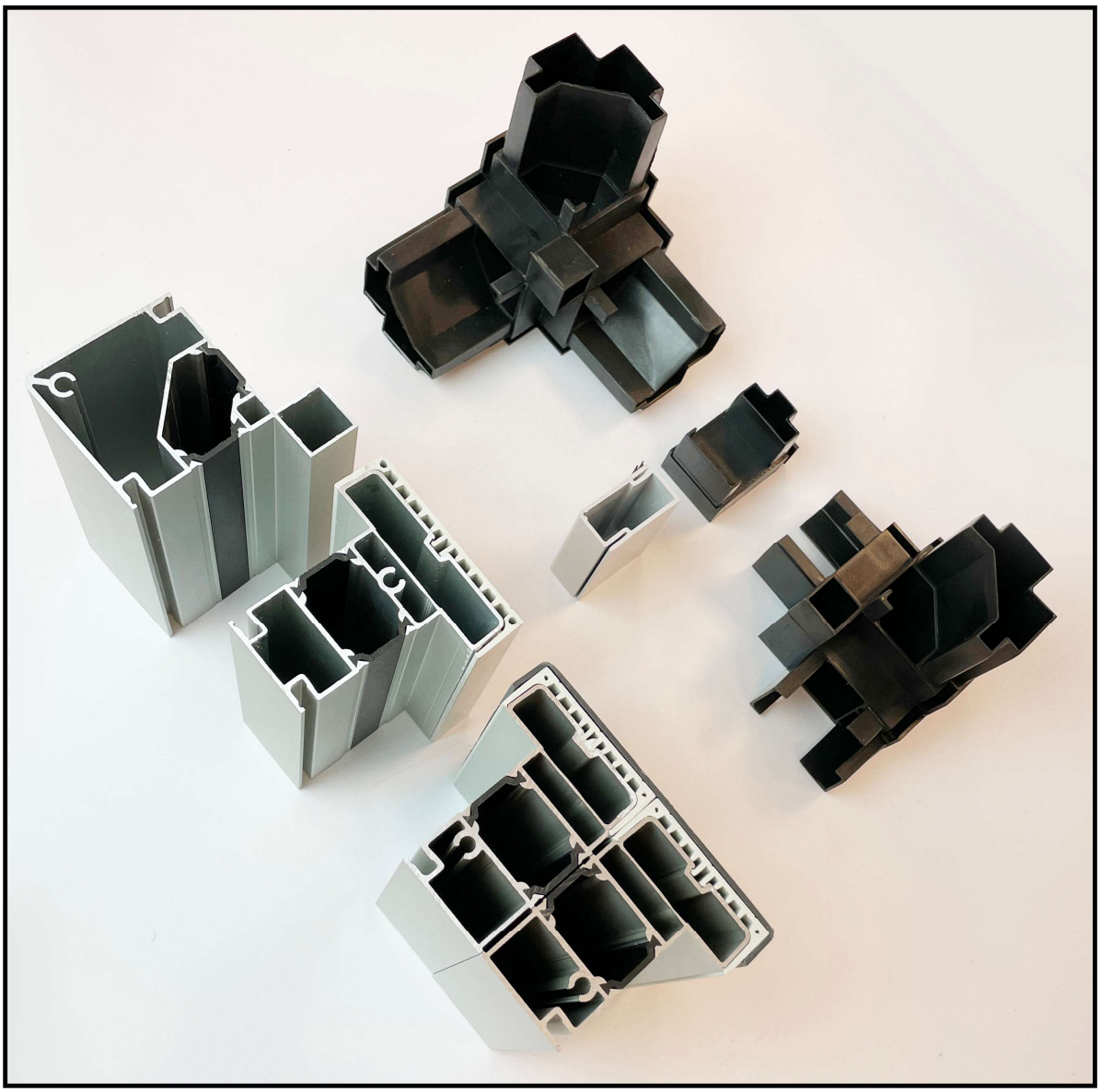
NEW PRODUCT 2022

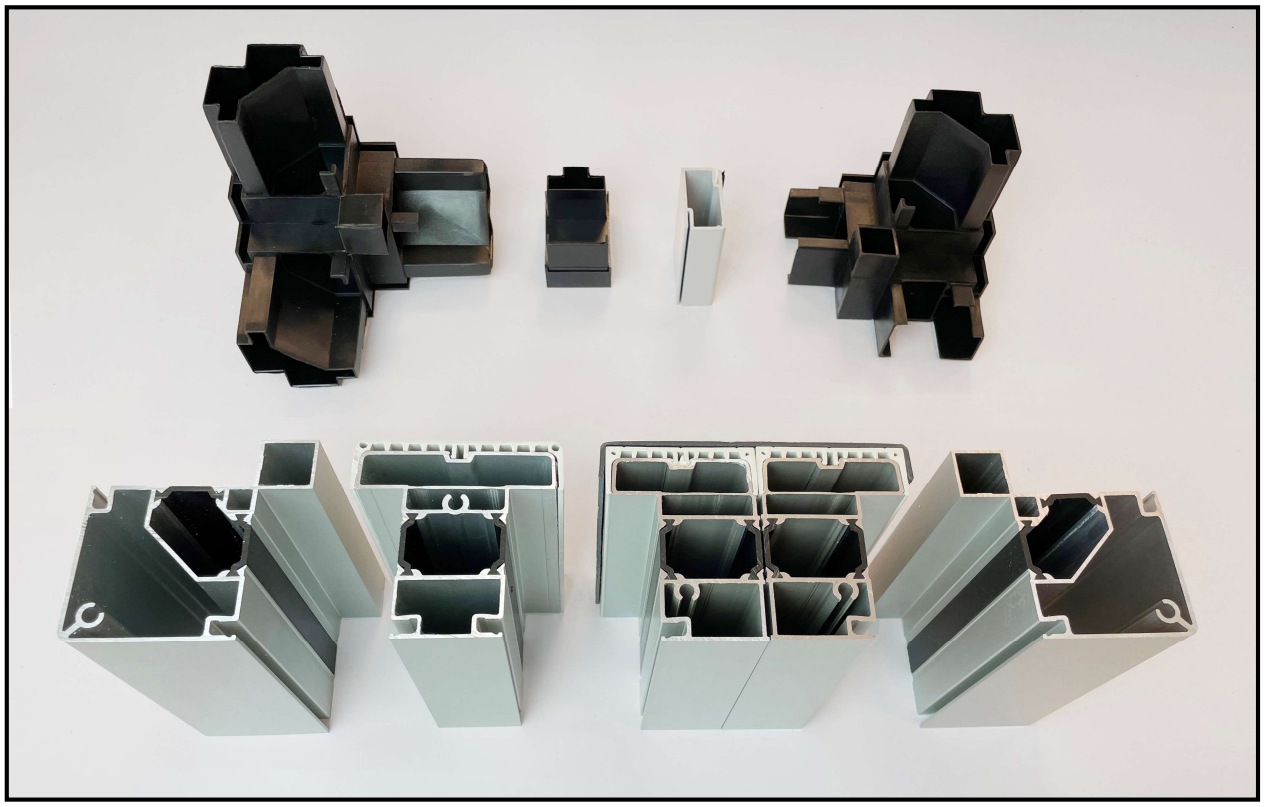
PRESENTATION OF THE NEW THERMAL BREAK SYSTEM 60/75-80 T1/TB1/L1/D1 WITH PANEL STOP PROFILES

