

PHYSICAL, MECHANICAL AND ELECTRICAL PROPERTIES – MEAN VALUES OF TRIGLASS® PROFILES

PROPERTY	TEST METHOD	UNIT	POLYESTER	POLYESTER	ACRYLIC
			STANDARD	SELF EXTINGUISHING	SELF EXTINGUISHING
MECHANICAL					
TENSILE STRENGTH LW	ASTM D638	MPa	400	400	300
TENSILE MODULUS LW	ASTM D638	GPa	26	26	22
TENSILE STRENGTH CW	ASTM D638	MPa	30	30	20
TENSILE MODULUS CW	ASTM D638	GPa	8	8	7
FLEXURAL STRENGTH LW	AST M D790	MPa	400	400	300
FLEXURAL MODULUS LW	EN 13706 (full scale)	GPa	25	25	21
FLEXURAL STRENGTH CW	ASTM D790	MPa	70	70	60
FLEXURAL MODULUS CW	ASTM D790	GPa	7	7	6
COMPRESSIVE STRENGTH LW	ASTM D695	MPa	220	220	160
COMPRESSIVE MODULUS LW	ASTM D695	GPa	18	18	15
COMPRESSIVE STRENGTH CW	ASTM D695	MPa	70	70	55
COMPRESSIVE MODULUS CW	ASTM D695	GPa	7	7	6
IN PLANE SHEAR STRENGTH LW	ASTM D2344	MPa	30	30	20
SHEAR MODULUS LW	EN 13706 (full scale)	GPa	3	3	2,4
IMPACT STRENGTH (CHARPY)	ASTM D5942	kJ/m2	170	160	140
BEARING STRENGTH LW	ASTM D953	MPa	170	170	130
BEARING STRENGTH CW	ASTM D953	MPa	70	70	50
POISSON'S RATIO LW	ASTM D3039	---	0,28	0,28	----
POISSON'S RATIO CW	ASTM D3039	---	0,12	0,12	----
PHYSICAL					
BARCOL HARDNESS	ASTM D2583	°B	45	45	50
SPECIFIC WEIGHT	ASTM D792	g/cm ³	1,8	1,8	2
GLASS CONTENT BY WEIGHT	ISO 1172	%	58	58	48
WATER ABSORPTION	ISO 62	%	0,4	0,4	0,4
COEFFICIENT OF THERMAL EXPANSION	ISO 11359-2	K ⁻¹	11 x 10 ⁻⁶	11 x 10 ⁻⁶	9 x 10 ⁻⁶
THERMAL CONDUCTIVITY	EN 12667/ EN 12664	W/mK	0,3	0,3	0,35
TOXICITY INDEX	CEI 2037 part 2	/	----	<2	<1
ELECTRICAL					
DIELECTRIC STRENGTH	ASTM D149	kV/mm	5	5	10
DIELECTRIC CONSTANT @ 50HZ	ASTM D150	---	5	5	5
LOSS FACTOR @ 50 HZ	ASTM D7028	---	0,2	0,2	0,2
SURFACE RESISTIVITY	EN 61340	Ω	10 ¹²	10 ¹²	10 ¹²
COMPARATIVE TRACKING INDEX	EN 60112	V	----	----	CTI 600

MEAN VALUES RELATED TO GLASSFIBRE REINFORCED (Continuous Filament Mat/Roving) STANDARD POLYESTER - ACRYLIC PROFILES WITH THICKNESS OVER 3 mm

CW = crosswise - LW = lengthwise

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.

FIRE REACTION PROPERTIES – MEAN VALUES OF TRIGLASS® PROFILES

PROPERTY	TEST METHOD	UNIT	POLYESTER STANDARD	POLYESTER SELF EXTINGUISHING	ACRYLIC SELF EXTINGUISHING
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	----	I3	I0
SURFACE FLAME PROPAGATION	BS 476 part 7	Class	----	3	1
SMOKE DENSITY	BS 6853	Index	----	----	A ₀ (On) = 9 A ₀ (Off) = 10
FLAME PROPAGATION, SMOKE EMISSION	ASTM E84	Class	----	/	1
FLAMMABILITY INDEX (GLOW WIRE)	IEC 695-2-1	°C	----	/	960 without drops
HALOGEN CONTENT	/	/	No	Yes	No
FLAMMABILITY TEST (HORIZONTAL SAMPLE)	UL 94	Grade	HB	V1/V0	V0
FLAMMABILITY TEST (VERTICAL SAMPLE)	UL 94	Grade	----	V1/V0	V0

COMPARISON WITH OTHER MATERIALS

MATERIALS:	SPECIFIC WEIGHT [g/cm³]	TENSILE STRENGTH [MPa]	ELASTIC MODULUS [GPa]	THERMAL EXPANSION COEFFICIENT [K ⁻¹]	THERMAL CONDUCTIVITY [W/mK]
WOOD	0,7	80	12	14 X 10 ⁻⁶	0,1
PVC	1,4	70	3	85 X 10 ⁻⁶	0,1
PULTRUDED GRP	1,8	400	26	11 X 10⁻⁶	0,3
ALUMINIUM	2,7	250	70	23 X 10 ⁻⁶	170
STEEL	7,8	400	210	12 X 10 ⁻⁶	40

RESINS MAIN CHARACTERISTIC

	POLYESTER STANDARD	POLYESTER SELF EXTINGUISHING	ACRYLIC SELF EXTINGUISHING	VINYLESTER	EPOXY	
LOW COST	●	●	●	●	●	<p>REALLY GOOD GOOD FAIR</p>
PROCESSING VERSATILITY	●	●	●	●	●	
AVAILABILITY	●	●	●	●	●	
FIRE RACTION PROPERTIES	●	●	●	●	●	
SMOKE EMISSION	●	●	●	●	●	
CHEMICAL RESISTANCE	●	●	●	●	●	
MECHANICAL PERFORMANCES	●	●	●	●	●	
CREEP & FATIGUE PERFORMANCES	●	●	●	●	●	
ELECTRICAL INSULATION	●	●	●	●	●	