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# CELSTRAN® PA66-GF60-02 AD3002 BLACK

## CELSTRAN® Long Fibre

Material code according to ISO 1043-1: PA66

Heat stabilized Nylon 66 reinforced by 60 weight percent long glass fibers. 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.

Can be used for substituting die cast metal with the advantage of Weight reduction, no corrosion problems, no post treatment.

## Product information

| | | |
|---|---|---|
| Resin Identification | PA66-LGF60 | ISO 1043 |
| Part Marking Code | >PA66-LGF60< | ISO 11469 |

## Typical mechanical properties

| | dry/cond. | | |
|---|---|---|---|
| Tensile modulus | 21000 / 17000 | MPa | ISO 527-1/-2 |
| Tensile stress at break, 5mm/min | 258 / 203 | MPa | ISO 527-1/-2 |
| Tensile strain at break, 5mm/min | 1.5 / 1.6 | % | ISO 527-1/-2 |
| Flexural modulus | 19200 / 16000 | MPa | ISO 178 |
| Flexural strength | 420 / 330 | MPa | ISO 178 |
| Flexural strain at failure | 3 / 3.3 | % | ISO 178 |
| Charpy impact strength, 23 °C | 100 / 83 | kJ/m² | ISO 179/1eU |
| Charpy impact strength, -30 °C | 85 / - | kJ/m² | ISO 179/1eU |
| Charpy notched impact strength, 23 °C | 50 / 40 | kJ/m² | ISO 179/1eA |
| Charpy notched impact strength, -30 °C | 52 / - | kJ/m² | ISO 179/1eA |
| Puncture - maximum force, 23 °C | 2820 / - | N | ISO 6603-2 |
| Puncture energy, 23 °C | 17.6 / - | J | ISO 6603-2 |
| Poisson's ratio | 0.33 / 0.33[C] | | |

[C]: Calculated

## Thermal properties

| | dry/cond. | | |
|---|---|---|---|
| Temperature of deflection under load, 1.8 MPa | 260 / * | °C | ISO 75-1/-2 |
| Temperature of deflection under load, 8 MPa | 250 / * | °C | ISO 75-1/-2 |
| Coefficient of linear thermal expansion (CLTE), parallel | 14 / * | E-6/K | ISO 11359-1/-2 |
| Coefficient of linear thermal expansion (CLTE), normal | 60 / * | E-6/K | ISO 11359-1/-2 |

## Physical/Other properties

| | dry/cond. | | |
|---|---|---|---|
| Density | 1690 / - | kg/m³ | ISO 1183 |

## Injection

| | | |
|---|---|---|
| Drying Recommended | yes | |
| Drying Temperature | 80 | °C |
| Drying Time, Dehumidified Dryer | 2 - 4 | h |
| Processing Moisture Content | ≤0.2 | % |
| Melt Temperature Optimum | 295 | °C |

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| | | |
|---|---|---|
| Min. melt temperature | 285 | °C |
| Max. melt temperature | 305 | °C |
| Screw tangential speed | ≤0.2 | m/s |
| Mold Temperature Optimum | 100 | °C |
| Min. mould temperature | 70 | °C |
| Max. mould temperature | 120 | °C |
| Hold pressure range | 50 - 100 | MPa |
| Back pressure | 3 | MPa |
| Ejection temperature | 218 | °C |

## Characteristics

| | |
|---|---|
| Processing | Injection Moulding |
| Delivery form | Pellets |
| Special characteristics | Heat stabilised or stable to heat |

## Additional information

Processing Notes

### Pre-Drying

CELSTAN PA should in principle be predried. Because of the necessary low maximum residual moisture content the use of dry air dryers is recommended. The dew point should be =< - 30° C. The time between drying and processing should be as short as possible.

