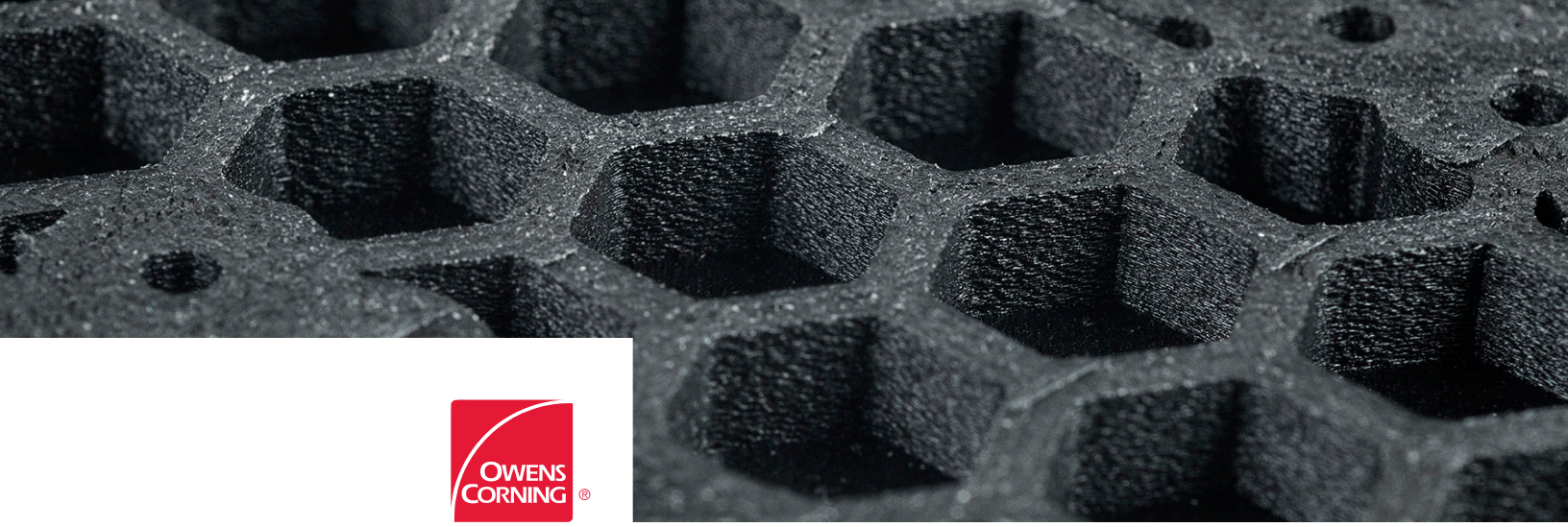

# XSTRAND® GF30-PA6 SETTING STANDARDS

Developed by Owens Corning, a world leader in Composites, XSTRAND® GF30-PA6 filament for 3D printing is a reinforced material designed to be compatible with any standard Fused Filament Fabrication 3D printer (1.75 and 2.85 mm diameters available).

## FOR 3D PRINTING

## GLASS FIBER REINFORCED POLYAMIDE 6 | GF30-PA6

### Product Benefits

- Superior durability and strength (up to +250% compare to ABS)
- Large operational temperature range (heat deflection temperature of 129°C)
- Chemical and UV resistance
- High wear resistance
- Excellent layer adhesion
- Reduced warping effect compared to neat PA6

### Potential Applications

XSTRAND® GF30-PA6 is designed for functional prototyping and demanding applications such as industrial tooling, transportation, electronics, small appliances, sports & leisure.

# MATERIAL

## Physical Properties

| | METRIC | IMPERIAL | STANDARD |
|---|---|---|---|
| Density | 1.17 g/cm³ | 9.76 lbs/gal | ISO 1183-A |
| Moisture Absorption | 0.58% | 0.58% | ISO 62<br>23°C/50% RH |
| Water Absorption | 9.62% | 9.62% | ISO 62<br>23°C/Sat |
| Color | Black | | |

