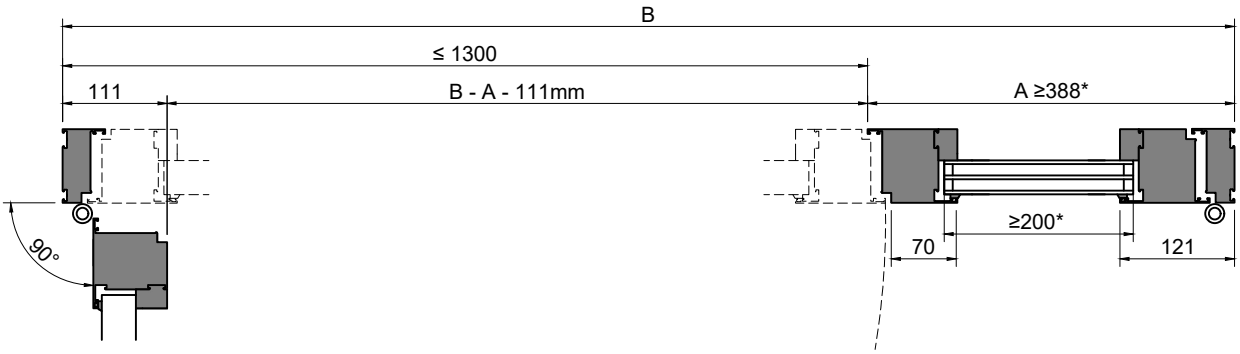


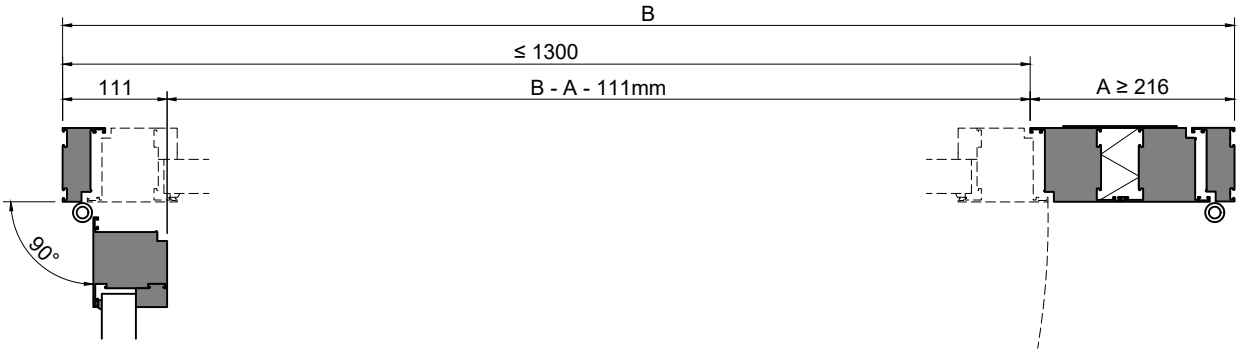


VAPAAT KULKUAUKOT, KARMI 781231, 781232
CLEAR DIMENSION, FRAME 781231, 781232





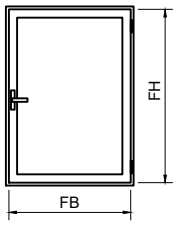




LK78X SISÄÄNAUKEAVAT IKKUNAT
LK78X INWARD OPENING WINDOWS

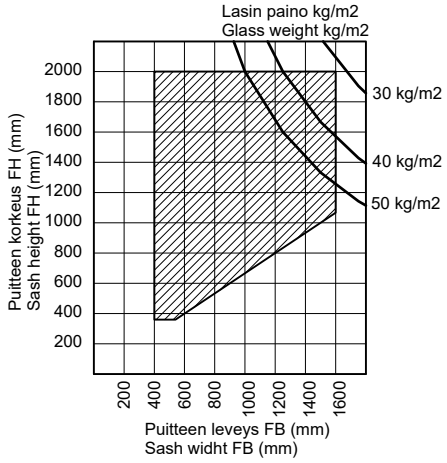
SIVUSARANOITU IKKUNA
SIDE HUNG WINDOW



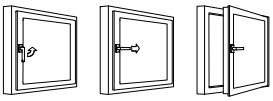


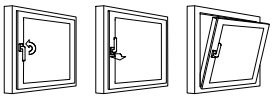
Puitteen leveys FB Sash width FB	400 .. 1600*
Puitteen korkeus FH Sash height FH	360 .. 2000*
Puitteen enimmäispaino Max. sash weight	100 kg
Ikkunan mittasuhde: FB/FH Window dimension ratio: FB/FH	< 1.5

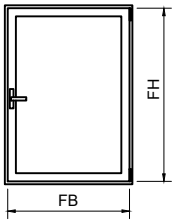
* Kts. viereinen kaavio
* See adjacent diagram



SIVU/ALASARANOITU IKKUNA (DK)
TILT AND TURN WINDOW

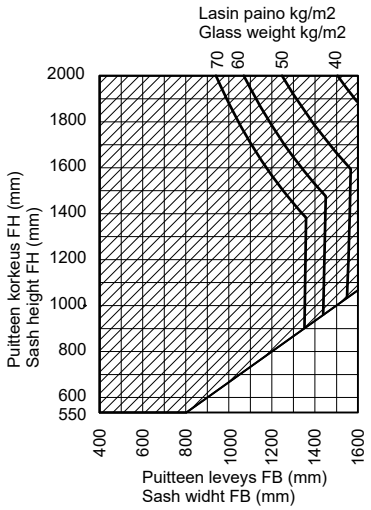




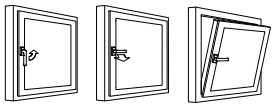


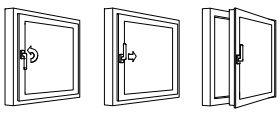
Puitteen leveys FB Sash width FB	400 .. 1600*
Puitteen korkeus FH Sash height FH	550 .. 2000*
Puitteen enimmäispaino Max. sash weight	130 kg
Ikkunan mittasuhde: FB/FH Window dimension ratio: FB/FH	< 1.5

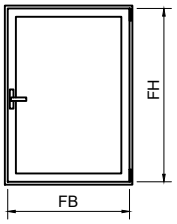
* Kts. viereinen kaavio
* See adjacent diagram



SIVU/ALASARANOITU IKKUNA TBT
SIDE/BOTTOM HUNG TBT

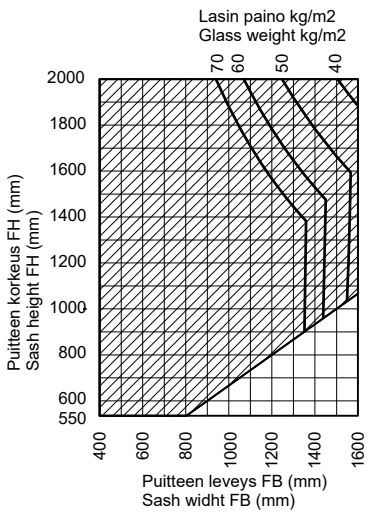






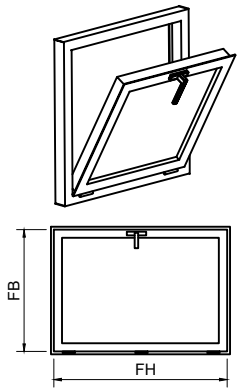
Puitteen leveys FB Sash width FB	400 .. 1600*
Puitteen korkeus FH Sash height FH	550 .. 2000*
Puitteen enimmäispaino Max. sash weight	130 kg
Ikkunan mittasuhde: FB/FH Window dimension ratio: FB/FH	< 1.5

* Kts. viereinen kaavio
* See adjacent diagram



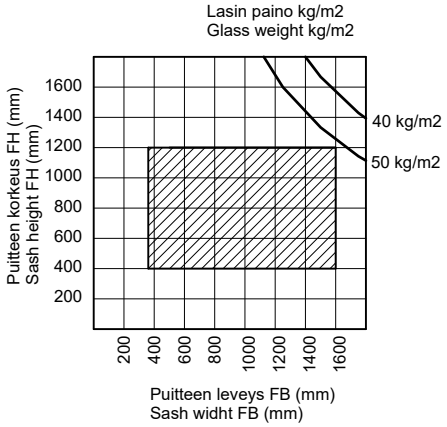
LK78X SISÄÄNAUKEAVAT IKKUNAT
LK78X INWARD OPENING WINDOWS

ALASARANOITU IKKUNA
BOTTOM HUNG WINDOW

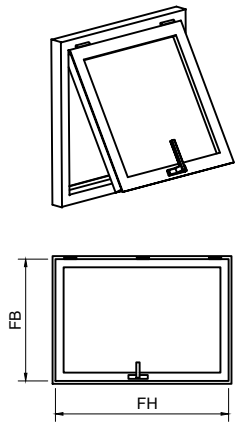


Puitteen leveys FB Sash width FB	360 .. 1600*
Puitteen korkeus FH Sash height FH	400 .. 1200*
Puitteen enimmäispaino Max. sash weight	100 kg

* Kts. viereinen kaavio
* See adjacent diagram

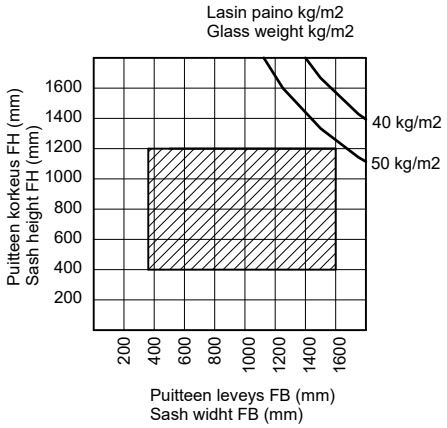


YLÄSARANOITU IKKUNA
TOP HUNG WINDOW



Puitteen leveys FB Sash width FB	360 .. 1600*
Puitteen korkeus FH Sash height FH	400 .. 1200*
Puitteen enimmäispaino Max. sash weight	100 kg

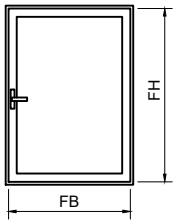
* Kts. viereinen kaavio
* See adjacent diagram



LK78X SISÄÄNAUKEAVAT IKKUNAT
LK78X INWARD OPENING WINDOWS

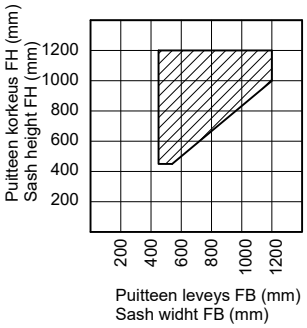
SIVUSARANOITU IKKUNA, PIILOHELAT
SIDE HUNG WINDOW, CONCEALED HINGES



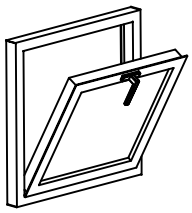


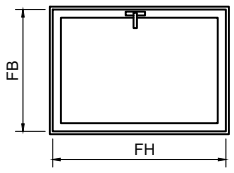
Puitteen leveys FB Sash width FB	450 .. 1200*
Puitteen korkeus FH Sash height FH	450 .. 1200*
Puitteen enimmäispaino Max. sash weight	100 kg
Ikkunan mittasuhde: FB/FH Window dimension ratio: FB/FH	< 1.2

* Kts. viereinen kaavio
* See adjacent diagram



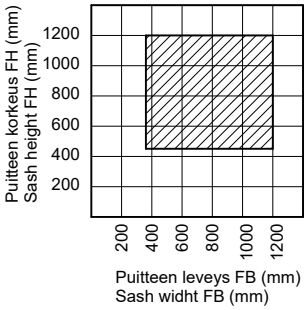
ALASARANOITU IKKUNA, PIILOSARANAT
BOTTOM HUNG WINDOW, CONCEALED HINGES



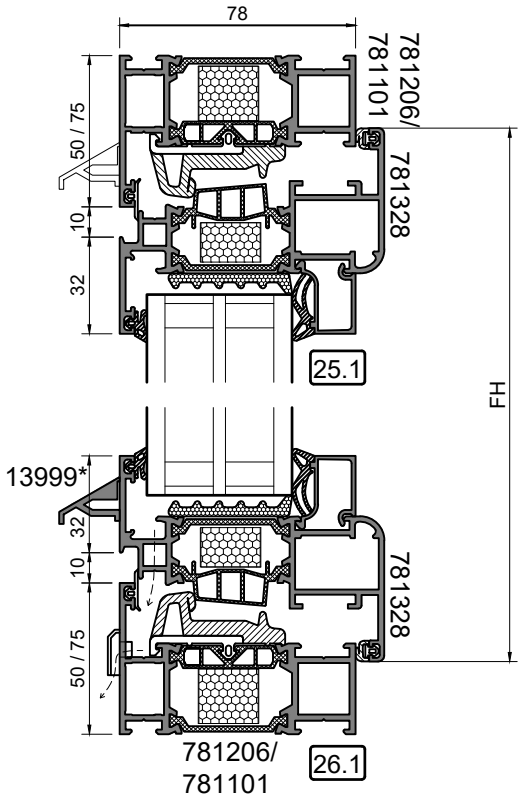


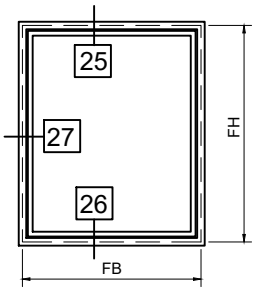
Puitteen leveys FB Sash width FB	360 .. 1200*
Puitteen korkeus FH Sash height FH	450 .. 1200*
Puitteen enimmäispaino Max. sash weight	100 kg

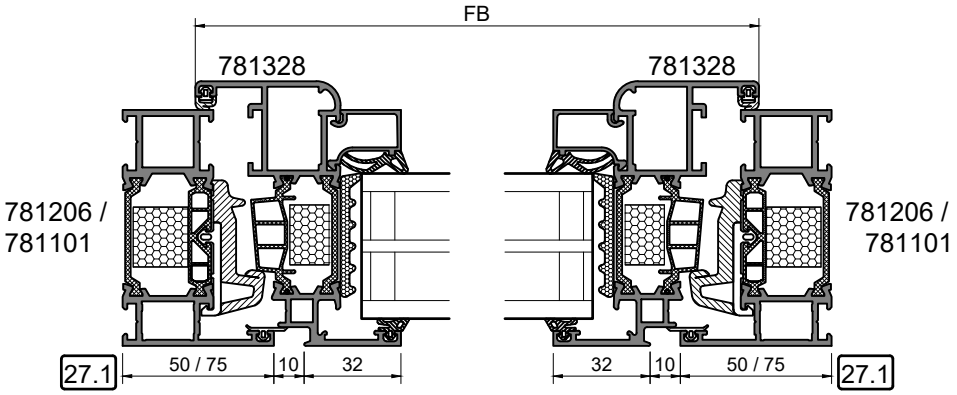
* Kts. viereinen kaavio
* See adjacent diagram



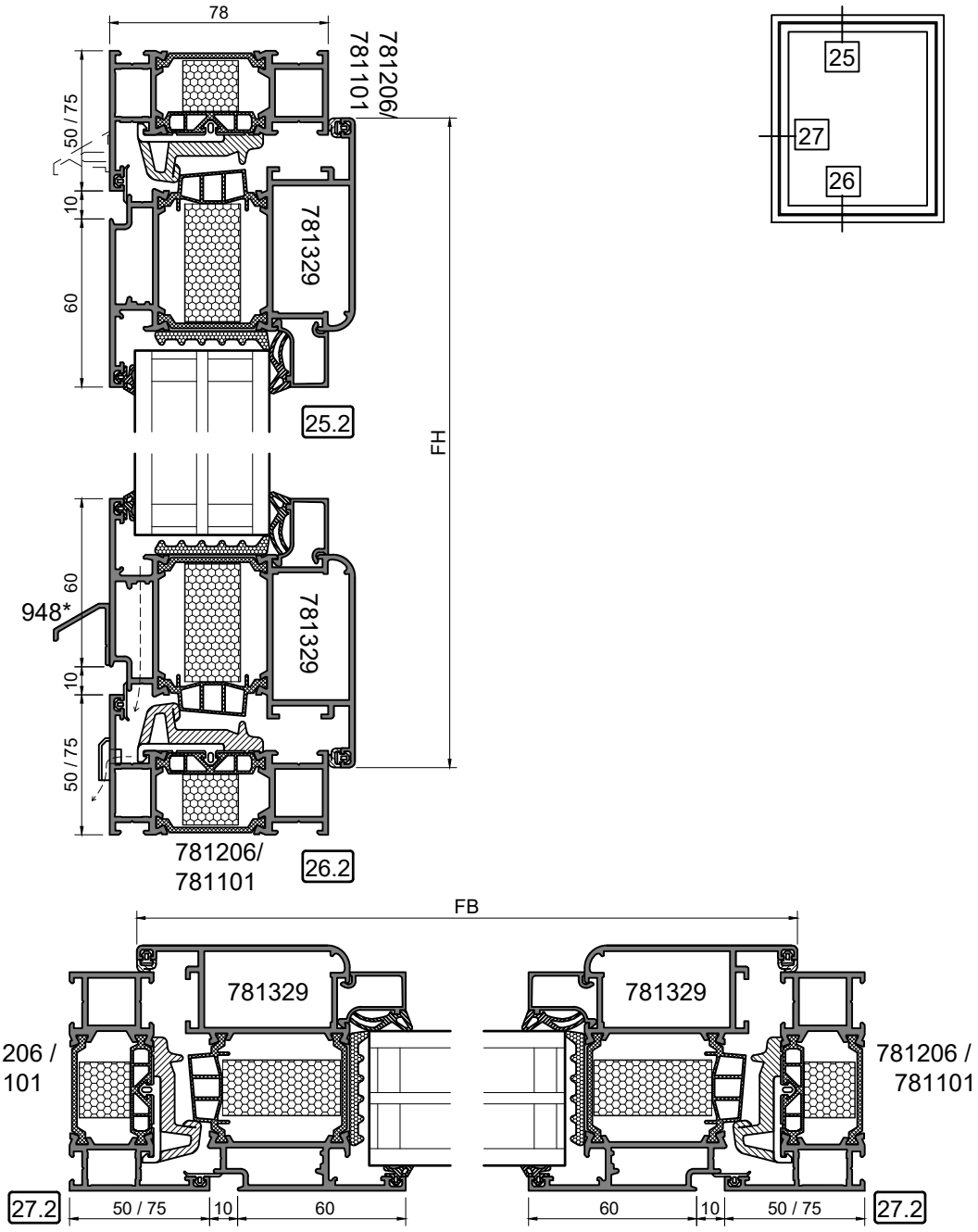
LK78X SISÄÄNAUKEAVA IKKUNA, PUITE 781328
LK78X INWARD OPENING WINDOW, SASH 781328



