

LIFT BOTTOM KILN BEYOND THE STATE OF THE ART

The ONEJOON lift bottom kiln is ideal for processes which contain binder burn-off steps and require high temperature homogeneity. It enables a fully automatic and regulated treatment of goods under different sequential atmospheric and temperature conditions. It is recommended to manufacturers who produce several different goods with various firing curves and atmospheres. The lift bottom kiln is most beneficial when the production capacity of each batch is too small for a continuous kiln. It is possible to install several lift bottom kilns in a line to be fed by a common conveying system, which results in a high degree of flexibility and helps optimize production planning. Additionally, the bottom loading concept saves a lot of space.

Advantages at a glance:

- Excellent temperature homogeneity
- Optimized cycle times
- Small footprint / Optimized layout
- Flexible planning of production
- Easy to scale up
- Maximum energy efficiency
- Very high heat-up rates

Technical highlights:

- Kiln bottom spring sealing
- SiC air flow blinds
- Pre-heated circulation air
- Additional final cooling chamber
- Safety concept with emergency N₂ purging system
- CFD simulation for air flow optimization

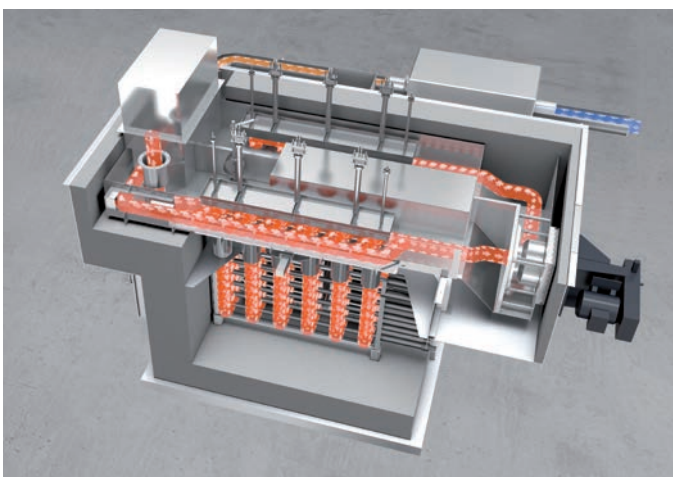
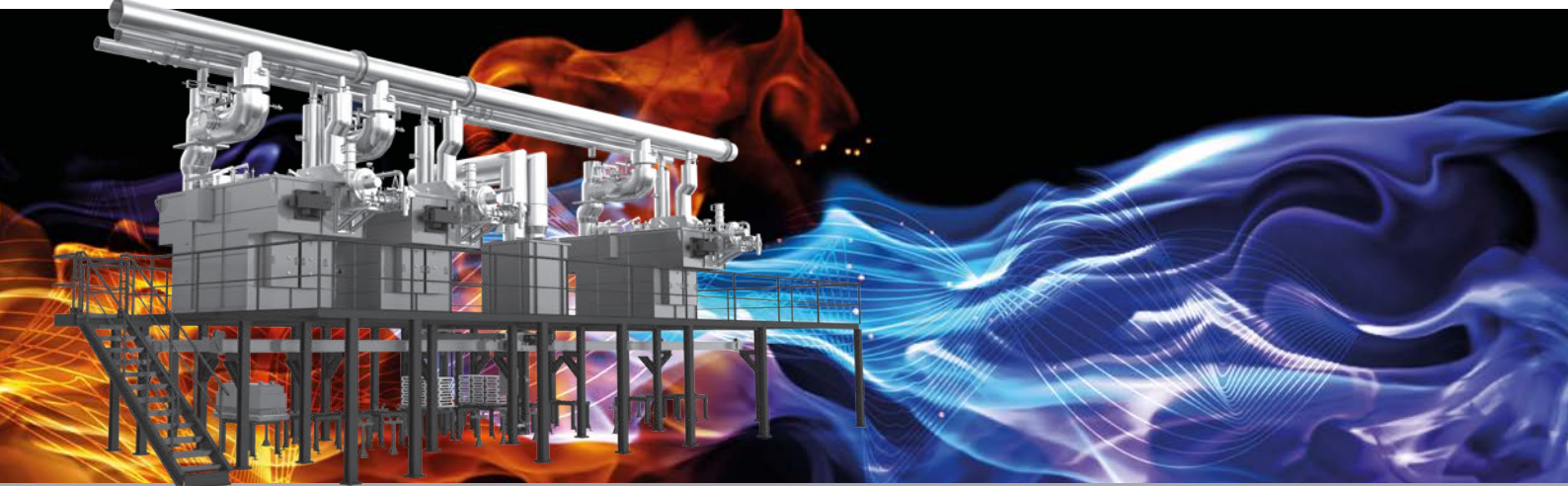


