GRENZEBACH

Production technology for stone wool




SUSTAINABLE STONE WOOL PRODUCTION THROUGH INNOVATION

Grenzebach has developed a sustainable stone wool production line in response to rising energy costs and growing demand for insulation materials. This line, which uses basalt and dolomite as its primary raw materials, is a testament to our commitment to environmental sustainability. The process begins with melting these stones in a furnace, followed by fiberization using a spinning machine. The fibers are then formed into a continuous fibrous web, which is processed through a curing oven. Finally, the cured product is cut and handled to produce the final boards at the cold end.

Your journey partner – we plan, design and manufacture:

- Experience in insulation and building materials
- Own engineering capacities (Feasibility studies, raw material analysis)
- Forward-looking melting technologies (Upgrades of existing equipment, brownfield projects)
- After-sales-service
- Cooperation with external experts

Grenzebach equipment

Hot End

- Raw material handling and batch feeding system
- Gas cupola furnace and electric melter
- Binder system and spinning machines
- Collection drums, pendulum units, compression units
- Curing ovens, cooling zones

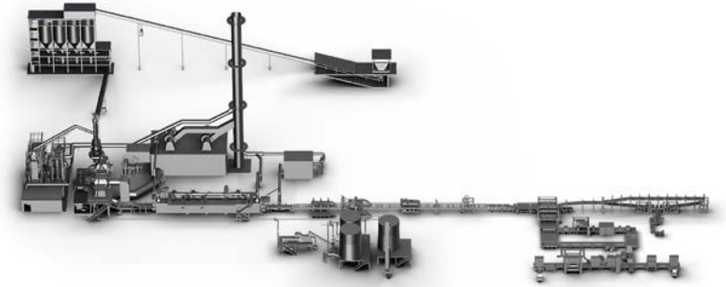
Cold End

- Horizontal band saws, trimming saws, cross-cut saws
- Stacking technology
- Packing and palletizing

Grenzebach thinks ahead and offers its customers all possible options to produce stone wool boards and mats, from a low-cost solution for producers entering the market to highly sophisticated automated plants with large capacity and high yield.

GENERAL PRODUCTION DATA

Capacities:	Individual	
Working width:	1,200 mm or 2,400 mm	
Size of final product:	Product thickness:	15–250 mm
	Width:	600–2,400 mm
	Density:	30–200 kg/m³



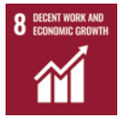
YOUR SOLUTION PROVIDER
FOR A SUSTAINABLE STONE WOOL INDUSTRY

Reaching the UN sustainable development goals

Grenzebach supports you in achieving your goals regarding the UN sustainability goals by modernizing your existing plant. We replace your coke cupola with a modern electric melting furnace or a gas cupola furnace. We take you from start to finish: from raw material analysis and melting tests to feasibility studies and pre-engineering to project management, installation, training, and final execution.

Resource-saving water management in production

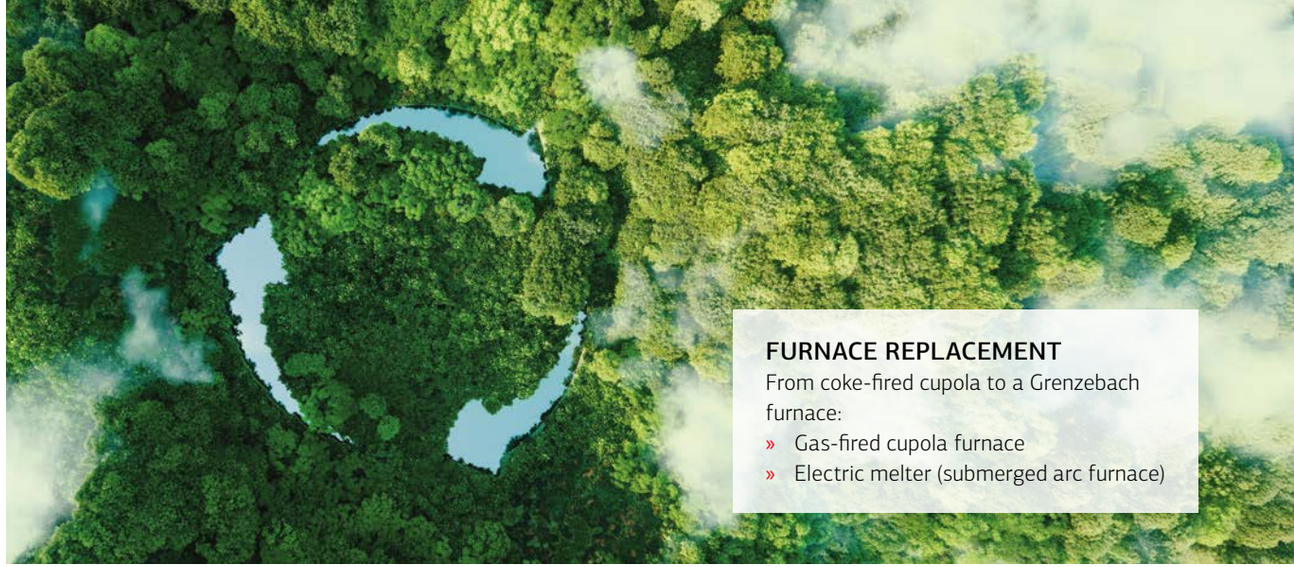
Improvement of energy efficiency in own office buildings



