

CELSTRAN® PA66-GF50-01 - PA666
Description

Material code according to ISO 1043-1: PA66 Nylon 66 reinforced by 50 weight percent long glass fibers. The pellets are cylindrical and normally as well as the embedded fibers 10 mm long. Parts molded of CELSTRAN have outstanding mechanical properties such as high strength and stiffness combined with high heat deflection. The notched impact strength is increased at elevated and low temperatures due to the fiber skeleton built in the parts. The long fiber reinforcement reduces creep significantly. The very isotropic shrinkage in the molded parts minimizes the warpage. Complex parts can be manufactured with high reproducibility by injection molding. Can be used for substituting die cast metal with the advantage of Weight reduction, no corrosion problems, no post treatment.

Physical properties	dry / cond	Unit	Test Standard
Density	1560 / 1560	kg/m ³	ISO 1183

Mechanical properties	dry / cond	Unit	Test Standard
Tensile modulus	16500 / 11200	MPa	ISO 527-2/1A
Tensile stress at break, 5mm/min	255 / 175	MPa	ISO 527-2/1A
Tensile strain at break, 5mm/min	2.1 / 2.4	%	ISO 527-2/1A
Flexural modulus, 23°C	14500 / 8700	MPa	ISO 178
Flexural modulus, 80°C	8600 / 7200	MPa	ISO 178
Flexural strength, 23°C	350 / 260	MPa	ISO 178
Flexural strength, 80°C	250 / 210	MPa	ISO 178
Charpy impact strength, 23°C	96 / 107	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	82 / 76	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	43 / 40	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	41 / 42	kJ/m ²	ISO 179/1eA

Thermal properties	dry / cond	Unit	Test Standard
DTUL at 1.8 MPa	242 / *	°C	ISO 75-1, -2
DTUL at 8.0 MPa	217 / *	°C	ISO 75-1, -2

Typical injection moulding processing conditions

Pre Drying	Value	Unit	Test Standard
Necessary low maximum residual moisture content	0.15	%	-
Drying time	2 - 4	h	-
Drying temperature	70 - 80	°C	-
Temperature	Value	Unit	Test Standard
Hopper temperature	70 - 80	°C	-
Feeding zone temperature	20 - 50	°C	-
Zone1 temperature	280 - 285	°C	-
Zone2 temperature	280 - 290	°C	-
Zone3 temperature	290 - 300	°C	-
Zone4 temperature	300 - 310	°C	-
Nozzle temperature	310 - 320	°C	-
Melt temperature	310 - 320	°C	-
Mold temperature	90 - 120	°C	-
Hot runner temperature	300 - 315	°C	-
Pressure	Value	Unit	Test Standard
Back pressure max.	30	bar	-
Speed	Value	Unit	Test Standard
Injection speed	medium	-	-
Screw Speed	Value	Unit	Test Standard
Screw speed diameter, 40mm	50	RPM	-
Screw speed diameter, 55mm	35	RPM	-
Screw speed diameter, 75mm	25	RPM	-

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Pre-drying

CELSTRAN PA should in principle be predried. Because of the necessary low maximum residual moisture content the use of dry air dryers is recommended. The dew point should be $\leq -30^{\circ}\text{C}$. The time between drying and processing should be as short as possible.

Characteristics

Product Categories	Delivery Form
Glass reinforced	Pellets
