Carpet Backing with Infrared Improves Productivity

A medium wave infrared system from Heraeus Noblelight is helping to double line speeds, while significantly reducing on-line maintenance problems at the Wilton Carpet Factory in Salisbury.
Wilton carpets are exported all over the world and are synonymous with high quality English craftsmanship. The manufacture of a woven carpet involves weaving the woollen tufts with an appropriate weft material to form the finished carpet. For carpet sold in the UK and Europe, the preferred weft backing material is jute but the US market requires a polypropylene backing. In the backing application process, latex is spread onto the jute or polypropylene material, which forms the base of the woven carpet. This seals the backing and secures the tufts of pile yarn in place. The completed carpet is then pre-heated to dry the latex before being passed over a steam-heated drum to effect the final cure.
For many years, the pre-heating had been done by passing the carpet assembly under a long wave infrared system in the backing application line. However, when producing carpet for the American market, there had been a need to reduce the line speed as the polypropylene does not absorb the latex and, consequently, is harder to dry. In addition, the longer period of dwell at the two heating areas could cause shrinkage of the carpet on the steam-heated drum and there was often a problem of undried latex being deposited on the drum surface.
To solve these problems, Wilton decided to retrofit an electric medium wave infrared system from Heraeus into the backing application line. This new system is rated at just 64.5 kW compared with the 90 kW of the previous long wave system. Switching is effected by individual miniature circuit breakers.
Since installation, it has been found that it is now possible to operate the backing application line at twice the previous line speed for polypropylene backed carpet, which has significantly improved productivity. There are now no shrinkage or scorching problems and the latex is always dried when the carpet assembly reaches the curing drum, no matter what the backing material.

Technical Data

- Medium wave emitters
- 64.5kW
- emitters arranged in three zones to to cater for the different widths of carpet and for the different drying rates required
- centre zone of 2000mm heated length, contains six 500W emitter
- two edge zones, each of 1150mm heated length, contain six 2875W emitters
- heated length can be set at 1150mm, 2000mm, 3150mm and 4300mm

Features

- Pre-heating of latex carpet backing
- Line speed was doubled
- Significant reduction of maintenance

Germany
Heraeus Noblelight GmbH
Infrared Process Technology
Reinhard-Heraeus-Ring 7
63801 Kleinostheim
Phone +49 6181 35-8545
Fax +49 6181 35 16-8410
hng-infrared@heraeus.com
www.heraeus-noblelight.com/infrared

USA
Heraeus Noblelight America LLC
1520C Broadmoor Blvd.
Buford, GA 30518

Phone +1 678 835-5764
Fax: +1 678 835-5765
info.hna.ip@heraeus.com
www.heraeus-thermal-solutions.com

Great Britain
Heraeus Noblelight Ltd.
Clayhill Industrial Estate
Neston, Cheshire
CH64 3UZ
Phone +44 151 353-2710
Fax +44 151 353-2719
ian.bartley@heraeus.com
www.heraeus-infraredsolutions.co.uk

China
Heraeus Noblelight (Shenyang) LTD
2F, 5th Building 5
No. 406, Guilin Rd, Xuhui District
200233 Shanghai
Phone +8621 3357-5555
Fax +8621 3357-5333
info.hns@heraeus.com
www.heraeus-noblelight.cn