Pat. Pending



THE NEW SYSTEM 60/75-80 IS ABLE TO REACH T1/TB1/L1/D1 ACCORDING TO THE NORMATIVE UNI EN 1886:2008

NEW THERMAL BREAK SYSTEM 60/75-80 T1/TB1/L1/D1 WITH PANEL STOP PROFILES

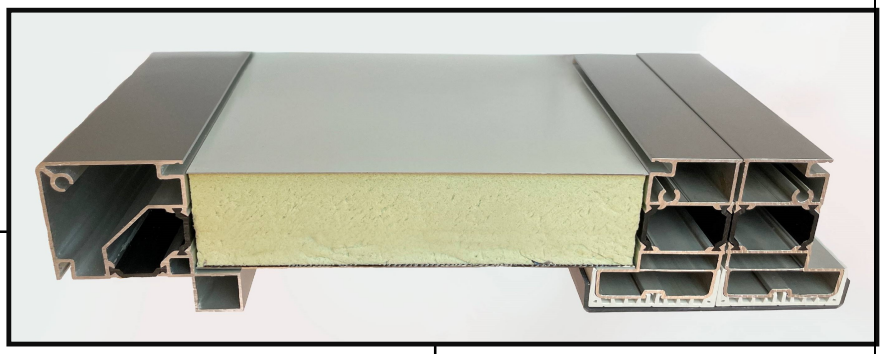


- ✓ Thermal break structure (T1,TB1)
- ✓ High thermal efficiency
- ✓ Guaranteed air tightness due to "panel lock profiles" (L1)
- ✓ Thermal break panel system (polyurethan)
- ✓ Joining system between profiles and accessories with totally hidden screws
- ✓ Airtight seal system guaranteed on the whole edge surface between panel and frame
- ✓ Panel assembly without screws to ensure safety and cleaning
- ✓ Easy and quick assembly
- ✓ Internal smooth surface

PROFILE SECTION = 60 mm
PANEL THICKNESS WITH PANEL STOP PROFILES = 50 mm
PANEL THICKNESS WITH STEP AND PANEL STOP PROFILES = 75 mm
PANEL THICKNESS WITH STEP AND WITH SCREWS = 80 mm

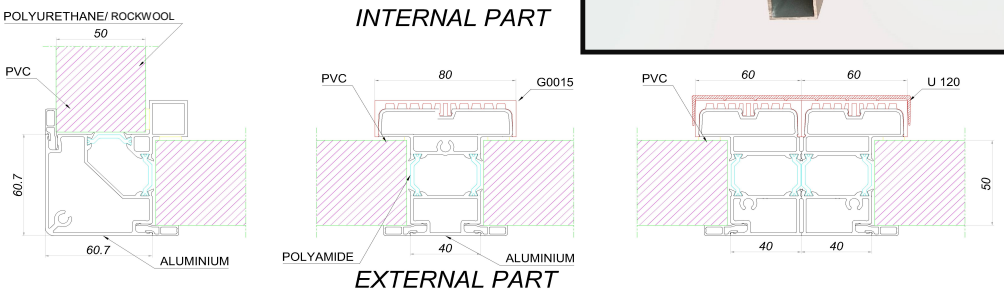
SUPPORTED PANELS

PANEL 50mm



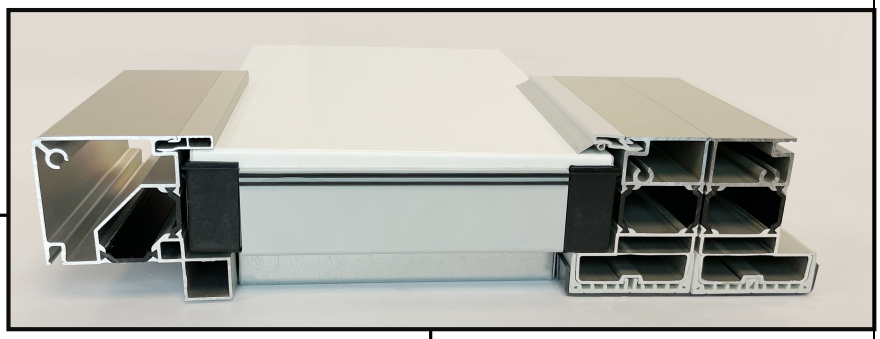
SYSTEM 60/50 PS

INTERNAL PART



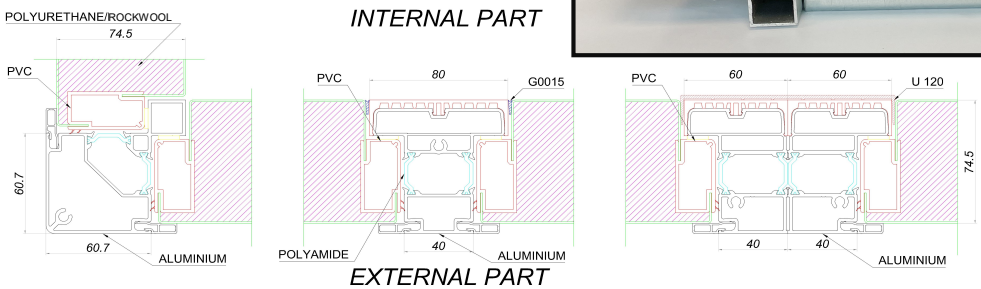
EXTERNAL PART

PANEL 75mm



SYSTEM 60/75 PS

INTERNAL PART

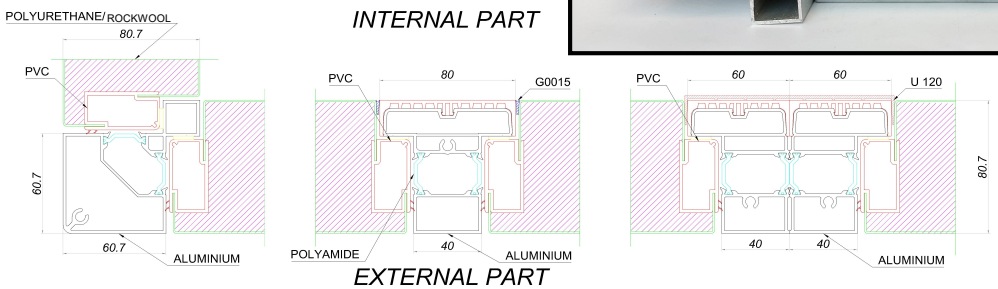


EXTERNAL PART

PANEL 80mm

SYSTEM 60/80

INTERNAL PART



EXTERNAL PART

DESCRIPTION:

This new thermal break system guarantees *the best levels of thermal efficiency*, thanks to specific 25 mm thermal break polyamide bars. One of the most interesting feature is the profile, equipped with a PVC cover on the internal side that allows to reduce drastically all the thernal losses and eliminate thermal bridging. The new “panel stop” is designed to join the panel to the frame without using any screw and the new gasket G004 blocks both water and air; the best levels of thermal efficiency are reached also with brand new thermal break panels, thickness 75 / 80mm.

The screws, which join the corners and joints to the profiles, guarantee mechanical stability and are also hidden by small nylon caps which avoid the presence of dirt and dust near the top of the screw. To ensure better air tightness, specific neoprene gaskets are inserted between the profile and the corner.

