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Robot and Engine print by ITALYmaker

## ABSpro™

ABSpro is a professional high-strength ABS (Acrylonitrile Butadiene Styrene) based 3D printer filament – which has been reinforced with a mixture of Styrene Maleic Anhydride (SMA) and PolyCarbonate (PC) – resulting in an incredibly strong and even more impact resistant filament. ABSpro is extremely strong, has an high aloss and is extremely suitable for printing mechanical parts with high precision and fine detail and has exceptional endurance properties.



### Flame Retardant ®



ABSpro - Flame Retardant is a professional, halogen free, self-extinguishing filament which is engineered to meet the UL 94 V-0 flammability standards, meaning that the vertical burning of the filament, or 3D printed object, stops within 10 seconds.







## EasyFil™ ABS

EasyFil ABS is an easy to use and high-end Acrylonitrile Butadiene Styrene 3D printer filament.

EasyFil ABS prints at slightly higher printing temperatures than regular ABS, but its superb process stability and physical features make EasyFil ABS a much more impact resistant and printable ABS type of filament compared to average ABS filaments.





### **JetX Engineering**

The X-Plorer 1 is the first engine model designed and manufactured by JetX, as well as being the first of its kind to feature an integrated monitoring system that tracks performance and wirelessly transmits the data in real time. Over 50 engineering students from 9 disciplines have been involved in the design, analysis, manufacture and testing phases.





#### **Premium ABS**

Black

Blue

Premium ABS is our entry-level no-nonsense ABS filament, which is very impact resistant.

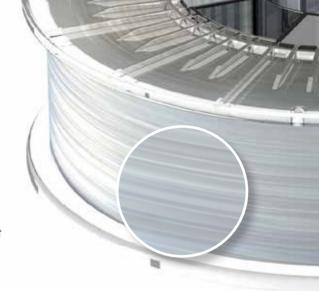
Even though Premium ABS might be our entry-level ABS filament, it still outperforms many other ABS type of 3D printer filaments by far when it comes to printer friendliness and reduced warping. Premium ABS has a great thermal stability and flowing behaviour, which is essential for 3D printing.



#### **ClearScent**<sup>™</sup>

ClearScent ABS is an extremely printer friendly Methyl Methacrylate-Acrylonitrile-Butadiene-Styrene type of 3D printer filament which is transparent in its original form and doesn't produce any unpleasant odours when being 3D printed.

Besides its transparency and odourless processing features ClearScent ABS is nearly warp-free, has an excellent thermal stability and its 3D printing flowing behaviour is fine-tuned for optimal 3D printing results.









White





Dark Blue



## **ApolloX**<sup>TM</sup>

ApolloX is a professional high-performance engineering filament, which is based on an uniquely industrial-grade modified ASA (Acry-Ionitrile Styrene Acrylate) compound. ApolloX has been modified to have great thermal stability, improved filament flowing behavior, zero-warping and flawless first- and interlayer adhesion allowing you to 3D print objects with an almost injection-molded precision. ApolloX is UV and weather resistant and by that ensuring great color stability - combined with high strength and heat resistant properties – which makes ApolloX a perfect engineering filament for outdoor and automotive applications.

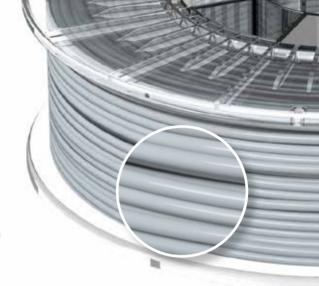




Print by Simone Fontana

### TitanX™

TitanX is an industrial-grade, high-performance and FFF/FDM-optimized ABS based engineering filament. TitanX is the evolution of ABS into a warp-free filament with unsurpassed mechanical properties and is extremely suitable for 3D printing large scale and high precision engineering objects. TitanX is truly FFF/FDM-optimized as it has zero warping, a perfect interlayer adhesion and can be printed directly on a heated glass plate without any adhesives or tapes to be used.







Black



White



Grey



Light Grey



Natural



Red



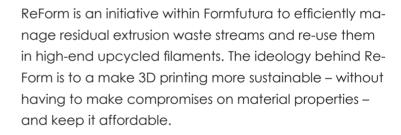
Dark Blue



### ReForm™

At Formfutura we truly believe that desktop 3D printing can have a major contribution in creating a more sustainable society.

