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JuSyS ® LW

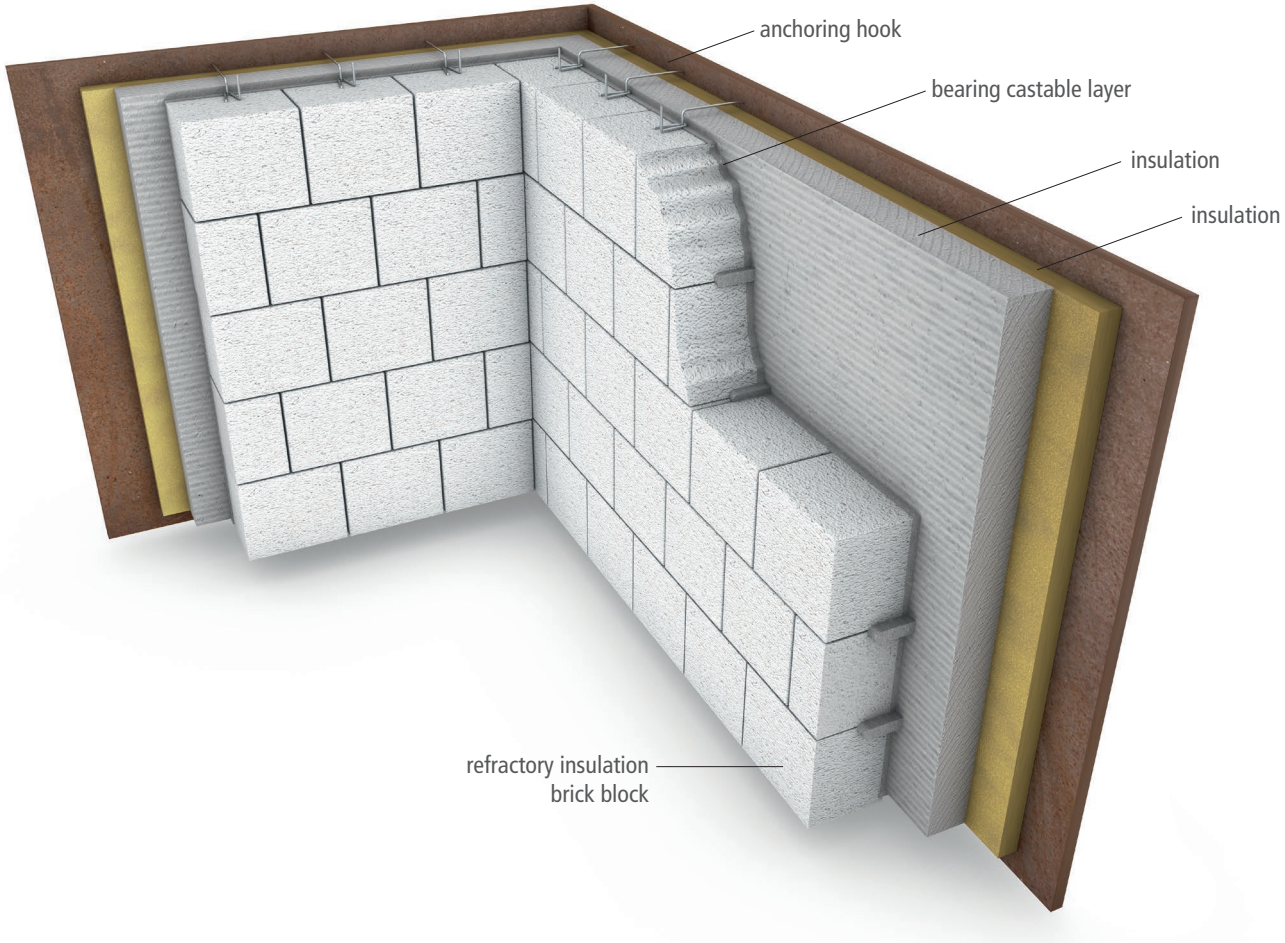
The innovative refractory system without fiber for energy-efficient lining of industrial furnaces

JuSyS® LW, our patented and revolutionary insulating refractory brick lining system, was developed as alternative for heat-insulating and insulating refractory linings, such as fiber module and insulating refractory brick linings. **JuSyS® LW** is specifically suited for installation in process furnaces used in the petrochemical industry and industrial furnaces used by the ceramic and steel industries.

Based on its special design, **JuSyS® LW** is able to replace fiber linings such as module or blanket linings as well as conventional insulating refractory brick linings. This new system combines the positive characteristics of both systems by a sophisticated anchoring system and innovative load transfer of its own weight.