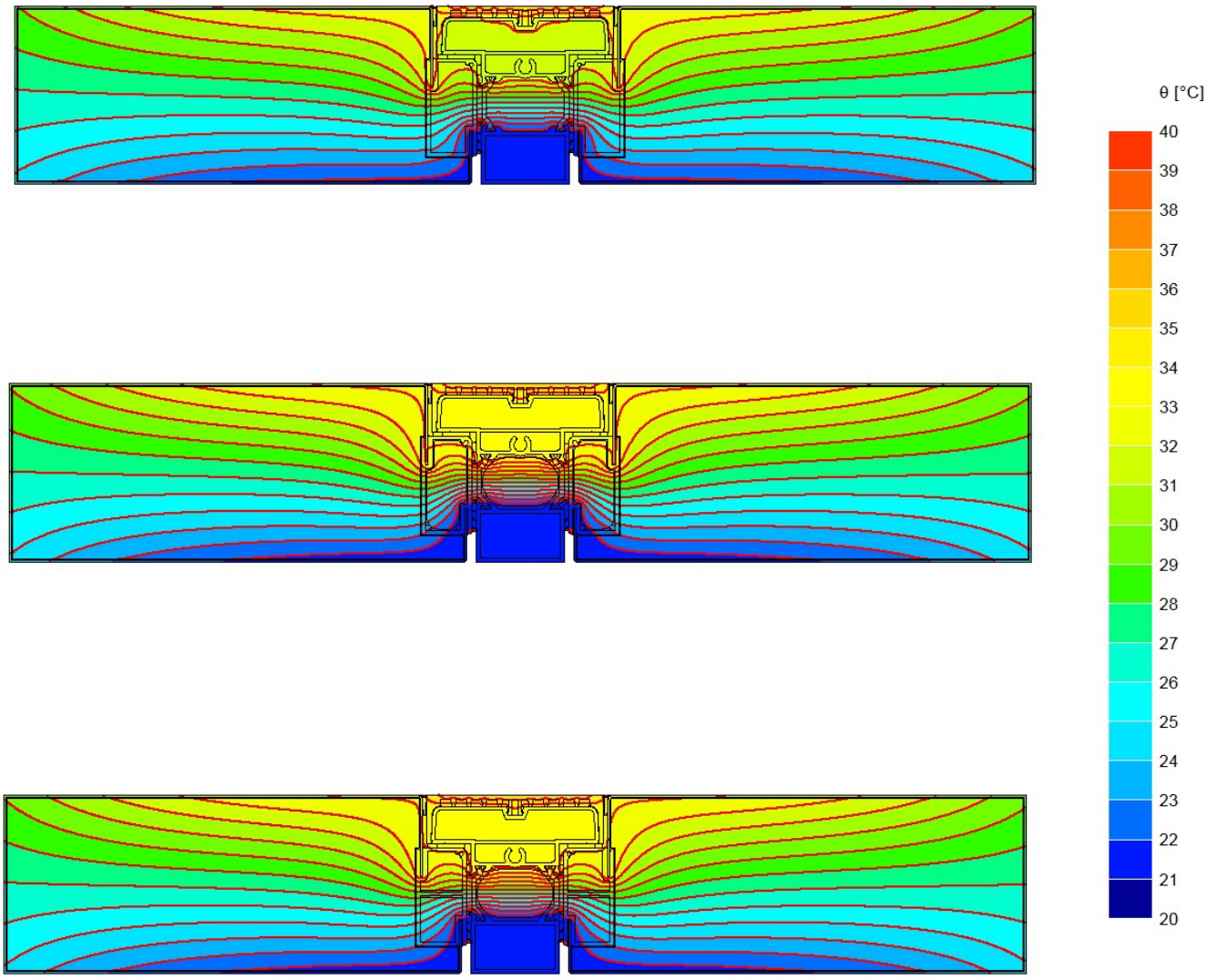
MODEL BOX TESTED IN A LABORATORY

1. THERMAL ISOLATION OF THE SYSTEM

1.1 TESTS WITH SOFTWARE SIMULATION

The performances of thermal break ensure a level of thermal isolation that is ranked *T1 – TB1* according to the normative UNI EN1886.

This result is the outcome of a project developed by the technical department and the *R&D*, by using *specific softwares,* which are able to simulate real conditions; the results are displayed in the graphs below.



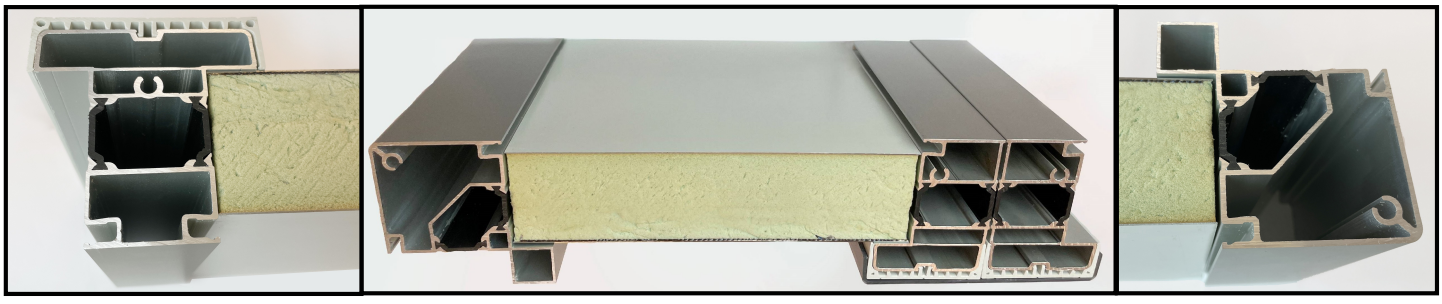
1.2 TESTS CARRIED OUT IN LABORATORIES

Test table with the results of the test

PROFILE	Ti	t s-max	ta	kb	Thermal class
System 60- P 260/75 PS TB	22	15	42	*0,80*	*TB1*
System 60- P 260/75-2 PS TB	22	15	42	*0,76*	*TB1*
System 60- P 160/75 PS TB	22	15	42	*0,85*	*TB1*

The high level class of thermal isolation of the system 60/75 has been confirmed by test which were carried out in accredited labs on an AHU which was assembled with patented corner post profiles, omega profiles and half omega profiles, panel stop profiles, specific gaskets and polyurethan insulated thermal break panels. The tables below show the tests results which are compliant with the standards of *thermal isolation* according to UNI EN 1886.

THERMAL PERFORMANCE	EN 1886	VALUES	RESULTS	THERMAL CLASS
TRANSMITTANCE	Class T1 Class T2 Class T3 Class T4 Class T5	U ≤ 0,5 0,5 < U ≤ 1,0 1,0 < U ≤ 1,4 1,4 < U ≤ 2,0 No requirements	*0,45*	*CLASS T 1*
THERMAL BRIDGING	Class TB1 Class TB2 Clase TB3 Class TB4 Class TB5	0,75 < k_b < 1,00 0,60 < k_b ≤ 0,75 0,45 < k_b ≤ 0,60 0,30 < k_b ≤ 0,45 No requirements	*0,76*	*CLASS TB 1*



1.3. MECHANICAL RESISTANCE OF THE STRUCTURE

Aspiration tests were run at -1000 Pa on a “model box” in order to determine possible structural issues. The results confirm *the great mechanical resistance of the* structure that reached *class D1*.

