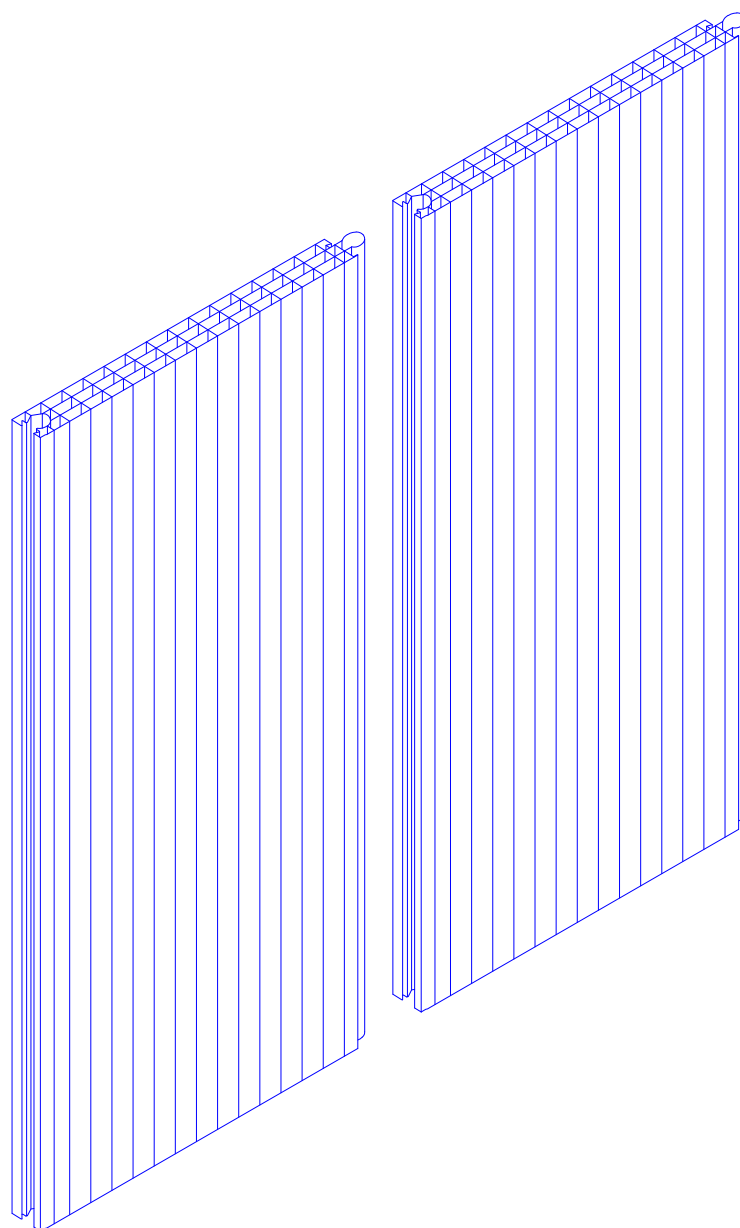


AKRA[®] PAIN

**MODULAR GLAZING SYSTEM
in MULTI-WALL POLYCARBONATE**

TECHNICAL HANDBOOK

Rev. 07



AKRAPLAST[®]

AKRAPLAST Sistemi S.r.l.

I - 20026 NOVATE MILANESE (MI) - Via Cascina del Sole, 70

Tel. (+39) 02.3513911 - Fax (+39) 02.35139150

E-mail : info@akraplast.com - www.akraplast.com

SUMMARY

Various	page	2
Panels Range – Technical Data		3
Wall-Northlight with 16 mm panels		4
Wall-Northlight with 20 mm panels		5
Window frames with 20 mm panels		6
Assembly with 16 and 20 mm panels		7
Wall-Northlight with 25 mm panels		10
Window frames with 25 mm panels		11
Assembly with 25 mm panels		12
Wall-Northlight with 40 mm panels		15
Window frames with 40 mm panels		16
Wall-Northlight with Thermal Cut Profiles and 40 mm Panels		17
Wall-Northlight with Thermal Cut Profiles and 50 mm Panels		18
Wall-Northlight with Thermal Cut Profiles and 60 mm Panels		19
Window frames with Thermal Cut Profiles		20
Assembly with 40-50-60 mm panels		21

SPECIFICATION TEXT

Choose between alternatives marked by •

• Wall; • Northlight;

realised with modular system type **AKRAPAN** by Akraplast Sistemi, composed of:

- UV protected multi-wall polycarbonate panels with lateral tongue and groove joint,
 - thickness 16 mm, modular width 500 mm, 4 walls honeycomb, thermal transmission $U=1,99$ W/m²K
 - thickness 20 mm, modular width 500 mm, 4 walls honeycomb, thermal transmission $U=1,81$ W/m²K
 - thickness 25 mm, modular width 500 mm, 4 walls honeycomb, thermal transmission $U=1,60$ W/m²K
 - thickness 40 mm, modular width 500 mm, 4 walls, thermal transmission $U=1,41$ W/m²K
 - thickness 40 mm, modular width 500 mm, 7 walls, thermal transmission $U=1,08$ W/m²K
 - thickness 50 mm, modular width 500 mm, 13 walls, thermal transmission $U=0,79$ W/m²K
 - thickness 60 mm, modular width 500 mm, 13 walls, thermal transmission $U=0,71$ W/m²K
- Profiles for perimeter framing in natural anodized aluminium, gaskets and what else is necessary for perfect tightness of the system.

WARRANTIES

In Europe they are covered by **10 YEARS WARRANTY** from the date of purchase against yellowing and weather damages (hail etc.). For Extra-European Countries the warranty may have a different duration. For further details, please ask for the Warranty Certificate.

CERTIFICATIONS

Regarding fire performance, the **AKRAPAN** panels have fire classification **EN13501 Bs1d0**. For further details, please ask for the respective certificates for the different countries.

POSITIONING, TOOLS and FIXING

Install the panels with the UV protected side towards the outside.

Respect the tolerances between top and bottom frame profiles because of the thermal expansion (3-4 mm/meter).

Usually the AKRAPAN panels are supplied with the borders sealed by a special aluminium tape, or (if requested) thermo-sealed.

For cutting on size can be used a circular saw with fine teeth or shears; remove chips and dust using compressed air and then close the cells with the special aluminium tape for polycarbonate.

If necessary please use only polycarbonate compatible silicon.

CARE and MAINTENANCE

It is recommended to clean the panels regularly in order to remove dust and atmospheric pollution.

To clean the sheets use cold or lukewarm water and (if necessary) neutral detergents. Do not use abrasive cloths, hot water and chemical detergents. Avoid to clean the panels when they are heated by the sun.

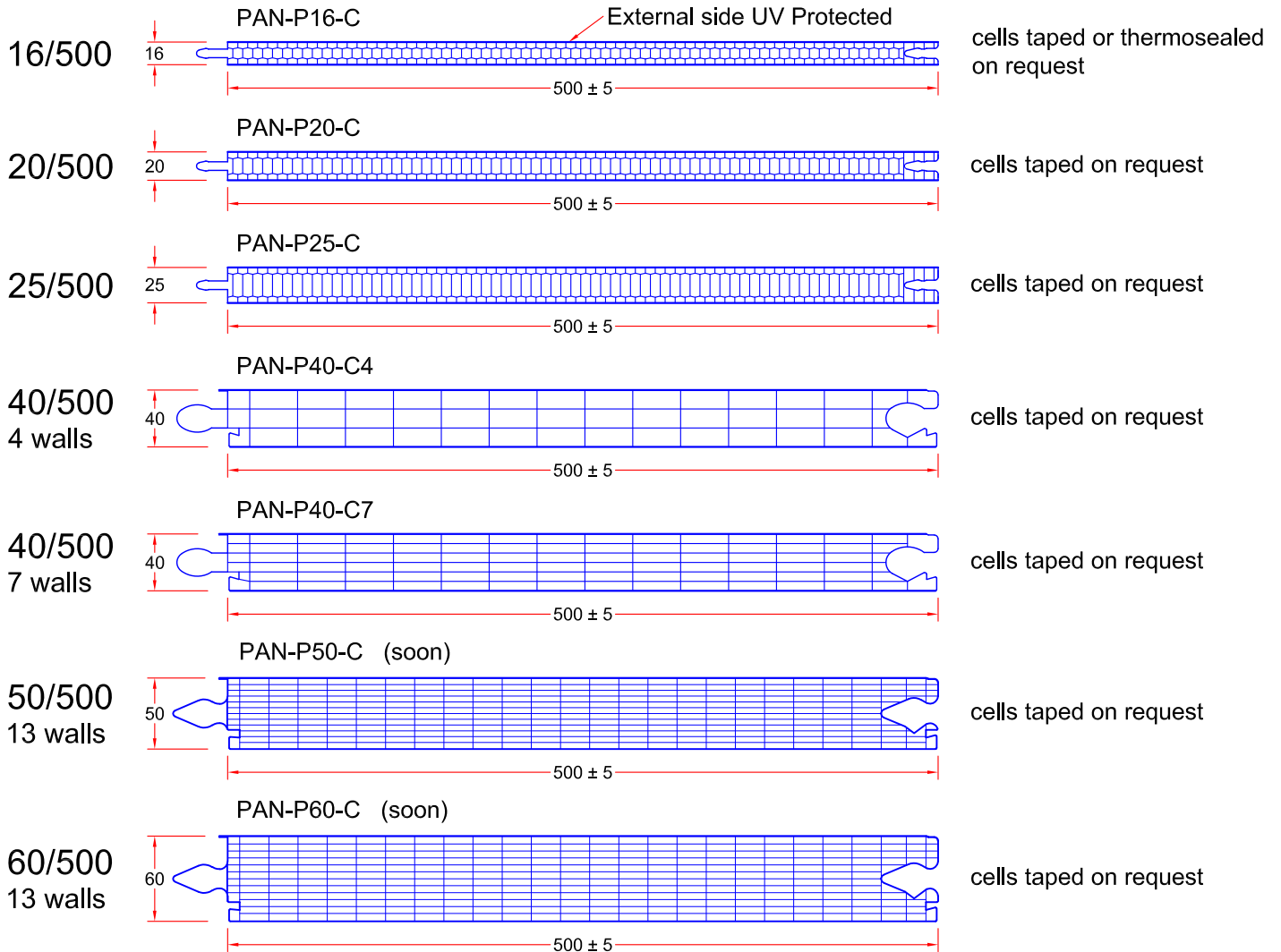
RESISTANCE to CHEMICAL AGENTS

Please contact us to ask about compatibility with chemical agents.

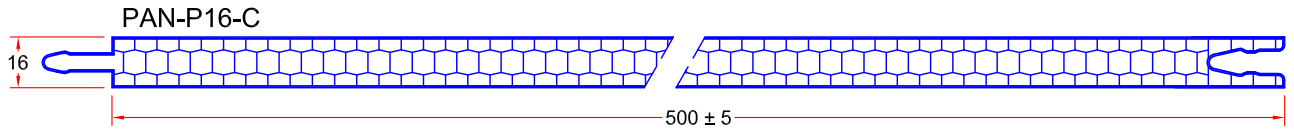
Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards.

AKRAPLAST Sistemi reserves the right to change specifications at any time.

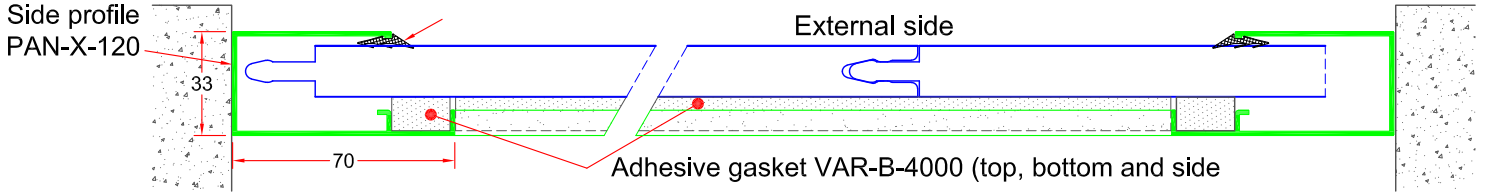
PANELS for EXTERNAL USE - UV Protected
(for wall - northlight - window)



TECHNICAL DATA	16/500	20/500	25/500	40/500/4	40/500/7	50/500	60/500		
Panel modular width	500 ± 5							mm	
Panel thickness (± 0,5 mm)	16	20	25	40	40	50	60	mm	
No. of walls	[4]	[4]	[4]	4	7	13	13		
Thermal transmission [U-value]	1,99	1,81	1,60	1,41	1,08	0,79	0,71	W/m ² K	
Light transmission	Clear satinized (*)	~ 69	~ 67	~ 64	~ 53	~ 56	~ 40	~ 39	%
	Opaline (*)	~ 52	~ 43	~ 35	~ 33	~ 36	~ 22	~ 16	%
SPANS D max q = 500 N/m ² (wind ≈ 100 km/h) q = 800 N/m ² (wind ≈ 130 km/h)	D max	D max	D max	D max	D max	D max	D max		
	1.300	1.400	1.600	1.900	1.950	2.900	3.450	mm	
	1.200	1.300	1.450	1.650	1.700	2.500	3.100	mm	
Fire classification EN13501-1	B s1 d0								
Thermal expansion	0,065							mm/m K	
Temperature range	-40 / +120							°C	
(*) standard colours - other colours produced on request									



HORIZONTAL SECTION with framing profiles in anodised aluminium

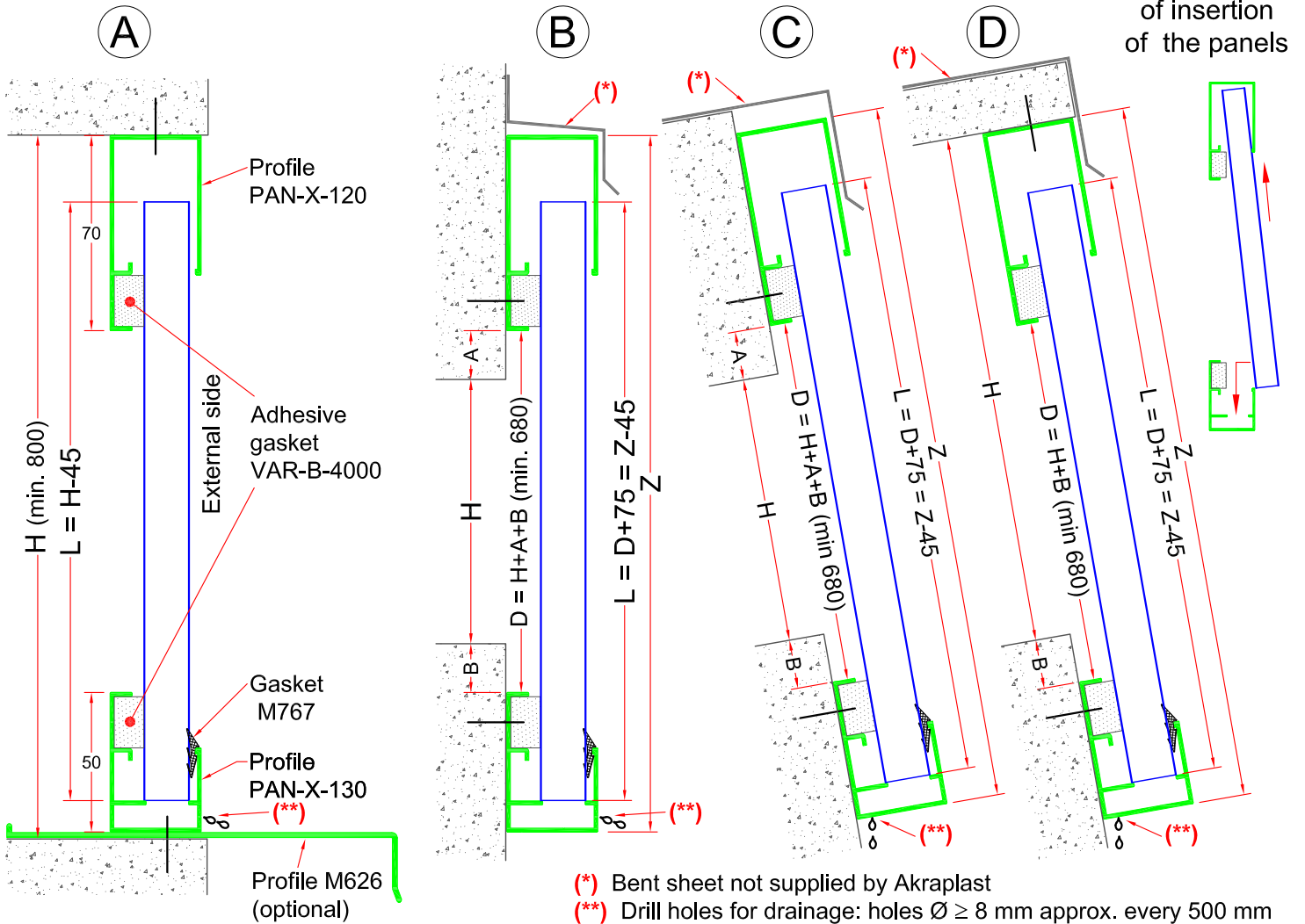


VERTICAL SECTIONS with framing profiles in anodised aluminium

Wall application

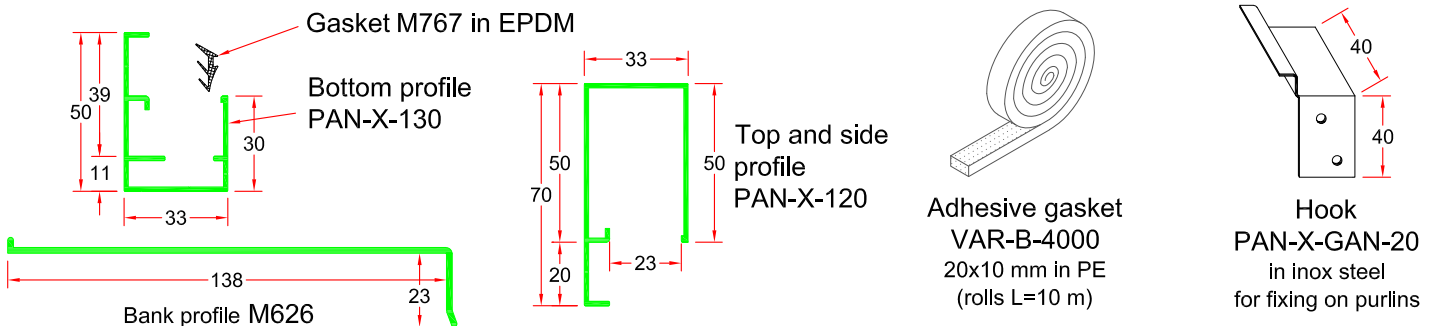
External applications

Example of insertion of the panels

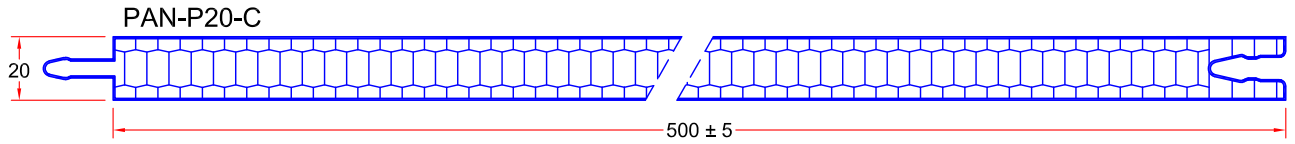


(*) Bent sheet not supplied by Akraplast
 (**) Drill holes for drainage: holes $\varnothing \geq 8$ mm approx. every 500 mm

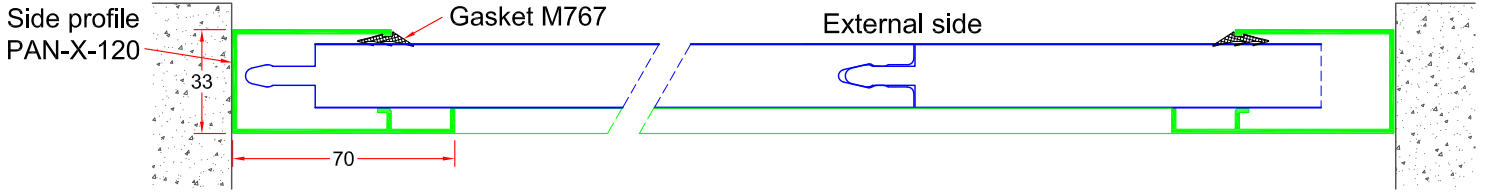
Akraplast Sistemi S.r.l. - www.akraplast.com



Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.



