

# CATALOG

## Index

Intro	2
1. <b>COMPANY</b>	E
2. PROFILES FOR LED LIGHTING	<u>c</u>
2.1 FINISHES	1
SPECIAL LED	1
GREY & WHITE (G&W)	
BLACK & WHITE (B&W)	1
MICROPRISM	1
SOFTLIGHT	1
SMART CONTROL	1
2.2 CURVED PROFILES	1
2.3 BOXED PROFILES	1

2.4 LENSES	21
3.ELECTRIFIED TRACKS	22
4.OTHER APPLICATIONS	24
5.TECHNICAL DRAWINGS	26
Miscellanea	52
Contacts	58



44 WE BRING YOUR PROJECTS TO LIFE



## **COMPANY**

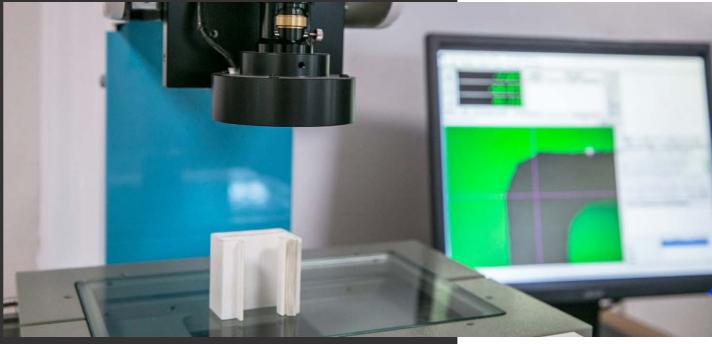
Profiles is a leading player operating in multiple international markets thanks to its innovative knowledge in the extrusion of plastic profiles.

3B Profiles leverages more than forty years' experience in the design and production of equipment for the extrusion of plastic and thermoplastic materials.

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

e 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

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.

a **technical office** dedicated to







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.

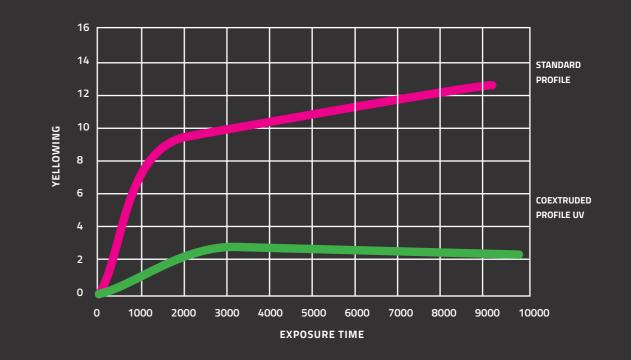


e mainly extrude profiles in Polycarbonate and PMMA with different surfaces, including: smooth, striped, microprismatic, embossed, matt; and finishes such as transparent, several opal tones, colored and multicolored.

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







olycarbonate 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.

olycarbonate 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.



ome 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.



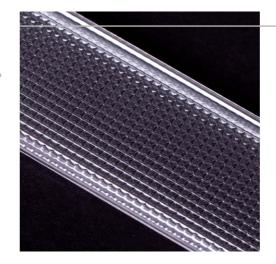
## **FINISHES**

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.

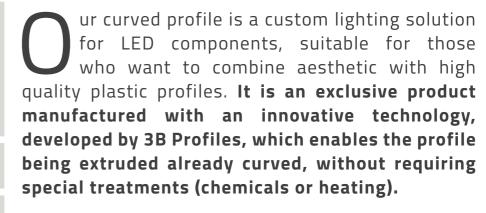
They are produced with a special Polycarbonate with thermal conductivity properties that enable the heat dissipation directly from the plastic body, thus avoiding the need for external aluminum or dissipating tapes.

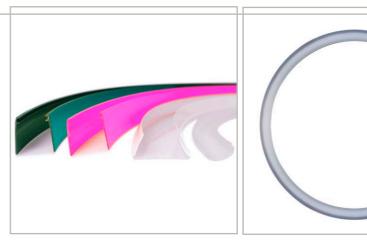






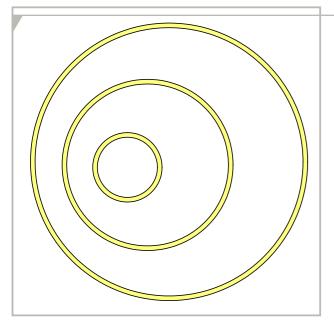
WE CAN ENSURE TOP QUALITY PROFILES WITH PERFECT SHAPES AND RESISTANCE TO BREAKAGE. THESE PROFILES ARE AVAILABLE IN POLYCARBONATE AND PMMA WITH MULTIPLE COLORS, SHAPE, FINISHES SUCH AS THE LINEAR PROFILES. THEY ARE AVAILABLE RECESSED OR PENDANT AND CAN BE ADAPTED TO EXISTING FRAMES.

