



alfa solare
WINDOW DIVISION CATALOG

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10

**ALFA
SOLARE**



For more than 30 years with you.

Alfa Solare is a Company that has been in the plastic extrusion industry **since 1986**. Our production sites are located in the Republic of **San Marino**, where we produce thermoplastics, such as **ABS, PVC, ASA, coextruded profiles, TPE** and other **special materials**, and in **San Leo**, Italy, where production is dedicated only to **PA** and **PPE/PA** with **hot and cold technology**.

Alfa Solare has the advantage of being a producer of a **multiplicity of materials**, which makes the company capable of presenting itself as a **single partner** and interlocutor, effective in the **study** and **development** of **innovative** and **360° complete solutions**. Indeed, **Alfa Solare's** extensive production is differentiated into a **variety of product typologies**, which find a wide range of

applications: from **home** and **office furniture** to the **automotive sector**, from **components for shipyards** to the **refrigeration sector**, and to the **thermal insulation market** for doors and windows.

As **Alfa Solare's** main ambition there has always been to be **forward-looking** and **innovative**, both with regard to **materials** and **process**, helping customers open new doors and offering them **technically advanced solutions**, thus proving to be essential partners in the development of **new projects**, and never as mere suppliers of extruded products.

Thanks to this, **Alfa Solare Group** has achieved an **important position**, in fact, within a highly dynamic and constantly evolving market.

Open to the future.

Below is an overview of the **main characteristics** in comparison of **all the materials** we produce.

COMPOSITION	MATERIAL CHARACTERISTIC TABLE												
	alfa MID	alfa THERM	alfa PRO	alfa ASA	alfa TECH	alfa TECH	alfa PRENE	alfa XP	alfa FIBER	alfa EPDM	alfa XPE		
	PAG625	PA/PPE	ABS	ASA	PVC-U	PVC alloy	TPE TPV SEBS	PVC	PVC	EPDM	LDPE closed cells	PC	WPVC
Glass fiber/charge	25%GF	20%GF						Expanded	Rice fiber		Expanded		Wood fiber
Density (gr/ccm)	1,3	1,05	1,05	1,06	1,45*	1,38	0,99	0,6÷0,9	1,45÷1,50	1,24	0,025÷0,035	1,2	1,39
Tensile Modulus	>2500Mpa (eq.)	>3000Mpa (eq.)	>1500Mpa	2300Mpa		3200Mpa (23°C)		800Mpa	2340Mpa				2350Mpa
Tensile Strength	>50 Mpa (eq.)	>50 Mpa (eq.)	>35 Mpa	48 Mpa	35 Mpa	38 Mpa (23°C)		15 Mpa	22 Mpa			70Mpa	39Mpa
Linear thermal expansion coefficient	2,8*10 ⁻⁵ K ⁻¹	3,5*10 ⁻⁵ K ⁻¹	8,5*10 ⁻⁵ K ⁻¹	8,8*10 ⁻⁵ K ⁻¹	7-8,9*10 ⁻⁵ K ⁻¹	6,8*10 ⁻⁵ K ⁻¹	8,7*10 ⁻⁵ K ⁻¹	4,5*10 ⁻⁵ K ⁻¹	3,6*10 ⁻⁵ K ⁻¹			7,5*10 ⁻⁵ K ⁻¹	8-10*10 ⁻⁵ K ⁻¹
Internal usage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
External usage*	✓	✓	✓	✓	✓ X	✓	✓ X	✓	✓	✓	X	✓ X	✓ X
Colour	Black White Grey	Black	ALL	ALL	ALL	Black	ALL	ALL	ALL	Black Brown White Grey	Grey	Transparent	Black White Grey
Temperature resistance	255° C	245°C	95°C	96°C	78°C	92°C	90°C	-30°C÷70°C		-35°C÷100°C	-40°C÷80°C	-140°C	-30°C÷70°C
UV resistance*	✓	✓	✓	✓	✓ X	✓	✓	✓	✓	✓	X	✓ X	✓ X
Powder coatability	✓	✓	X	X	X	X	X	X	X	X	X	X	X
Water absorption (23°C/sat)	>6%	2,50%	//	//	//	//	//	//	100% waterproof		1%	//	
Lambda**	0,3	0,18	0,139	0,16	0,17	0,17*	0,21	0,079*	0,199*	0,25	0,036	0,2*	0,14-0,16
Application field	Thermal break	Thermal break	Thermal break and other uses	Thermal break and other uses	Thermal break and other uses	Thermal break and other uses	Gaskets	Counterframes thresholds, other uses	Counterframes thresholds, other uses	Gaskets	Thermal break	Lighting	Various
Co-extrudability	X	X	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	✓
Thermal break product certification	ag	ag	ag		NF		//	//	//	//	//	//	//
Product homologation for French market	Approved CSTB QB49	Approved CSTB QB49	Approved CSTB QB49		Approved CSTB QB49	Approved CSTB QB49	Approved CSTB QB36	//	//	//	//	//	//
Sustainability	C2C MHC cert on going	C2C MHC Gold Level V. 3.1	C2C MHC Silver Level V. 3.1	C2C MHC Silver Level V. 3.1									
Recycled raw material or ISCC	Available	Available soon	Available	Available	Available		Available				Available		
Recyclability	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	X	✓	✓
Flammability	HB	HB	HB	HB	V0	HB	HB	V0	V0		B2	HB	V0

*Products in these ranges may be different, so please specify any requirements in your request.

**The lambda value may be approximate value from literature and not from measurement reports.

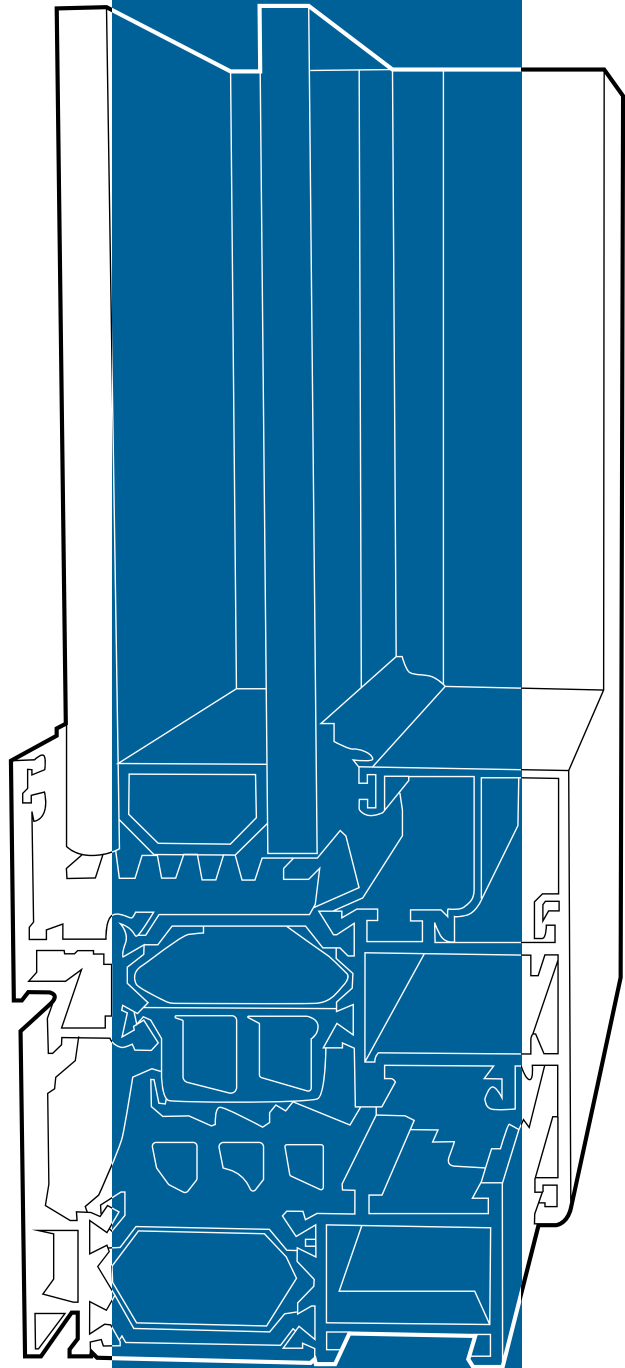
OTHER MATERIALS ARE AVAILABLE IN OUR RANGE FOR SPECIAL NEEDS AND APPLICATIONS

Window division

Alfa Solare has been supplying a wide range of profiles for the **thermal break** sector for years and thanks to our dedicated technical department we are able to propose **innovative solutions** for **energy saving**.

Alfa Solare, in fact, has developed a great know how in the production of profiles for **thermal insulation** and for **more than 30 years** it has been supporting its customers with **advanced solutions**, basing on customers' needs and proposing the right material depending on the final applications.

