

## CarbonFil™

CarbonFil™ is a light-weight and incredibly stiff carbon fibre reinforced filament. Our CarbonFil™ filament is based upon a unique blend of our HDglass™ compound reinforced with 20% ultra-light and relatively long stringer carbon fibres, which has resulted in an exceptionally stiff carbon fibre 3D printer filament.

By making use of ultra-lightweight and relatively long carbon fibre stringers we have managed to make our CarbonFil™ twice as stiff as our HDglass™ compound and yet we still managed to increase its impact strength with more than 10%. Usually an upturn in a material's stiffness will have a downturn on its impact strength. With CarbonFil™ we managed to increase both these parameters and by that it can truly be called a tough material. Adding such a relatively high percentage of 20% long stringer carbon fibres into our CarbonFil™ compound also has resulted in a relatively high heat deflection temperature of 85°C and very good dimensional stability properties.

The CarbonFil™ compound combines quite a few unique properties into a 3D printer filament and still one of the most important properties hasn't been named yet, namely its printer friendliness. CarbonFil™ outperforms any other carbon filament when it comes to printability of the filament. Printing with CarbonFil™ filament is truly very easy and comfortable as it is warp-free, can be printed without a heated bed, has a great thermal stability, an excellent flowing behaviour and a superb first- and interlayer adhesion and does not produce any odors during 3D printing.

CarbonFil™ filament and its printed objects have a stunning matt charcoal black carbon colour, feel and look and prints best at a printing temperature range within 230°C and 265°C. CarbonFil™ can be printed without a heat bed and sticks extremely well to [EuroCel Blue Masking Tape](#).

### CarbonFil™ unique features

- Extremely stiff
- Incredible carbon look and feel
- Very easy to print
- Warp-free
- Light-weight
- Great impact resistance
- Excellent first- and interlayer adhesion
- Great dimensional stability

Above set of unique features opens a whole new field of application for desktop 3D printing. Light-weight, stiffness, dimensional stability and an awesome carbon appearance are an assurance for applying desktop 3D printing to new fields of application in for instance the automotive and aerospace industry. What about printing your own drone, parts for your motorbike, or car parts?

CarbonFil™ has an excellent roundness and very tight diameter tolerances, which makes this filament a perfect match with all common desktop 3D printers. Printing with CarbonFil™ 3D printer filament will go very smoothly with basically all FFF/FDM technology based desktop 3D printers, such as:

- Ultimaker
- RepRap (Mendel, Huxley, Prusa)
- WASP
- Sharebot
- Solidoodle
- MakerBot (Replicator, Replicator 2, Replicator 2X)
- Leapfrog
- UP! Plus, Up! Mini
- AND MANY MORE....!

CarbonFil™ is a perfectly safe material as it does not contain any hazardous substances, is Bisphenol A free, RoHS certified and REACH compliant.

### Abrasiveness

Please be aware that CarbonFil™ filaments contain a relatively high concentration of extremely hard carbon fibres, which have an abrasive nature. In general these carbon fibres will accelerate the nozzle-wear of brass nozzles, much faster than unfilled filaments. We recommend to use nozzles from stainless steel or other hardened alloys.

### General Tips & Tricks for printing with CarbonFil™ filament

- It is important that your print bed is levelled properly and adjusted quite tight to the nozzle; This will make sure that you will get a good your first layer to your print surface.
- A good first layer adhesion can be obtained on [EuroCel Blue Masking Tape](#).
- It is important that your print surface is clean.