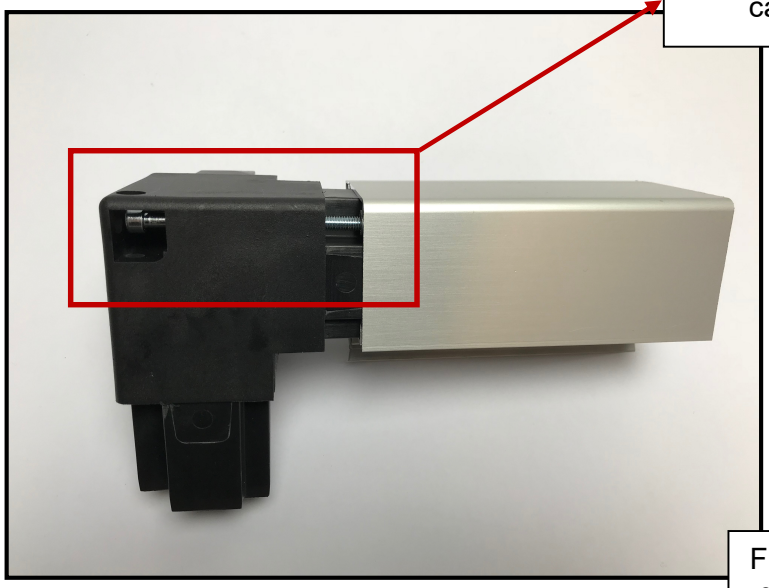
MODEL BOX TESTED IN A LABORATORY

1.4 PROFILES WITH MOMENT OF INERTIA FOR THERMAL BREAK STRUCTURES

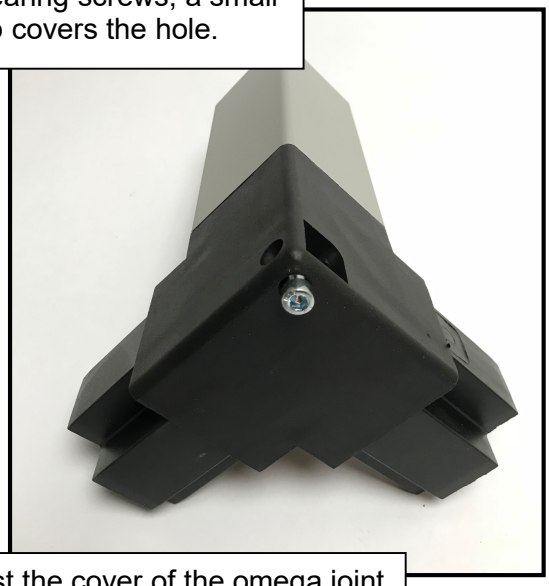
THERMAL BREAK MOMENTS OF INERTIA AND RESISTANCE		
TYPE OF PROFILE	Jxcm$_4$	Jycm$_4$
P 160/50 PS TB	67.31	32.38
P 260/50 PS TB	49.34	29.31
P 260/50-2 PS TB	44.22	19.42

1.5 ASSEMBLY WITH SCREWS: GUARANTEED AIR TIGHTNESS AND MECHANICAL RESISTANCE

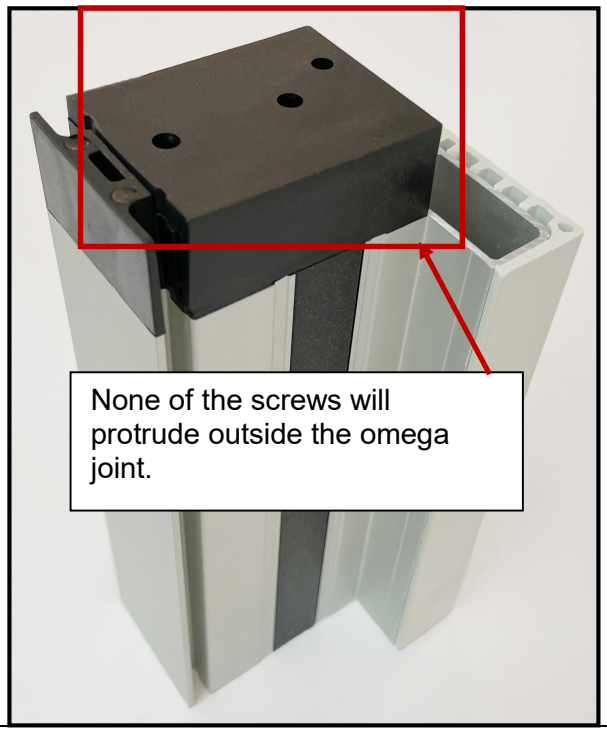
The thermal break structure is solid and has great air tightness, thanks to the *assembly with the screws*: all the accessories are designed to be used with *self stopping screws* that guarantee the best performances in terms of air tightness and mechanical resistance.



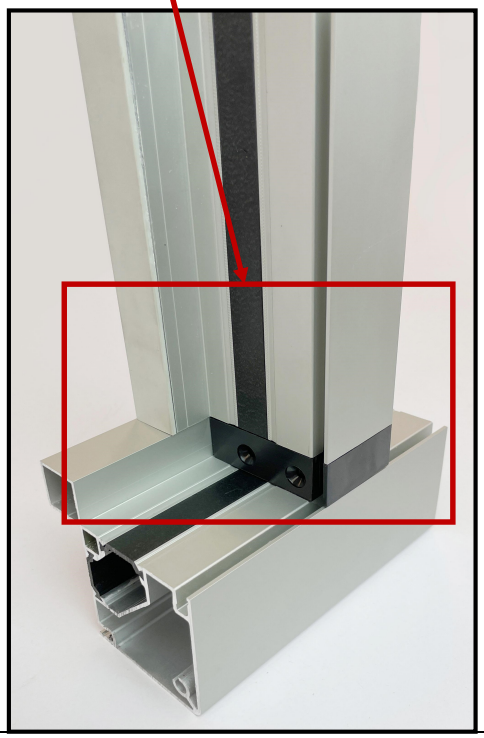
Disappearing screws, a small cap covers the hole.



First the cover of the omega joint gets screwed to the corner post profile, and then to omega is inserted and fixed with two screws.



None of the screws will protrude outside the omega joint.

