

Carbon Infrared helps chocolate keep its temper

Carbon infrared heating systems are helping Magna Speciality Confectioners to achieve better control over the quality of their filled chocolate products, as well as saving energy and space when compared with the previous chocolate heating system. Magna Speciality Confectioners make a wide range of chocolates, under contract, for most of the well-known chocolate manufacturers. They have particular expertise in filled products, such as filled chocolate bars and filled chocolate eggs, where the application of heat is an important process step.

In the manufacture of chocolate filled eggs, molten chocolate is poured into moulds on a so-called book moulding line to form the two halves of the finished product. The chocolate is then chilled so that it solidifies. The moulds are then filled and are eventually brought together, rather like the pages of a book, so that they can form the complete eggs. Before this joining can take place, it is necessary to heat the egg rims, so that the two halves in the two moulds can fuse together. Previously this had been carried out by using hot air blowers but the temperature profile proved difficult to control. This caused quality control problems and could also cause problems at the subsequent chilling and wrapping stages. It is also important to heat the moulds before the chocolate is poured in. If the moulds are too warm, then the chocolate can detemper as it is poured in and if they are too cold, then it can chill. It was decided to install Carbon medium wave infrared systems. The pyrometer on the mould heating section of the line measures the temperature of the plastic moulds just before the infrared station. This temperature then dictates the length of time that the heaters are switched on when the moulds under the infrared heater. A pyrometer after the heating station then ensures that the correct mould temperature has been achieved to allow chocolate to be deposited. Deflector plates at the front and back of the heating module ensure that only one module at a time is heated. On the book moulding section of the line, the pyrometer helps the chocolate temperature to raise to around 30°C, which ensures that the two halves are satisfactorily fused together.

Apart from the quality improvements and the more consistent presentation of the finished product, the new infrared heating system has also provided significant savings in space and energy over the previous system



Features

- temperatures can be controlled at 29°C ±1°C
- better quality control
- space and energy savings
- fast response of heaters, minimising damage to the chocolate product

Technische Daten

- carbon medium wave infrared system
- four 8.4kW systems,
- pyrometer-controlled
- typical dwell times are 3 to 4 seconds for line speeds of around 16 to 20 modules per minute

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