

VDM | Perfactory® 4 STD

EnvisionTEC produces superior and precise 3D printers for many different industry sectors and a wide range of applications. One such application is the development of production tools - for which accurate 3D printing is an ideal fit as demonstrated by VDM Kunststofftechnik, based in the Netherlands. VDM operates an EnvisionTEC Perfactory® 4 3D printer for this purpose, which was supplied by CNC-Consult, an EnvisionTEC reseller. However, since installing the Perfactory® system, VDM has discovered additional benefits that can be realised by this technology.

Peter van der Meulen is Director of VDM Kunststofftechnik and he became aware of the potential of 3D printing about three years ago. As a specialist in manufacturing plastic extrusion profiles with click fasteners he found the process of making realistic prototypes more than a little troublesome due to the accuracy required for reliable snap-fits. One of the greatest obstacles was achieving accuracy of 0.1 mm to produce secure profiles that would remain 'clicked-in' - after all, a part that easily detaches in such an application is next to useless. As an example, many of the profiles manufactured by Van der Meulen end up on pieces of furniture for attaching pieces of fabric to the steel frames - an application that demands accuracy and reliability.



According to Van der Meulen, it is not the matrix itself that is expensive and time-consuming to make, but the unit behind this, the so-called 'calibration unit' that conditions the profile.



Van der Meulen's initial research into 3D printing as a solution proved disappointing, until he discovered the Perfactory® 3D printing process from EnvisionTEC. The precision of this 3D printer met his needs and allowed him to quickly and accurately produce the parts he needed, and show his customers the results quickly, moreover, he was also able to suggest alternatives.

Creating a realistic and functional prototype requires more than just 'trial and error' procedures. In order to get a clear picture of how a snap connection works (given the final material and the method of production), Van der Meulen had to make a complete mold, which he subsequently adjusted based on initial results, assisted by his craftsmanship, experience and instincts. This provided him with a reliable enough model in 8-10 weeks. In today's market, two months for this type of product development is unacceptable - 'time to market' is key.



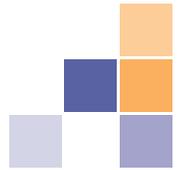
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Case Study

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In addition, Van der Meulen has also been able to profitably utilize the EnvisionTEC 3D printer for other projects, most recently he has been printing molds and achieved good results with a mold he printed for 'blowmolding', which is used for blowing plastic bottles. For this application he uses one of the strongest materials EnvisionTEC currently offers, HTM140, which is filled with a ceramic powder.



The company offers 3D printed parts in all of the EnvisionTEC materials, and also prints models for lost core molding applications and has undertaken some medical projects involving producing prototypes for surgeons for the preparation of complicated operations. For all projects, VDM offers its expertise and experience to get the best results.

In due course he also wants to create extrusion molds in this way, starting with trial and smaller series. Van der Meulen explained: *"This material can be cooled down very well. A temperature drop of up to 40 degrees is feasible by using water for cooling when the cooling ducts have been printed along closely underneath the surface. This makes it interesting for small, rapidly changing series."*

CNC-Consult was founded in 1995 as a supplier of solutions in the fields of CAD and CAM, providing software and small CNC machines together with training and support. From here, the step to 3D scanning and 3D printing was an easy one, and several years ago the management board decided to expand its portfolio to include 3D printers. This expansion has proven successful and now contributes significantly to the company's turnover.

VDM now also offers a range of services, similar to a service agency. Van der Meulen: *"The machine provides many possibilities for us, a lot more than I originally thought and with a build volume 100 x 160 x 230 mm, it is very flexible. In addition, the demand for profiles has somewhat decreased."*

EnvisionTEC was founded in 2002 in Marl, Germany. Under the guidance of Mr. Siblani, Chairman of the Board, EnvisionTEC has become a world leader in 3D printing equipment. Using a team of in-house experts in optical, mechanical, and electrical engineering, EnvisionTEC has been highly successful in producing the most reliable 3D printing platforms in the world using its core based technology of selective light modulation, which is currently being utilized in its DLP® based systems. The simplicity of the technology has made the system very popular in sectors such as the Hearing Aid market where EnvisionTEC enjoys more than 60% of the world market as well as more than 50% of the Jewelry market in the number of units.

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