Carbon Infrared Emitters meet the challenge of new lacquer formulation

A carbon infrared system from Heraeus Noblelight has proved successful in curing a lacquer applied to the longitudinal weld of metal containers at the Aintree manufacturing plant of Crown Packaging.
Crown Packaging is a company within Crown Holdings Inc, the leader in metal packaging technology. The Aintree plant manufactures containers for a wide range of products from industrial oils to foodstuffs, such as maple syrup. After being cut and formed from sheet material, the cans are longitudinally welded. It is then important that this weld is internally coated with a lacquer, to prevent contamination of any food products and to protect the weld from attack from aggressive contents. The lacquer is applied by spray and must then be cured. Previous curing solutions have included Radio Frequency (RF) ovens and infrared foil heaters. However, when the lacquer formulation was up-graded, neither of these heating systems could achieve the correct cure. Consequently, Crown contacted Heraeus, who carried out proving tests with carbon infrared at their Neston Application Centre. These proved so successful that a small-scale test unit was supplied to Crown for on-site trials, which led to an 84kW carbon infrared (CIR) system being installed. This consists of three 28kW CIR modules, each fitted with two 14kW carbon infrared emitters. The infrared heat is applied from the outside of the container and the heat is conducted through the weld to cure the lacquer on the can inside. Each module's output can be independently, manually regulated, so that heating profiles can be matched to specific can sizes. Alternatively, the line speed can be varied to vary the can dwell time under the heaters. "Apart from ensuring the correct lacquer cure, the new system has also brought other significant benefits," says Paul Kavanagh, project engineer at Crown. "Unlike the previous foil system, which required considerable guarding to prevent unwarranted access, the new CIR modules are already totally sealed. In addition, we suffered considerable downtime when foils failed and had to be replaced. So far we have not had one CIR emitter failure."

Features

- Less maintenance requirements
- Infrared emitters cure lacquer on internal weld

Technical Data

- Carbon Infrared system with 48 kW
- Three modules, each with 14 kW
- Heat profiles can be matched to different can sizes
- Each module can be independently, manually regulated

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