Regardless of the filaments used, desktop 3D printing and its FFF technology can contribute to a more sustainable future. However, your choice of filament can also help bring about a more sustainable environment in the future.



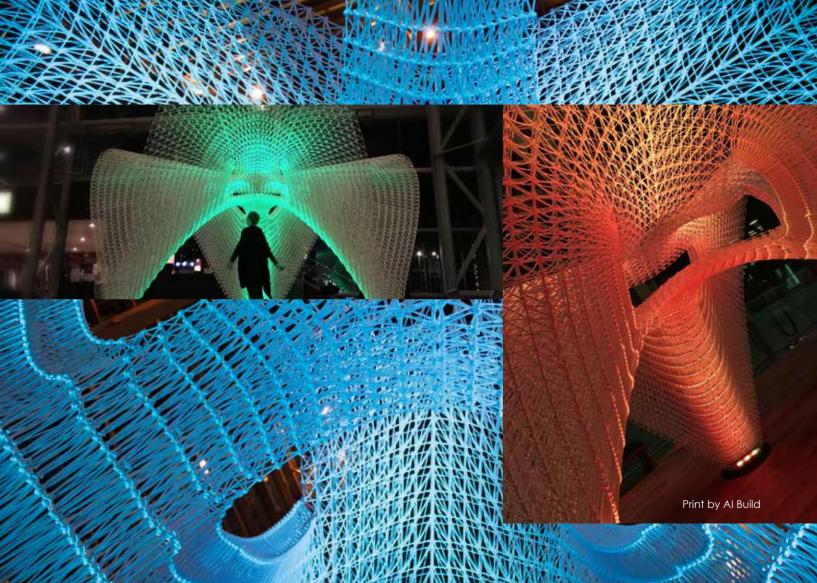
Available in rTitan, rPLA and rPet











### **Premium PLA**

Premium PLA is a high-end general purpose Poly-Lactic Acid type of 3D printer filament which is more purer and lesser modified than our EasyFil PLA for instance.

Premium PLA is a slightly harder PLA with an excellent thermal stability and a slightly faster crystallization process of the 3D printed layers and is often used for large(r) scale prototyping on industrial-sized 3D printers. Therefore Premium PLA is available on large spool sizes.







Strong Black





Frosty White



Dutch Orange



Transparent

Flaming

Red



Robotic Grey

Solar

Yellow



Ocean Blue



Atomic Green



# MagicFil™ Thermo PLA

MagicFil Thermo PLA is based on our EasyFil PLA compound, but with a touch of thermochromic magic added, as MagicFil has a colour changing ability when heated above 29° C. MagicFil's anthracite grey colour will change into a natural PLA colour when the material reaches a temperature of 29° C or above.

Being based on our EasyFil PLA compound make MagicFil Thermo PLA a high-end "easy to use" impact modified PLA (Poly-Lactic Acid) type of 3D printer filament which is optimized for FFF / FDM 3D printing technology. MagicFil Thermo PLA is tougher and less rigid than standard PLA and its improved filament flowing behaviour and interlayer adhesion make it an extremely easy to print filament.







#### **Volcano PLA**

Volcano PLA is an industrial grade PLA which is engineered for professional applications that require high printing speeds and improved heat resistance and mechanical properties similar to ABS. Volcano PLA offers the same mechanical and thermal properties - after annealing - as most ABS filaments, but with the biodegradability and ease of printing of PLA. Volcano PLA combines a high heat resistance with high printing speeds and high impact resistance into a PLA-based filament engineered for industrial applications.



Black



White





## 42 Skulls

Dutch artist Dolf Veenvliet (a.k.a. macouno) created a series of 42 one of a kind life size Skulls using a combination of FormFutura EasyFil and Premium PLA filaments.

Each skull takes a full day to print and colour changes are done manually.

In the summer of 2017 the skulls have been exhibited at the Kunst Rai in Amsterdam and the North Sea Jazz Festival.

For more information see: www.macouno.com



# **EasyFil HIPS™**

EasyFil HIPS is a high-performance and easy to print High Impact PolyStyrene type of 3D printer filament, which is slightly softer and more flexible than average HIPS filaments and by that making it a very impact resistant HIPS filament.

