

**CELSTRAN® PP-GF20-0553 Black - PP**
**Description**

Polypropylene with 20% reinforced long-glass-fiber

Material code according to ISO 1043-1: PP Polypropylene copolymer reinforced with 20weight percent long glass fibers.Black. Low emission. The fibers are chemically coupled to the polypropylene matrix. The pellets are cylindrical and normally as well as the embedded fibers 11 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

<b>Physical properties</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Density	<b>1030</b>	kg/m <sup>3</sup>	ISO 1183
Molding shrinkage, parallel (flow)	<b>0.4</b>	%	ISO 294-4, 2577
Molding shrinkage, transverse normal	<b>0.5</b>	%	ISO 294-4, 2577

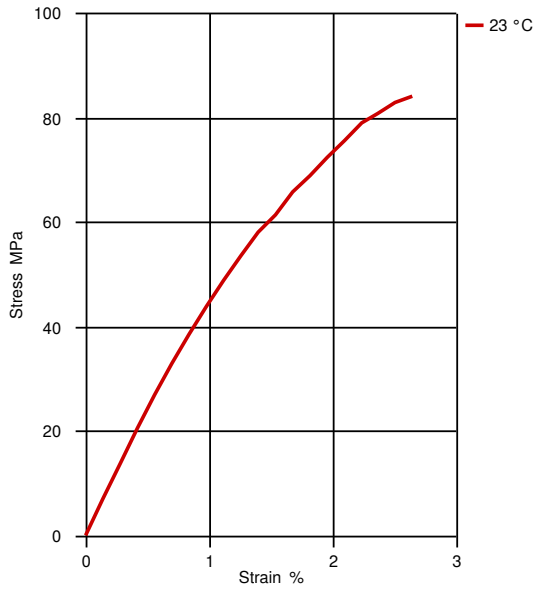
<b>Mechanical properties</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Tensile modulus	<b>4700</b>	MPa	ISO 527-2/1A
Tensile stress at break, 5mm/min	<b>84</b>	MPa	ISO 527-2/1A
Tensile strain at break, 5mm/min	<b>2.5</b>	%	ISO 527-2/1A
Flexural modulus, 23 °C	<b>4500</b>	MPa	ISO 178
Flexural modulus, 80 °C	<b>3400</b>	MPa	ISO 178
Flexural strength, 23 °C	<b>140</b>	MPa	ISO 178
Flexural strength, 80 °C	<b>90</b>	MPa	ISO 178
Charpy impact strength, 23 °C	<b>56</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30 °C	<b>60</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 23 °C	<b>20</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30 °C	<b>20</b>	kJ/m <sup>2</sup>	ISO 179/1eA

<b>Thermal properties</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
DTUL at 1.8 MPa	<b>159</b>	°C	ISO 75-1, -2
DTUL at 8.0 MPa	<b>136</b>	°C	ISO 75-1, -2
Flammability at thickness h	<b>HB</b>	class	UL 94
thickness tested (h)	<b>1.00</b>	mm	UL 94

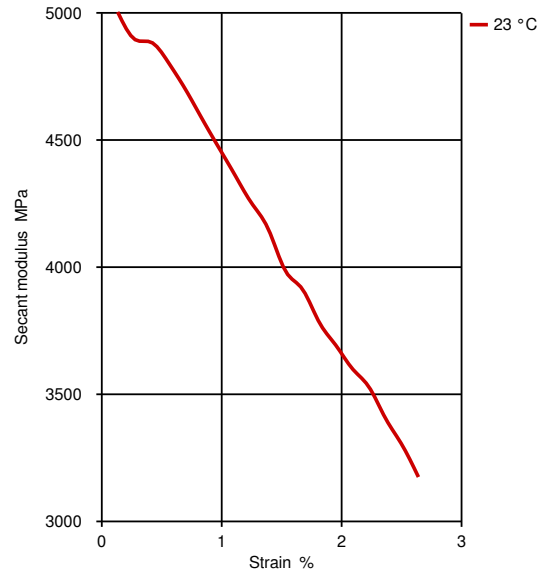
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**Diagrams**

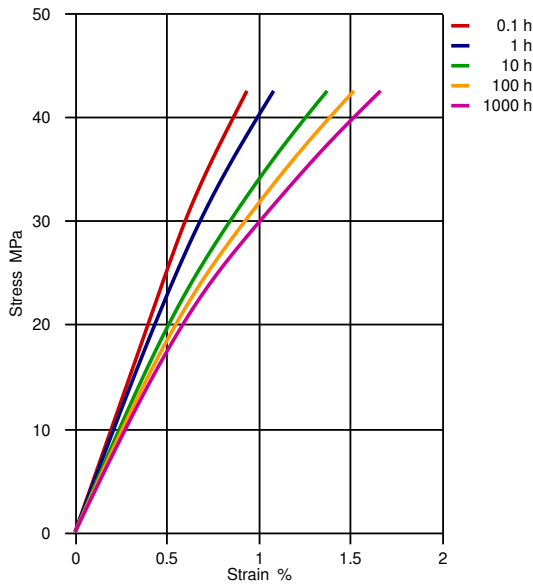
**Stress-strain**



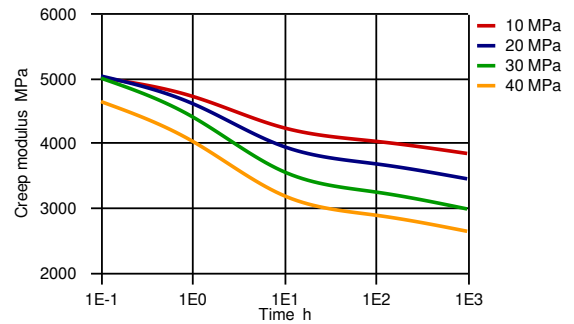
**Secant modulus-strain**



**Stress-strain (isochronous) 23 °C**



**Creep modulus-time 23 °C**



**Typical injection moulding processing conditions**

Pre Drying	Value	Unit
Necessary low maximum residual moisture content	<b>0.2</b>	%
Drying time	<b>2</b>	h
Drying temperature	<b>90 - 100</b>	°C

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Temperature	Value	Unit
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 - 270	°C
Mold temperature	30 - 70	°C
Hot runner temperature	230 - 250	°C

Pressure	Value	Unit
Back pressure max.	30	bar

Speed	Value
Injection speed	slow

Screw Speed	Value	Unit
Screw speed diameter, 40mm	50	RPM
Screw speed diameter, 55mm	35	RPM
Screw speed diameter, 75mm	25	RPM

**Other text information**

**Pre-drying**

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.

**Longer pre-drying times/storage**

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

**Characteristics**

**Special Characteristics**

Auto spec approved, Heat resistant

**Product Categories**

Low emission, Glass reinforced, Impact modified

**Processing**

Injection molding

**Delivery Form**

Pellets

**Other Approvals**

**OEM**

Chrysler (FCA)

Daimler

Geely

GM

**Specification**

CPN5149

5404.74

Q/JLY J7111001A-2016

GMW15890P-PP-GF20E BLK