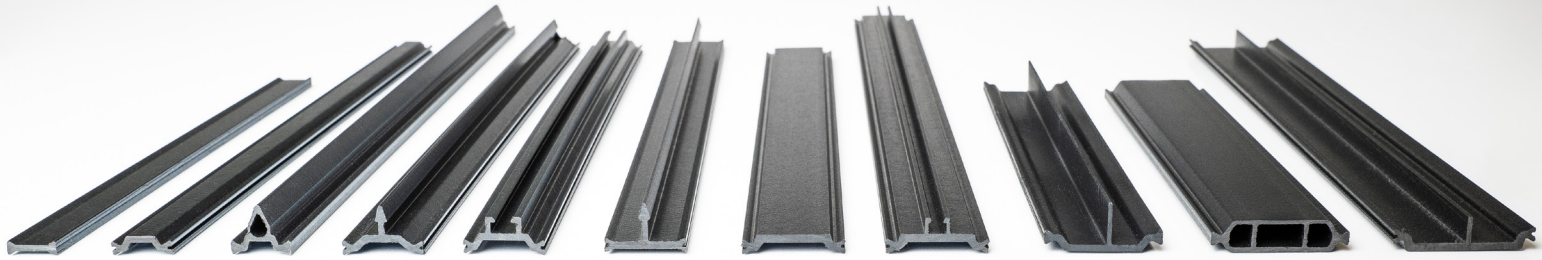
Being perfectly familiar with all the materials produced, **Alfa Solare** technicians know how to indicate the right solutions to be able to get the most out of your systems, achieving advanced **thermal performance** with the most innovative materials on the market, also through the support of latest generation software such as **Bisco** for Uf calculations or **FEM Calculator** for structural calculations.





02

**ALFA
MID**



The product range

Alfa MID

Polyamide, thanks to its resistance to **high temperatures** and therefore also to **powder coating**, has always been one of the main materials chosen for **thermal break windows**. This is why **Alfa Solare** has a wide range of standard products, **easily adaptable** to most systems on the market.

Alfa Solare, however, has always focused on **innovation**, which is why it has been working with **major market leaders for more than 30 years**, proposing **ad hoc** and **customized solutions**.

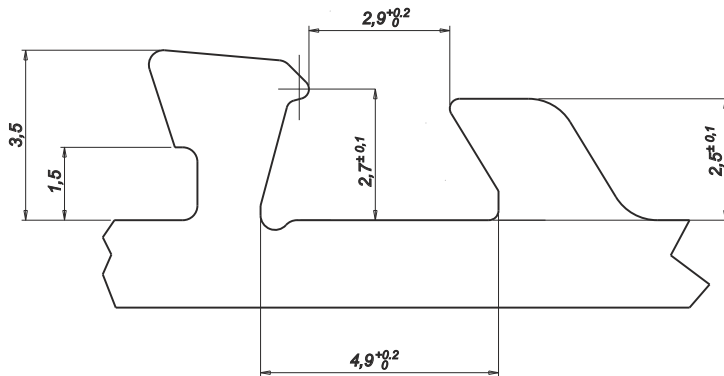
In fact, **Alfa Solare** along with its range of standard profiles is able to study and produce **custom profiles** with geometries

and specifications, based exclusively on the **customers' final needs**.

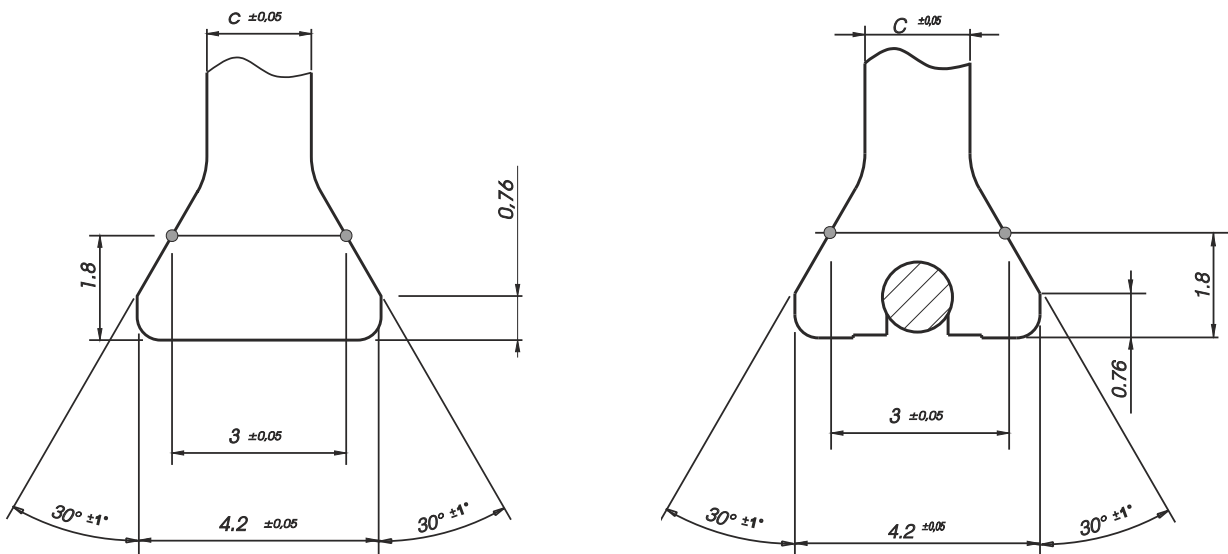
All profiles are extrudable from **100% recycled material**.

Alfa Solare's profiles can be offered in both **bars** and **rolls** and also are available in both **white** and **black** colors.

Standard aluminum groove

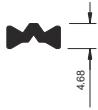


Standard foot



STANDARD PROFILES

10 mm



9199

12 mm



9057

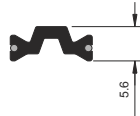


9150



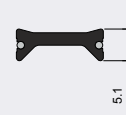
9464

13.4 mm

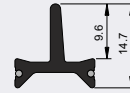


9133

14 mm



9373



9374

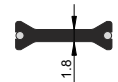


9197



9278

14.3 mm



9086



9351

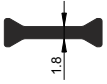
STANDARD PROFILES

14.5 mm

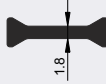
14.6 mm

14.8 mm

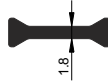
15.4 mm



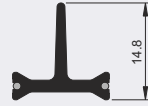
9390



9070



9041



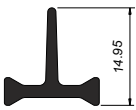
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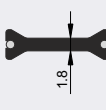
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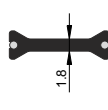
9188



9391



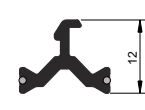
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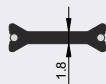
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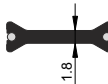
9125



9153



9190



9141



9215



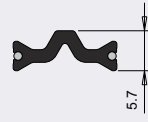
9328



9154



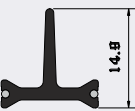
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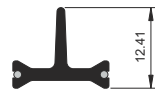
9309



9382



9187



9137



9183



9282



9042

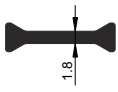


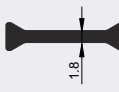

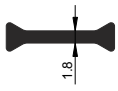


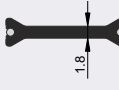

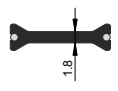


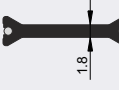

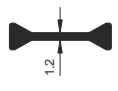
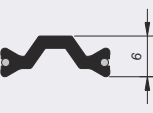



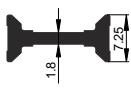




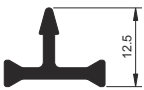







9067

STANDARD PROFILES

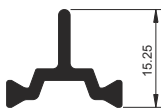
16 mm

18 mm

				
9023	9028	9295	9030	9261
				
9090	9145	9408	9200	9304
				
9136	9315	9219	9217	9277
				
9276	9267	9281	9353	9223
				
9116	9201	9287	9216	9260
				
9138	9077		9156	9449
				
			9266	9259

STANDARD PROFILES

18 mm



9157



9225



9585

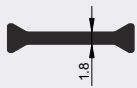


9450



9458

18,6 mm



9058



9144



9186



9310



9332



9556

19 mm



9316



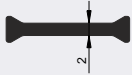




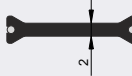













9317

STANDARD PROFILES

20 mm

20,6 mm

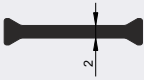

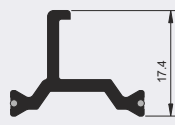
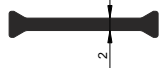
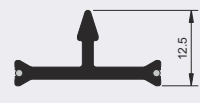
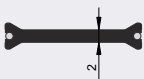


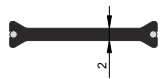

















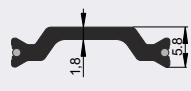
21 mm

 <p>9039</p>	 <p>9172</p>	 <p>9411</p>	 <p>9275</p>	 <p>9377</p>
 <p>9060</p>	 <p>9176</p>	 <p>9410</p>		 <p>9378</p>
 <p>9326</p>	 <p>9429</p>	 <p>9289</p>		 <p>9393</p>
 <p>9079</p>	 <p>9308</p>	 <p>9175</p>		
 <p>9203</p>	 <p>9146</p>	 <p>9171</p>		

STANDARD PROFILES

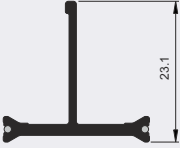



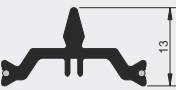
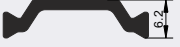



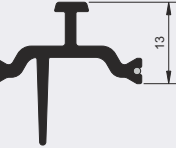
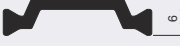



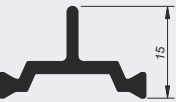










22 mm

24 mm

				
9019	9204	9205	9029	9220
				
9191	9412	9273	9044	9126
		22,6 mm		
9238	9413		9346	9027
		9360		
9108	9274		9446	9185
		9362		
9268	9409		9069	9447
		9361		
9206	9237	23 mm		
				