EasyFil HIPS is very chemically inert and has outstanding characteristics with respect to hygiene, strength and heat resistance and it prints really smoothly and in fine detail with an extremely matter surface finish. EasyFil HIPS printed parts are very light-weight and can easily be glued together with a variety of adhesives.



Black



White



Grey



Red



Dark Blue



### STYX-12<sup>™</sup> NYLON

STYX-12 is an industrial PA12 grade nylon filament which combines excellent mechanical, chemical and hygroscopic properties with printability.

STYX-12 has a very low water absorption compared to other nylons and can be printed at relatively low temperatures. This combination of properties has resulted in high-performance and industrial-grade nylon which can be printed on a wide-range of FFF/FDM 3D printers.



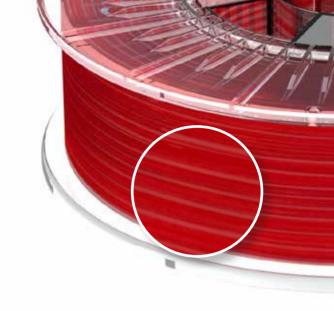




## HDglass™

HDglass is a high performance filament based on an unique PETG blend resulting in an amorphous, high strength, high gloss and ultra-transparent 3D printer filament.

HD stands for "Heavy Duty", as HDglass is developed to have an optimal thermal stability and by that perfect 3D printing flowing behaviour, resulting in a very easy to print 3D printer filament with a remarkable high gloss, transparency and excellent properties with respect to strength, toughness and temperature resistance.



\* Blinded



## **Support Materials**

### Aquasolve™ - PVA

AquaSolve is a high-end cold water soluble PVA (PolyVinyl Alcohol ) type of 3D printer filament, which bonds very well to a variety of (thermo)plastics – such as PLA, PETG, ABS, and more – that print within a similar temperature range. This makes AquaSolve an excellent PVA support material for dual extrusion prints.

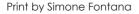
AquaSolve™ PVA has a limited smell during printing and is non-toxic and biodegradable once dissolved in water





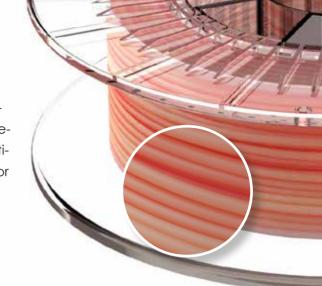






#### Atlas Support<sup>™</sup> - PVA

Atlas Support is the next generation in PVA water-soluble support materials for FFF/FDM 3D printing. Atlas Support is the result of extensive research to PVA improvement which has resulted in an unique formulation where numerous PVA grades have been blended into one superior water soluble support material with improved thermal stability. Atlas Support has good bonding to a wide variety of materials – such as PLA, ABS, PETG, ASA, HIPS, et cetera – and is much less sensitive to





degradation by humidity.

#### LimoSolve<sup>™</sup> - HIPS

LimoSolve HIPS is a high-performance and easy to print High Impact PolyStyrene type of 3D printer filament which doesn't contain any added colorants and dissolves completely in Limonene. Being soluble in Limonene in combination with similar thermal properties to ABS make LimoSolve an outstanding supporting material for complex dual extrusion ABS prints. When not being used as support material LimoSolve HIPS prints in an extremely bright white colour and has exactly the same characteristics as our EasyFil HIPS filament range.



#### Flexible Materials

#### Crystal Flex<sup>™</sup> - SBC

Crystal Flex is a high-performance and easy to use Styrene-Butadiene Copolymer based 3D printer filament, which combines strength, resilience, semi-flexibility and transparency with printability.

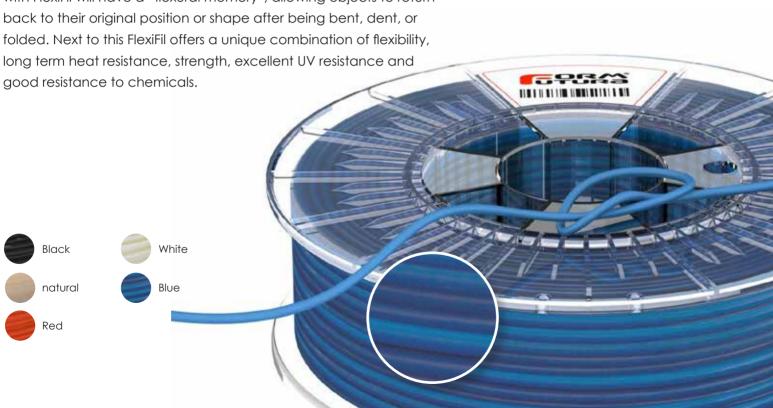
Crystal Flex filament is as clear as PolyCarbonate and has an extremely high surface gloss and by that can truly be called a bright filament. All these properties combined make Crystal Flex a diverse and wonderful filament to print with and which can be applied for a wide range of applications.





