



WOW

The Wienerberger Group at the Geopolymer Camp

Geopolymer Camp 30.8. – 1.9.2021

Ondřej Sarvaš, Tetyana Boyko

wienerberger

Mission Statement

wienerberger

Our Vision

We aim to be **the most highly regarded manufacturer of sustainable building materials** and infrastructure solutions and the preferred employer in our markets.

Our Culture

We live by our values and share them with all our stakeholders. Based on our strong corporate culture, local teams join forces in a dynamically evolving international company.



Our Mission

We improve people's quality of life by providing outstanding solutions for new build, renovation, and infrastructure.

Our Goal

The primary goal of our entrepreneurial activities is the **continuous growth of our company based on a strategic commitment to our ESG** and financial targets.

Basic overview

200 years

of innovation and experience

~17,000

Employees



wienerberger

197

In 197 plants we produce sustainable and innovative products.

€ 3.4 billion

Revenues

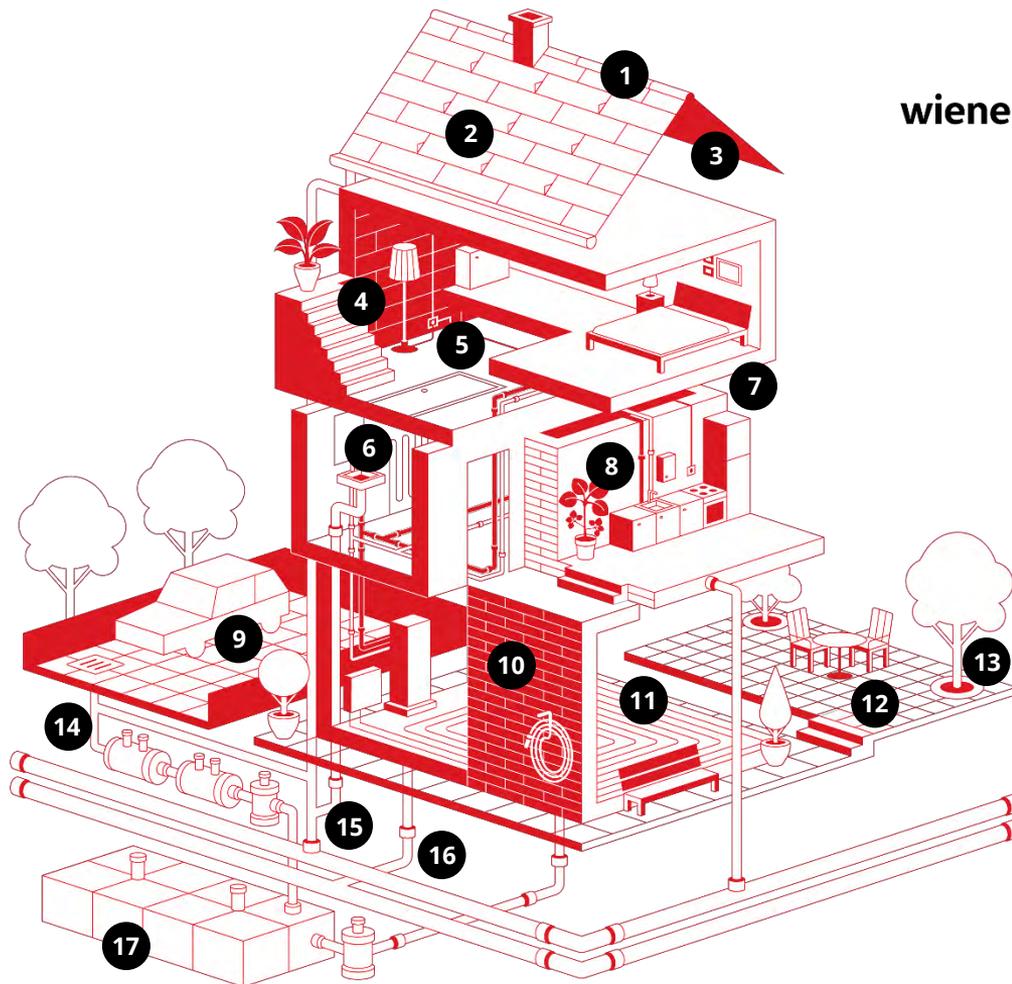
Products & production sites

Clay blocks (61), facing bricks (36), roof systems (31), pavers (20), plastic pipes and ceramic pipes (33), digital products and solutions (2), calcium silicate brick (2) concrete products(1),

Our System Solutions at a Glance

wienerberger

- 1 **Ceramic accessories**
- 2 **Roof tiles**
- 3 Roof underlay
- 4 **Clay blocks**
- 5 Electrical installations
- 6 Wall heating and cooling system
- 7 Ceiling cooling
- 8 Hot and cold water installation
- 9 **Concrete pavers**
- 10 **Facing bricks**
- 11 Floor heating
- 12 **Clay pavers**
- 13 Landscaping elements
- 14 Water filtration unit
- 15 Wastewater
- 16 Fresh water supply
- 17 Raineo



Building Solutions

wienerberger

System solutions for the entire building envelope

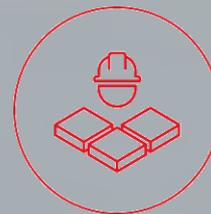
Clay blocks and roof tiles, pavers for roofs, facades, walls, pavements.



