

CELSTRAN® PP-GF20-04 Black - PP

Description

Material code according to ISO 1043-1: PP Polypropylene homopolymer reinforced with 20weight percent long glass fibers. Black. The fibers are chemically coupled to the polypropylene matrix. The pellets are cylindrical and normally as well as the embedded fibers 11 mm long. (-0453 = low emission-grade). 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. Application field: Functional/structural parts for automotive

Physical properties	Value	Unit	Test Standard
Density	1030	kg/m³	ISO 1183

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	4400	MPa	ISO 527-2/1A
Tensile stress at break, 5mm/min	85	MPa	ISO 527-2/1A
Tensile strain at break, 5mm/min	2.4	%	ISO 527-2/1A
Flexural modulus, 23°C	4900	MPa	ISO 178
Flexural modulus, 80°C	3300	MPa	ISO 178
Flexural strength, 23°C	125	MPa	ISO 178
Flexural strength, 80°C	80	MPa	ISO 178
Charpy impact strength, 23°C	45	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	24	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	12	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	15	kJ/m²	ISO 179/1eA

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	166	°C	ISO 11357-1/-3
DTUL at 1.8 MPa	159	°C	ISO 75-1, -2

Typical injection moulding processing conditions

Pre Drying	Value	Unit	Test Standard
Necessary low maximum residual moisture content	0.2	%	-
Drying time	2	h	-
Drying temperature	90 - 100	°C	-
Temperature	Value	Unit	Test Standard
Feeding zone temperature	20 - 50	°C	-
Zone1 temperature	200 - 220	°C	-
Zone2 temperature	210 - 230	°C	-
Zone3 temperature	220 - 250	°C	-
Zone4 temperature	220 - 250	°C	-
Nozzle temperature	220 - 250	°C	-
Melt temperature	220 - 250	°C	-
Mold temperature	30 - 70	°C	-
Hot runner temperature	230 - 250	°C	-
Pressure	Value	Unit	Test Standard
Back pressure max.	30	bar	-
Speed	Value	Unit	Test Standard
Injection speed	slow	-	-
Screw Speed	Value	Unit	Test Standard
Screw speed diameter, 40mm	50	RPM	-
Screw speed diameter, 55mm	35	RPM	-
Screw speed diameter, 75mm	25	RPM	-

