

CELSTRAN® +PP-GF60-04CN15/10 | PP | Glass Reinforced

Description

Material code according to ISO 1043-1: PP

Polypropylene with 60 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. Concentrate for blending down on a fiber content of 20-30%

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.

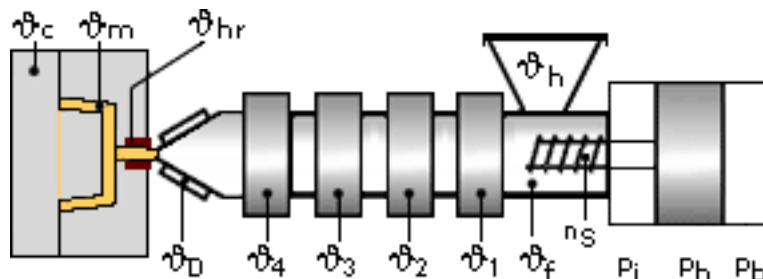
Complex parts can be manufactured with high reproducibility by injection molding.

Application field: Functional/structural parts for automotive

Physical properties	Value	Unit	Test Standard
Density	1430	kg/m ³	ISO 1183
Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	14400	MPa	ISO 527-2/1A
Tensile modulus (80°C)	9500	MPa	ISO 527-2/1A
Tensile strength (80°C)	80	MPa	ISO 527-2/1A
Tensile stress at break (5mm/min)	135	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	1.8	%	ISO 527-2/1A
Elongation at break (80°C)	2	%	ISO 527-2/1A
Flexural modulus (23°C)	15000	MPa	ISO 178
Flexural modulus (80°C)	9500	MPa	ISO 178
Flexural strength (23°C)	210	MPa	ISO 178
Flexural strength (80°C)	135	MPa	ISO 178
Charpy impact strength @ 23°C	60.0	kJ/m ²	ISO 179/1eU
Charpy impact strength @ -30°C	58.0	kJ/m ²	ISO 179/1eU
Charpy notched impact strength @ 23°C	30.0	kJ/m ²	ISO 179/1eA
Charpy notched impact strength @ -30°C	45.0	kJ/m ²	ISO 179/1eA
Thermal properties	Value	Unit	Test Standard
Melting temperature (10°C/min)	164	°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

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Typical injection moulding processing conditions



Pre Drying:

Necessary low maximum residual moisture content: 0.2%

It is normally not necessary to dry CELSTRAN PP. However, should there be surface moisture (condensate) on the molding compound as a result of incorrect storage, drying is required.

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

Drying time: 4 h

Drying temperature: 90 - 100 °C

Temperature:

	ϑ _{Manifold}	ϑ _{Mold}	ϑ _{Melt}	ϑ _{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

Pressure:

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

Speed:

Injection speed: slow

Screw speed

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

Special Info:

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

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