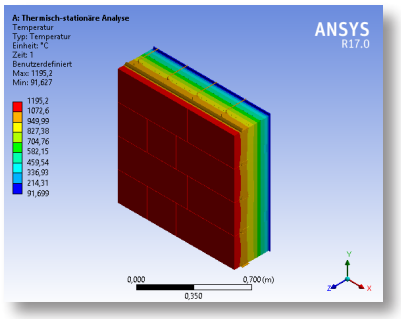
What is so different about **JuSyS® LW** compared to conventional heat-insulating refractory concepts?

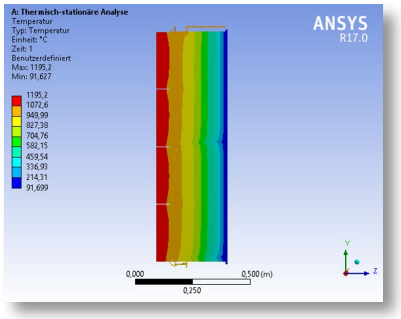
- It is a simple, modular and insulating lining system which can be efficiently adapted to the specific requirements inside the furnace without much time and effort required at the construction site
- It can be installed without any ceramic fiber that is always connected to health concerns
- Even at heights >10 m no support consoles out of expensive heat-resistant steel are needed
- The extremely efficient heat insulation ensures savings of energy and resources
- A very low risk of local overheating and rear currents in the lining
- Low maintenance cost due to not having to repeatedly stuff fiber in certain areas or expansion joints



systems by comparison - temperature profile and heat loss [Q̇]

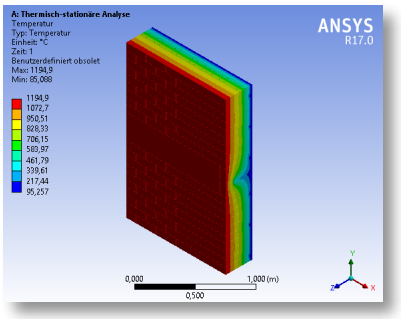
JuSyS ®LW

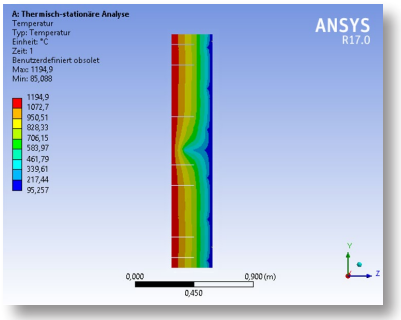




heat flux Q = 602 W/m²

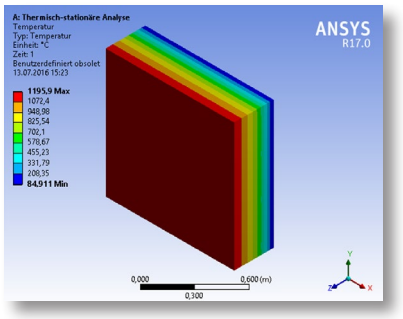
Refractory Insulating Brick

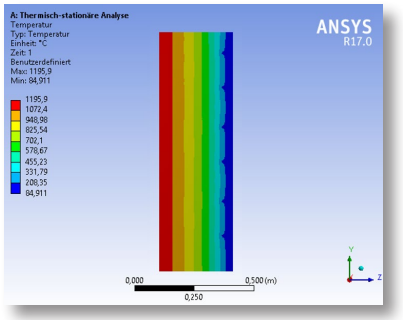




Q̇ = 809 W/m²

Fiber Module





Q̇ = 516 W/m²

The basic technological principle of **JuSyS ® LW** is that the weight of the front layer out of insulating refractory bricks is transferred via a stable and solid castable layer that forms kind of a ceramic console. The thermal expansion of the front layer is absorbed by a multitude of small individual expansion joints. The closed bearing layer out of castable is cast into the gap between insulation and the front layer during installation work. Due to the significantly lower temperature of the castable layer, compared to the front layer, the castable layer expands significantly less than standard linings out of insulating refractory bricks. This innovation means no big expansion joints or support consoles. The closed castable layer offers best protection against currents and rear currents. Since this lining does not have any consoles it is possible to much more easily select the wall thickness than is the case for conventional linings. There are fewer thermal bridges because of missing consoles and attachment (fixing) strips. Thus, the system is ideal for enhancement of energy efficiency and retrofitting of existing furnaces. **JuSyS ® LW** can be used for flue gas temperatures up to 1,400 °C.

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