HORIZONTAL SECTION with framing profiles in anodised aluminium

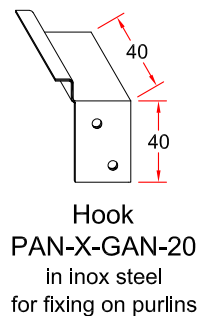
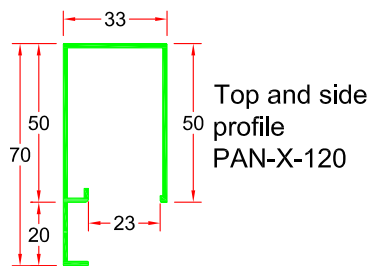
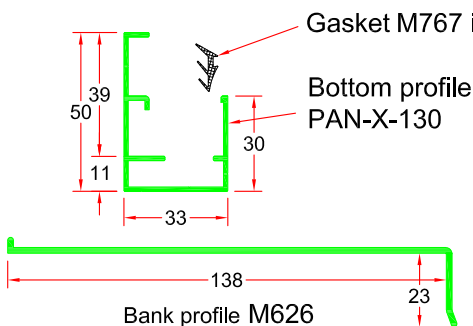
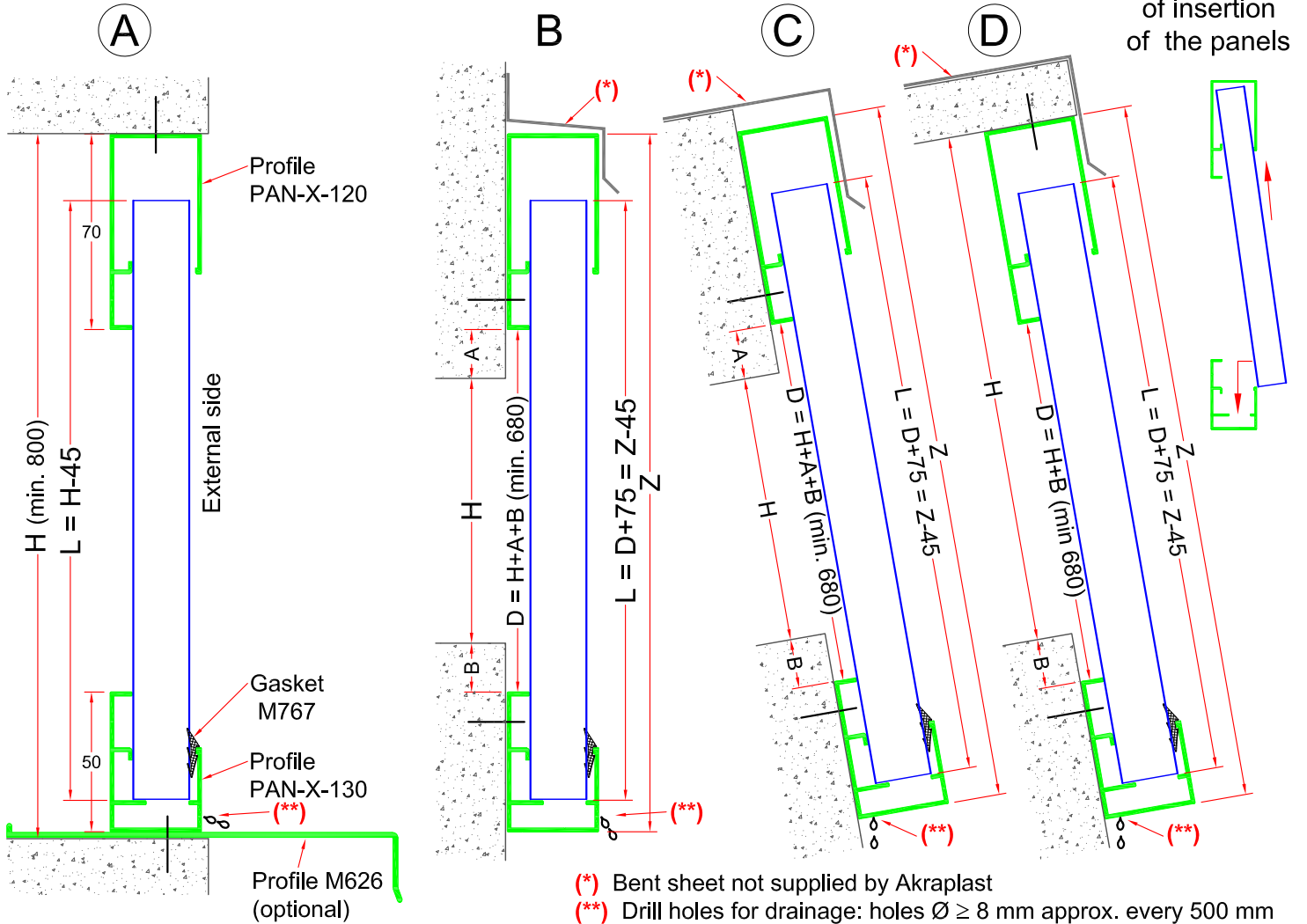


VERTICAL SECTIONS with framing profiles in anodised aluminium

Wall application

External applications

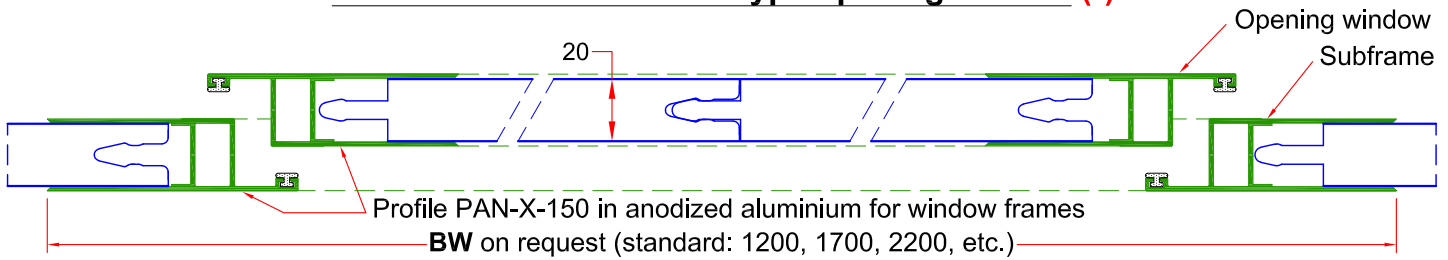
Example of insertion of the panels



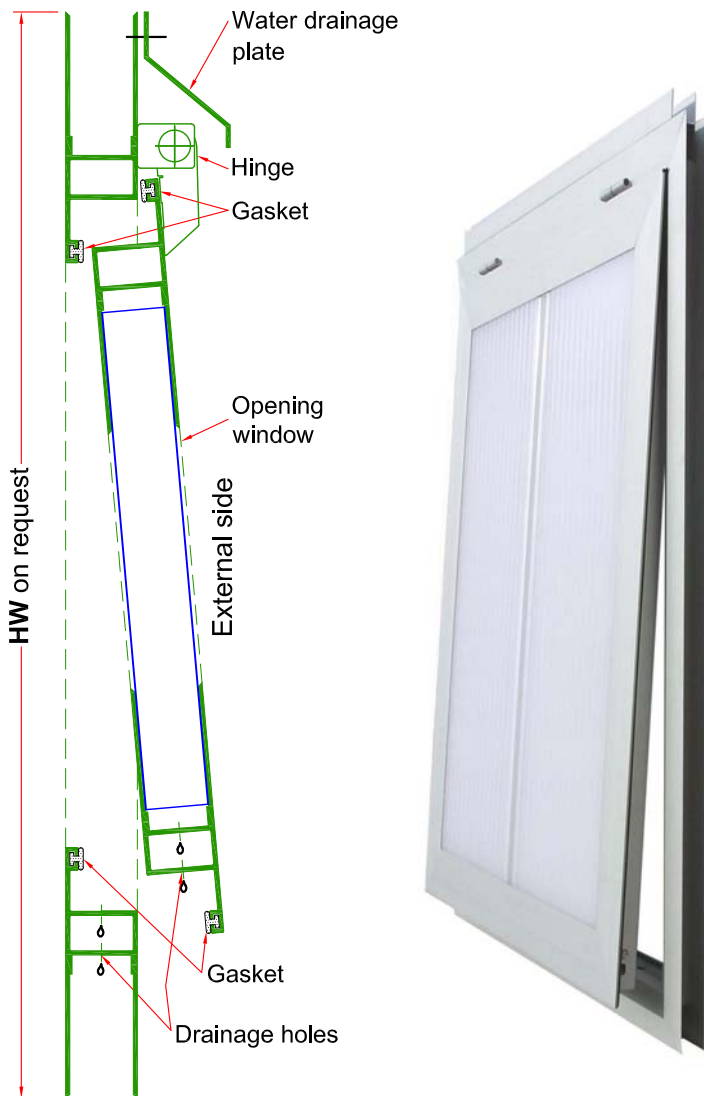
Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.

Supplied assembled - size BW x HW on request, max 3 m² - opening manual or motorized

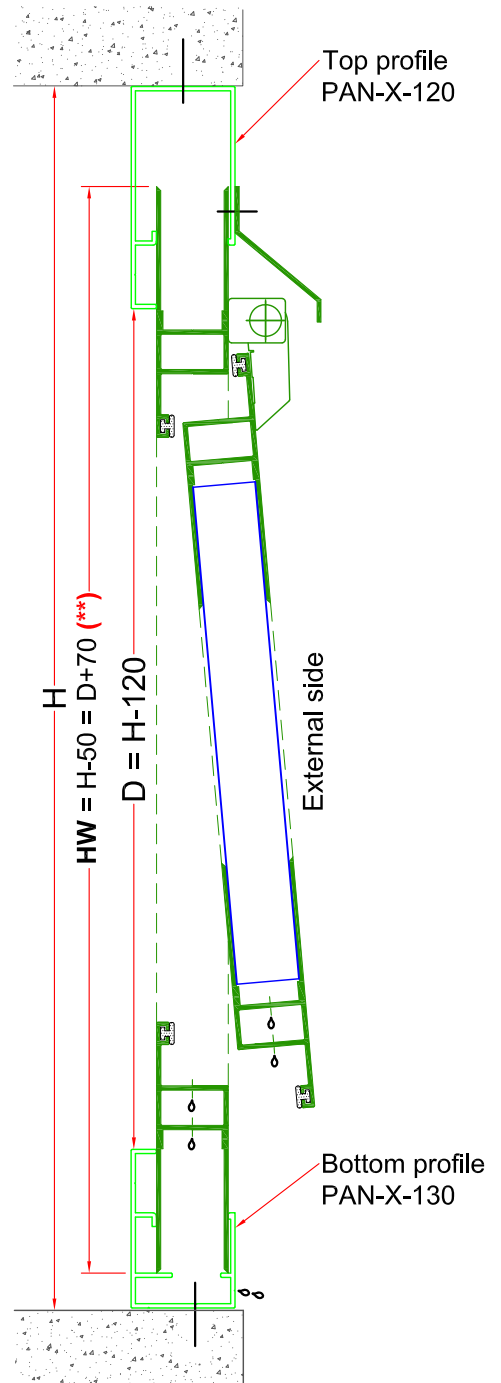
HORIZONTAL SECTION - type opening outside (*)



**VERTICAL SECTION
type opening outside (*)**



**Application
with top and bottom profiles**

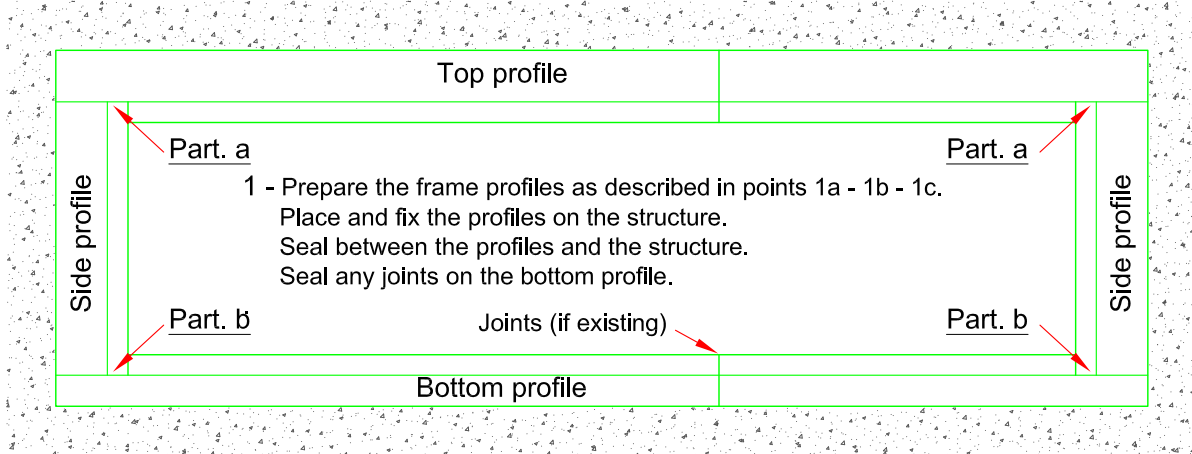


(*) Also available opening inside and smoke heat extraction type

(**) Measure HW valid only with profile PAN-X120 and PAN-X-130

Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.

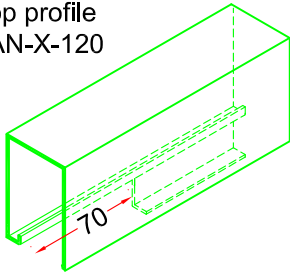
Note: drawings not in scale



①a Cut out for 70 mm the ends of the top and bottom profiles destined to the corners of the wall, to create the seat for the profile PAN-X-120 used laterally.

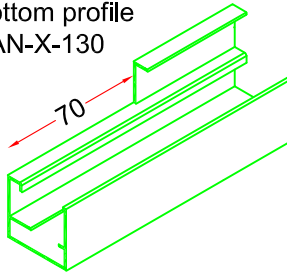
Part. a

Top profile
PAN-X-120



Part. b

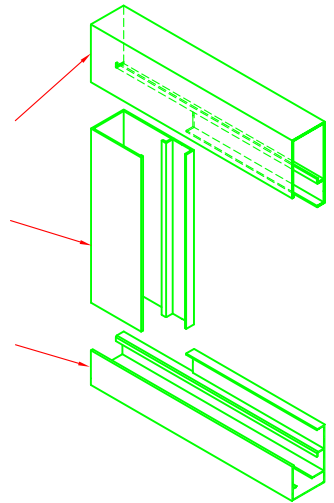
Bottom profile
PAN-X-130



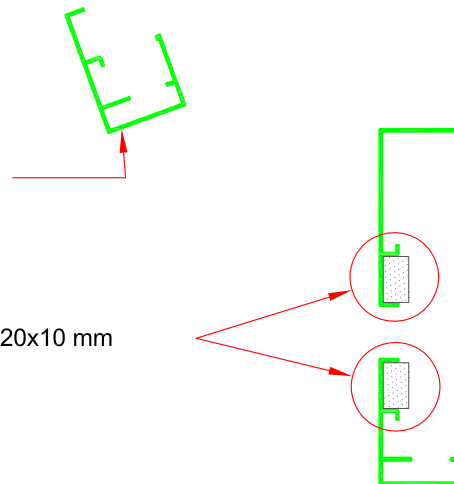
Top profile
PAN-X-120

Side profile
PAN-X-120

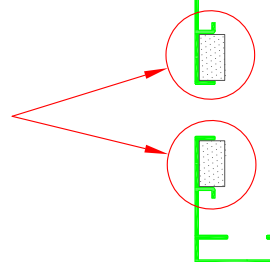
Bottom profile
PAN-X-130



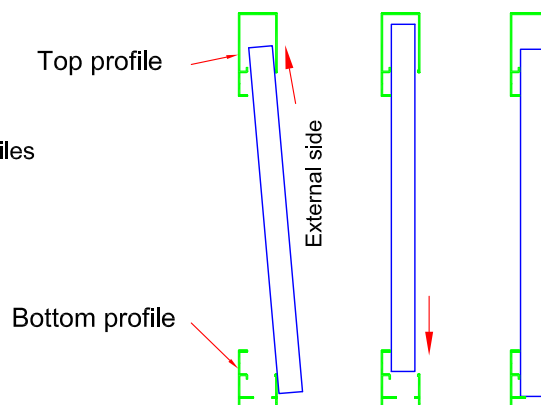
①b Only for inclined application:
drill holes for drainage the lower edge of the bottom profile with holes \varnothing minimum 8 mm approx. every 500 mm.



