Infrared drying and heating technologies

A local service supported by global presence

Being near to you is central to our strategy. Our global presence means that our products are manufactured to strict international standards of safety and quality. Our local support means that we serve you at all times.

Would you like to know more about our products and services?
Feel free to contact us.

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Infrared drying and heating technologies

High efficiency solutions that allow flexible design and small footprint

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Control the heat with Bekaert technology

What we do
Bekaert designs and produces customized drying and heating solutions based on infrared and air technologies. We can satisfy your process requirements with solutions ranging from individual units to complete turnkey packages. We provide drying and heating solutions for a wide range of industries, including paper and board, metal processing and various other industrial applications.

A customer oriented approach
Co-development is an important part of the Bekaert philosophy. Understanding your exact needs is the first step in developing high quality drying or heating solutions that add value to your business. Our experienced teams of project managers and engineers assist you through each step of the production process starting from the design to the installation of our system in your production line. Thanks to our extended service organization, we can offer you technical assistance around the clock and preventive maintenance programs.

We are there when you need us.
An introduction to infrared technology

What is infrared radiation?
Infrared radiation (IR) consists of invisible electromagnetic wavelengths that range between 0.78 and 1000 µm. This type of radiation has the property to transfer thermal energy from a warmer object to a cooler object. Targeted heat is produced by matching the infrared emission spectrum of the heater to the absorption characteristics of the material. This high degree of control reduces energy losses to the surrounding areas, making it a popular heat source for industrial drying processes.

Why choose infrared technology?
Infrared radiation has high power density, high configuration flexibility and is compatible with almost any other heating system. As a result infrared heaters have several advantages over conventional heating technologies:

- Shorter drying times
- Compact footprint
- Low energy and operating costs
- Optimized end-product quality

The technology behind our solutions

To meet the power requirements and infrared emission spectrum of a wide range of applications, Bekaert has developed several types of electric and gas infrared emitters. These core technologies are used as a basis to design and develop customized infrared systems for each customer.

Bekaert gas infrared emitters
Bekaert Gem and GemE gas emitters are available in standard dimensions and power densities that range from 227 to 419 kW/m². The GemE emitter features two reflective screens that improve energy recovery from hot flue gases. The GemE also includes a ceramic plate that has been optimized with a special surface treatment that resists temperatures up to 1250°C.

Bekaert electric infrared emitters
Bekaert electric infrared modules feature four to six lamps of 1 to 4kW. The lamps are protected by a quartz plate and surrounded by a gold surface that reflects up to 98.5 % of the energy. You can combine several modules to match the contours and size of small surfaces, edges and lines. The power of our modules can be easily controlled by an integrated regulation system.

Discover our product range

Depending on your application, design and required power density, we offer two types of systems: those that only use infrared energy and those that combine infrared with air technologies.

Infrared systems

<table>
<thead>
<tr>
<th>High power density (&gt;150 kW/m²)</th>
<th>Electric infrared technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>GemDryer®</td>
<td>UniDryer®</td>
</tr>
<tr>
<td>WebMate®</td>
<td>e-UniDryer</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Medium power density (&lt;150 kW/m²)</th>
<th>Electric infrared technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>MasterCassette</td>
<td>MiniFlex Family</td>
</tr>
<tr>
<td>WebFlex</td>
<td>MonoCassette NV</td>
</tr>
</tbody>
</table>

Combination of infrared and air technologies
In some cases the infrared system can be combined with an integrated air drying system.

To keep the size of the installation compact, the exhaust air from the infrared system can be directly recirculated for convection using integrated fans. One example is our UniDryer® system. Another solution is our Energy Recovery System. This system uses the exhaust air from the infrared system as heating source for the air dryers. The power consumption of the air dryer is reduced to the minimum or even completely by using the energy left in the exhaust from the infrared system.
Applications that benefit from infrared technology

Drying

e.g. coated paper and board, coated abrasives and glass mirrors
Our drying systems transfer energy to evaporate a given amount of water or solvents. The air flow then carries away the generated vapor.

(Pre) heating

e.g. artificial grass, laminates and metal processing
Our infrared systems can be easily added to your production line before the air dryers to achieve the high temperatures required for pre-heating processes and to increase your machine speed.

Curing and crosslinking
To assure consistent and stable heating during the curing or crosslinking processes Bekaert provides stand-alone infrared systems or round ovens that combine infrared with hot air tunnels. Our round ovens are designed specifically to cross-link the outer protection sheath of regular pipes and flexpipes.

Scorching

e.g. brake pads
Compared to hot plates our non-contact infrared solutions assure a more reliable weight loss, high productivity and repeatability, lower operating costs and less cleaning.

Temperature and moisture profile correction
Our infrared systems have high flexibility. This allows easy correction of moisture profiles and smoothing, for example, before applying glue during the production of gypsum panels.

The expert in infrared technologies

Bekaert has more than 130 years of experience in producing steel wire products for a wide range of applications and industries. Today we are a global technology and market leader in steel wire transformation and applying coating technologies.

Over the years we have been expanding our capabilities to reach more markets. In 2004 we acquired Solaronics S.A., a company with almost 40 years of experience in producing drying and heating systems.

By joining knowledge and experience we have been able to develop new technologies, expand our global reach and become more competitive. To keep up with the evolving market requirements we invest more than 5% of our turnover from heating and drying technologies in further research and upgrades.

Today, Bekaert has installed more than 1,000 systems and 50,000 emitters worldwide for the paper and board, metal and other industrial sectors.