

CELSTRAN® +PP-GF40-04CN03 | PP | Glass Reinforced

Description

Material code according to ISO 1043-1: PP

Polypropylene with 40 weight percent ash content, long glass fibers reinforced. The fibers are chemically coupled to the polypropylene matrix. 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.

Application field: Functional/structural parts for automotive

Physical properties	Value	Unit	Test Standard
Density	1220	kg/m ³	ISO 1183

Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	8600	MPa	ISO 527-2/1A
Tensile modulus (80°C)	6300	MPa	ISO 527-2/1A
Tensile strength (80°C)	84	MPa	ISO 527-2/1A
Tensile stress at break (5mm/min)	135	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	2	%	ISO 527-2/1A
Elongation at break (80°C)	2.2	%	ISO 527-2/1A
Flexural modulus (23°C)	7800	MPa	ISO 178
Flexural strength (23°C)	185	MPa	ISO 178
Charpy impact strength @ 23°C	60.0	kJ/m ²	ISO 179/1eU
Charpy impact strength @ -30°C	50.0	kJ/m ²	ISO 179/1eU
Charpy notched impact strength @ 23°C	32.0	kJ/m ²	ISO 179/1eA
Charpy notched impact strength @ -30°C	35.0	kJ/m ²	ISO 179/1eA

Thermal properties	Value	Unit	Test Standard
Melting temperature (10°C/min)	165	°C	ISO 11357-1,-2,-3
DTUL @ 1.8 MPa	158	°C	ISO 75-1/-2
DTUL @ 8.0 MPa	138	°C	ISO 75-1/-2



Typical injection moulding processing conditions



Necessary low maximum residual moisture content: 0.2%

The product can then be stored in standard conditions until processed.

Drying temperature: 90 - 100 °C

	$\vartheta_{\text{Manifold}}$	ϑ_{Mold}	ϑ_{Melt}	$\vartheta_{\text{Nozzle}}$	ϑ_{Zone4}	ϑ_{Zone3}	ϑ_{Zone2}	ϑ_{Zone1}	ϑ_{Feed}
min (°C)	230	30	230	240	250	240	230	220	20
max (°C)	270	70	270	250	250	250	240	230	50

	Inj press	Hold press	Back pressure
min (bar)	600	400	0
max (bar)	1200	800	30

Injection speed: slow

Screw diameter (mm)	16	25	40	55	75
Screw speed (RPM)	-	-	50	35	25

Assessment of mechanical values using an injection molding machine with dedicated screw. Implementation: Feb. 2010

Americas

Europe

Ticona GmbH
Information Service