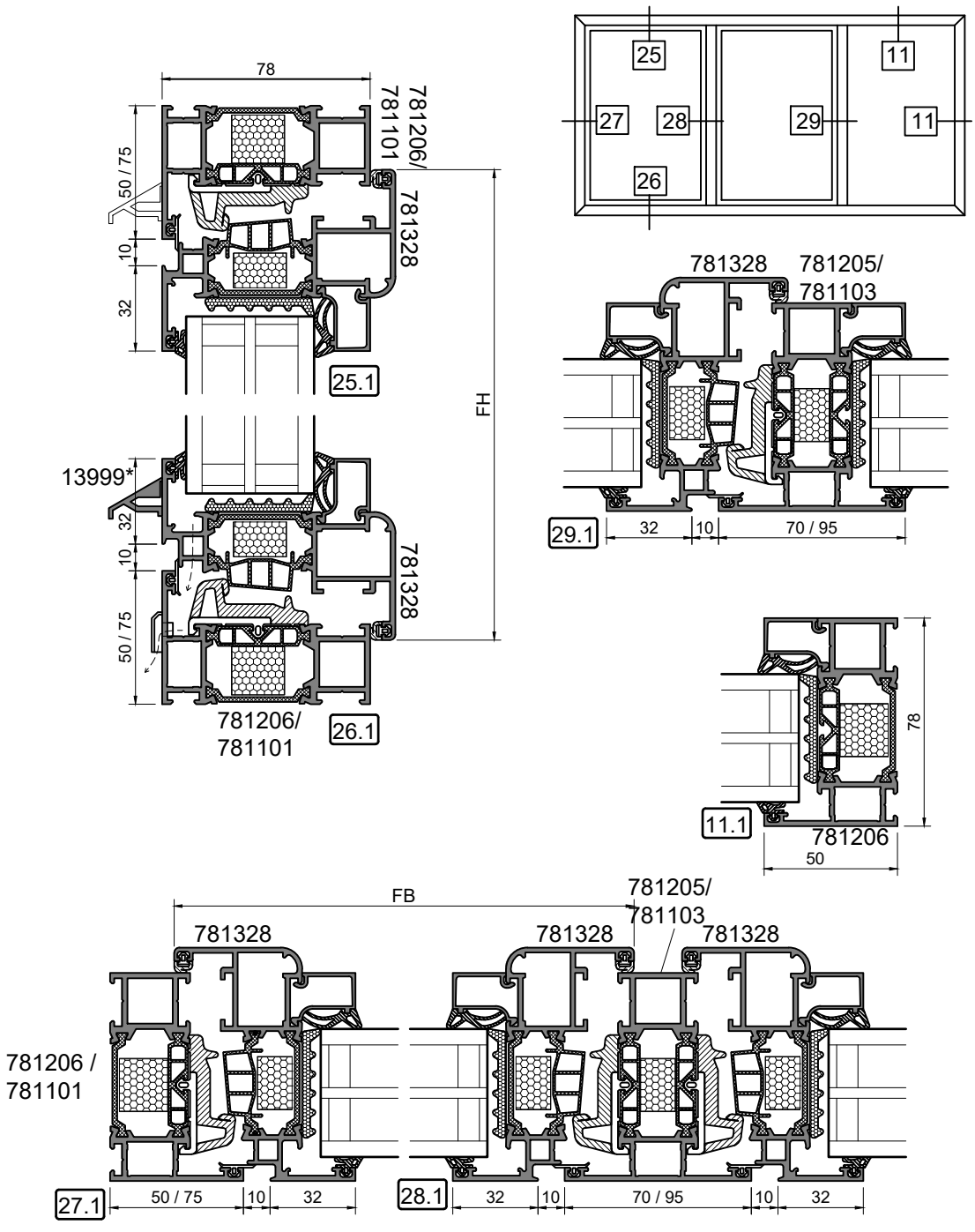




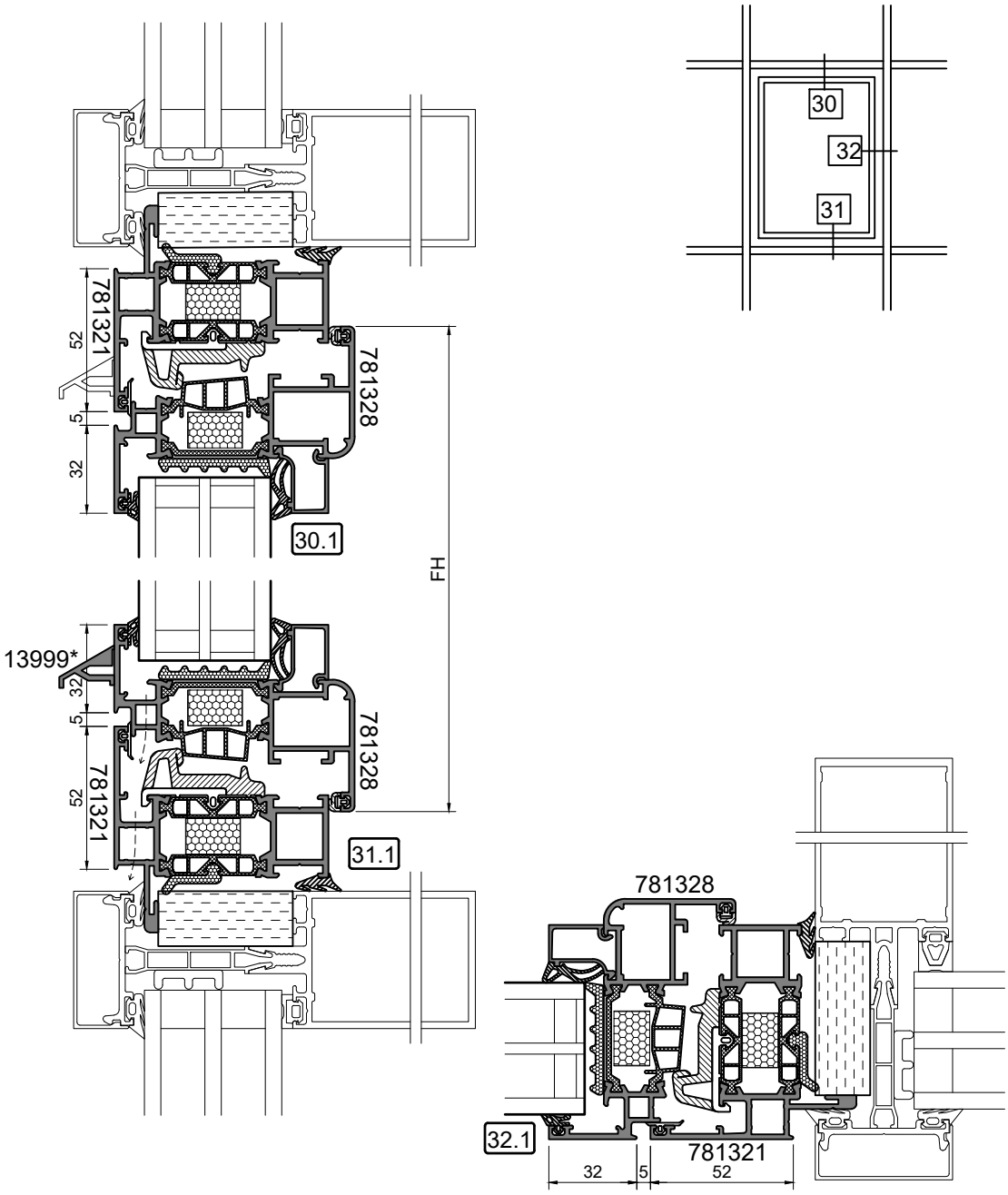
LK78X SISÄÄNAUKEAVA IKKUNA, PUITE 781329
LK78X INWARD OPENING WINDOW, SASH 781329



LK78X SISÄÄNAUKEAVA IKKUNA
LK78X INWARD OPENING WINDOW

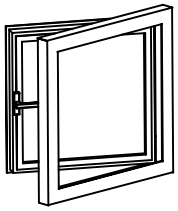


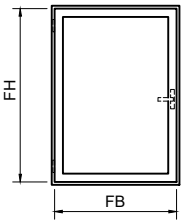
LK78X SISÄÄNAUKEAVA IKKUNA P50L JULKISIVUSSA
LK78X INWARD OPENING WINDOW IN P50L FASADE



LK78X ULOSAUKEAVAT IKKUNAT
LK78X OUTWARD OPENING WINDOWS

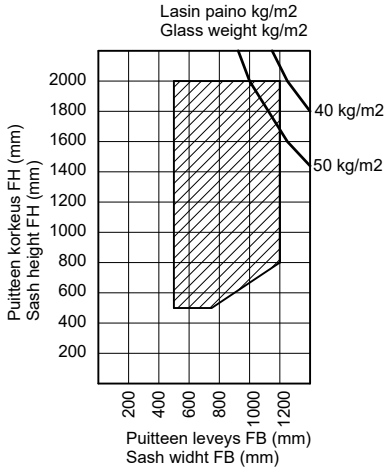
SIVUSARANOITU IKKUNA
SIDE HUNG WINDOW



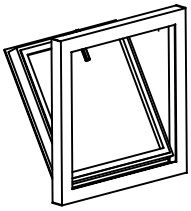


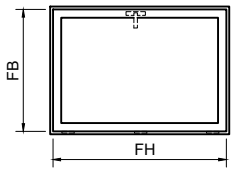
Puitteen leveys FB Sash width FB	500 .. 1200*
Puitteen korkeus FH Sash height FH	500 .. 2000*
Puitteen enimmäispaino Max. sash weight	100 kg
Ikkunan mittasuhde: FB/FH Window dimension ratio: FB/FH	< 1.5

* Kts. viereinen kaavio
* See adjacent diagram



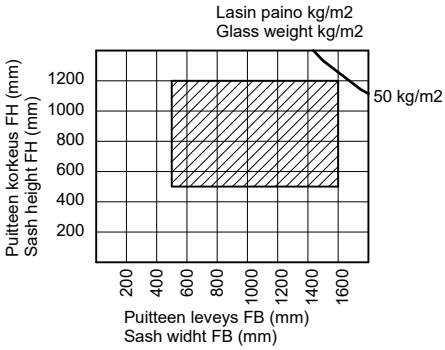
ALASARANOITU IKKUNA
BOTTOM HUNG WINDOW



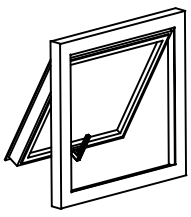


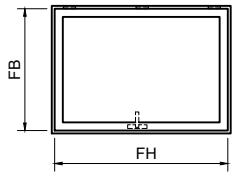
Puitteen leveys FB Sash width FB	500 .. 1600*
Puitteen korkeus FH Sash height FH	500 .. 1200*
Puitteen enimmäispaino Max. sash weight	100 kg

* Kts. viereinen kaavio
* See adjacent diagram



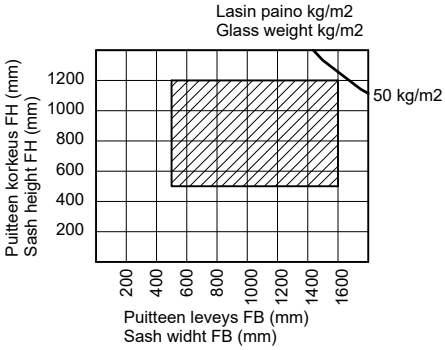
YLÄSARANOITU IKKUNA
TOP HUNG WINDOW





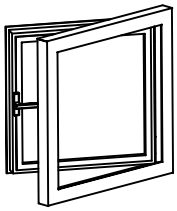
Puitteen leveys FB Sash width FB	500 .. 1600*
Puitteen korkeus FH Sash height FH	500 .. 1200*
Puitteen enimmäispaino Max. sash weight	100 kg

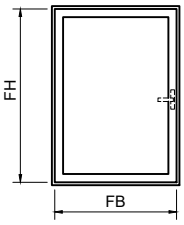
* Kts. viereinen kaavio
* See adjacent diagram



LK78X ULOSAUKEAVAT IKKUNAT
LK78X OUTWARD OPENING WINDOWS

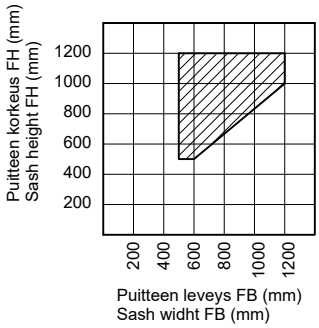
SIVUSARANOITU IKKUNA, PIILOHELAT
SIDE HUNG WINDOW, CONCEALED HINGES



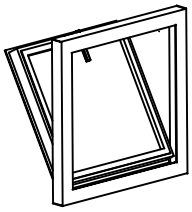


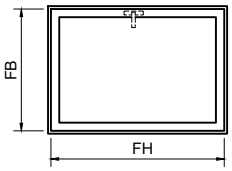
Puitteen leveys FB Sash width FB	500 .. 1200*
Puitteen korkeus FH Sash height FH	500 .. 1200*
Puitteen enimmäispaino Max. sash weight	100 kg
Ikkunan mittasuhde: FB/FH Window dimension ratio: FB/FH	< 1.2

* Kts. viereinen kaavio
* See adjacent diagram



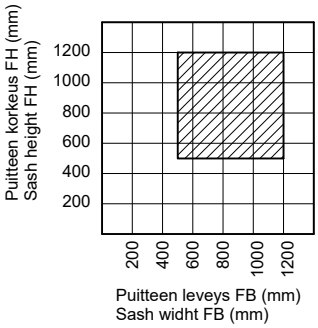
ALASARANOITU IKKUNA, PIILOSARANAT
BOTTOM HUNG WINDOW, CONCEALED HINGES



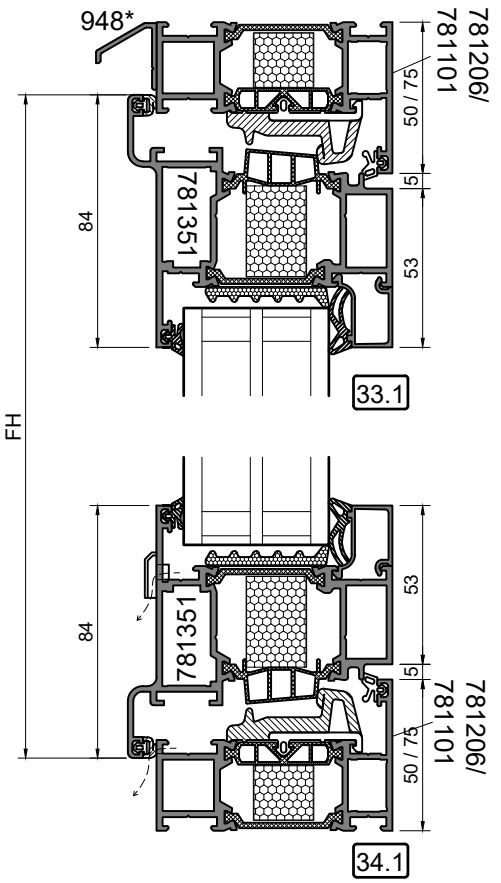


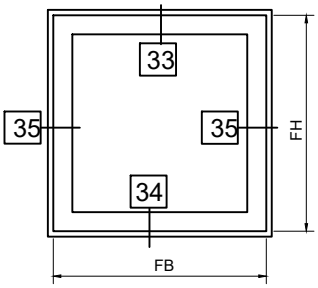
Puitteen leveys FB Sash width FB	500 .. 1200*
Puitteen korkeus FH Sash height FH	500 .. 1200*
Puitteen enimmäispaino Max. sash weight	100 kg

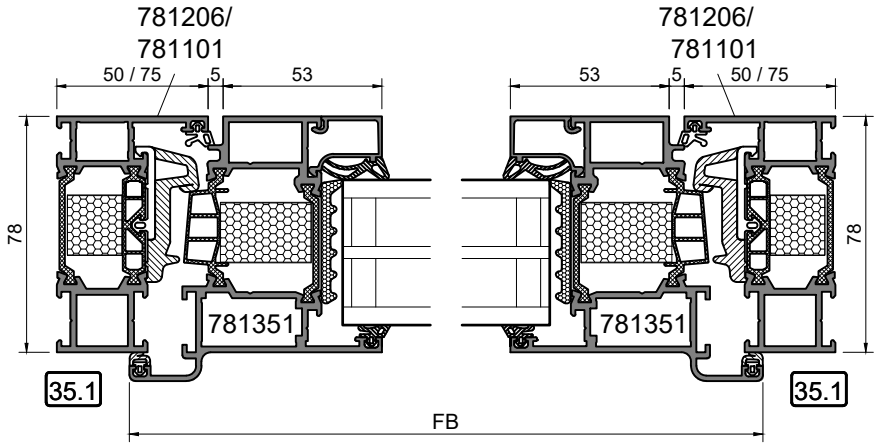
* Kts. viereinen kaavio
* See adjacent diagram



