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TECHNICAL DATA

MATERIAL PROPERTIES
TRIGLASS™ PROFILES

TECHNICAL DATA

The table hereunder presents physical-mechanical properties of TRIGLASS™ standard thermosetting pultruded profiles. Afterwards are listed the advantages related to the use of resins different from the standard polyester. The chemical-physical production process allows to combine and change on demand raw materials (rowing, fabrics and resin matrix) and process parameters, to match specific requirements, different from the ones listed in the table.

PHYSICAL-MECHANICAL PROPERTIES				
PROPERTY	TEST METHOD	UNIT	MAT/ROVING/MAT POLYESTER	ROVING POLYESTER
Specific weight	ASTM D792	g/cm ³	1,75	2
Glass content by weight	ISO 1172	%	60	70
Tensile strength	ASTM D638	MPa	400	800
Tensile modulus	ASTM D638	GPa	26	35
Flexural strength	ASTM D790	MPa	400	800
Flexural modulus	full bending	GPa	25	35
Compressive strength	ASTM D695	MPa	220	300
Compressive modulus	ASTM D695	GPa	20	25
Impact strength (CHARPY)	ASTM D5942	kJ/m ²	180	250
Water absorption	ISO 62	%	0,4	0,3
Dielectric strength	ASTM D149	kV/mm	5	3
Surface resistivity	ASTM D257	Ω	10 ¹²	10 ¹²
Coefficient of Thermal Expansion	ASTM D696	K ⁻¹	11 x 10 ⁻⁶	7,5 x 10 ⁻⁶
Thermal conductivity	ASTM C177	W/mK	0,35	0,3

VINYLESTER RESIN	EPOXY RESIN	SELF - EXTINGUISHING
<ul style="list-style-type: none"> • Excellent chemical resistance • Mechanical performances: 5÷10% higher • Better creep and fatigue performances • Better electrical insulation 	<ul style="list-style-type: none"> • Very good chemical resistance • Mechanical performances: 10÷15 % higher • Excellent creep and fatigue performances • Better electrical insulation 	<ul style="list-style-type: none"> • Excellent fire resistance, low smoke emission (halogen free) • Excellent electrical insulation
Average tolerance on mechanical properties referred to longitudinal direction: ± 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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The table hereunder presents physical-mechanical and fire reaction properties of TRIGLASS™ thermosetting pultruded profiles made with polyester or acrylic matrix self-extinguishing.

PHYSICAL-MECHANICAL AND FIRE REACTION PROPERTIES				
CHARACTERISTIC	TEST METHOD	UNIT	POLYESTER SELF-EXTINGUISHING	ACRYLIC SELF-EXTINGUISHING
Specific weight	ASTM D792	g/cm ³	1,8	2
Glass content by weight	ISO 1172	%	60	50
Tensile strength	ASTM D638	MPa	400	300
Tensile modulus	ASTM D638	GPa	26	20
Flexural strength	ASTM D790	MPa	400	300
Flexural modulus	full bending	GPa	25	20
Compressive strength	ASTM D695	MPa	220	150
Compressive modulus	ASTM D695	GPa	20	15
Impact strength (CHARPY)	ASTM D5942	kJ/m ²	180	150
Water absorption	ISO 62	%	0,4	0,4
Dielectric strength	ASTM D149	kV/mm	5	10
Surface resistivity	ASTM D257	Ω	10 ¹²	10 ¹³
Coefficient of Thermal Expansion	ASTM D696	K ⁻¹	11 x 10 ⁻⁶	9 x 10 ⁻⁶
Thermal conductivity	ASTM C177	W/mK	0,35	0,3
Toxicity index	CEI 2037 part 2	/	<2	<1
M classification	NF P 92-501	Class	M3	M1
F classification	NF F 16-101	Class	F2	F0
I classification	NF F 16-101	Class	I4	I0
Surface flame propagation	BS 476 part 7	Class	3	1
Flame propagation, smoke emission	ASTM E84	Class 1	/	/
Flammability index (glow wire)	IEC 695-2-1	°C	/	960
Halogen content	/	/	Yes	No
Flammability test (vertical sample)	UL 94	Grade	V1/V0	V0

Average tolerance on mechanical properties referred to longitudinal direction: ± 10%.

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