

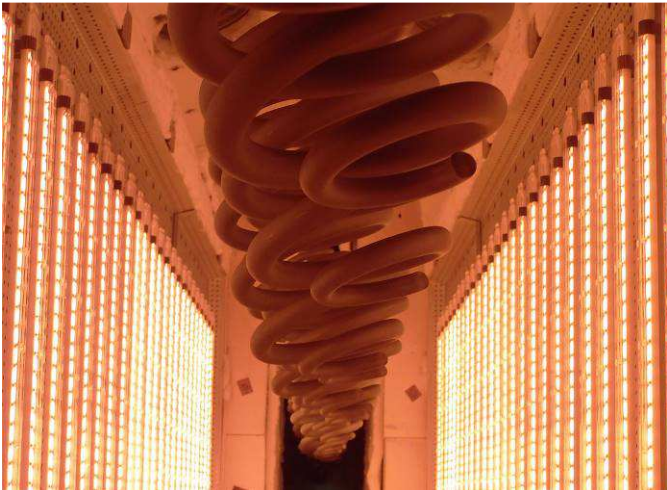


QRC® Infrared Emitters Help To Improve The Quality of Motor Vehicle Suspension Springs

Thanks to an infrared system from Heraeus Noblelight, Ahle Springs, of Lindlar-Karlsthal, Germany, can now achieve improved quality in the coating of vehicle suspension springs. Ahle Springs designs and manufactures springs, which are used mainly in the motor industry but also in machine and gearbox manufacture, in ships' engines, or as braking accumulator systems for tracked vehicles. Helical compression springs of flat and round wire or bar with linear and advanced characteristic are used for controlled impact absorption in vehicle shock absorbers. Together with stabilizers and chassis springs, they contribute to the stabilization of the vehicle and hence improve travel comfort.

Because of the ever-increasing quality requirements relating to the coating of vehicle suspension springs, Ahle Springs decided to examine their current coating and drying methods. Quality improvement required increasing the coating thickness. However, it was also important that existing production processes should be changed as little as possible. One possibility was to increase the coating thickness with a two-layer lacquer. With this approach, however, two stages were required. First the primer needs to be applied and dried before the final coating is applied in the next stage. Because of this additional stage the production process needed to be changed so that the system did not meet the company's objectives.

An alternative is a two-component coating, laid down on the pre-heated spring. Ahle Springs investigated several heating techniques to cure the powder coating. Important criteria were not only quality and a small footprint but also the investment and operating costs. Among those techniques considered were convection ovens and NIR infrared. However, both of these technologies came with disadvantages. Gas-fired convection ovens take up a lot of space and are accompanied by high investment costs, while NIR Infrared systems are less efficient and incur high capital cost. Finally, the company found the best solution in infrared radiation. Infrared systems have a small footprint and the new infrared oven can therefore be located directly before powder coating plant, with little change to the existing production layout. The oven heats the springs before powder coating, which is then cured by a warm air oven.



Features

- Two-component powder coating
- Space-saving installation
- Pre-heating of springs up to 140°C
- No significant change to the existing production line
- A mobile system
- Connection with a heat-recovery system

Technical Data

- Shortwave QRC® Infrared emitters with nano reflectors
- Four, 81.45kW infrared modules, 60 emitters
- Heats the product to 145°C at 2m/min

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