



Infrared Heat activates Adhesives on Decorative Trims

An infrared system from Heraeus Noblelight is helping R-Tek Ltd to achieve perfect adhesion of decorative trims on the inside of motor vehicle door panels. The plastic decorative trims are normally fixed to the panels on a production line by spraying the inside of the panel with an adhesive and then applying the trim. However, when R-Tek started to experience problems with the adhesion, it was soon established that the prime cause of the problem was the fact that the adhesive often tended to part-cure between the spraying of the panels and the application of the trims. To solve this, they used a purpose-built adhesive, which requires the addition of reactivation heat after it has been applied, to ensure optimum adhesion.

After discounting hot air blowers as a means of providing the reactivation heat, because of their high power consumption and lack of controllability, it was decided to investigate the potential of infrared heating systems for this particular application.

Trials proved so successful that a complete IR system, using carbon emitter technology, was eventually installed at R-Tek. This consists of two 8kW carbon medium wave cassettes, which combine the heating efficiency of medium wave infrared for this type of application with the controllability allowed by low thermal mass carbon fibre emitters, which have an extremely fast response time of around one second.

In operation, the cassettes are arranged in two stations directly above the production line, where they apply the necessary heat to the panels, which have been previously sprayed with the adhesive. They are automatically switched on only when necessary and the power is applied for a timed period. The surface temperature of the adhesive is monitored by a pyrometer and an alarm is sounded if this does not reach a set value, at which point the timer is overridden and the IR system is operated until the pre-set temperature is achieved.

Since installation, R-Tek has found that the highly controllable and energy efficient IR system has continued to optimise the performance of the adhesive to ensure a consistent and repeatable bond between the door panels and the trims.



Features

- medium wave Carbon heater, matching to product
- fast response times allow control
- contact free and efficient heating

Technical Data

- Infrared system with Carbon Infrared emitters, two cassettes with 8kW each
- Control of surface temperature by pyrometers

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