



CATALOG

profiles



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“WE BRING YOUR PROJECTS TO LIFE”

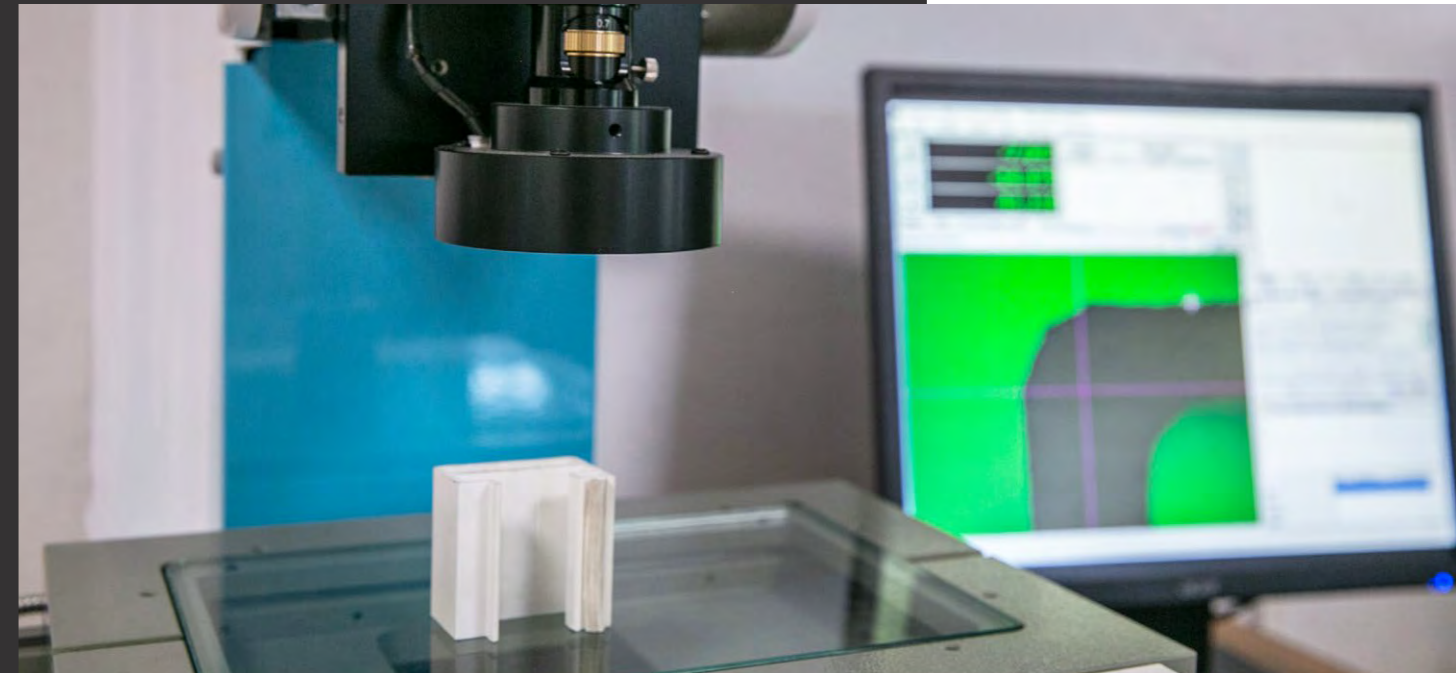


COMPANY

3B Profiles is a leading player operating in multiple international markets thanks to its innovative knowledge in the extrusion of plastic profiles. **3B Profiles** leverages more than forty years' experience in the design and production of equipment for the extrusion of plastic and thermoplastic materials.

Our products address different sectors, ranging from lighting and furniture to refrigeration, automotive and building industry.

We manufacture profiles tailored to our customer needs with high attention to details.



Our experienced staff supports our customers in every design phase leveraging top notch technologies and methods:

- Technical consultations
- Schematic design
- Material selection
- Design and production of equipment
- Testing and Prototyping
- Production

OUR COMPANY INCLUDES A PRODUCTION DEPARTMENT WITH SEVERAL EXTRUSION LINES

a **technical office** dedicated to consultancy and project development using CAD/CAM technologies, a **department dedicated to the equipment realization and test**, a **warehouse** for the storage of raw materials, administrative **offices** and a **showroom**.



PROFILES FOR LED LIGHTING

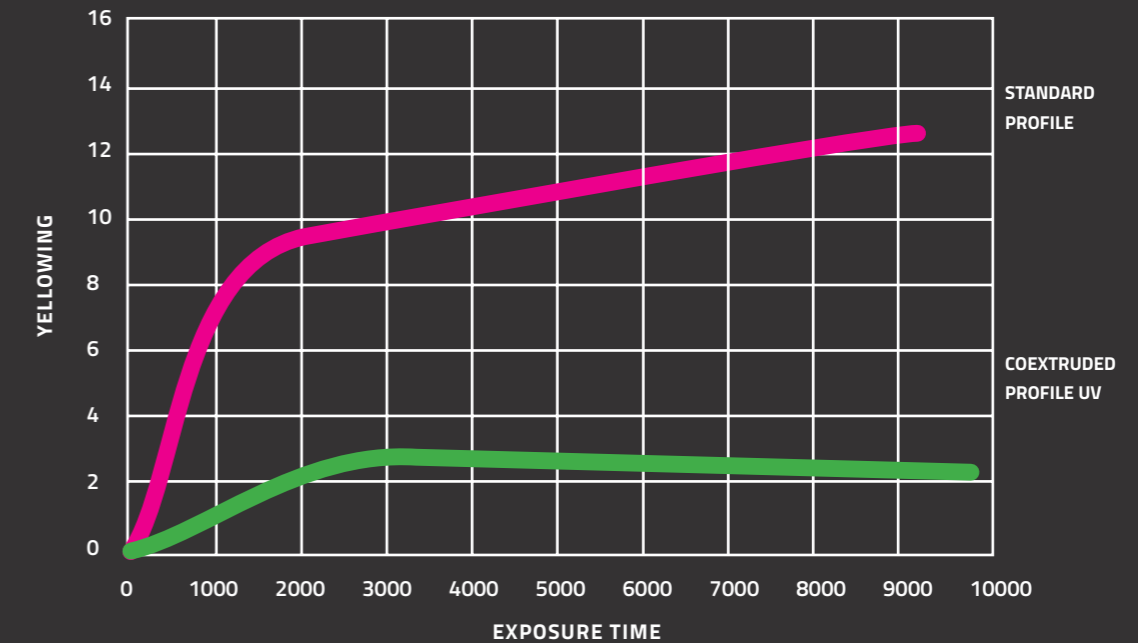
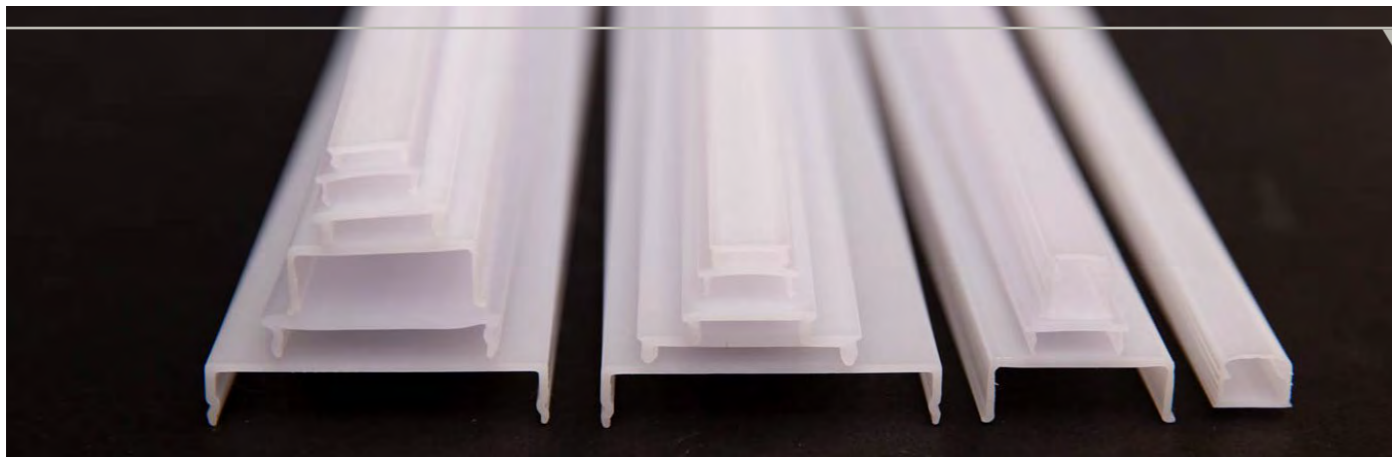


3B Profiles is specialized in the extrusion of profiles for the lighting sector. We extrude both standard and customized

profiles according to our customer's needs with high attention to technical details and appearance.

We mainly extrude profiles in Polycarbonate and PMMA with different surfaces, including: smooth, striped, microprismatic, embossed, matt; and finishes such as transparent, several opal tones, colored and multicolored.

We use virgin raw materials supplied by worldwide leading producers to ensure superior production quality.



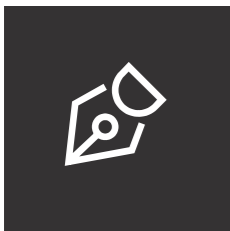
Polycarbonate is a versatile material that is extensively used in the extrusion sector thanks to its mechanical properties such as hardness, impact resistance, lightness, transparency and flexibility.

Polycarbonate profiles can be coextruded with UV protection to improve performance against deterioration and yellowing due to UV exposure. Yellowing improvement, due to coextrusion with UV protection, is shown in the plot above compared to standard profiles without UV protection.



Some of our profiles, depending on their geometry and production materials, can be rolled up in single pieces

(20/30/40 meters), thus enabling easy packaging and transportation.



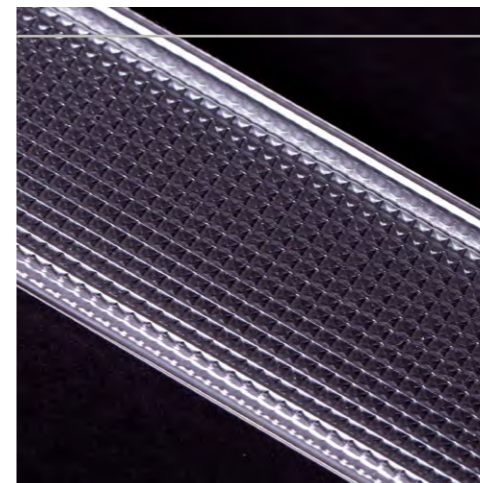
FINISHES

Among our new generation products, we emphasize the ones that leverage constant research and innovation such as:



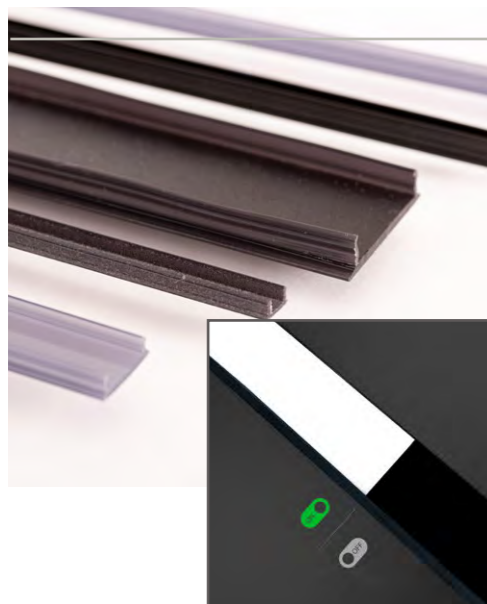
SPECIAL LED

Profiles in Polycarbonate made up by a **special opal finish that masks the LED spot sources**, thus enabling homogeneous distribution of light across the whole surface.



MICROPRISM

Profiles produced with a microprismatic surface in Polycarbonate or PMMA. This surface enables profiles to **maintain unchanged its Transparency, Light Transmission, Haze and Clarity, while reducing glare effects and ensuring maximum visual comfort.**



GREY & WHITE (G&W) BLACK & WHITE (B&W)

These profiles are produced with a special Polycarbonate. **When the LEDs sources are off, the profiles show elegant monochromatic coupling between extruded plastic and lamp body, perfectly matching dark walls and objects. When LEDs are on, the extruded profiles “magically” scatter white light** as conventional opal diffusers. These profiles are available grey or black, and either smooth or matt.



SOFTLIGHT

These profiles are coextruded with two materials, one of which is soft, used for outdoor applications such as greenhouses and damp environments. **Peculiarity of this product is the soft part that acts as a gasket between the profile and the aluminium frame.** This product is particularly suitable to those applications requiring IP protection.



SMART CONTROL

These profiles are capable of dissipating the heat produced by internal electronic components. **They are produced with a special Polycarbonate with thermal conductivity properties that enable the heat dissipation directly from the plastic body,** thus avoiding the need for external aluminum or dissipating tapes.





CURVED PROFILES

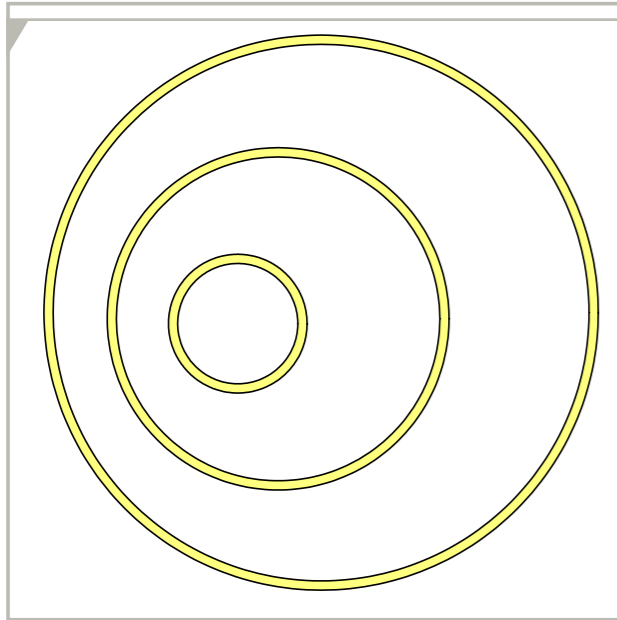


Our curved profile is a custom lighting solution for LED components, suitable for those who want to combine aesthetic with high quality plastic profiles. **It is an exclusive product manufactured with an innovative technology, developed by 3B Profiles, which enables the profile being extruded already curved, without requiring special treatments (chemicals or heating).**

WE CAN ENSURE TOP QUALITY PROFILES WITH PERFECT SHAPES AND RESISTANCE TO BREAKAGE. THESE PROFILES ARE AVAILABLE IN POLYCARBONATE AND PMMA WITH MULTIPLE COLORS, SHAPE, FINISHES SUCH AS THE LINEAR PROFILES. THEY ARE AVAILABLE RECESSED OR PENDANT AND CAN BE ADAPTED TO EXISTING FRAMES.

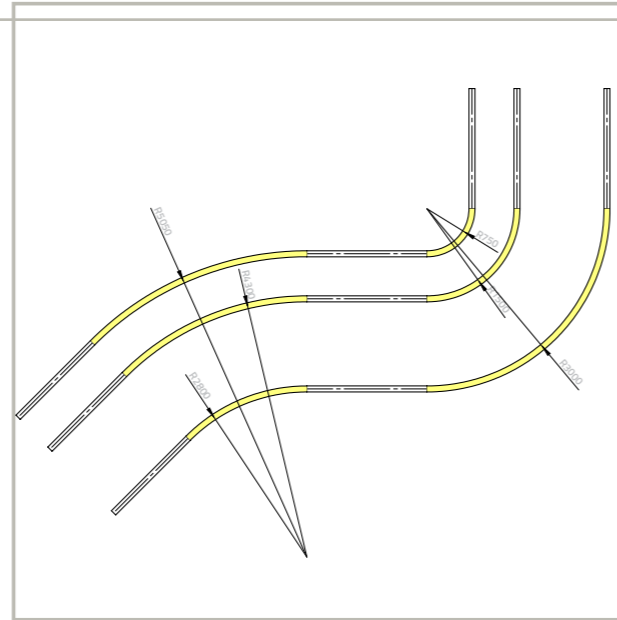


These profiles can be combined between each other as well as with linear profiles, enabling the creation of exclusive and original shapes. Here are some examples:



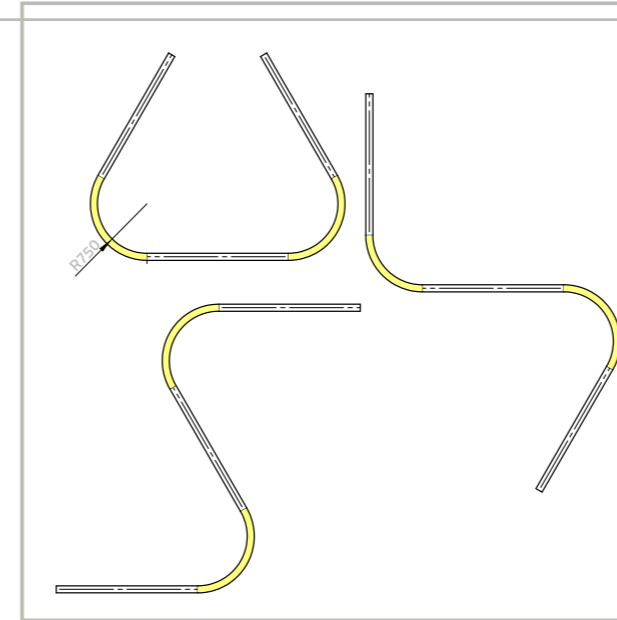
CIRCLE OF LIGHT

A perfectly circular profile in a single piece, in which the beginning perfectly matches the end. It can be produced in large diameters to illuminate vast environment.



