

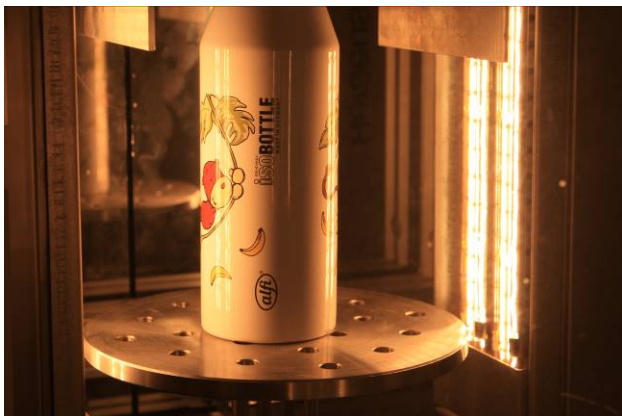


Infrared System cures Decorative Coatings on Insulated Containers

Decorative motifs on insulated containers, such as coffee pots or vacuum flasks, must be scratch-resistant, tough and ideally also dishwasher-proof. Alfi GmbH in Wertheim in Germany, a leading manufacturer of high-quality insulated flasks, has resolved this problem using an infrared system from Heraeus Noblelight.

Vacuum flasks from the Isobottle range are made from stainless steel with a painted coating. Decorative patterns are applied to the outside of the flasks using spot colours or screen-printing. Alfi applies the UV paints at six stations on a printing machine. When Alfi redesigned the base of its flasks and opted for a powder coating in order to make them dishwasher-proof, it became clear that the decorative coating would not pass the crosshatch test. In order to resolve this problem, Alfi decided to use heat as part of the post-curing process for the UV paint. Jürgen Hössel, head of assembly and service at Alfi, explains: "We opted for infrared radiation, because in comparison with hot air it has a far higher power density, responds very quickly and is therefore easy to control." The process parameters, such as the distance between flasks and the heat source, and the process times had to remain constant, so that all the flasks were processed under the same conditions. However, at the same time it was necessary to be able to adapt these parameters to suit the changing requirements.

The post-curing process begins when a robot places the printed flasks on a rotary plate between two infrared modules. The plate ensures that the products, which are rotationally symmetrical, are evenly heated. The two infrared lamps, which are positioned opposite one another, have a total rated power output of 6 kW. They are fitted with short wave, twin tube emitters which are arranged vertically in each module at a slight angle. Together with gold reflector on the emitters, this ensures that the heat is aimed directly at the product. The use of the infrared system after the UV curing process speeds up the chemical reaction (post-curing). In addition, the initial adhesion of the coloured film to the substrate is improved and the products can be processed or packed immediately. Jürgen Hössel is proud of the screen-printing machine: "The entire printing process is now fully automatic and has functioned perfectly right from the start. We have had a viewing panel installed and enjoy showing groups of visitors our infrared drying process."



Features

- Post-curing of paints on insulated containers
- Evenly heating through rotation
- More rapid response time than conventional hot air oven
- Fast and efficient heat transfer
- Flexibel adaption to product requirements

Technical Data

- Short wave twin tube infrared emitter
- Vertically positioned at a slight angle
- About 10 seconds to take effect

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