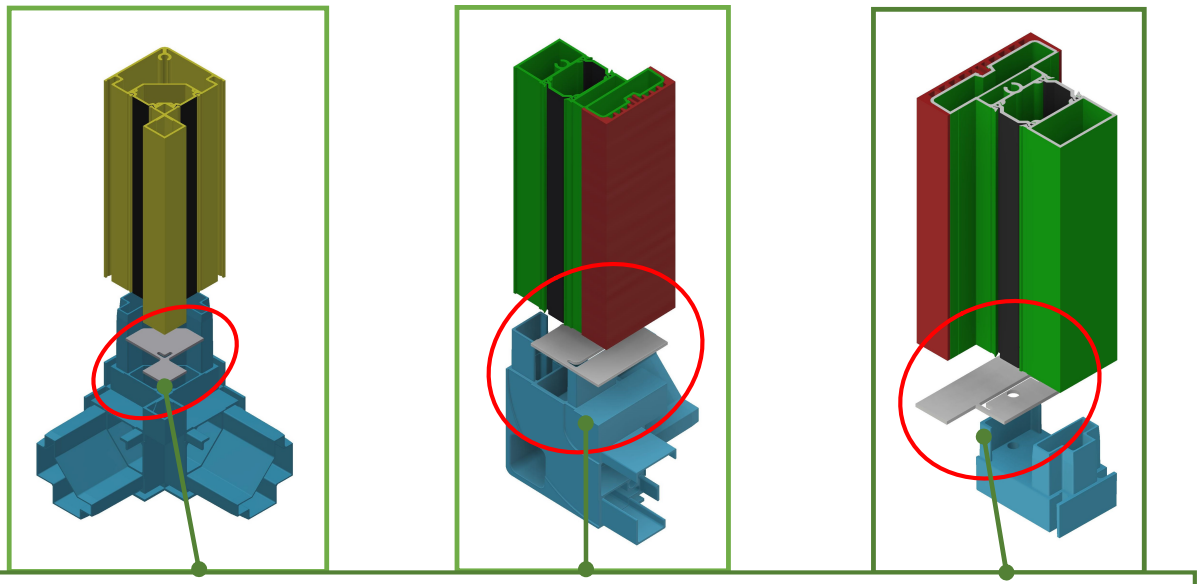


2. AIR TIGHTNESS

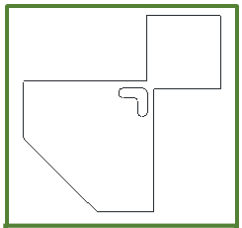
2.1 INTERNAL AIR TIGHTNESS

The results of tests on a “model box” highlighted the *great performances in terms of air tightness*.

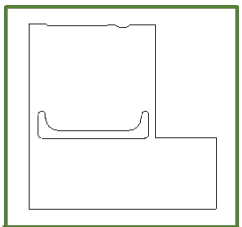
Those results were reached also due to the new gasket system shown in the tables below.



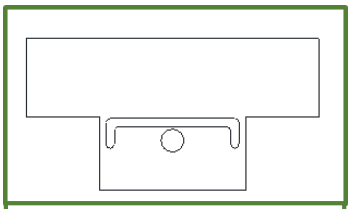
EACH CORNER HAS A SPECIFIC GASKET INSERTED BETWEEN THE CORNER AND THE PROFILE, TO PREVENT AIR AND WATER TO GET INSIDE THE UNIT.



GPL-DW7



GPL-DW8



GPL-DW9

AIR LEAKAGE	- 400 Pa	Class L1 Class L2 Class L3	≤ 0,15 (l * s^{-1} * m^{-2}) ≤ 0,44 (l * s^{-1} * m^{-2}) ≤ 1,32 (l * s^{-1} * m^{-2})	*0,03 = CLASS L1*
	+ 700 Pa	Class L1 Class L2 Class L3	≤ 0,22 (l * s^{-1} * m^{-2}) ≤ 0,63 (l * s^{-1} * m^{-2}) ≤ 1,9 (l * s^{-1} * m^{-2})	*0,15 = CLASS L1*

These excellent results were obtained due to the new “panel stop profiles” and *the new patented gasket system GPL-DW7, GPL-DW8 and GPL-DW9,* placed between corners/joints and the profiles to ensure air tightness.

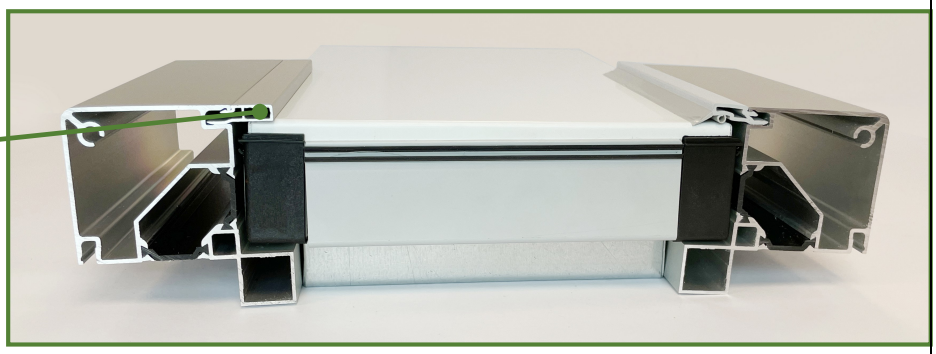
2.2 EXTERNAL AIR TIGHTNESS

DESCRIPTION

To fix the panels onto the frame we developed a special panel stop profile (PS 15X6) which is mounted on the frame inside a specific groove. To make sure that air tightness is maximised, there are also other solutions (PS 15X6 G and PVC PS 15X6) that with the help of specific gaskets guarantee air and water tightness.

2.21 STANDARD PANEL STOP PROFILE

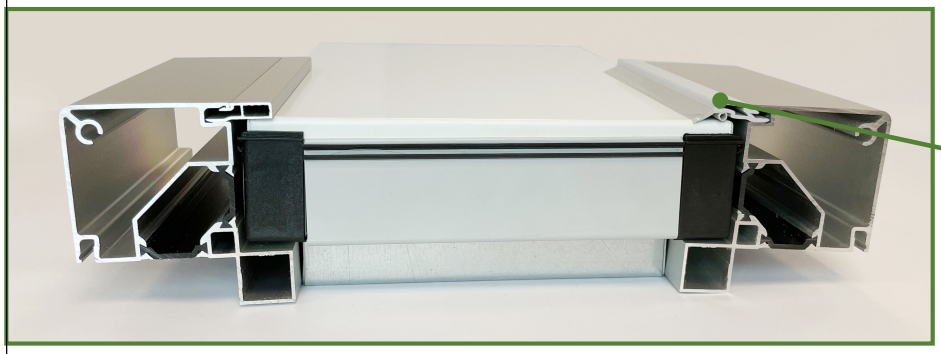
The panel stop profile ps 15x6 allows to install the panels to the machine in an economic and intuitive way.



2.22 PANEL STOP PROFILE PS 15x6 G + G004

Ps 15x6 g panel stop allows to install the panels to the unit. this profile was designed with an apposite groove that features a gasket (g004) that prevents the air and water from going inside the unit.

2.23 PLASTIC PANEL STOP PROFILE PVC-PS 15X6

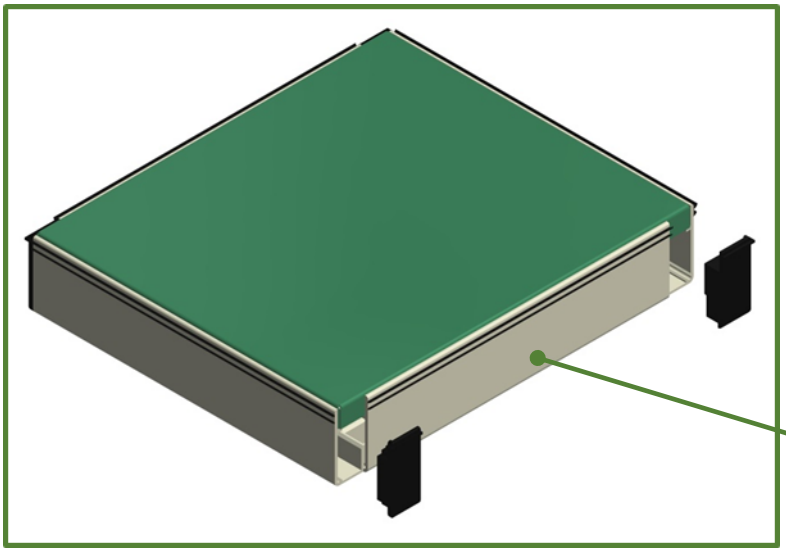


The panel stop profile pvc ps 15x6 it's entirely made of pvc with co-extruded gaskets to seal the entire perimeter of the panel, always to make sure that no air or water go inside the machine.