			9584	

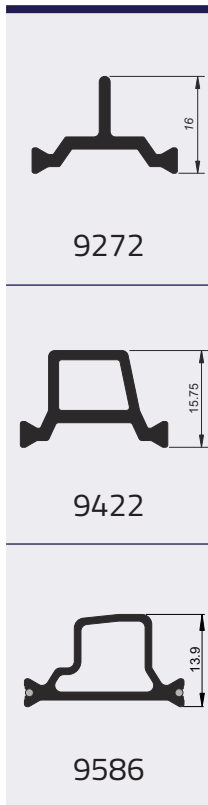
STANDARD PROFILES

24 mm

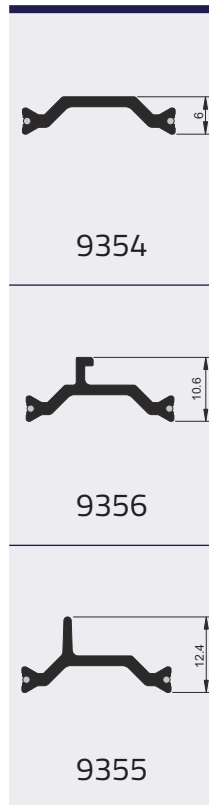
 9303	 9161	 9363	 9211	 9387
 9486	 9388	 9280	 9246	 9444
 9174	 9066	 9386	 9162	 9288
 9184	 9170	 9247	 9430	 9301
 9300	 9370	 9431	 9279	 9472

STANDARD PROFILES

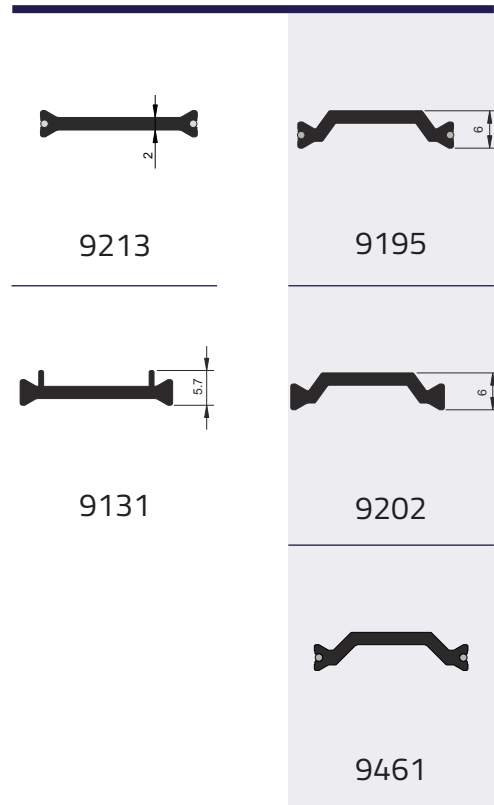
24 mm



24,5 mm



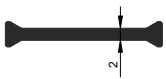




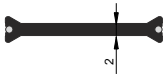


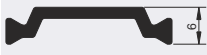


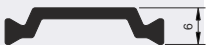


25 mm



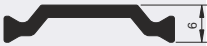
STANDARD PROFILES

26 mm

27 mm

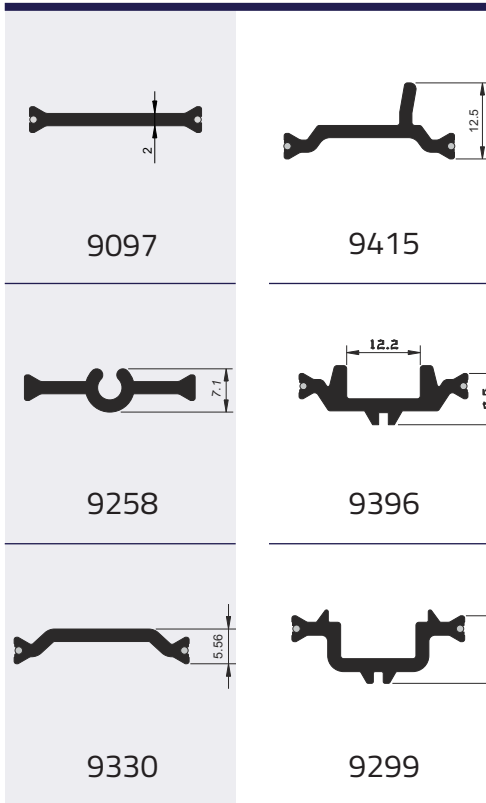
				
9037	9336	9240	9158	9340
				
9224	9334	9349	9451	9452
				
9218	9348	9241	9341	

27,5 mm

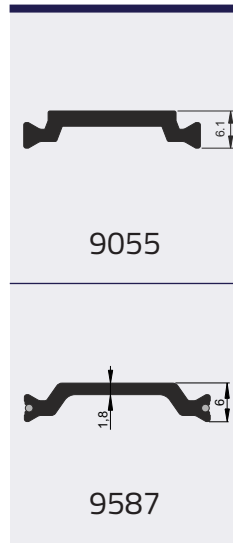

9196

STANDARD PROFILES

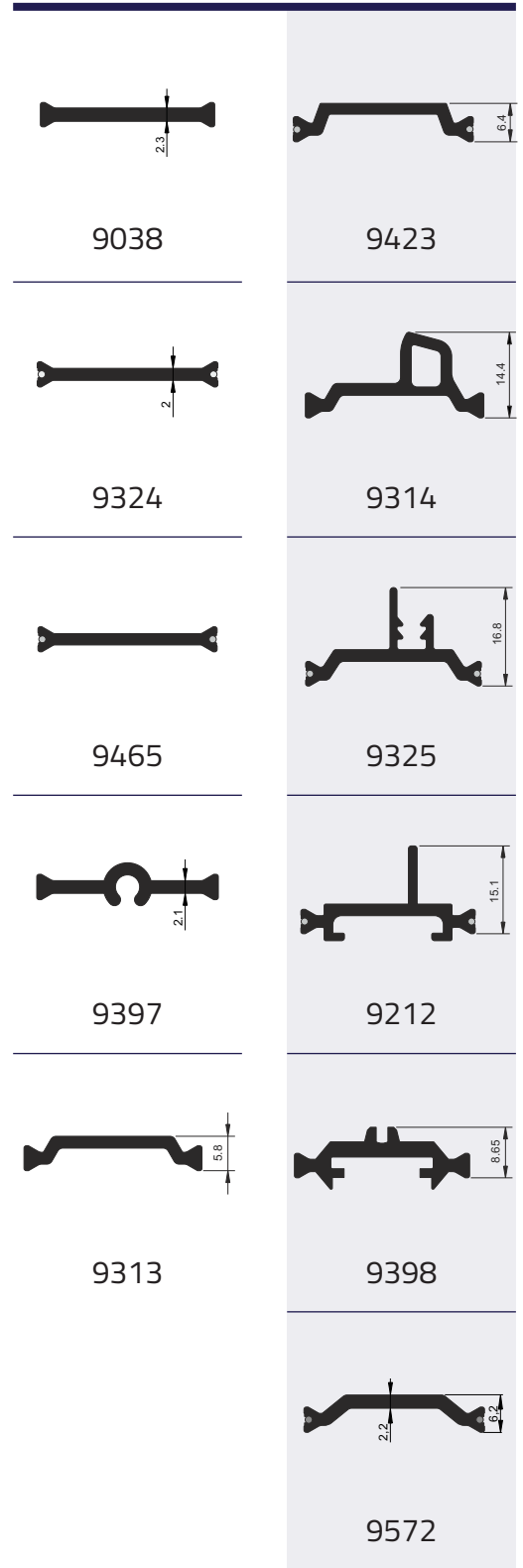
28 mm



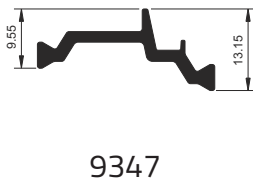
29 mm



30 mm

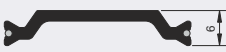
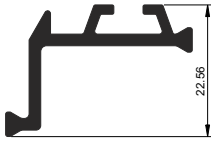
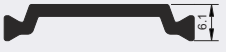

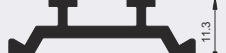






28,6 mm




STANDARD PROFILES

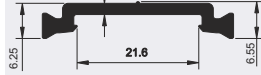

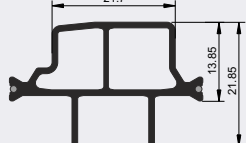




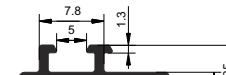






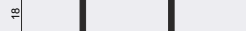

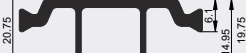
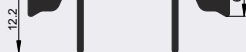
32 mm

 9478	 9271
 9270	 9477
 9380	 9503
 9381	 9570
 9406	

33 mm

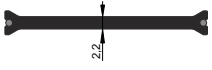
 9588

34 mm

 9088	 9555	 9527
 9366	 9505	 9528
 9367	 9506	 9537
 9368	 9493	 9538
 9095	 9509	 9539
	 9526	 9549
		 9550

