

CELSTRAN® PP-GF50-04 Natural - PP
Description

Material code according to ISO 1043-1: PP Heat stabilized polypropylene reinforced with 50 weight percent long glass fibers. Natural. The fibers are chemically coupled to the polypropylene matrix. The pellets are cylindrical and normally as well as the embedded fibers 11 mm long. (-0403 = heat stabilized, -0453 = low emission) 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 | 1340 | kg/m ³ | ISO 1183 |

| Mechanical properties | Value | Unit | Test Standard |
|---------------------------------------|-------|-------------------|---------------|
| Tensile modulus | 12000 | MPa | ISO 527-2/1A |
| Tensile stress at break, 5mm/min | 145 | MPa | ISO 527-2/1A |
| Tensile strain at break, 5mm/min | 2 | % | ISO 527-2/1A |
| Flexural modulus, 23°C | 12900 | MPa | ISO 178 |
| Flexural modulus, 80°C | 9000 | MPa | ISO 178 |
| Flexural strength, 23°C | 235 | MPa | ISO 178 |
| Flexural strength, 80°C | 130 | MPa | ISO 178 |
| Charpy impact strength, 23°C | 80 | kJ/m ² | ISO 179/1eU |
| Charpy impact strength, -30°C | 75 | kJ/m ² | ISO 179/1eU |
| Charpy notched impact strength, 23°C | 35 | kJ/m ² | ISO 179/1eA |
| Charpy notched impact strength, -30°C | 38 | kJ/m ² | ISO 179/1eA |

| Thermal properties | Value | Unit | Test Standard |
|-------------------------------|-------|------|----------------|
| Melting temperature, 10°C/min | 165 | °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 | 220 - 240 | °C | - |
| Zone2 temperature | 220 - 240 | °C | - |
| Zone3 temperature | 230 - 250 | °C | - |
| Zone4 temperature | 230 - 250 | °C | - |
| Nozzle temperature | 230 - 250 | °C | - |
| Melt temperature | 230 - 250 | °C | - |
| Mold temperature | 30 - 70 | °C | - |
| Hot runner temperature | 240 - 270 | °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 | - |

Other text information

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Pre-drying

It is normally not necessary to dry CELSTRAN PP

Characteristics

Product Categories

Glass reinforced

Delivery Form

Pellets