## Automotive

| OEM | STANDARD | ADDITIONAL INFORMATION |
|---|---|---|
| Ford | WSB-M4D680-A | |
| General Motors | GMW17810P-PA66-GF60 | Black (Limited Approval) |
| Stellantis - Chrysler | MS.50017 / CPN-4329 | Technical Black |

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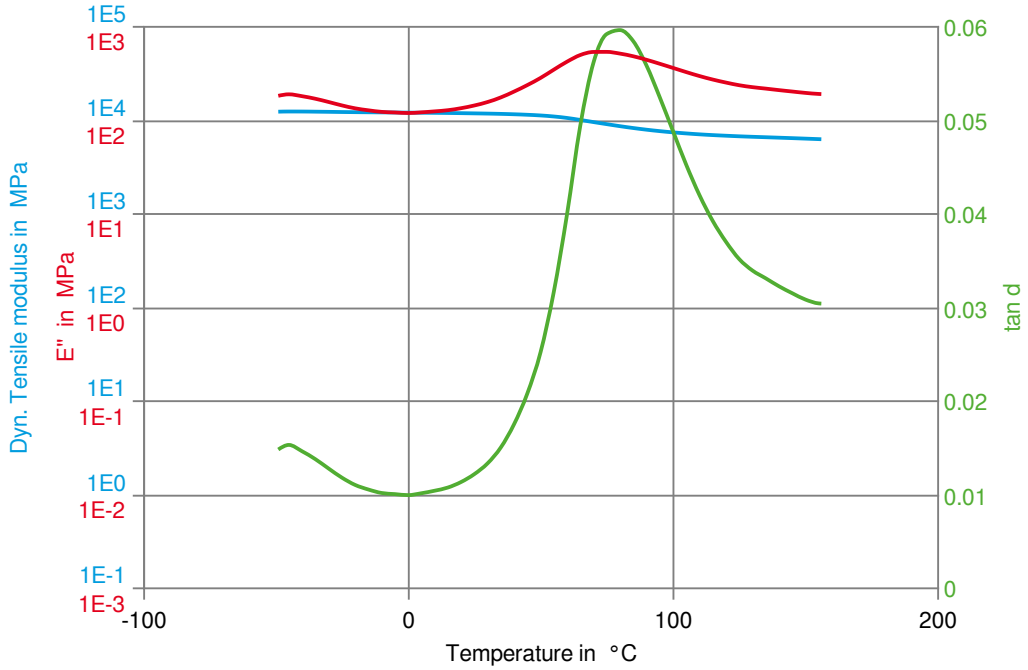
## Dynamic Tensile modulus-temperature (dry)



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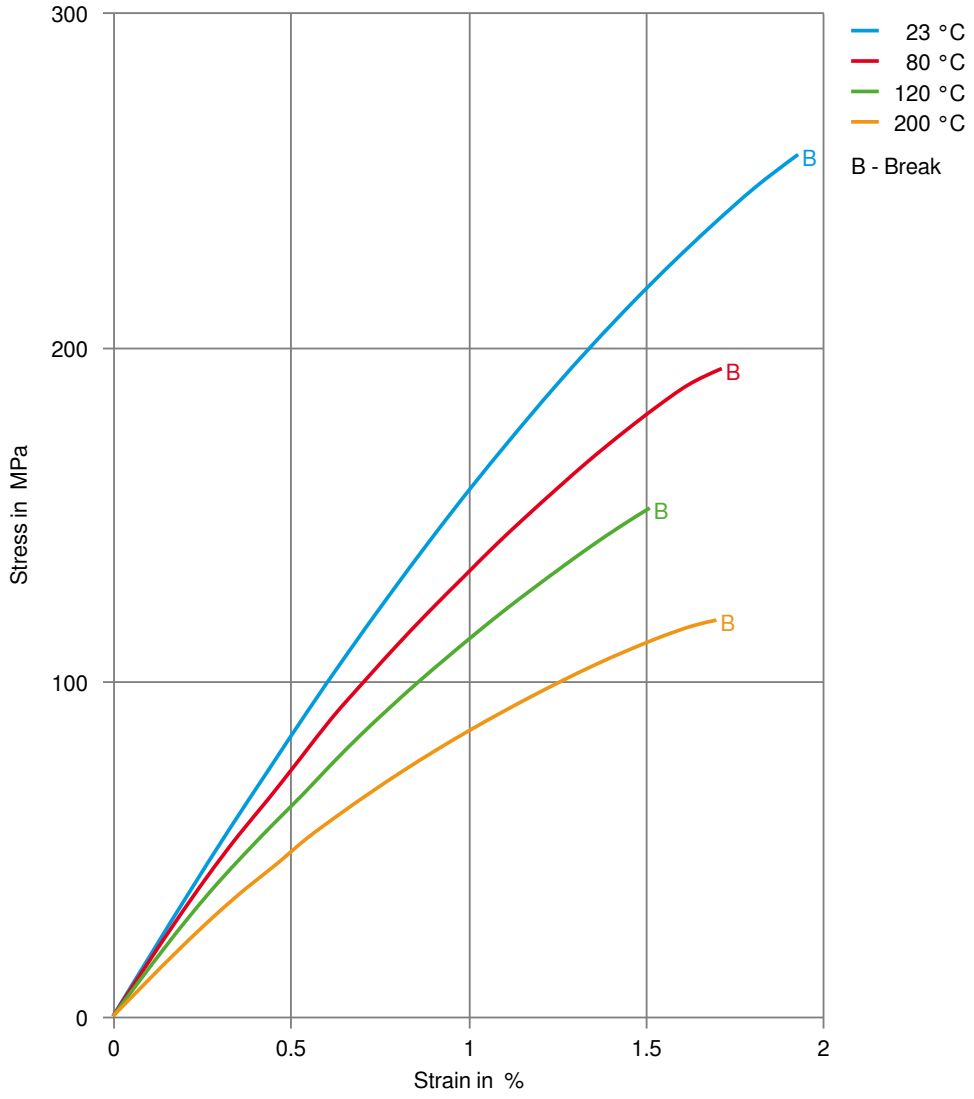
## Stress-strain (dry)



