Press Release

Optimized Sealing in Aircraft Production

Recognizing the potential in dispensing applications

Protecting the environment while reducing costs – let us take a look at existing dispensing processes in the aerospace industry: It is only in a few cases that they are state of the art. Dispensing technology, in association with sealing applications in particular, can be improved. The prerequisite: The process is viewed comprehensively, and an individual solution developed. The applications in focus here are known as cap sealing, fillet sealing, interfay sealing and edge sealing. They are primarily used for sealing fuel tanks and structural aircraft components. One or more sealing applications can be found on almost all elements made of metal or carbon fiber reinforced plastics.

Potential for environmental protection and cost reduction

For manual 2-component applications, it is common that these are supplied in small containers. Here, hardener rod cartridges or so-called "pre-mixed frozen" cartridges are often used. In both cases, a great deal of material is usually disposed of. This can be avoided by [dispensing according to requirements](https://www.viscotec.de/en/news/whitepaper/sealing-over-the-course-of-time/), which is possible, for example, with the 2-component dispensing head vipro-DUOMIX from ViscoTec. The user can therefore request exactly the desired amount of material required, and no environmentally harmful or costly waste is produced.

Overall, however, the optimized process of the sealing applications improves not only the material disposition, but also the dispensing itself. For example, robotics and a powerful dispensing system perfectly coupled with the traversing speed of the robot could work completely independently. This means that the dispensing of a sealed seam can be produced without a worker. Both the resulting time savings and, above all, the increase in the quality of the dispensing result are noteworthy. In addition to permanent monitoring of the dispensing parameters, it is also possible to record all data.

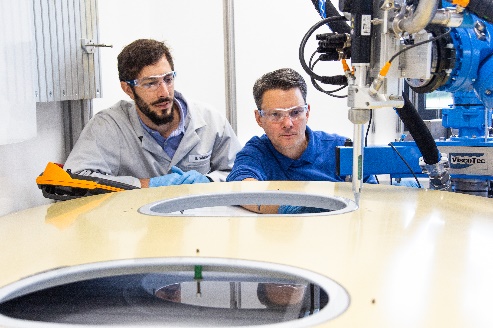
The dispensing of sealants requires a certain level of expertise. The commonly used compressible polysulfides are 2-component fluids that must be mixed in a precise ratio to achieve full performance and meet specifications. Things get really exciting when dispensing particularly small quantities, as is common in the sealing sector. Here, progressive cavity technology offers advantages over other dispensing systems that are operated with valves or time-pressure controls. This is due to the purely volumetric dispensing that can be carried out with high precision and repeatability and involves only a minimum of wear on parts.

At ViscoTec, it is standard practice to reproduce and simulate processes and projects in the in-house technical center and to verify them together with the customer or the respective material manufacturer. For example, joint trials were carried out with the material manufacturer [Chemetall](https://www.chemetall.com/) using the Naftoseal MC-780 B-2 sealing material, which is well known in the industry. It contains tiny hollow polymer spheres and is therefore compressible – which is particularly challenging from a dispensing point of view! Using a real component from a passenger aircraft, an application was recreated to gain further experience and identify potential challenges. "We always try to generate as much application knowledge as possible. This enables us to offer our customers the best possible support in automating their processes," says Simon Widderich, Business Development Manager Aerospace at ViscoTec. Not only was the material application the focus of the dispensing tests, but also the inspection of the properties of the mixed material. An analysis of the dispensing results was therefore carried out together with Chemetall. Heinz Burock, Aerospace Application Technologies Manager at Chemetall on the results: "Previously unattained precision of the specified mixing ratios for all dispensing quantities, as well as scalability of the system from cartridge filling to the application of the mixing head on a robot with large cartridge supply, are the outstanding features of this technology."

Click here for the video of the dispensing tests with Chemetall: <https://www.youtube.com/watch?v=4QImCNmzT-U>

4,210 characters including spaces. Reprinting free of charge. Copy requested.

Pictures:

*Sealing dispensing tests in the ViscoTec technical center*

*Automated sealing application examples in aerospace production*

ViscoTec – Perfectly dosed!

ViscoTec Pumpen- u. Dosiertechnik GmbH manufactures systems required for conveying, dosing, applying, filling, and emptying medium to high-viscosity fluids. The headquarter is in Töging a. Inn (Bavaria). ViscoTec has subsidiaries in the USA, in China, Singapore, India and in France and employs about 270 people worldwide. Numerous sales partners all over the world complete the international distribution network. Next to technically sophisticated solutions to even the most complicated application, ViscoTec is the single point of contact to deliver all components for a complete system: From emptying to preparing and to dosing. This guarantees successful interaction of all components. All fluids showing a viscosity of up to 7.000.000 mPas can be conveyed and dosed almost pulsation-free and with extremely low shear. ViscoTec offers comprehensive consulting for every application and, if required, extensive tests will be carried out in close cooperation with the customer. The dosing pumps and systems are perfectly adapted to their respective application whether it is the food sector, the e-mobility industry, the aerospace field, the medical technology, the pharmaceutical industry, electronics manufacturing or many other branches.

Press contact:

Melanie Hintereder, Marketing

Phone: +49 8631 9274-404

melanie.hintereder@viscotec.de

**ViscoTec America Inc.**1955 Vaughn Road, Suite 209 | Kennesaw, GA 30144 | USA  
www.viscotec-america.com

**ViscoTec Asia Pte Ltd**7 Gambas Crescent | #09-38, Ark @ Gambas | Singapore 757087 | Singapore  
www.viscotec-asia.com

**ViscoTec Shanghai Ltd. / Greater China**1/F, BLK 18, City of Elite | No. 1000 Jin Hai Road, Pudong  
Shanghai, 201206 | P.R. China

www.viscotec.com.cn

**ViscoTec India Pvt. Ltd.**  
710 Nucleus Mall, 1 Church Road Pune | Pune 411001 | India  
www.viscotec-india.com

**ViscoTec France SASU**  
5 Avenue Henri Becquerel, Parc Activité Kennedy | 33700 Mérignac | France  
www.viscotec.fr