

CASE STUDY

France

Henkel Surface Technologies Automotive Division, France

Automotive

PULSE, Application software, Transducers

The Henkel Surface Technologies facility at Cosne-sur-Loire, France was founded in 1951. The factory annually manufactures 16 000 tonnes of material representing some 50 million items. The Automotive Division focuses on the development, production and sale of adhesives, mastics, sound insulation and reinforcing materials for automotive manufacturers and sub-suppliers throughout the world.

Henkel Surface Technologies at Cosne-sur-Loire has three PULSE systems that are used for acoustical holography, modal analysis, material testing, and general NVH analysis.



The Company and its History

In 1876, Fritz Henkel and two partners founded the company Henkel & Cie in Aachen and marketed its first product, “Universalwaschmittel”, a universal detergent based on silicate.

Today, the Henkel Group's worldwide headquarters is in Düsseldorf, Germany. The company has subsidiaries in more than 75 different countries throughout the world, with a total of around 45 750 employees. About 75% of the workforce is employed outside Germany, making Henkel one of the most internationally aligned companies in Germany. The Henkel Group holds leading positions in its brandname products, market and technologies segment.

The Henkel Group manages its industry-related system businesses via its three divisions:

- Industrial Adhesives
- Engineering Adhesives
- Surface Technologies

The Henkel Surface Technologies facility at Cosne-sur-Loire in the Burgundy district of France was founded in 1951. The site extends to some 92 000 m² with 23 000 m² of buildings. About 300 people are employed at Cosne-sur-Loire, with 50 in the R&D and design departments. The factory annually manufactures 16 000 tonnes of materials representing 50 million items.

Automotive Focus

Fig. 1
The impressive interior of Henkel's new acoustics centre at Cosne-sur-Loire



The Automotive Division focuses on the development, production and sale of adhesives, mastics, sound insulation and reinforcing materials for automotive manufacturers and sub-suppliers throughout the world. Its customers include PSA, Renault, Fiat, Seat, Nissan, Toyota, Honda, Ford, BMW, etc.

Following an investment of over one million Euros, Henkel opened a new acoustics centre at Cosne-sur-Loire in October 2001.

Jean-Luc Wojtowicki was appointed the manager of the new acoustics centre. He has an engineering degree from The University of Technology, Compeign where he specialised in sound and vibration.

Jean-Luc has worked at Henkel for two years and previously in the acoustics and vibration laboratory of Sherbrooke University, Canada for eight years.

Jean-Luc says, "The new centre has four main test rooms. These are used for wide variety of NVH testing including modal analysis, material testing, and acoustical holography measurements".

Flexible, Total Package

Fig. 2
Jean-Luc Wojtowicki is the manager of Henkel's new acoustics centre

Jean-Luc explains, "Brüel & Kjær offered us a competitively priced total package of the noise and vibration solutions that we needed and it has made setting up the new test facilities much easier and faster".

Henkel Surface Technologies in France has three PULSE systems:

- 16-channels – mainly used for acoustical holography
- 8-channels – mostly used for modal analysis
- 4-channels – for material testing and general NVH analysis

Jean-Luc continues, "If we need more channels for a particular test, then we can just stack the systems together. It's very flexible and efficient. We just take our PULSE around to wherever its needed and this includes taking it to our customers' sites. We also purchased a robot controlled sound intensity mapping system with ten microphones, and a range of Brüel & Kjær transducers and calibrators".



The PULSE software applications include:

- Noise and Vibration Analysis – Type 7700
- Acoustic Test Consultant – Type 7761
- PULSE Material Testing – Type 7758
- Spatial Transformation of Sound Fields (STSF) – Type 7780
- Modal Test Consultant – Type 7753
- ME'scope Modal & Structural Analysis – Type 7754

Fig. 3
Typical results from
a measurement
using Spatial
Transformation of
Sound Fields Type
7780



Jean-Luc explains, “We focus on two main areas – chemically-based acoustical barrier products that are applied to the hollow bodies of a vehicle, materials that are sprayed on to panels to reduce structure-borne noise, and reinforcing materials for crash and NVH control. Automotive manufacturers are increasingly focusing on better acoustics, lower weight, cost reduction, safety and environmental issues. This is the way the industry is going. We are one of the global leaders in the technology of sprayable materials and it is being increasingly used”.

Henkel’s materials have several key advantages:

- Weight can be reduced by optimising the application of material. This reduces weight, the insulation can be placed exactly where it's needed, and costs are reduced
- Damping panels on assembly lines are heavy and there are often heat-related problems. Spraying on the insulation material has several advantages compared to conventional melt-sheets (bitumen pads), one of the most important being its ability to be applied by robots
- There is far less dust with our solutions and this is a great benefit in the paint-shop

Jean-Luc concludes, “We are building our skills and experience to make better automotive solutions and we have started to achieve success with our customers, partly thanks to PULSE”.

Key Facts

- The Henkel Group has subsidiaries in more than 75 different countries throughout the world, with a total of around 45 750 employees
- The Henkel Surface Technologies facility at Cosne-sur-Loire, France was founded in 1951 and annually manufactures 16 000 tonnes of material representing some 50 million items
- The Automotive Division focuses on the development, production and sale of adhesives, mastics, sound insulation and reinforcing materials for automotive manufacturers and sub-suppliers throughout the world
- A new acoustics centre, costing over one million Euros, was commissioned in 2001
- “Brüel & Kjær offered us a competitively priced total package of the noise and vibration solutions that we needed”
- Henkel Surface Technologies in France has three PULSE systems
- “Automotive manufacturers are increasingly focusing on better acoustics, lower weight, cost reduction, safety and environmental issues”
- Henkel’s materials have several key advantages