

# CELANEX® 3300

## CELANEX® PBT

Celanex 3300 is a general purpose, 30% glass reinforced, polybutylene terephthalate that offers a superior combination of mechanical, electrical, and thermal properties. This grade provides outstanding processability and good chemical resistance. Celanex 3300 is a high flow material.

### Product information

Resin Identification	PBT-GF30	ISO 1043
Part Marking Code	>PBT-GF30<	ISO 11469

### Rheological properties

Melt volume-flow rate	13 cm <sup>3</sup> /10min	ISO 1133
Temperature	250 °C	
Load	2.16 kg	
Melt mass-flow rate	17 g/10min	ISO 1133
Melt mass-flow rate, Temperature	250 °C	
Melt mass-flow rate, Load	2.16 kg	
Viscosity number	100 cm <sup>3</sup> /g	ISO 307, 1628
Intrinsic viscosity	0.75	ISO 307, 1628
Moulding shrinkage range, parallel	0.3 - 0.7 %	ISO 294-4, 2577
Moulding shrinkage range, normal	0.7 - 1.1 %	ISO 294-4, 2577

### Typical mechanical properties

Tensile modulus	10000 MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	135 MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.5 %	ISO 527-1/-2
Flexural modulus	9700 MPa	ISO 178
Flexural strength	210 MPa	ISO 178
Compressive strength	159 <sup>[DS]</sup> MPa	ISO 604
Charpy impact strength, 23°C	46 kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	45 kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 23°C	8.5 kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30°C	8.5 kJ/m <sup>2</sup>	ISO 179/1eA
Izod notched impact strength, 23°C	7.5 kJ/m <sup>2</sup>	ISO 180/1A
Izod impact strength, 23°C	24 kJ/m <sup>2</sup>	ISO 180/1U
Hardness, Rockwell, M-scale	90	ISO 2039-2
Poisson's ratio	0.43	
Shore D hardness, 15s	84	ISO 48-4 / ISO 868

[DS]: Derived from similar grade

### Thermal properties

Melting temperature, 10°C/min	225 °C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	60 °C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	205 °C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	225 °C	ISO 75-1/-2
Temperature of deflection under load, 8 MPa	150 °C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	220 °C	ISO 306
Coefficient of linear thermal expansion (CLTE), parallel	25 E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	100 E-6/K	ISO 11359-1/-2

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### Flammability

Burning Behav. at thickness h	HB class	IEC 60695-11-10
Thickness tested	0.71 mm	IEC 60695-11-10
Oxygen index	20 %	ISO 4589-1/-2

### Electrical properties

Relative permittivity, 100Hz	4.5	IEC 62631-2-1
Relative permittivity, 1MHz	4.1	IEC 62631-2-1
Dissipation factor, 100Hz	22 E-4	IEC 62631-2-1
Dissipation factor, 1MHz	160 E-4	IEC 62631-2-1
Volume resistivity	>1E13 Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15 Ohm	IEC 62631-3-2
Electric strength	31 kV/mm	IEC 60243-1
Comparative tracking index	425	IEC 60112
Arc Resistance	125 s	UL 746B

### Physical/Other properties

Humidity absorption, 2mm	0.16 %	Sim. to ISO 62
Water absorption, 2mm	0.4 %	Sim. to ISO 62
Density	1530 kg/m <sup>3</sup>	ISO 1183

### VDA Properties

Emission of organic compounds	20 µgC/g	VDA 277
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### Injection

Drying Recommended	yes
Drying Temperature	120 °C
Drying Time, Dehumidified Dryer	4 h
Processing Moisture Content	≤0.02 %
Melt Temperature Optimum	250 °C
Min. melt temperature	240 °C
Max. melt temperature	260 °C
Screw tangential speed	0.1 - 0.3 m/s
Mold Temperature Optimum	80 °C
Min. mould temperature	60 °C
Max. mould temperature	130 °C

### Characteristics

Processing	Injection Moulding
Delivery form	Pellets

### Additional information

Injection molding

### Preprocessing

To avoid hydrolytic degradation during processing, CELANEX resins have to be dried to a moisture level equal to or less than 0.02%. Drying should be done in a

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dehumidifying hopper dryer capable of dewpoints <-30°F (-34 °C) at 250°F (121 °C) for 4 hours.

### Processing

Rear Temperature 450-470(230-240) deg F (deg C)  
Center Temperature 460-480(235-250) deg F (deg C)  
Front Temperature 470-500(240-260) deg F (deg C)  
Nozzle Temperature 480-500(250-260) deg F (deg C)  
Melt Temperature 460-500(235-260) deg F (deg C)  
Mold Temperature 150-200(65-93) deg F (deg C)  
Back Pressure 0-50 psi  
Screw Speed Medium  
Injection Speed Fast

Injection speed, injection pressure and holding pressure have to be optimized to the individual article geometry. To avoid material degradation during processing low back pressure and minimum screw speed have to be used. Overheating of the material has to be avoided, in particular for flame retardant grades. Up to 25% clean and dry regrind may be used.