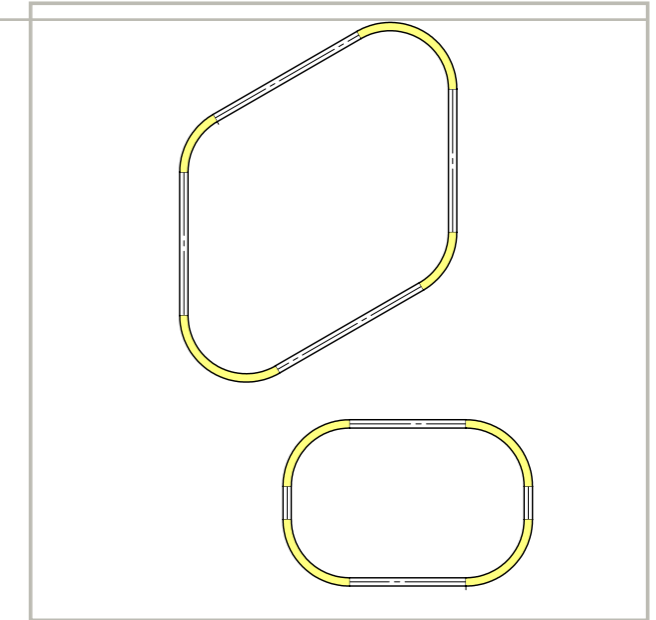
COMPOSITIONS WITH LINEAR AND CURVED PROFILES

By combining linear and curved profiles together, it is possible to obtain unique and exclusive shapes of light on ceilings, walls and floors.



CREATIVE SHAPES

Some examples of possible shapes are 'S', 'U' and 'closed'. Lighting draws new contours capable of framing objects and silhouettes.





BOXED PROFILES

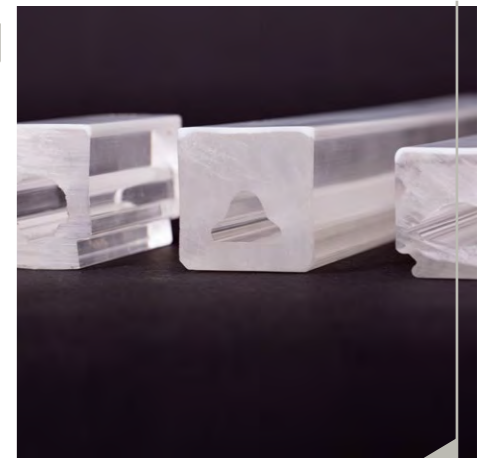
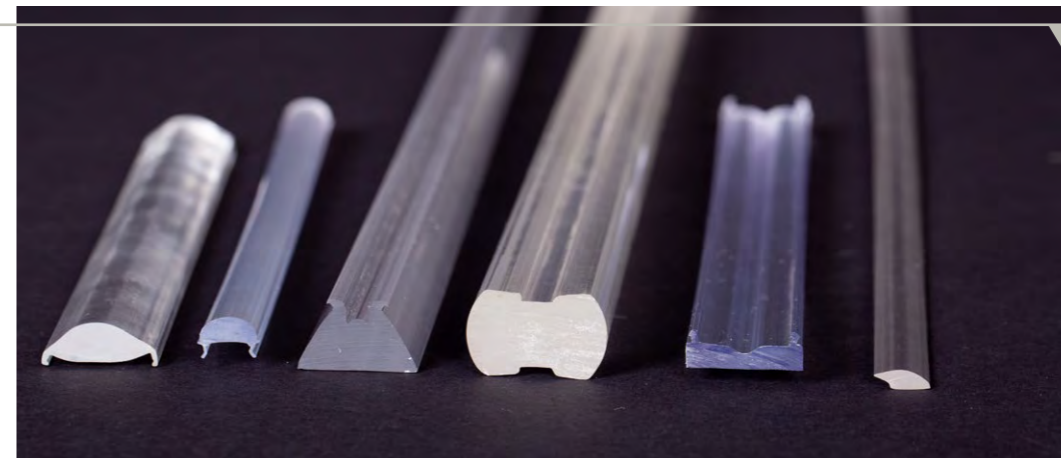
Closed section profiles available in different shapes, such as square, rectangular, triangular and rounded. They are produced in Polycarbonate and PMMA with LED strips placed directly into them, thus avoiding the use of extruded aluminum. They can be produced with a special Polycarbonate capable of dissipating heat thanks to its excellent thermal conductive properties (see, 2.1 SMART CONTROL).





LENSES

Our Polycarbonate or PMMA lenses are developed for the lighting sector to guarantee high transparency and light transmission. They are particularly indicated when lighting innovation requires products with specific and dedicated optics. Our lenses can be transparent, opal, coextruded with multiple colors, and they can be used indoor, outdoor and underwater (e.g., in swimming pools).





ELECTRIFIED TRACKS

Our electrified tracks are produced with a V0 Polycarbonate suitable for this type of application, due to its insulating and conductive properties, and compliant with fire and fumes regulations.



The electrified tracks are manufactured with our innovative technology that enables the plastic profile being extruded directly with the metal components. Profiles can include one, two or more, metal conductors in a flat or round shape as needed.

Copper surface can be treated to avoid oxidation still maintaining its conductivity. Among these products particularly interesting is the black copper for its appearance properties.



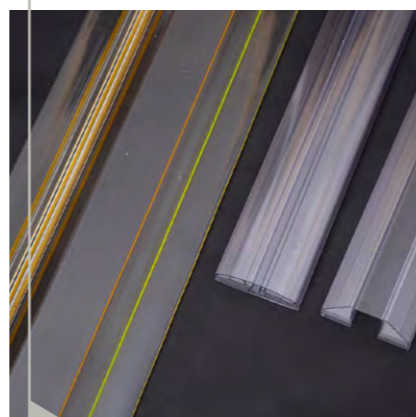
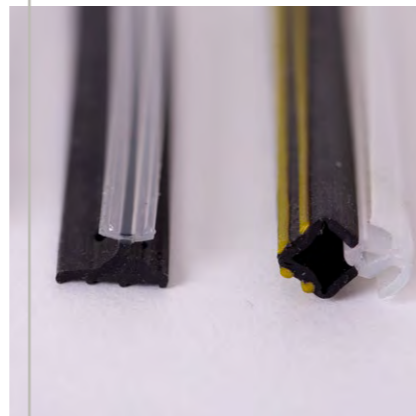
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OTHER APPLICATIONS

3B PROFILES PRODUCES PROFILES IN POLYCARBONATE, PMMA, ABS AND POLYURETHANE FOR MANY APPLICATIONS AND SECTORS SUCH AS ELECTRONICS, AUTOMOTIVE, REFRIGERATION, INDUSTRIAL AND CIVIL CONSTRUCTION.

Depending on the applications and customer's requests, we use materials with antistatic properties, conductive properties, flame retardant agents, certified for food contact, bio polymers etc.



Among these products, we emphasize attention to **our sealing modules, which are produced with a method based on a patented extrusion process** (application no. WO2017186883A1). These modules ensure maximum protection of cables, pipes and similar elements from external agents such as fire, water, dust, etc.

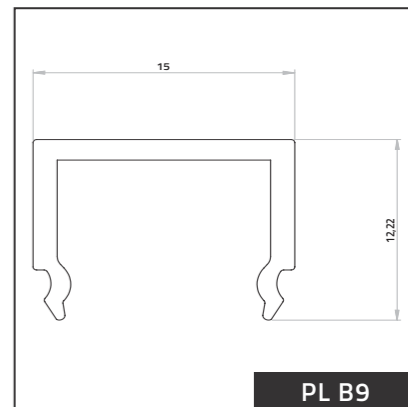
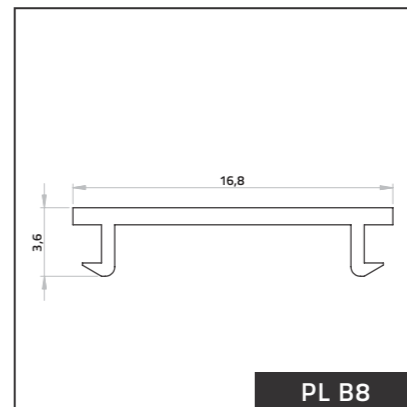
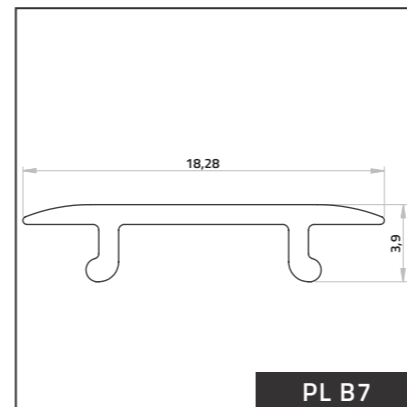
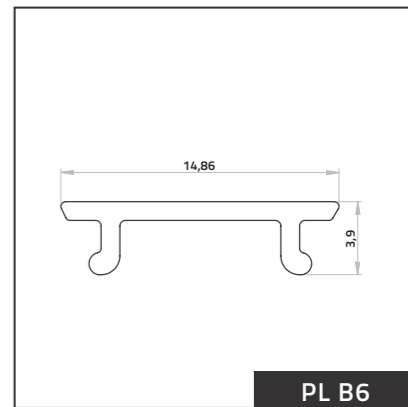
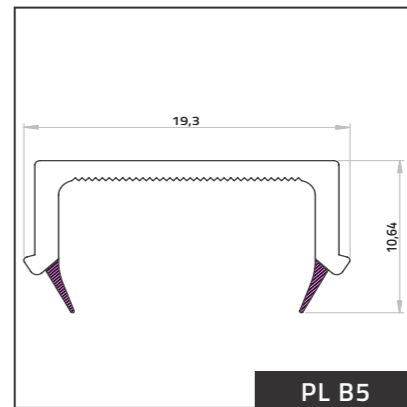
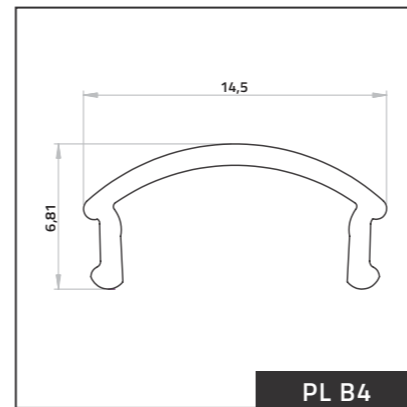
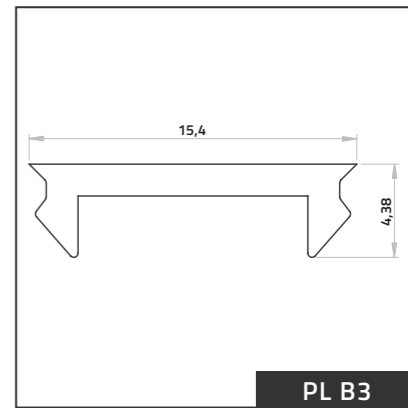
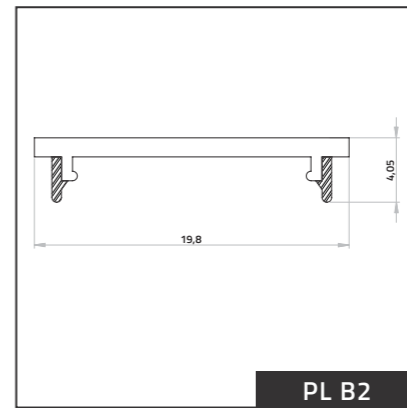
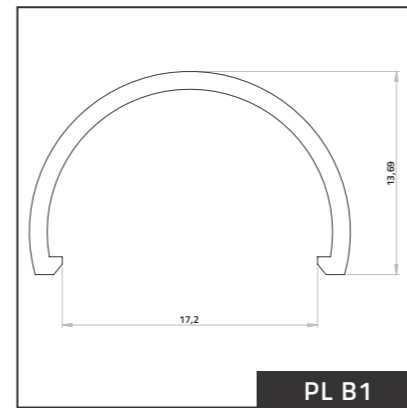
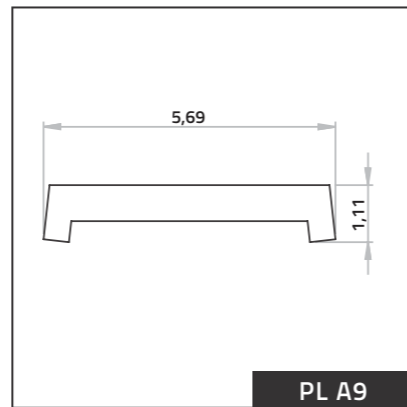
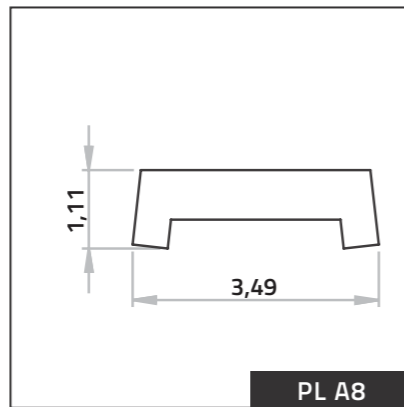
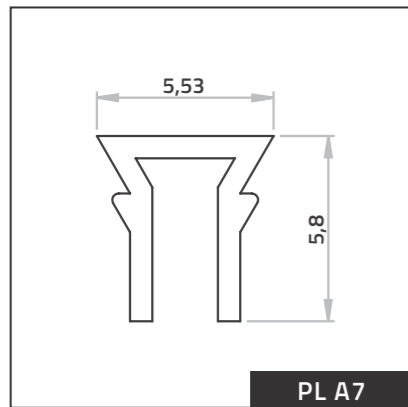
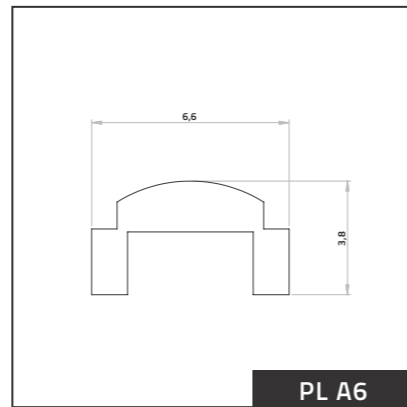
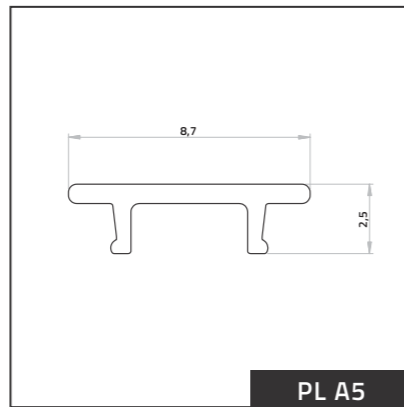
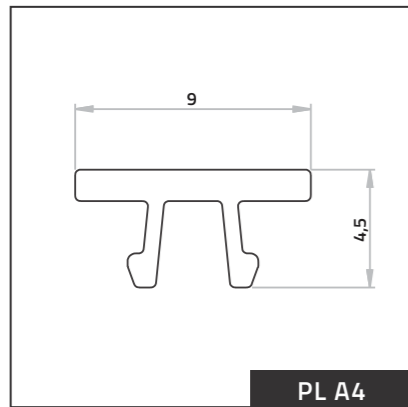
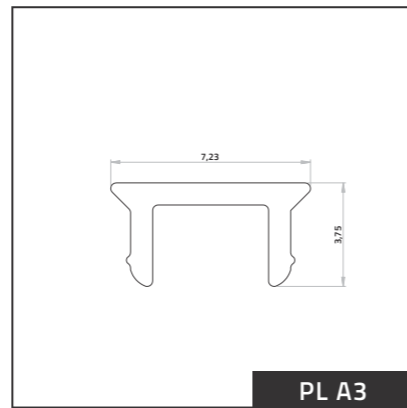
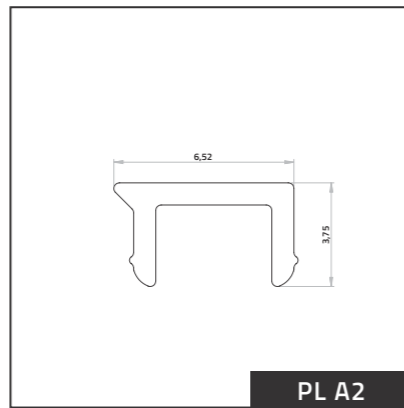
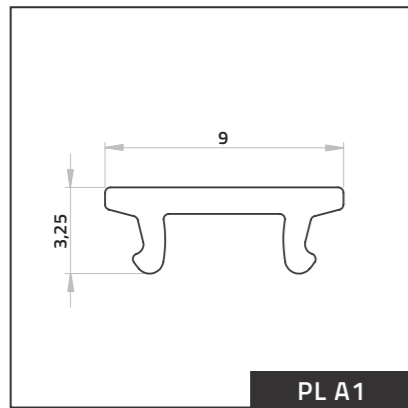


Our system offers several technical and productive advantages compared to other existing technologies, while guaranteeing superior quality of the product.