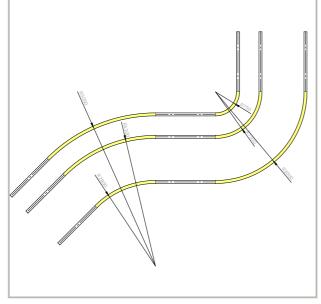






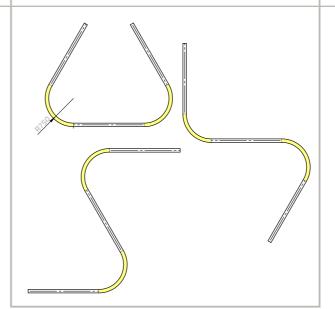
These profiles can be combined between each other as well as with linear profiles, enabling the creation of exclusive and original shapes. Here are some examples:

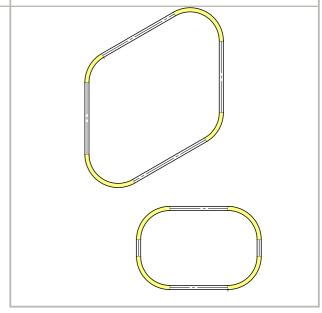






By combining linear and curved profiles together, it is possible to obtain unique and exclusive shapes of light on ceilings, walls and floors.





## **CREATIVE SHAPES**

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

## **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.

16



## **BOXED PROFILES**

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).

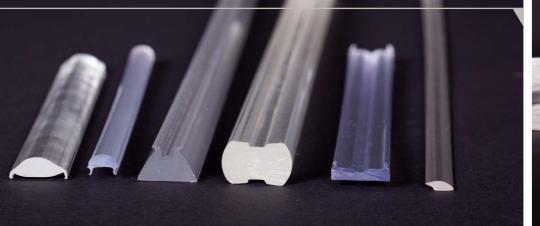






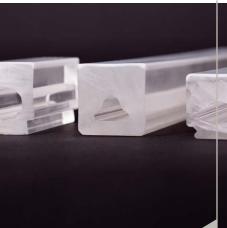
## **LENSES**

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).





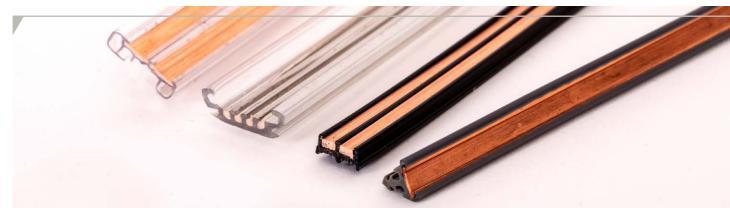






## ELECTRIFIED TRACKS

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



he 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.

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



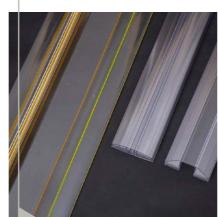


## OTHER APPLICATIONS

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

epending 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.





mong these products, we emphasize attention to our sealing modules, which are produced with a method based on a patented extrusion **process** (application no. W02017186883A1). These modules ensure maximum protection of cables, pipes and similar elements from external agents such as fire, water, dust, etc.

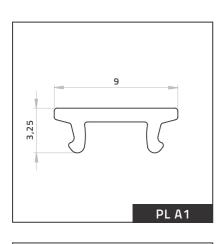
ur system offers several technical and productive advantages compared to other existing technologies, while guaranteeing superior quality of the product.