#### FlexiFil™ - TPE

FlexiFil is a rubber-like high-performance and partially bio-based flexible TPC (Thermoplastic Co-Polyester) type of 3D printer filament. FlexiFil has unique flexural strength properties, as 3D printed objects with FlexiFil will have a "flexural memory", allowing objects to return back to their original position or shape after being bent, dent, or folded. Next to this FlexiFil offers a unique combination of flexibility, long term heat resistance, strength, excellent UV resistance and



### **StoneFil™**

StoneFil is a PLA-based filament which is based on our modified and easy-to-print EasyFil PLA compound and is gravimetrically filled with 50% of powdered stone.

This high "stone filling" has resulted in a 3D printer filament with remarkable aesthetic features and a significant higher material density up to 37% higher than "normal" PLA. StoneFil is an easy-to-print 3D printer filament and printed objects have an extremely matte stone-like finish with unique natural gradient colour linings resulting in an exceptional chromatic spectrum per print. Every StoneFil printed object will have its own identity and unique gradient colour shading.



Vase design by nextgen3D

### **CarbonFil™**

Our CarbonFil filament is based upon the unique PETG blend of our HDglass compound and is reinforced with 20% ultra-light and relatively long stringer carbon fibres, which has resulted in an exceptionally stiff carbon-fibre reinforced 3D printer filament. CarbonFil is twice as stiff as HDglass and yet it is even 10% more impact resistant, which is a remarkable feature for carbon-fibre reinforced filament.





Black





### MetalFil™

MetalFil is a metal-filled PLA-based filament with approximately 80% of gravimetric metal filling. This incredible high filling with powders enables every FDM 3D printer user to 3D print bjects which are almost indistinguishable from genuine copper and bronze casted objects.

MetalFil is easy to print and can be printed on full metal, PEEK, and PFTE hotends and can perfectly be printed with  $\geq$  0.4mm nozzles with retraction settings enabled on both direct drive extruders, as well as on Bowden style extruders, which is a truly unique feature for a metal-filled filament. MetalFil printed objects can very easily be post-processed allowing one to create amazing metal objects with various patina effects.







## **EasyCork**™

EasyCork is a lightweight cork-filled PLA-based filament which is gravimetrically filled with approximately 30% cork fibres. The gravimetric filling with relatively lightweight cork fibres means that EasyCork has extremely high volumetric cork filling properties, allowing you to 3D print beautiful objects with great cork-like aesthetics and cork-like properties such as being lightweight and impact resistant.

EasyCork is a very easy to print material as it is based on our EasyFil PLA compound and the 30% gravimetrical filling with cork fibres make the filament absolutely warp-free.







## EasyWood™

EasyWood is a wood-filled PLA-based filament which is gravimetrically filled with approximately 40% grinded wood particles. EasyWood is a very easy to print wood filament as it is based on our EasyFil PLA compound and the 40% gravimetrical filling with grinded wood particles make the filament absolutely warp-free.

EasyWood looks, feels and smells like real wood and beautiful wood-nerve structures can be obtained by grinding the printed object a bit with a piece of fine grit sandpaper or by varying with the printing temperature.