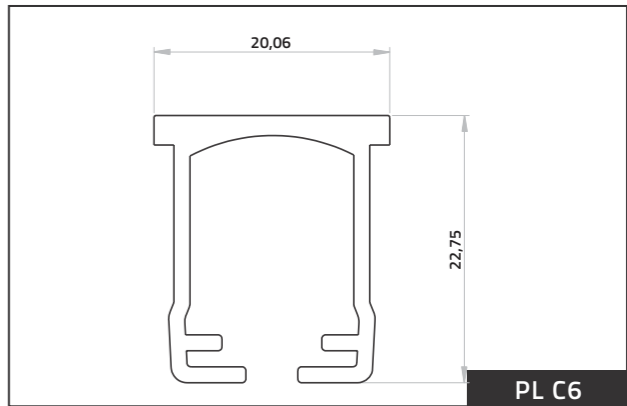
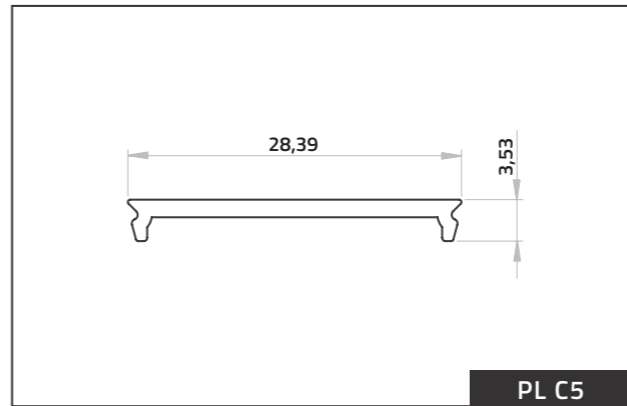
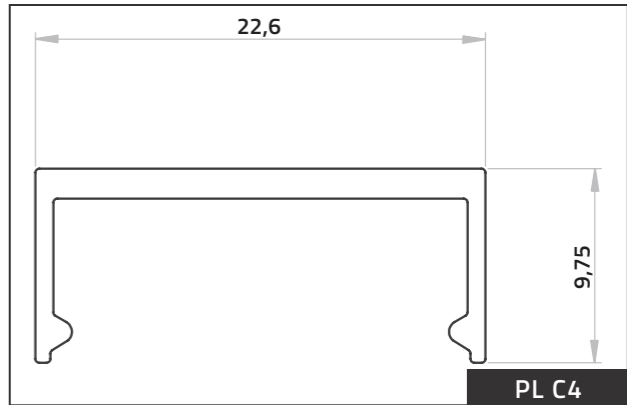
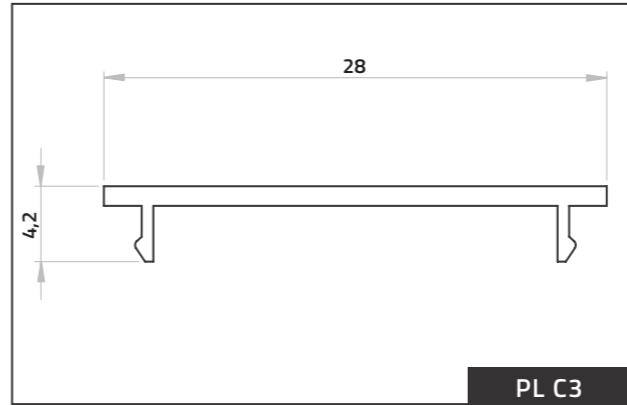
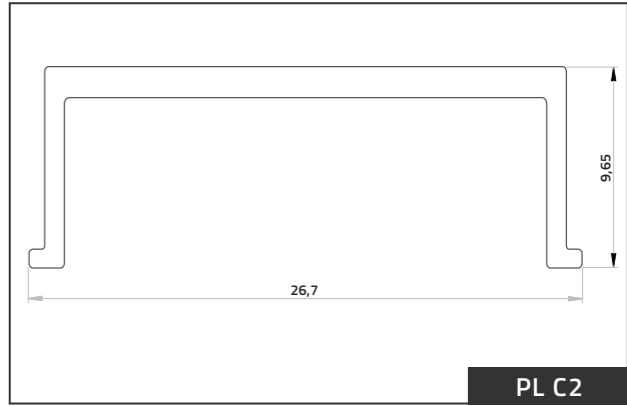
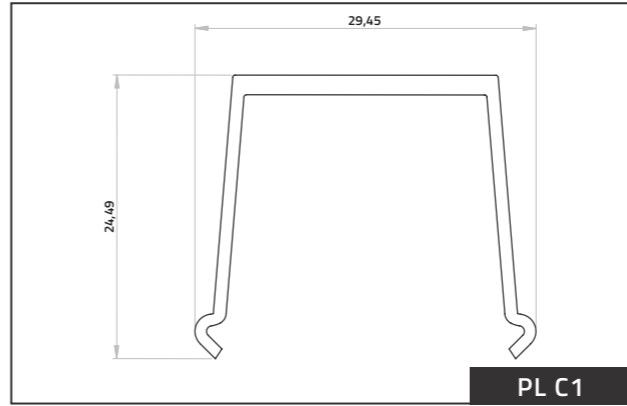
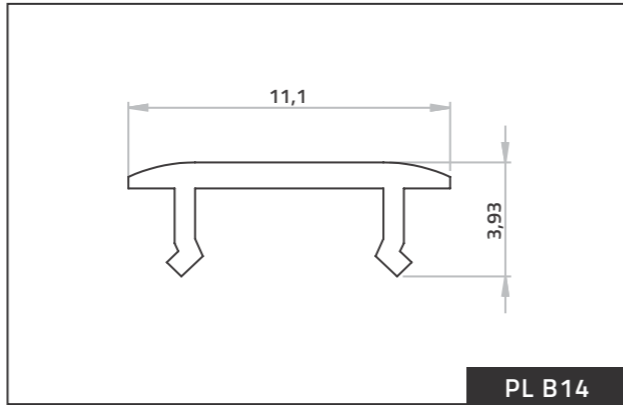
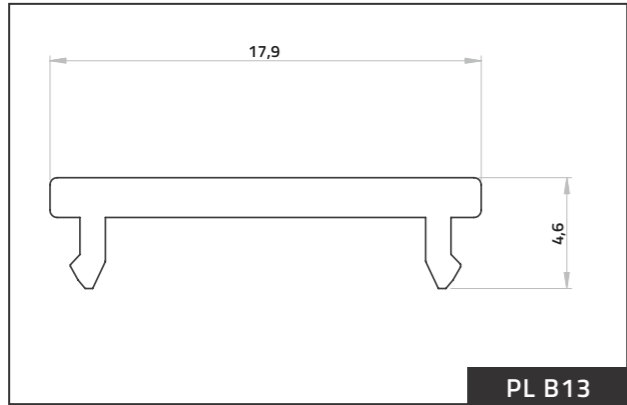
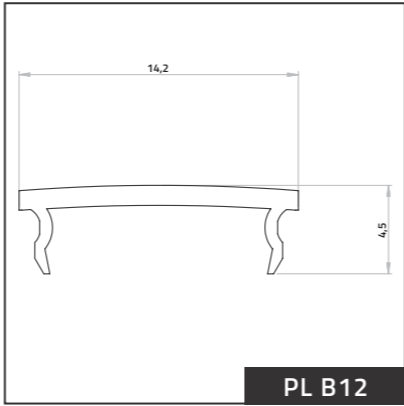
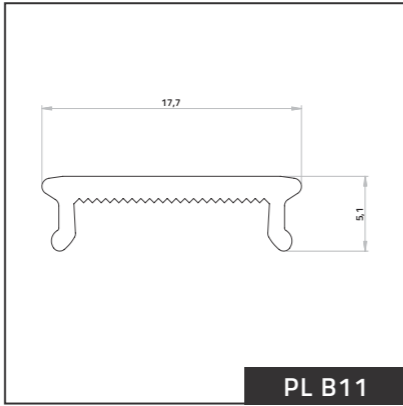
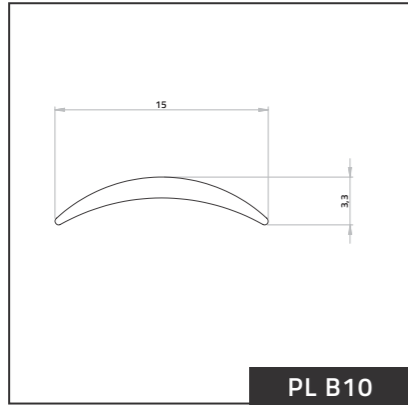