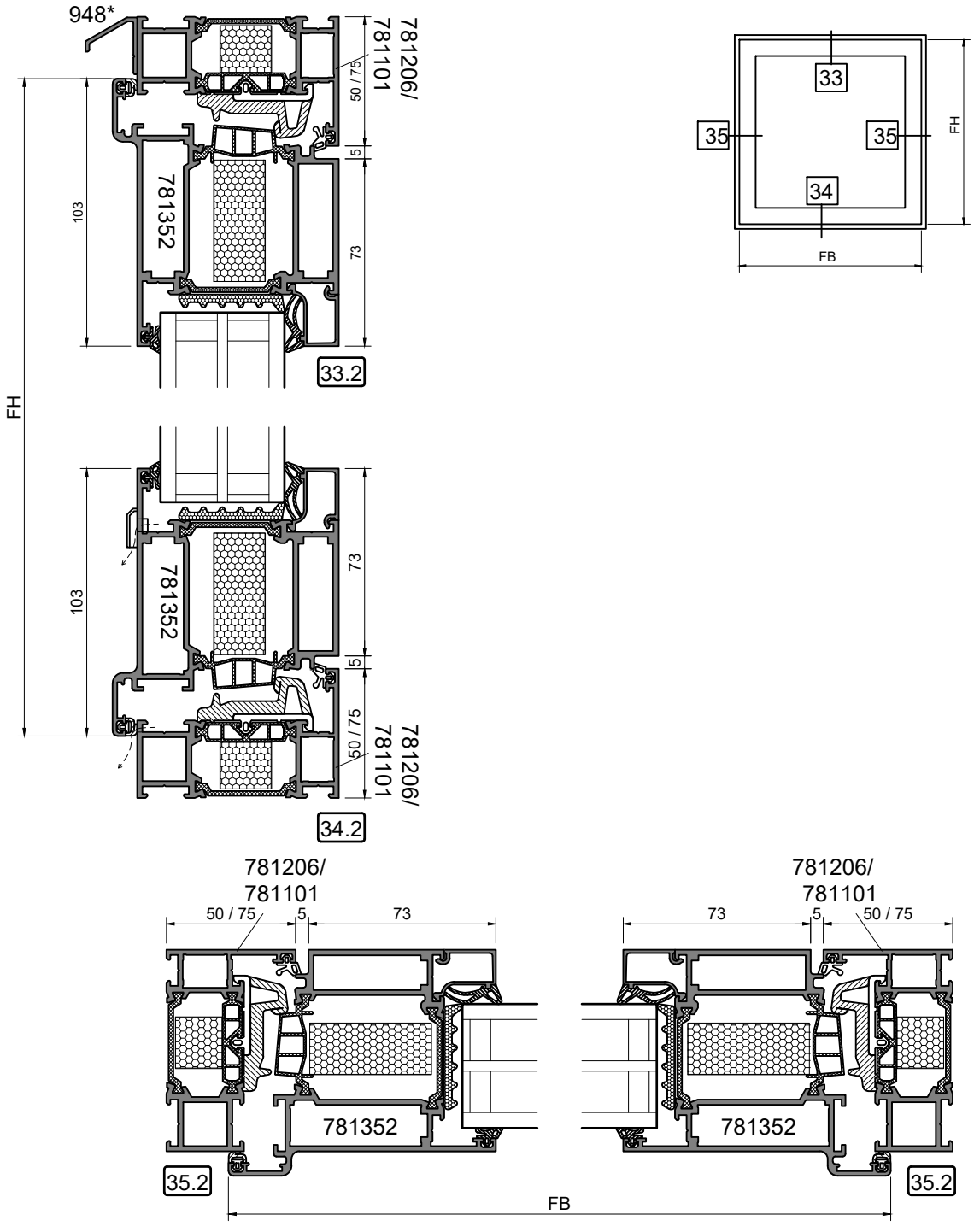
LK78X ULOSAUKEAVA IKKUNA, PUITE 781351
LK78X OUTWARD OPENING WINDOW, SASH 781351



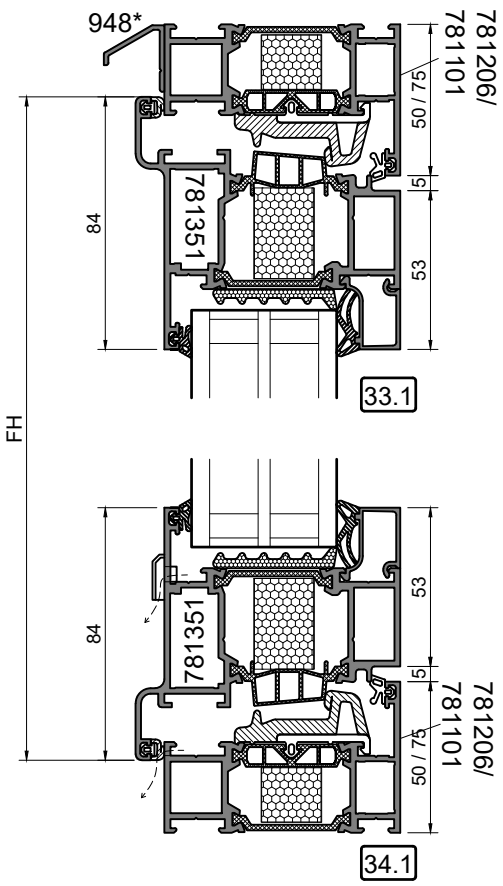


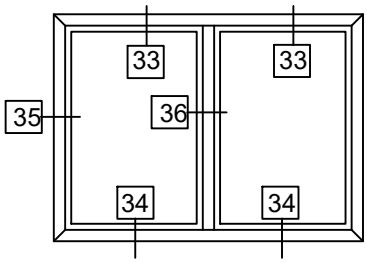


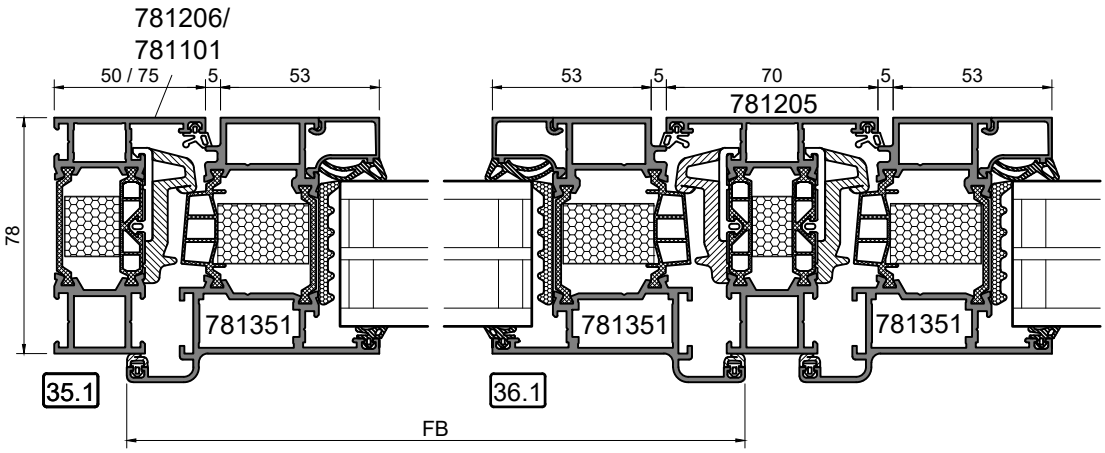
LK78X ULOSAUKEAVA IKKUNA, PUITE 781352
LK78X OUTWARD OPENING WINDOW, SASH 781352



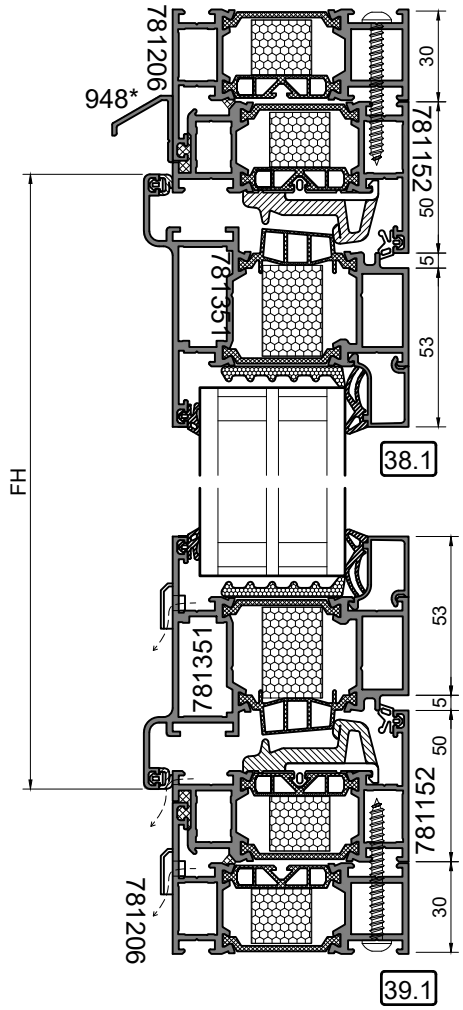
LK78X ULOSAUKEAVA IKKUNA
LK78X OUTWARD OPENING WINDOW

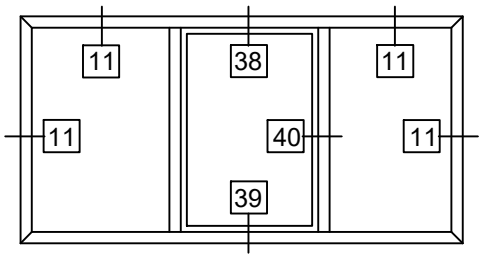


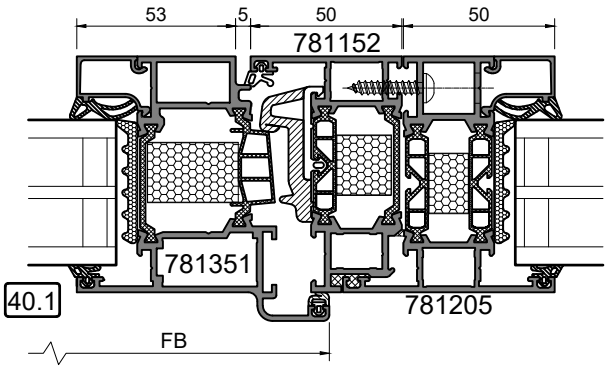


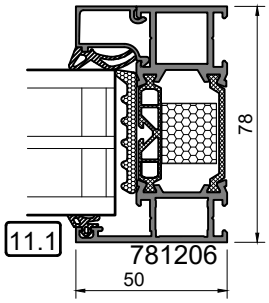


LK78X ULOSAUKEAVA IKKUNA IKKUNANAUHASSA
LK78X OUTWARD OPENING WINDOW IN WINDOW STRIP

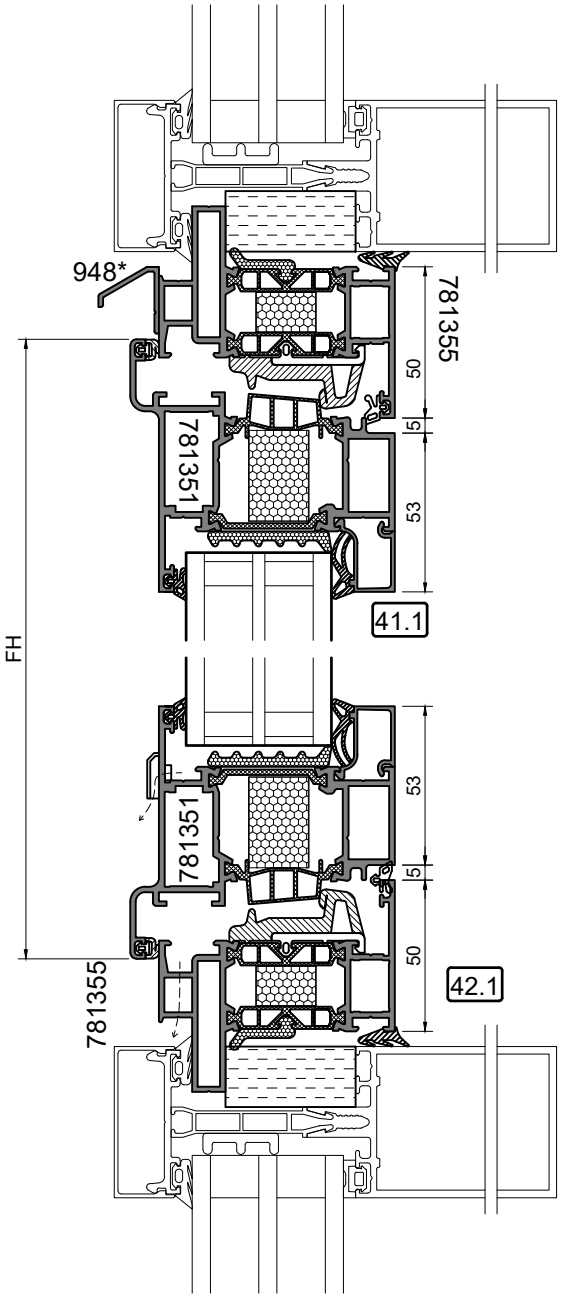


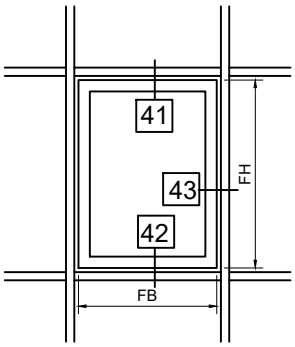


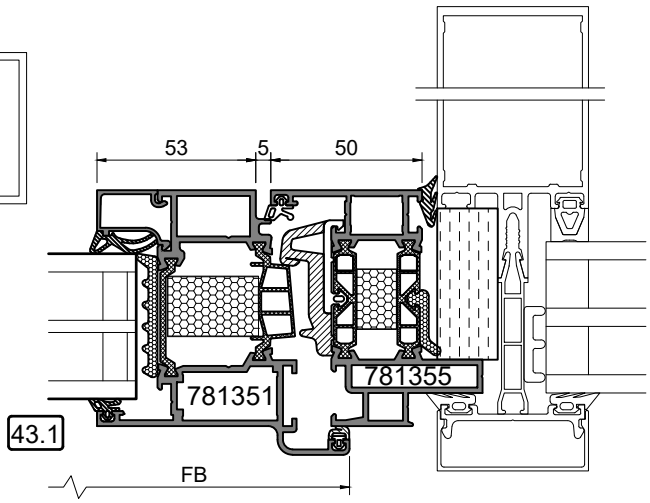




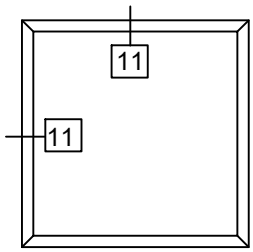
LK78X ULOSAUKEAVA IKKUNA P50L JULKISIVUSSA
LK78X OUTWARD OPENING WINDOW IN P50L FASADE

