

ForTii® Ace MX53T

PPA-GF50

50% Glass Reinforced, PA4T, Heat Stabilized, Excellent Surface Properties, for Structural Parts

Print Date: 2019-10-19

ForTii® Ace MX53T is a high Tg, dimensional stable PPA, designed to replace metal in structural parts that need high performance from -35°C up to 150°C, even in aggressive environments (oil, road salt, fuel, coolants, etc.)

Properties	Typical Data	Unit	Test Method
Rheological properties	dry / cond		
Molding shrinkage (parallel)	0.3 / *	%	ISO 294-4
Molding shrinkage (normal)	0.7 / *	%	ISO 294-4
Mechanical properties	dry / cond		
Tensile modulus	17300 / 18400	MPa	ISO 527-1/-2
Tensile modulus (-40°C)	17500 / 19100	MPa	ISO 527-1/-2
Tensile modulus (40°C)	17100 / -	MPa	ISO 527-1/-2
Tensile modulus (80°C)	16000 / 13500	MPa	ISO 527-1/-2
Tensile modulus (100°C)	15900 / 5700	MPa	ISO 527-1/-2
Tensile modulus (120°C)	14500 / 5100	MPa	ISO 527-1/-2
Tensile modulus (150°C)	7400	MPa	ISO 527-1/-2
Tensile modulus (160°C)	5300	MPa	ISO 527-1/-2
Tensile modulus (180°C)	4500	MPa	ISO 527-1/-2
Tensile modulus (200°C)	3900	MPa	ISO 527-1/-2
Stress at break	270 / 250	MPa	ISO 527-1/-2
Stress at break (-40°C)	310 / 310	MPa	ISO 527-1/-2
Stress at break (40°C)	255 / -	MPa	ISO 527-1/-2
Stress at break (80°C)	205 / 115	MPa	ISO 527-1/-2
Stress at break (100°C)	185 / 70	MPa	ISO 527-1/-2
Stress at break (120°C)	150 / 60	MPa	ISO 527-1/-2
Stress at break (150°C)	85	MPa	ISO 527-1/-2

Property Data (Provisional)

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Properties	Typical Data	Unit	Test Method
Stress at break (160°C)	70	MPa	ISO 527-1/-2
Stress at break (180°C)	55	MPa	ISO 527-1/-2
Stress at break (200°C)	42	MPa	ISO 527-1/-2
Strain at break	2.5 / 2.3	%	ISO 527-1/-2
Strain at break (-40°C)	2.6 / 2.2	%	ISO 527-1/-2
Strain at break (40°C)	2.5 / -	%	ISO 527-1/-2
Strain at break (80°C)	2.5 / 5	%	ISO 527-1/-2
Strain at break (100°C)	2.7 / 8	%	ISO 527-1/-2
Strain at break (120°C)	3 / 7	%	ISO 527-1/-2
Strain at break (150°C)	7	%	ISO 527-1/-2
Strain at break (160°C)	10	%	ISO 527-1/-2
Strain at break (180°C)	9	%	ISO 527-1/-2
Strain at break (200°C)	7	%	ISO 527-1/-2
Charpy impact strength (+23°C)	81 / 74	kJ/m ²	ISO 179/1eU
Charpy impact strength (-30°C)	78 / 74	kJ/m ²	ISO 179/1eU
Charpy notched impact strength (+23°C)	12 / 11.5	kJ/m ²	ISO 179/1eA
Charpy notched impact strength (-30°C)	11.5 / 11	kJ/m ²	ISO 179/1eA

Thermal properties

dry / cond

Melting temperature (10°C/min)	320 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	275 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	0.27	E-4/°C	ASTM D696
Coeff. of linear therm. expansion (normal)	0.29	E-4/°C	ASTM D696
Thermal Index 5000 hrs	172	°C	IEC 60216/ISO 527-1/-2

Other properties

dry / cond

Humidity absorption	1.7 / *	%	Sim. to ISO 62
Density	1620 / -	kg/m ³	ISO 1183

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Tens. fatigue 8Hz, T, R=0.1 ,
dry

