



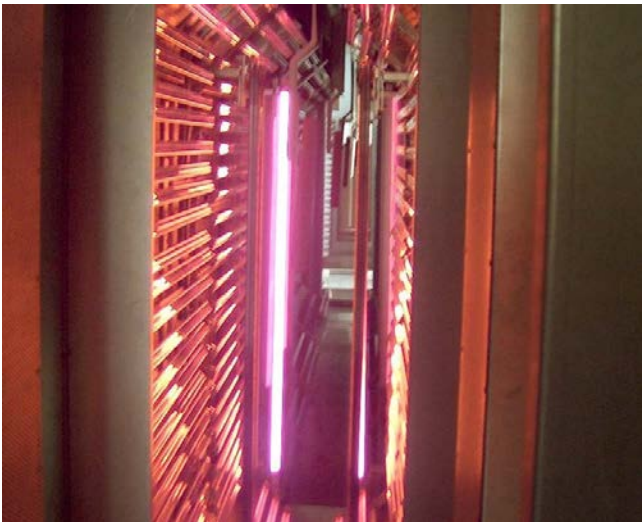
Infrared emitters optimise powder coating of medium-density fibreboards

A Heraeus Noblelight infrared booster helps Sauter GmbH powder-coat medium-density fibreboards. Such boards are widely used for tables, cupboards and office furniture. However, powder coating posed a challenge to the company as wood fibres are hardly conducting and, moreover, sensitive to heat. Finally, the breakthrough was achieved by using a highly reactive low-temperature coating powder.

Coating powder is applied and melted and then needs to be cured. Further processing of the boards can start after cooling.

However, the previously used powder coating oven soon reached its capacity limit. Instead of making the oven longer, Sauter decided to use a Heraeus Noblelight infrared booster, which is an additional upstream infrared module. The booster was installed directly behind the coating station where the powder is preheated to 140°C to 150°C and gelled within a few seconds. The already existing oven is used for curing.

The booster is equipped with medium-wave infrared emitters. Carbon emitters are installed in the booster for critical spots at the front and rear edges. They have very short response times and are therefore easy to control. The medium-wave emitters are running continuously to heat the surfaces, while the carbon emitters are cycled to prevent overheating of the edges. Medium-wave radiation is very well suitable for heat-sensitive boards because it primarily heats the surface of the boards and does not penetrate too deeply into the material. Another advantage of infrared radiation is that dust is not entrapped and powder is not swirled because the air does not move during heating. Infrared heat is very energy-efficient. Tests showed that infrared emitters need just 30 seconds to heat a 19 mm thick fibreboard to 180°C, while convection ovens need 16 minutes. The quick melting improves coating quality and increases throughput speed because the wood remains as cold as possible and hence is ready for further processing sooner. The use of the infrared booster saved much energy and time and optimised the coating process.



Features

- Time and energy saved
- Quality improved due to quick gelling
- No swirling or entrainment of powder
- Contactless heating of the boards

Technical data

- Heated within 30 seconds.
- Infrared booster with medium-wave radiation for heating surfaces and carbon emitter for heating front and rear edges
- Response times of 1 to 3 seconds prevent overheating of the material

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