TECHNICAL DATA SHEET (TDS)

# IVE GLASSFORCE rPP

Recycled polypropylene (rPP) – 30% glass fiber reinforced pellet for FGF 3D printing.



## 01 Product description & applications

IVE GLASSFORCE rPP is a polypropylene (rPP) compound reinforced with 30% glass fibers. The formulation is engineered for pellet extrusion and optimized for large-format FGF 3D printing. The glass fiber reinforcement significantly increases stiffness, dimensional stability, heat resistance and impact strength compared to unfilled polypropylene. The material is designed for reliable printing of large parts with lower warpage and stable mechanical performance. Typical applications include functional prototypes, housings, fixtures and load-bearing components. The printed parts show good machinability and can be post-processed using standard finishing methods.

## 02 Pellet properties

| PELLET DIAMETER | PELLET LENGTH | PELLET SHAPE | AVAILABLE COLORS |
|---|---|---|---|
| **Approx. 2.6 mm** | **Approx. 3 mm** | **Cylindrical, cold cut** | **Black** |

**Source** – PIR Post-Industrial Recycled

## 03 Packaging

Available in **10 kg bags** **20 kg bags** **1000 kg big bags**

## 04 Recommended 3D printing conditions

| | | |
|---|---|---|
| NOZZLE TEMPERATURE<br>**220–230 °C** | BED TEMPERATURE<br>**50–80 °C** | LAYER HEIGHT<br>**Layer width / height ratio 3:1** |
| BED SURFACE / ADHESION<br>**Mechanical clamping / PEI** | NOZZLE DIAMETER<br>**≥ 0.8 mm** | PRINT SPEED<br>**20–80 mm/s** |

## 05 Drying recommendations

| RECOMMENDED | MINIMUM | TIME | MOISTURE |
|---|---|---|---|
| **70 °C** | **55 °C** | **6–12 h** | Drying conditions depend on the hardware setup. Ideally, the moisture content should be reduced to **below 0.1%** before use. |

## 06 Physical & general properties

| GENERAL | STANDARD | AVERAGE VALUE |
|---|---|---|
| Specific mass | ISO 1183-1 | **1.17 g/cm³** |
| Bulk density | ISO 60 | **1.07 g/cm³** |

| THERMAL | STANDARD | AVERAGE VALUE |
|---|---|---|
| Glass transition temperature | ISO 11357-2 | **-5 °C** |
| Heat deflection temperature | ISO 75-2 (0.45 MPa) | **125 °C** |
| MFR | ISO 1133-1 (2.16 kg, 230 °C) | **4.36 g/10 min** |

| TENSILE | STANDARD | XZ DIRECTION (1) | ZX DIRECTION (2) |
|---|---|---|---|
| Tensile strength | ISO 527 (50 mm/min) | **53.4 MPa** | – |
| Elongation at break | ISO 527 (50 mm/min) | **8%** | – |
| Young's modulus | ISO 527-1, -2 | **5540 MPa** | – |

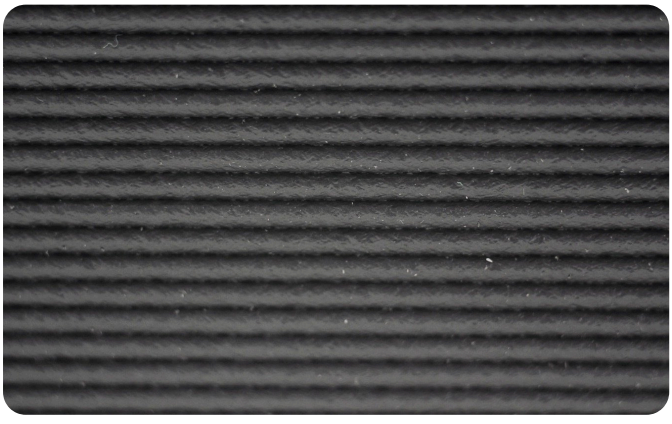
| FLEXURAL | STANDARD | XZ DIRECTION (1) | ZX DIRECTION (2) |
|---|---|---|---|
| Flexural strength | ISO 178 (2 mm/min) | **81.8 MPa** | – |
| Flexural modulus | ISO 178 | **5684 MPa** | – |

| IMPACT | STANDARD | XZ DIRECTION (1) | ZX DIRECTION (2) |
|---|---|---|---|
| Impact strength (Charpy, unnotched) | ISO 179-1 | **18.5 kJ/m²** | – |

## 07 Storage & handling

Store in sealed, moisture-proof packaging between 10 °C and 25 °C in a clean, dry area. Avoid direct sunlight, moisture exposure and dust. To prevent damage to the extrusion system and possible clogging with smaller nozzle sizes, avoid contamination with solids or other thermoplastic materials. The shelf life is 12 months under recommended storage conditions. **Dry the material before processing** to ensure consistent print quality.

3D PRINT EXAMPLE



SAMPLE ORIENTATION

