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Product specifications

Our ApolloX CF10 combines all benefits of ApolloX filament plus 10% carbon fibers.

ApolloX CF10 is a high-performance carbon fiber reinforced ASA filament. The use of high modulus carbon fibers make ApolloX CF10 very lightweight and stiff. This engineering filament is very easy to 3D print on open desktop machines. No enclosure, or heated chamber needed. Its low shrinkage factor and perfect layer adhesion make ApolloX CF10 a breeze to print with.

Important key features

- UV- and weather resistant
- Stiff with high modulus and impact resistance
- Heat resistant up to 101°C
- Superior dimensional stability
- Easy to print on open desktop 3D printers

Suitable applications

- Aerospace and automotive
- 3D printing housings and covers
- Rigid parts for outdoor applications
- Civil engineering applications
- Manufacturing end-use products

Carbon fiber reinforcement explained

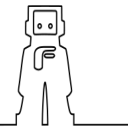
Reinforcing filaments with carbon results in great benefits. It combines the unique properties of both materials. The properties of the thermoplastic improve with everything carbon fibers offer. Carbon fibers offer lots of benefits, such as:

- Increasing stiffness
- Reducing weight
- Increasing tensile strength
- Increasing dimensional stability
- Reducing shrinkage / warping
- Increasing heat resistance
- Increasing chemical resistance
- Masking layer lines with a matt surface finish in 3D printed objects

This makes carbon fiber reinforced filaments perfect for 3D printing applications that require stiffness and lightweight properties.

| Material properties | Typical value | Test Method |
|--|----------------------------|-------------|
| Density | 1.1 g/cm ³ | ISO 1183 |
| Mechanical properties | | |
| Elastic tensile modulus | 7580 MPa | ISO 527 |
| Tensile strength (23°C, 50mm/min) | 79 MPa | ISO 527 |
| Elongation at break (23°C, 50mm/min) | 1,8% | ISO 527 |
| Charpy unnotched impact strength, 23°C | 8 ft.lb/in ² | ISO 179/1eU |
| Charpy notched impact strength, 23°C | 2.57 ft.lb/in ² | ISO 179/1eU |
| Thermal properties | | |
| VICAT softening point | 101.6°C | ISO 306 |
| Heat deflection temperature (HDT) @ 66 psi | 100.5°C | ISO 75 |
| Heat deflection temperature (HDT) @ 264psi | 95°C | ISO 75 |





Abrasiveness

Please be aware that carbon fiber reinforced filaments contain a relatively high concentration of extremely hard carbon fibers, which have an abrasive nature. In general these carbon fibers will accelerate the nozzle-wear of brass nozzles, much faster than unfilled filaments. We recommend to use ruby nozzles or hardened steel nozzles.

Storage and handling

Filament should be stored at room temperature in a dry and dark place with humidity below 15%. Recommended storage temperature is ca. 18-25°C (64.4 -77.0°F). Keep out of moisture, sunlight and direct heat. When stored properly, product has a shelf life of 24 months. To obtain the best parameters of the printed object, it is recommended to dry the material prior to usage and to 3D print it directly from a dry box.

Product export information

| HS Code | Description | Origin |
|----------|------------------------------|----------------|
| 39169090 | Monofilament for 3D printing | European Union |

Disclaimer

The product- and technical data provided in this datasheet is correct to the best of FormFutura BV's knowledge and are intended for reference and comparison purposes only. Actual values may vary according to printing conditions, model complexity, environmental conditions, etcetera. Typical values are indicative only and are not to be construed as being binding specifications. All other information supplied, including that herein, is considered accurate but is furnished upon the express condition that the customer shall make its own assessment to determine a product's suitability for a particular purpose. We make no warranty, express or implied, including regarding any information supplied or the data upon which it is based or the results to be obtained from the use of such products or information, or concerning product, whether of satisfactory quality, merchantability, fitness for any particular purpose or otherwise, or with respect to intellectual property infringement as a result of use of information or products, and none shall be implied.