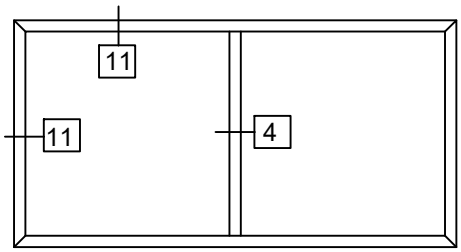


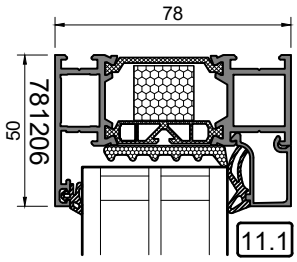


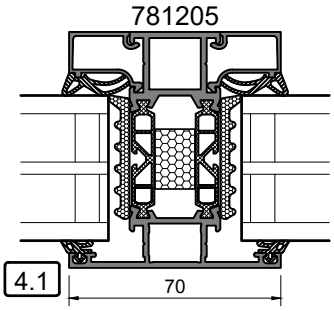


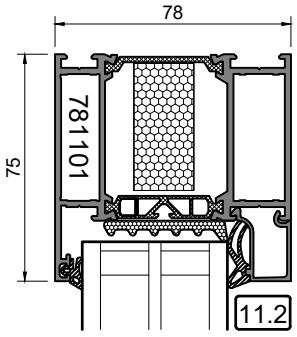
LK78X KIINTEÄ IKKUNA
LK78X FIXED WINDOW

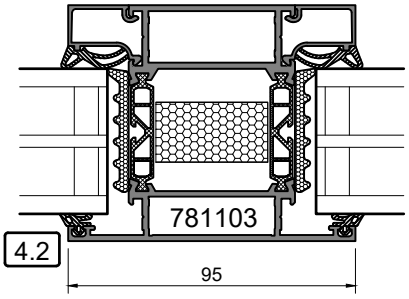


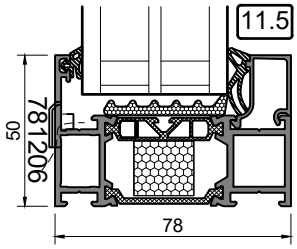




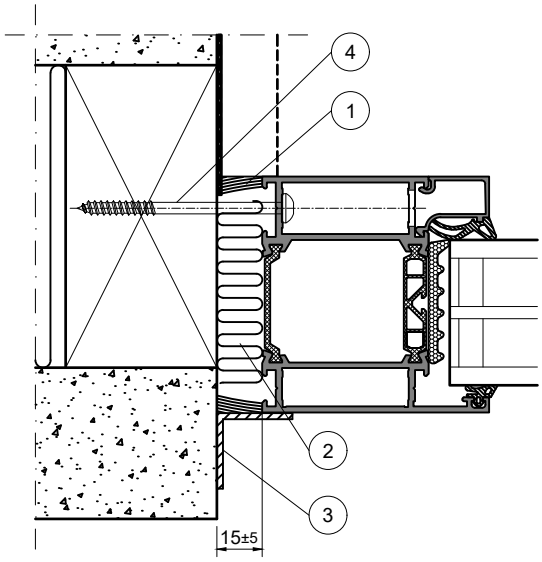


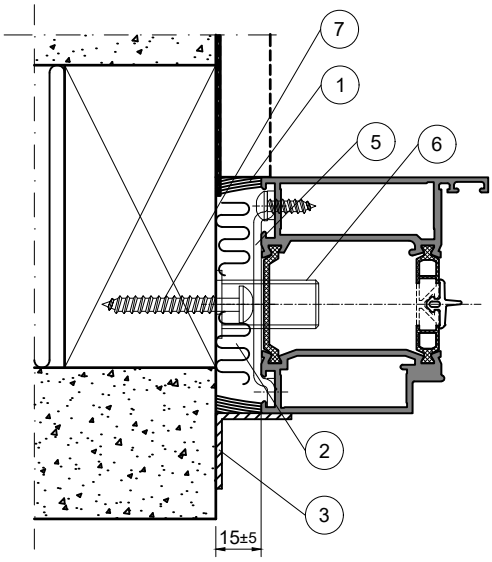


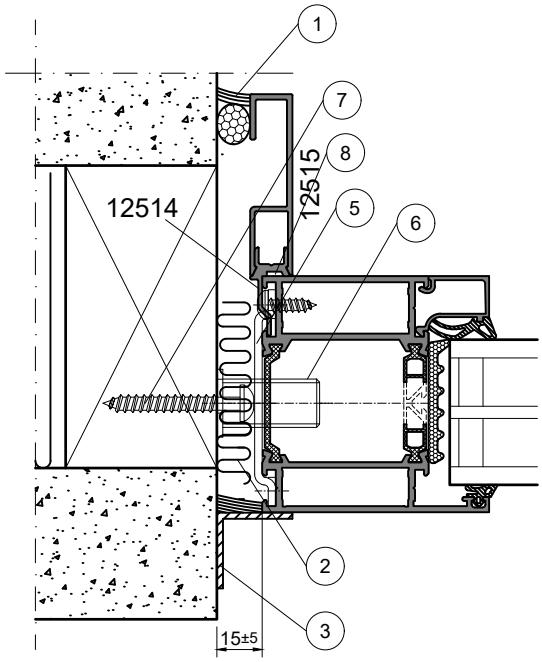


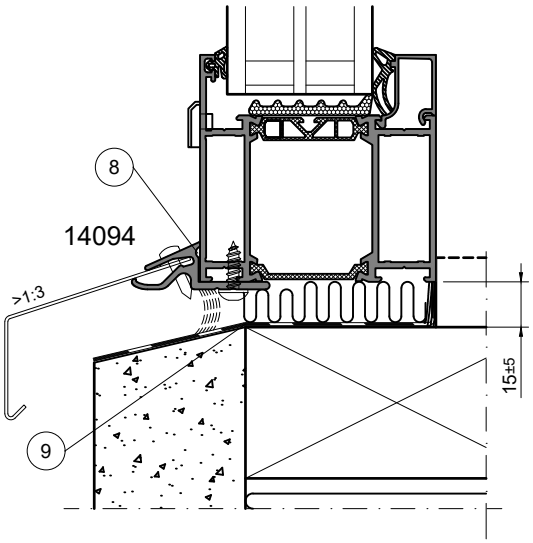


LIITTÄMINEN RAKENNUSRUNKOON, ESIMERKKEJÄ
MOUNDING TO BUILDING FRAME, EXAMPLES



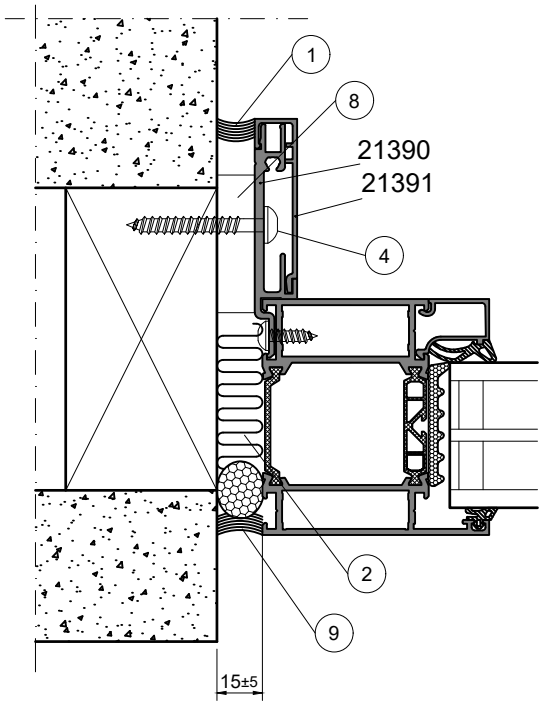


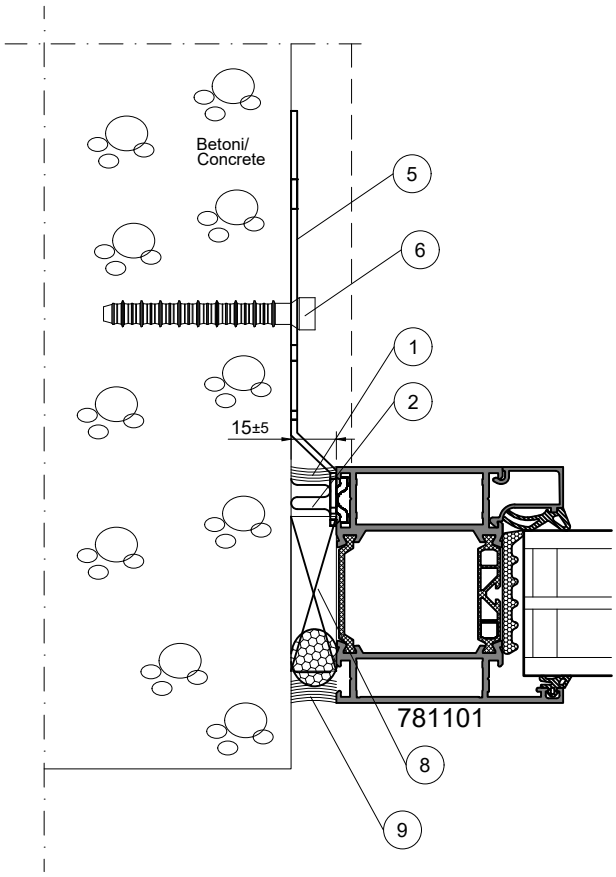




1	Ilma- ja höyrytiivistys Air and diffision seal	4	Kiinnitysruuvi Fixing screw	7	Adjufix kiinnitysruuvi Adjufix fixing screw
2	Eriste Insulation	5	Karmin kiinnityslevy Fixing plate	8	Tiivistysmassa Sealing compound
3	Peitelista Cover strip	6	Kiinnityshylsy Frame screw		

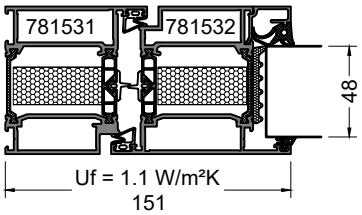
LIITTÄMINEN RAKENNUSRUNKOON, ESIMERKKEJÄ
MOUNDING TO BUILDING FRAME, EXAMPLES





1	Ilma- ja höyrytiivistys Air and diffision seal	4	Kiinnitysruuvi Fixing screw	8	Asennuskiila Setting block
2	Eriste Insulation	5	Kääntöankkuri Rotary anchor	9	Sääsauma Weather sealing
3	Peitelista Cover strip	6	Betoniruuvi Screw for concrete		

LK78X OVEN U_D-ARVOJA
LK78X DOOR U_D-VALUES



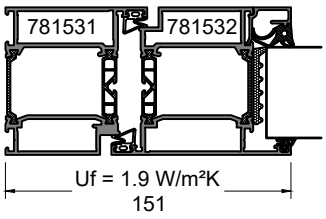
1-lehtinen ovi
1-leaf door

Koko / Size	1230 x 2180	Profiilit / Profiles	781531/781532, 781536/781530	Lasin U_g-arvo / Glass U_g-value					
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		0.80	0.87	0.93	1.0	1.1	1.1
RST t=0.18		0.066 W/mK		0.86	0.93	0.99	1.1	1.1	1.2
Alumiini t=0.3		0.106 W/mK		0.95	1.0	1.1	1.1	1.2	1.3

2-lehtinen ovi
2-leaf door

Koko / Size	2000 x 2180	Profiilit / Profiles	781531/781532, 781536/781530	Lasin U_g-arvo / Glass U_g-value					
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		0.81	0.88	0.94	1.0	1.1	1.1
RST t=0.18		0.066 W/mK		0.88	0.94	1.0	1.1	1.1	1.2
Alumiini t=0.3		0.106 W/mK		0.98	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

Koko / Size	2000 x 2180	Profiilit / Profiles	781531/781532, 781536/781530	Lasin U_g-arvo / Glass U_g-value					
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

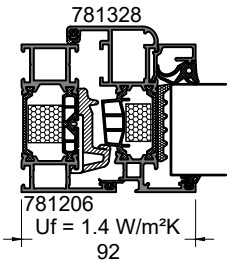
Koko / Size	2000 x 2180	Profiilit / Profiles	781531/781532, 781536/781530	Lasin U_g-arvo / Glass U_g-value					
Eristyslasin välilista / IGU spacer		Lisäkonduktanssi ψ_g / Linear thermal transmittance ψ_g		0.5	0.6	0.7	0.8	0.9	1.0
				Oven U_D-arvo / Door U_D-value W/m²K					
TPS		0.038 W/mK		1.1	1.1	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 ≤ 3,6 m^2.
Parioven (2000x 2180 mm) taulukoituja U_D-arvoja voidaan käyttää ovien yhteispinta-alan ollessa > 3,6 m^2.
Tarkemmat projektikohtaiset laskennat tehtävä erikseen.

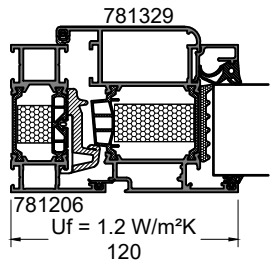
Tabulated U_D-values can be used for single leaf door (1230x 2180 mm) when the door size ≤ 3,6 m^2.
Tabulated U_D-values can be used for double leaf door (2000x 2180 mm) when the door size > 3,6 m^2.
Specific values according to project are declared separately.

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

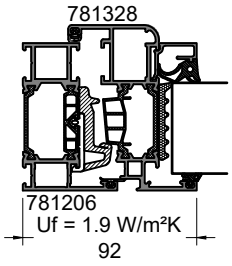


Koko / Size	1230 x 1480	Profiilit / Profiles	781206/ 781328	Lasin U_g-arvo / Glass U_g-value					
Eristyslasin välilista / IGU spacer		Lisäkonduktanssi ψ_g / Linear thermal transmittance ψ_g		0.5	0.6	0.7	0.8	0.9	1.0
				Ikkunan U_W-arvo / Window U_W-value				W/m²K	
TPS		0.038 W/mK		0.83	0.90	0.98	1.1	1.1	1.2
RST t=0.18		0.066 W/mK		0.90	0.97	1.0	1.1	1.2	1.3
Alumiini t=0.3		0.106 W/mK		1.0	1.1	1.2	1.2	1.3	1.4

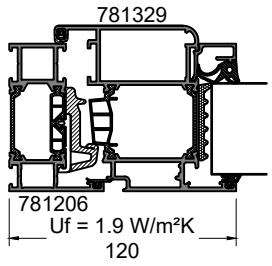


Koko / Size	1230 x 1480	Profiilit / Profiles	781206/ 781329	Lasin U_g-arvo / Glass U_g-value					
Eristyslasin välilista / IGU spacer		Lisäkonduktanssi ψ_g / Linear thermal transmittance ψ_g		0.5	0.6	0.7	0.8	0.9	1.0
				Ikkunan U_W-arvo / Window U_W-value				W/m²K	
TPS		0.038 W/mK		0.82	0.89	0.96	1.0	1.1	1.2
RST t=0.18		0.066 W/mK		0.89	0.96	1.0	1.1	1.2	1.2
Alumiini 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



Koko / Size	1230 x 1480	Profiilit / Profiles	781206/ 781328	Lasin U_g-arvo / Glass U_g-value					
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		0.96	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
Alumiini t=0.3		0.106 W/mK		1.1	1.2	1.3	1.4	1.4	1.5



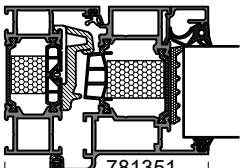
Koko / Size	1230 x 1480	Profiilit / Profiles	781206/ 781329	Lasin U_g-arvo / Glass U_g-value					
Eristyslasin välilista / IGU spacer		Lisäkonduktanssi ψ_g / Linear thermal transmittance ψ_g		0.5	0.6	0.7	0.8	0.9	1.0
				Ikkunan U_W-arvo / Window U_W-value				W/m²K	
TPS		0.038 W/mK		1.0	1.1	1.2	1.3	1.3	1.4
RST t=0.18		0.066 W/mK		1.1	1.2	1.3	1.3	1.4	1.5
Alumiini t=0.3		0.106 W/mK		1.2	1.3	1.4	1.4	1.5	1.6

Tarkemmat projektikohtaiset laskennat tehtävä 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

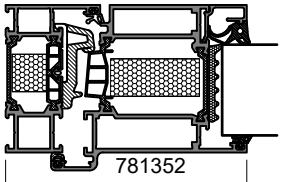
LK78X ULOSAUKEAVAN IKKUNAN U_W-ARVOJA
LK78X OUTWARD OPENING WINDOW U_W-VALUES

781206



Koko / Size	1230 x 1480	Profiilit / Profiles	781206/ 781351	Lasin U_g-arvo / Glass U_g-value					
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

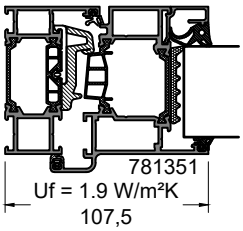
781206



Koko / Size	1230 x 1480	Profiilit / Profiles	781206/ 781352	Lasin U_g-arvo / Glass U_g-value					
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

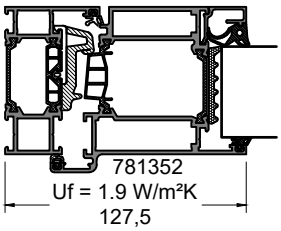
LK78Xe ULOSAUKEAVAN IKKUNAN U_W-ARVOJA
LK78Xe OUTWARD OPENING WINDOW U_W-VALUES

781206



Koko / Size	1230 x 1480	Profiilit / Profiles	781206/ 781351	Lasin U_g-arvo / Glass U_g-value					
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		1.0	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
Alumiini t=0.3		0.106 W/mK		1.2	1.3	1.4	1.4	1.5	1.6

781206

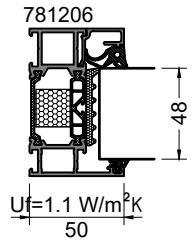


Koko / Size	1230 x 1480	Profiilit / Profiles	781206/ 781352	Lasin U_g-arvo / Glass U_g-value					
Eristyslasin välilista / IGU spacer		Lisäkonduktanssi ψ_g / Linear thermal transmittance ψ_g		0.5	0.6	0.7	0.8	0.9	1.0
				Ikkunan U_W-arvo / Window U_W-value W/m²K					
TPS		0.038 W/mK		1.1	1.1	1.2	1.3	1.3	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

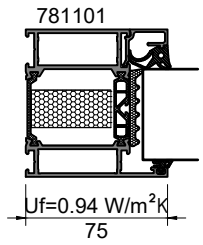
Tarkemmat projektikohtaiset laskennat tehtävä erikseen.
Specific values according to project are declared separately.