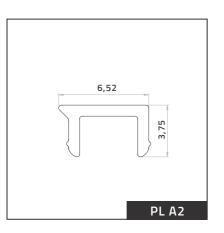


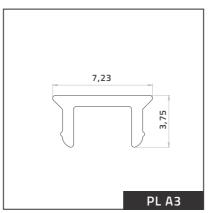


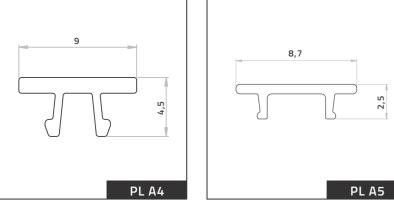


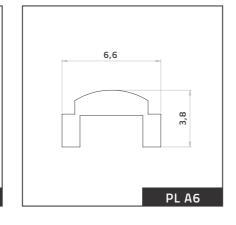
TECHNICAL DRAWINGS

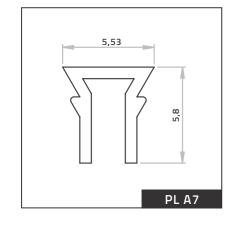


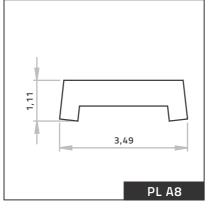


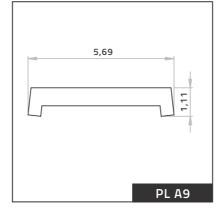


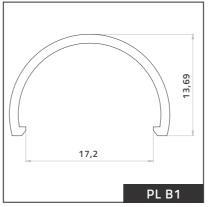


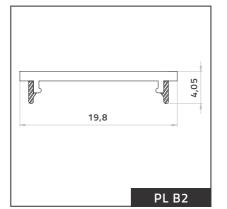


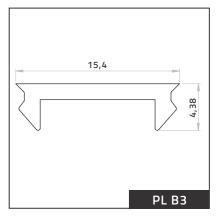


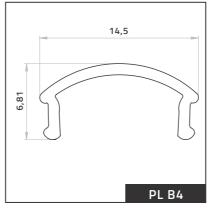


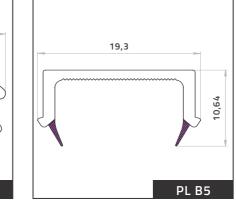


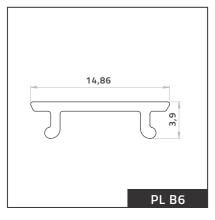


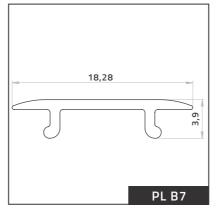


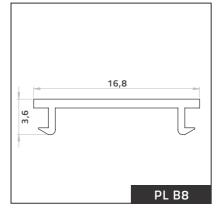


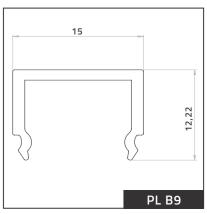


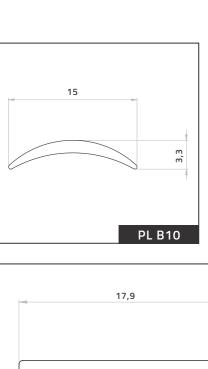


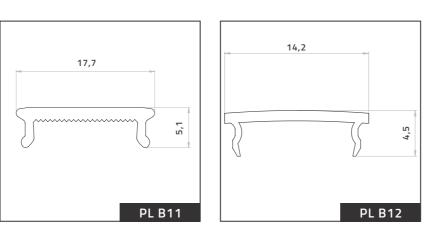


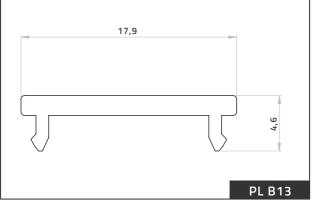


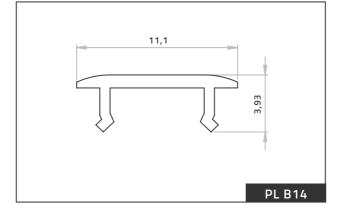


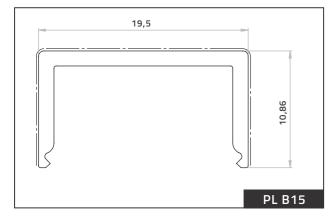


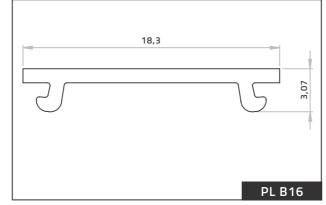


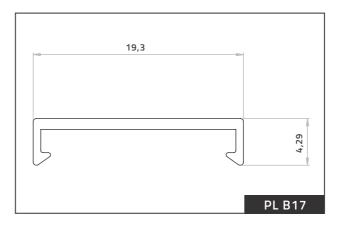


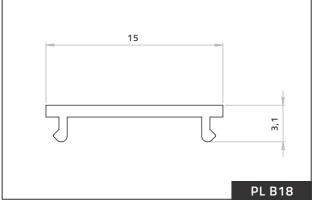


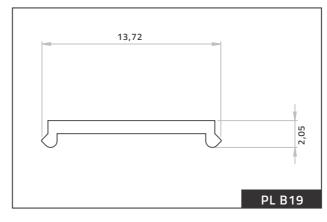


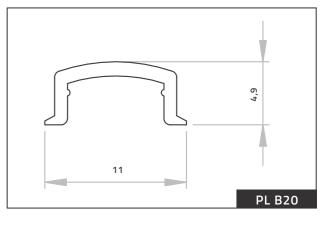