①c Only for 16 mm panels:
apply in all profiles the adhesive gasket VAR-B-4000 in PE 20x10 mm

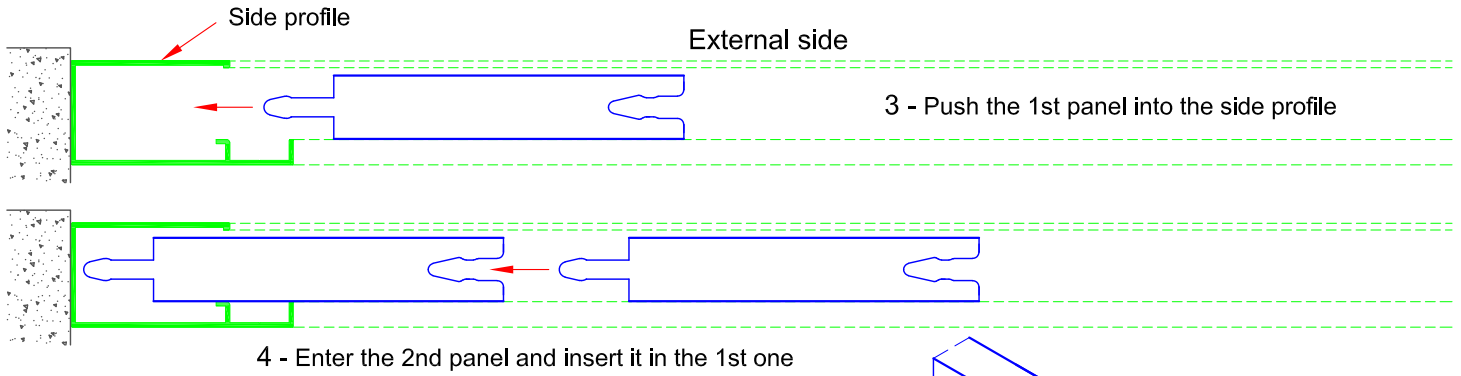


2 - Enter the panels between the top and bottom profiles

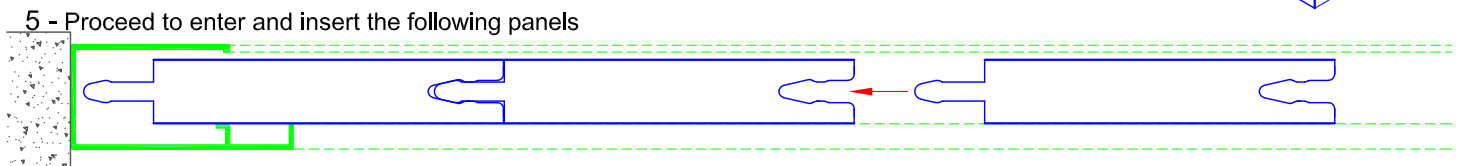
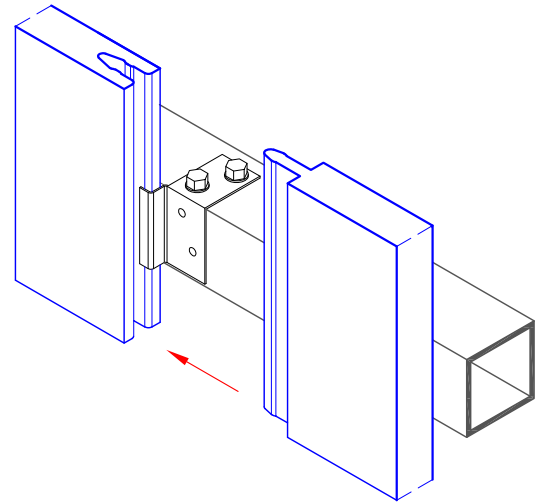


follows

Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.

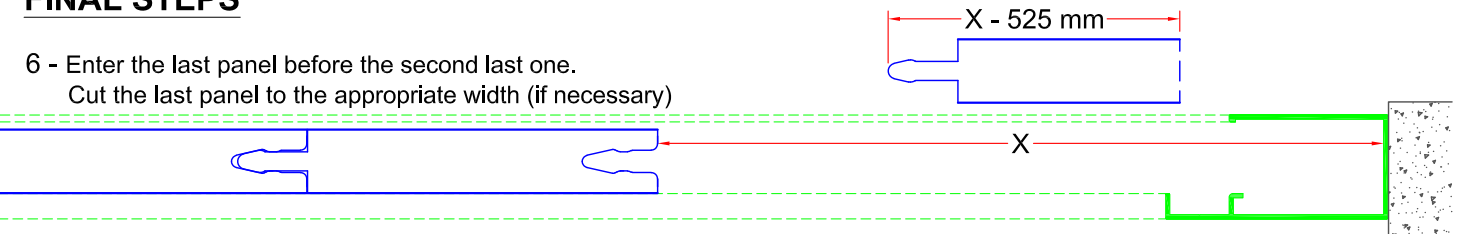


④b Only with intermediate purlins:
 Attach the hooks PAN-X-GAN-20 before entering the following panel

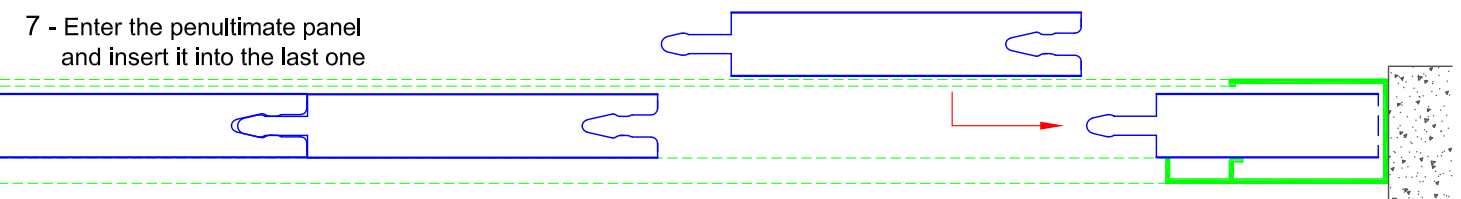


FINAL STEPS

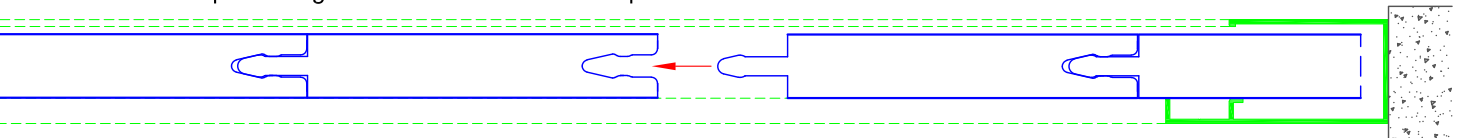
6 - Enter the last panel before the second last one.
 Cut the last panel to the appropriate width (if necessary)



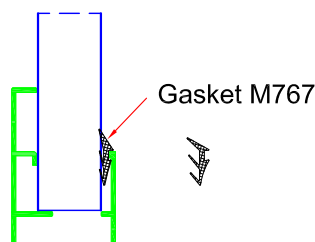
7 - Enter the penultimate panel
 and insert it into the last one



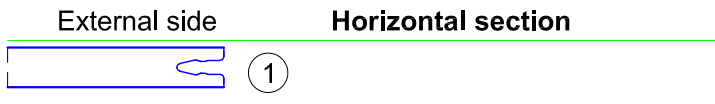
8 - Push the two panels together and insert them in the previous one



9 - Apply the gasket M767 in the bottom and side profiles



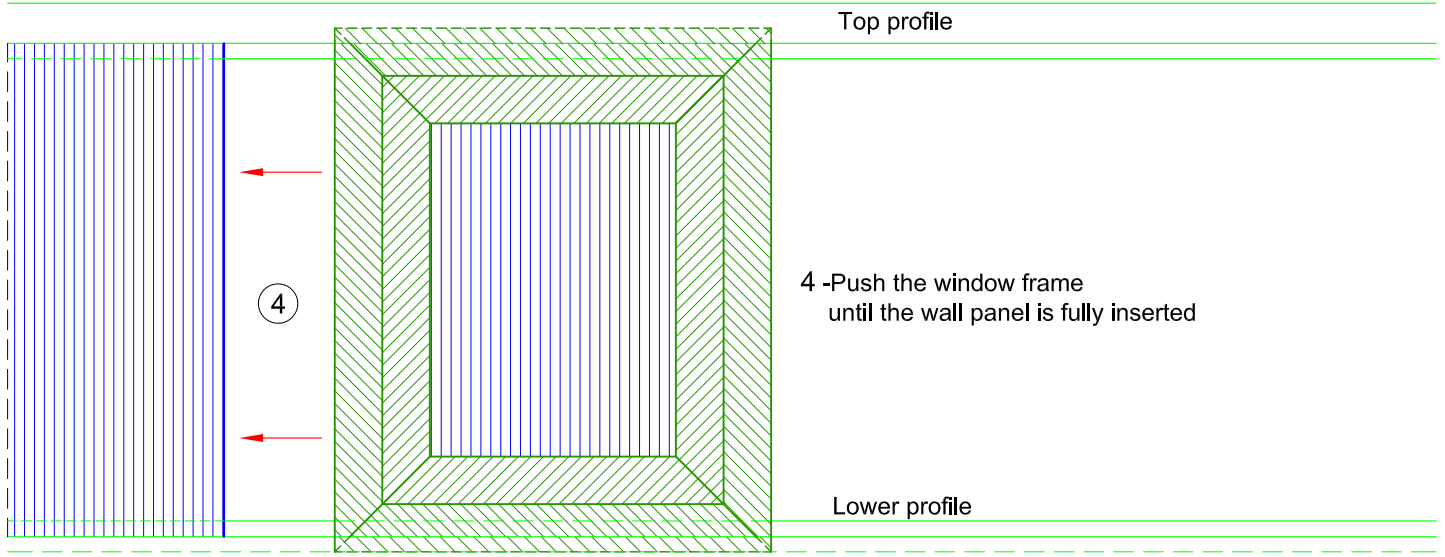
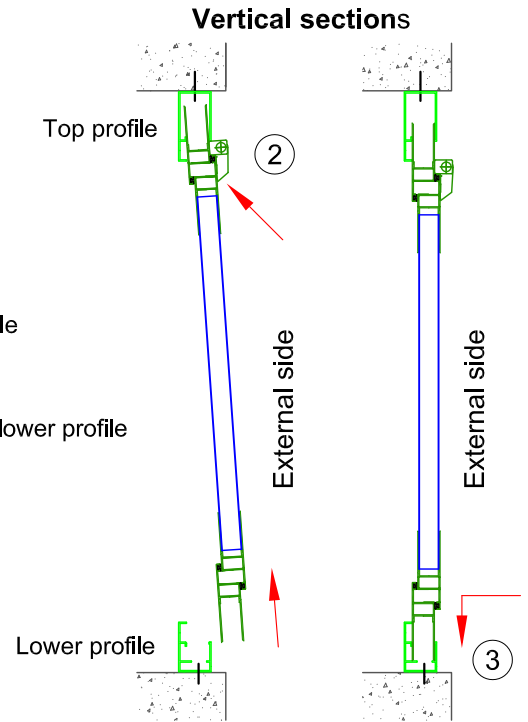
Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.



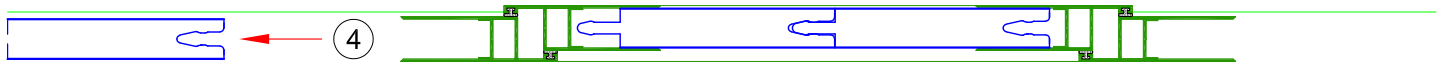
1 - Assemble the last panel of the wall

2 - Insert the window frame into the top profile

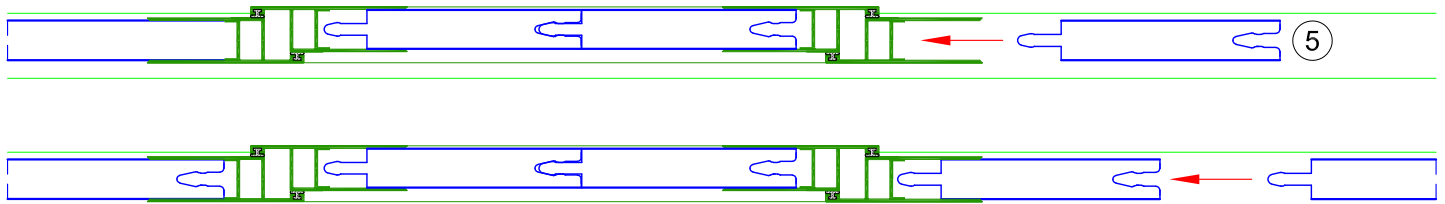
3 - Position the bottom of the window in the lower profile

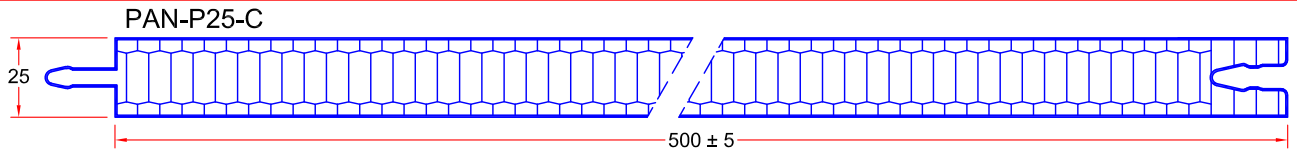


4 - Push the window frame until the wall panel is fully inserted

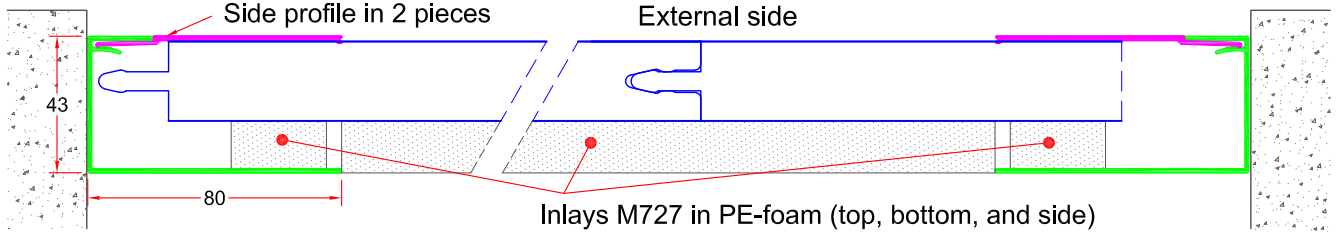


5 - Continue mounting the wall. Fit strongly the panel in the side of the window frame



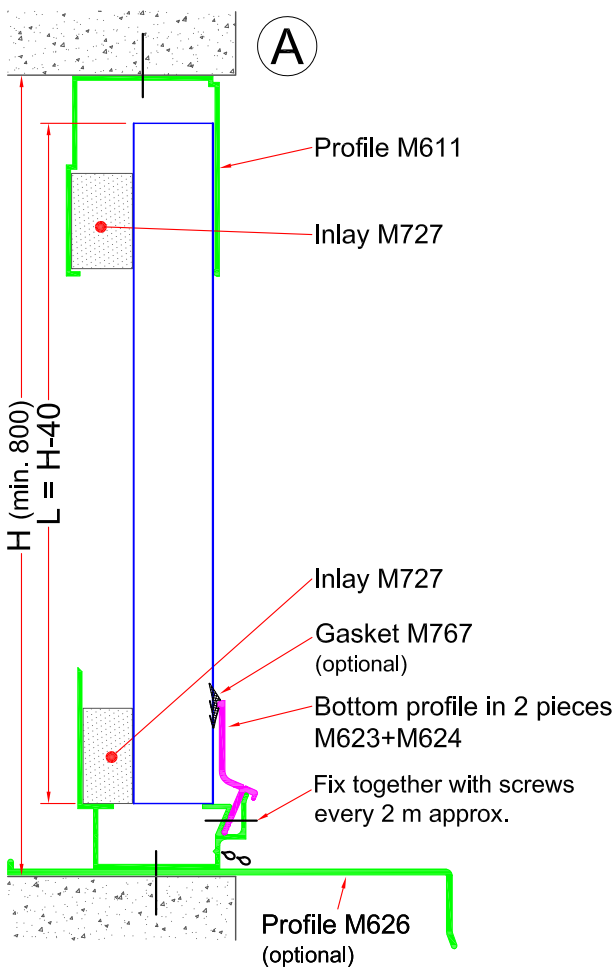


HORIZONTAL SECTION with framing profiles in anodised aluminium

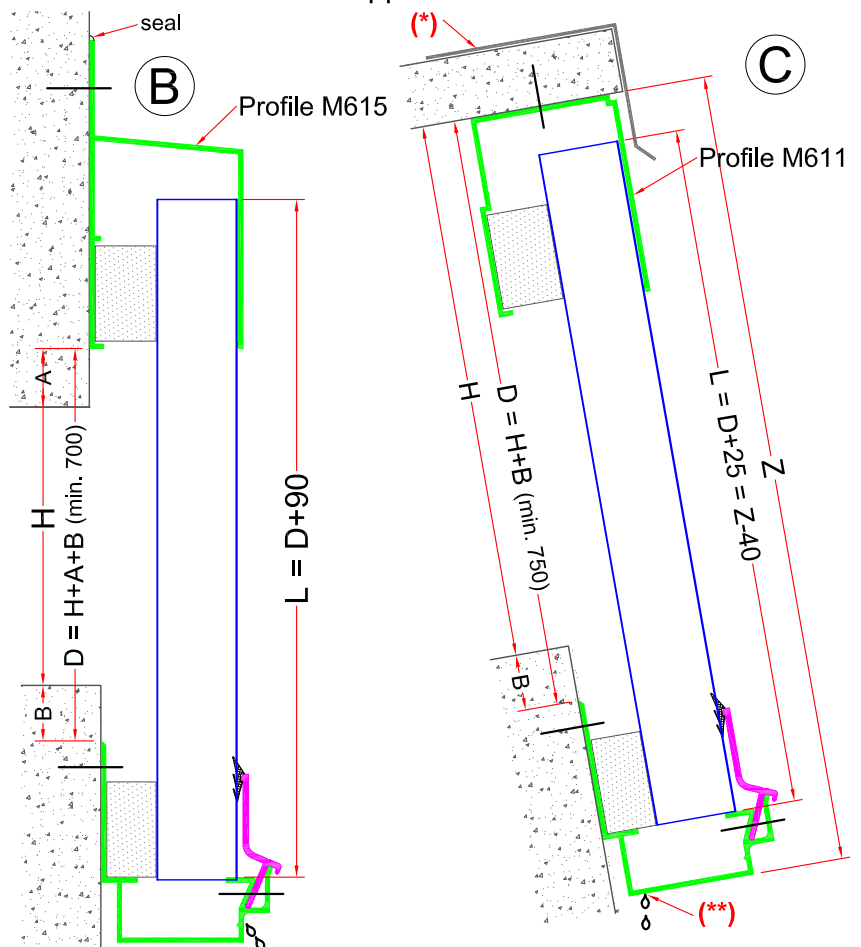


VERTICAL SECTIONS with framing profiles in anodised aluminium

Wall application

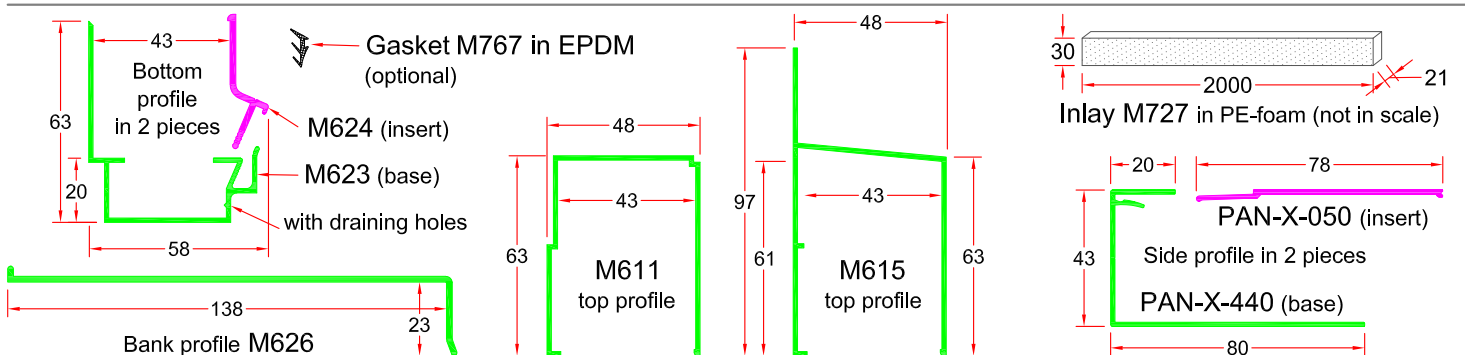


External applications



(*) Bent sheet not supplied by Akraplast

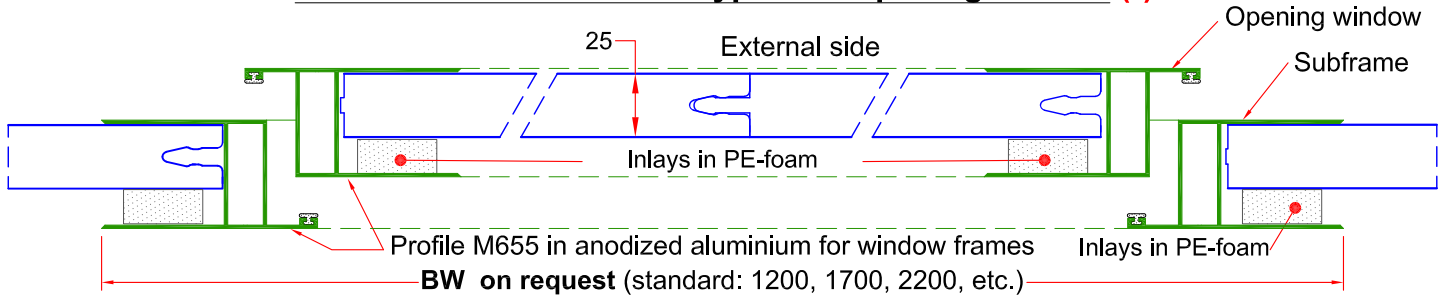
(**) Drill holes for drainage: holes $\varnothing \geq 8$ mm approx. every 500 mm