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 KIINTEÄN IKKUNAN U_W-ARVOJA
LK78X FIXED WINDOW U_W-VALUES

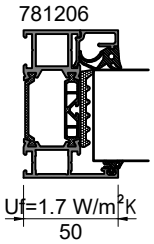


Koko / Size	1230 x 1480	Profiilit / Profiles	781206	Lasin U_g-arvo / Glass U_g-value					
Eristyslasin välilista / IGU spacer		Lisäkonduktanssi ψ_g / Linear thermal transmittance ψ_g		0.5	0.6	0.7	0.8	0.9	1.0
				Ikkunan U_W-arvo / Window U_W-value W/m²K					
TPS		0.038 W/mK		0.69	0.78	0.86	0.95	1.0	1.1
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

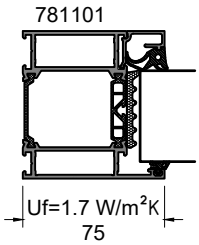


Koko / Size	1230 x 1480	Profiilit / Profiles	781101	Lasin U_g-arvo / Glass U_g-value					
Eristyslasin välilista / IGU spacer		Lisäkonduktanssi ψ_g / Linear thermal transmittance ψ_g		0.5	0.6	0.7	0.8	0.9	1.0
				Ikkunan U_W-arvo / Window U_W-value W/m²K					
TPS		0.038 W/mK		0.69	0.77	0.85	0.93	1.0	1.2
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



Koko / Size	1230 x 1480	Profiilit / Profiles	781206	Lasin U_g-arvo / Glass U_g-value					
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		0.78	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

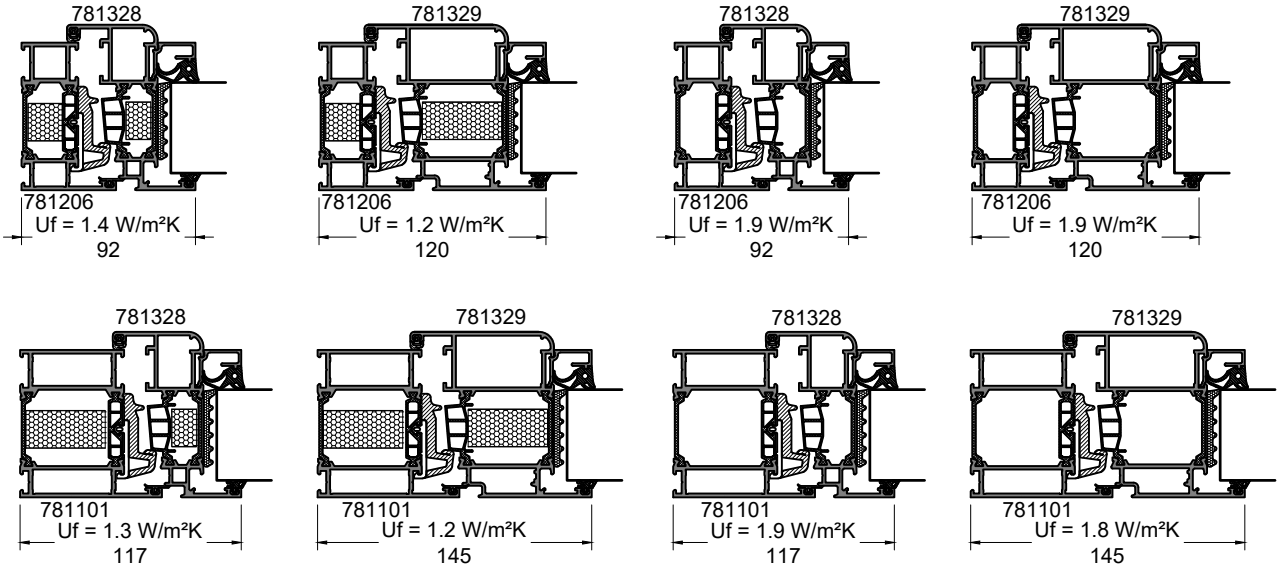


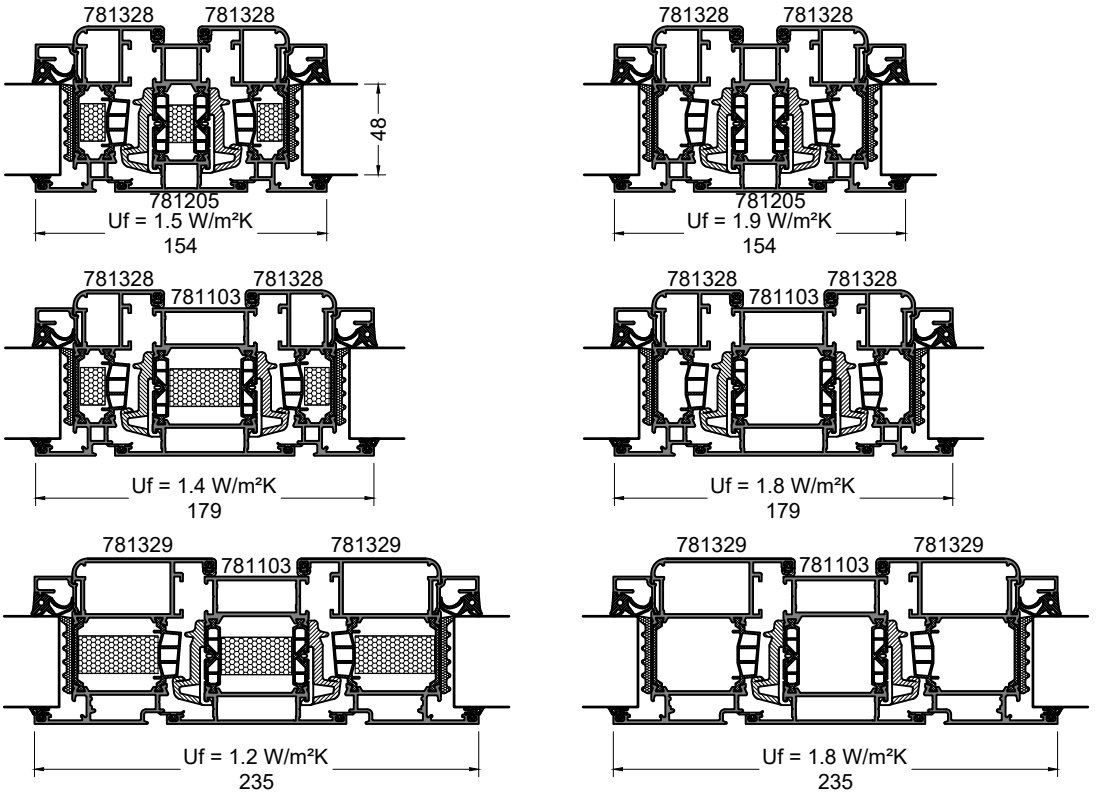
Koko / Size	1230 x 1480	Profiilit / Profiles	781101	Lasin U_g-arvo / Glass U_g-value					
Eristyslasin välilista / IGU spacer		Lisäkonduktanssi ψ_g / Linear thermal transmittance ψ_g		0.5	0.6	0.7	0.8	0.9	1.0
				Ikkunan U_W-arvo / Window U_W-value W/m²K					
TPS		0.038 W/mK		0.85	0.93	1.0	1.1	1.2	1.2
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 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

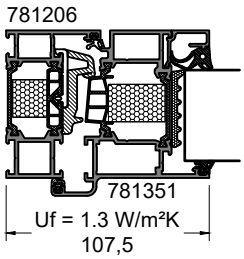


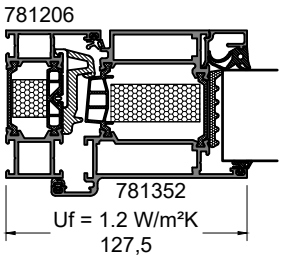


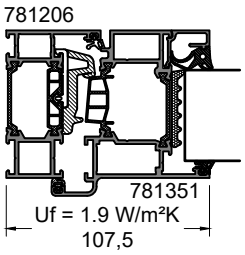
Karmirakenteen lämmönläpäisykertoimet U_f on määritetty standardin SFS-EN ISO 10077-2:2017 mukaan

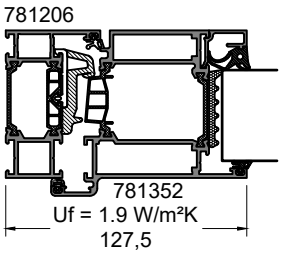
The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

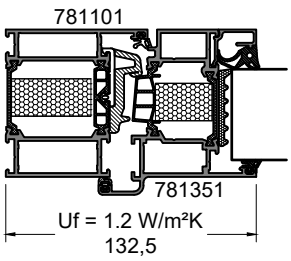
LK78X IKKUNAPROFIILEIDEN U_f-ARVOJA
LK78X WINDOW PROFILES U_f-VALUES

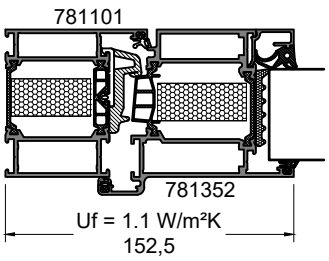


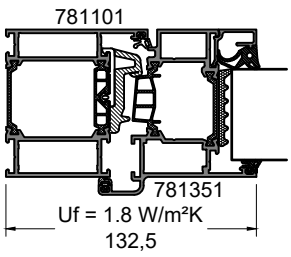


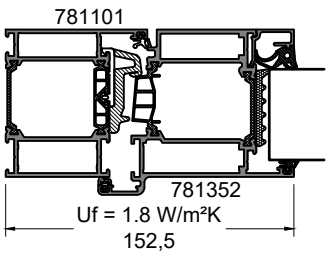


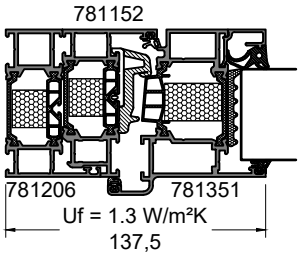


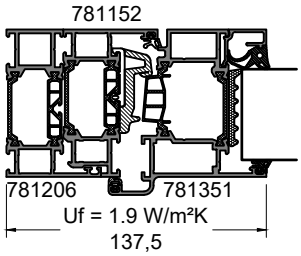


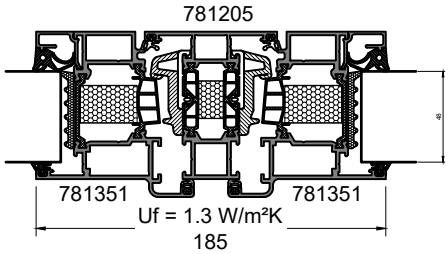


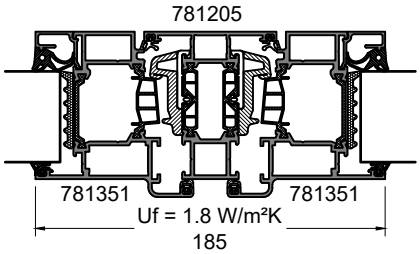


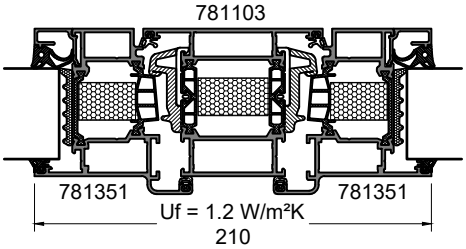


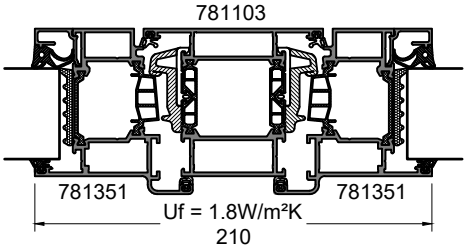


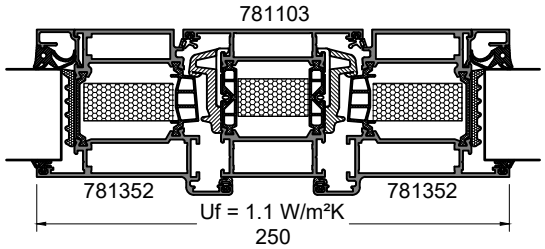


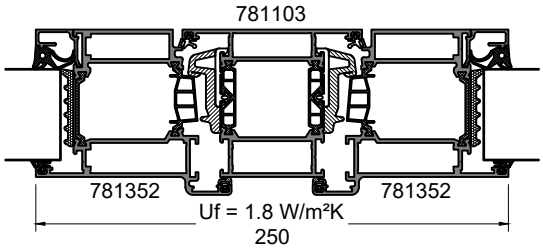








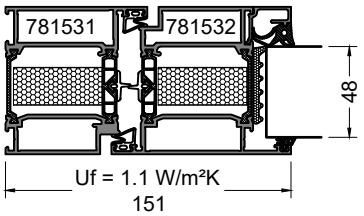


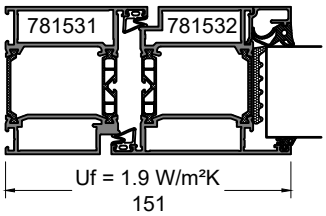


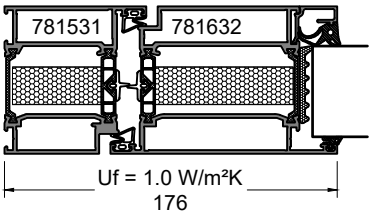
Karmirakenteen lämmönläpäisykertoimet U_f on määritetty standardin SFS-EN ISO 10077-2:2017 mukaan

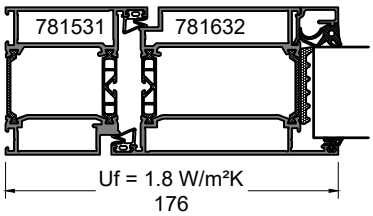
The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

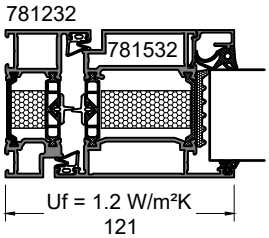
LK78X OVIPROFIILEIDEN U_f-ARVOJA
LK78X DOOR PROFILES U_f-VALUES

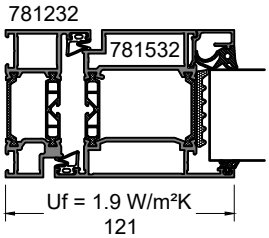


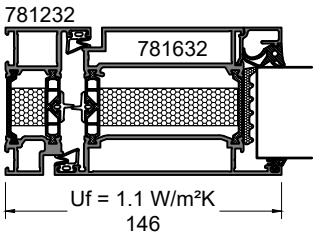


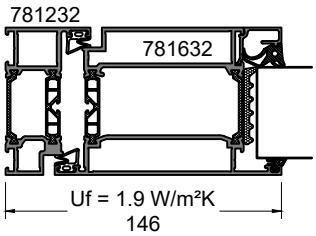


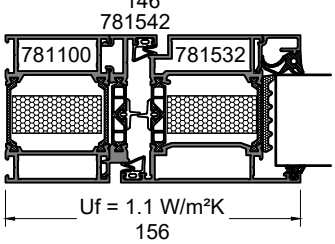


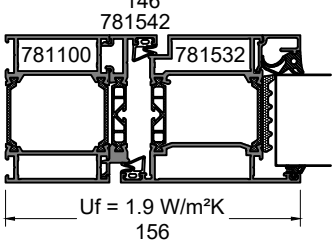


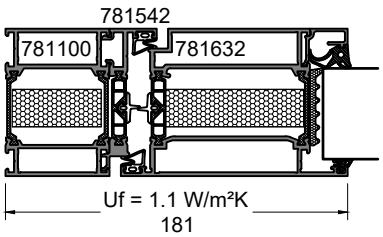


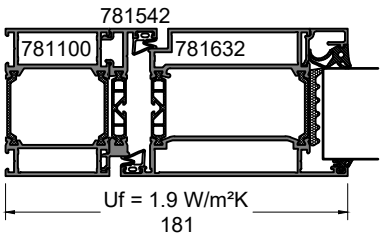








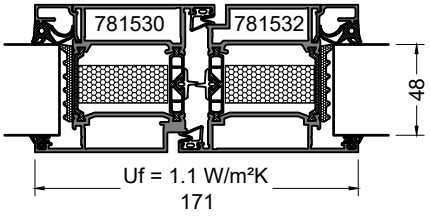


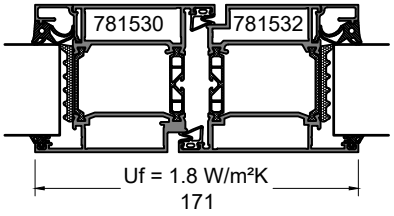


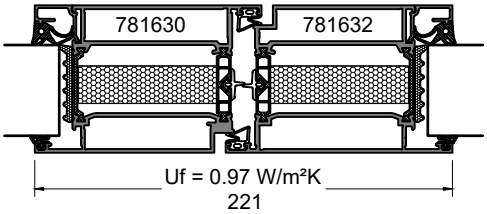
Karmirakenteen lämmönläpäisykertoimet U_f on määritetty standardin SFS-EN ISO 10077-2:2017 mukaan

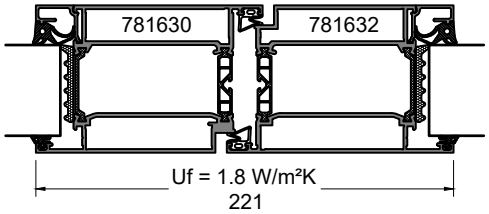
The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

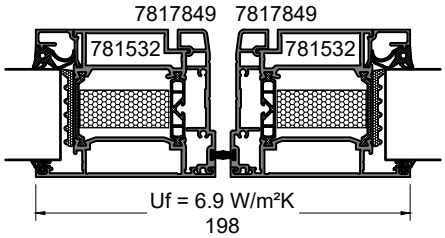
LK78X OVIPROFIILEIDEN U_f-ARVOJA
LK78X DOOR PROFILES U_f-VALUES

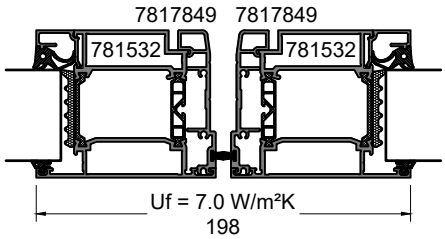


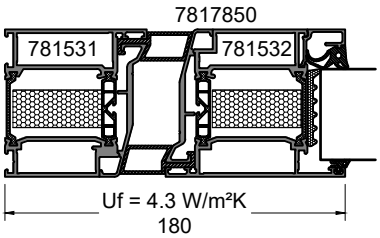


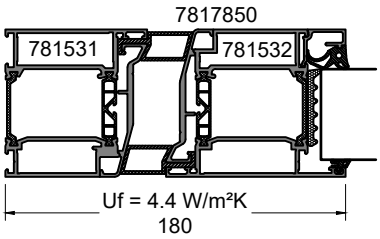


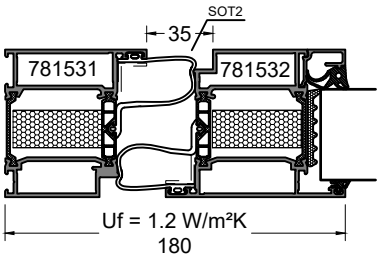


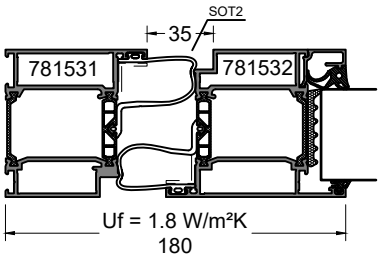








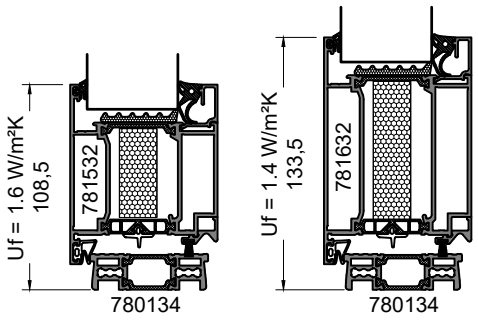


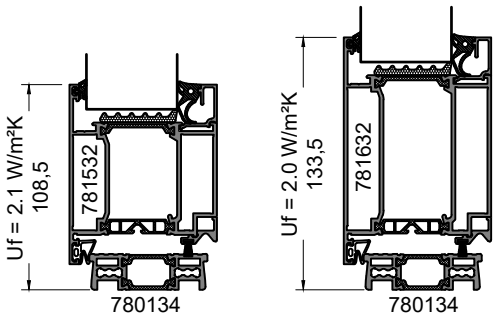


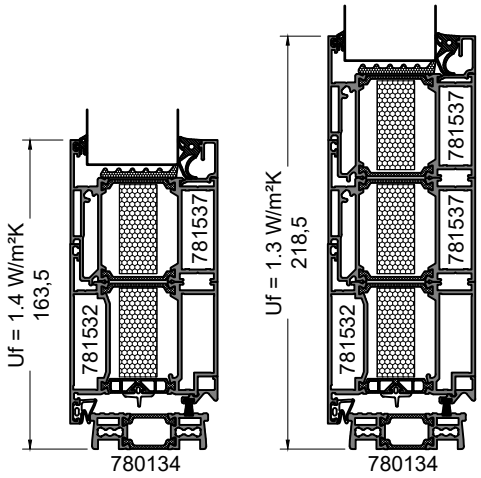
Karmirakenteen lämmönläpäisykertoimet U_f on määritetty standardin SFS-EN ISO 10077-2:2017 mukaan