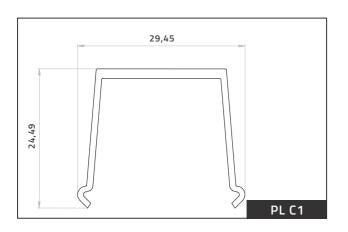




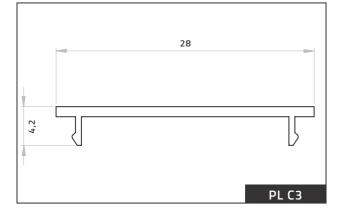


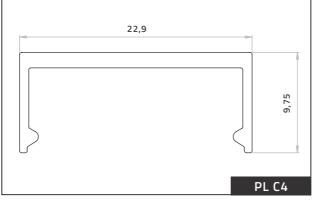


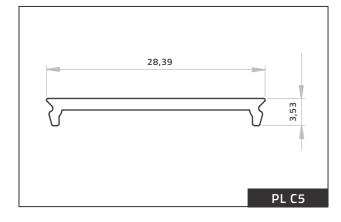


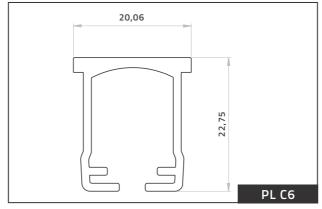


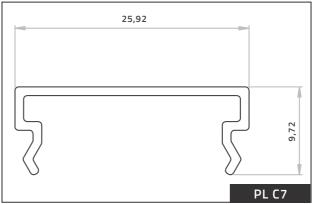


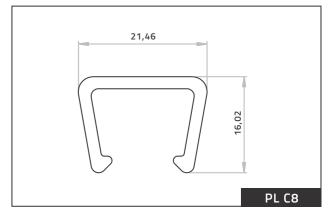


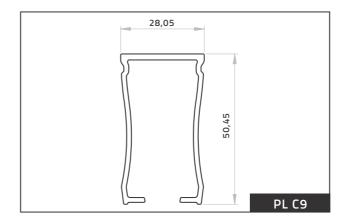


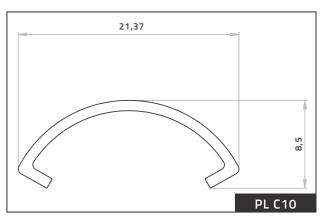


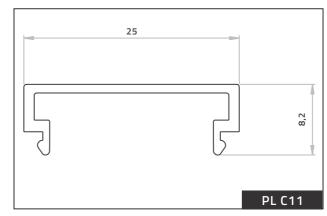


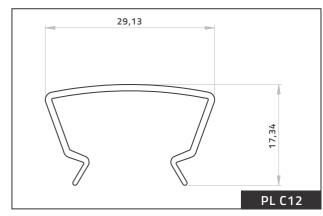










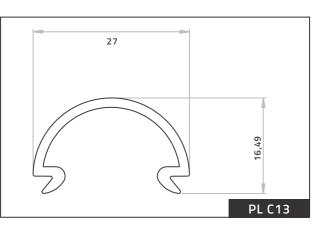


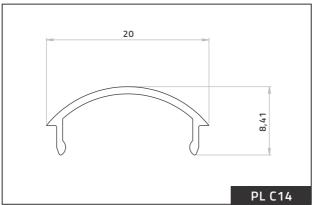
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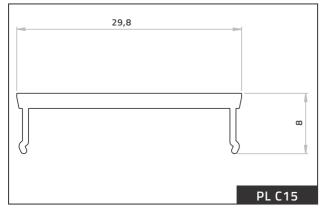
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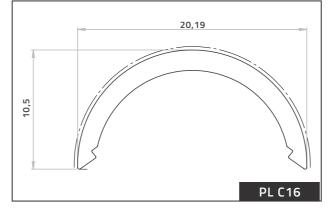
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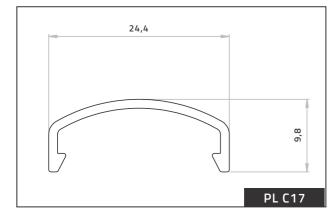
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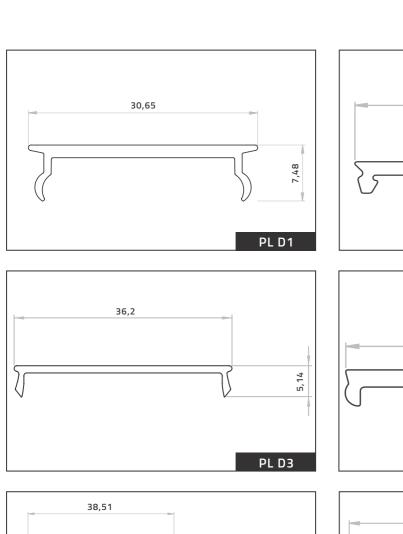




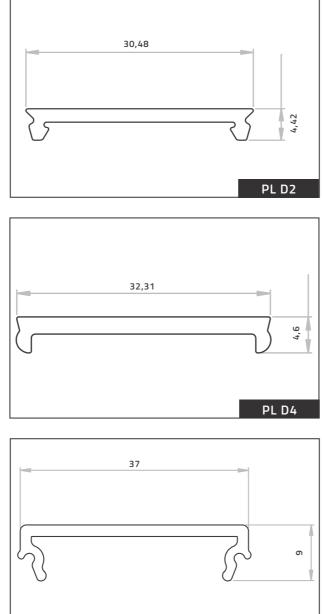




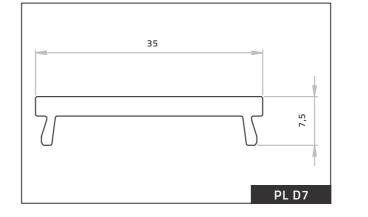




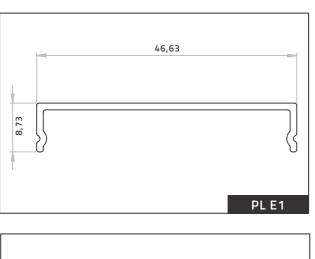
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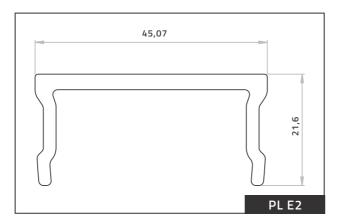


