

Gas Infrared Furnace

Solution for MgO drying in GO Electrical Steel

Benefit from our services

You can trust our know-how. More than 1,000 systems have been installed worldwide of which 70% come from repeat orders with existing customers.

The Solaronics Bekaert Gas Infrared Furnace has been a proven technology for GO Electrical Steel since 1995. Our systems are used by the major European producers of GO Electrical Steel such as ThyssenKrupp, Stalprodukt, Arcelor Mittal, etc... Recent references include several important lines (130m/min) in Asia.

Our application engineering services are at your disposal to define the best solution in terms of drying quality, efficiency and investment costs.

We have local service teams available in Brazil, China, Finland, France, Germany, Indonesia, Italy, Sweden and USA.

www.bekaert.com/ncd

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BCT 415247 This paper has been dried with a Bekaert non contact drying system



No product waste - Lower energy cost - Top product quality

Bekaert Gas Infrared Furnace for non-contact drying of MgO coating in Grain Oriented Electrical Steel production

Minimize your operating costs

Benefit from the minimum production waste and highest energy efficiency provided by the Bekaert Gas Infrared Furnace.

Almost no production waste thanks to a fast retraction of the burners during line stops, keeping the coated strip below critical temperature, by using quick process responsiveness and advanced process control.

Bekaert Furnace has the highest energy efficiency thanks to the combination of energy transfer both by infrared radiation and by hot air convection. Several burners transfer the energy directly into the strip by producing infrared radiation. In addition, state of the art blowing nozzles installed on each burner optimize the energy efficiency by convection and remove the evaporated water. The furnace power is automatically fine-tuned according to the main parameters: line speed, strip thickness, MgO coating weight, etc...

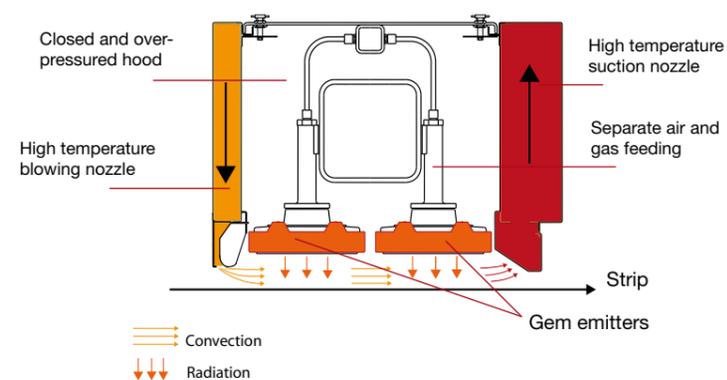
As a result, your gas consumption could be reduced up to 30% compared to previous technologies.

All burners are made of rows of Bekaert Gem Emitters. These ceramic infrared emitters are designed for very demanding industrial processes. They have the longest proven lifetime in the market, up to seven years at nominal power. Gem emitters ensure the highest machine uptime and lowest maintenance costs.

Improve your performance and quality

Thanks to the Bekaert Gas Infrared Furnace's unique features, you will notice an overall product quality improvement and a better runability of your equipments (finishing, slitting and side trimming operations). Machine uptime and production can be increased in line with higher operating speed.

Bekaert Infrared Burner : working principles



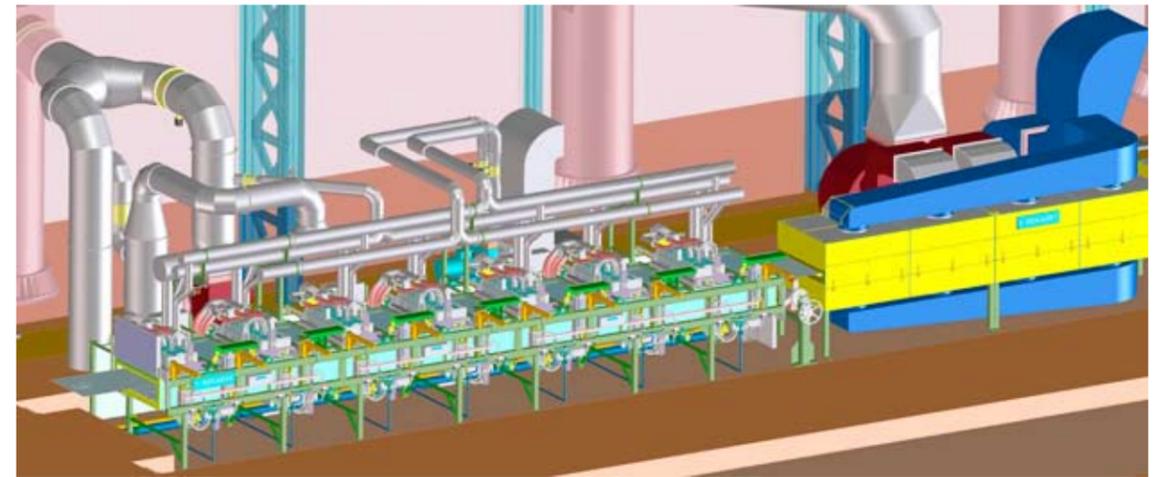
Confidential - France
MgO drying, GO Electrical Steel line
Decarb 2 and Decarb 3
85 m/min 2.2 MW 1.2 m



Confidential - Germany
MgO drying, GO Electrical Steel line
60 m/min 1.9 MW 1.1 m



Confidential - China
MgO drying, GO Electrical steel
(2 lines - 2 ovens)
130 m/min 4.0 MW 1.3 m



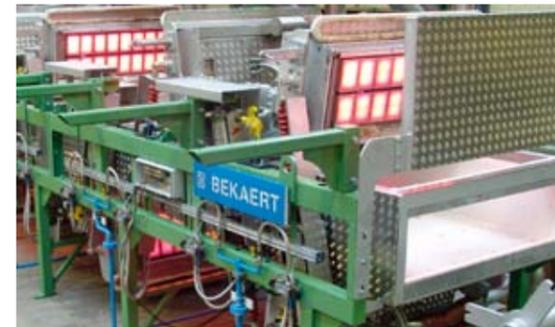
Bekaert Gas Infrared Furnace overview

Decarburisation process

During the decarburisation process, carbon content of the strip is reduced to a level which avoids magnetic ageing. Simultaneously, a thin oxide layer on the strip surface is formed.

After decarburising, the surface of the strip is coated with an annealing separator (MgO, magnesium oxide) to prevent the windings of the coiled strip sticking in the subsequent high temperature annealing.

The Bekaert Gas Infrared Furnace is the most appropriate solution to dry the MgO coating in Grain Oriented Electrical Steel production.



Bekaert Gas Infrared Furnace options to better satisfy your current and future needs

Air cooling units to decrease the strip exit temperature and prevent dust from being scattered around the line.

Heat resistance coated exit roll to keep the pass line and to avoid MgO picking.

An extensive Gem Infrared Emitter family (Gem7, Gem9, Gem10) ranging from 7 to 10 kW and offering a maximum flexibility for your future increasing power needs.

Enhance your production capacity at lowest operating cost

Bekaert Gas Infrared Furnace is the most appropriate solution for non-contact drying of MgO coating after the decarburisation process. The furnace consists of insulated casing equipped with several Bekaert burners producing combined infrared and hot air energy. This unique combination ensures a high system efficiency and material yield. Knowing that Gem Infrared Emitters offer the longest lifetime at the highest power, you can be sure that your operating costs are minimized.

Thanks to the Bekaert Gas Infrared Furnace, overall product quality and equipments performance are significantly improved.