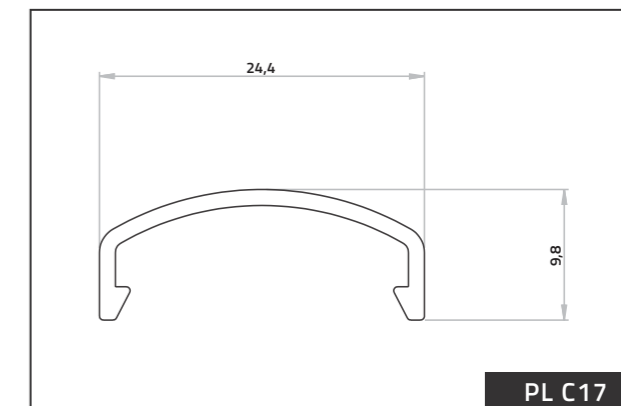
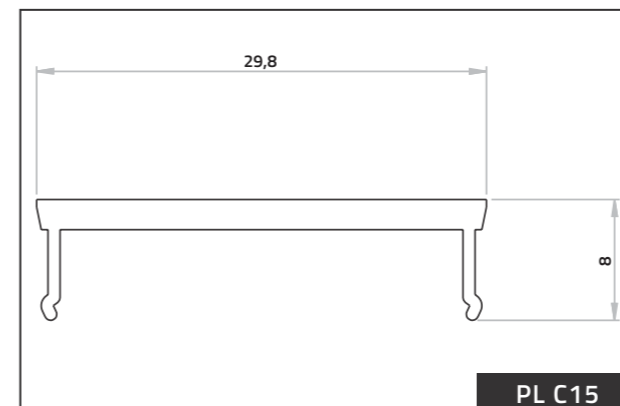
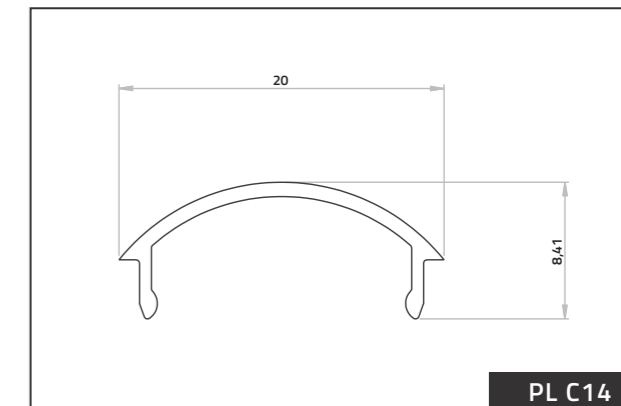
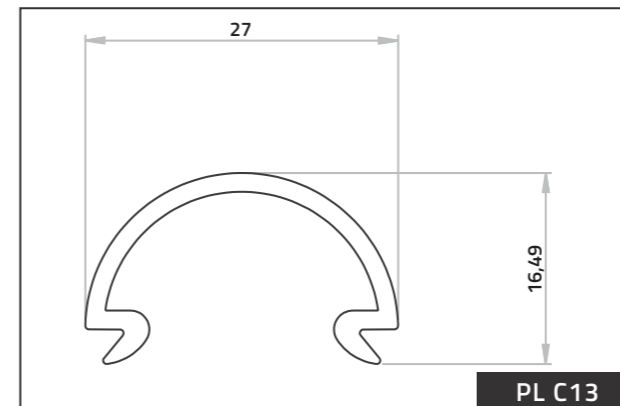
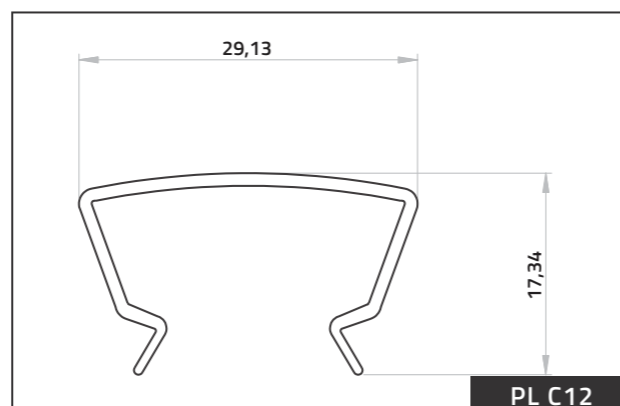
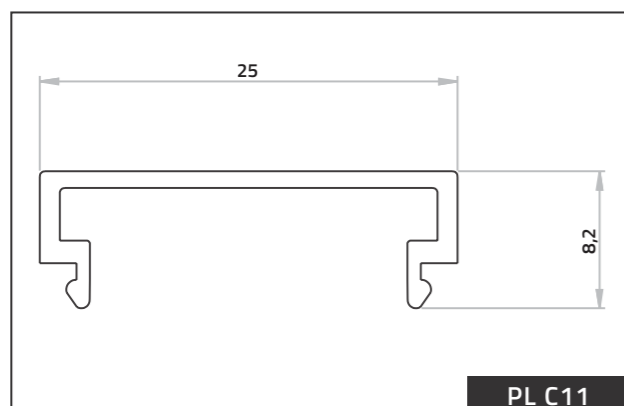
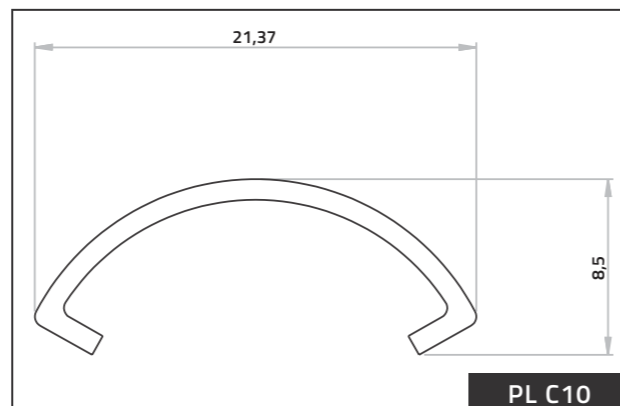
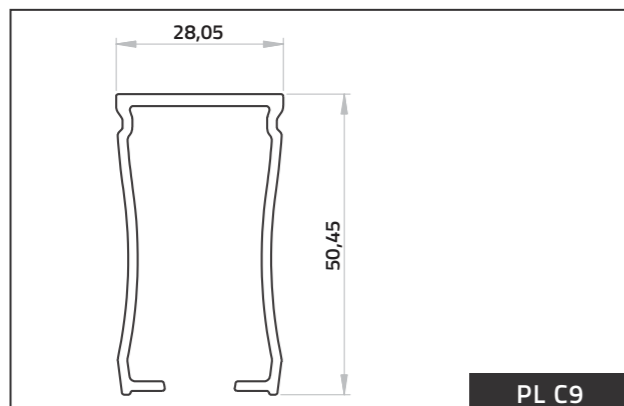
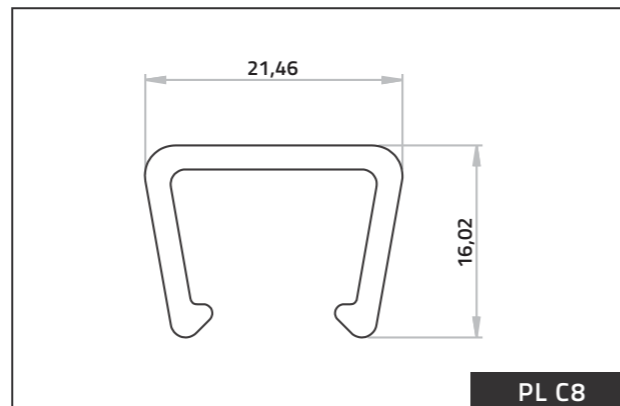
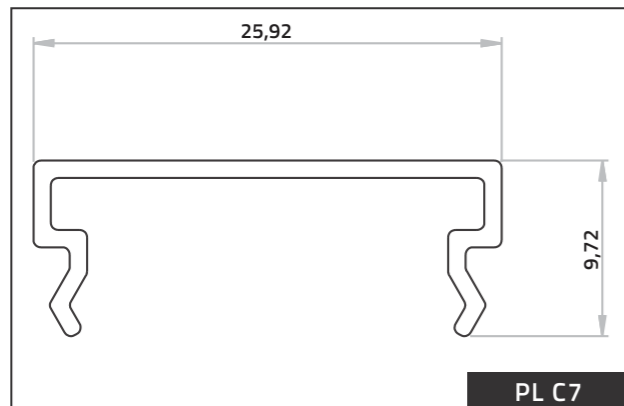
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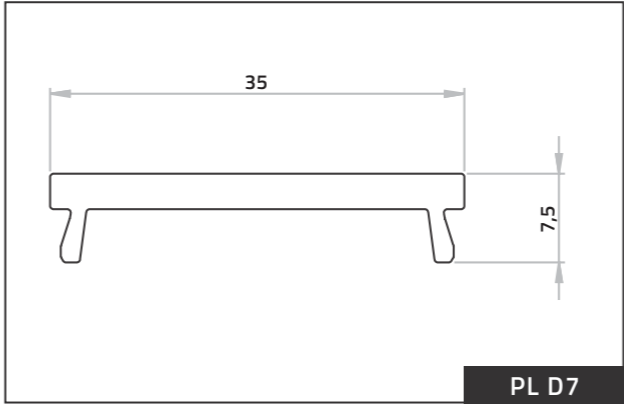
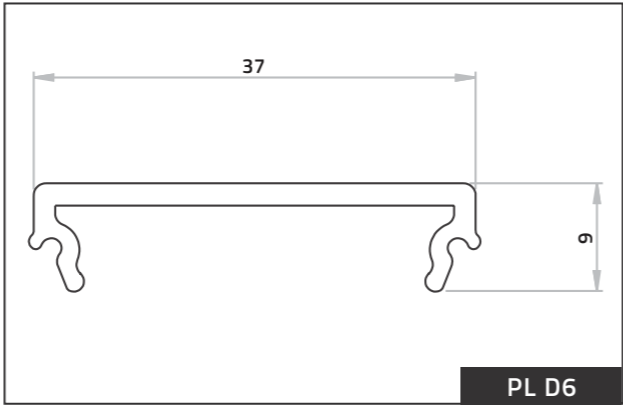
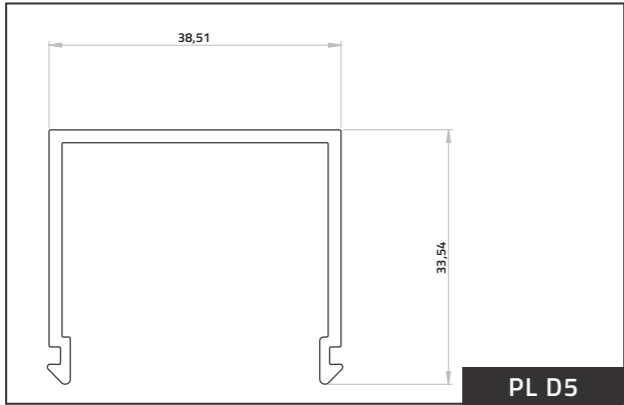
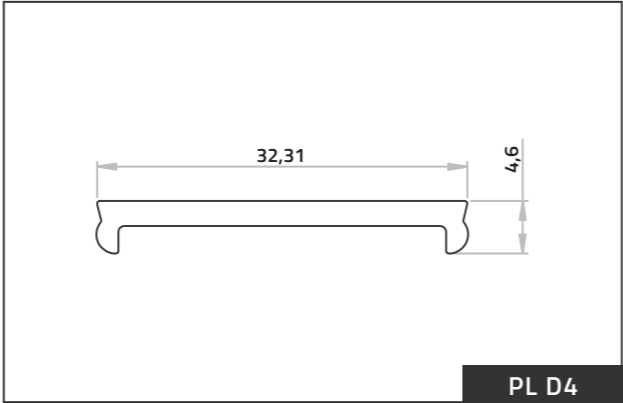
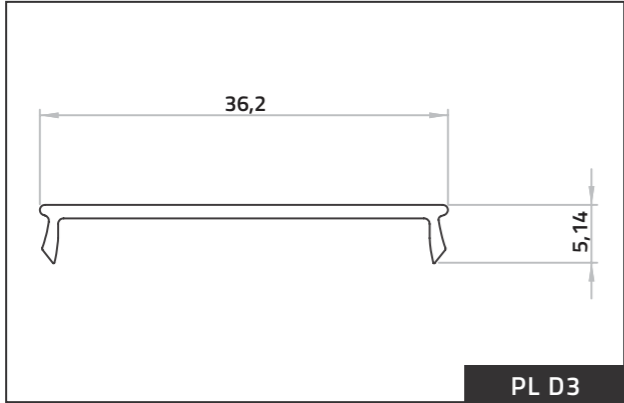
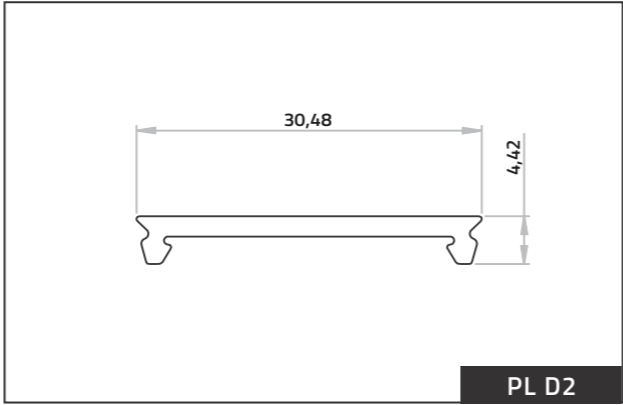
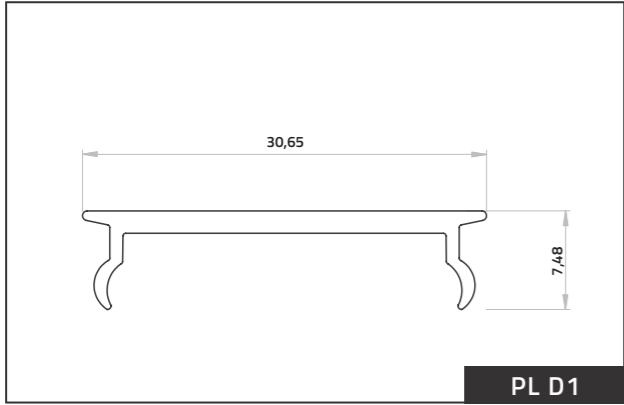
LINEAR PROFILES 5-10 mm