Figure 1: Air is pre-heated before flowing into the kiln. It compensates the off-gas which is permanently exhausted and sent to a post-combustion unit.

Technical Details

Atmosphere	air or protective gas
Binder burn-off phase	up to 500 °C
Process gas circulation	up to 800 °C
Maximum temperature	up to 1500 °C



LIFT BOTTOM KILN INNOVATIVE IMPROVEMENT OF PRODUCTIVITY

General system description

After loading the kiln furniture with products, they are transported to the kiln bottom. The kiln bottom is then lifted upwards. As soon as it reaches the upper position, it is locked to the kiln and sealed by spring packages to achieve gas tightness. The lifting unit can then be used for loading or unloading of other parallel kilns.

During the binder burn-off phase (up to 500 °C), the kiln load is heated by circulating hot air, which is heated by an external heater. The binder contaminated exhaust gas is cleaned in a thermal post-combustion unit. At the end of the binder burn-off phase, further heating is done by electric heating elements in the main kiln. It is possible to keep the process gas circulating even at elevated temperatures up to 800 °C. This results in a better temperature homogeneity during the heat-up. Process gas circulation stops at temperatures higher than 800 °C.

There will be no gas or air circulation in the next ramp-up steps and in the following soaking at the maximum temperature. Turbulences in the kiln's atmosphere are very critical for several sintering and crystallization processes. At the end of the process, the goods are cooled by tempered air or gas. For this purpose, temperature of the cooling medium is controlled and adjusted by an external heater before it reaches the goods. After products are cooled down to approximately 250 °C, the kiln bottom is transferred by the lifter to a final cooling chamber, where products are cooled further to room temperature.

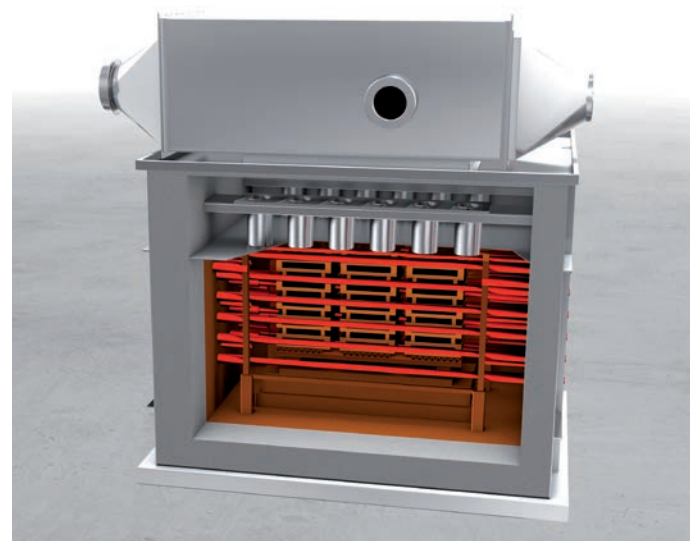


Figure 2: At the end of the binder burn-off phase and after stopping the air circulation, further heating is done by electric heating elements.

ONEJOON plans your success!

Are you interested in this product? Do you have a vision?
Your vision becomes reality!
Let's plan your optimized kiln. Our team will be pleased to consult you in all product issues.

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