154,000
houses built



286,300
roofs covered



14,000,000_{m²}
surface paved

Our Strategy; ESG targets 2023

wienerberger



-15 %

less CO₂ emissions compared to 2020



Biodiversity

A biodiversity program for all our sites



100 %

of new products to be recyclable or reusable

All our activities are subject to clear **ESG** criteria

Organic growth through



Innovation & Digitalization

Process improvements through



Operational Excellence

External growth through



M&A & Portfolio Optimization



Wienerberg: Former clay pit becomes recreation area

Intention at GP-camp

- > let others know our interest in geopolymers
- > meet relevant experts
- > deepen our knowledge
- > look for possible cooperation
- > share our vision and targets
- > learn from others

Geopolymer activities

- > increasing number of projects
- > always in cooperation with other partners (companies, universities,...)
- > Wienerberger usually as industrial partner or supplier of raw materials

Examples of projects

- > Wienerberger United Kingdom
 - Low Temperature Setting Ceramics
 - New binding technology for production of bricks/pavers
 - collaboration with University of Leeds
 - Formation of a low sintered glass-ceramic
 - collaboration with Liverpool John Moores University

- > Wienerberger Belgium
 - Development of sustainable, load-bearing, lightweight building elements with low environmental impact and at a competitive price
 - 2 industrial partners + 2 research/scientific partners

- > Wienerberger AG
 - Geopolymer thermal insulation
 - Geopolymer lightweight blocks

Semmelrock

wienerberger

- > Production in
 - ~30 Production lines
 - 7 countries
 - 14 plants
 - HQ in Vienna
- > Main products
 - Pavers
 - Slabs
 - Fences
 - Oth.: Deco elements, Walls, etc.



Private Gardens



Patio and Private Gardens



Pedestrian Zones



Pedestrian street Jagiellońska, Chorzów
Umbriano pavers, granite-grey-white and grey anthracite

Marinas

A large white yacht is docked at a modern marina. The yacht has several oval windows and a sleek design. The marina features a paved walkway made of light yellow and anthracite pavers. To the right of the walkway, there are landscaped areas with greenery and a concrete curb. In the background, there are parked cars and a building. The sky is overcast with soft clouds, suggesting a late afternoon or early evening setting.

Marina Mandalina, Šibenik, Croatia
La Linia pavers, light yellow and anthracite

Technology

wienerberger

BLOCK PRESS MACHINE



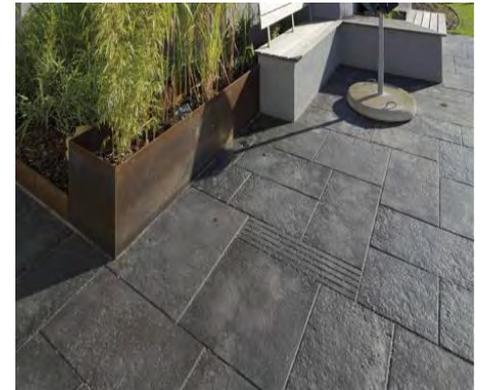
HERMETIC



WET CAST



PRODUCTS:



Requirements on the products

wienerberger

> Usage Durability

- Nice surfaces not easy to contaminate (e.g. garden grill party)
- Easy to clean surfaces
- Durable and robust in time
- Etc.

> Product Norm requirements

- Required flexural strength for slabs; splitting strength for pavers; compressive strength for fences and inner walls
- **Freeze-thaw salt resistant** for pavers and slabs
- Low water absorption
- Defined dimensions
- Low Abrasiveness
- Slippery resistant
- Etc.

Geopolymer feasibility

- > All products are made of concrete using cement
- > Requirements/Challenges by using geopolymer
 - To find suitable available raw materials
 - Reliable suppliers
 - Fulfill Norm and usage requirements
 - Be recyclable at the end of the lifetime
 - Low cost and low CO₂ footprint
 - ...



WOW

Thank you for your attention!

Ondrej Sarvaš ondrej.sarvas@wienerberger.com

Tetyana Boyko tetyana.boyko@wienerberger.com

wienerberger