## Mechanical Properties

| | METRIC | IMPERIAL | STANDARD |
|---|---|---|---|
| Tensile Modulus | 7,400 MPa | 1,074 ksi | ISO 527<br>1mm/min<br>(0.04 inch/min) |
| Tensile Strength (Yield) | 102 MPa | 14,800 psi | ISO 527<br>1mm/min<br>(0.04 inch/min) |
| Tensile Strength (Break) | 102 MPa | 14,800 psi | ISO 527<br>1mm/min<br>(0.04 inch/min) |
| Elongation (Break) | 2.1% | 2.1% | ISO 527<br>1mm/min<br>(0.04 inch/min) |
| Flexural Modulus | 6,100 MPa | 880 ksi | ISO 178<br>2 mm/min<br>(0.08 inch/min) |
| Flexural Strength (Yield) | 170 MPa | 24,600 psi | ISO 178<br>2 mm/min<br>(0.08 inch/min) |
| Flexural Strength (Break) | 166 MPa | 24,100 psi | ISO 178<br>2 mm/min<br>(0.08 inch/min) |
| Charpy unnotched impact | 56 kJ/m² | - | ISO 179 |

## Thermal Properties

| | METRIC | IMPERIAL | STANDARD |
|---|---|---|---|
| Heat Deflection Temperature | 124°C | 255°F | ISO 75<br>Method A (1.8 MPa) |
| Melting Point | 206°C | 403°F | ISO 11357 |
| Glass Transition Temperature | 62°C | 143.6°F | DSC ISO 11357 |
| Thermal Coefficient | In process | | ISO 11395-2 |

## Printer Setting

| | METRIC | IMPERIAL |
|---|---|---|
| Nozzle Temperature | 220°C - 280°C | 80°C - 110°C |
| Bed Temperature | 60°C - 70°C | 140°F - 158°F |
| Printing Speed | 30-100 mm/s | - |
| Nozzle diameter | >0.4mm | - |
| Recommended Bed Type | Perforated plate – PEI plate – PI (Kapton) – PA6 glue (Dimafix™, ...) - Bluetape | |

# PACKAGING

**Package Specifications**

| | METRIC | IMPERIAL | STANDARD |
|---|---|---|---|
| Filament diameter | 1.75 mm/2.85 mm | 0.069 inch/0.122 inch | +/- 0,05 mm |
| Material weight | 500 g/2200 g | 1.1 lbs/4.85 lbs | Net weight |
| Spool (500 g/1.1lbs) | 200/52/55 mm | 7.9/2.0/2.2 inch | Øext/Øint/width |
| Spool (2200 g/4.85lbs) | 300/52/102 mm | 11.8/2.0/4.0 inch | Øext/Øint/width |


## GF30-PA6

GF30-PA6 is a reinforced PA6 nylon filament with 30% glass fiber. Up to 250% stronger than carbon fiber reinforced ABS, GF30-PA6 has a wide operational temperature range (-20° to 120° C) to meet all your needs.

## Industry and Tooling

Manufacture on demand with XSTRAND® GF30-PA6. GF30-PA6 makes it possible to design, print, and make modifications to parts and tools on site. XSTRAND® GF30-PA6 has the high performance, thermal stability and wear resistance for all your manufacturing and prototyping needs.

## Electronics and Small Appliances

XSTRAND® GF30-PA6 offers quick prototyping, testing and custom design with an industrial grade material. Customize small scale production of new parts or rapidly prototype parts for testing.


## Storage and Drying

XSTRAND® filaments must be stored in a dark, dry and temperate location. It is recommended that the product remain closed in its original packaging until use. GF30-PA6 is very sensitive to moisture. For optimal printing results, the product must be dried at least 4 hours in the oven at 80° C prior to use and stored in a dry, Pelican like case, even during printing.

## Warning

When melted, XSTRAND® filament can be abrasive due to its glass reinforcement. Printing with XSTRAND® may reduce brass nozzles and extruder driving wheels' lifetime. For a better experience, using hardened steel nozzles and extruder driving wheels is advised. Ensure sufficient ventilation in your 3D printing space and avoid inhaling extrusion fumes.

**IMPORTANT NOTICE:** We recommend the use local exhaust ventilation equipped with HEPA filters to remove ultra-fine particles and/or carbon filters to remove VOCs on all 3D printers.

## Contact

For any questions related to XSTRAND® 3D products, contact us at:

**3dprinting@owenscorning.com**

Or visit us at:
**www.owenscorning.com/xstrand**

Safety data sheet and more information available on our website.

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