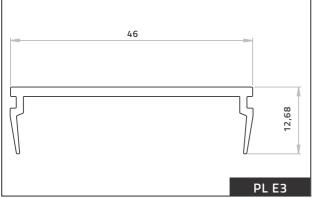
PL D6

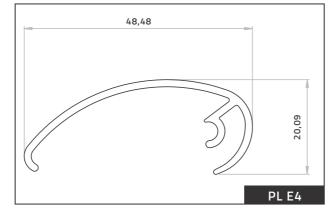


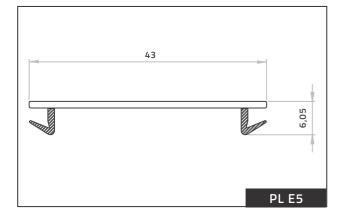
# 40-50 mm LINEAR PROFILES

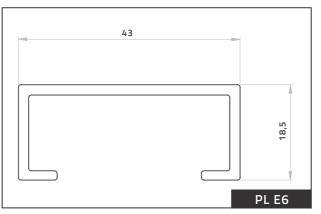


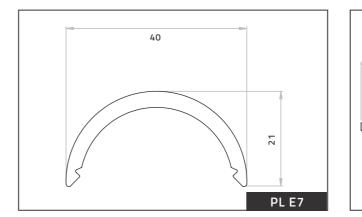


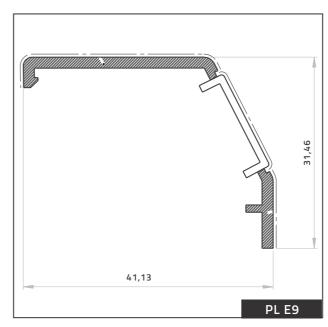








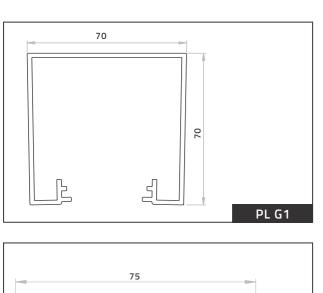


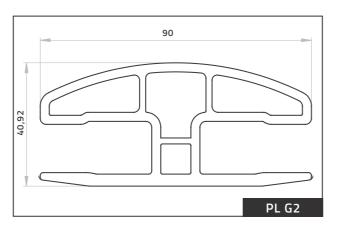


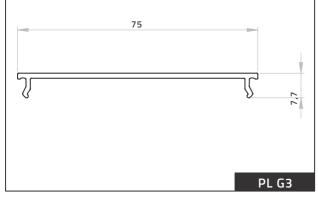


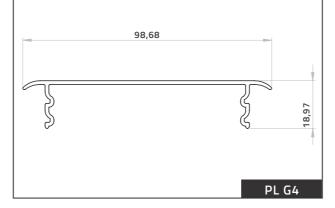
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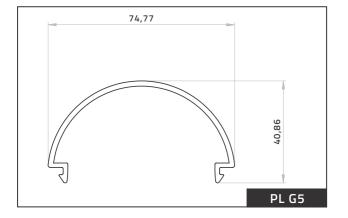
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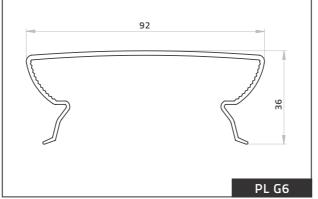


