Property Data (Provisional)

Envalior
Imagine the Future

ForTii® Ace MX53B

PPA–GF50

50% Glass Fiber Reinforced, PA4T, Heat Stabilized, for Structural Parts

Print Date: 2026–05–23

ForTii® Ace MX53B is a high Tg PPA combining good toughness at low temperatures and chemical resistance. It is designed to replace metal in structural parts that need high performance over a broad temperature range, from –35°C to above 150°C, both in dry as well as conditioned environment.

PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
RHEOLOGICAL PROPERTIES	**DRY / COND**		
Molding shrinkage (parallel)	0.33 / *	%	ISO 294–4
Molding shrinkage (normal)	0.85 / *	%	ISO 294–4
MECHANICAL PROPERTIES	**DRY / COND**		
Tensile modulus	18000 / 18900	MPa	ISO 527–1/–2
Tensile modulus (–40°C)	19000 / 19200	MPa	ISO 527–1/–2
Tensile modulus (40°C)	17500 / 18000	MPa	ISO 527–1/–2
Tensile modulus (80°C)	17000 / 14000	MPa	ISO 527–1/–2
Tensile modulus (100°C)	16800 / 8800	MPa	ISO 527–1/–2
Tensile modulus (120°C)	16000 / 7300	MPa	ISO 527–1/–2
Tensile modulus (150°C)	9000	MPa	ISO 527–1/–2
Tensile modulus (160°C)	7700	MPa	ISO 527–1/–2
Tensile modulus (180°C)	6200	MPa	ISO 527–1/–2
Tensile modulus (200°C)	5800	MPa	ISO 527–1/–2
Stress at break	260 / 240	MPa	ISO 527–1/–2
Stress at break (–40°C)	320 / 290	MPa	ISO 527–1/–2
Stress at break (40°C)	245 / 220	MPa	ISO 527–1/–2
Stress at break (80°C)	205 / 140	MPa	ISO 527–1/–2
Stress at break (100°C)	195 / 105	MPa	ISO 527–1/–2

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Stress at break (120°C)	170 / 85	MPa	ISO 527–1/–2
Stress at break (150°C)	100	MPa	ISO 527–1/–2
Stress at break (160°C)	96	MPa	ISO 527–1/–2
Stress at break (180°C)	75	MPa	ISO 527–1/–2
Stress at break (200°C)	65	MPa	ISO 527–1/–2
Strain at break	2.1 / 2	%	ISO 527–1/–2
Strain at break (–40°C)	2.3 / 2	%	ISO 527–1/–2
Strain at break (40°C)	2.1 / 1.9	%	ISO 527–1/–2
Strain at break (80°C)	2.2 / 3.2	%	ISO 527–1/–2
Strain at break (100°C)	2.3 / 4.2	%	ISO 527–1/–2
Strain at break (120°C)	2.4 / 4.8	%	ISO 527–1/–2
Strain at break (150°C)	5	%	ISO 527–1/–2
Strain at break (160°C)	6	%	ISO 527–1/–2
Strain at break (180°C)	6	%	ISO 527–1/–2
Strain at break (200°C)	6	%	ISO 527–1/–2
Flexural modulus	17800 / 18000	MPa	ISO 178
Flexural strength	390 / 350	MPa	ISO 178
Flexural modulus (120°C)	16300	MPa	ISO 178
Flexural modulus (160°C)	8500	MPa	ISO 178
Flexural modulus (180°C)	6700	MPa	ISO 178
Flexural modulus (200°C)	6200	MPa	ISO 178
Charpy impact strength (+23°C)	80 / 70	kJ/m²	ISO 179/1eU
Charpy impact strength (–30°C)	75 / 65	kJ/m²	ISO 179/1eU
Charpy notched impact strength (+23°C)	11 / 9.5	kJ/m²	ISO 179/1eA
Charpy notched impact strength (–30°C)	11 / 9.5	kJ/m²	ISO 179/1eA

THERMAL PROPERTIES	DRY / COND		
Melting temperature (10°C/min)	330 / *	°C	ISO 11357–1/–3
Temp. of deflection under load (1.80 MPa)	305 / *	°C	ISO 75–1/–2

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Coeff. of linear therm. expansion (parallel)	0.14 / *	E–4/°C	ISO 11359–1/–2
Coeff. of linear therm. expansion (normal)	0.47 / *	E–4/°C	ISO 11359–1/–2
Coeff. of linear therm. expansion (parallel)	0.27	E–4/°C	ASTM D696
Coeff. of linear therm. expansion (normal)	0.3	E–4/°C	ASTM D696
Thermal Index 5000 hrs	178	°C	IEC 60216/ISO 527–1/–2

ELECTRICAL PROPERTIES	DRY / COND		
Comparative tracking index	400 / –	V	IEC 60112

OTHER PROPERTIES	DRY / COND		
Humidity absorption	1.5 / *	%	Sim. to ISO 62
Density	1660 / –	kg/m³	ISO 1183