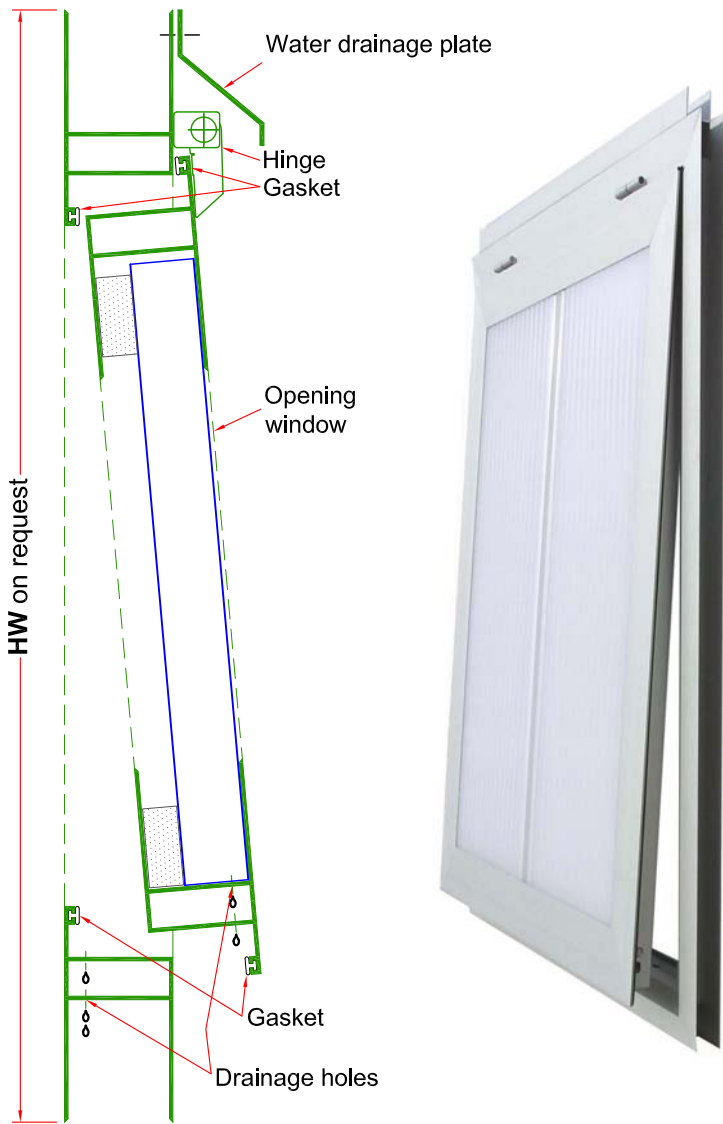
Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.

Supplied assembled - size BW x HW on request, max 3 m² - opening manual or motorized

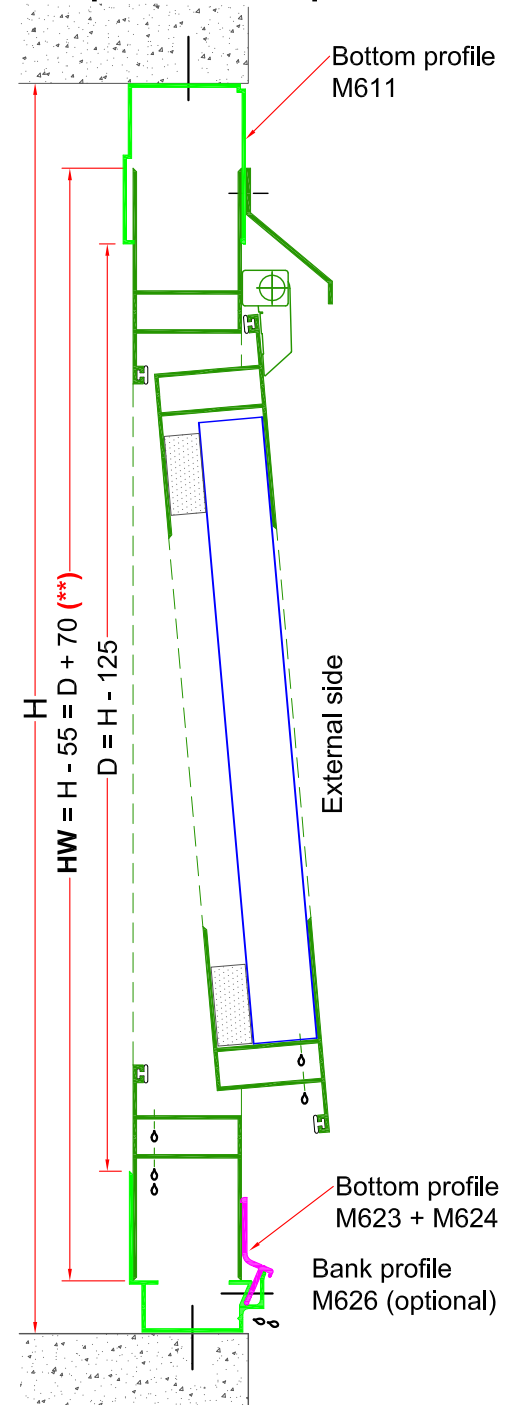
HORIZONTAL SECTION - type with opening outside (*)



**VERTICAL SECTION
type opening outside (*)**



**Application
with top and bottom profiles**

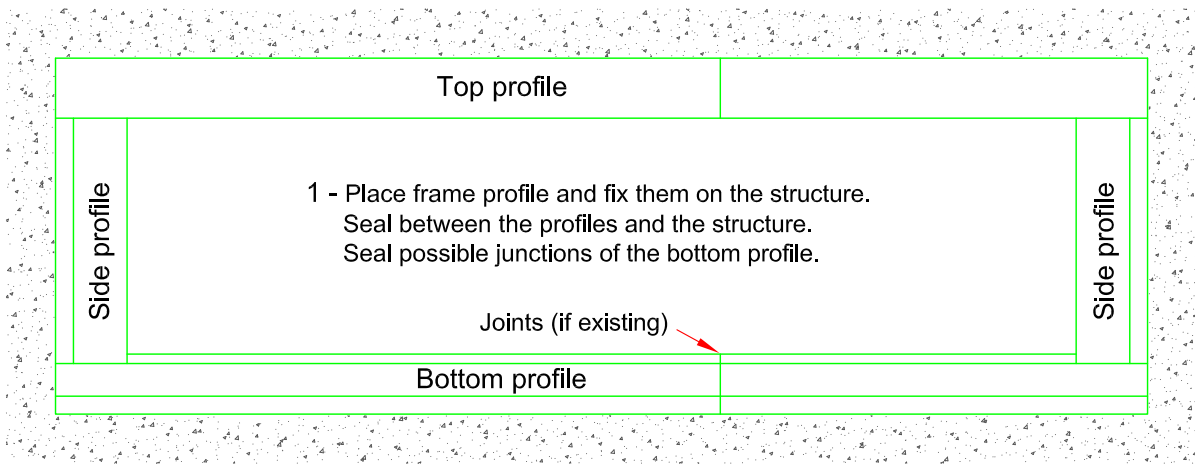


(*) Also available opening inside and smoke heat extraction type

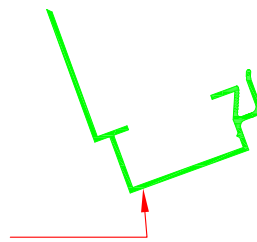
(**) Measure HW valid only with profile M610 and M623 + M624.

Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.

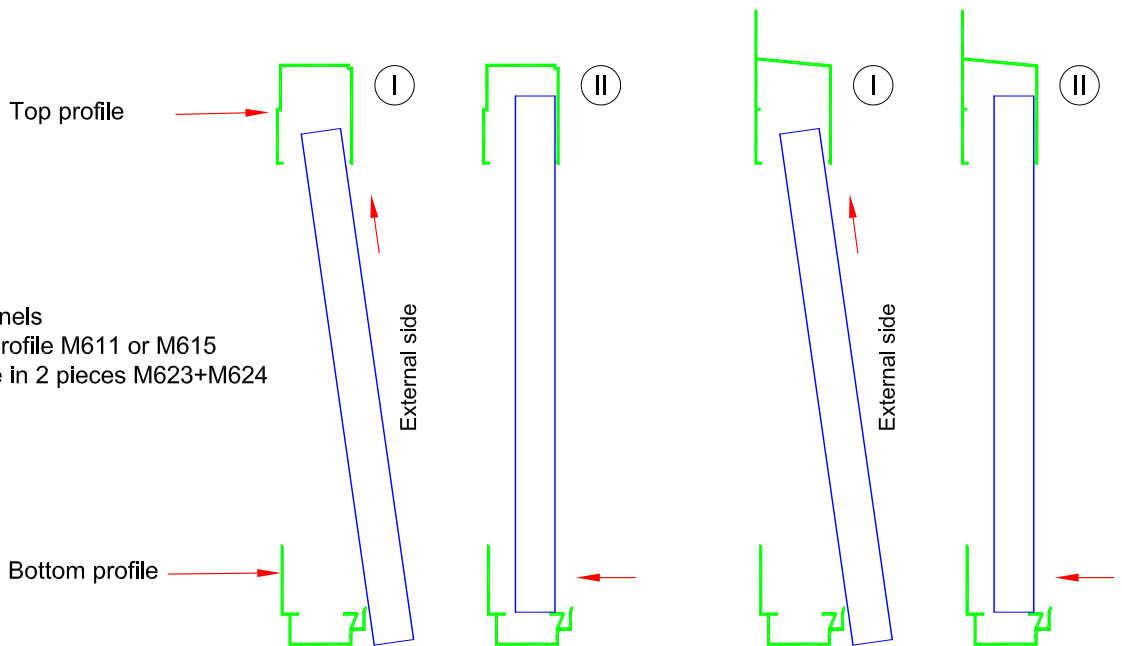
Note: drawings not in scale



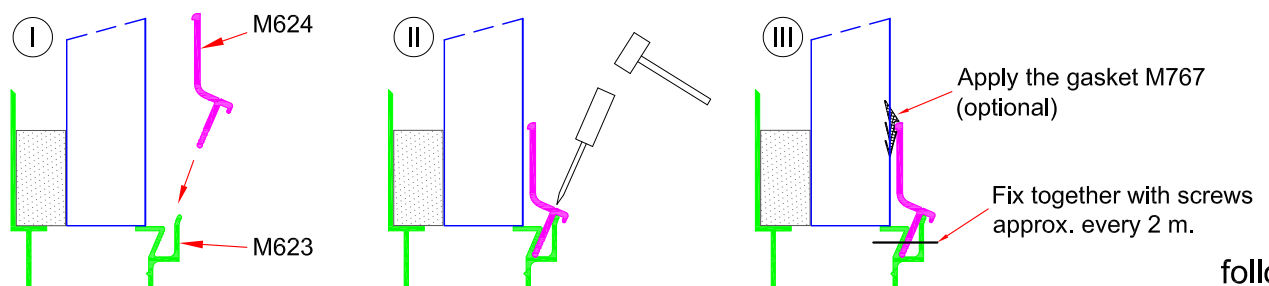
- (a) Only for inclined application:
 drill holes for drainage the lower edge of the bottom profile M623 with holes \varnothing minimum 8 mm every 500 mm approx.



- (b) Entering of the panels between the top profile M611 or M615 and bottom profile in 2 pieces M623+M624

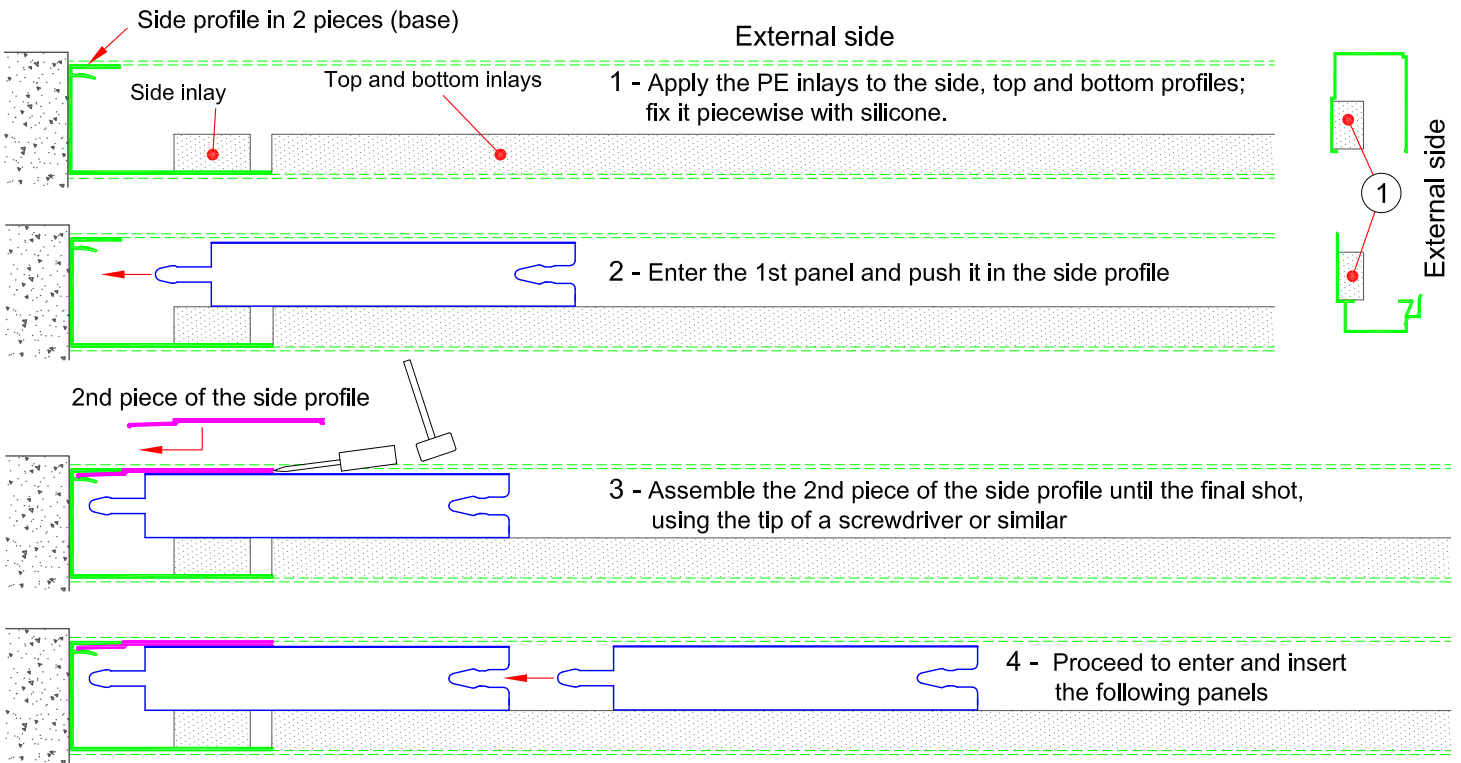


- (c) Assembly of the bottom profile in 2 pieces M623+M624



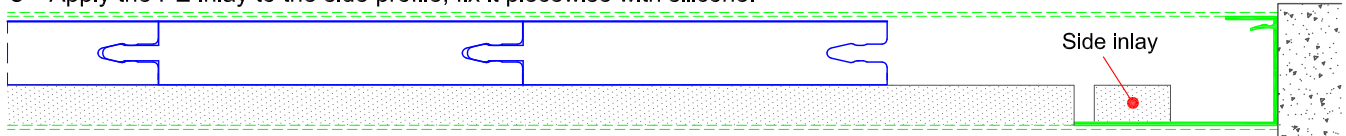
follows

Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.

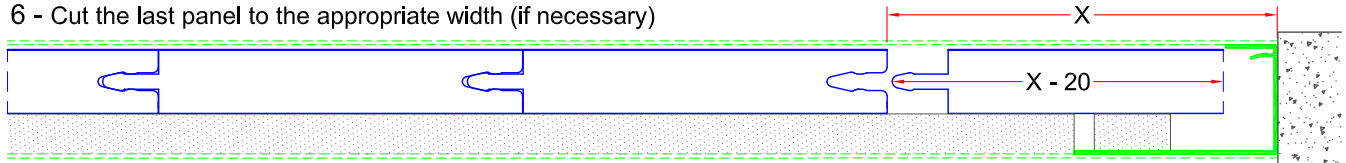


FINAL STEPS

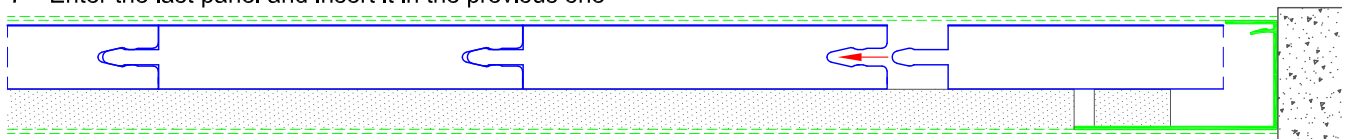
5 - Apply the PE inlay to the side profile; fix it piecewise with silicone.