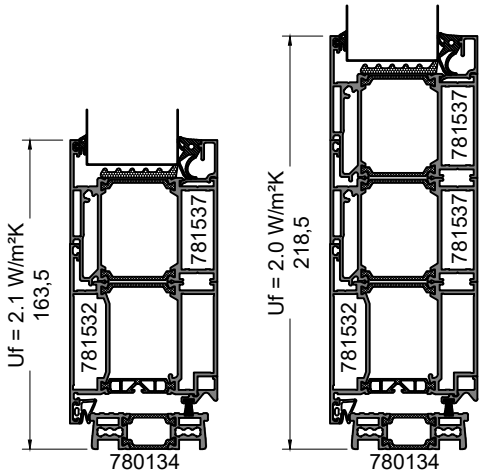
The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

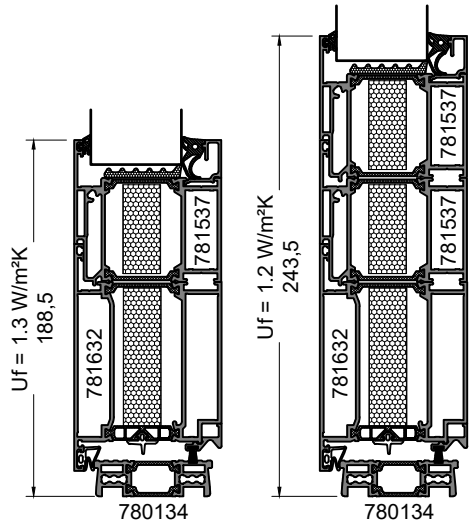
LK78X OVIPROFIILEIDEN U_f-ARVOJA
LK78X DOOR PROFILES U_f-VALUES

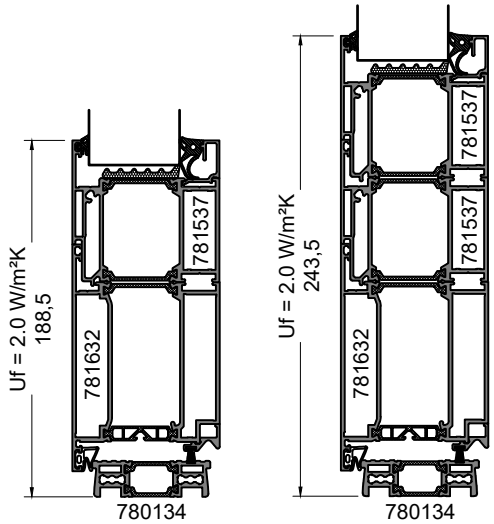










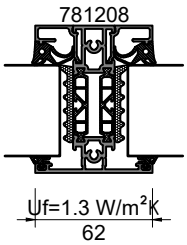


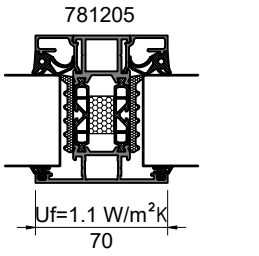
Karmirakenteen lämmönläpäisykertoimet U_f on määritetty standardin SFS-EN ISO 10077-2:2017 mukaan

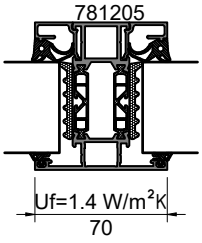
The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

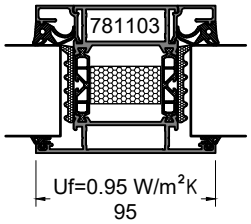
LK78X OVIPROFIILEIDEN U_f-ARVOJA
LK78X DOOR PROFILES U_f-VALUES

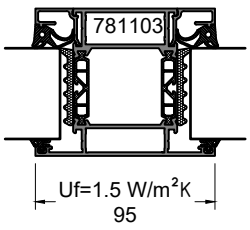


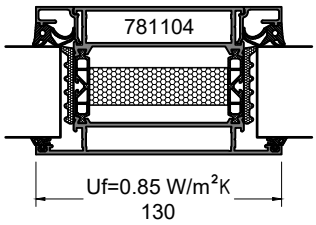


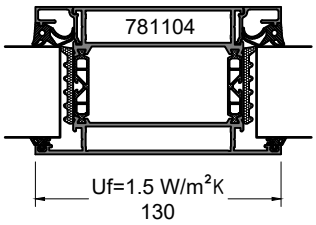


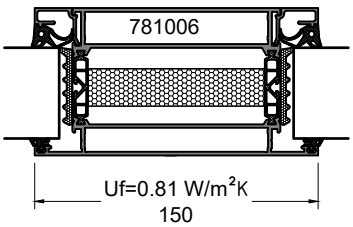


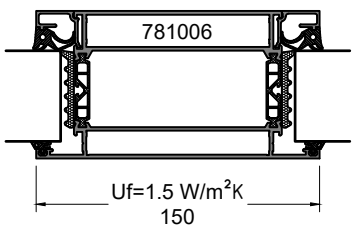








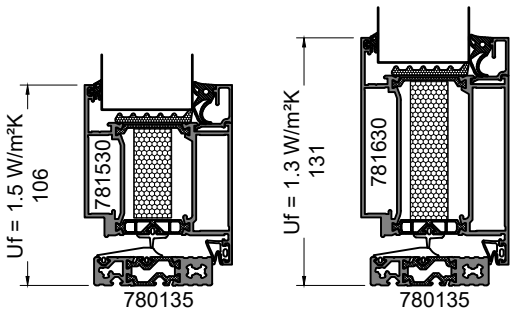


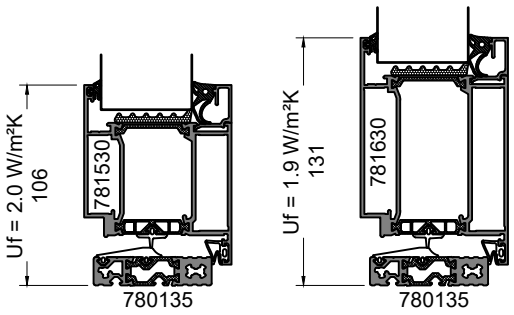


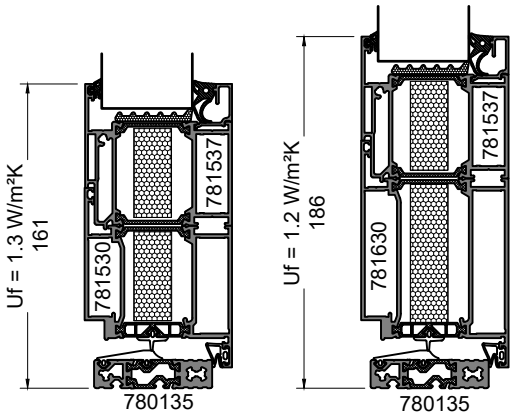
Karmirakenteen lämmönläpäisykertoimet U_f on määritetty standardin SFS-EN ISO 10077-2:2017 mukaan

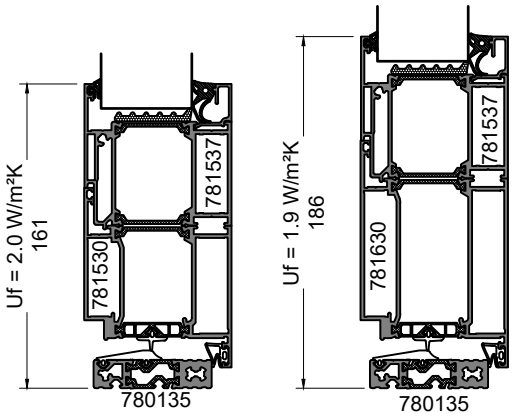
The thermal transmittance of the frames (U_f) are defined according to standard EN ISO 10077-2:2017

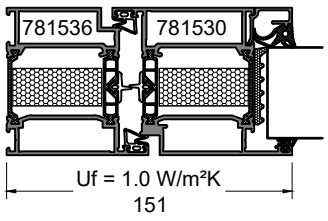
LK78X OVIPROFIILEIDEN U_f-ARVOJA
LK78X DOOR PROFILES U_f-VALUES

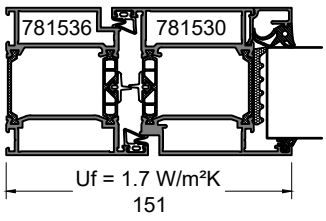


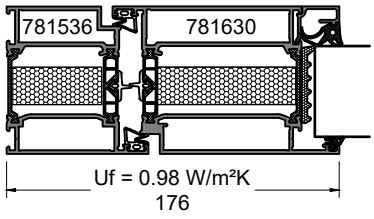


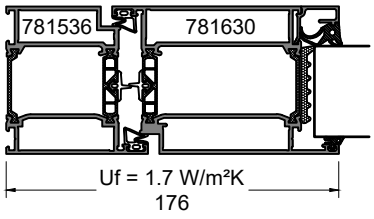












Karmirakenteen lämmönläpäisykertoimet U_f on määritetty standardin SFS-EN ISO 10077-2:2017 mukaan

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)					
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** 41 dB [4]	**R_W +C** 40 dB [4]	**R_W +C_{tr}** 38 dB [4]	**R_W** 41 dB [4]	**R_W +C** 40 dB [4]	**R_W +C_{tr}** 39 dB [4]
Lämmönläpäisykerroin (U_D) [3] **Thermal transmittance (U_D)** [3] (EN ISO 10077-2)	≥ 0,78 W/m^{2}K			≥ 0,80 W/m^{2}K		
Ilmanpitävyys [2] **Air permeability** [2] (EN 12207)	**4** (ulosauk./ Outward) **4** (sis.auk./ Inward)			**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 m^2, pariovet ≤ 3,2 m^2
[2] Elementin koko: yksilehtiset ≤ 3,1 m^2, pariovet ≤ 4,8 m^2
[3] Projektikohtaiset 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 m^2, double leaf door ≤ 3,2 m^2
[2] Element size: single leaf door ≤ 3,1 m^2, double leaf door ≤ 4,8 m^2
[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

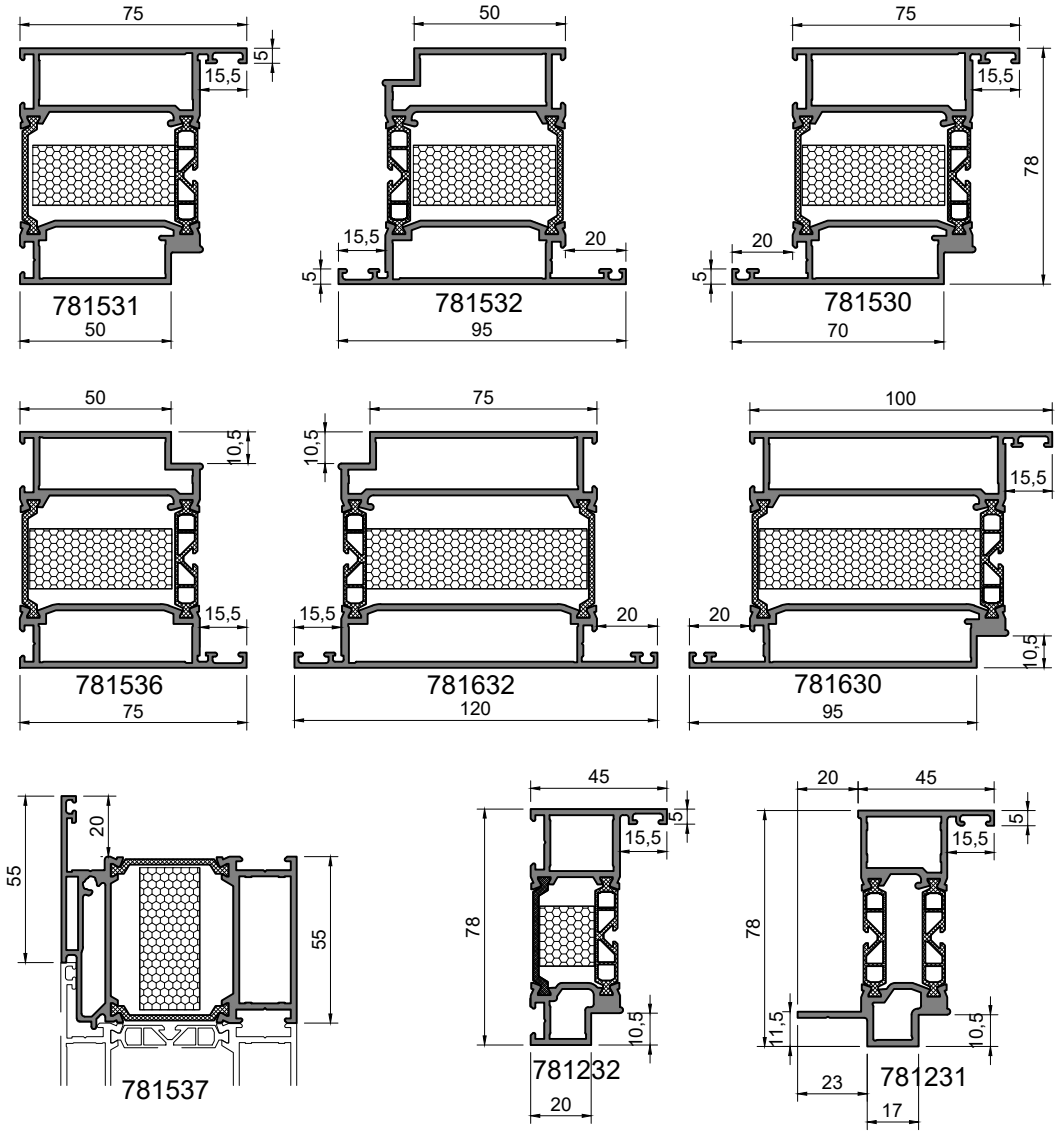
OMINAISUUDET/ LUOKITUS SFS-EN 14351-1 +A1 MUKAISESTI
PROPERTIES/ CLASSIFICATION ACCORDANCE TO EN 14351-1 +A1

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** 44 dB [4)]	**R_W +C** 43 dB [4)]	**R_W +C_{tr}** 41 dB [4)]	**R_W** 40 dB [4)]	**R_W +C** 39 dB [4)]	**R_W +C_{tr}** 35 dB [4)]	**R_W** 41 dB [4)]	**R_W +C** 39 dB [4)]	**R_W +C_{tr}** 36 dB [4)]
Lämmönläpäisykerroin (U_D) [3)] **Thermal transmittance (U_D)** [3)] (EN ISO 10077-2)	≥ 0,70 W/m^{2}K			≥ 0,84 W/m^{2}K			≥ 0,84 W/m^{2}K		
Ilmanpitävyys **Air permeability** (EN 12207)	**4** [2b)]			**4** [2b)]			**4** [2)]		

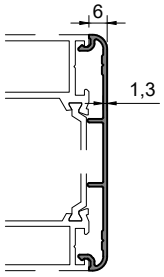
HUOM!
[1a)] Elementin koko ≤ 1230x1480mm
[1b)] Elementin koko ≤ 1720x2110mm
[2)] Elementin koko ≤ 2,7 m^2
[2b)] Elementin koko ≤ 5,4 m^2
[3)] Projektikohtaiset arvot määritettävä erikseen
[4)] Lasi/ umpiosa, kts. LK78X-tuotepassi

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

OVIPROFIILIT
DOOR PROFILES



OVIPROFIILIT
DOOR PROFILES



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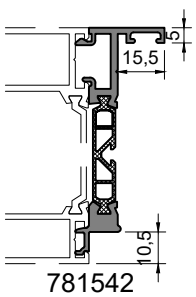

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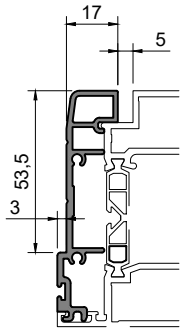

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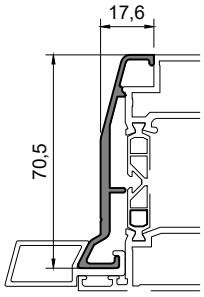