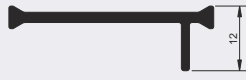
STANDARD PROFILES

36 mm



9569

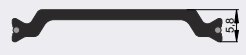
38 mm



9400

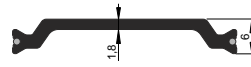


9418



9574

39 mm



9589

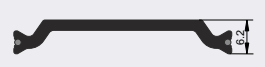


9454



9455

40 mm



9547



9548

39,3 mm

45 mm

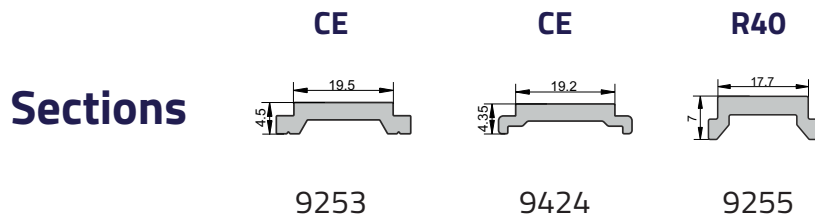
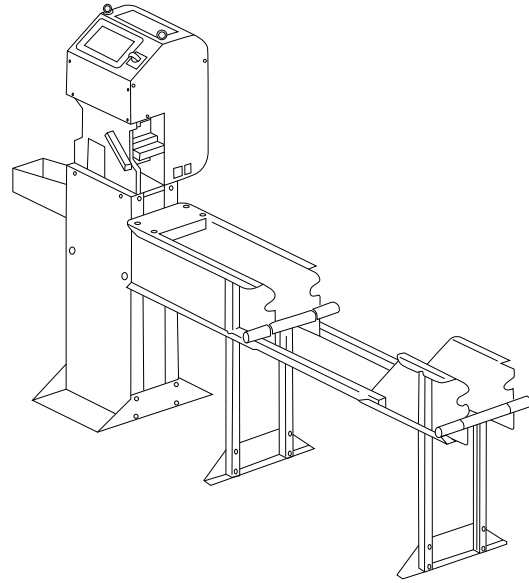


9568

CREMONESE ROD

Alfa Solare was the **inventor** of the **cremonese rod** made of **polyamide**, supplying it in rolls for **easier** assembly management.

This solution **saves space, time** and **eliminates waste** by gaining time in the production of a window.

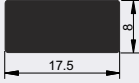



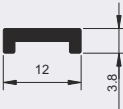



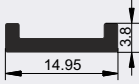

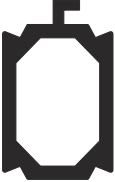


Cremonese Rod

Our standard proposals for cremonese rod:

Article	90/H16 m. x roll	90/H8 m. x roll	Blister Roll m. x roll	Boxes 11x11 pcs x box
CE 9253	250	250	250	100
CE 9424	250	250	250	100
R40 9255	200	200	200	100
Packaging	12 rolls x pallet 12 pallets x truck	16 rolls x pallet 10 pallets x truck	18 rolls x pallet 12 pallets x truck	15 boxes x pallet L max 3000

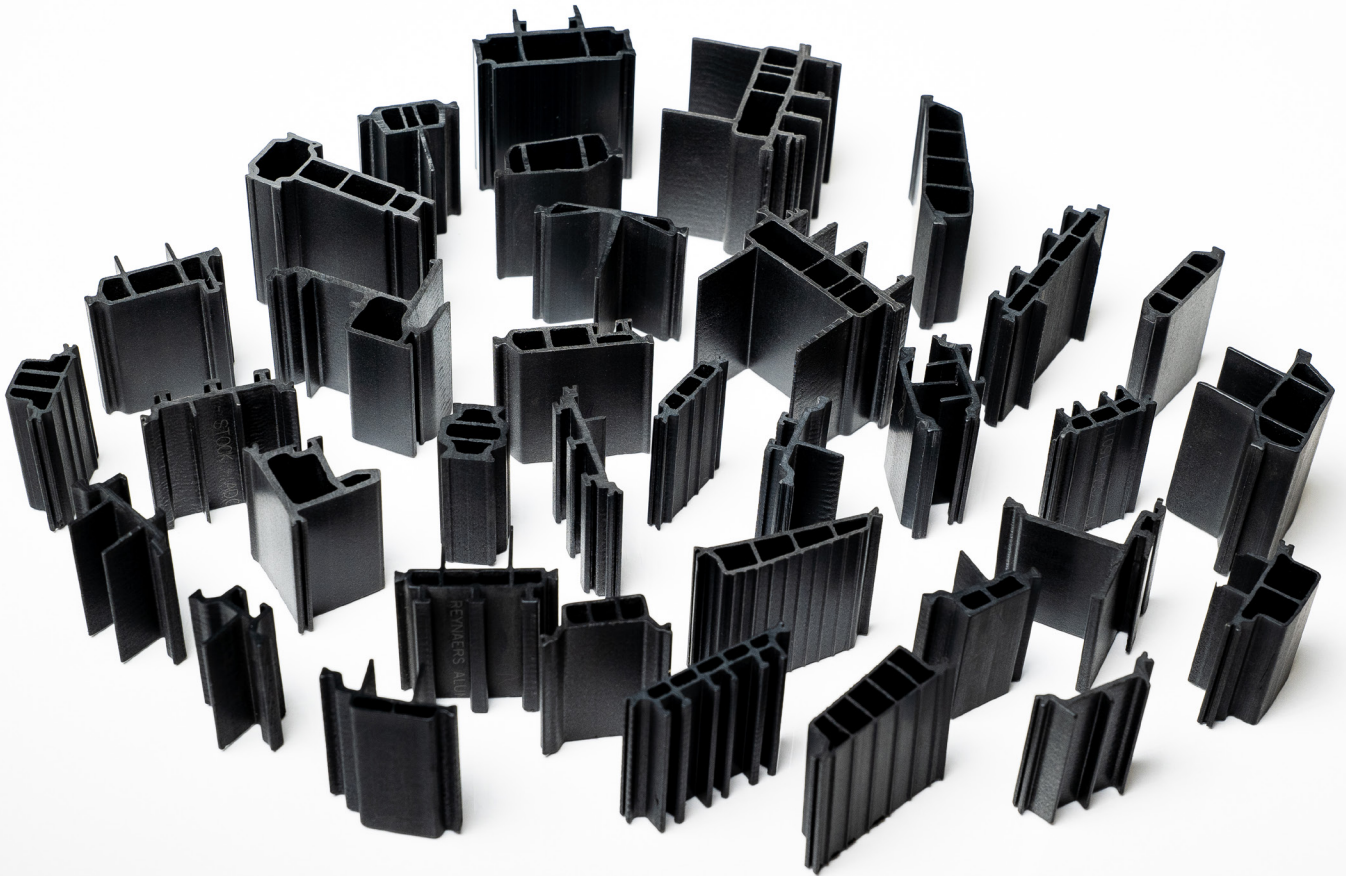
SPECIAL PROFILES

 <p>9426</p>	 <p>9024</p>	 <p>9375</p>	 <p>9376</p>
 <p>9103</p>	 <p>9140</p>	 <p>9392</p>	 <p>9394</p>
 <p>9294</p>	 <p>9416</p>		 <p>9407</p>



30

**ALFA
THERM**



The product range Alfa Therm

For several years now, **Alfa Solare** has been proudly producing a material that is currently used in the world's highest thermal performance windows: **PPE/PA**, commercially known as **Noryl**.

It is an **alloy** between **polymers composed of polyphenyleneoxide, polystyrene and PA**. **PPE/PA** has excellent **mechanical properties, water resistance, light weight, chemical resistance and impact resistance** at both **high and low temperatures**.

Other features that make it particularly attractive are its **low density** and **consequent reduction** in the **coefficient of thermal transmission** compared to, for example, **PA**,

allowing a significant increase in **thermal insulation** and **improved coatability** of the product.

This product also has **lower hygroscopicity**, making it much **more suitable** for powder coating. In fact, **Alfa Therm** has also been approved by **Qualital** (Italian branch of Qualicoat).

Composition:

PA/PPE with **20%** glass fiber.

Lambda: 0,18 W/(m• K).

Can be used indoors and outdoors, UV-resistant.