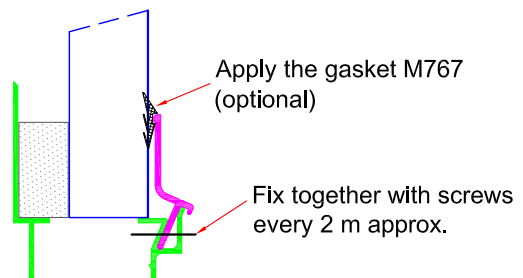
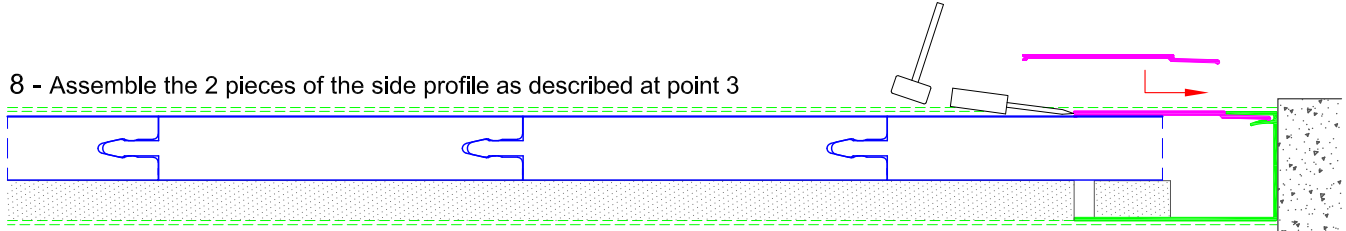
6 - Cut the last panel to the appropriate width (if necessary)



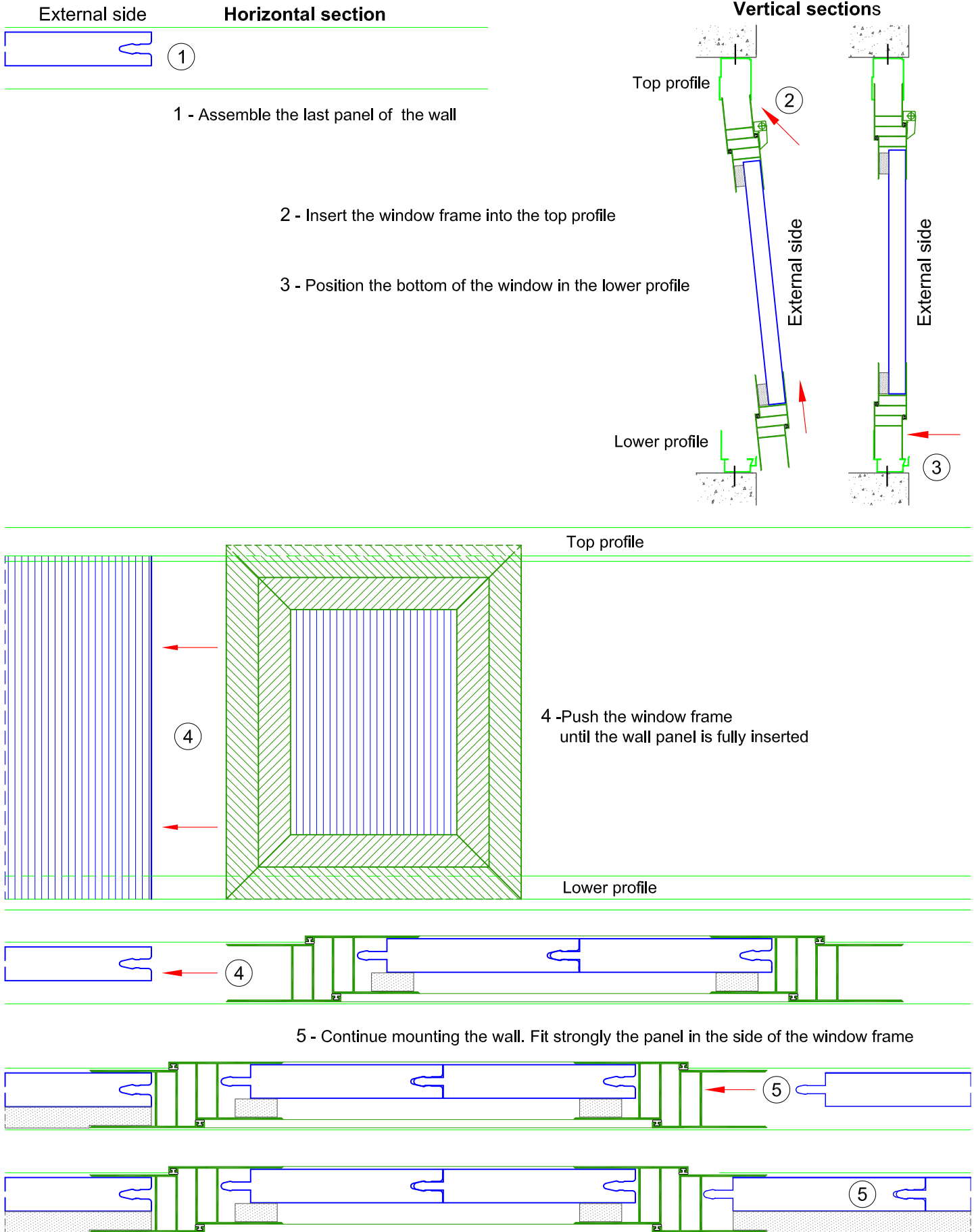
7 - Enter the last panel and insert it in the previous one

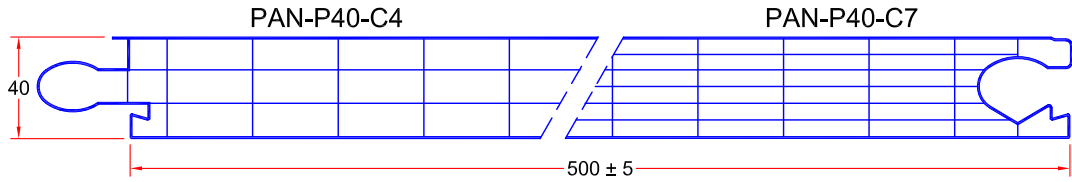


8 - Assemble the 2 pieces of the side profile as described at point 3

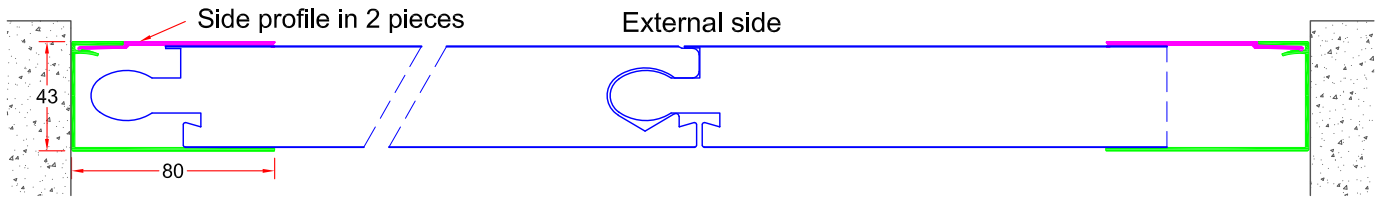


Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.





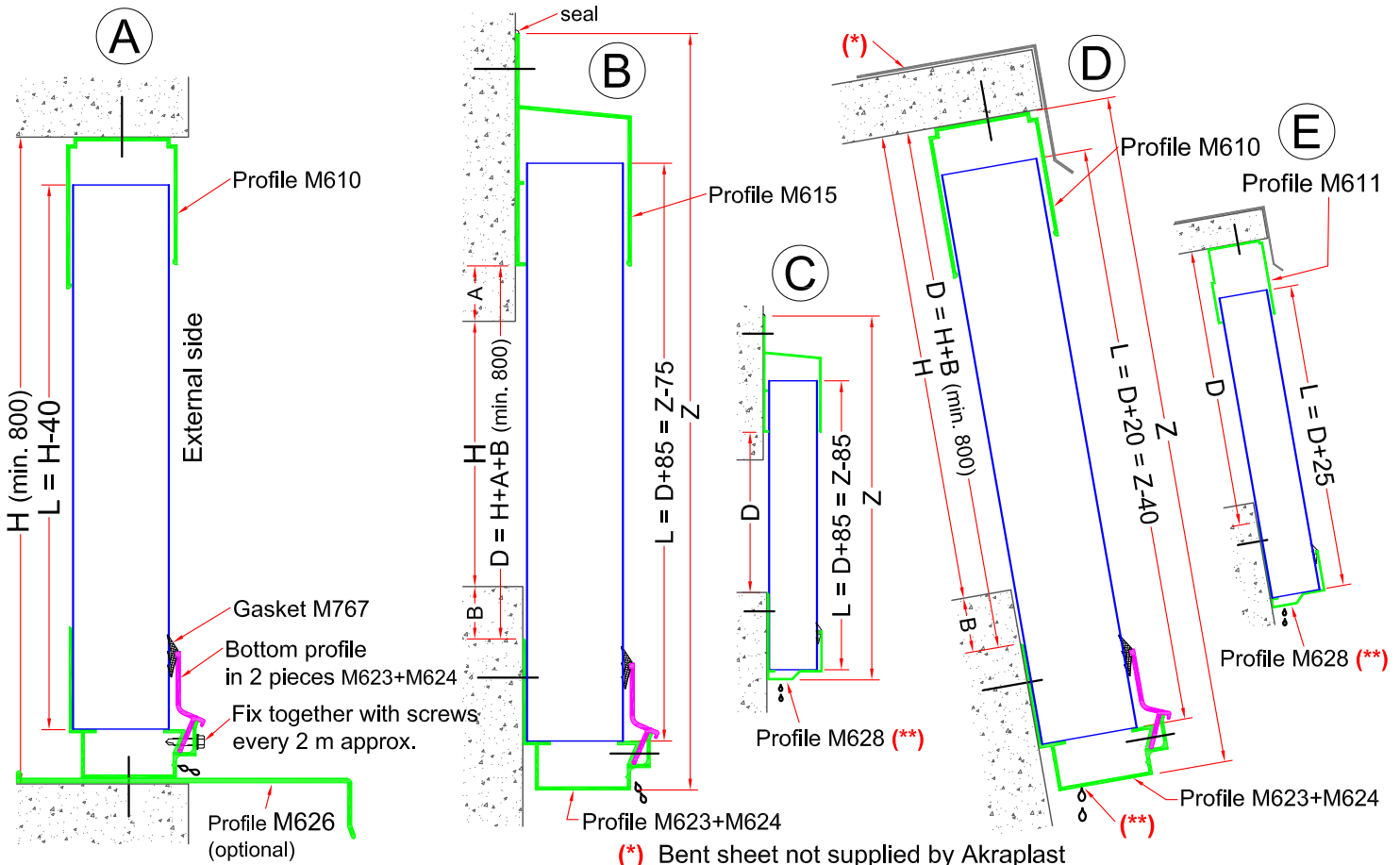
HORIZONTAL SECTION with framing profiles in anodised aluminium



VERTICAL SECTIONS with framing profiles in anodised aluminium

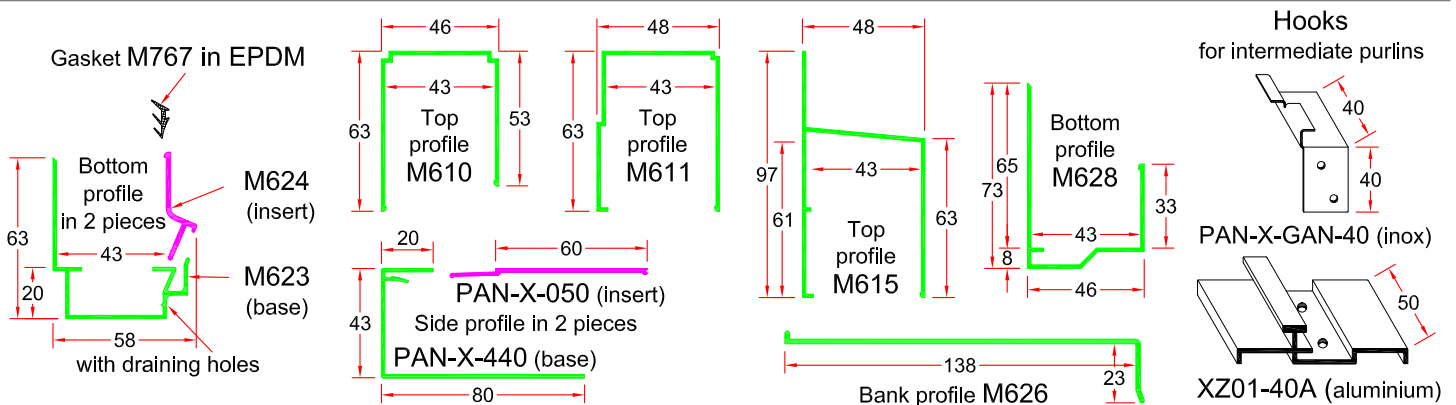
Wall application

External applications



(*) Bent sheet not supplied by Akraplast

(**) Drill holes for drainage: holes $\varnothing \geq 8$ mm approx. every 500 mm

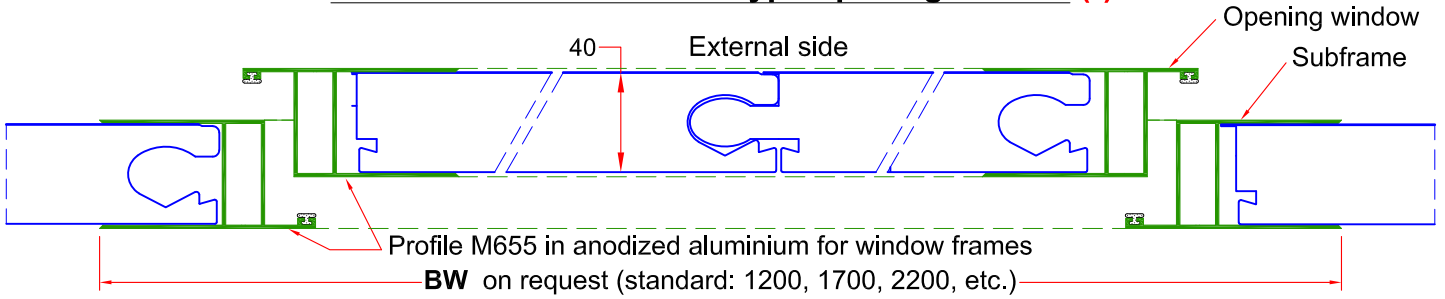


Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards.

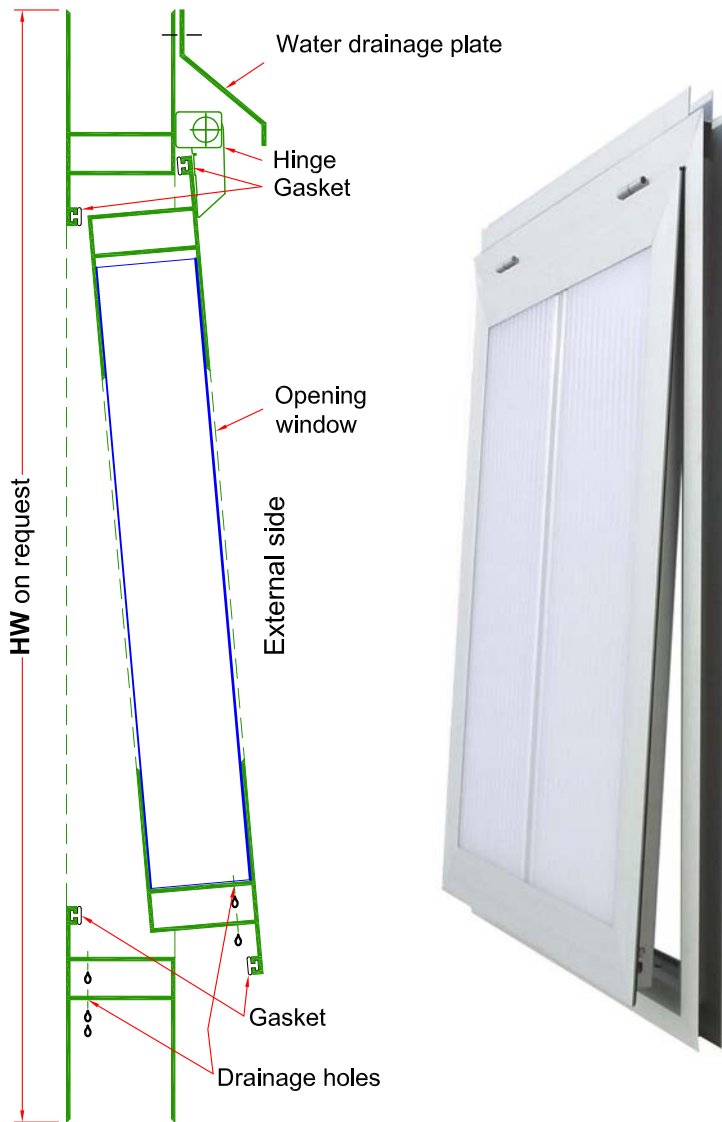
AKRAPLAST Sistemi reserves the right to change specifications at any time.

Supplied assembled - size BW x HW on request, max 3 m² - opening manual or motorized

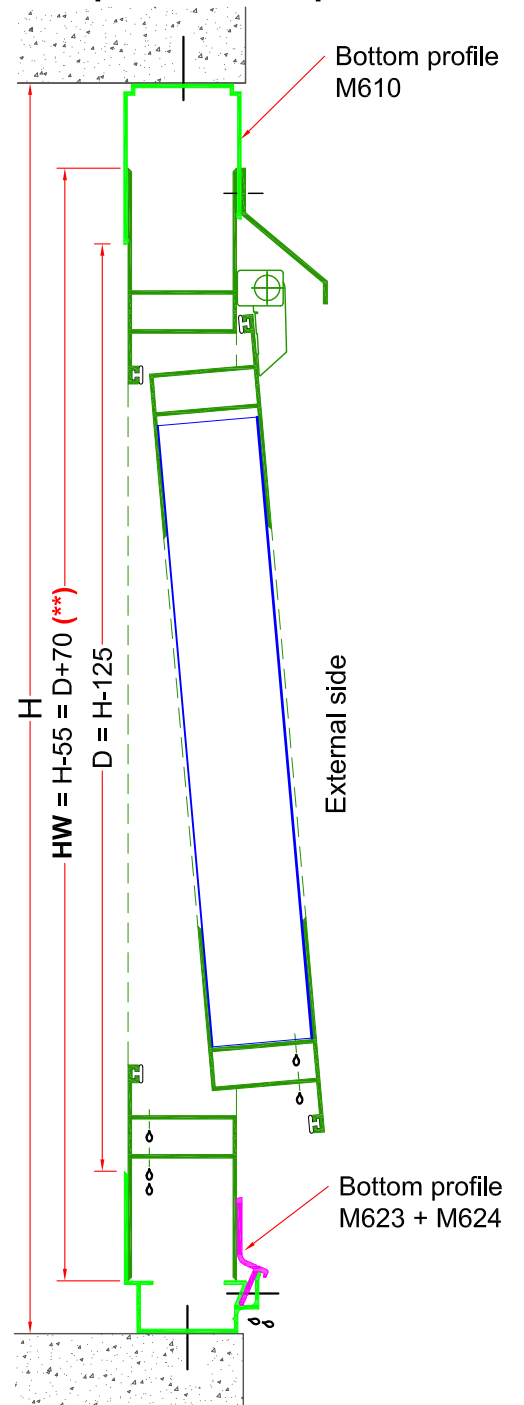
HORIZONTAL SECTION - type opening outside (*)



VERTICAL SECTION
type opening outside (*)



