Press release

Long-standing partnership between Dürr Systems AG and Orafol Europe

**Efficient environmental technology:** **Oxi.X RE system from Dürr purifying solvent-laden exhaust air at Orafol**

Bietigheim-Bissingen, April 2, 2025 – The internationally active Orafol Group is once again relying on exceptionally energy-efficient environmental technology from Dürr. A new regenerative thermal air pollution control system will purify the heavily solvent-laden exhaust air from a new 14,000 m2 production hall dedicated to laminating and coating special films and adhesive tape systems.

The Orafol Group, a specialist in the manufacture and finishing of adhesives, develops and produces self-adhesive graphical products, reflective materials, and industrial adhesive tape. To meet the increasing global demand for its products and to establish new technologies, the company is expanding its production infrastructure at its Oranienburg site in Germany. The investment, the biggest in the company’s history at 160 million euros, also aims to further reduce emissions and set new standards through state-of-the-art building and systems technology. Contributing to this will be the Oxi.**X** RE system installed in the new factory Hall 10, which meets the highest technical requirements and environmental standards as a regenerative thermal oxidation system.

**Energy efficient and economical**

Oxi**.X** RE systems purify the solvent-laden exhaust air from production processes by oxidizing nearly all organic substances at temperatures between 800°C and 900°C. Despite these high temperatures, the system uses minimal primary energy due to its integrated regenerative heat exchanger, which preheats inflowing exhaust air to nearly 800°C using energy from previously purified exhaust air. Once the Oxi**.X** RE reaches operating temperature, it runs autothermally (i.e., without the need for gas or heating oil), even with a very low solvent load. This not only reduces energy costs but also makes the air pollution control system extremely economical and productive.

Technically, this efficiency is achieved through special ceramic honeycomb bodies in the heat exchanger, which can store and transfer substantial heat thanks to their high thermal conductivity and large surface area. The design enables the process to be highly energy-efficient recovering over 96% of the energy required to operate the system through the integrated heat exchanger, meaning that only around 4% needs to be supplied externally. The newly installed Oxi**.X** RE also leverages the solvent energy from the exhaust air to heat the thermal oil for the ovens, thereby covering the heat supply for the production plant. This approach positively impacts Orafol’s carbon footprint.

**Turnkey complete solution**Orafol operates thirteen air pollution control systems, in its roughly 280,000 m2 headquarters, including nine Oxi**.X** RE systems from Dürr. “Our long-standing cooperation, which also includes service, replacement, and modification, ensures that Dürr’s team understands our requirements well and provides tailored technology that enables us to achieve exhaust air purification results significantly higher than legally required,” explains Marcel Janßen, Senior Vice President Engineering & Technology at the Orafol Group. “Efficient and even productive energy recovery is a crucial component in the sustainable development of our high-performance production infrastructure.” The new RTO system was delivered as a turnkey project, encompassing development, design, production, installation, and commissioning. It included all associated piping and air duct systems between the air pollution control and coating systems, as well as a boiler for generating process steam from the excess heat.

**New heat management system increases operational reliability**The new RTO is Dürr’s largest installation for Orafol to date. Previously, two large coating systems were connected to a common air pollution control system – now it’s three. A key innovation is the advanced energy management system, which includes two specialized modules: XtraBalance equalizes temperature differences between the three RTO media chambers packed with ceramic heat exchange material. XtraControl establishes an overall “average system temperature” and monitors it through multiple sensors in the heat exchange tanks and combustion chamber, using the data to control the system. Together, these modules ensure reliable and trouble-free operation, high system availability, and uniform conversion of released energy into usable thermal energy for production. This further reduces operating costs and enhances resilience, even under highly fluctuating operating conditions.

Over the many years of successful collaboration, Dürr has precisely and efficiently adapted and optimized its technology to Orafol’s specific needs and operating conditions. Looking ahead, Dürr has already planned for an additional Oxi**.X** RE system for purifying the exhaust air from the coating systems as part of Orafol’s production hall expansion.

**Pictures**



Picture 1: The new regenerative thermal air pollution control system will purify the heavily solvent-laden exhaust air from a new 14,000 m2 production hall. Picture: ORAFOL Europe GmbH



Picture 2: The new RTO is the largest plant Dürr has ever built for Orafol. Picture: ORAFOL Europe GmbH



Picture 3: Orafol and Dürr have a long-standing partnership. Picture: ORAFOL Europe GmbH

**About Dürr**

The Dürr Group is one of the world's leading mechanical and plant engineering firms with particular expertise in the technology fields of automation, digitalization, and energy efficiency. Its products, systems, and services enable highly efficient and sustainable manufacturing processes – mainly in the automotive industry and for producers of furniture and timber houses, but also in sectors such as the chemical and pharmaceutical industries, medical devices, electrical engineering, and battery production. In 2024, the company generated sales of €4.7 billion. The Dürr Group has around 20,000 employees and 139 business locations in 33 countries. As of January 1, 2025, the former divisions Paint and Final Assembly Systems and Application Technology were merged to form the new Automotive division. Since then, the Dürr Group has been operating in the market with four divisions:

* **Automotive:** painting technology, final assembly, testing and filling technology
* **Industrial Automation:** automated assembly and test systems for automotive components, medical devices, and consumer goods as well as balancing technology solutions and coating systems for battery electrodes
* **Woodworking:** machinery and equipment for the woodworking industry
* **Clean Technology Systems Environmental:** air pollution control and noise abatement systems

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