3. PANELS

3.1 THERMAL BREAK PANEL SYSTEM TBP1

- The system allows to reach the highest performances of thermal break depending on the thickness of the panel chosen.
- Ideal for panels insulated with polyurethan and rockwool.
-Energy saving: thanks to the low thermal conductivity of the panel and the high efficiency of the co-extruded gasket on the profile.

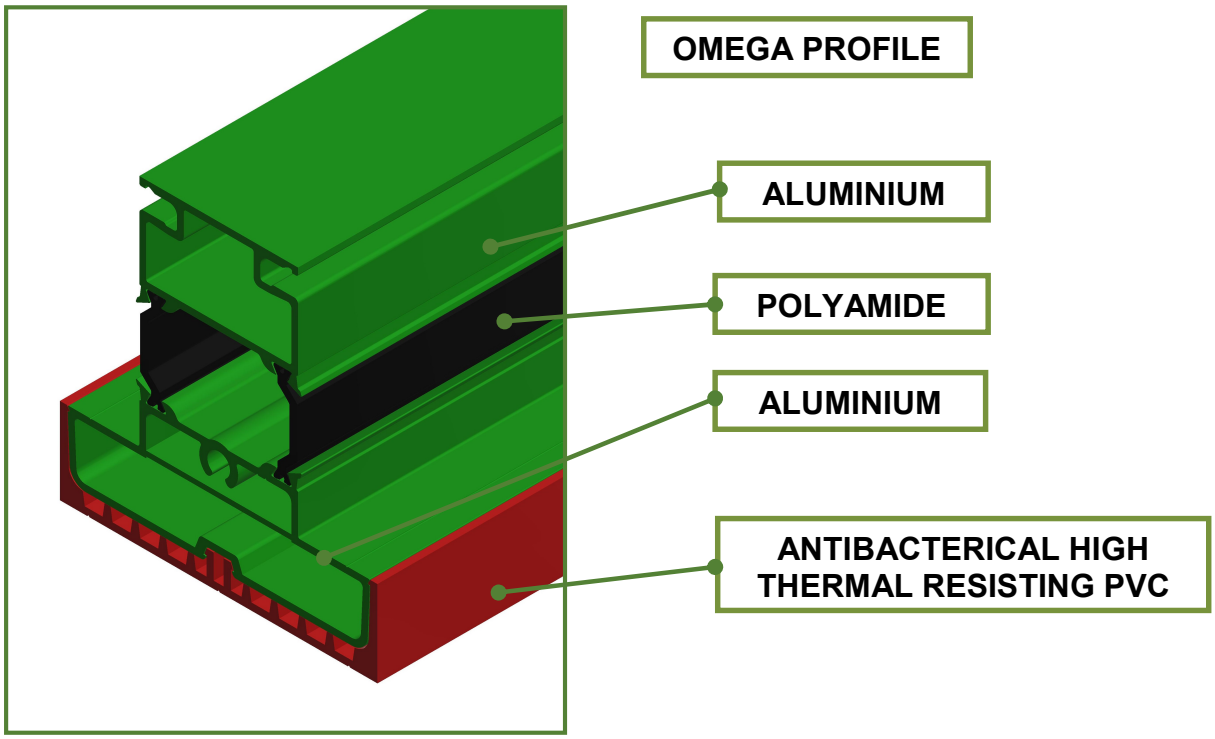


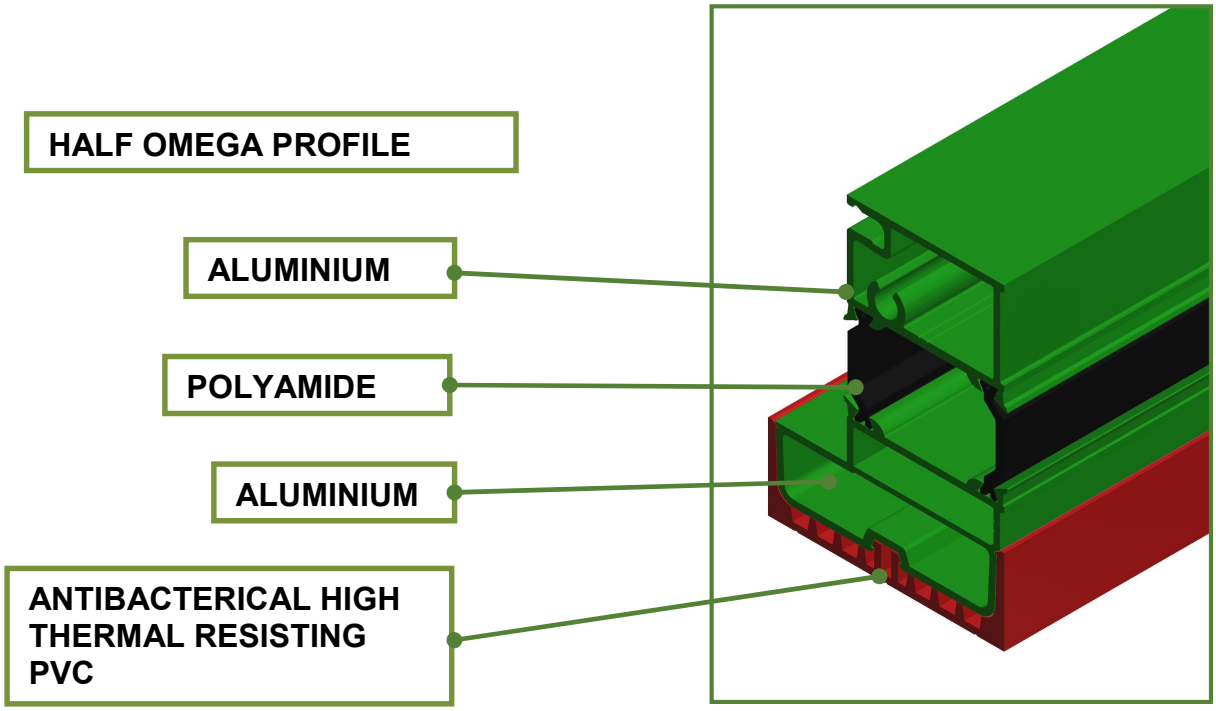
EASY TO ASSEMBLE
The assembly is intuitive and quick, given that the profile is cut at 90° and it's closed by plastic caps

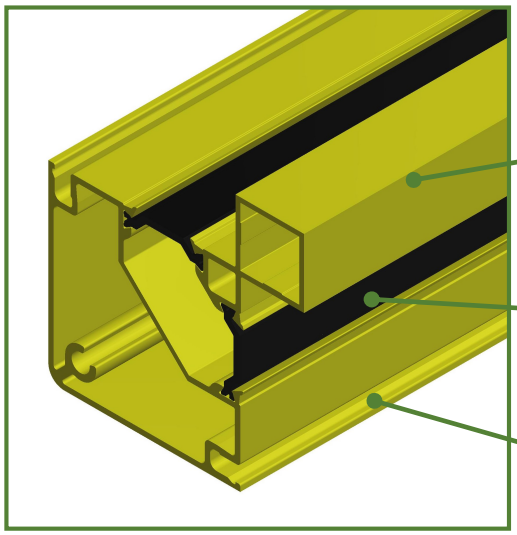
THE SYSTEM IS DESIGNED TO WORK WITH THERMAL BREAK PANELS THAT ARE UP TO 80MM THICK.

