Infrared improves heating control of hot foil embossing

Carbon Infrared emitters increase running-speed

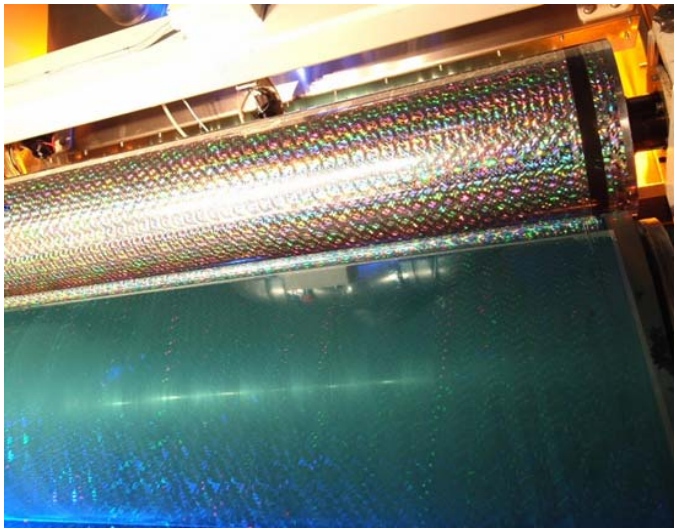
A carbon medium wave infrared system is helping API Foils Ltd to achieve greater line running speeds and better heating control in the hot embossing of holographic foils.

API Foils is a worldwide group which produces an extensive range of stamping foils used on a wide variety of products from stationery to wine labels and from flexible food packaging to picture frames. The company manufactures holographic foils and these are used to create 2-D or 3-D prismatic effects for products such as credit cards and for brand authentication, decoration and security purposes.

The production of holographic foil relies on the hot embossing of the polyester-based film and this is conventionally achieved using embossing rollers which are filled with hot oil. Unfortunately, this technique does not readily lend itself to sensitive control, and in order to increase line running speeds and achieve greater flexibility of the embossing line to allow different materials to be run, API decided to investigate heating techniques, which offer a greater measure of operational control.

It was realised that pre-heating of the foil would provide a simple and effective method of controlling the actual embossing temperature and API decided that the problem would be best solved by means of infrared. Following successful tests, a carbon infrared system from Heraeus was incorporated in the production line.

This 83kW carbon medium wave system is located after the film unwind and infeed stations, immediately prior to the embossing station. It features an optical pyrometer, so that the temperature of the pre-heated film passing to the embossing rollers can be precisely controlled in a closed loop system. Moreover, the fast response time of the carbon emitters ensures minimum wastage of product, as the emitters can be switched off virtually instantaneously in the event of line stoppage.



Technical Data

- Carbon medium wave emitters
- 83kW
- Control by optical pyrometer, closed loop system

Features

- Carbon heaters have very short response times, so the heating process can be controlled much better
- Carbon heaters can easily be retrofitted in an existing line
- Line running speeds could be increased

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