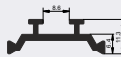
EXISTING PROFILES

Here are some **Alfa Therm** profiles available in our **standard range**:

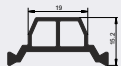
32 mm



3414

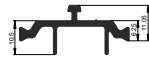


3415



3416

34 mm



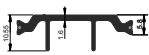
3348



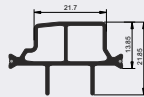
3349



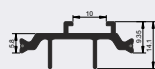
3350



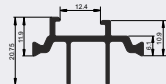
3351



3352



3353



3355



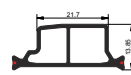
3356



3360



3361



3362

38 mm



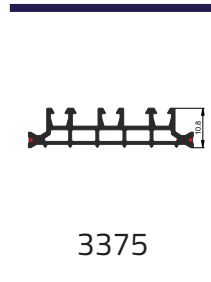
3412

EXISTING PROFILES

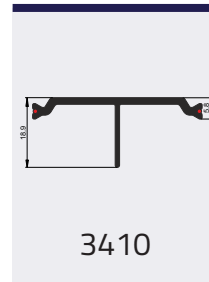
40 mm



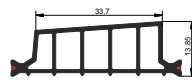
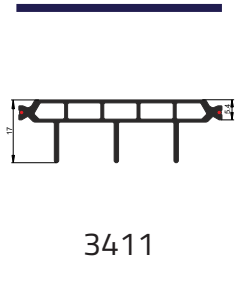
45 mm



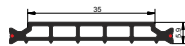
46 mm



55 mm



3376



3377



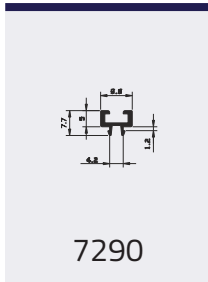
04

**SPECIAL
PROFILES FOR
FACADES**

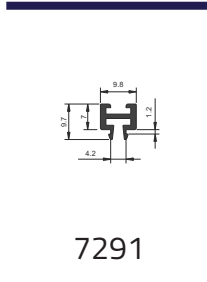
SPECIAL PROFILES FOR FACADES

In addition to thermal break window manufacturers, **Alfa Solare** also cooperates with major curtain wall manufacturers. Therefore, in addition to **customized solutions** we have a range of **standard solutions** in **different geometries** and **materials**:

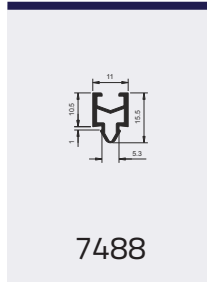
5 mm



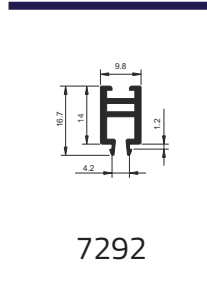
7 mm



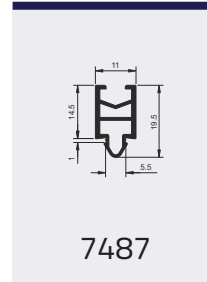
10,5 mm



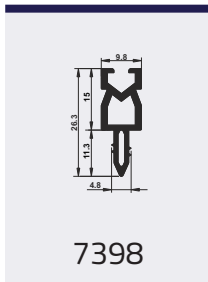
14 mm



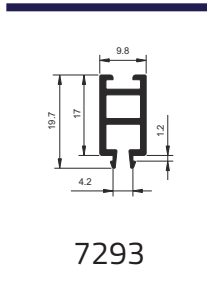
14,5 mm



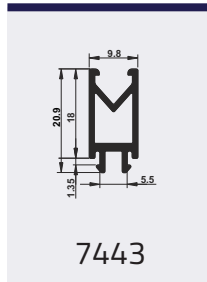
15 mm



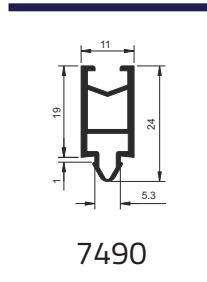
17 mm



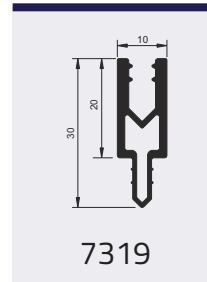
18 mm



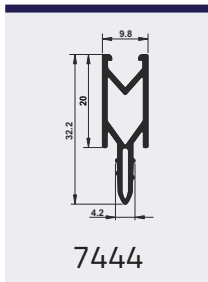
19 mm



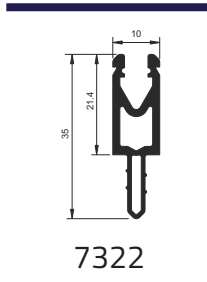
20 mm



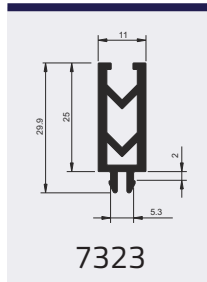
20 mm



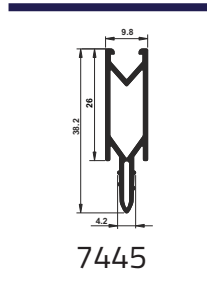
21,4 mm



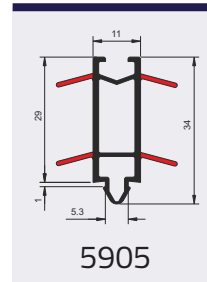
25 mm



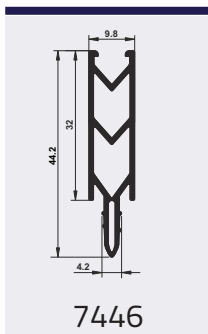
26 mm



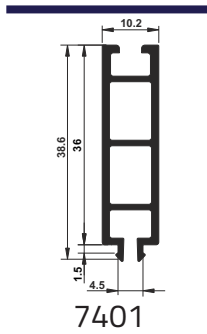
29mm



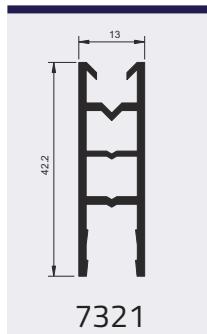
32 mm



36 mm

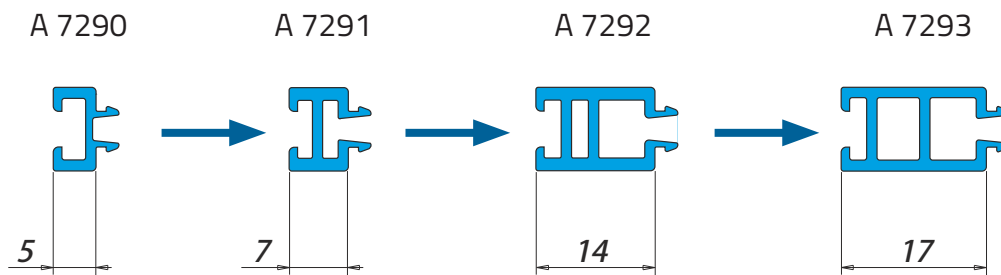


42,2 mm



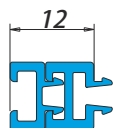
SPECIAL PROFILES FOR FACADES

Here is also a modular solution designed by Alfa Solare.

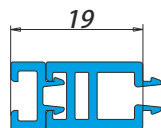


Modular solutions A.

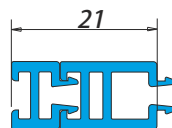
A 7290 + A7291



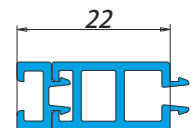
A 7290 + A7292



A 7291 + A7292

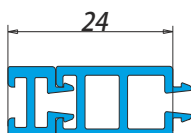


A 7290 + A7293

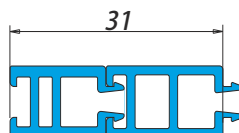


Modular solutions B.

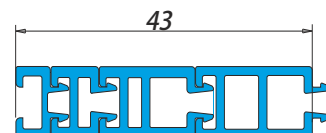
A 7291 + A7293



A 7292 + A7293



A 7290 + A7291 + A7292 + A7293





50

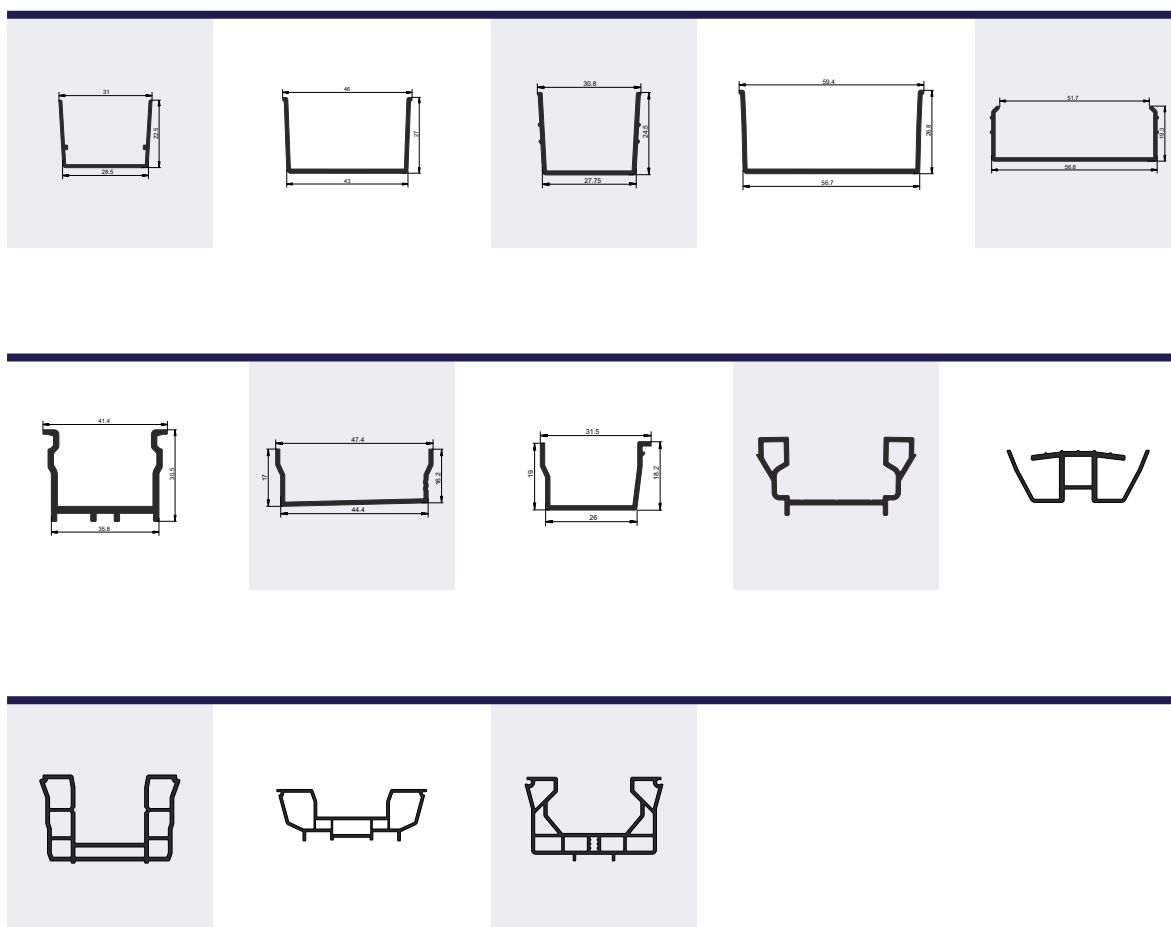
**SPECIAL
PROFILES FOR
SLIDING
SYSTEMS**

SPECIAL PROFILES FOR SLIDING SYSTEMS

Alfa Solare is able to offer solutions for **thermal break sliding systems**, even **customized** and totally **tailor-made**.