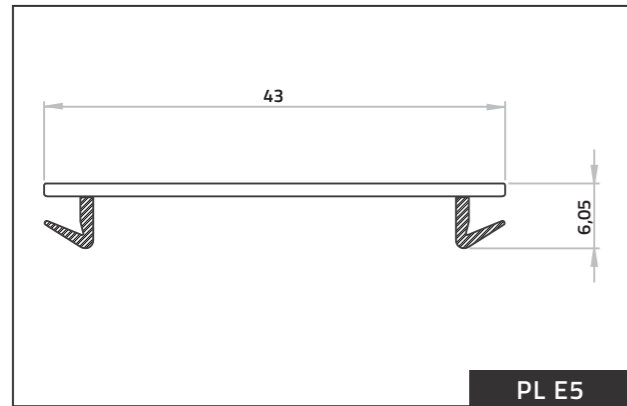


LINEAR PROFILES 10-20 mm

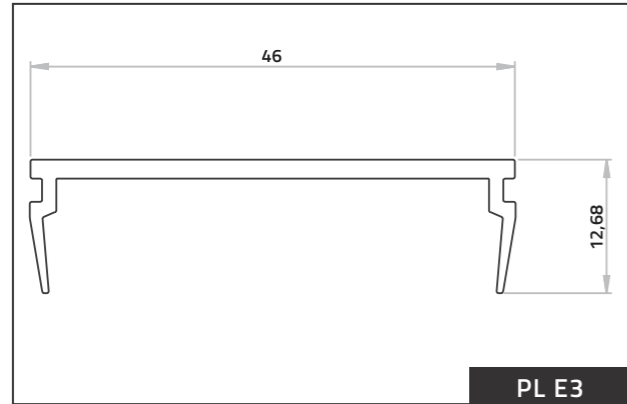




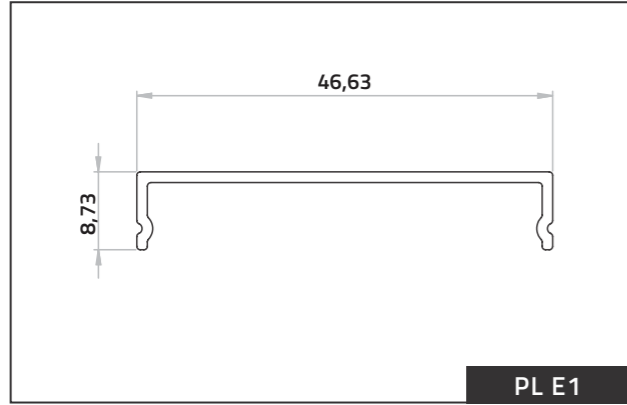




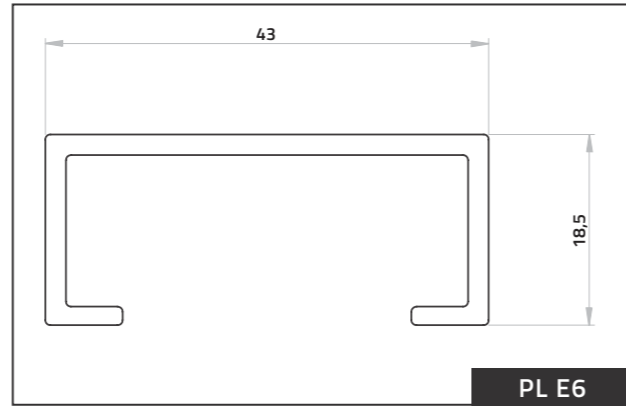
PL E5



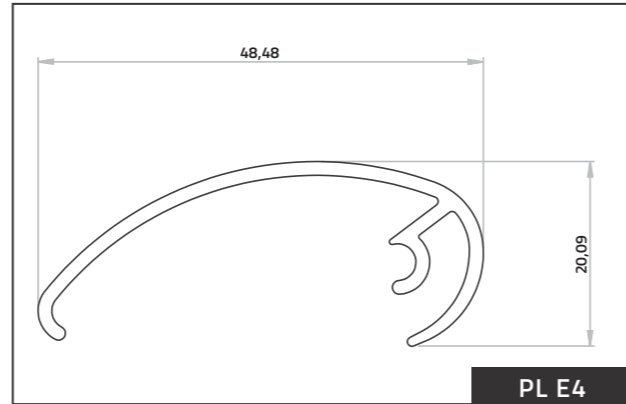
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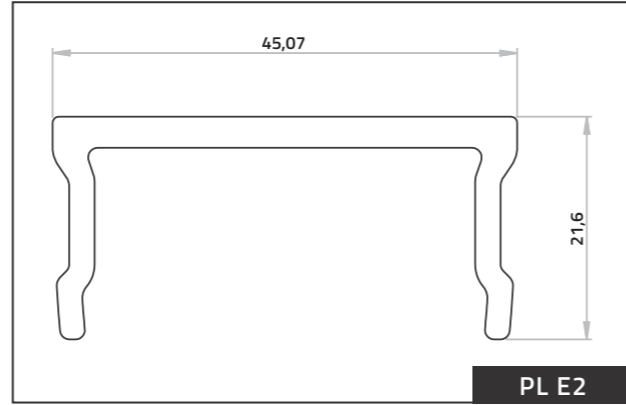
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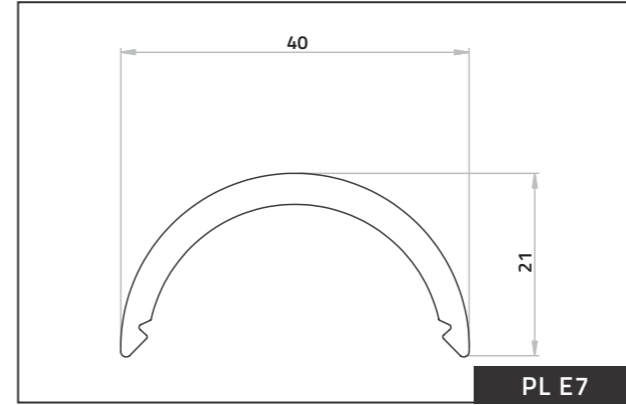
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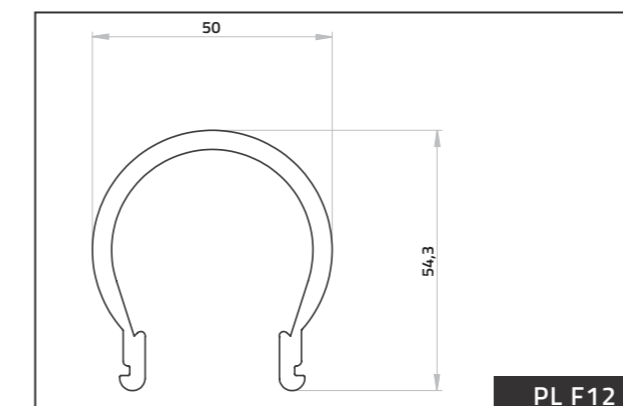
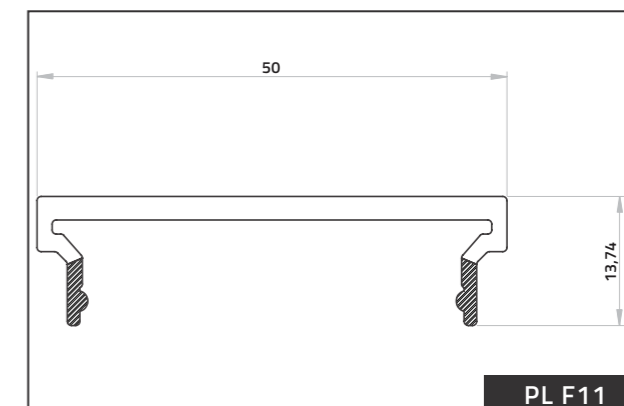
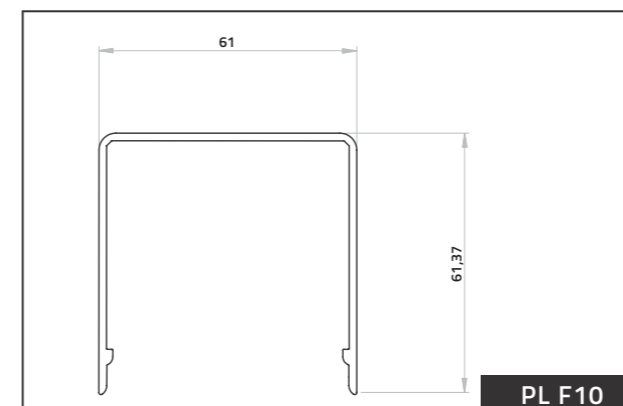
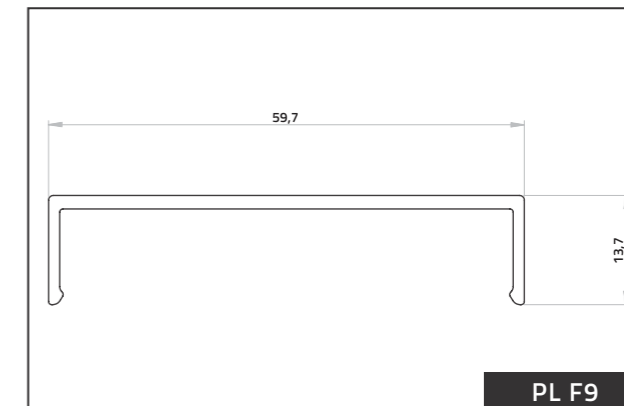
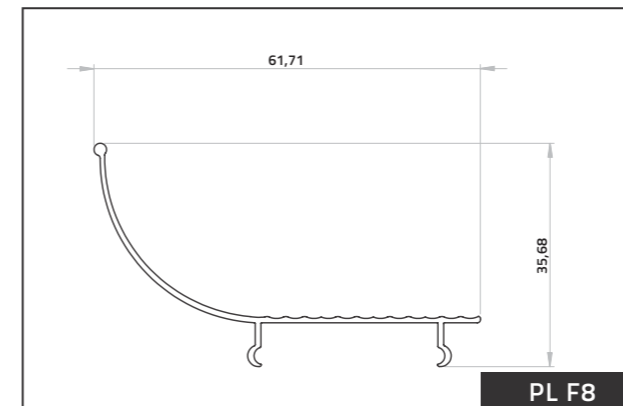
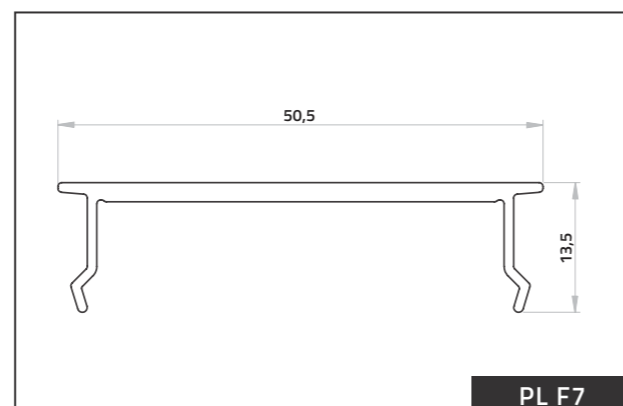
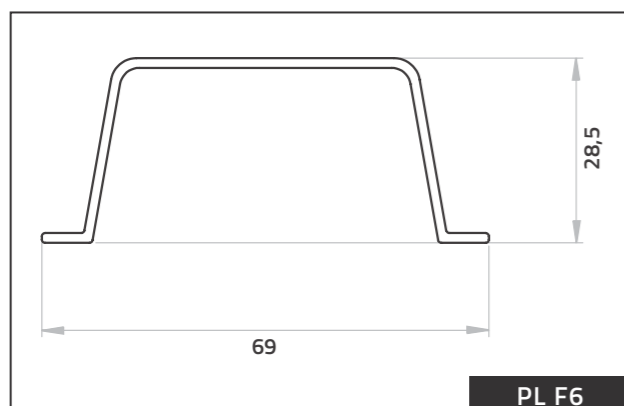
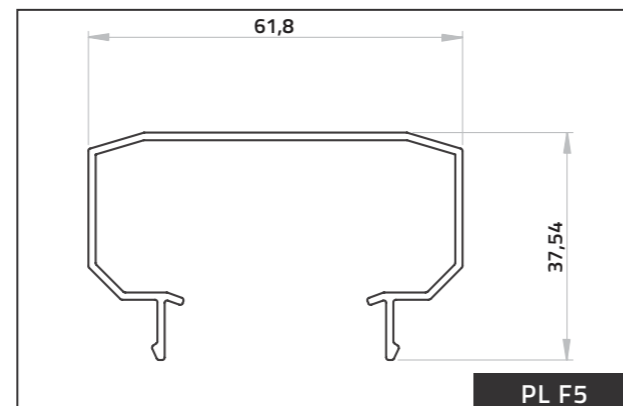
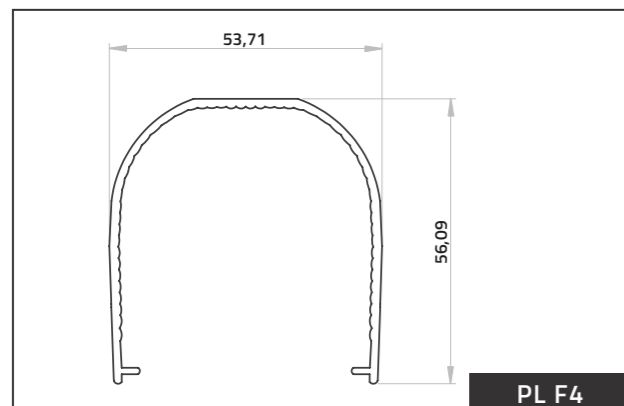
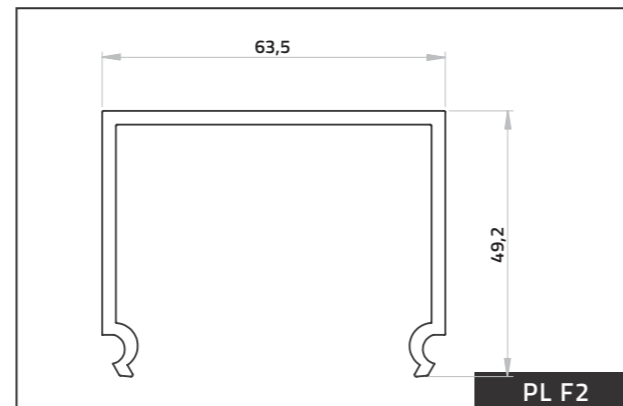
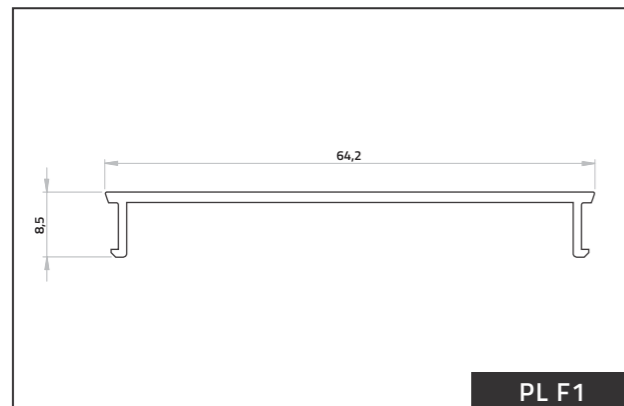
PL E4

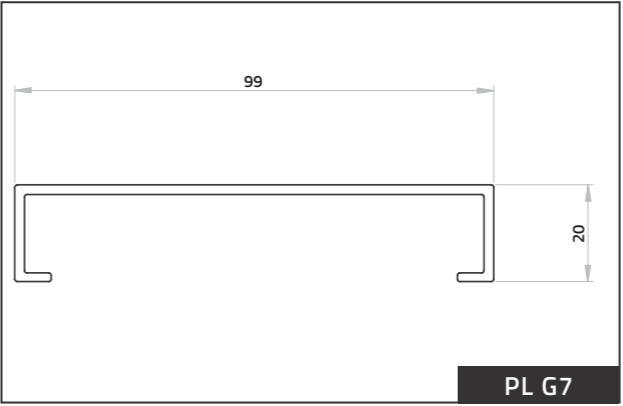
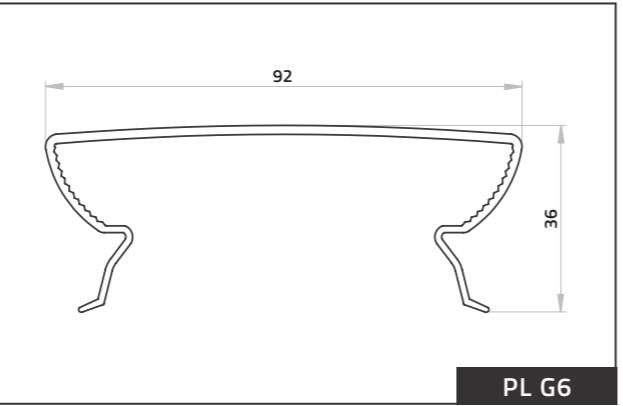
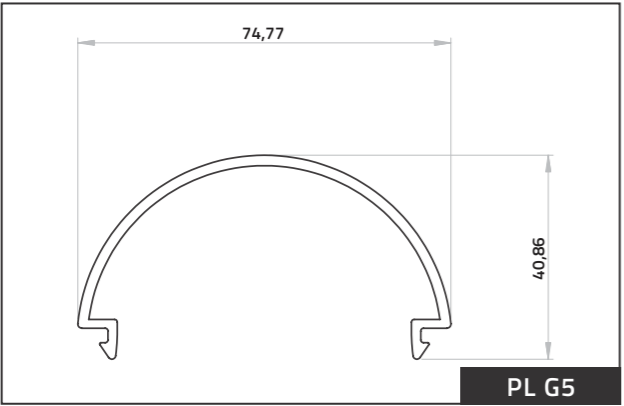
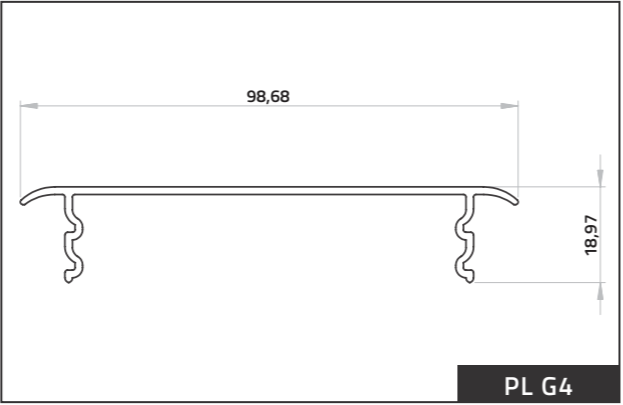
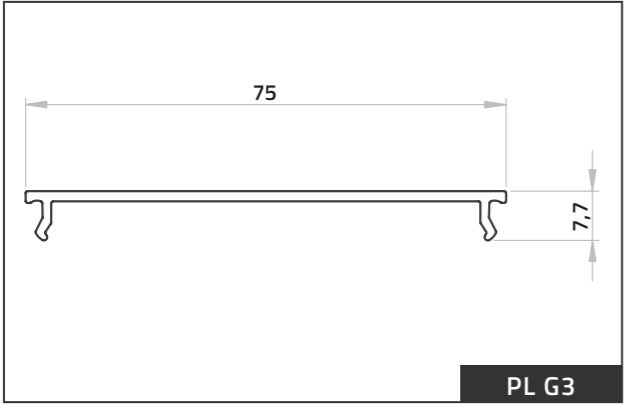
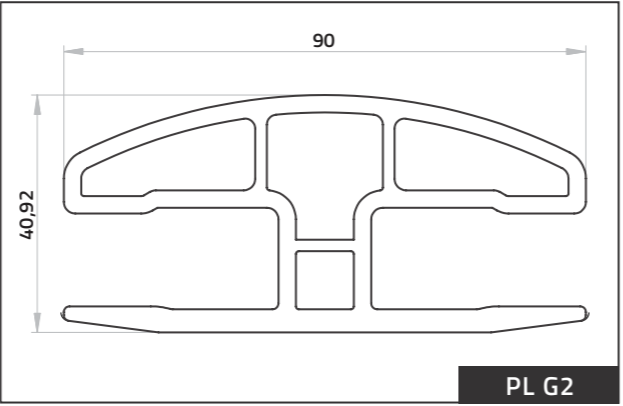
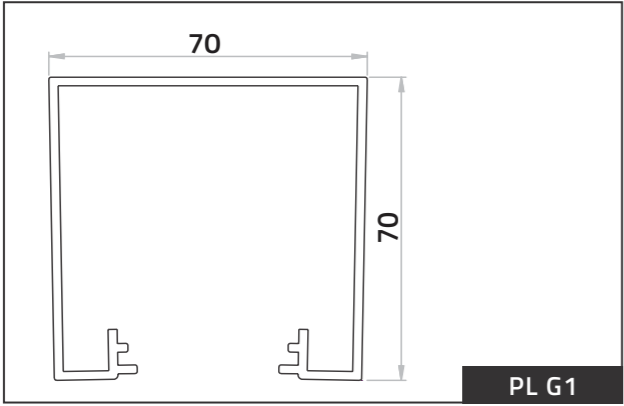