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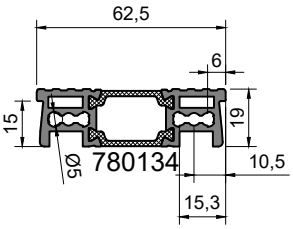

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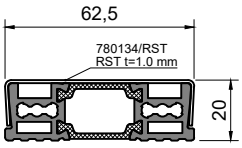

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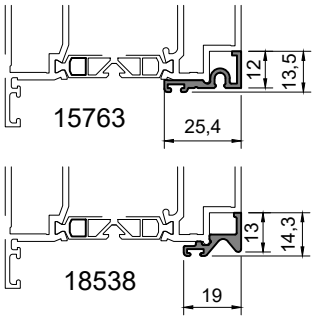

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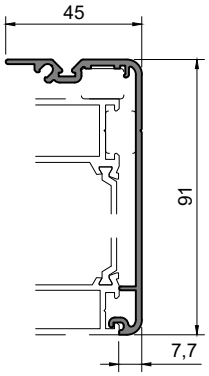

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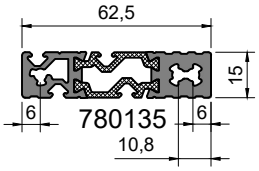

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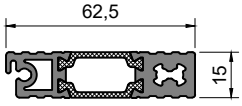

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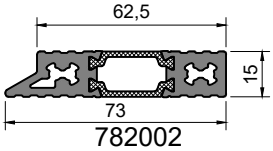

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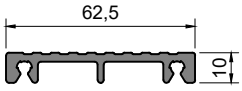

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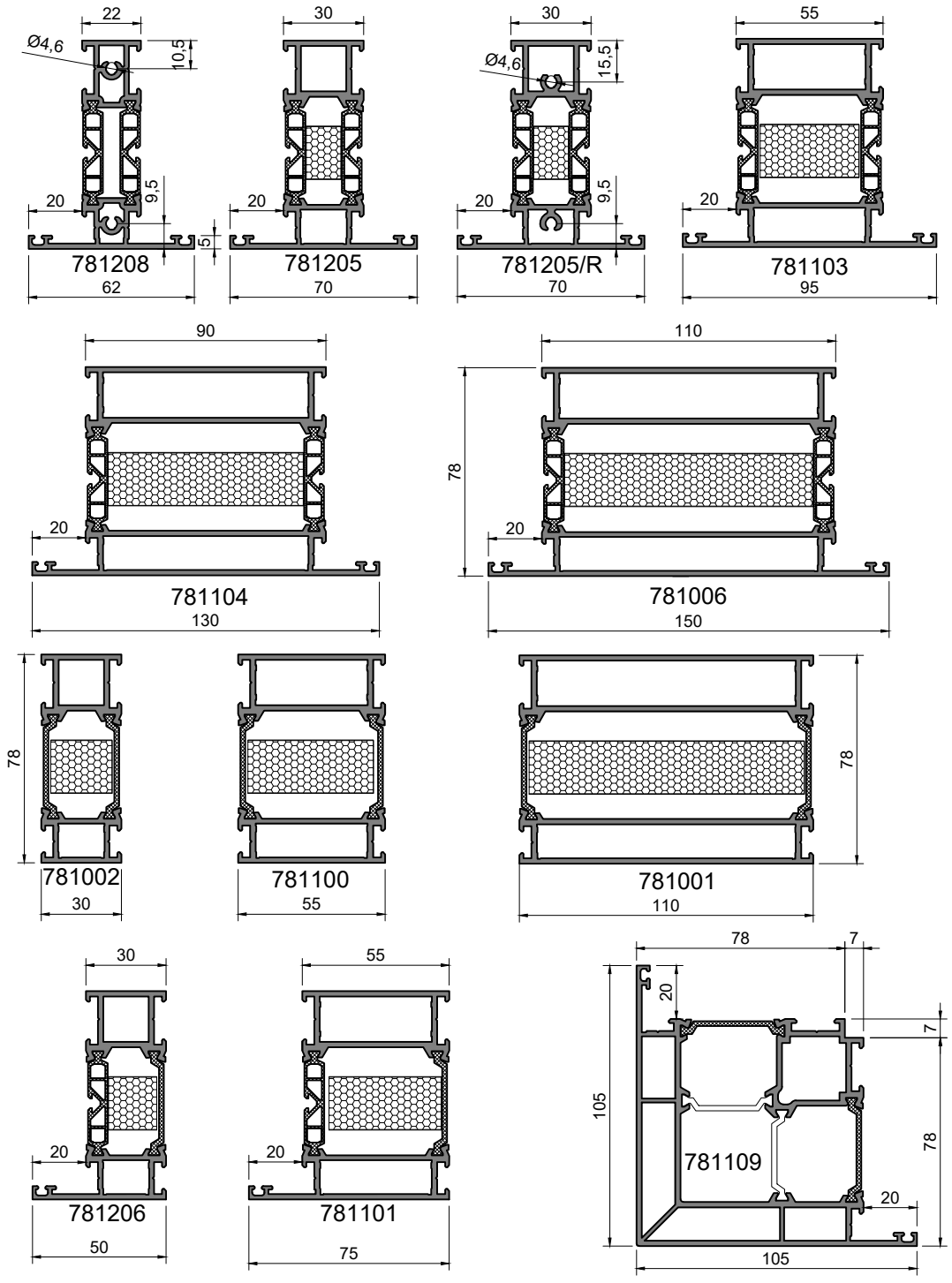
RUNKOPROFIILIT
FRAME PROFILES



RUNKOPROFIILIT
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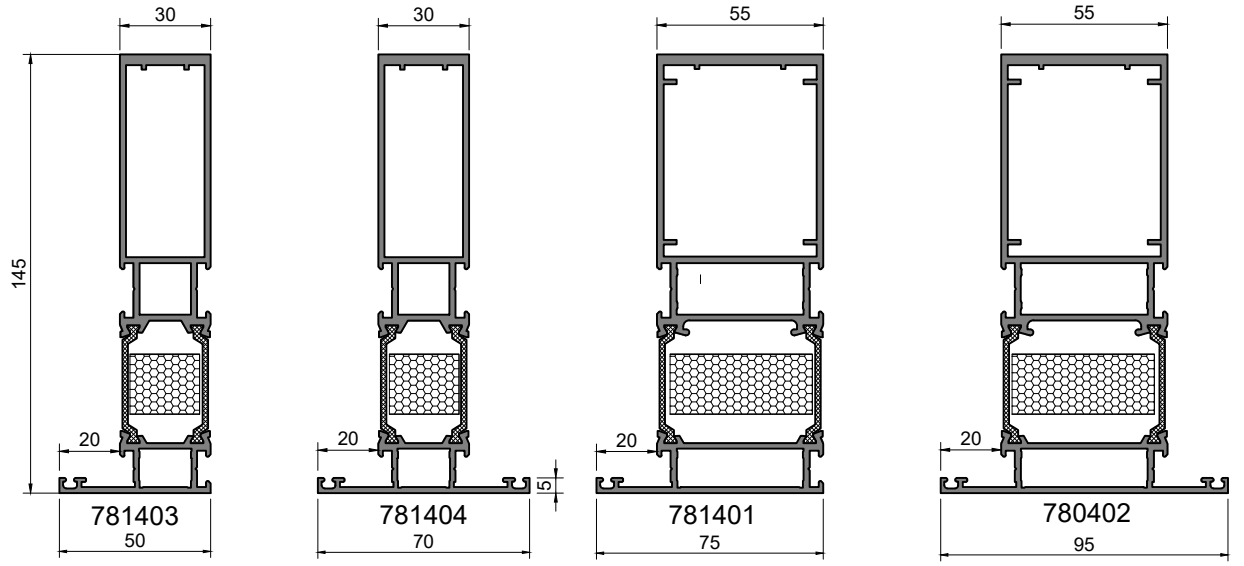
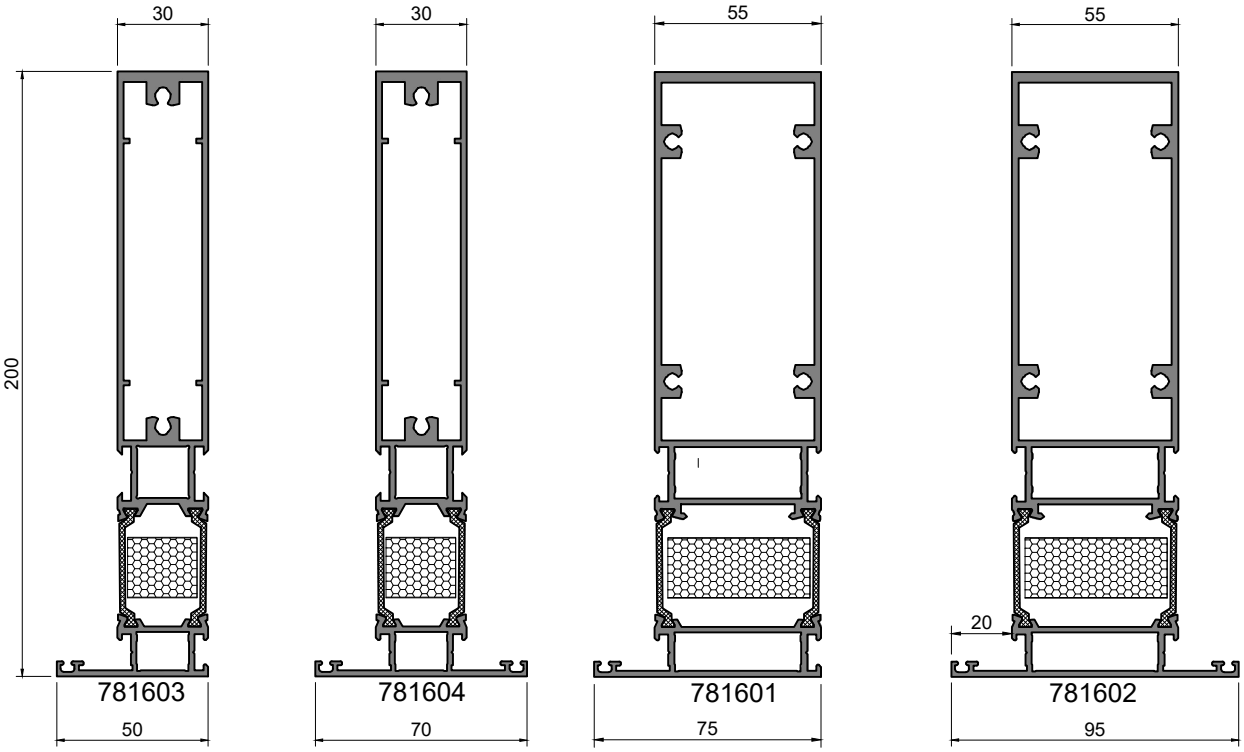
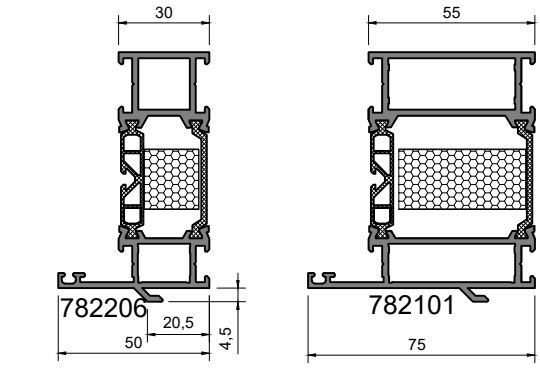
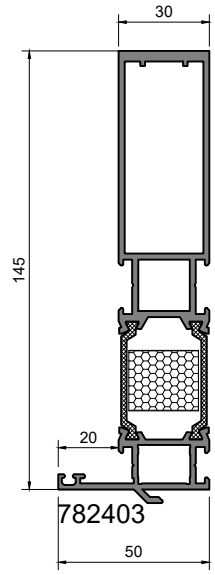
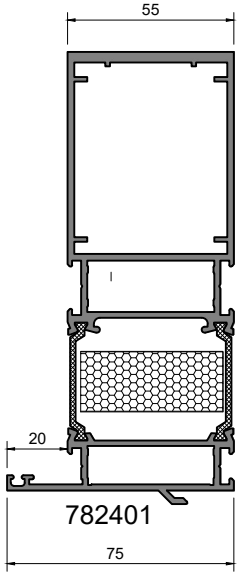


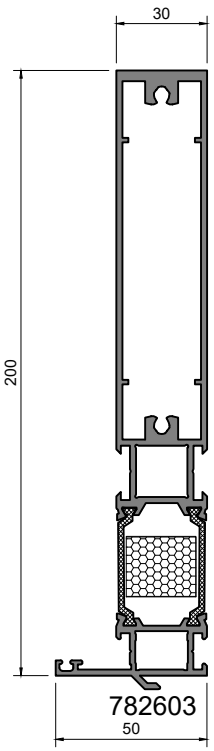


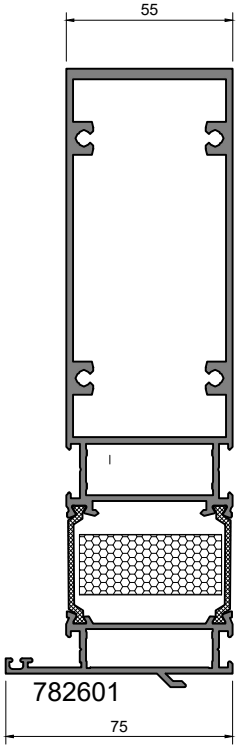
RUNKOPROFIILIT
FRAME PROFILES



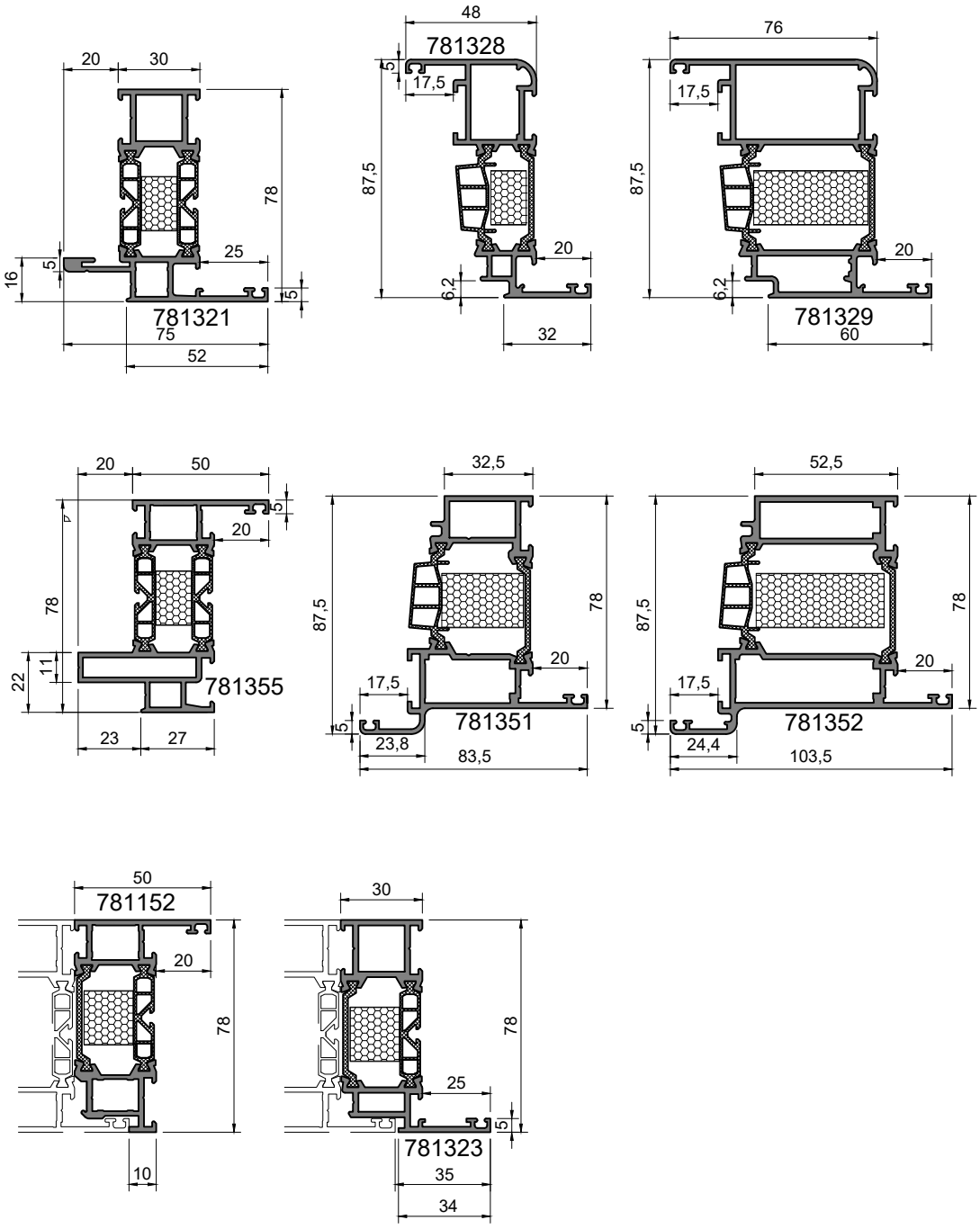




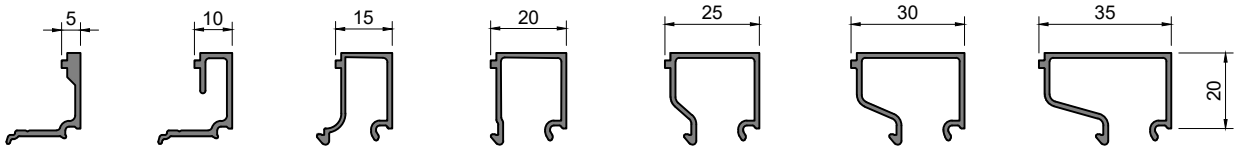




IKKUNAPROFIILIT
WINDOW PROFILES



LASITUSLISTAT
GLAZING BEADS



22628 22629 22630 22631 22632 22633 22962

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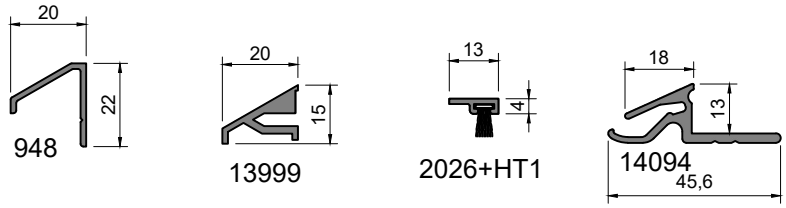
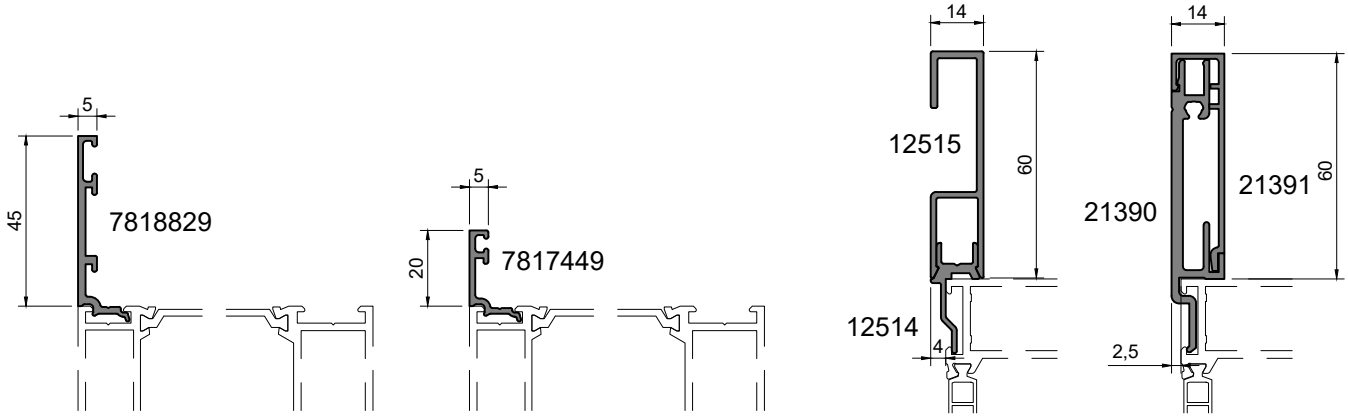
ADDITIONAL PROFILES