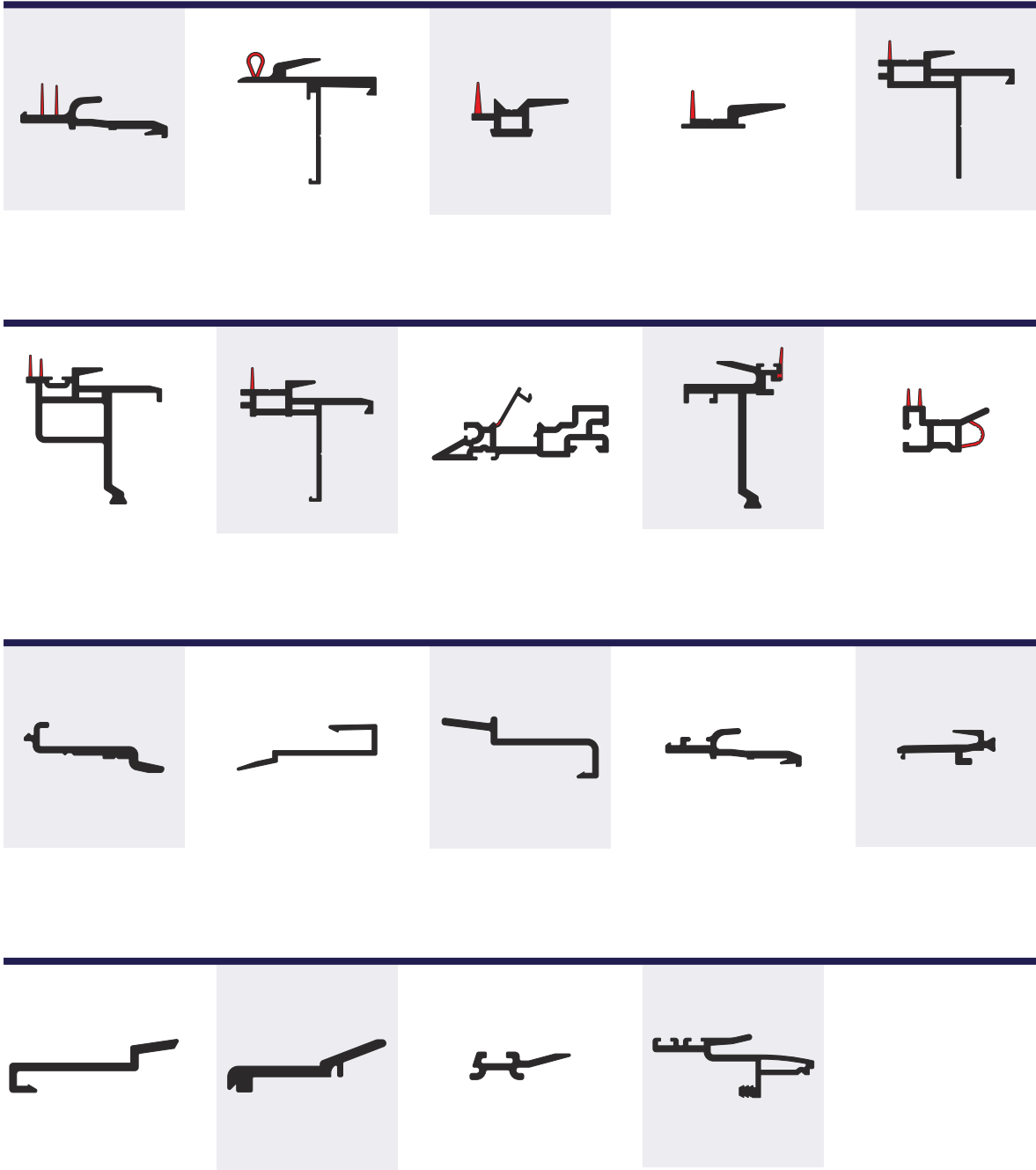
Alfa Solare also has the following solutions in different geometries and materials for **channels** and **chicanes**.

CHANNELS



SPECIAL PROFILES FOR SLIDING SYSTEMS

CHICANES





60

**INDUSTRIAL
SOLUTIONS**

Alfa Solare has always proposed itself as a partner and not just as a mere supplier.

For this reason, in the study of solutions we always try to propose **customized solutions** to the customer that also aim, when possible, at the **optimization** of production processes, industrializing them.

Below are some **examples**:

A. TPE CORNER GASKETS

TPE cutting and welding machine

Alfa Solare has developed with **OEMME** a gasket **welding machine** with which gasket frames can be **prepared industrially** and installed directly on site.



From **ARTISAN** to **INDUSTRY**

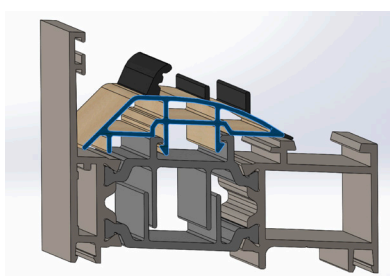
B. ABS SOLUTIONS

Coextruded ABS/TPE

Alternative solution in terms of **thermal performance** to **EPDM foam gaskets** that necessarily have **greater thicknesses** (e.g., 2.5mm).

Central gasket in **ABS** with a thickness of **0.8mm** with **lambda 0.14 W/(m- K)**.

This profile can be **clipped to 6.5m bars**, helping to **save time** during installation.

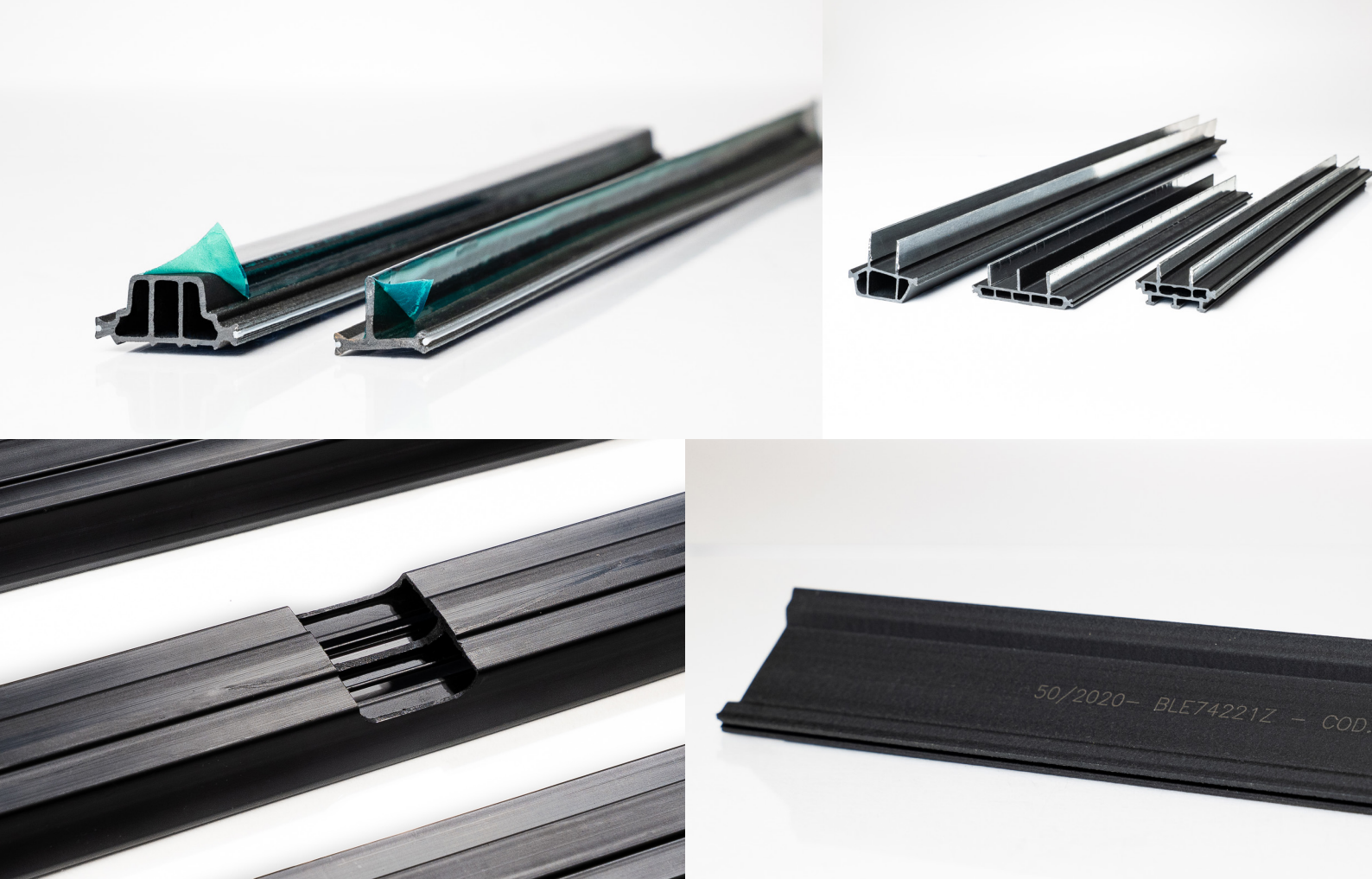


Profiles



07

**MECHANICAL
AND
ACCESSORY
MACHINING**



Mechanical and accessory machining

Alfa Solare is able to supply not only the extruded product, but also a **wide range of accessory machining**. In this way, the extruded product is transformed into a **finished component** by also performing assemblies.