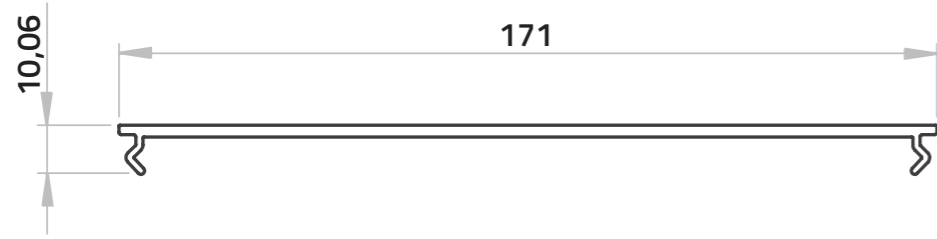
PL E2



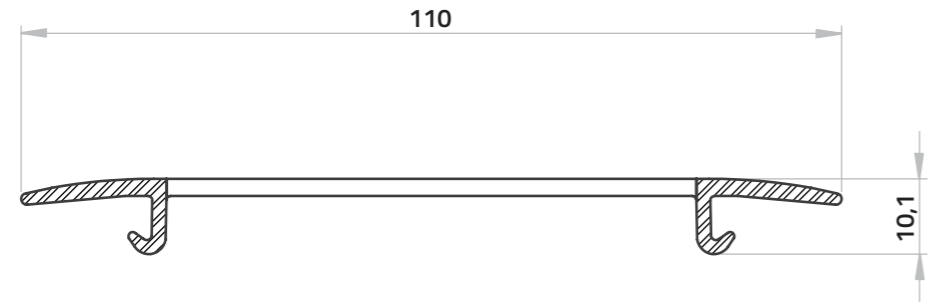
PL E7



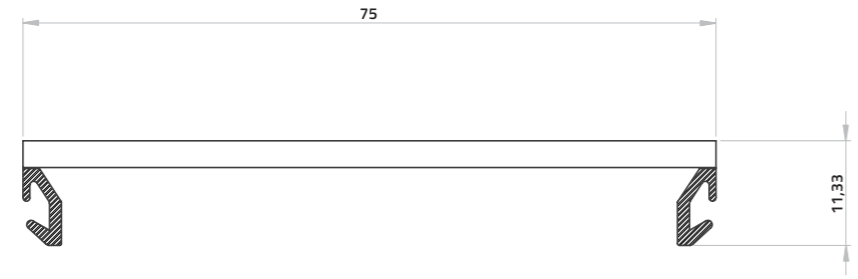




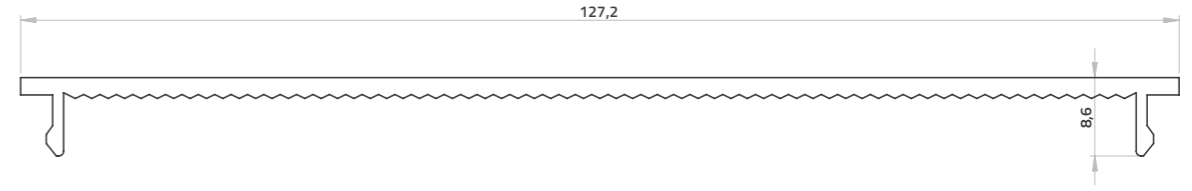
PL H1



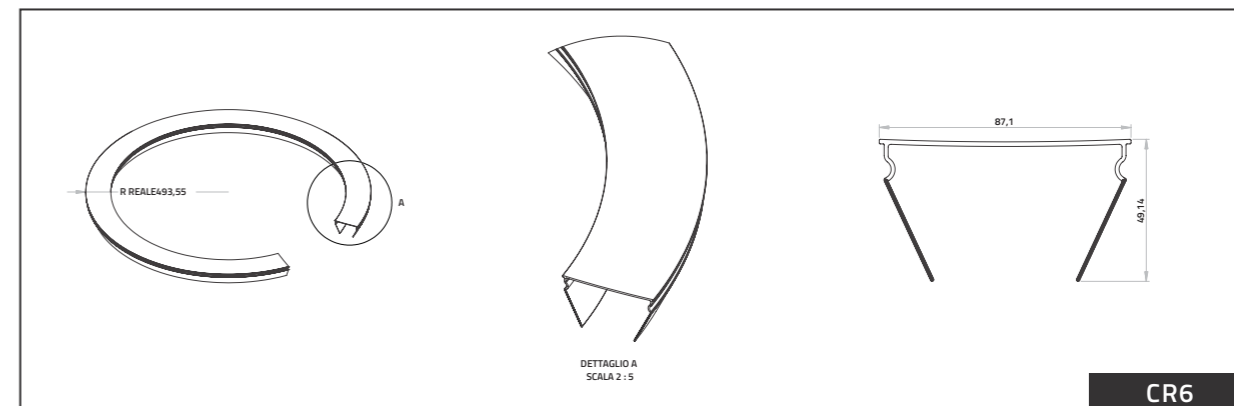
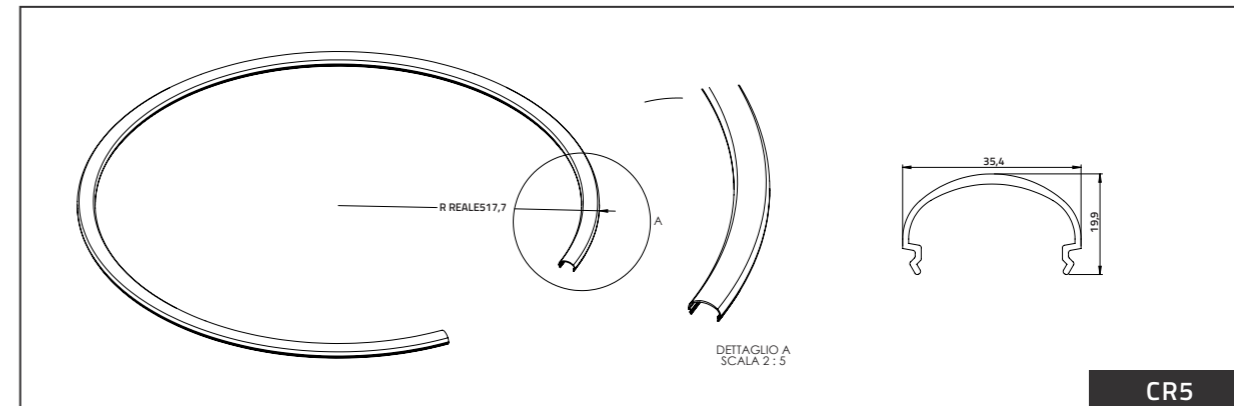
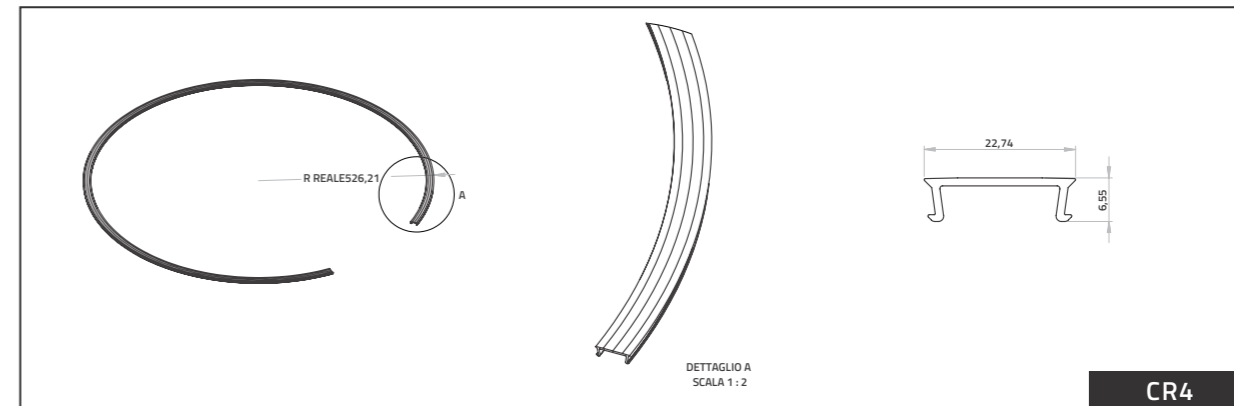
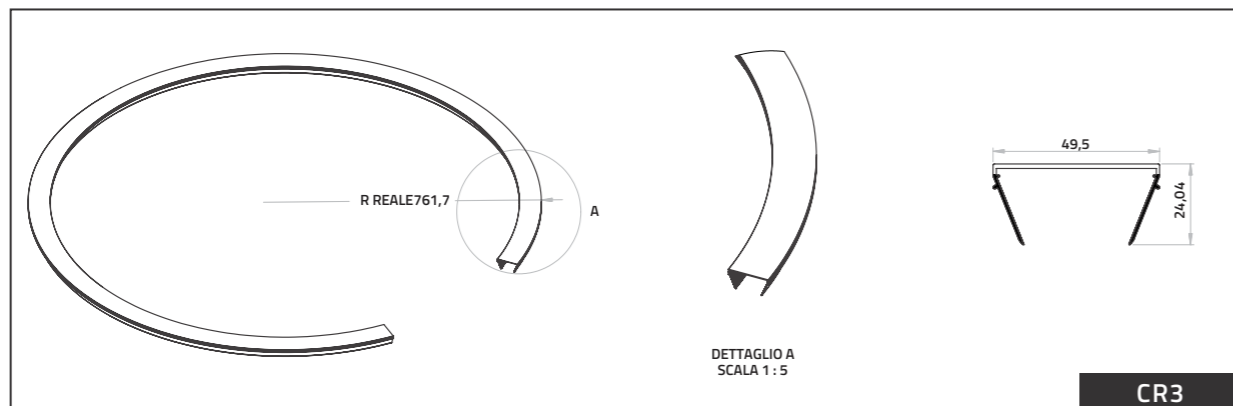
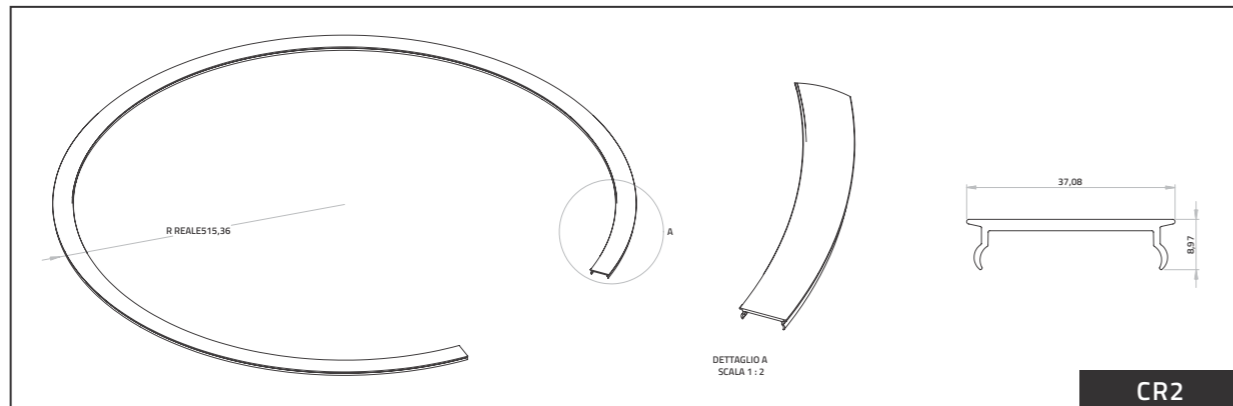
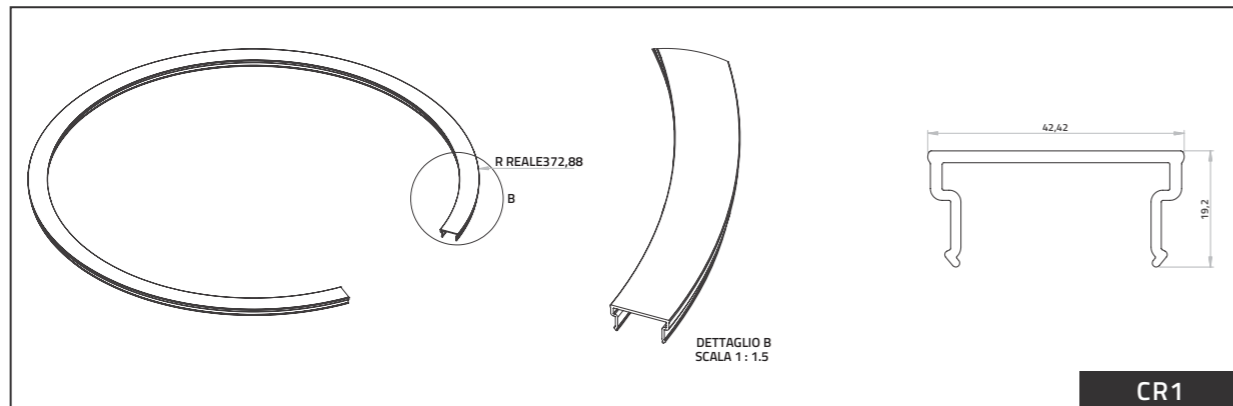
PL H2



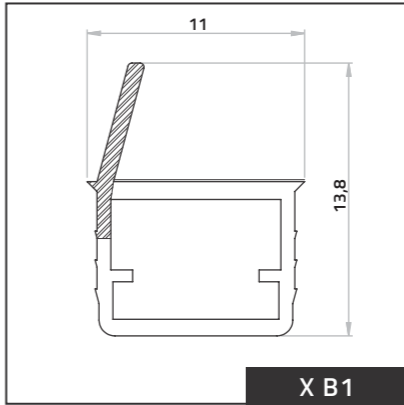
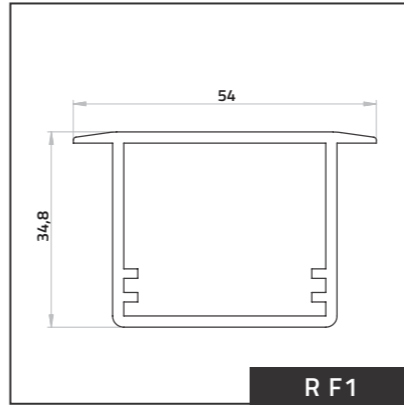
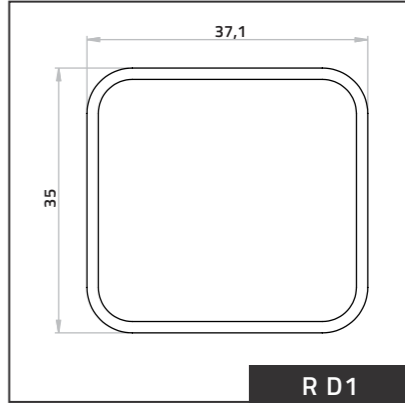
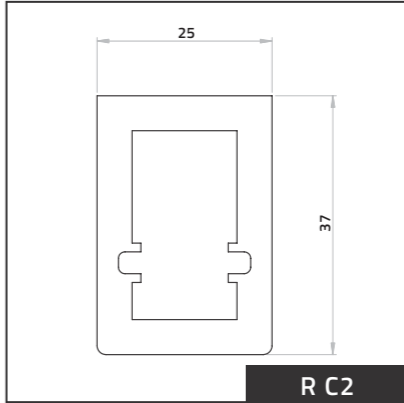
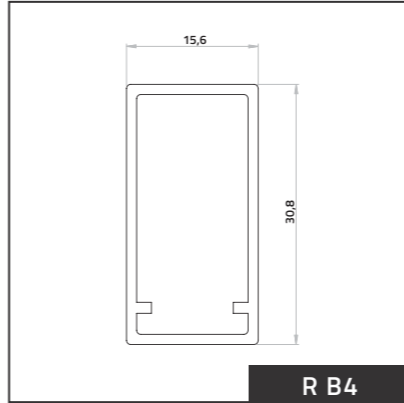
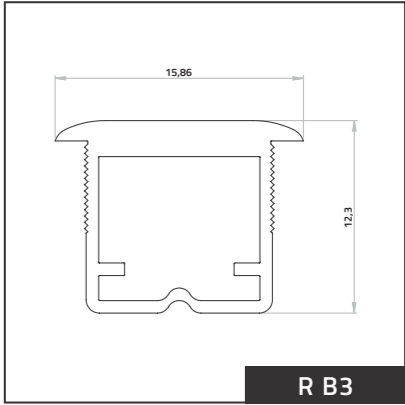
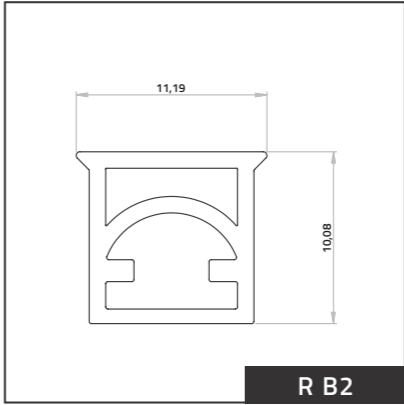
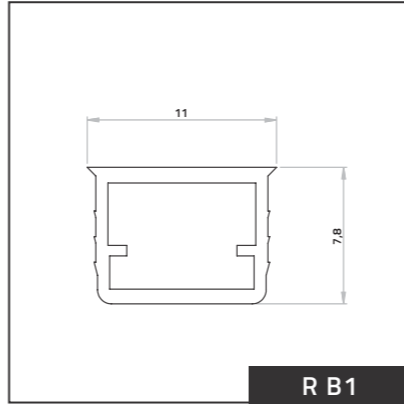
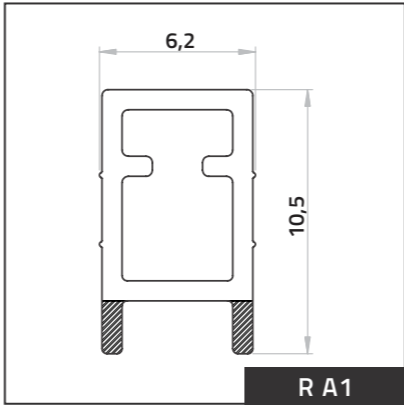
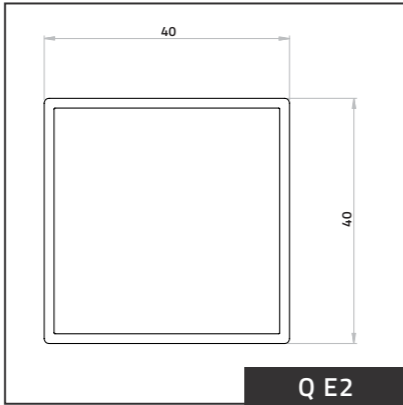
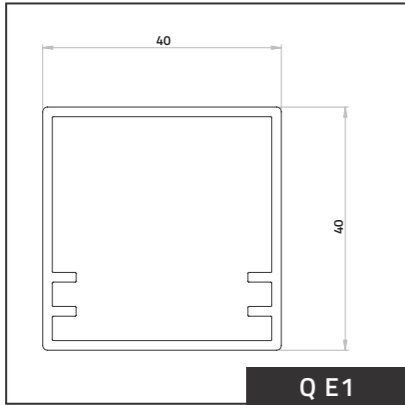
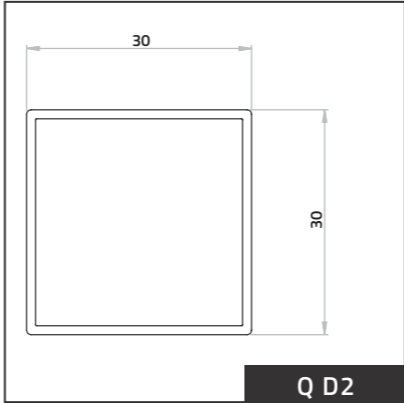
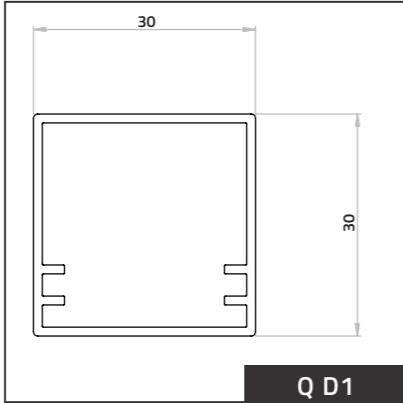
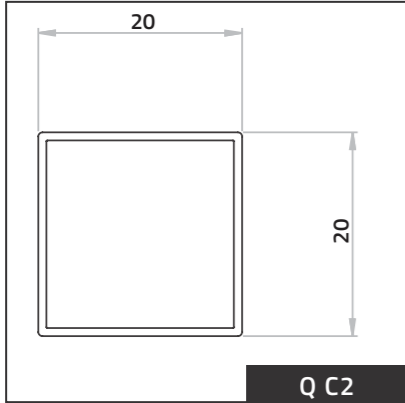
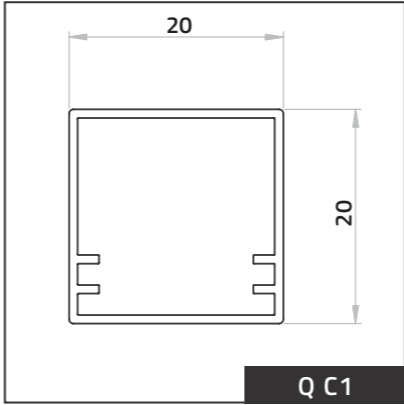
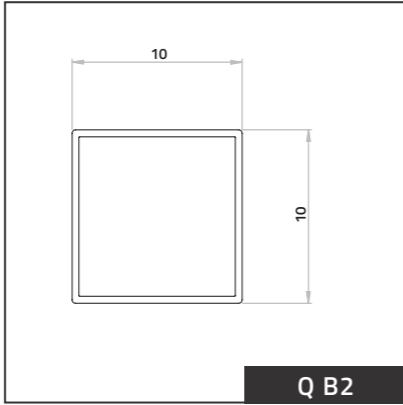
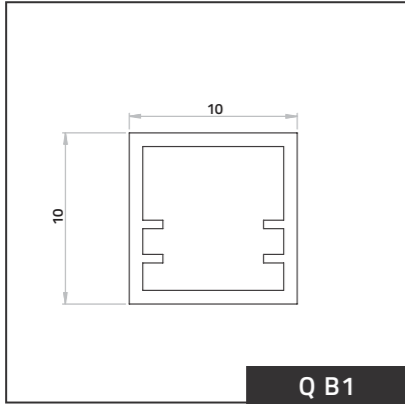
PL H3