Application with top and bottom profiles

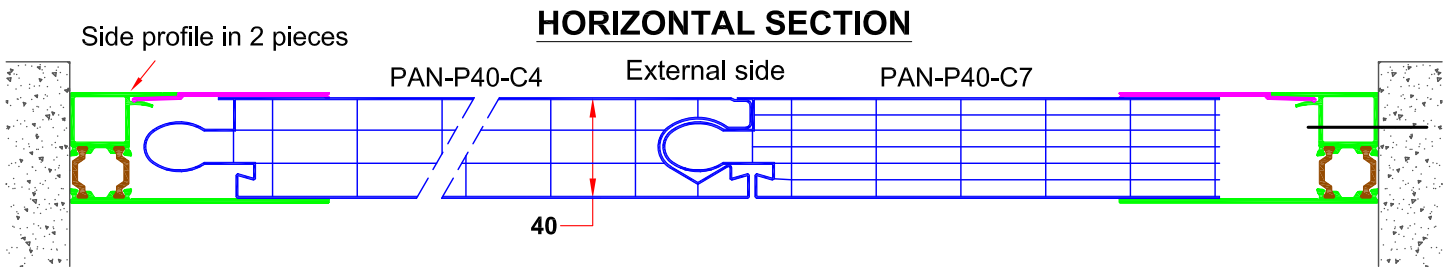


(*) Also available opening inside and smoke heat extraction type

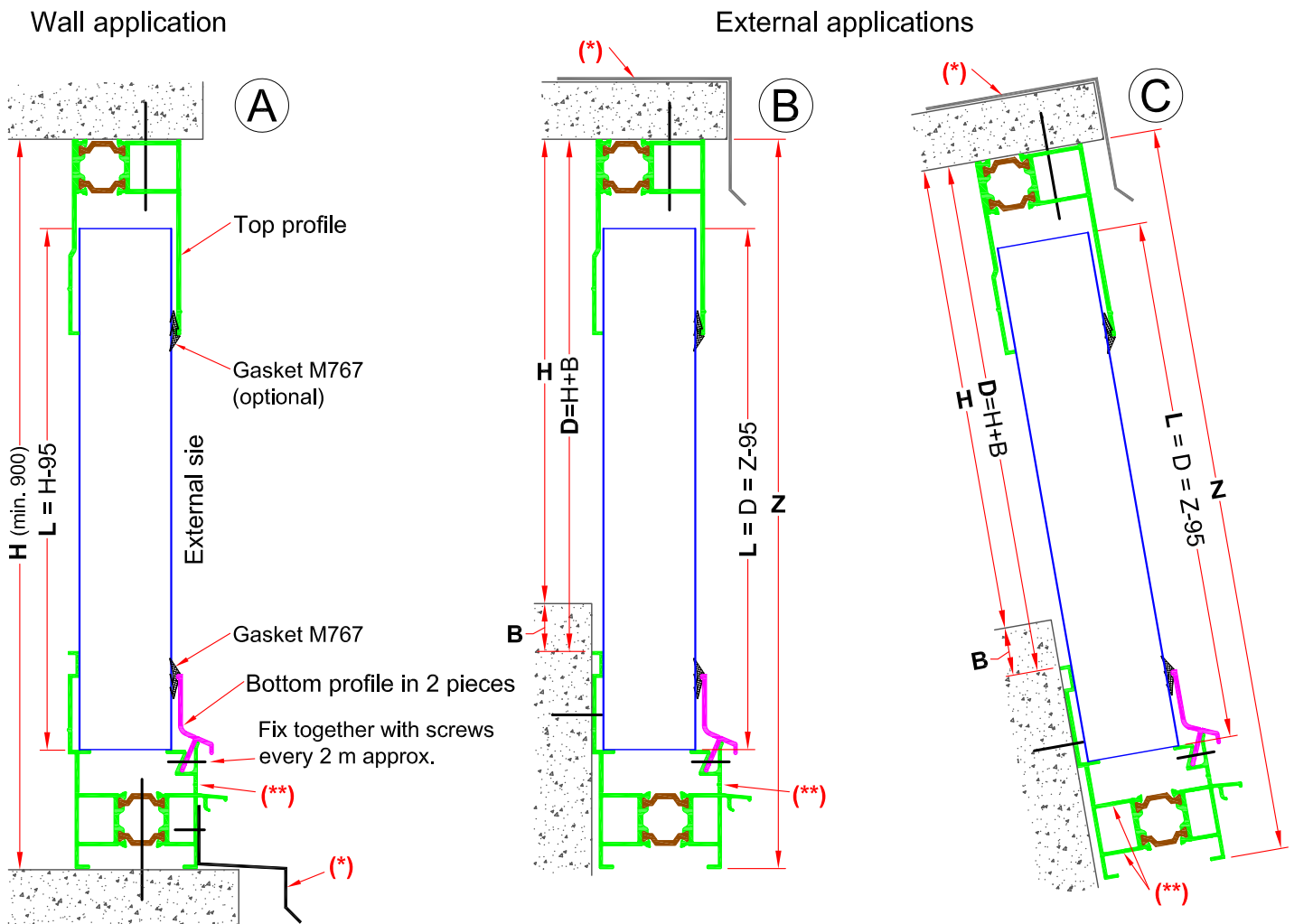
(**) Measure HW valid only with profile M610 and M623 + M624.

Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.

SECTIONS with 40 mm panels

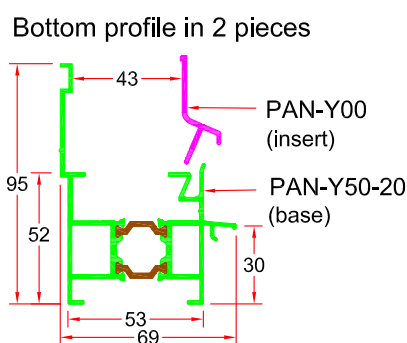
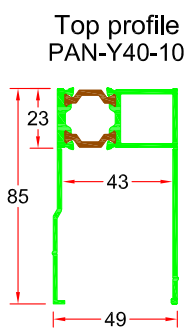


VERTICAL SECTION

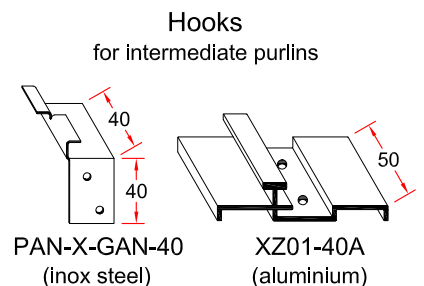
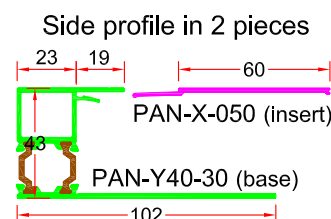


(*) Bent sheet not supplied by Akraplast

(**) Drill holes for drainage: holes $\varnothing \geq 8$ mm approx. every 500 mm

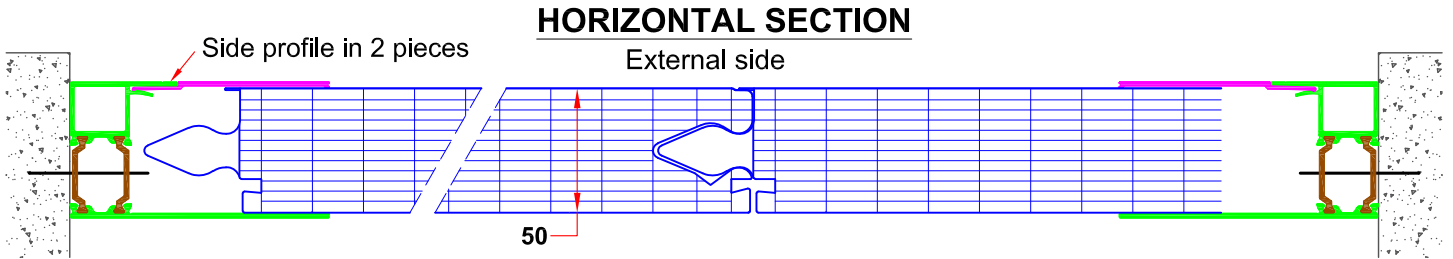


Gasket M767 in EPDM



Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.

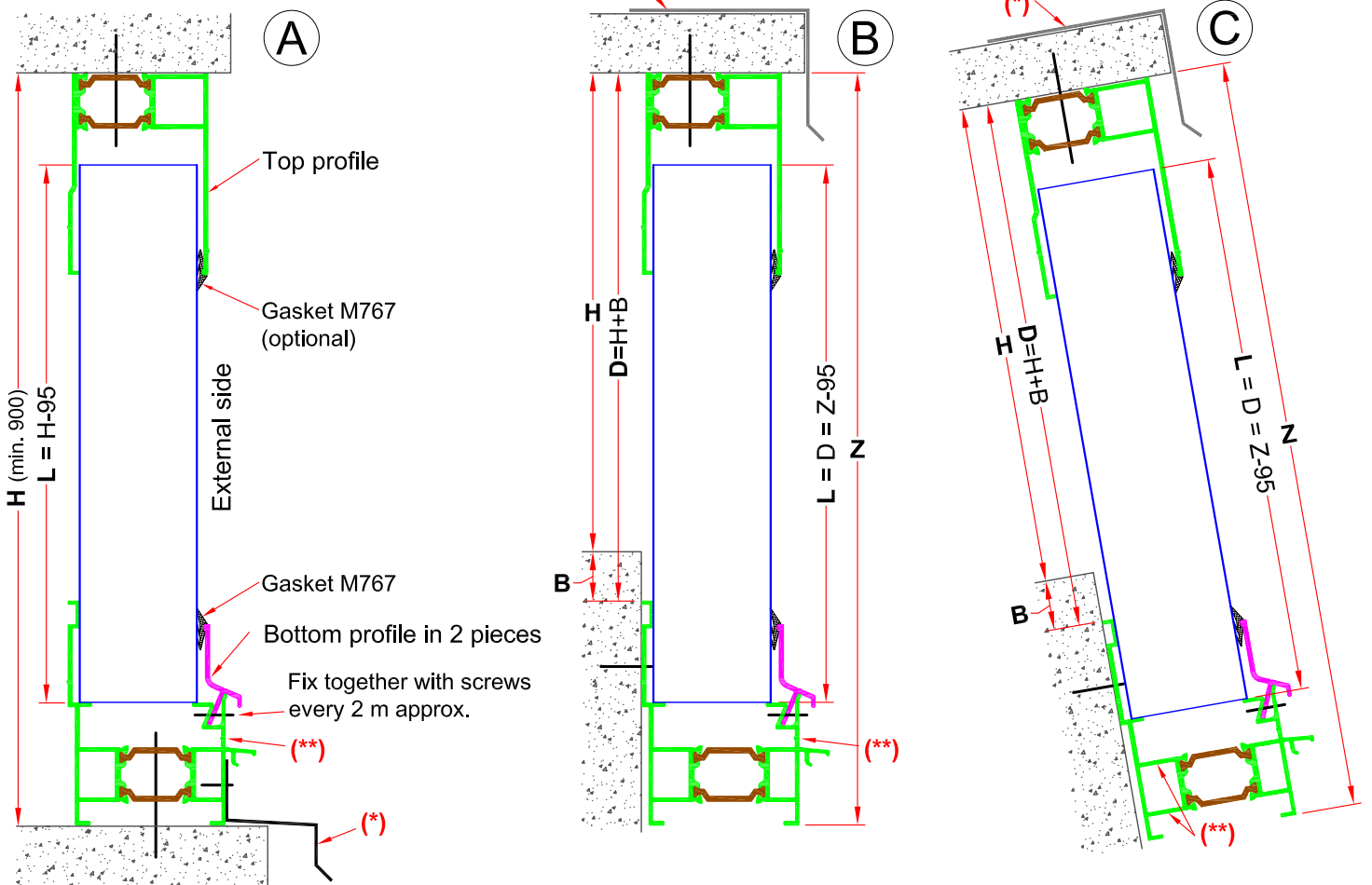
SECTIONS with 50 mm panels



VERTICAL SECTION

Wall application

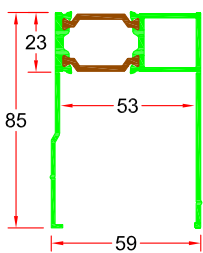
External applications



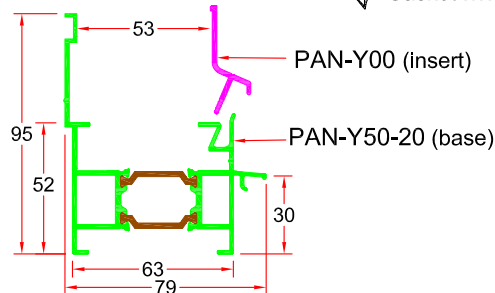
(*) Bent sheet not supplied by Akraplast

(**) Drill holes for drainage: holes $\varnothing \geq 8$ mm approx. every 500 mm

Top profile
 PAN-Y50-10

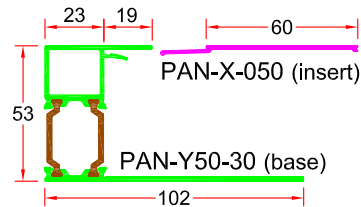


Bottom profile in 2 pieces

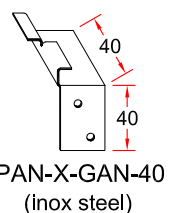


Gasket M767 in EPDM

Side profile in 2 pieces



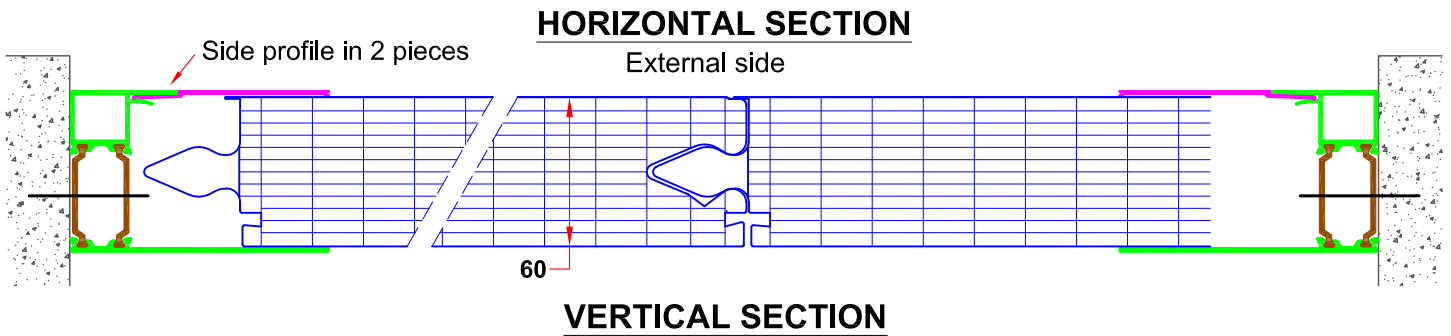
Hook
 for intermediate purlins



Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards.

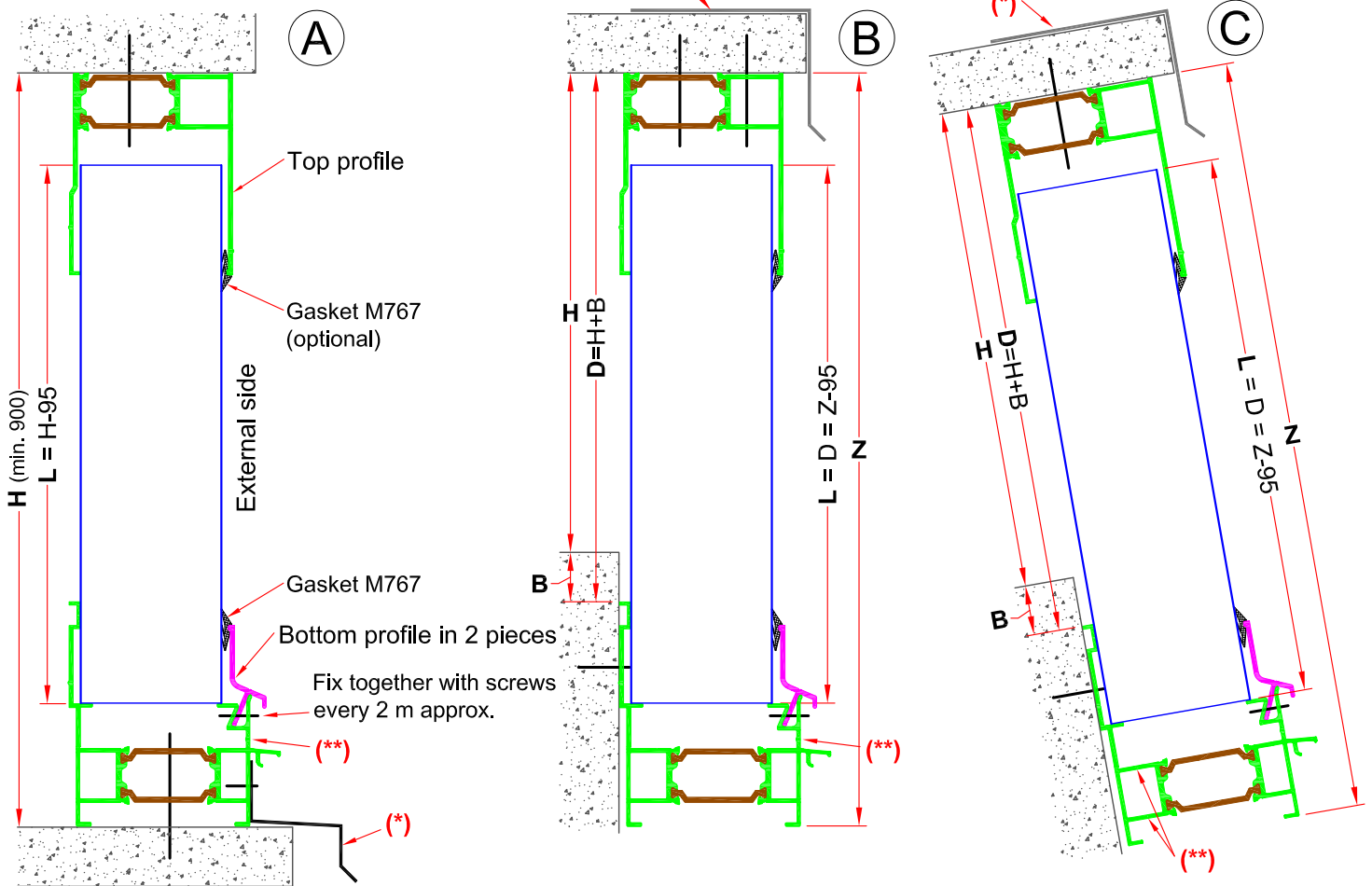
AKRAPLAST Sistemi reserves the right to change specifications at any time.

