

Ten Kate Racing uses Innofil3D's ABS Fusion+ for printing functional parts

3D-printing in the ultimate competitive environment

Ten Kate Racing is the Official Honda World Superbike Team and they used to work with milled parts on their racing bikes. Due to a need for flexibility in producing parts and challenging conditions during racing, the R&D engineers of the team contacted Innofil3D for material support. Ten Kate Racing wanted to know which materials would meet their requirements and which printer was best suitable to process these materials. ABS Fusion+ appeared to fulfil these needs.

Speed up development and production time

Ten Kate Racing is a multiple champion in the World Supersport and Superbike Championship, which consist of twelve races in eleven different countries and four continents. In contrary to for example Formula1 the World Superbike teams have to work with standard road motorcycles and transform these bikes into full race spec race bikes. In the past they produced parts 'the classic way' by designing and milling parts taking several weeks. The engineers of Ten Kate had some experience with outsourcing 3D-printed prototypes. But at the end of the 2016 season the team decided it was time to explore possibilities to 3D-print parts in-house to speed up development and production time.

Materials driven

The moment the team decided to explore 3D-printing opportunities, they knew they had to start with materials. Bastiaan Huisjes, R&D engineer at Ten Kate Racing: "Material performance is extremely important for us, especially when using 3D-printed parts on our racing bikes. We have to take into account rapid changing conditions in temperature, mechanical loads and vibrations. So materials had to be the starting point for us."

Partnership

At the same time Polyscope Polymers and Innofil3D were exploring options to develop an ABS grade which was optimized for 3D-printing. The companies wanted to tackle well known issues like warping, difficult processability and adhesion to water soluble support. With the request of Ten Kate Racing in the back of their mind, Innofil3D knew they had the opportunity to develop an engineering grade filament which was optimized for 3D-printing and allowed for the hassle free printing of functional parts. From that point on the companies decided to work together on the development of this new filament. Innofil3D offered a 3D-printer from their lab so Ten Kate Racing could create parts they needed and test the material performance. This is how ABS Fusion+ "made with Polyscope XILOY™ 3D" was realized.

Easy to use

During the 2017 pre-season and season Ten Kate Racing, Polyscope and Innofil3D worked on improving the features with a focus on low warping, easy to use, high heat resistance and adhesion to water soluble support. Usability is one of the key features the companies have been focussing on as Bastiaan explains: "For me it is important that a material like ABS FUSION+ is easy to process. We are a racing team and I am not a full time 3D-printing operator."

Increased flexibility in parts design

With a material like ABS FUSION+ Ten Kate Racing was able to realize multiple advantages. Bastiaan: “The spacer for the dashboard is a good example. Designing and milling of this part would have taken us at least 3 weeks. Now the whole process is reduced to just one week. A material like ABS FUSION+ enables us to use more and more 3D-printed parts on our racing bikes and it gives the flexibility, performance and quality we need.”

For more information about ABS FUSION+ go to www.innofil3d.com/playtime-is-over