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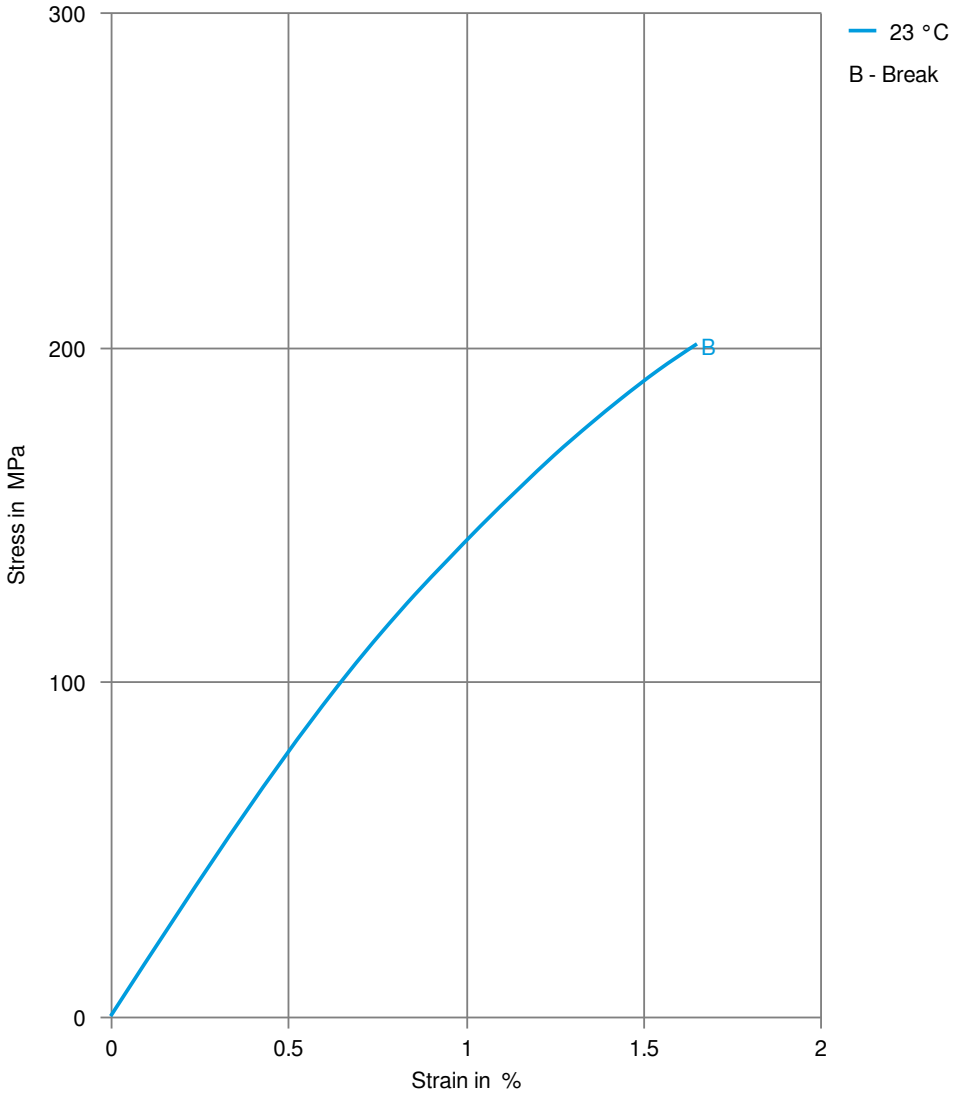
## CELSTRAN® Long Fibre