TIIVISTEET
SEALINGS



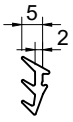
ECO 770 111



ECO 770 109



ECO 770 107



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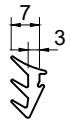

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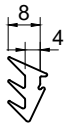

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DX783



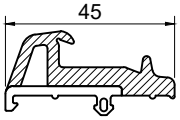
IT511



DX781



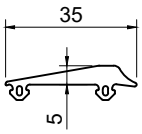
DX782



PT781



DX787



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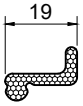
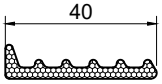


PE1



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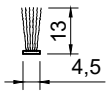
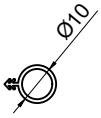


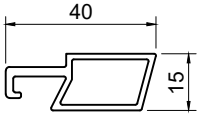
HT1



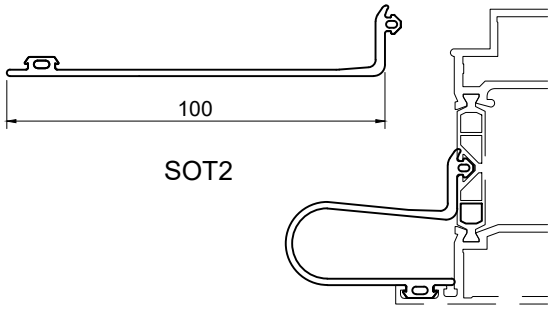
DX733



LOT3

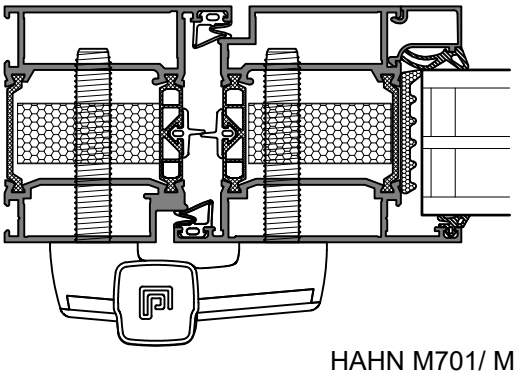


SOT1

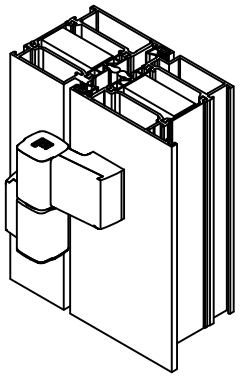


SOT2

LK78X OVISARANAT
LK78X DOOR HINGES



HAHN M701/ M751



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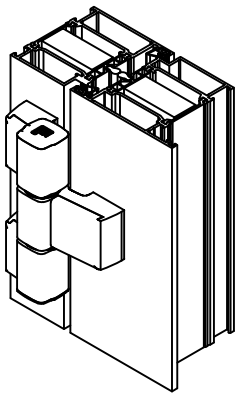
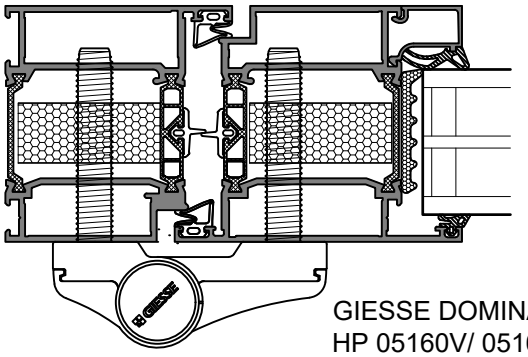
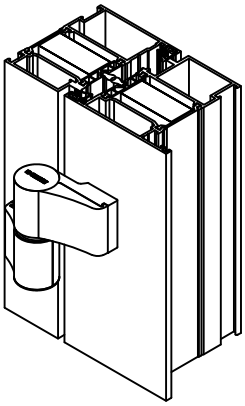


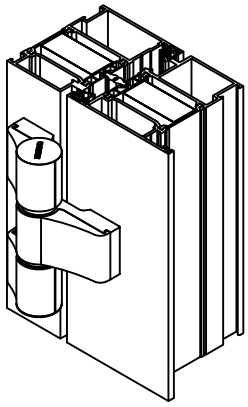
HAHN M751



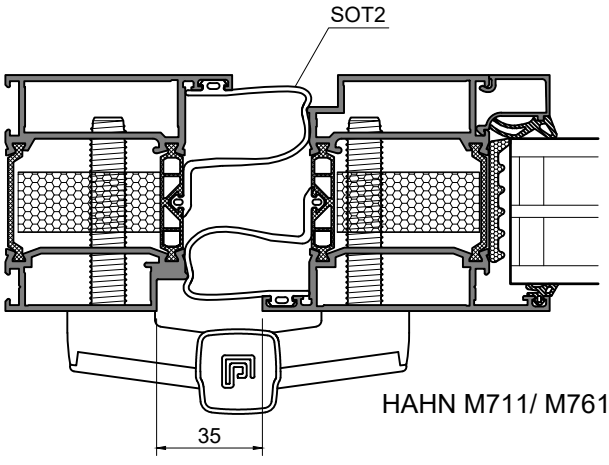
GIESSE DOMINA
HP 05160V/ 05161V



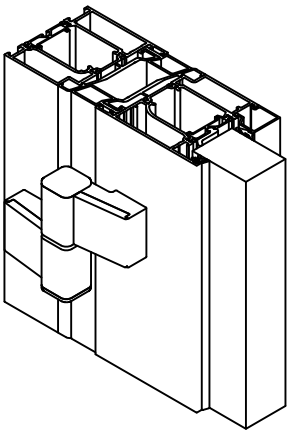
GIESSE DOMINA HP
2-leaf (05160V)



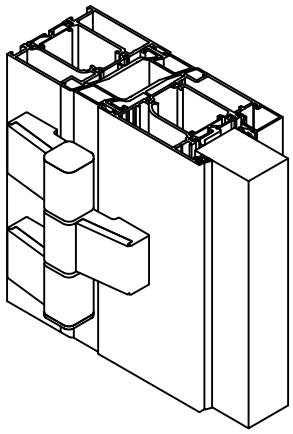
GIESSE DOMINA HP
3-leaf (05161V)



HAHN M711/ M761

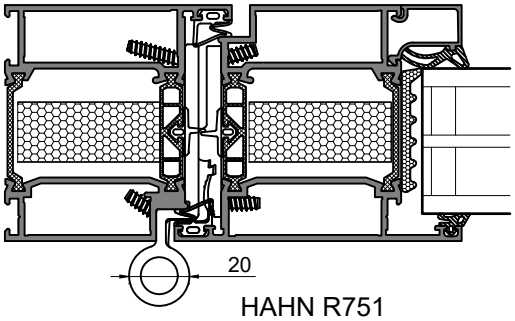


HAHN M711



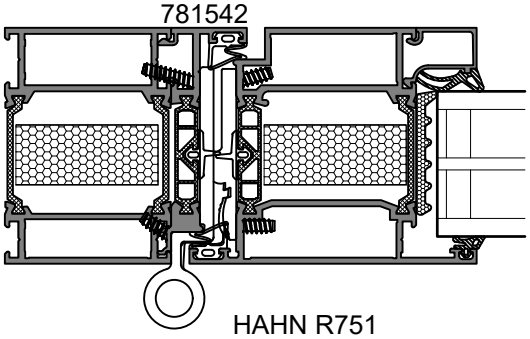
HAHN M761

LK78X OVISARANAT
LK78X DOOR HINGES

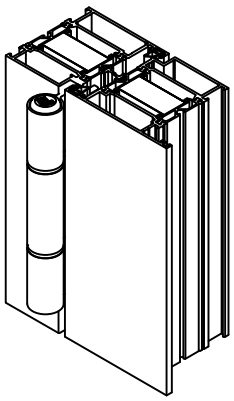


HAHN R751

781542

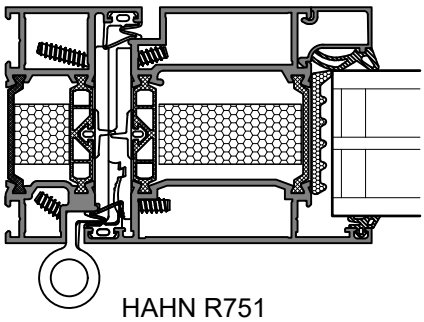


HAHN R751



HAHN R751

781232



HAHN R751

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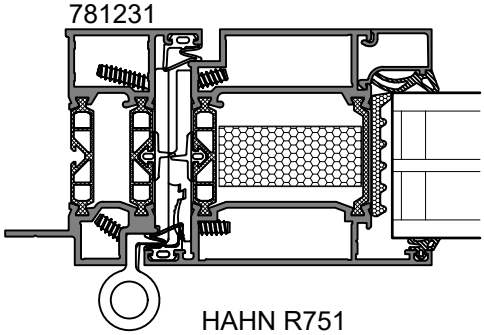


HAHN R751

OVILEHDEN (leveys ≤ 1000, korkeus 2000...2300)
SUOSITELTAVAT MAKSIMIPAINOT (kg) ERI SARANOILLA

DOOR LEAVES (width ≤ 1000, heigth 2000...2300)
RECOMMENDED MAXIMUM WEIGTHS (kg) FOR HINGES

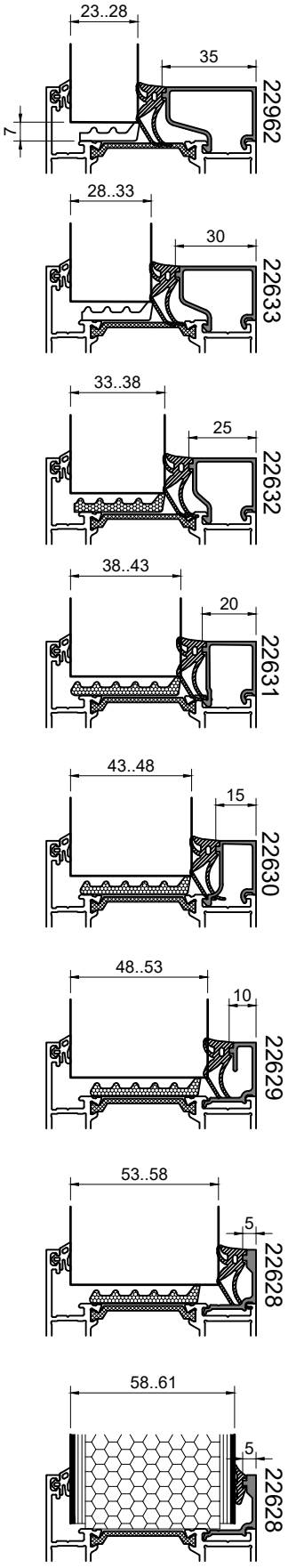
Saranat Hinges		Käyttökohde/Application			
		Omakotitalot,yms. Single-family houses etc	Porraskäytävän ovet, yms. Staircase doors, etc	Porraskäytävän ovet, yms. (Oviautomatiikka) Staircase doors, etc (Door automation)	Koulut, sairaalat, yms. (Oviautomatiikka) Schools, hospitals, etc. (Door automation)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

*Käytettäessä automaattisia ovensulkimia 2-osaisia saranoita ei suositella.
*The use of two-part hinges is not recommended when automatic door closers are installed.

LASITUSLISTOJEN JA TIIVISTEIDEN VALINTA
SELECTING GLAZING BEADS AND SEALINGS

Lasin paksuus Glazing thickness	Lasituslista Glazing bead	Ulkopuolentiiviste Outer gasket	Sisäpuolentiiviste 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	Ulkopuolentiiviste Outer gasket	Sisäpuolentiiviste 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 jatkoskohdat 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 profiili uraan. Lasin asennuksen jälkeen asennetaan kyntetilan tiiviste PE2. Lasituslistojen asennuksen jälkeen sovitetaan sisäpuolen jälkiasennustiiviste paikoilleen. Jälkiasennustiivisteen 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.

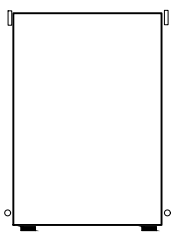
Tuki- ja kuljetuskiilat tulee olla paksuudeltaan joustavia ja ne eivät saa haitata kannatuskiilojen toimintaa. Tukikiilat estävät lasiruudun liikkumisen käytössä. Tuki- ja kuljetuskiilojen pituus on vähintään 50 mm ja leveys sama kuin kannatuskiiloilla.

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.

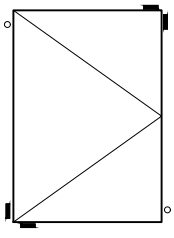
Lasituksessa on huomioitava standardin *”SFS-EN 12488 Rakennuslasit. Lasitussuositukset. Lasin asennusohjeet pystysuoriin ja kalteviin rakenteisiin”* ohjeet.

- KANNATUSKIILA
- TUKIKIILA
- KULJETUSKIILA

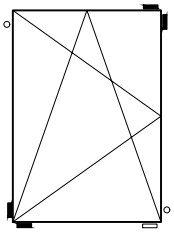
KIINTEÄ IKKUNA



SIVUSARANOITU IKKUNA



SIVU-/ALASARANOITU IKKUNA



LASITUSOHJE

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.
Installion 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.

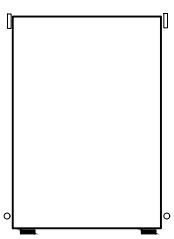
Lock and transport pads are to be of appropriate thickness and must not obstruct functioning of bearing pads. The lock pads prevent the glass pane from moving in use. Lock and transport pads are at least 50 mm long and as wide as bearing pads.

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.

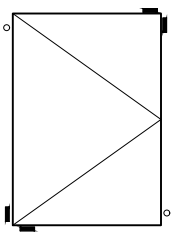
The glazing must follow the instructions of standard *"EN 12488 Glass in building. Glazing recommendations. Assembly principles for vertical and sloping glazing"*

- BEARING PAD
- LOCK PAD
- TRANSPORT PAD

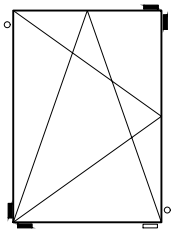
FIXED WINDOW



SIDE-HUNG WINDOW



SIDE/BOTTOM HUNG WINDOW



TEKNISIÄ TIETOJA

Profiilit

- Alumiiniseos yleensä EN-AW 6063 T5
  $R_{p0,2}$(min) = 130 N/mm²
  R_m(min) = 175 N/mm²
  E = 70000 N/mm²
- Alumiinirakenteiden suunnittelussa on huomioitava lämpötilan muutoksista aiheutuvat siirtymät
- Alumiinin lämpölaajenemiskerroin on $24x10^{-6}$/K
- Profiilien 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

Profiilien pintakäsittely

Anodisointi

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

Jauhemaalaus

Jauhemaalauksessa profiilin pintaan ruiskutetaan pulveri, joka sulatetaan uunissa kestäväksi ja tasaiseksi pinnaksi. Ennen maalausta profiileille 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 N/mm²
  R_m(min) = 175 N/mm²
  E = 70000 N/mm²
- Thermal transitions caused by changes in temperature must be taken into account in the design
- Thermal expansion coefficient of aluminium is $24x10^{-6}$/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
Manufacturing, sales and tehcnicalinformation

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10/2023