

Fortum Circo® PP-CF 20

Post-consumer recycled (PCR) polypropylene reinforced with cellulose fibres from sustainably grown forests

Product Description

Fortum Circo® PP-CF is a compound of recycled plastic reinforced with cellulose fibre for injection moulded applications with low CO₂e emissions. The compound is supplied in pellet form. The grade is available in grey colour with an option to add colour MB of your choice.

Sustainability

Fortum Circo PP-CF 20 contains at least 65 % of Post-Consumer recycled material which is separately collected plastic packaging from households in accordance with EN ISO 14021:2016. The quality and traceability of recycled content is certified by EuCertPlast. Cellulose fibre is sustainably and traceably sourced from Nordic coniferous forests.

The total cradle-to-gate carbon footprint of product (GWP total), including also biogenic carbon content is 207 kg CO₂ eq per 1000kg of the packed granulates.

The material is recyclable using modern recycling methods. For further information, please contact Fortum representative.

Typical Properties

| | Nominal Value | Units | Test Method |
|--|--------------------------|-------------------|-------------|
| Mechanical | | | |
| Tensile Modulus | 2100 | MPa | ISO 527 |
| Tensile Strength at Yield | 30 | MPa | ISO 527 |
| Tensile Elongation at Break | 2,6 | % | ISO 527 |
| Flexural Modulus | 2300 | MPa | ISO 178 |
| Flexural Strength | 51 | MPa | ISO 178 |
| Charpy Impact Strength (A notched) +23°C | 5 | kJ/m ² | ISO 179 |
| Charpy Impact Strength (Unnotched) +23°C | 26 | kJ/m ² | ISO 179 |
| Physical | | | |
| Density | 0,99 | kg/m ³ | ISO 1183 |
| Post-consumer recycled (PCR) content | >65 | % | Weight |
| Filler content | 20 | % | Internal |
| Filler type | Cellulose fibre | | Internal |
| Viscosity 1400 1/s (Pa*s) | 115 | Pa*s | ISO 11443 |
| Viscosity 5000 1/s (Pa*s) | 45 | Pa*s | ISO 11443 |
| Melt flow rate (200°C/10,0 kg) | 9 | g/10min | ISO 1133 |
| Colour | Grey, colour MB optional | | |

These are typical property values not to be construed as specification limits.

Processing: Injection moulding

Pre-drying is suggested to 105 °C in a dessicant dryer for a sufficient time, typically 4 hours. Residual moisture is suggested to keep below 0,2%.

The suggested injection moulding cylinder temperature is between 160 °C and 200 °C. Temperatures should not exceed 200 °C, as it may cause unwanted colouring and degradation of the material. Mould temperatures can be between 20 °C and 80 °C, depending on the application.

Use relatively high injection speed but avoid high spot temperatures on e.g. the nozzle. Holding pressure is needed and should be matched to the process, although the holding pressure time can be relatively short together with the cooling time. Use modest rpm on plasticization with low back pressure to avoid fibre breakage.

Purge the compound with pure PP for process stop; prolonged residue times may cause unwanted material degradation and should be avoided. Make sure that hot lumps are cooled properly, preferably with water.

For further information of processing Fortum Circo PP-CF series materials, please refer to Processing Guide.

Features

- Sustainability: recycled plastics & renewable fibres
- Excellent stiffness
- Low density vs. stiffness
- Vivid surface
- Pleasant haptic sensation
- Fast production cycle time
- Low tool wear vs. glass fibres

Applications

- Automotive
- Consumer goods
- Furniture & décor
- Electrical & electronic products

Further Information

Certificates

| | |
|---------------------------------------|----------------------------|
| Quality Management System | ISO 9001:2015 No. 1111-16 |
| Environmental Management System | ISO 14001:2015 No. 1110-17 |
| Occupational Health and Safety System | ISO 45001:2018 No. 5051-11 |



Health and Safety

Material is based on post-consumer recycled plastic. Please verify that use of PCR based materials is permitted in your products.

For further information about safety in handling and processing please refer to the Safety Data Sheet.

Storage

The granulate is packed in big bags or bulk containers.

Material should be stored in dry conditions at normal temperatures and protected from UV-light. If it is stored under certain conditions, i. e. if there are large fluctuations in ambient temperature and the atmospheric humidity is high, moisture may condense inside the packaging. Under these circumstances, it is recommended to dry the resin before use.

Disclaimer

It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products.

The suitability of the material for the planned use should be always verified by the customer. Fortum is reporting these values and guidelines based on its own knowledge; updates may occur without notice. Please verify data accuracy with Fortum.

Company Information

For further information, please visit: www.fortum.com/circo