Property Data

Envalior
Imagine the Future

ForTii® F11

PPA–GF30 FR(40)

30% Glass Fiber Reinforced, PA4T, Electro–friendly, Halogen free and free of red phosphorous, Certified V–0 at 0.2mm

Print Date: 2026–09–29

ForTii® F11 has an excellent balance in flow, toughness and stiffness, enabling thin walls or complicated geometries for E&E applications. F11 is all–color VDE approved, has a high RTI electrical rating of 140°C at 0.75 mm and a CTI ≥800V rating to secure thermal ageing and electrical performance.

PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
RHEOLOGICAL PROPERTIES	**DRY / COND**		
Molding shrinkage (parallel)	0.35 / *	%	ISO 294–4
Molding shrinkage (normal)	1.2 / *	%	ISO 294–4
MECHANICAL PROPERTIES	**DRY / COND**		
Tensile modulus	11500 / 12000	MPa	ISO 527–1/–2
Tensile modulus (–40°C)	12000 / –	MPa	ISO 527–1/–2
Tensile modulus (40°C)	11300 / –	MPa	ISO 527–1/–2
Tensile modulus (80°C)	10800 / 7600	MPa	ISO 527–1/–2
Tensile modulus (100°C)	10000 / –	MPa	ISO 527–1/–2
Tensile modulus (120°C)	8000 / –	MPa	ISO 527–1/–2
Tensile modulus (140°C)	5700	MPa	ISO 527–1/–2
Tensile modulus (160°C)	5000	MPa	ISO 527–1/–2
Stress at break	150 / 140	MPa	ISO 527–1/–2
Stress at break (–40°C)	175 / –	MPa	ISO 527–1/–2
Stress at break (40°C)	145 / –	MPa	ISO 527–1/–2
Stress at break (80°C)	125 / 85	MPa	ISO 527–1/–2
Stress at break (100°C)	115 / –	MPa	ISO 527–1/–2
Stress at break (120°C)	100 / –	MPa	ISO 527–1/–2
Stress at break (140°C)	80	MPa	ISO 527–1/–2

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PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
Stress at break (160°C)	70	MPa	ISO 527–1/–2
Strain at break	2 / 1.9	%	ISO 527–1/–2
Strain at break (–40°C)	2.2 / –	%	ISO 527–1/–2
Strain at break (40°C)	1.9 / –	%	ISO 527–1/–2
Strain at break (80°C)	1.9 / 2.9	%	ISO 527–1/–2
Strain at break (100°C)	2 / –	%	ISO 527–1/–2
Strain at break (120°C)	2.6 / –	%	ISO 527–1/–2
Strain at break (140°C)	3.3	%	ISO 527–1/–2
Strain at break (160°C)	3.8	%	ISO 527–1/–2
Flexural modulus	11000 / 11500	MPa	ISO 178
Flexural strength	245 / 220	MPa	ISO 178
Flexural modulus (120°C)	8200	MPa	ISO 178
Flexural modulus (160°C)	5000	MPa	ISO 178
Charpy impact strength (+23°C)	50 / 50	kJ/m²	ISO 179/1eU
Charpy notched impact strength (+23°C)	7.5 / 7.5	kJ/m²	ISO 179/1eA
THERMAL PROPERTIES	**DRY / COND**		
Melting temperature (10°C/min)	325 / *	°C	ISO 11357–1/–3
Temp. of deflection under load (1.80 MPa)	305 / *	°C	ISO 75–1/–2
Coeff. of linear therm. expansion (parallel)	0.2 / *	E–4/°C	ISO 11359–1/–2
Coeff. of linear therm. expansion (normal)	0.6 / *	E–4/°C	ISO 11359–1/–2
Coeff. of linear therm. expansion (parallel)	0.3	E–4/°C	ASTM D696
Coeff. of linear therm. expansion (normal)	0.35	E–4/°C	ASTM D696
Burning Behav. at 1.5 mm nom. thickn.	V–0 / *	class	IEC 60695–11–10
Thickness tested	1.5 / *	mm	IEC 60695–11–10
UL recognition	Yes / *	–	–
Burning Behav. at 3.0 mm nom. thickn.	V–0 / *	class	IEC 60695–11–10
Thickness tested	V–0 / *	mm	IEC 60695–11–10
UL recognition	3 / *	–	–

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PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
Relative Temperature Index – electrical	140	°C	UL746B
RTI electrical (Thickness (1) tested)	0.75	mm	UL746B
Thermal Index 5000 hrs	170	°C	IEC 60216/ISO 527-1/-2

ELECTRICAL PROPERTIES	DRY / COND		
Volume resistivity	>1E13 / >1E13	Ohm*m	IEC 62631-3-1
Electric strength	33 / 33	kV/mm	IEC 60243-1
Comparative tracking index	600 / 600	V	IEC 60112
Comparative Tracking Index (above 600V)	≥800V	V	Sim. to IEC 60112
Relative permittivity (100Hz)	4.2 / 4.2	–	IEC 62631-2-1
Relative permittivity (1 MHz)	3.9 / 3.9	–	IEC 62631-2-1
Relative permittivity (1GHz)	3.8 / 3.9	–	IEC 61189-2-721
Relative permittivity (10GHz)	3.8 / 3.9	–	IEC 61189-2-721

OTHER PROPERTIES	DRY / COND		
Humidity absorption	1.6 / *	%	Sim. to ISO 62
Density	1460 / –	kg/m³	ISO 1183

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