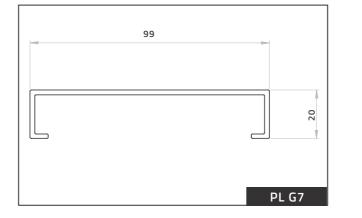




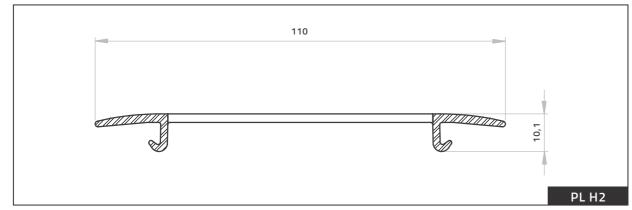


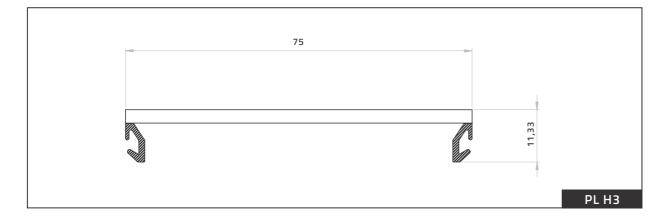


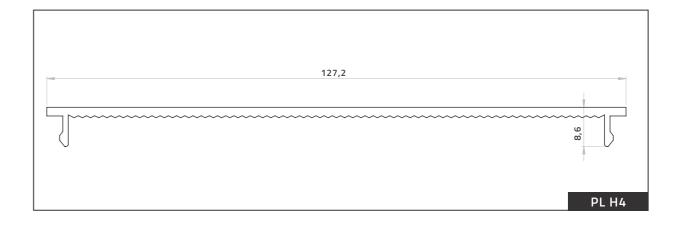


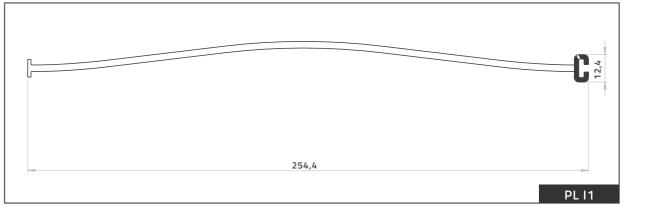


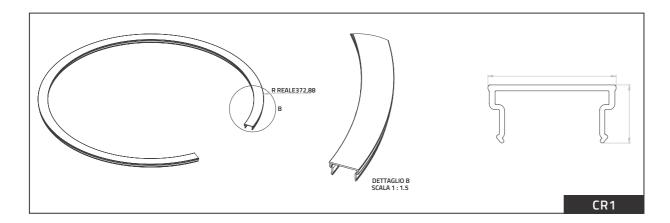


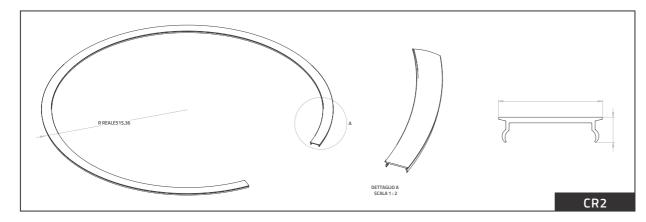


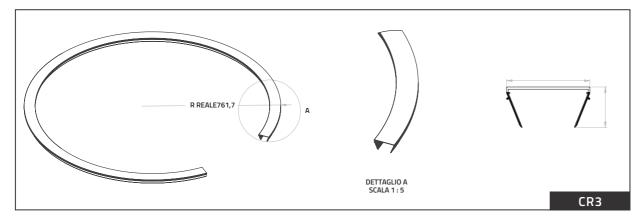


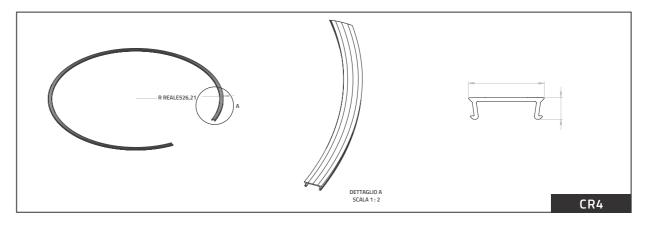


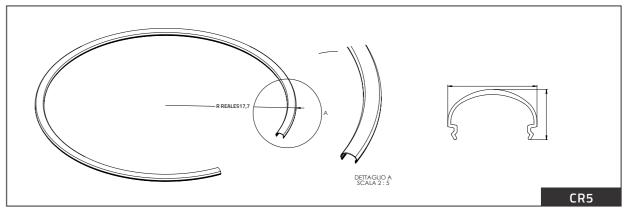


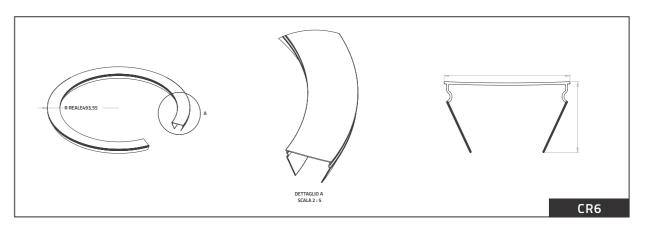




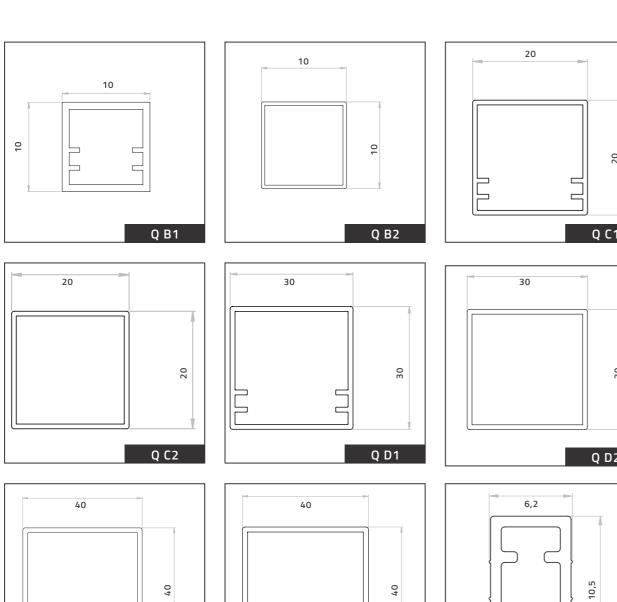






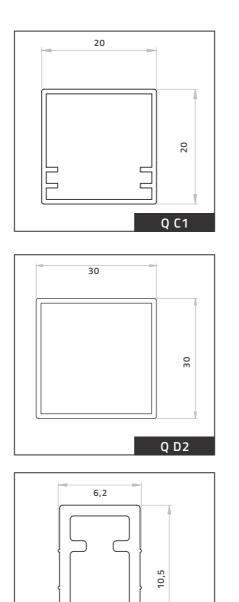


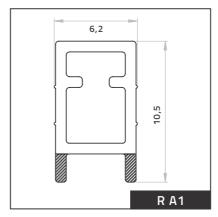
# PROFILES BOXED

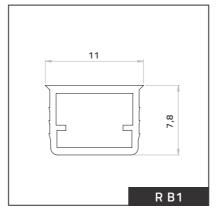


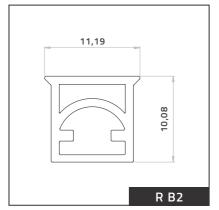
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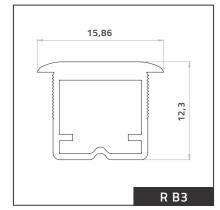
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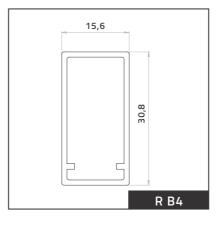