We can machine parts **up to 6.5 meters long** and **perform complex machining** with up to **five axes**, with **very tight tolerances**.

Machining can be done **in-line or off-line**, on processing machines.

Alfa Solare can offer its products with:

- **In-line marking.**
- **In-line machining such as milling, with no extra cost.**
- **Application of protective film for powder coating.**
- **Application of low-emissivity aluminum foil.**
- **Any other off-line processing.**



80

**ALFA
ECO LINE**



Alfa Solare's approach toward **sustainability**

Alfa Solare Group is constantly pushing its research toward increasingly **high-performance materials**, with the goal of **improving** the **energy savings** of thermal break windows.

Over **more than 30 years** of its history, **Alfa Solare Group**, by distributing millions of meters of Polyamide, ABS, TPE, PVC and PE foams to the market, has certainly contributed to **reducing energy consumption** for heating and cooling. But now this alone is not enough and we need to go one step further.

With the knowledge that plastics are derived from **fossil fuels**, **Alfa Solare** wants to

contribute to the **reduction** of the use of **non-renewable energy sources** by choosing **innovative raw materials** with the **lowest possible impact on emissions**, thanks to our **ECO-LINE** production line.

Alfa Solare Group's R&D department is always looking for **specific products** with these characteristics.

We strongly believe that our and your efforts can also contribute to **improving the future** of our planet.

There are different types of approaches to sustainability in the plastics market:

1. MECHANICAL RECYCLING

It involves the **mechanical transformation** of plastic objects, collected as waste, into **secondary raw materials** for the production of new objects. The quality of the products obtained will depend heavily on the **quality of the selection** made on the product to be **recycled**. For this reason, efforts are made to continuously improve the selection techniques of **recycling materials** in order to obtain increasingly “clean” fractions of homogeneous materials.

Alfa Solare is able to produce products in which the content of **recycled plastics** can reach **100%**, while maintaining the performance of the products themselves. The recycled material content can be **certified**.

Options currently available are:

- **ALFA MID (PA)** already ATG certified, with up to 100% recycled PIR content;
- **ALFA PRO (ABS)** with a recycled PIR content of up to 85%. It is also possible to have a material with a PCR recycled content.
- **ALFA TECH (PVC)** with recycled material is also available..

2. BIOMASS APPROACH FOR A BIOBASED PRODUCT

It is also possible to have **ALFA PRO (ABS)**, **ALFA ASA (ASA)**, and **ALFA THERM (Noryl)** based on **bionaphtha produced from biobased feedstocks** (e.g., vegetable oils); based on **bionaphtha produced from biobased and circular feedstocks** (e.g., waste fats); or **based on circular feedstocks** (r-oil or chemical recycling oil).

The resulting products offer identical performance, quality, and properties, not differing from standard products in terms of **chemical composition** and **physical and mechanical performance**, with **greenhouse gas emission** savings of up to **55%** compared to, for example, **ABS** with **fuel derivatives**, and up to **70%** when used with **organic** and **circular origin**.

These products have a **sustainability statement**, which indicates the amount of bio, bio-circular, or circular components, and which is **guaranteed by ISCC PLUS certification** obtained through the mass balance approach for the production of monomers, intermediates, polymers from sustainable raw materials, bionaphtha, and recycling chemicals.



ISO

**PRODUCT AND
PROCESS
CERTIFICATIONS**

PRODUCT AND PROCESS CERTIFICATIONS

All **Alfa Solare** processes and products are certified by accredited external laboratories in accordance with European standards.

IFT ROSENHEIM, CSTB & CSTC

Alfa Solare insulation profiles are international quality products tested by specific Institutions:

- **IFT Germany**
- **UBAtc Belgium**
- **CSTB France**
- **Qualital Italy**

Our range of thermal break products, ALFAMID® and ALFAPRO®, has been awarded **ATG** product certification by the Belgian branch **UBAtc**.

ALFATECH® thermal break products in PVC have obtained French **NF132 certification**.

In addition, **Alfa Solare** has already achieved **SILVER LEVEL** of the **Cradle to Cradle™ Material Health Certification** for **ALFA THERM**, **ALFA PRO** and **ALFA ASA**. We will soon obtain the same certification for **ALFA MID**.

We are also looking forward to receiving **EPD (Environmental Product Declaration)**, a certificate describing the environmental impacts associated with the production of a given product) for ALFA MID (PA), ALFA THERM (Noryl), ALFA PRO (ABS) and ALFA ASA (ASA).

For more information, please feel free to contact us: alfasolare@alfasolare.com

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**TECHNICAL
DATA SHEET**

ALFA TECH “NF132”

Technical data sheet Alfa - Tech – PVC -U certified NF132

Technical information	Standard	UM	Value		
Color			Black	White	Grey
Certification code			s55	s54	s56
Specific weight	ISO 1183	gr/cm ³	1,45±0,02	1,49±0,02	1,49±0,02
Hardness	ISO 868	Shore D	81	81	81
Tensile strength	ISO 37	N/mm ²	>37	>37	>37
Elongation at break	ISO 37	%	>100	>100	>100
Flexural modulus	ISO 178	N/mm ²	3100±310	3100±310	3250±325
VICAT Softening temperature 5kg	ISO 306	°C	79,1±2	78,5±2	3200±320
Linear thermal expansion Coefficient CLTE	ISO 11359-2	10 ⁻⁵ K ⁻¹	c.a. 7,1 (1) c.a. 8,9 (t)	c.a. 8,9 (t)	c.a. 7,1 (1) c.a. 8,9 (t)
Thermal conductivity Coefficient	ISO 10456	W/m*k	0,17	0,17	0,17
Inflammability	UL94	Class	V0	V0	V0

Material stabilized with Ca/Zn, in line with the European RoHS Directive 2002/95/CE.

NOTES: The above mentioned technical characteristics derived from our laboratory tests or bibliography, and these have to be considered indicative and not strictly binding.

ALFA MID

Plastic insulations bars, with the designation ALFA MID, are suitable for use as a thermal barrier in thermal break metal profiles, according to EN 14204.

MAXIMUM VALUES OF ALFA MID MATERIAL (polyamide 6.6 25% GF)

Technical information	Standard	UM	Value
Composition			PA 6.6 25 +/-3% GLASS FIBER
Density	ISO 1183	gr/cm ³	1,30±0,05
Color			BLACK /WHITE
DSC melting point	ISO 3146	°C	>260
Heat deflection temperature under load HDT 1.8Mpa	ISO 75-2	°C	c.a. 255
Thermal conductivity coefficient	EN ISO 10077-2	W/m*K	0,3
Linear thermal expansion coefficient (23°C a 85°C)	ISO11359-2		c.a. 2,8*10 ⁻⁵ K ⁻¹
Fire classification	UNI EN13501-11:2019		Class E
Flammability	UL94		HB

MECHANICAL PROPERTIES OF THE EXTRUDED PROFILE ¹

Tests	Standard	UM	D.A.M. value ²	Cond. Value ³
Tensile strength at break	ISO 527 - 4	N/mm ²	> 75	>50
Tensile modulus	ISO 527 - 4	N/mm ²	> 4500	> 2500
Elongation at break	ISO 527 - 4	%	> 3	> 7
Charpy notched impact strenght	ISO 179/1 2fU	KJ/m ²	> 35	> 60
Water absorption (24h + 23° C)	ISO 62	%	> 1,2	//
Ash - Black color	ISO 3451-4	%	25±3	//
Ash - White color	ISO 3451-4	%	27±3	//
Hardness	ISO 868	ShD	83±3	> 74

It's not possible to guarantee the stability of white color if the product is used into the powder coating oven.

¹ Profiles can be supplied with recycled polyamide of post-industrial origin PIR.

² d.a.m. = dry as moulded - Values found on the dry extruded profile.

³ cond. = conditioned according to ISO 110 - Values found at the state of equilibrium in the standardized conditions)

Material should be stored at around 20°C and 50% HR.

