



Press Release

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Saving weight and improving performance

Henkel partners with Fiat Chrysler to save weight and improve process and material performance

Düsseldorf, Germany – Henkel and Fiat Chrysler Automobiles (FCA) are set to discuss their close cooperation in the development of ground-breaking new treatment processes applied to the latest version of the Alfa Romeo Giulia. Both companies will share the podium at Surcar 2017, the international meeting on automotive body finishing taking place in Cannes, France, on June 29-30. FCA and Henkel worked together for almost three years to develop and tailor Henkel materials and systems for FCA's specific needs.

Weight reduction in car bodies is causing significant changes to the processes applied in body and paint shops. Lighter car bodies manufactured from mixed steel and lighter metals like aluminum are requiring new approaches to surface treatments. The new processes are providing car makers not only with the opportunity to use lighter metal structures, but they are themselves using materials that are lighter than previous generations of treatment products. Processes and procedures are changing significantly as new materials and application technologies are launched.

At Surcar, Roberto Selvestrel from FCA Materials Engineering Paint and Manfred Holzmueller, Sales Director Transplant OEM Business at Henkel, will discuss results achieved by using new metal treatment systems applied to the new Giulia, created through close cooperation between body engineering, process & materials engineering, and the process material supplier. They will shed light on a holistic approach involving state-of-the-art multi-metal pretreatment technology as well as acoustic, structural, sealing & coating technologies in the body and paint shop.

The new Giulia has a body that is 90 kg lighter than a comparable all-steel body. This was achieved by the use of light metals in combination with new process materials and application technologies. To reduce weight and improve performance, FCA is using Aluminum to account for 45% of car body weight. It has adopted a ground-breaking acoustic package to enhance passenger comfort while saving more weight.



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Pretreatment processes

The Bonderite two-step metal pretreatment process was developed by Henkel for multi-metal bodies with very high aluminum contents (up to 80%), providing superior corrosion performance while reducing investment- and processing costs. The dip-coating process uses zinc phosphate in the first step to treat the steel, followed by aluminum treatment in the post rinse.

“Aluminum can be eaten up by the acids normally used to phosphate steel, so there is a need to find a balance in the treatment process,” says Holzmueller. “Corrosion performance is equal to tricationic Zn-Phosphate, but the Bonderite process generates 30 – 50% less sludge, consumes fewer chemicals, and creates less surface roughness that demands rework. Lower operating temperature also saves energy.”

Keeping the noise out

The Alfa Romeo Giulia also benefits from Henkel Teroson high expansion pillar fillers. These are moldings made from a special foamable elastomer that are inserted into cavities in the car body – in the A-pillars for example – during assembly in the body shop. When the body passes through the e-coat oven, the high temperatures cause the moldings to expand to up to ten times their original volume, completely filling and sealing the cavity. This prevents any air entering into the cavity while the vehicle is in motion, and eliminates any wind noise that would otherwise result.

A second Teroson product applied to the car body, Teroson AL7154, is a liquid spray-applied acrylic waterborne sound deadener (LASD) developed by Henkel to reduce noise generation in the passenger compartment caused by vibration of the body shell. During extensive tests at FCA, this product showed by far the highest loss factor (a measure of the damping properties) of all candidate materials. The total weight of Teroson AL7154 on the Giulia is over 10% less than standard bitumen pads that would have provided a lower level of acoustic insulation. A further advantage of this new LASD is that it can be applied robotically, without the need for any human intervention at all. This has important implications, not only in terms of costs, but also in terms of health and safety.

The Alfa Romeo Giulia was the first new car to benefit from the use of Teroson AL7154. Two other vehicles made by FCA on the same line in Cassino, Italy – the company’s first SUV, the Stelvio, as well as the existing Giulietta (in a running change) – have also since adopted the product.



Also developed for fully robotic application on the Giulia is Teroson PV3414, a new interior and exterior seam sealer concept that replaces two different sealers – one for exterior seams, one for interiors, and both applied manually. It enables higher application speed, better sealing, better appearance, less dripping and significantly less manual touch-up work. Alfa Romeo is also the first adopter of this system, which is based on a PVC plastisol.

According to Holzmueller: “The new Cassino paint shop is providing FCA with a step-change in quality for its vehicles. The company now uses the most modern paint shop technology for the production of high class vehicles. We believe that the innovative spirit at Henkel is clearly on show in the new Giulia. We are facilitating weight reduction through the use of lighter metals, and we are helping our customer cut costs and improve sustainability by using fully automated application systems and reducing waste by avoiding sludge and overspray in its the processes.

Furthermore, we are reducing the need for cleaning and maintenance. FCA has taken a major step forward with the simultaneous implementation of numerous new technologies and processes for the new Alfa Romeo Giulia. Very close and intensive cooperation between our two companies was essential, and I am happy that it has resulted in such a beautiful new car!”

Henkel and FCA’s presentation, “Reducing Applied Weight While Improving Performance”, will take place June 29th at 10:30 in the Hôtel Majestic Barrière Cannes. Presenters are: Manfred Holzmueller, Sales Director Transplant OEM Business at Henkel and Roberto Selvestrel, EMEA Region, Materials Engineering Paint at FCA.

For more information:
<http://www.bonderite-mpt.com>

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About Henkel

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Photo material is available at www.henkel.com/press.

Contact Yasmin Brimo-Hayek
Phone +49 211 7970
Email

Kevin Noels
+31 164 317 011
knoels@emg-pr.com

Henkel AG & Co. KGaA

EMG

The following material is available:



FCA's Alfa Romeo Giulia, a holistic approach involving Henkel's state-of-the-art multi-metal pretreatment technology as well as acoustic, structural, sealing & coating technologies in the body and paint shop. (Photo: FCA/Henkel, PR032)

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knoels@emg-pr.com, +31 164 317 011).