SECTIONS with 60 mm panels



Wall application

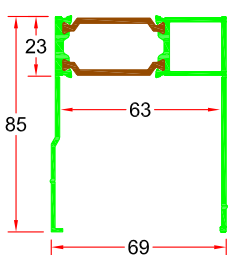
External applications



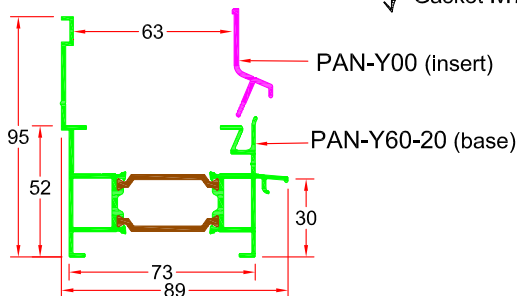
(*) Bent sheet not supplied by Akraplast

(**) Drill holes for drainage: holes $\varnothing \geq 8$ mm approx. every 500 mm

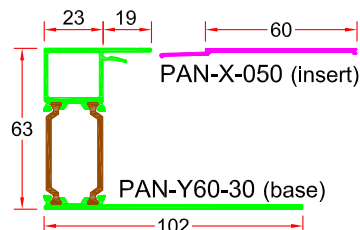
Top profile
 PAN-Y60-10



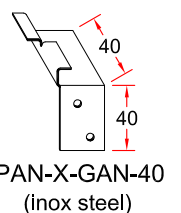
Bottom profile in 2 pieces



Gasket M767 in EPDM



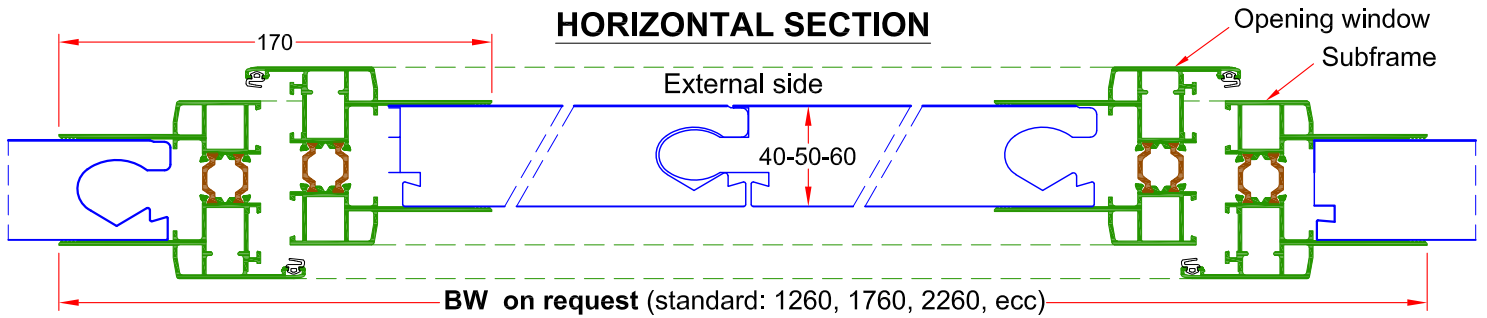
Hook
 for intermediate purlins



Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards.

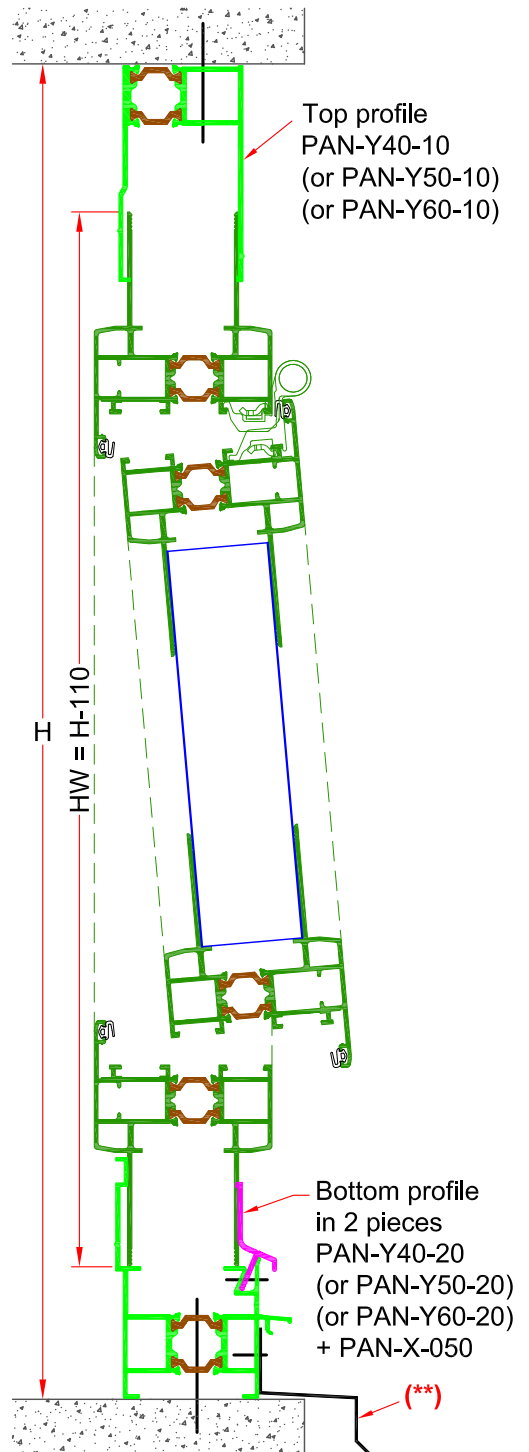
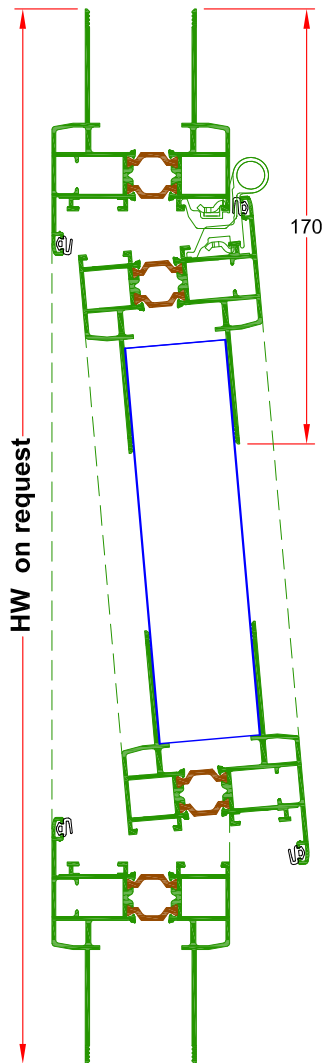
AKRAPLAST Sistemi reserves the right to change specifications at any time.

SECTION with 40 - 50 - 60 mm panels



Application with top and bottom profiles

VERTICAL SECTION
type opening outside (*)

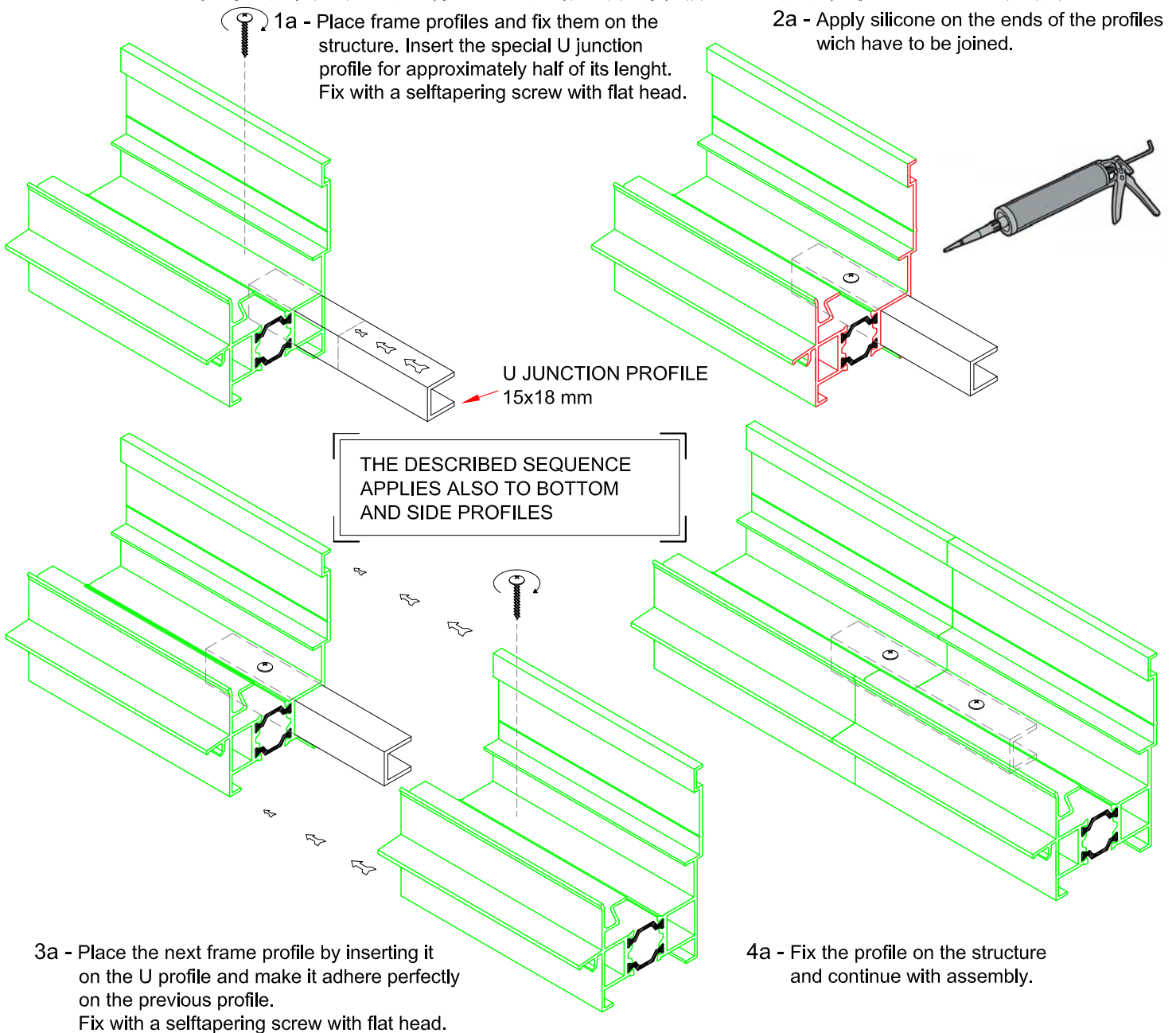
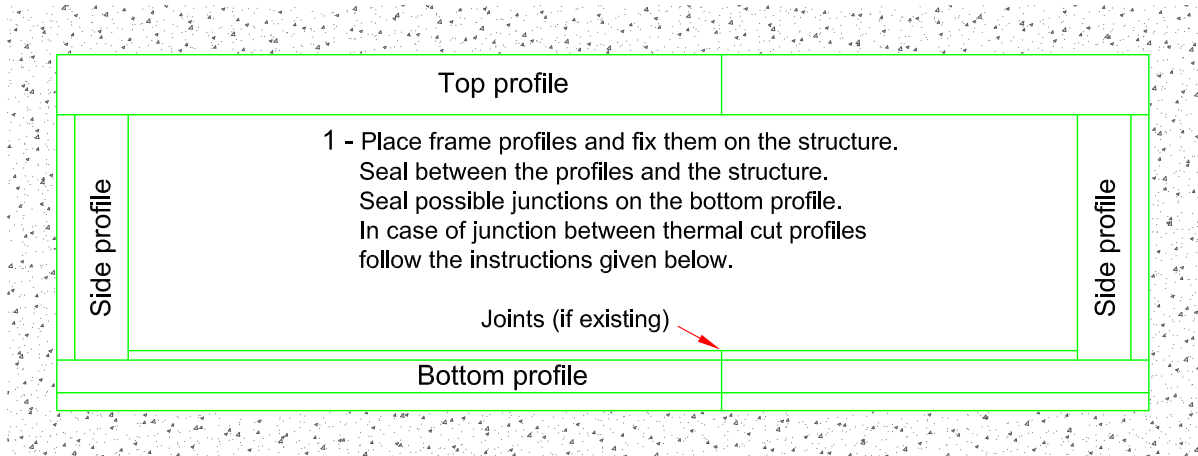


- (*) Also available opening inside and smoke heat extraction type
- (**) Option: bent sheet (not supplied by Akraplast)

Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.

Note: drawings not in scale

Instructions for usual profiles and for thermal cut profiles



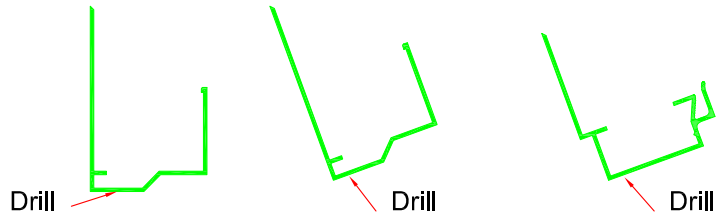
follows

Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.

Note: drawings not in scale

Instructions for usual profiles and for thermal cut profiles

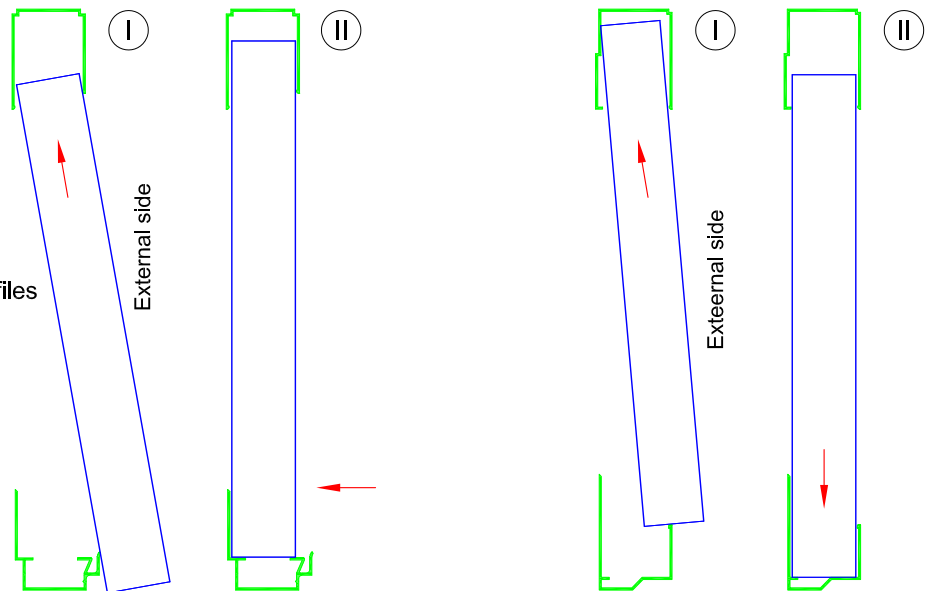
- (a) With bottom profile M628 or profile in 2 pieces inclined:
drill holes for drainage the lower edge of the profile with holes \varnothing minimum 8 mm every 500 mm approx.



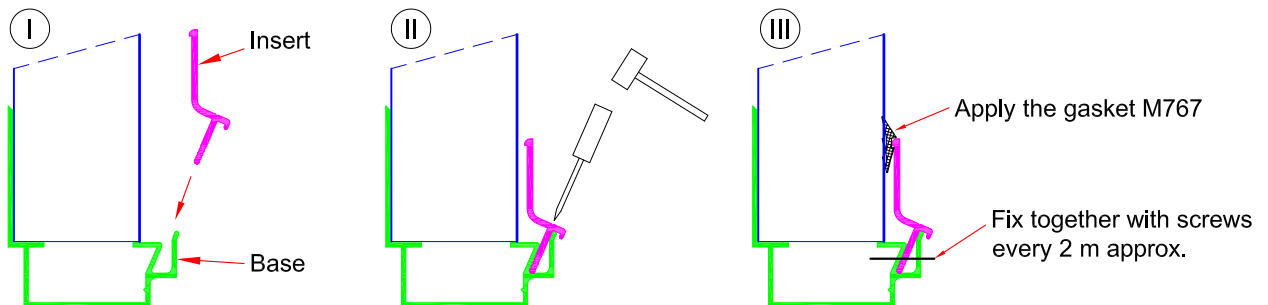
with top profile M610 or M615 or Thermal Cut and bottom profile in 2 pieces

with top profile M611 or M615 and bottom profile M628

- (b) Entering of the panels between the top and bottom profiles

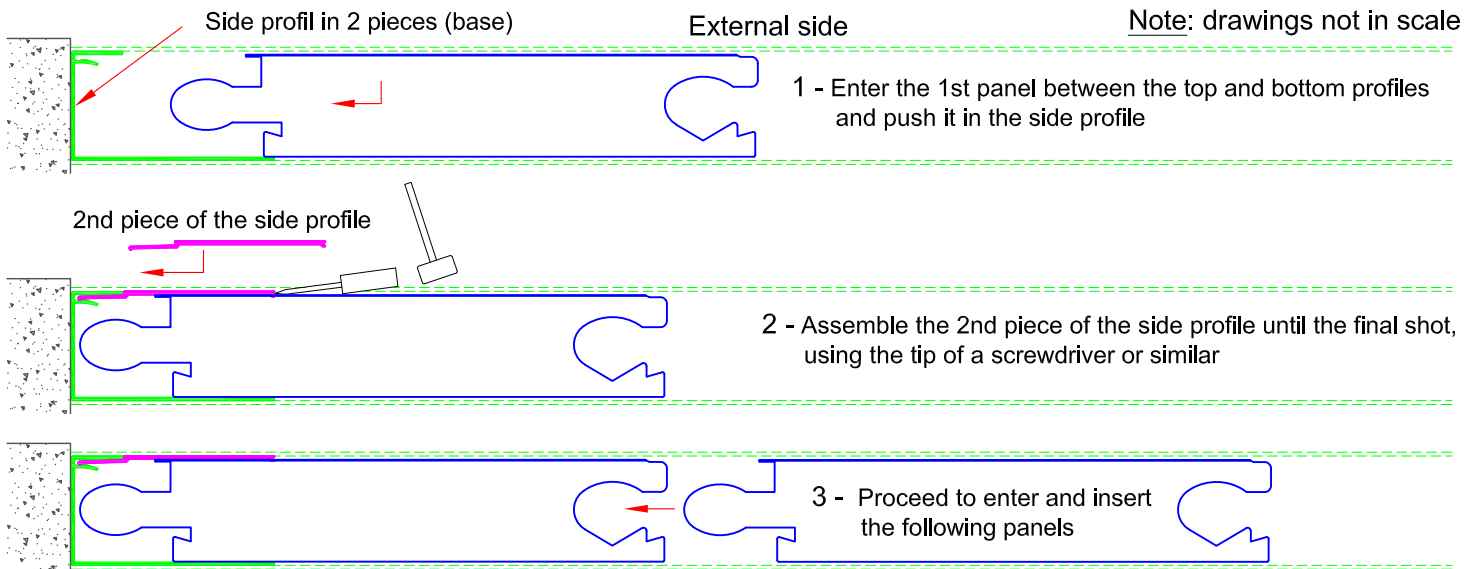


- (c) Assembly of the bottom profile in 2 pieces



follows

Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.