ALFA ASA

Technical data sheet Alfa ASA - Acrylonitrile Styrene Acrylate

C2C Certified Material Health Certificate™ Silver Level Version 3.1 (Expire date 9 Feb. 2026)

<https://c2ccertified.org/certified-products/alfa-asa>

Technical information	Standard	UM	Value
Density	ISO 1183	gr/cm ³	1,06
VICAT Softening Temperature - 5 Kg - 50° /h	ISO 306	°C	96
Heat deflection temperature under load HDT, 1.8Mpa	ISO 75	°C	81
Flexural strength 23°C	ISO 178	N/mm ²	70
Flexural modulus 23°C	ISO 178	N/mm ²	2200
Tensile strength at YELD	ISO 527	N/mm ²	48
Tensile modulus	ISO 527	N/mm ²	2300
Tensile elongation at YELD	ISO 527	%	>5
Tensile elongation at break	ISO 527	%	>30
Izod notched impact strength 23°C	ISO 180/1A	KJ/m ²	20
Charpy notched impact strength 23°C	ISO 179/1eA	KJ/m ²	30
Linear thermal expansion coefficient CLTE: (-20°C/+80°C)	ISO 11359-2	10 ⁻⁵ K ⁻¹	c.a. 8,8
Thermal conductivity coefficient	EN 12664	W/m*k	0,16
Flammability	UL94	Class	HB

Good weatherability - High stiffness

NOTES: The above mentioned technical characteristics comes from our laboratory tests or bibliography, and these have to be considered as indicative and not strictly binding.



ALFA PRENE-S

Technical data sheet Alfa - PRENE - THERMOPLASTIC ELASTOMER TPE-S

Technical information	Standard	UM	Value
Density 23°C	ASTM D792	gr/cm ³	1,02
Hardness 3"	ASTDM D2240	ShoreA	62
Tensile strenght	ASTM D412-C	MPa	10
Elongation at break	ASTM D412-C	%	540
Modulus 100%	ASTM D412-C	MPa	2,2
Tension set	ASTM D412	%	6
Tear strenght 23°C	ISO 34-1 B	N/mm	34

Material suitable for the co-extrusion with ABS material.

NOTES: The above mentioned technical characteristics comes from our laboratory tests or bibliography, and these have to be considered as indicative and not strictly binding.

ALFA TECH "A"

Technical data sheet ALFA TECH - PVC - U shockproof

Technical information	Standard	UM	Value
Specific weight	ISO 1183	gr/cm ³	1,45
Hardness	ISO 868	Shore D	76,5
Tensile strength	ISO 37	N/mm ²	35
Elongation at break	ISO 37	%	100
Flexural modulus	ISO 178	N/mm ²	2000
VICAT Point - 5Kg	ISO 306	°C	78,5
Impact strength	ISO 180	J/m	1100 (+23 °C) 150 (0 °C) 100 (-15 °C)
Linear thermal expansion coefficient CLTE	ISO 11359-2	10 ⁻⁵ k ⁻¹	c.a. 7,1 (l) c.a. 8,9 (t)
Thermal conductivity coefficient	EN 12667	W/m*k	0,17
Flammability	UL94	Class	V0

Material suitable for external use, modified with CPE.

Material stabilized with Ca/Zn, in line with the European RoHS directive 2002/95/EC.

NOTES: The above mentioned technical characteristics comes from our laboratory tests or bibliography, and these have to be considered as indicative and not strictly binding.

ALFA THERM

Plastic insulation bars, made of Alfa Therm material, are suitable for use as a thermal barrier in thermal break metal profiles, according with EN 14024

PHYSICAL/ THERMAL CHARACTERISTICS OF ALFA THERM MATERIAL

Technical information	Standard	UM	Value
C2C Certified Material Health Certificate™ SILVER Version 4.0 (Expire date 10 April 2027) https://c2ccertified.org/certified-products/alfatherm			
Composition			PPE/PA
Density	ISO1183	gr/cm ³	1,05 ± 0,15
Moisture absorption 23° C/ 50 HR	ISO62	%	1,1
Glass content	ISO1172	%	20 ± 3
Color			Black
Glass transition temperature	ISO11357 - DSC		
VICAT softening temperature - 5kg	ISO 306	°C	> 230
Melting point DSC	ISO 11357-3	°C	> 245
Heat deflection temperature under load HDT, 0,45Mpa	ISO 75/Bf	°C	c.a. 235
Thermal conductivity coefficient (extruded profiles)	EN ISO 10456	W/m*K	0,18
Linear thermal expansion coefficient (from -20°C to +80°C)	ISO 11359-2		c.a. 3 (flow) - 9,9 (x flow) *10 ⁻⁵ K ⁻¹
Flammability	UL94		HB
Fire resistance classification for building products	EN 13501-1		Class E

MECHANICAL CHARACTERISTICS

Tests	Standard	UM	Dry Value	Conditioned value
Tensile strenght at Yield	ISO 527-2	N/mm ²	>55	>50
Tensile modulus	ISO 527-2	N/mm ²	>3500	>3000
Flexural modulus	ISO178	N/mm ²	5000	//
Tensile elongation at break	ISO 527-2	%	> 2	> 3
Izod Notched impact strenght - +23° C	ISO 180/1A	KJ/m ²	7* +23°C 6* -30°C	//
Charpy notched impact strenght	ISO 179/1eA ISO 179/1eU	KJ/m ²	8* > 30	// > 35
Hardness	ISO 868	ShD	79±5	77±5

The profile can be assembled before surface finishing processes (such as painting, anodizing, etc.).

Profiles made of Alfa Therm, due to their own characteristics, allow an excellent result in powder coating.

The material should be stored at 20°C and 50% HR.

Avoid placing excessive weights on the stored material to prevent the formation of permanent deformation.

Alfa Therm product has good resistance to the main chemical agents.

ALFA PRO

Plastic insulations bars, made of Alfa PRO, are suitable for use as a thermal barrier in thermal break metal profiles, according to EN 14024, respecting the usage limitations below indicated.

PHYSICAL/ THERMAL CHARACTERISTICS OF ALFA PRO MATERIAL

Technical information	Standard	UM	Value
C2C Certified Material Health Certificate™ Silver Level Version 3.1 (Expire date 09 Feb. 2026) https://c2ccertified.org/certified-products/alfapro			
Composition			ABS
Density	ISO1183	gr/cm ³	1,02 ± 0,07
Color			Various
Glass transition	ISO11357 - DSC	°C	c.a. 116
Vicat softening temperature – 5kg	ISO306	°C	> 95
Heat deflection temperature under load HDT, 1,8Mpa	ISO 75-2	°C	c.a. 83
Heat deflection temperature under load HDT, 0,45Mpa	ISO 75-2	°C	c.a. 95
Thermal conductivity coefficient	EN 10456	W/m*K	0,139
Linear thermal expansion coefficient (da -20°C a +80°C)	ISO 11359-2		c.a. 8,5*· 10 ⁻⁵ K ⁻¹
Flammability	UL94		HB

MECHANICAL CHARACTERISTICS OF EXTRUDED PROFILE

Tests	Standard	UM	Value
Tensile strength at YELD	ISO 527-2	N/mm ²	>35
Tensile modulus	ISO 527-2	N/mm ²	>1500
Flexural modulus	ISO178	N/mm ²	2800
Tensile elongation at break	ISO 527-2	%	> 10
Izod notched impact strenght	ISO 180/1A	KJ/m ²	> 10
Charpy notched impact strenght	ISO 179/1 2fU	KJ/m ²	> 10
Hardness	ISO 868	ShD	75±5

The profile has to be assembled after surface finishing processes (such as powder coating, anodizing, etc.).

Avoid placing excessive weights on the stored material to prevent the formation of permanent deformation.

ALFA PRO

BEHAVIOR AND RESISTANCE IN CONTACT WITH SOME CHEMICAL AGENTS

CHEMICAL AGENT	VARIATION
Sulphuric Acid	⊖
10% Sulphuric Acid	⊕
Nitric Acid conc.	⊖
40% Nitric Acid	⊖
10% Nitric Acid	⊕
Hydrochlo-ric Acid conc.	⊖
10% Hydrochlo-ric Acid)	⊕
6% Chromic Acid	⊕
50% Caustic Soda	⊕
10% Salt solution	⊕
10% Liquid ammonia	⊕
Benzene	⊖
Toluene	⊖
Phenol	⊖
Cresol	⊖
DMF - Dimethyl Formamide	⊖
Methyl-ether	⊖
Gasoline	⊖
White kerosine	⊖
Stearic Acid	⊕*
Freon Gas	⊕*
Distilled water	⊕
DOP - Dioctyl Phthalate	⊕*
Glacial Acid Aceti	⊖
5% Acid Acetic	⊕
Glicerin	⊕*
Butanol - Butyl Alcohol	⊕*
Isopropyl Alcohol	⊕*
Carbon tetrachlor-ide	⊖
Chloroform	⊖
95% Ethanol	⊖*
50% Ethanol	⊕
Acetone	⊖
Methyl-ethyl-ketone	⊖
Oil Machine	⊕*
Silicon oil	⊕*
Grease	⊕*
Formate	⊕*
Break oil	⊖*

LEGEND

- ⊕ Absolutely no variation in appearance and Strength
- ⊖ Slight variation in appearance and Strength
- ⊖ Significant variation in appearance and Strength
- * Crack may appear as time elapses when residual stresses are present and when the parts are subjected to oil)



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