PL H4

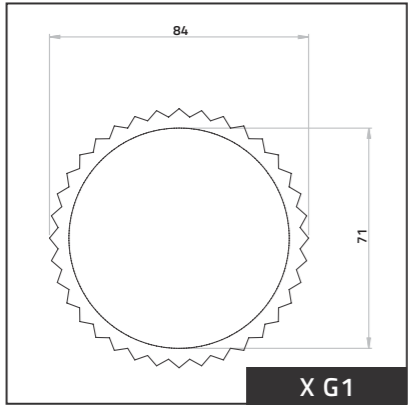
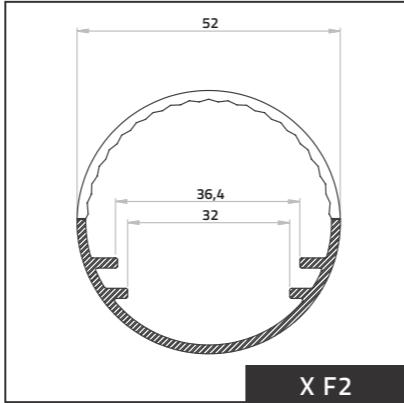
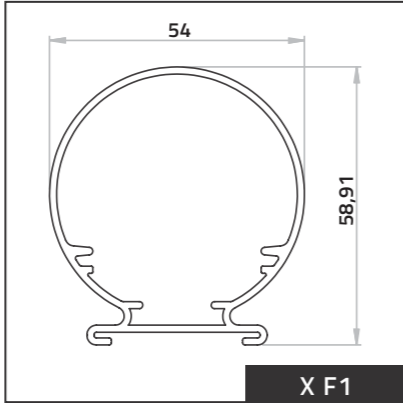
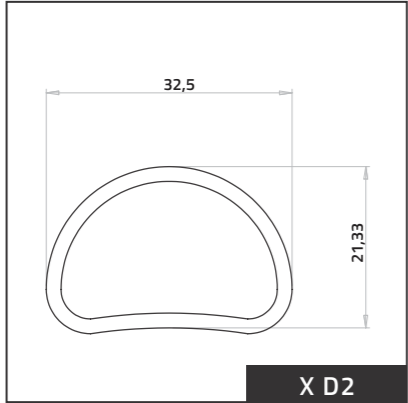
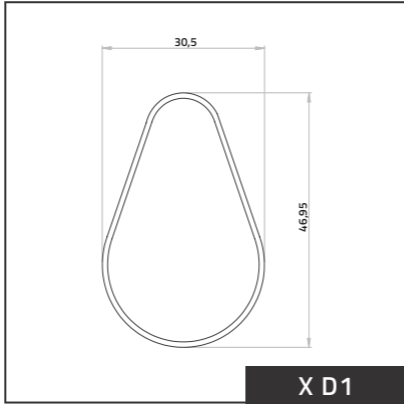
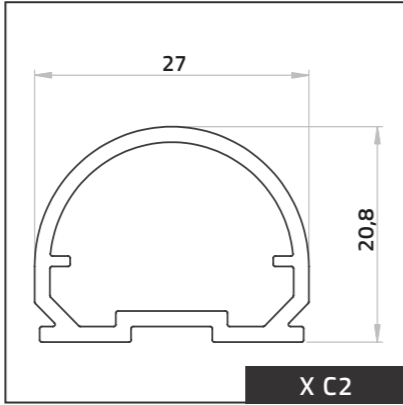
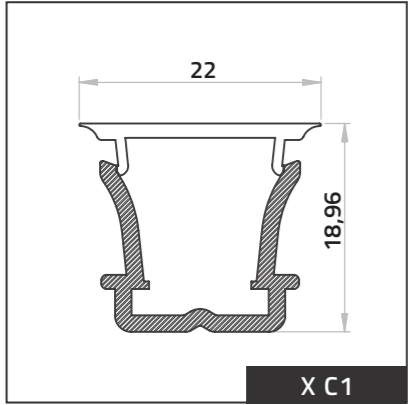


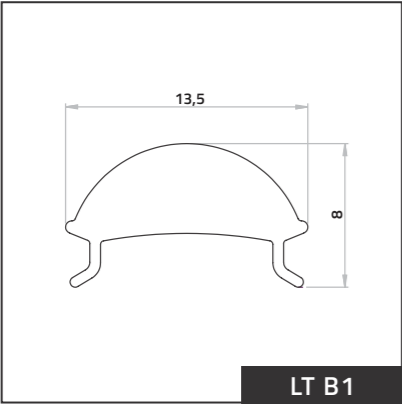
BOXED PROFILES



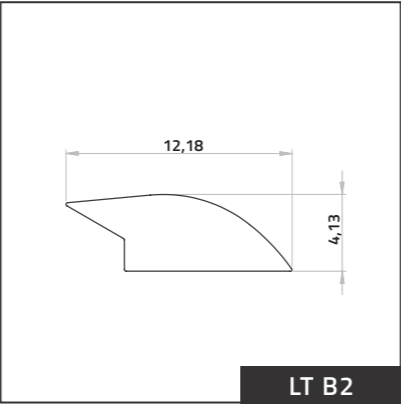
BOXED PROFILES

BOXED PROFILES

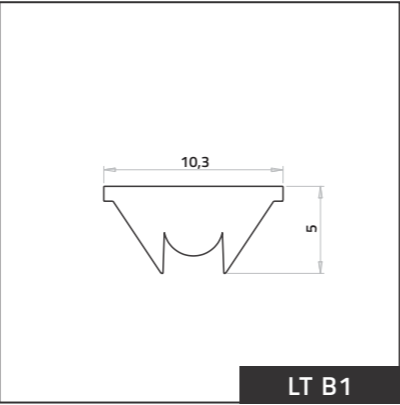




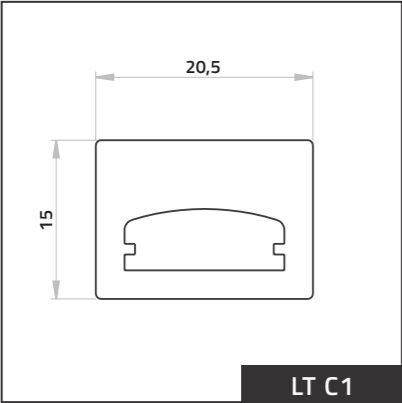
LT B1



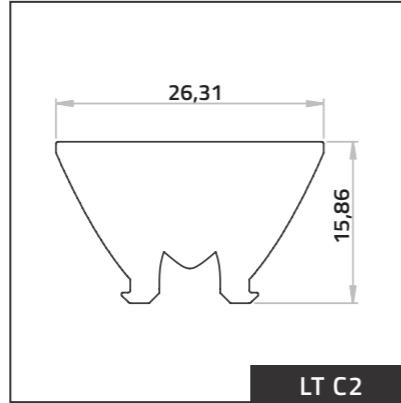
LT B2



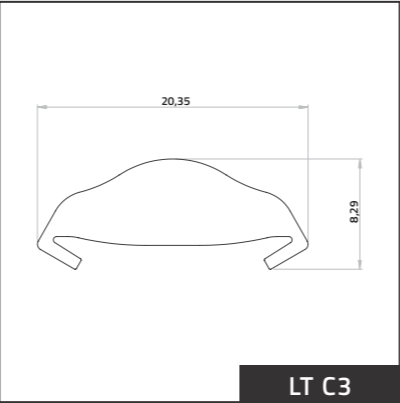
LT B1



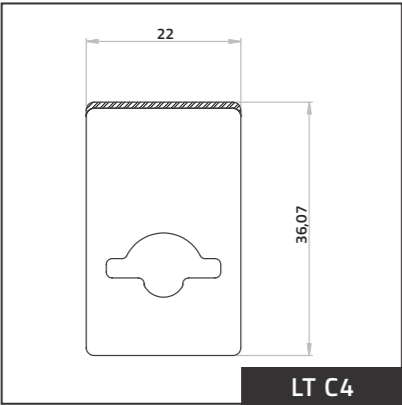
LT C1



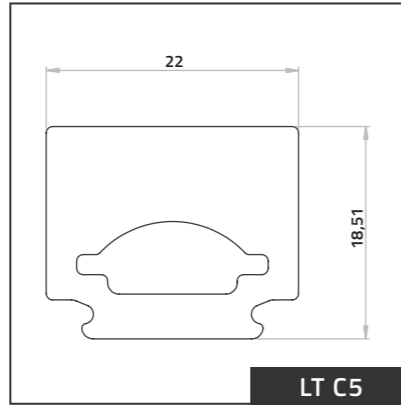
LT C2



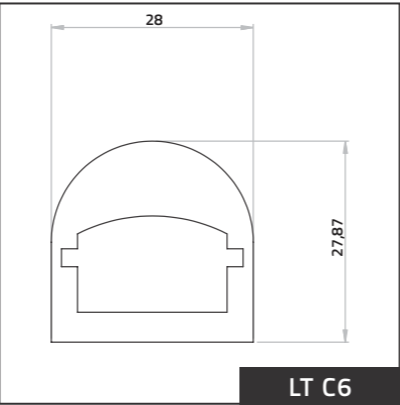
LT C3



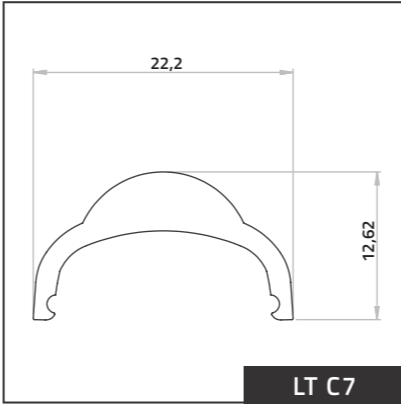
LT C4



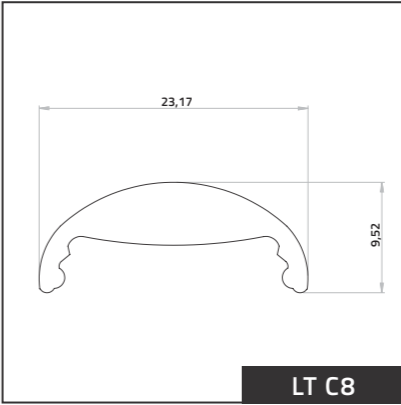
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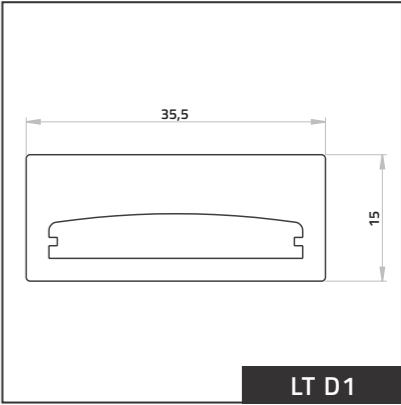
LT C6