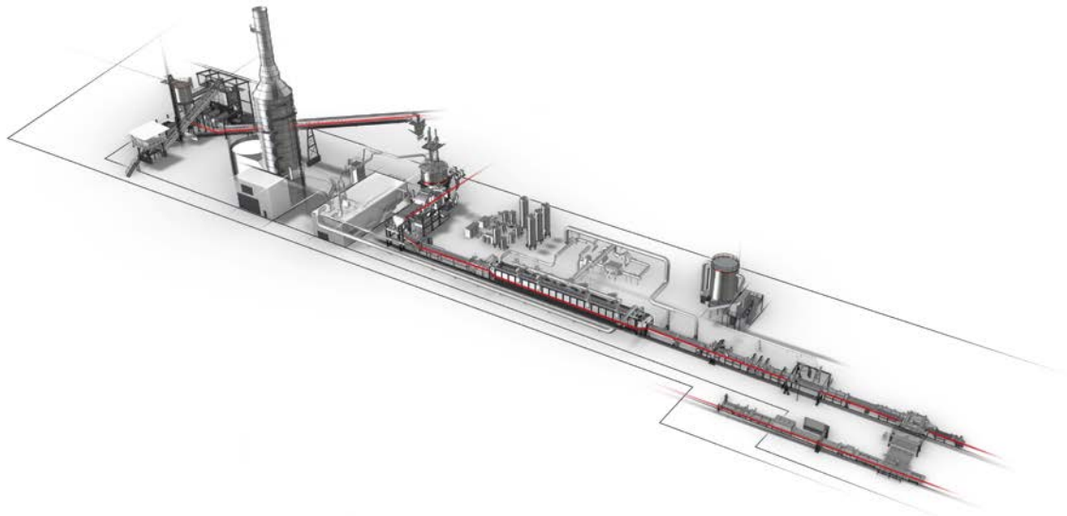
- modern working conditions
- no fatal accidents / fewer lost time accidents

Waste-free production due to recycling of production-related waste
Goal: **ZERO WASTE**

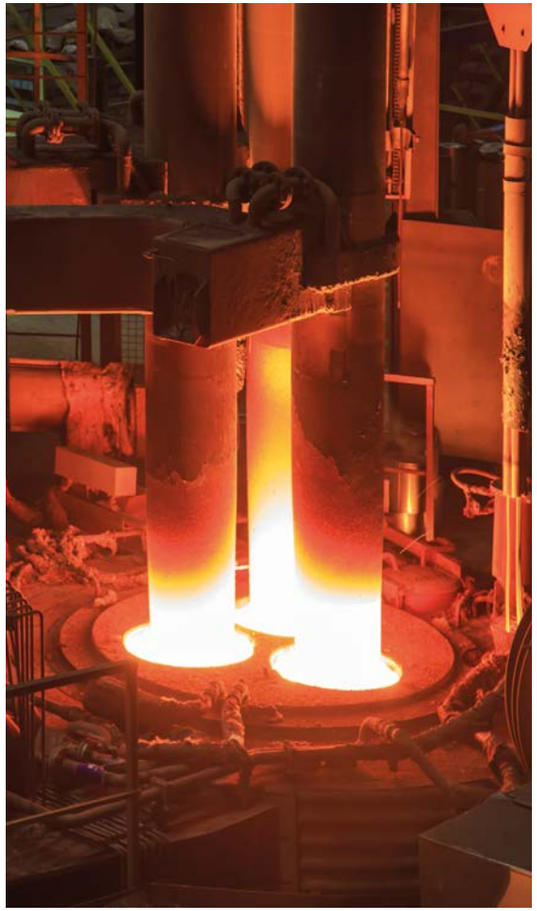
Reduction of CO_2 emissions
Goal: **ZERO CARBON**



