



Press Release

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BONDERITE M-PP: a simple and robust painting process for radiators

Henkel's innovative BONDERITE M-PP coating process provides a simple and economical alternative to electrocoating. Already established in the agricultural, construction and paint sub-contractor markets, the technology is now also showing its ability to deliver outstanding performance in the domestic radiator market. Through its BONDERITE brand, Henkel is a global leader in metal pretreatments and functional coatings. The company is well known for its ability to develop innovative, customer-tailored solutions that make no compromises on performance, economics or regulatory specifications. One example is the development of a new autodeposition primer coating process in partnership with the company Radiateurs Industrie, a major player in the French domestic heating market.

For the past 52 years, Radiateurs Industrie (based in La Chartre-sur-le-Loir, France) has been well known for the quality of its radiators. The factory produces 400,000 radiators per year.

"Changing our painting process was the only way to continue the production at this site," says Raphaël Alain, the Operations Director. Indeed, until end of 2015 the company was still operating a conventional dip paint primer process that still contained some solvents. This process had major health and safety disadvantages. With increasingly tight environmental legislation, solvents had to be eliminated and replaced by a sustainable water-based process.

Henkel was the right partner to address this problem and proposed its innovative BONDERITE M-PP process (then known as Autophoretic coatings). Radiateurs Industrie was immediately convinced by this simple and robust technology that



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could solve all their environmental headaches while greatly improving the cosmetics and corrosion resistance performance of their steel radiators.

The new paint process had to be 100% solvent-free, it had to meet all the performance requirements of Radiateurs Industrie, and it also had to be compact enough to fit into the new extension to the factory. Additionally, the primer coating had to be compatible with powder top-coating, and if possible had to have an even thickness over the entire radiator surface, even on the difficult-to-reach internal convector plates. It had to be invisible, or in other words clear, and finally, its total cost in use had to be competitive.

“All these requirements were challenging enough on their own. Meeting all of them combined required exceptional focus and perseverance,” says Mathieu Van De Cappelle, Technical Customer Service specialist at Henkel. “We had to be particularly creative in order to meet tough cost targets and we designed-to-cost everything from our formulation to our supply chain. All in all, driving such an innovative project and making it a success has been a great achievement for the entire team,” comments Loïc Guillou, Sales Engineer at Henkel.

Unique features of the BONDERITE M-PP technology include its ability to uniformly coat complex ferrous metal parts, also inside tubes and on sharp edges; its chemical composition that is entirely free of solvents and volatile organic compounds; its compact process sequence; and its low environmental impact with very little energy consumption and minimal waste water stream.

The new installation started up smoothly on January 4, 2016.

Process sequence:

- Alkaline degreasing
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- Tap water rinse
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- RO water rinse
- Bonderite M-PP 102
- 90°C stove

Raphaël Alain comments: “Radiateurs Industrie is a strong market player, the sole manufacturer of panel radiators in France, and represents the brands Chappée and De Dietrich. In 2015, the company’s activity grew by 15% within a flat market. The quality of our products is driving our strong growth. Transitioning from the traditional solvent process to Henkel’s innovative autophoretic process was an obvious choice, once we realized its simplicity, robustness, and its ability to coat 3 million m² per year of complex-shaped components. Unlike cathaphoretic coating, parts are not subjected to electric current. And as proof of its simplicity, it worked perfectly from the first day of production.”



Radiators being immersed in the BONDERITE M-PP 102 tank.



Radiators having just exited the co-curing BONDERITE M-PP 102 + powder paint oven.

Radiateurs Industrie is part of the global BDR Thermea group which holds brands such as De Dietrich, Brötje, Baxi, Baymak, Remeha, Chappée. It is the fourth largest European manufacturer of heating devices, employs 6,500 people across Europe and has annual sales close to €1.7 billion. The Group has a top market position in key European countries and strong positions in the rapidly growing markets of Eastern Europe, Turkey, Russia, North America and China. In total, BDR Thermea operates in more than 70 countries worldwide.

BONDERITE is a Henkel brand for surface treatment and functional coatings solutions that create real competitive advantages for end users. BONDERITE functional coatings are recognized for their reliability, sustainability and



performance. They offer superior operational efficiency and competitive in-use costs.

About Henkel

Henkel operates globally with a well-balanced and diversified portfolio. The company holds leading positions with its three business units in both industrial and consumer businesses thanks to strong brands, innovations and technologies. Henkel Adhesive Technologies is the global leader in the adhesives market – across all industry segments worldwide. In its Laundry & Home Care and Beauty Care businesses, Henkel holds leading positions in many markets and categories around the world. Founded in 1876, Henkel looks back on more than 140 years of success. In 2015, Henkel reported sales of 18.1 billion euros (20.1 billion US dollars), adjusted operating profit of 2.9 billion euros (3.2 billion US dollars). Its three top brands, Persil (detergent), Schwarzkopf (hair care) and Loctite (adhesive) generated more than 6 billion euros (around 6.6 billion US dollars) in combined sales. Henkel employs around 50,000 people globally – a passionate and highly diverse team, united by a strong company culture, a common purpose to create sustainable value, and shared values. As a recognized leader in sustainability, Henkel holds top positions in many international indices and rankings. Henkel's preferred shares are listed in the German stock index DAX. For more information, please visit www.henkel.com.

Photo material is available at <http://www.henkel.com/press>

Contact: Holger Elfes
Phone: +49 211 797-99 33
Email: holger.elfes@henkel.com

Contact: Eric Ardourel, Market Development Manager Europe, Functional Coatings
Phone: +33 4 74 83 38 85
Email: eric.ardourel@henkel.com

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