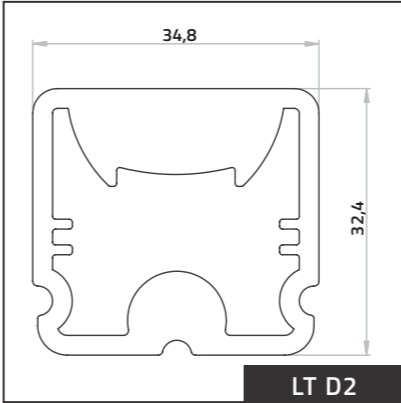
LT C7



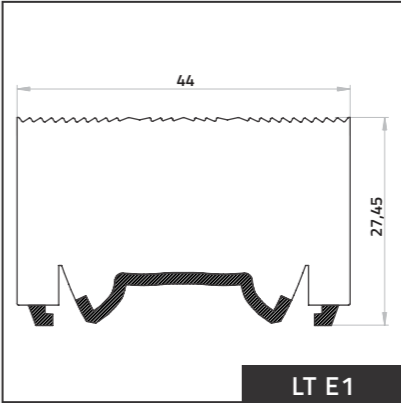
LT C8



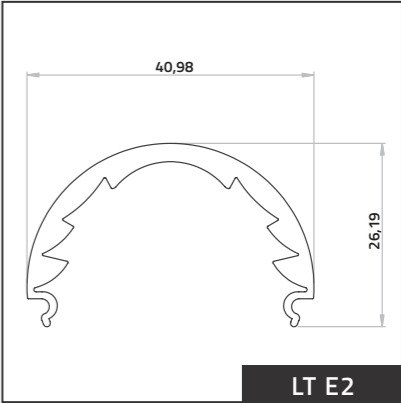
LT D1



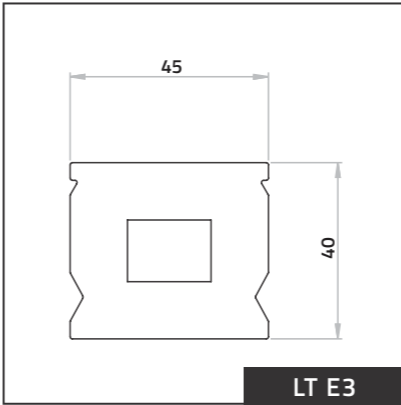
LT D2



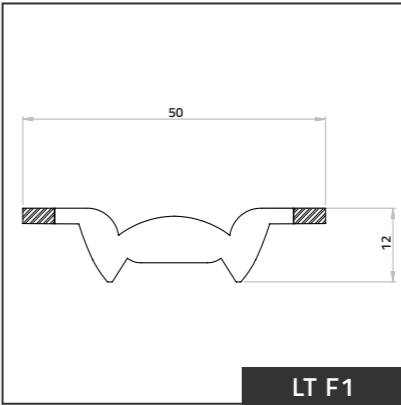
LT E1



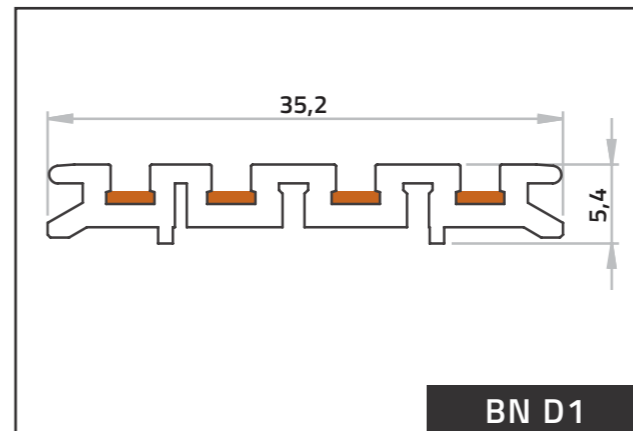
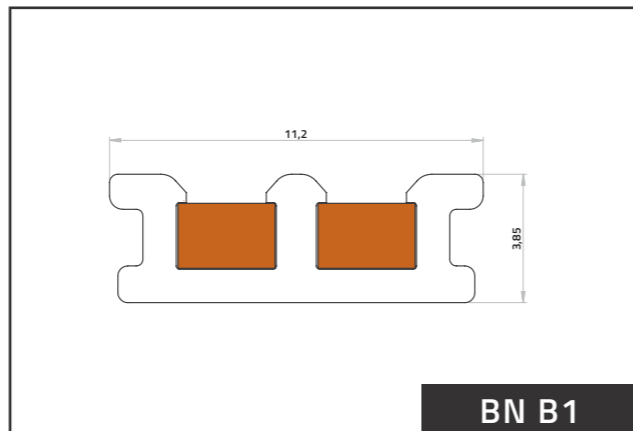
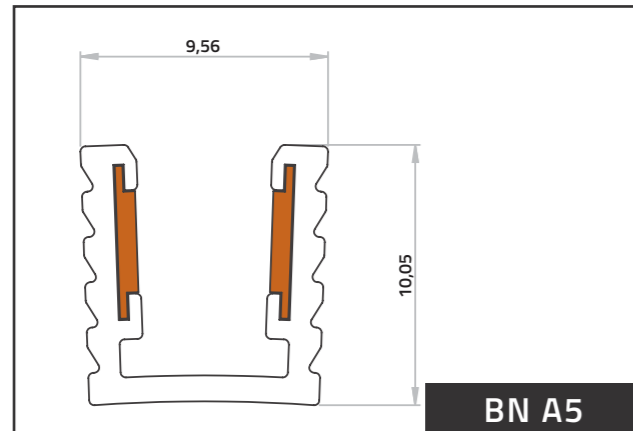
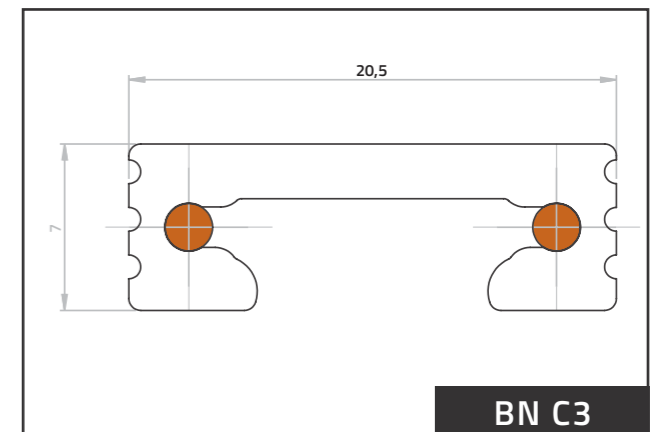
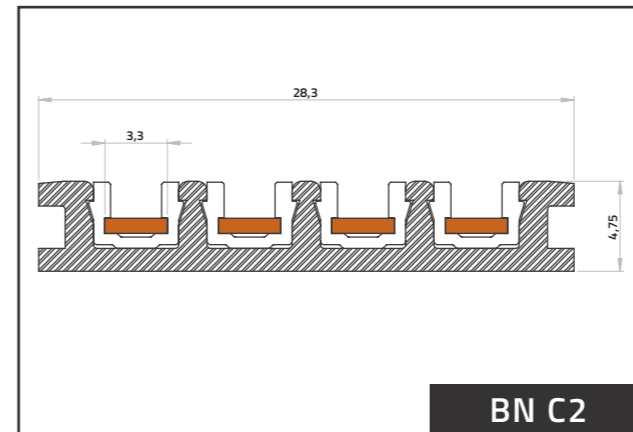
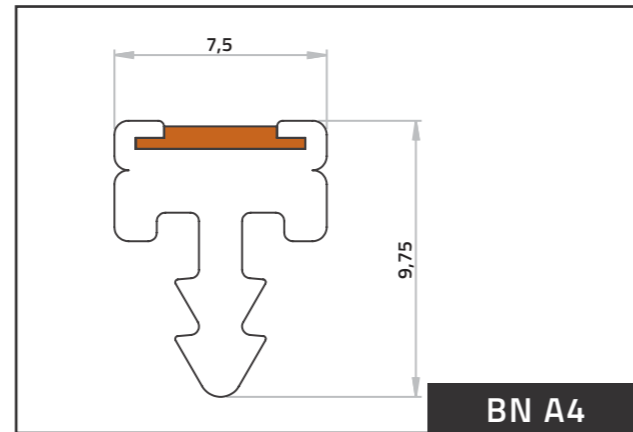
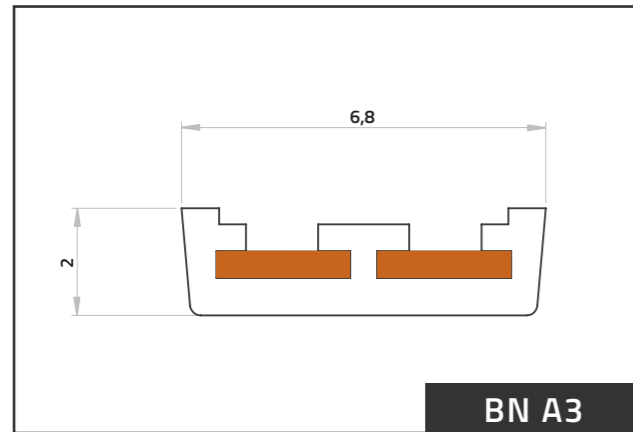
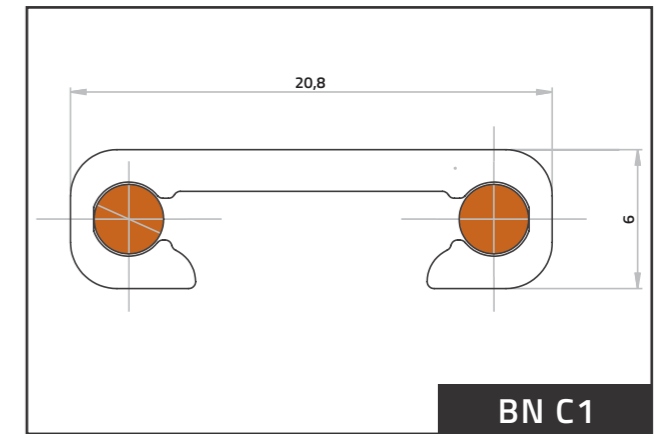
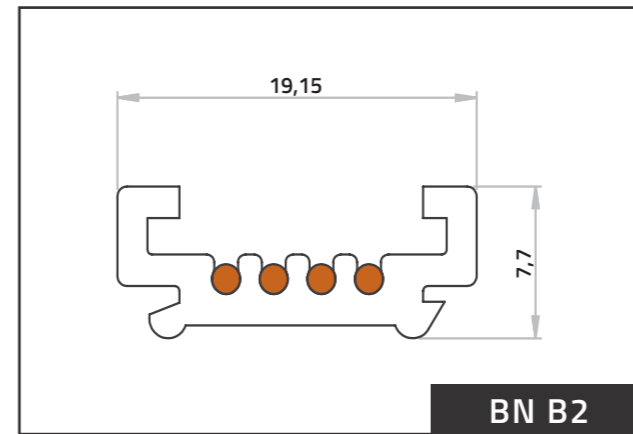
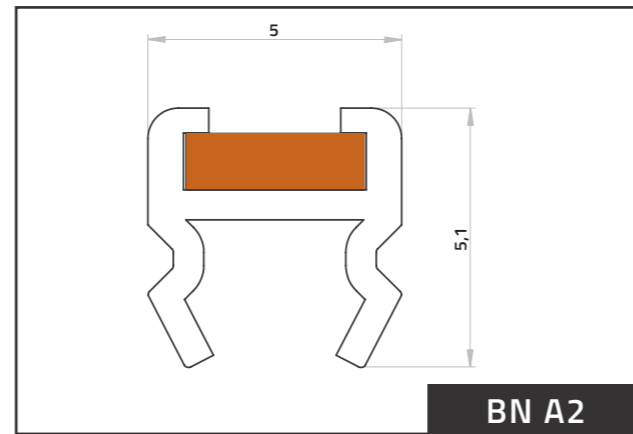
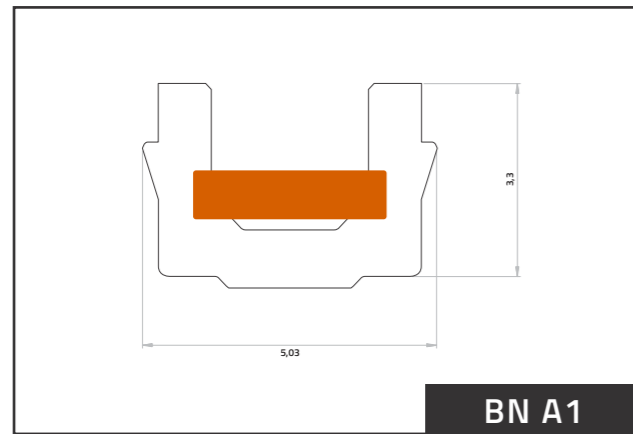
LT E2



LT E3



LT F1





MISCELLANEA

1 PRODUCT CARE AND CONSERVATION

We recommend cleaning the polycarbonate and PMMA profiles with a mild soap using sponges and soft cloths. Avoid contact with alkaline or abrasive detergents, or solvents. Do not rub with brushes, steel wool or other abrasive materials.

2 PATENT

Title: SEALING MODULE FOR CABLES OR PIPES AS WELL AS METHOD AND APPARATUS FOR PROVIDING THE SAME
Application number: WO2017186883A1

3 TECHNICAL DATA-SHEETS

POLYCARBONATE

TYPICAL PROPERTY VALUES

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yield, 50 mm/min	65	MPa	ISO 527
Tensile Stress, break, 50 mm/min	70	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	7	%	ISO 527
Tensile Strain, break, 50 mm/min	>70	%	ISO 527
Tensile Modulus, 1 mm/min	2350	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	95	MPa	ISO 178
Flexural Modulus, 2 mm/min	2300	MPa	ISO 178
IMPACT			
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ /m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	NB	kJ /m²	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	75	kJ /m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	55	kJ /m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	70	kJ /m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	50	kJ /m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ /m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ /m²	ISO 179/1eU
THERMAL			
Thermal Conductivity	0.2	W/m-°C	ISO 8302
CTE, 23°C to 80°C, flow	7.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	149	°C	ISO 306
Vicat Softening Temp, Rate B/120	150	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	130	°C	ISO 75/Af
PHYSICAL			
Mold Shrinkage, flow, 3.2 mm (5)	0.5 – 0.7	%	SABIC method
Density	1.2	g/cm³	ISO 1183



PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Water Absorption, (23°C /sat)	0.35	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.15	%	ISO 62
Melt Volume Rate, MVR at 300°C /1.2 kg	3	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 300°C /2.16 kg	5	cm³/10 min	ISO 1133
OPTICAL			
Light Transmission, 2.54 mm	88 – 90	%	ASTMD 1003
FLAME CHARACTERISTICS			
Glow Wire Flammability Index 850°C, passes at	1	mm	IEC 60695-2-12
MULTIWALL SHEET EXTRUSION			
Drying Temperature	120	°C	
Drying Time	2 – 4	hrs	
Barrel -Zone 1 Temperature	260 – 300	°C	
Barrel -Zone 2 Temperature	260 – 290	°C	
Barrel -Zone 3 Temperature	260 – 290	°C	
Hopper Temperature	100 – 120	°C	
Adapter Temperature	240 – 280	°C	
Die Temperature	240 – 300	°C	
Melt Temperature	260 – 300	°C	
Calibrator Temperature	50 – 100	°C	

POLYCARBONATE V0

TYPICAL PROPERTY VALUES PC V0

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Taber Abrasion, CS-17, 1 kg	9	mg/1000cy	SABIC method
Tensile Stress, yield, 50 mm/min	65	MPa	ISO 527
Tensile Stress, break, 50 mm/min	70	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	7	%	ISO 527
Tensile Strain, break, 50 mm/min	>70	%	ISO 527
Tensile Modulus, 1 mm/min	2350	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	95	MPa	ISO 178
Flexural Modulus, 2 mm/min	2350	MPa	ISO 178
Hardness, H35B/30	95	MPa	ISO 2039-1
IMPACT			
Izod Impact, unnotched 80°10*3 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80°10*3 -30°C	NB	kJ/m²	ISO 180/1U
Izod Impact, notched 80°10*3 +23°C	11	kJ/m²	ISO 180/1A
Izod Impact, notched 80°10*3 -30°C	10	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80°10*3 sp=62mm	11	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80°10*3 sp=62mm	10	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80°10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80°10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU
THERMAL			
Thermal Conductivity	0.2	W/m-°C	ISO 8302
CTE, 23°C to 80°C, flow	7.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	155	°C	ISO 306
Vicat Softening Temp, Rate B/120	156	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120°10*4 sp=100mm	148	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120°10*4 sp=100mm	135	°C	ISO 75/Ae
PHYSICAL			
Mold Shrinkage on Tensile Bar, flow	0.4 – 0.6	%	SABIC method
Density	1.25	g/cm³	ISO 1183
Water Absorption, (23° C/sat)	0.32	%	ISO 62
Moisture Absorption (23° C / 50% RH)	0.13	%	ISO 62
Melt Volume Rate, MVR at 300°C /1.2 kg	3	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 300°C /2.16 kg	5	cm³/10 min	ISO 1133
OPTICAL			
Light Transmission, 2.54 mm	88	%	ASTM D 1003
Haze, 2.54 mm	<0.8	%	ASTM D 1003
Refractive Index	1.586	-	ISO 489
ELECTRICAL			
Volume Resistivity	>1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ohm	IEC 60093
Dielectric Strength, in oil, 3.2 mm	17	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.7	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.001	-	IEC 60250
Dissipation Factor, 1 MHz	0.01	-	IEC 60250
Relative Permittivity, 50/60 Hz	2.7	-	IEC 60250



FLAME CHARACTERISTICS				
UL Recognized, 94V-0	Flame Class Rating	1.5	mm	UL 94
Glow Wire Flammability Index 850°C, passes at	1	mm	IEC 60695-2-12	
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12	
Oxygen Index (LOI)	37	%	ISO 4589	
MULTIWALL SHEET EXTRUSION				
Drying Temperature	120	°C		
Drying Time	2 – 4	hrs		
Barrel - Zone 1 Temperature	260 – 300	°C		
Barrel - Zone 2 Temperature	260 – 290	°C		
Barrel - Zone 3 Temperature	260 – 290	°C		
Hopper Temperature	100 – 120	°C		
Adapter Temperature	240 – 280	°C		
Die Temperature	240 – 300	°C		
Melt Temperature	260 – 300	°C		
Calibrator Temperature	50 – 100	°C		

PMMA

Properties:

	Parameter	Unit	Standard	PLEXIGLAS® 7H
Mechanical properties				
Tensile modulus	1 mm/min	MPa	ISO 527	3200
Stress at break	5 mm/min	MPa	ISO 527	76
Strain at break	5 mm/min	%	ISO 527	5.5
Charpy impact strength	23 °C	kJ/m²	ISO 179/1eU	20
Thermal properties				
Vicat softening temperature	B / 50	°C	ISO 306	103
Glass transition temperature		°C	IEC 10006	112
Temp. of deflection under load	0.45 MPa	°C	ISO 75	100
Temp. of deflection under load	1.8 MPa	°C	ISO 75	95
Coeff. of linear therm. Expansion	0 - 50 °C	E-5 / °K	ISO 11359	8
Fire rating			DIN 4102	B2
Rheological properties				
Melt volume rate, MVR	230 / 3.8	cm³/10min	ISO 1133	1.4
Optical properties				
Transmission factor	D65/10°	%	ISO 13468	92
Haze			ASTM D1003	< 0.5
Refractive index			ISO 489	1.49
Other properties				
Density		g/cm³	ISO 1183	1.19
Recommended processing conditions				
Predrying temperature		°C		max. 93
Predrying time in desiccant-type drier		h		2 - 3
Melt temperature		°C		220 - 260
Cylinder temperature		°C		220 - 260
Die temperature (extrusion)		°C		220 - 260

The above information and technical data shown are provided by the producers.



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