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Features

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Energy-efficient adiabatic cooling system at the Klingele Grunbach

The [Klingele Paper & Packaging Group](#) is breaking new ground in the air conditioning of the production halls at the Grunbach site, thereby improving working conditions for employees. An innovative adiabatic cooling system has been in operation since September 2024 and will take full effect for the first time in the upcoming summer months. Unlike conventional air conditioning systems, the system uses evaporative cooling and is largely powered by self-generated solar electricity.

Temperatures of around 30 degrees Celsius are possible in summer when processing corrugated base paper into corrugated board. The new adiabatic cooling system lowers the temperature mainly in the working area of the machines. The reduced temperature also makes the machines less susceptible to malfunctions.



Left to right: Alexander Stark, Energy Management Officer and Ulrich Metzger, Plant Manager, Klingele Grunbach.

Efficient cooling through evaporation

In contrast to conventional air conditioning systems, the adiabatic system uses evaporative cooling to lower the temperature. Water flows over a grid while warm outside air flows over it. The air gives off heat to the water, which evaporates and cools the air in the process. This process enables effective temperature reduction with minimal energy consumption, as only ventilators and pumps need to be operated.

“The technology of adiabatic cooling has developed enormously and is now a more sustainable and powerful alternative to conventional cooling systems,” explains Alexander Stark, Energy Management Officer at the Grunbach corrugated board plant. His evaluation of various air

conditioning systems led to the decision in favour of this innovative cooling technology from the Austrian company INFRANORM® Technologie GmbH. Stark only completed his training as a packaging technologist at Klingele in 2020 and has always been characterised by his special commitment to Klingele's values. In the meantime, he has also successfully completed his Bachelor of Engineering Sustainable Science and Technology/Packaging Technology.



The new adiabatic cooling system in production uses evaporative cooling for efficient and more environmentally friendly temperature reduction.

Modern energy concept for reliable corrugated board products

The cooling system is the latest addition to Klingele's high-performance processing machines, with which the company optimises its processes in a sustainable way and offers its customers efficient and recyclable packaging solutions. The system is largely powered by electricity from the company's own photovoltaic system.

"In total, around 88% of the energy used in production at the Klingele Group comes from renewable and alternative fuels. The introduction of this energy-efficient and innovative cooling

technology fits perfectly into our holistic energy concept,” adds Ulrich Metzger, Plant Manager. “With this investment, Klingele is sending out a clear signal for greater environmental compatibility, modern production standards and good working conditions for the employees working on the machinery for the production of corrugated board packaging.”

Recyclable packaging solutions for transportation, retail and e-commerce

At its Grundbach site, Klingele produces packaging solutions for transportation, retail and e-commerce that are manufactured using state-of-the-art technology and can be recycled after use. Individually printed folding boxes strengthen the impact of brands and contribute to visibility in retail. A large proportion of the corrugated packaging produced by Klingele is shelf-ready packaging. They offer product protection, easy handling and attractive product presentation at the point of sale. Thanks to their sturdy construction and effective promotional printing, they increase visibility in retail and support the sale of goods.

“Our customers need reliable and environmentally friendly packaging. With our expertise and the latest machinery, such as here at the Grunbach site, we help our customers to produce more efficiently and sell more successfully,” adds Metzger.

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