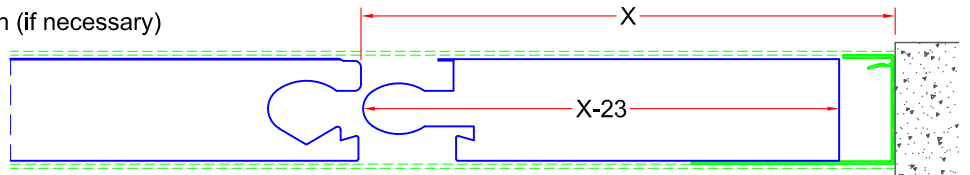


3a) In case of fixing to intermediate purlins with the hooks, see next page

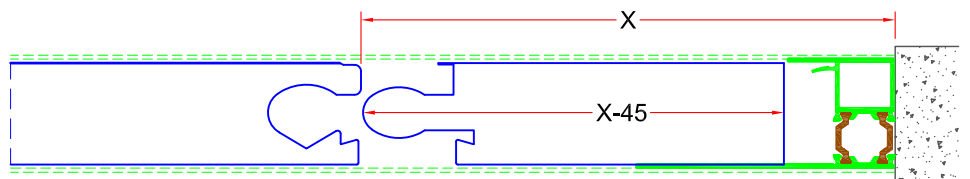
FINAL STEPS

4 - Cut the last panel to the appropriate width (if necessary)

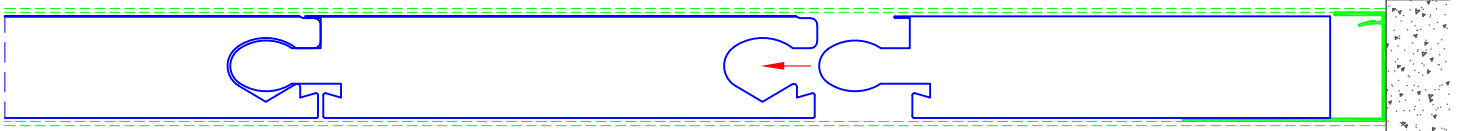
4a - With normal profile



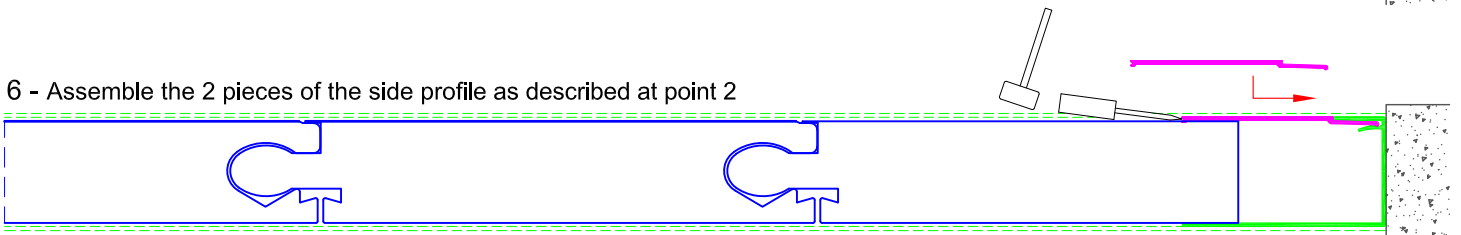
4b - With Thermal Cut profile



5 - Enter the last panel and insert it into the previous one

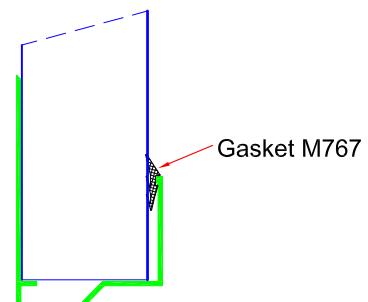
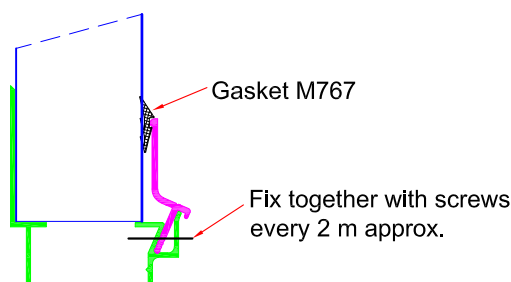


6 - Assemble the 2 pieces of the side profile as described at point 2



7a - With bottom profile in 2 pieces:
assembly the 2 pieces
(see page before part. c)

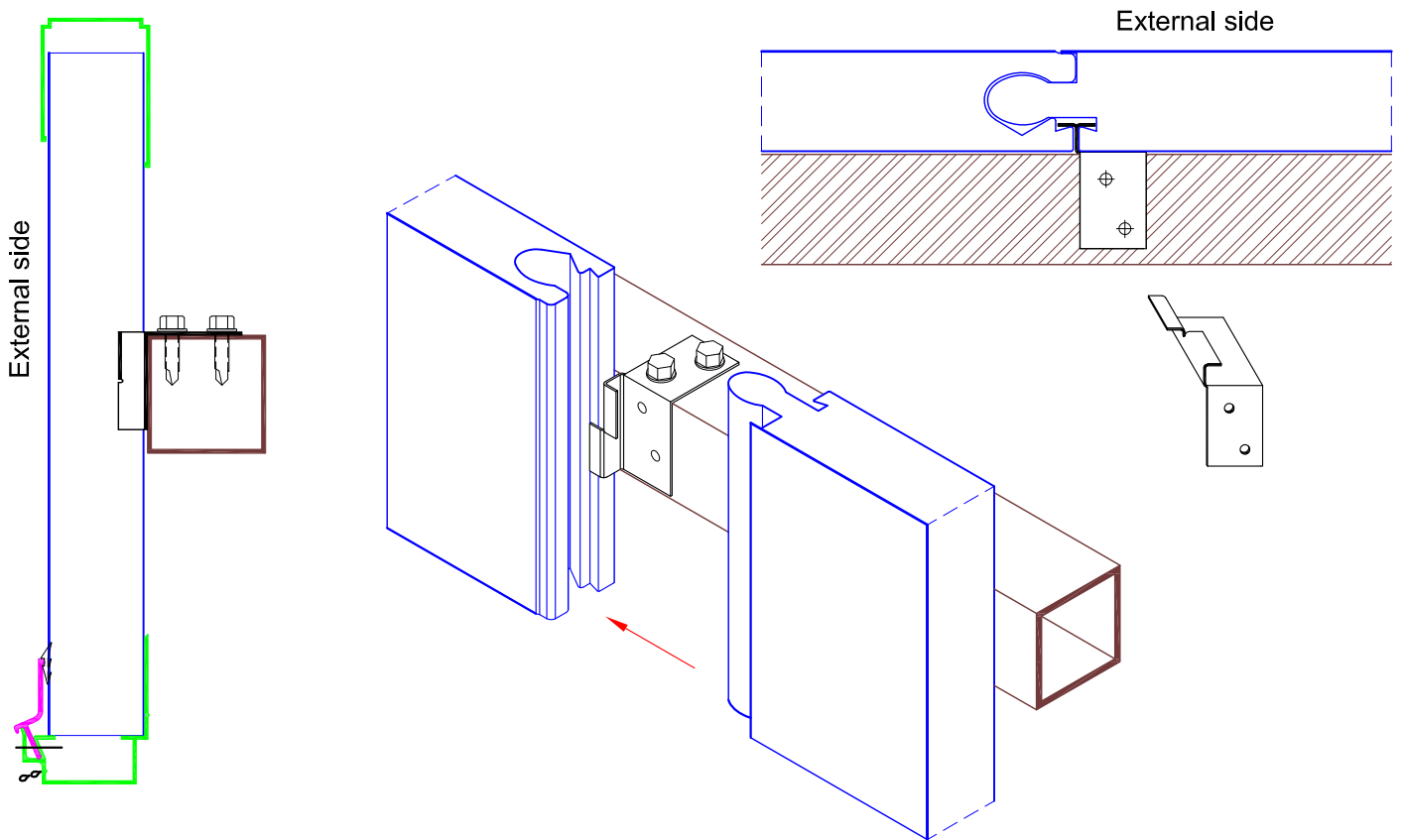
7b - With bottom profile M628:
apply the gasket M767



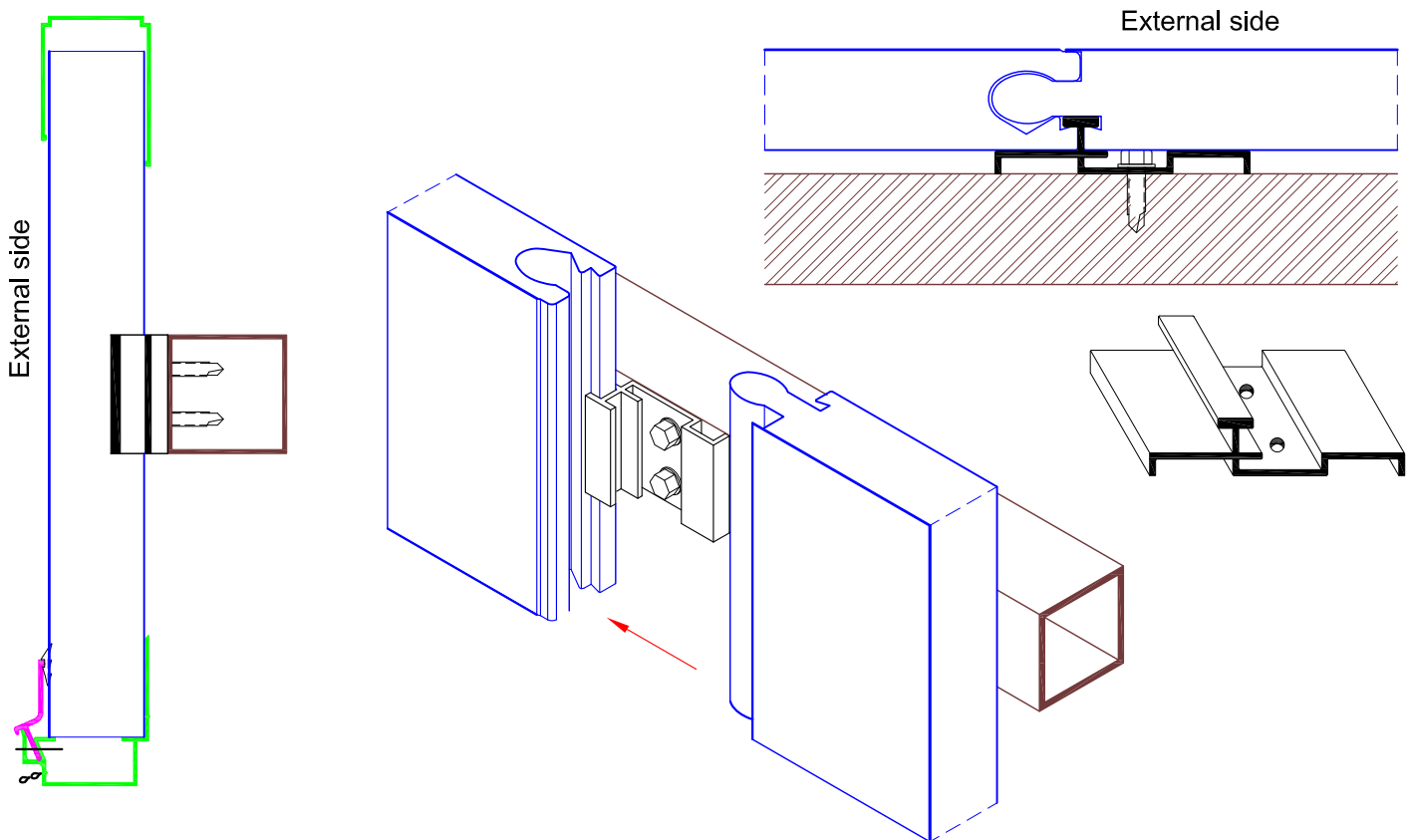
follows

Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.

HOOKS inox steel for intermediate purlins

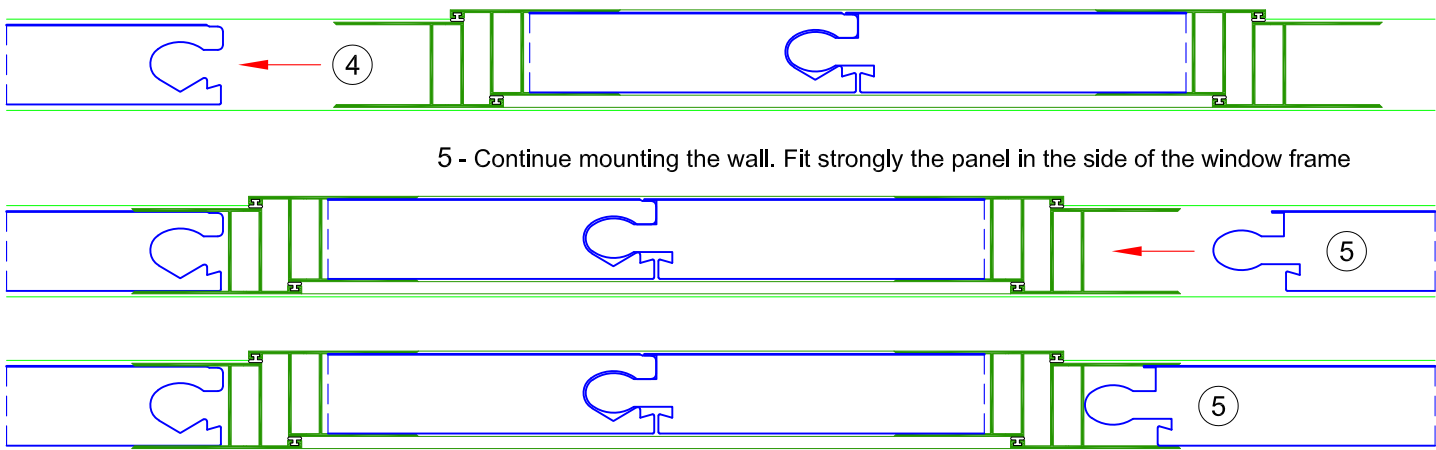
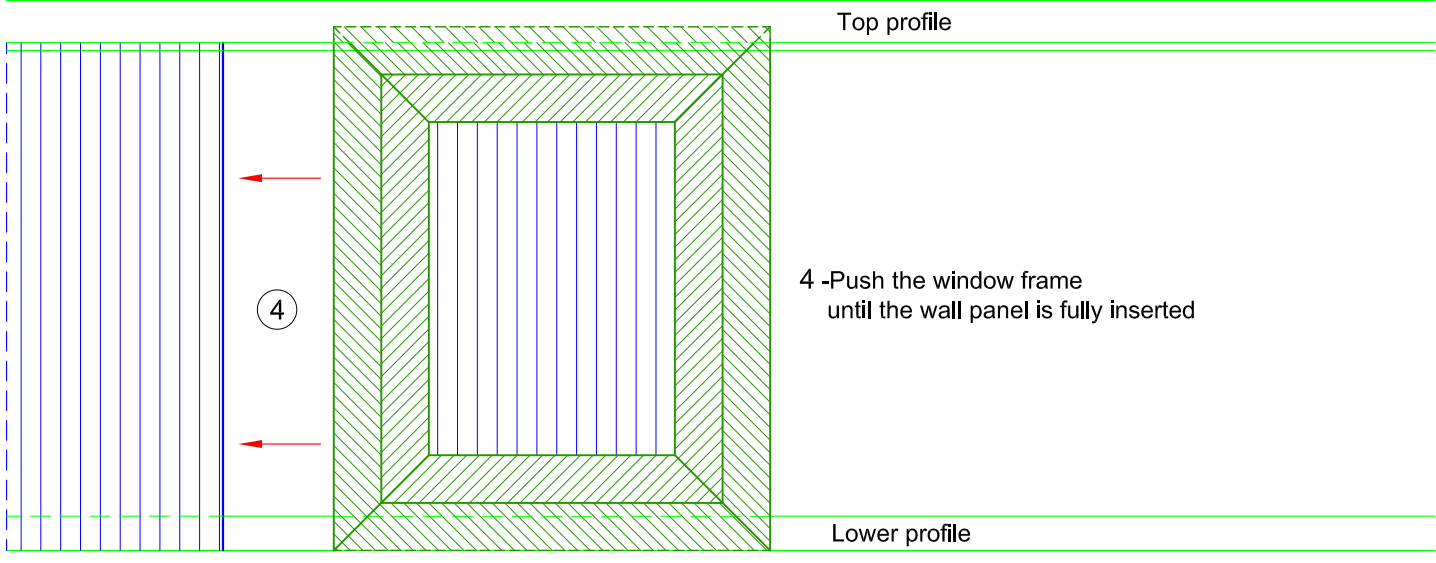
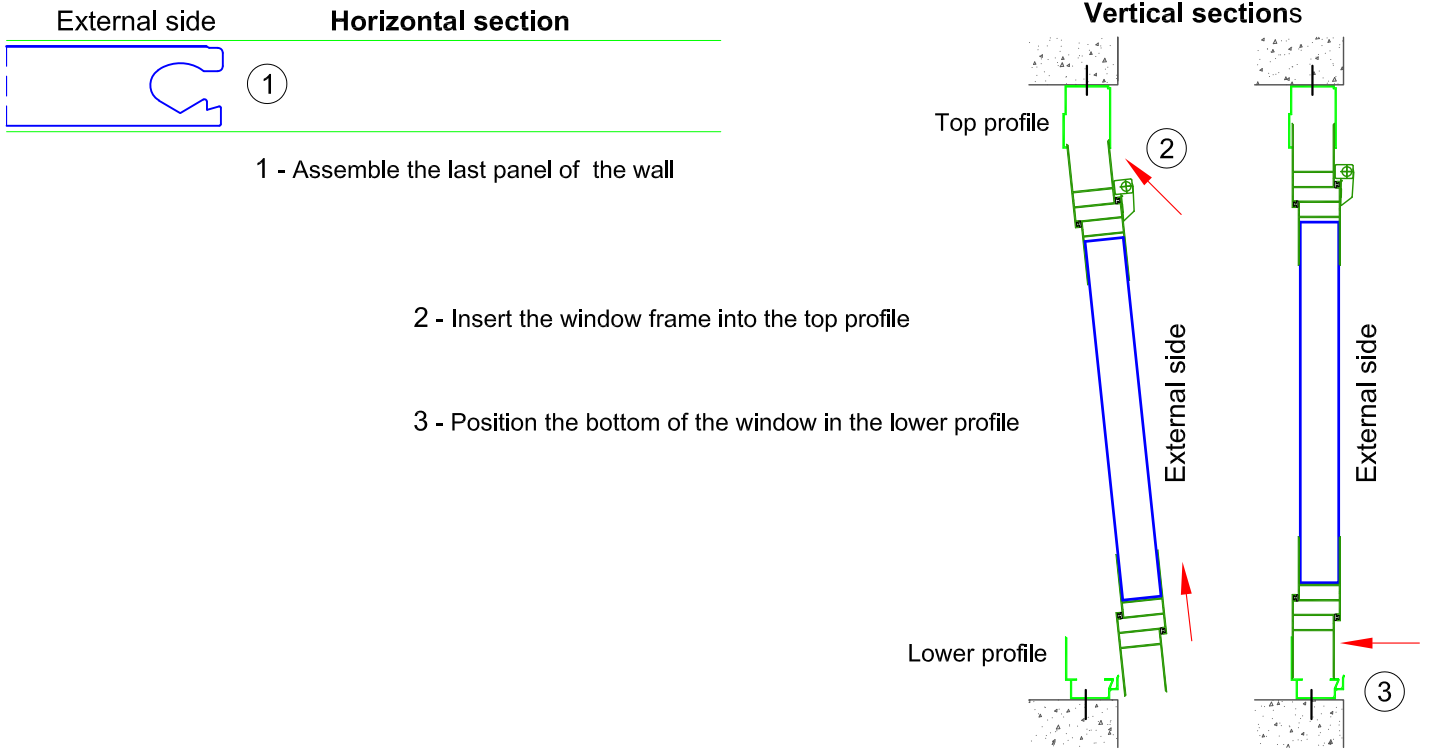


HOOKS in aluminium for intermediate purlins



Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.

Note: Drawings with cold profiles. Sequence also valid with thermal cut profiles.



Responsibility clause: all information and technical advice given are made in good faith and based on the best of our knowledge; but having no control over the use of their material, we accept no responsibility for their applications. These indications do not exempt the customer from its controls to determine compliance of materials and installation procedures to their needs and standards. AKRAPLAST Sistemi reserves the right to change specifications at any time.

AKRAPLAST[®]

AKRAPLAST Sistemi S.r.l.

I - 20026 NOVATE MILANESE (MI) - Via Cascina del Sole, 70
Tel. (+39) 02.3513911 - Fax (+39) 02.35139150
E-mail : info@akraplast.com - www.akraplast.com