### Processing Notes

### Pre-Drying

To avoid hydrolytic degradation during processing, CELANEX resins have to be dried to a moisture level equal to or less than 0.02%. Drying should be done in a dehumidifying hopper dryer capable of dewpoints <-40°F (-40 °C) at 250°F (121 °C) for 4 hours.

### Storage

For subsequent storage of the material in the dryer until processed (<= 60 h) it is necessary to lower the temperature to 100° C.

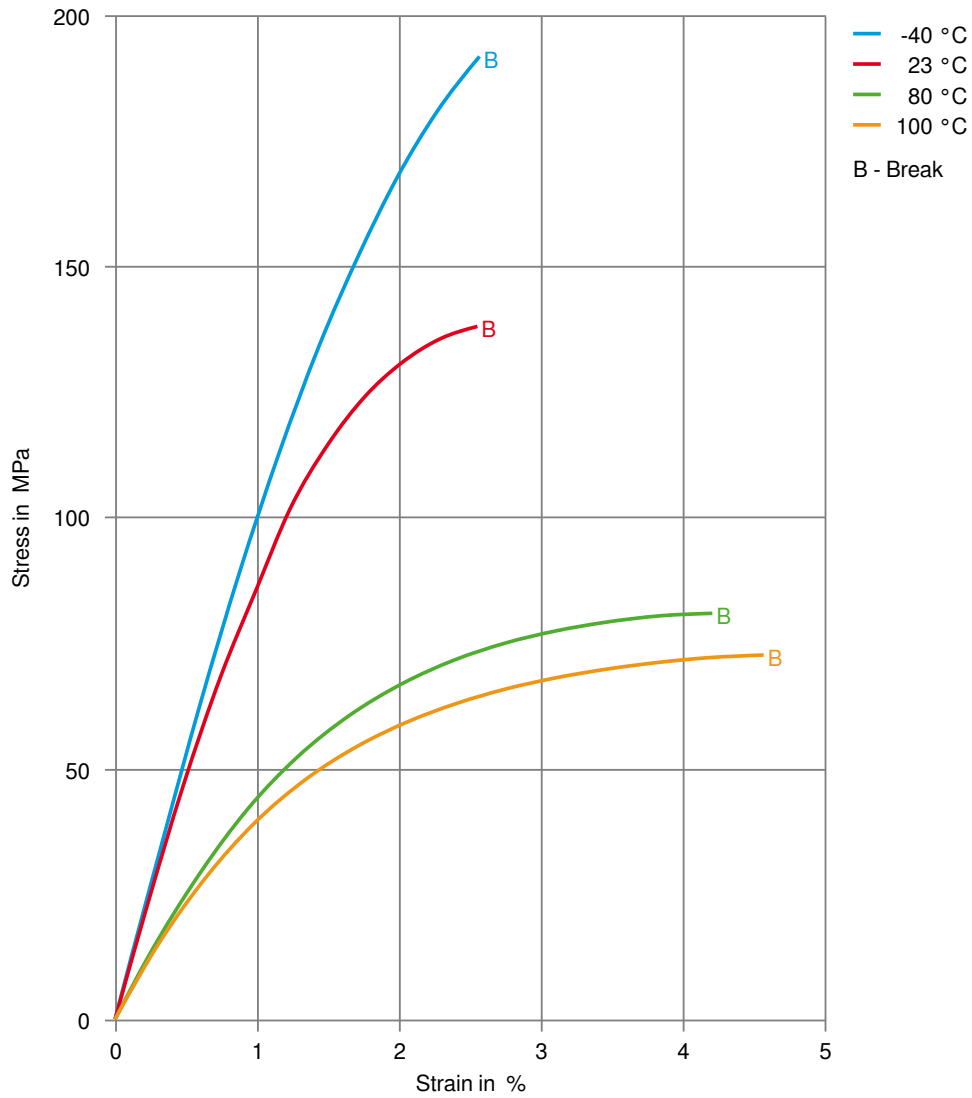
### Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
Bosch	N28 BN07-GF028	Natural
Bosch	N28 BN07-GF028	Black
Ford	WSS-M4D725-B1	
Ford	WSS-M4D929-A3	Natural
General Motors	GMW16733P-PBT-GF30	Natural
General Motors	GMW16733P-PBT-GF30	Black
Stellantis - Chrysler	MS.50103 / CPN-2252	Natural
Stellantis - Chrysler	MS.50103 / CPN-3199	Canod
Stellantis - Chrysler	MS.50103 / CPN-4675	100% COLOR MATCH

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## Stress-strain



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## Secant modulus-strain

