

SIKA AT WORK

LONGER LASTING COMMERCIAL VEHICLES

WITH FULLY BONDED VAN RACKING SYSTEM

Modul System is a globally leading manufacturer of racking systems and equipment for commercial vehicles and parcel delivery vans. Modul System has replaced mechanical fasteners such as rivets and screws by using adhesive bonding to adapt to the growing number of electric vehicles. Sikaflex®-268 Booster and Sikaflex®-268 PowerCure are their products of choice to meet the required strength for safe operation and fast curing to ensure that vehicles are ready to operate quickly.

As a total solution provider for van conversions, providing customized solutions for individual customers is an essential part of Modul System's offering. The racking system carries the cargo during transport and needs to be firmly fixed to the van's body. With mechanical fasteners such as rivets or screws, many holes must be drilled into the van's body. In electric vehicles with a battery pack under the vehicle chassis floor, it is impossible to drill through and use traditional bolts. Moreover, some vehicle manufacturers might prohibit drilling through the body in some positions on the side of the vehicle. In addition, using mechanical fasteners increases corrosion risk and many holes in the vehicle body might decrease the residual value.

The racking system is mounted onto the integrated aluminium rails in the floor panel modul-floor, which in turn is glued to the vehicle chassis floor. Modul System's engineering team calculated the adhesive system and joint dimensions

requirements by simulating stringent load scenarios for their racking systems and vehicle operation. Only a high-strength polyurethane such as Sikaflex®-268 can meet the strength requirements. The flat, lightweight floor panel is installed on the uneven chassis; the adhesive joints are massive to fill the gaps. Hence, curing the adhesive would take significant time. Here the Sikaflex® Booster technology facilitates fast through-curing, allowing the vans to be put into operation soon after assembly.

Modul System operates its own van conversion service network. Sika's system approach for Sikaflex® Booster adhesive allows Modul System to scale the process as needed without re-engineering the design of the van conversion kit. In smaller service centers, Sikaflex®-268 PowerCure provides the optimal solution; while in larger centers, Sikaflex®-268 Booster is applied in bulk allowing cost improvements while maintaining the same adhesive performance.



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Interview with **Mr. Thomas Johansson** / Vice President

How did you tackle the design challenges that go along with the vehicles' use cases and loads on your racking system?

We have done both FEM simulations and physical tests to resist harsh brakes and crash forces. The FEM simulations have been done for individual attachments such as complete racking in a vehicle body. Both physical load capacity tests and full-scale crash tests have been conducted.

How does Sika's System approach, along with the Sikaflex® Booster Technology, help you optimize your production?

It allows scaling the process, for example by using bulk instead of PowerCure for larger jobs or sites. The handling of a glue

machine with bulk packages could be challenging especially in smaller workshops, where a glue gun is preferred for flexibility. The bulk package saves cost for larger workshops with larger amount of glue used.

How well did the transition from traditional fasteners to adhesive bonding meet your targets?

We promote a non-intrusive solution, especially when there are issues with drilling, as for example with electric vehicles. The non-intrusive installation is more expensive in the short term, but avoiding problems in the workshop will pay off in the long run. In vehicles where it is difficult to find positions for ordinary drilling/bolting, glued fixation points could solve the problem.

Sikaflex® Booster – SPEED WITHOUT RE-ENGINEERING



Sikaflex® Booster adhesive technology has been proven by numerous industrial users all around the world. With the PowerCure dispensing and packaging platform's introduction, smaller users can also benefit from the technology.

The PowerCure system is as robust and reliable as industrial pump and dosing equipment. Sikaflex® Booster products are typically offered with a system approach consisting of a 1C, a bulk booster, and a PowerCure version, all achieving the same end performance.

Sikaflex® Booster Technology

- Speeds up the adhesive curing reaction
- Maintains adequate working time
- Can be interchanged with the corresponding 1C material

Read more: www.sika.com/sikaflex-booster

ABOUT MODUL SYSTEM

Modul System is one of the world's leading manufacturers of racking solutions for service vehicles. The head office is located in Sweden, and we have ten subsidiaries in Europe and Asia. In addition, we have global coverage through our partner network, and the products are sold in 50 countries worldwide. Modul System is part of the Lifco group, which is listed on the Swedish stock exchange. The racking solutions are produced in our state-of-the-art factory in Sweden. The products are manufactured using some of the most advanced manufacturing technologies in Europe. In our factory and at our service centers alike, we practice LEAN management. By working according to these principles, we ensure quality and efficiency throughout our processes, which ultimately will benefit you as a customer.

www.modul-system.com

ABOUT SIKA

Sika is a specialty chemicals company with a leading position in the development and production of systems and products for bonding, sealing, damping, reinforcing, and protecting in the building sector and motor vehicle industry. Sika has subsidiaries in 100 countries around the world and manufactures in over 300 factories. Sika employs more than 25,000 people and generated sales of CHF 8.1 billion in fiscal 2019. At the end of 2019 Sika won the Swiss Technology Award for a groundbreaking new adhesive technology.

LEGAL NOTE

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the products suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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