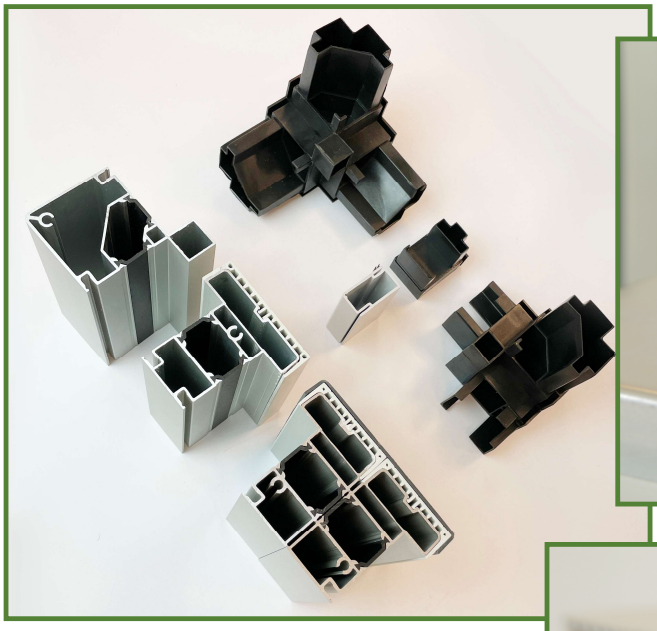
4. HIGH PERFORMING NEW THERMAL BREAK PROFILES

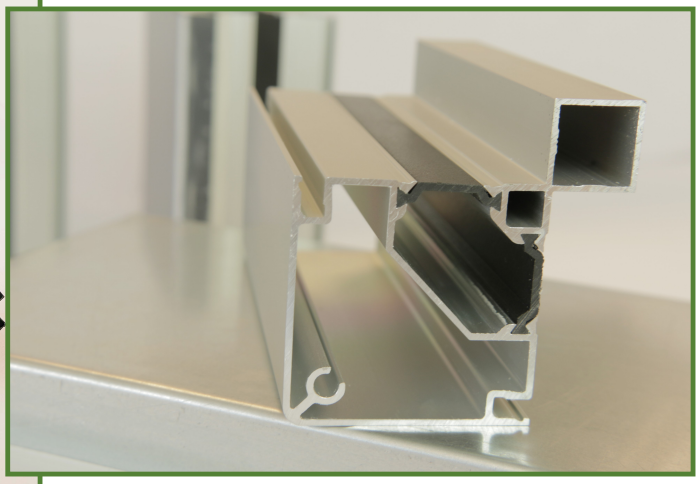
The new 60/75-80 system is designed with innovative profiles that work with different aluminium layers, polyamide and high thermal resisting PVC which is also antibacterical, studied and specifically placed to prevent energetic losses.

