

TRIGLASS™ fibreglass profiles incorporate high electrical insulation properties which make them irreplaceable in the production of such high voltage equipment as dry type transformers, electric motors and reactors. We keep a consistent stock of a variety of forms and dimensions in our warehouse.



- ELECTRICAL INSULATION
- THERMAL CLASS H
- WAREHOUSE READY
- WELL TESTED
- CUSTOM CUT
- FLAME RESISTANT, LOW SMOKE AND TOXICITY

ELECTRICAL PROFILES

MATRICES AND REINFORCEMENTS

A **polyester matrix** is mainly used for electrical applications due to the fact that it guarantees **Thermal Class H** performance – and this is essential in ensuring the durability of transformers, reactors and electrical motors. In addition, polyester guarantees appropriate **electrical insulation**. The fibreglass reinforcement used represents a specific roving for solid profiles. These sections can also be tailor-made by using **special matrices** and reinforcements to meet the precise needs of our customers. Furthermore, **special profiles** with different sectional geometries can also be delivered.



APPLICATION

Electrical profiles are used in **dry type transformers, reactors** and **electric motors**.

Depending on their section, they can be used to either protect the core edges (corner pieces) or they can be arranged at regular intervals on the faces of the core (dog bone).

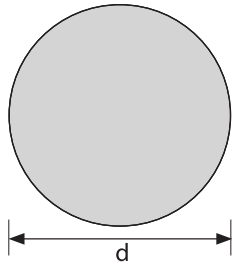
They are designed to provide support and electrical **spacing for the windings**, while simultaneously ensuring ventilation channels. Their fundamental advantage is the **outstanding electrical insulation** capacity that they provide, are **easy to install** and entirely **maintenance-free**. This makes them an ideal material for use in the above described products, where significant electrical currents are handled. In addition, they ensure **Thermal Classes F and H** (operating temperatures of 155°C and 180°C respectively) depending on the polymer used in their matrix.

The profiles can also be produced halogen-free, with **UL 94V0 flammability rating**.

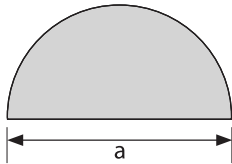
All profiles meet the requirements set out by the European Directive **RoHS 2002/95/EC**, which relates to hazardous substances content. All of our electrotechnical profiles are subjected to extensive **laboratory testing** guaranteeing that they will successfully meet the stated technical specifications. At Top Glass, we keep a wide range of these profiles **in stock** to ensure that we can meet customer orders efficiently and if required, profiles can also be **custom cut** before packaging.



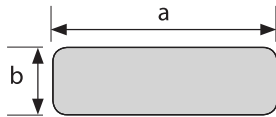
ELECTRICAL PROFILES



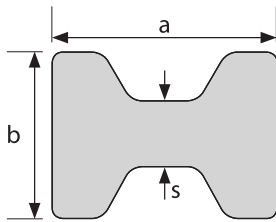
RODS	
d	d
*8	*16
*10	*18
*12	*20
13	*24
*14	



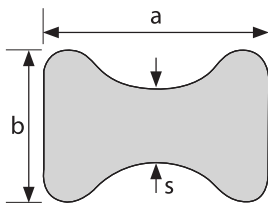
HALF-ROUND			
a	a	a	a
*3	*8	13	20
*4	*9	14	22
*5	10	15	24
*6	11	16	
*7	*12	18	



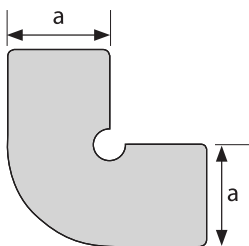
FLAT PROFILES			
a	b	a	b
5	3	15	1,5
6	5	15	5
7	3	*18	2
13	8	17	12
15	1,25	20	15



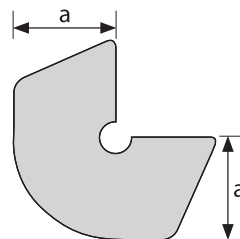
REINFORCED DOUBLE-T					
a	b	s	a	b	s
8	6	2	*16	14	3
10	8	2	*18	16	3
12	10	2,5	20	18	4
*14	12	2,5	*22	20	4



DOGBONES					
a	b	s	a	b	s
*8	6	2	*16	12	6
*10	8	4	*16	13	6,5
*11	10	4	*17	12	4
*12	10	5	*18	14	7
*13	10	5	*19	12	4
*14	10	5	*20	16	8
*15	10	4	*24	16	8



CORNER SECTIONS
a
*6
*8
*10



CORNER SECTIONS
a
*7
7,1
*12
*16

* = in stock – nominal dimensions in mm

ELECTRICAL PROFILES

TRIGLASS™ Fibreglass profiles can be used for a wide range of applications in the electrical industry. The most popular lengths for all of the sections and measures specified in the previous tables are **kept in stock** at our warehouse. And for ease, they are **pre-packaged** in amounts that conform to handling requirements (weight). For lengths required that are shorter than our standard stock, the profiles can be cut and re-packaged. In addition, **longer lengths** can be produced to directly meet the requirements of our customers. The thinner and more flexible profiles can now be wound onto continuous spools. This will allow the customer to cut them to meet their precise requirements.



The table below details the **physical and chemical properties** of the polyester matrices of Top Glass electrotechnical profiles.

PHYSICAL AND CHEMICAL PROPERTIES OF ELECTROTRCHNICAL MATERIALS			
PROPERTY	UNIT	TEST METHOD	TEST RESULT
Water absorption	% by weight	ISO 62	0,15
Dielectric strength	kV/mm	ASTM D149	5
Surface electrical resistivity	Ω	ASTM D257	10^{12}
Dielectric constant at 50 Hz	—————	ASTM D150	5
Loss factor at 50 Hz	tg δ	ASTM D150	0,035
Insulation class	—————	—————	F/H
Thermal expansion coefficient	K ⁻¹	ASTM D696	$7,5 \times 10^{-6}$
Thermal conductivity	W/mK	ASTM C177	0,3
Specific weight	g/cm ³	ASTM D 792	1,9
Glass content by weight	%	ISO 1172	65
Tensile strenght	Mpa	ASTM D 638	700
Elastic modulus	Gpa	ASTM D 638	32
Flexural strenght	Mpa	ASTM D 790	700
Flexural modulus	Gpa	full bending	32
Compression strenght	Mpa	ASTM D 695	250
Elastic modulus	Gpa	ASTM D 695	23

• Standard polyester profile average value tolerance: $\pm 10\%$.

To the best of our knowledge, the data contained in this publication is accurate. However, Top Glass does not assume liability for how the data is used.



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