FURNACE REPLACEMENT
From coke-fired cupola to a Grenzebach furnace:
» Gas-fired cupola furnace
» Electric melter (submerged arc furnace)



ELECTRIC MELTING FURNACE



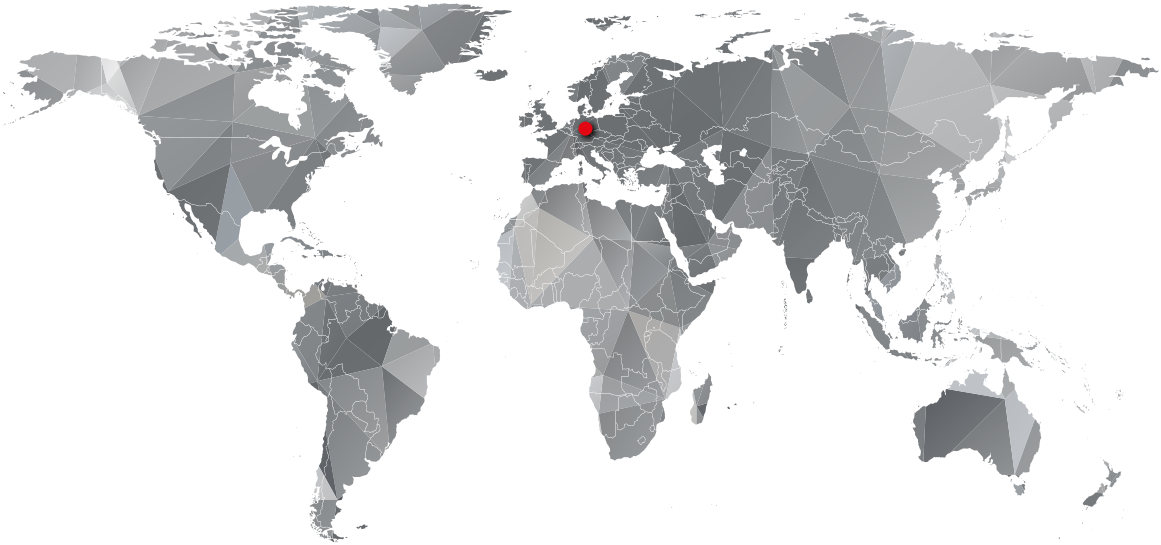
For stone wool production that is independent of fossil fuels, relies on renewable energy and sustainable raw materials to minimize both environmental impact and long-term cost savings.

- Use of electric power from **renewable energy** sources (wind, solar, hydrogen, ...)
- Replacement of refractory lining **3-5 years increases economic efficiency**
- **Reduced iron drainage required**
- **Low CO2 and nitrogen oxide** content in exhaust gas, less complex waste gas treatment
- No additonal raw materials needed
- **No additional** briquetting and oxygen plant necessary

GAS CUPOLA FURNACES

For stone wool manufacturing processes, individually adapted to the local conditions, eco-friendly and resource-conserving.

- In a **brownfield project**, a coke cupola furnace can be **replaced by a gas cupola furnace** with minimal modification work due to their similar construction
- Natural gas as primary energy source provides a positive energy balance
- No required iron discharge decreases downtimes
- **Reduced operating costs** through simplified lining compared to the electric melter
- **Efficient production** independent of coke price and quality fluctuations
- Short start-up and shut-down times (45 minutes to first product)
- Especially interesting for countries with **natural gas resources**



Grenzebach BSH GmbH
Rudolf-Grenzebach-Straße 1
36251 Bad Hersfeld
Germany
Phone: +49 6621 81 3000
E-mail: info.gbsh@grenzebach.com

www.grenzebach.com/insulation

GRENZEBACH