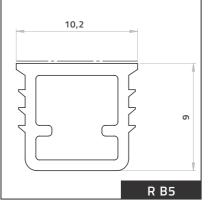


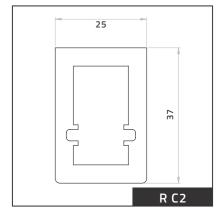


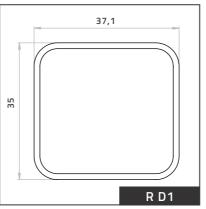


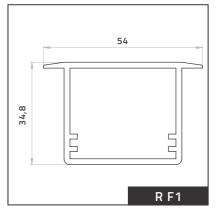


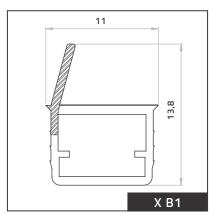


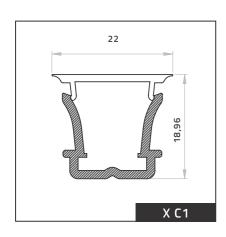


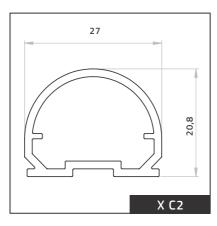


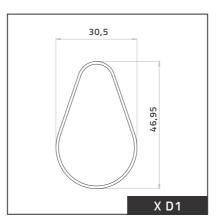


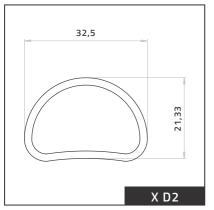


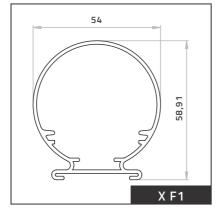


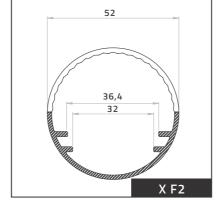


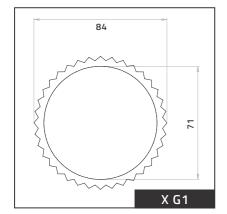






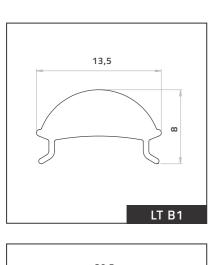


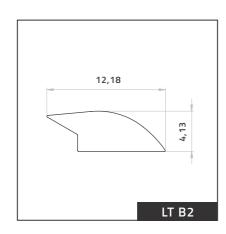


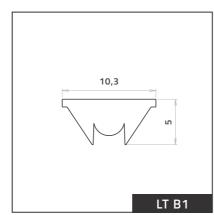


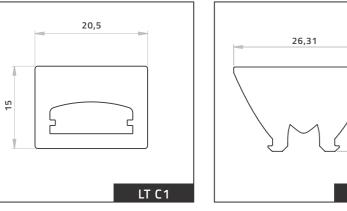
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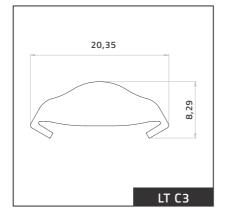
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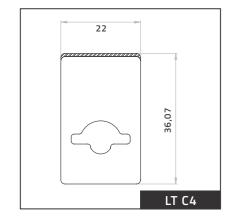