	Nozzle size	Print temp	Heat bed	Layer height	Print speed	Fan speed	Flow rate	Retraction
ABSpro™	≥ 0.15mm	± 245 - 275° C	± 110 - 120°C	≥0.1mm	Medium	0-25%	± 106%	yes - 5mm
ABSpro™ Flame Retardant	≥ 0.15mm	± 240 - 260° C	± 100 - 120°C	≥ 0.1mm	Medium	0-25%	± 100%	yes - 5mm
ApolloX™	≥ 0.15mm	± 235 - 255° C	± 80 - 90°C	≥ 0.1mm	Medium	0-25%	± 100%	yes - 5mm
AquaSolve™	≥ 0.15mm	± 180 - 205° C	± 0 - 60° C	≥0.1mm	Medium	0-25%	± 104%	yes - 5mm
Atlas Support™	≥ 0.15mm	± 180 - 205° C	± 0 - 60° C	≥0.1mm	Medium	0-25%	± 106%	yes - 5mm
CarbonFil™	≥ 0.5mm	± 230 - 265° C	± 0 - 60° C	≥ 0.35mm	High	50-100%	± 100%	yes - 5mm
ClearScent™ ABS	≥ 0.15mm	± 220 - 260° C	± 90 - 100°C	≥ 0.1mm	Medium	0-25%	± 100%	yes - 5mm
Crystal Flex™	≥ 0.15mm	± 230 - 260° C	± 80 - 100°C	≥0.1mm	High	0-25%	± 100%	yes - 5mm
EasyCork™	≥ 0.4mm	± 210 - 260° C	± 0 - 60° C	≥ 0.25mm	High	50-100%	± 100%	yes - 5mm
EasyFil™ ABS	≥ 0.15mm	± 220 - 270° C	± 90 - 110°C	≥0.1mm	Medium	0-25%	± 104%	yes - 5mm
EasyFil™ HIPS	≥ 0.15mm	± 220 - 260° C	± 90 - 110°C	≥0.1mm	Medium	25-50%	± 100%	yes - 5mm
EasyFil™ PLA	≥ 0.15mm	± 180 - 220° C	± 0 - 60° C	≥0.1mm	Medium	50-100%	± 100%	yes - 5mm
EasyWood™	≥ 0.4mm	± 200 - 240° C	± 0 - 60° C	≥ 0.12mm	High	50-100%	± 104%	yes - 5mm
FlexiFil™	≥ 0.15mm	± 220 - 260° C	± 90 - 110°C	≥0.1mm	Low	50-100%	± 100%	yes - 5mm
HDglass™	≥ 0.15mm	± 195 - 225° C	± 65 - 75°C	≥ 0.1mm	High	50-100%	± 110%	yes - 6mm
Limo\$olve™	≥ 0.15mm	± 220 - 260° C	± 90 - 110°C	≥0.1mm	Medium	25-50%	± 100%	yes - 5mm
MagicFil™ Thermo PLA	≥ 0.15mm	± 180 - 220° C	± 0 - 60° C	≥0.1mm	Medium	50-100%	± 100%	yes - 5mm
MetalFil™	≥ 0.4mm	± 190 - 220° C	± 0 - 60° C	≥0.1mm	Medium	50-100%	± 104%	yes - 5mm
Premium ABS	≥ 0.15mm	± 220 - 270° C	± 90 - 110°C	≥0.1mm	Medium	0-25%	± 106%	yes - 5mm
Premium PLA	≥ 0.15mm	± 190 - 225° C	± 0 - 60° C	≥0.1mm	Medium	50-100%	± 100%	yes - 5mm
StoneFil™	≥ 0.4mm	± 200 - 240° C	± 0 - 60° C	≥ 0.12mm	High / Medium	50-100%	± 110%	yes - 5mm
TitanX™	≥ 0.15mm	± 240 - 260° C	± 80 - 90°C	≥0.1mm	Medium	0-25%	± 106%	yes - 5mm
ReForm rPLA	≥ 0.15mm	± 180 - 220° C	± 0 - 60° C	≥0.1mm	Medium	50-100%	± 100%	yes - 5mm
ReForm rPET	≥ 0.15mm	± 195 - 225° C	± 65 - 75°C	≥0.1mm	High	50-100%	± 110%	yes - 6mm
ReForm rTitan	≥ 0.15mm	± 240 - 260° C	± 80 - 90°C	≥0.1mm	Medium	0-25%	± 106%	yes - 5mm
STYX-12	≥ 0.2mm	± 240 - 270° C	± 80 - 120°C	≥0.1mm	Low / Medium	10-30%	100-110%	yes - 5mm
Volcano PLA	≥ 0.15mm	± 220 - 255° C	± 0 - 60° C	≥0.1mm	High	50-100%	95- 100%	yes - 5mm