### Stress-strain (cond.)



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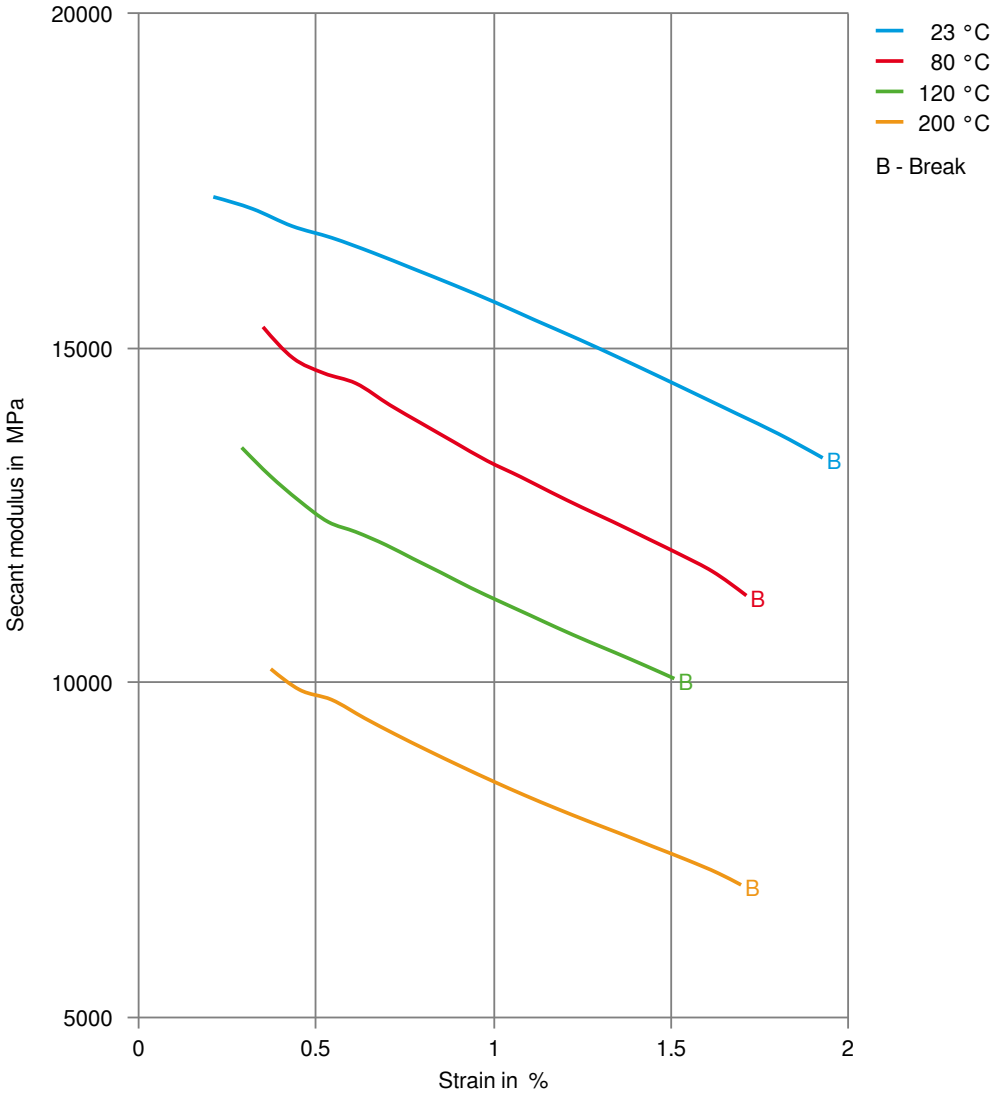
## Secant modulus-strain (dry)



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## Secant modulus-strain (cond.)