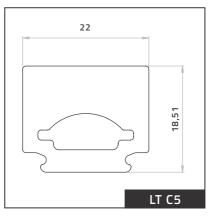




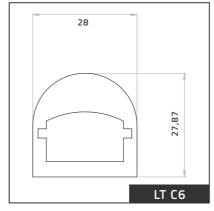


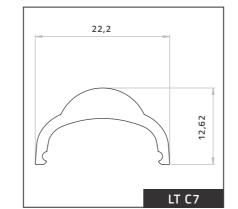


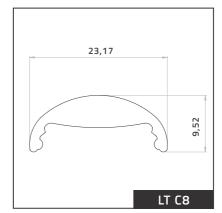


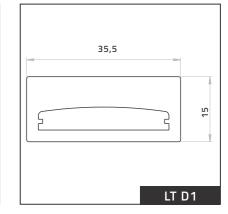


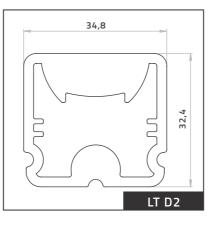
LT C2

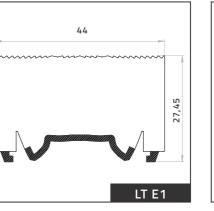


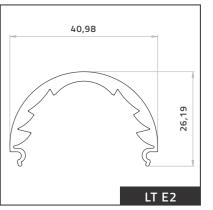


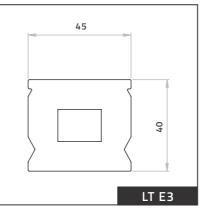


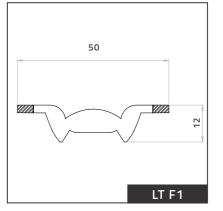






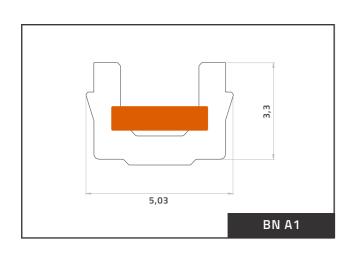


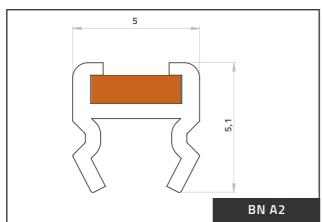


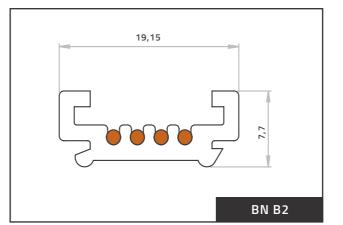


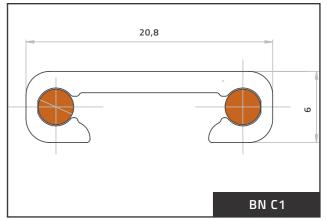
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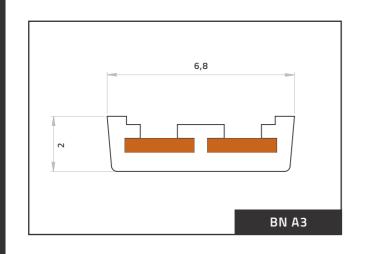
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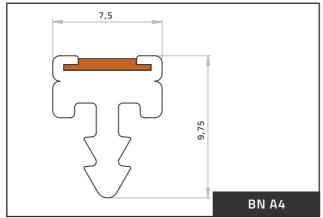


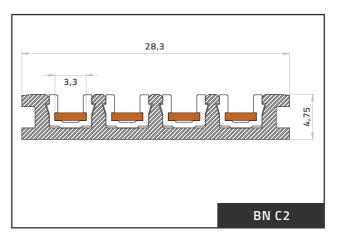


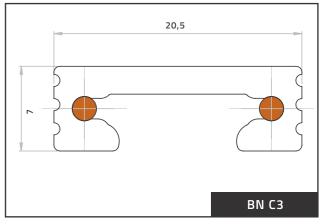


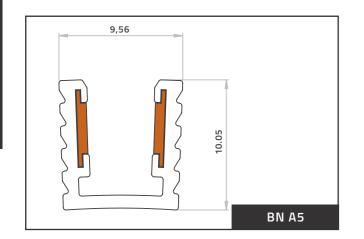


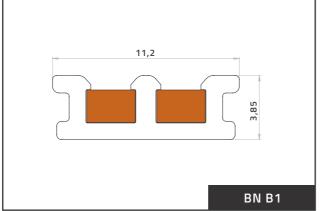


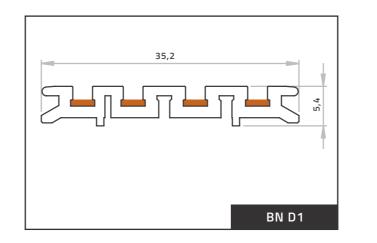














## MISCELLANEA

## 1 PRODUCT CARE AND CONSERVATION

e 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

itle: 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℃	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℃	55	kJ /m²	ISO 180/1A
Charpy 23℃, V-notch Edgew 80*10*3 sp=62mm	70	kJ /m²	ISO 179/1eA
Charpy -30℃, V-notch Edgew 80*10*3 sp=62mm	50	kJ /m²	ISO 179/1eA
Charpy 23℃, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ /m²	ISO 179/1eU
Charpy -30℃, 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℃ to 80℃, flow	7.E-05	1/℃	ISO 11359-2
Ball Pressure Test, 125℃ +/- 2℃	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	149	°	ISO 306
Vicat Softening Temp, Rate B/120	150	°	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℃/sat)	0.35	%	ISO 62
Moisture Absorption (23℃ /50% RH)	0.15	%	ISO 62
Melt Volume Rate, MVR at 300℃/1.2 kg	3	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 300℃/2.16 kg	5	cm³/10 min	ISO 1133
OPTICAL			
Light Transmission, 2.54 mm	88 – 90	%	ASTM D 1003
FLAME CHARACTERISTICS			
Glow Wire Flammability Index 850℃, 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	℃	
Hopper Temperature	100 – 120	℃	
Adapter Temperature	240 – 280	°C	
Die Temperature	240 – 300	°C	
Melt Temperature	260 – 300	℃	
Calibrator Temperature	50 – 100	°C	

## POLYCARBONATE VO

## TYPICAL PROPERTY VALUES PC VO

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Taber Abrasion, CS-17, 1 kg	9	mg/1000cy	SABIC method
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, H358/30	95	MPa	ISO 2039-1
IMPACT			
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m²	ISO 180/1U
THERMAL			
Thermal Conductivity	0.2	W/m-°C	ISO 8302
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm			
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm			
PHYSICAL			
Mold Shrinkage on Tensile Bar, flow	0.4 - 0.6	%	SABIC method
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
			IEC 60243-1
			IEC 60250
			IEC 60250
Dissipation Factor, 1 MHz			IEC 60250
			IEC 60250



FLAME CHARACTERISTICS			
Oxygen Index (LOI)	37	%	ISO 4589
MULTIWALL SHEET EXTRUSION			
Drying Time	2 – 4	hrs	
Barrel - Zone 1 Temperature	260 – 300	°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		

## *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		ISO 306	103
Glass transition temperature			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	d=3 mm			
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				max. 93
Predrying time in desiccant-type drier				
Melt temperature				220 - 260
Cylinder temperature				220 - 260
Die temperature (extrusion)		°C		220 - 260

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



## 3B profile srl

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## Contatti

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