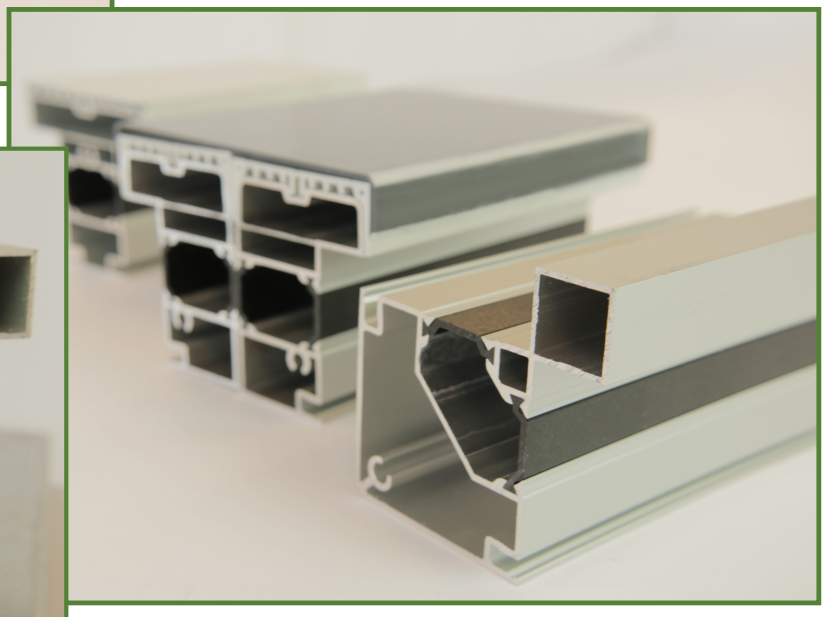


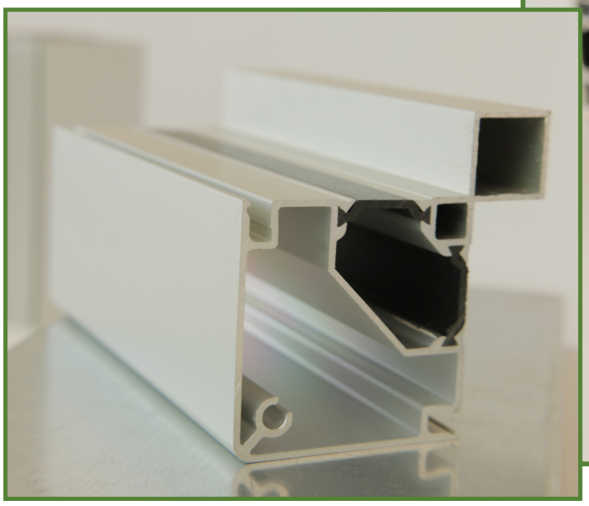



CORNER POST PROFILE
ALUMINIUM
POLYAMIDE
ALUMINIUM



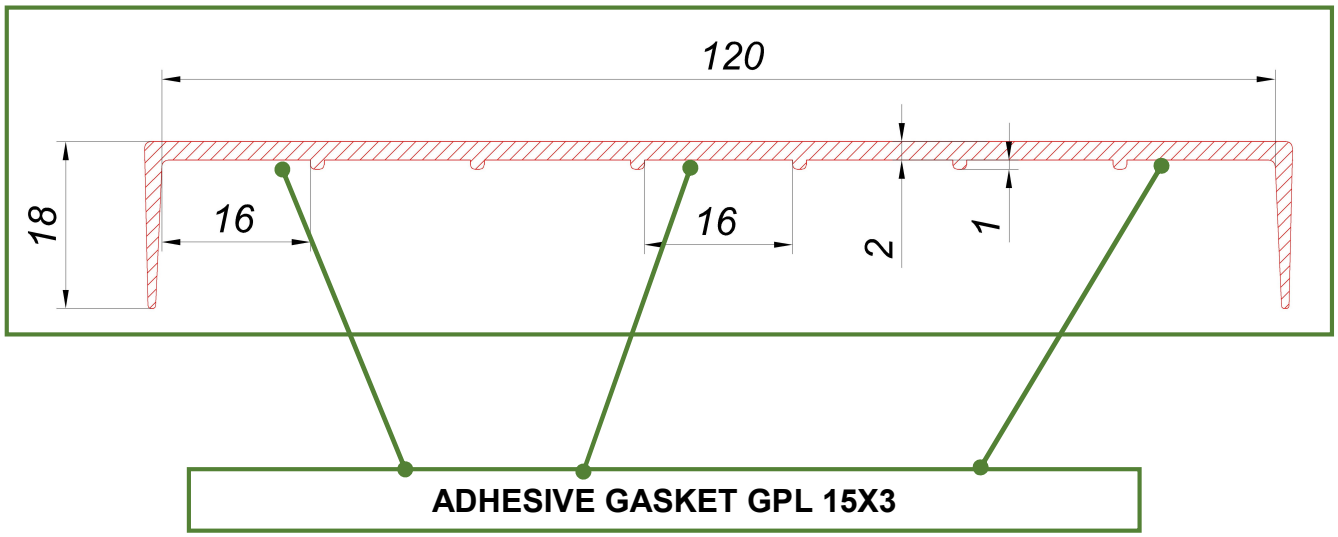




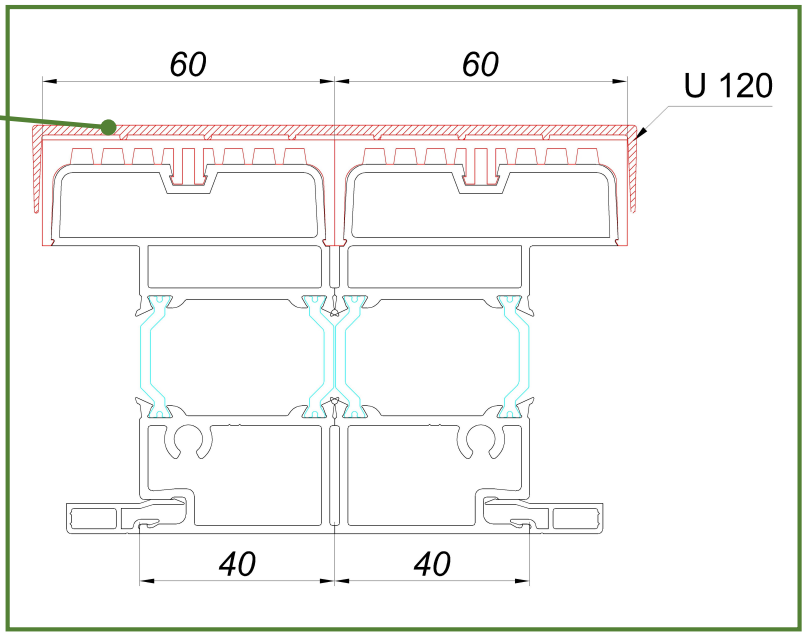


4.1 PVC PROFILE U 120

To protect the most sensible area of the machine, which is the half omega profile zone that separate the two different sections of the machine, we created a PVC cover that prevents energetic losses through the area of the profiles, assuring high air tightness.



PVC PROFILE U 120



PVC U 120
PVC cover for half omega profile:
Guarantees:
- air tightess
- high thermal break
- high thermal resistance
- antibacterial

5. ACCESSORIES IN THERMOPLASTIC ANTI-BACTERIAL MATERIAL (ISO 846:1997) AND SELF-EXTINGUISHING CLASS V-0

The corners, omega joints and accessories made of plastic material can be produced with special additives in order to obtain characteristics that affect the flame retardancy and antibacterial finishings.

It can therefore obtain:

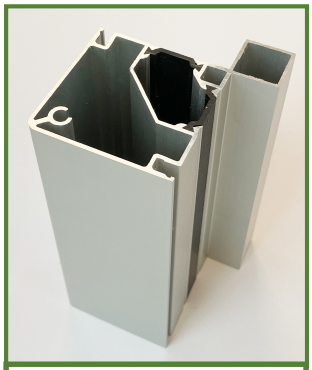
- *Fire resistant products* of different self-extinguishing classes;
- Products that *prevent the growth of colonies of bacteria and fungi* in accordance with ISO 846:1997.

6. ACCESSORIES IN THERMOPLASTIC MATERIAL - ATEX DIRECTIVE

The accessories can be manufactured with *thermoplastic material* suitable for use in potentially explosive atmospheres *in accordance with ATEX directive 94/9/EC.*

By using specific additives a special compound is obtained: it *prevents the build-up of electrostatic* charges and propagation of arcs by high values of CTI (Comparative Tracking Index), allowing to ground static electricity.

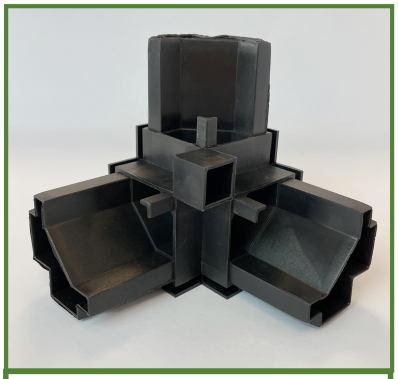
7. LIST OF COMPONENTS



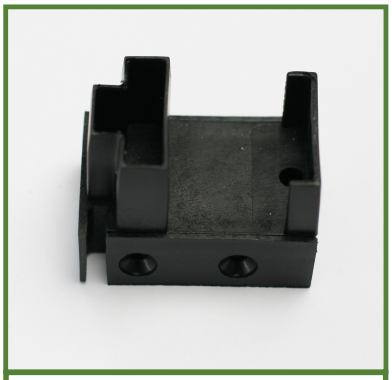
P 160/75 PS TB

P 260/75 PS TB

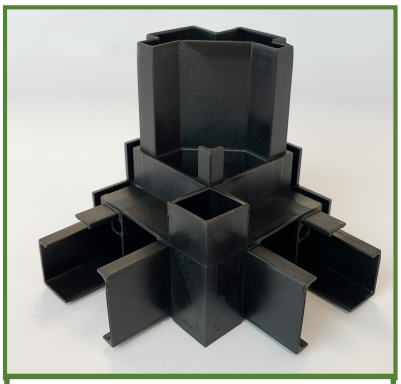
P 260/75-2 PS TB



N 60/75



N 60 JP



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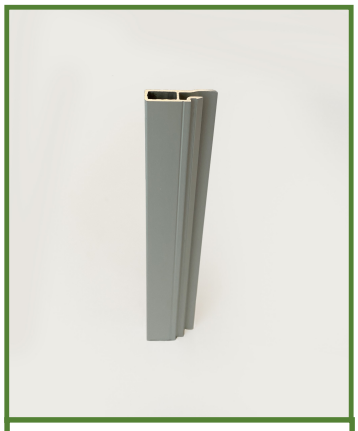

PS 15 x 6

PS 15x6 G

PVC PS 15x6