MCT Italy S.r.l., 06084 Bettona, Italy

Together to Zero: Vandersanden's new Pirrouet factory

One year after launching Pirrouet®, the first CO_2-negative facing brick on the market, Vandersanden officially opened the first Pirrouet factory in Lanklaar. Not only is the Pirrouet brick sustainable and environmentally friendly, but the production process is also CO_2-neutral. The green electricity that powers the factory is largely generated by its solar panels and windmill. Pirrouet uses residual streams from the steel industry contributing to a substantial reduction of up to 80% of primary raw materials and significantly reducing waste.

Investment of 32.5 million euros for CO_2-neutral production process

The new factory employs 26 people and has an area of 8,000 m². Annually, the facility produces up to 20 million Pirrouet facing bricks. There is also an opportunity to expand the plant, doubling the production capacity to 40 million bricks per year. Vandersanden has received a European subsidy of 2.2 million euros for this project, with a total investment of 32.5 million euros in the factory. The European grant program falls under "Horizon Europe", which supports the installation of the necessary equipment and further research into CO_2 capture and reuse.

Johan Deburchgrave, CEO of Vandersanden, commented, "With the opening of this new factory, we can now produce Pirrouet bricks on a large scale. This is an important step in increasing our joint ecological impact. We are extremely curious about the beautiful projects this will create, and there are already many promising initiatives in the pipeline."

About Vandersanden
Vandersanden is a Belgium family-run company producing producing facing bricks, pavers, brick slips and provide solutions for façades and streetscapes at their nine factories in Belgium, the Netherlands and Germany. Vandersanden is not only one of the largest, but also one of the most sustainable brick producers in Europe. Craftsmanship, co-creation, innovation and sustainability are the keywords of their approach.

One-year CO_2-negative Pirrouet facing brick

Exactly one year ago, Vandersanden introduced the Pirrouet facing brick, which, thanks to a unique carbonation technology, absorbs 60 kg CO_2 per ton during curing. The facing brick is not fired but cures with CO_2 derived from plants within energy-intensive industries, resulting in a solid, limestone-like structure. With a production capacity of 20 million bricks per year, the factory can remove 2,280 tons of CO_2 from the air annually. This is equivalent to the CO_2 absorbed by 114,000 adult trees per year.

Vandersanden opening ceremony, Lanklaar, Sept. 17, 2024

Plant flyover

Powder silo and automatic aggregates loading system

Pirrouet facing bricks are already being used in several building projects, including the Green Nobelhorst project in Almere, where 60 sustainable homes are being built. These projects are part of a broader and well-stocked project pipeline. "Green Nobelhorst is all about sustainability and innovation. The choice of Pirrouet facing bricks in our project is a conscious decision to further reduce the ecological footprint of the project. These facing bricks fit perfectly with our vision to realise sustainable and energy-efficient homes," says Helmich Heutink, CEO of Heutink Groep, the contractor of Green Nobelhorst.

As the first CO_2-negative facing brick in the construction industry, Pirrouet marks an important milestone in making the construction industry more sustainable. This innovative facing brick supports Vandersanden's ambition to be fully CO_2-neutral by 2050. By using Pirrouet facing bricks, the company hopes to make a significant contribution to reducing the construction industry's carbon footprint and promoting sustainable building practices.

Massive plant for most accurate dosing precision

The automatic aggregate loading system, starting from the primary receiving hopper, has been studied in order to avoid any kind of contamination among the different coloured aggregates.

The several conveyor belts are equipped with electrical scrapers actuated only when coloured materials are loaded; furthermore, every conveyor has an automatic washing system which guarantees a clean environmen. This makes possible to discharge, transfer and store the special component of Carbinox.

The batching plant, carefully engineered with Vandersanden engineers in every step, has an aggregates storage of huge capacity:

Indoor batch plant

- 320 cubic meters total aggregates storage, divided into 8 compartments
- 300 ton of powders
- 1 aggregates scale can feed, in an extreme fast way, the two mixers:
- 1 Eirich Intensive mixer for base mix (grey concrete) with compacted concrete of 2 m³
- 1 Eirich Intensive Mixer for face mix (coloured concrete) concrete of 0,5 m³
- 6 coloured granulate dosing systems
- Underneath both mixer 2 concrete flying buckets

The total flexibility of the colour blending is ensured by the weighing systems of the single hoppers and by the metered extraction belts located on every hopper.

The level of investment is fully justified by the high-quality performances that the mixer guarantees in terms of repetitiveness of homogeneous colour concrete for the face mix.

Long-term ambitions: Together to Zero

Johan Deburchgrave emphasizes, "This plant is a fully operational production facility and fits seamlessly with our other production units. It is not just a pilot project, but an essential and serious step in our commitment to sustainable production and CO_2 reduction." Looking to the future, Vandersanden's ambition is to realise multiple Pirrouet factories as such an expansion will contribute to a broader impact and further strengthen their sustainability goals.

Eng. Luca Cellni Falchetti, Sales Manager of MCT Italy, pointed out: "The most energy-intensive aspect of producing facing bricks is no longer necessary with Pirrouet. Instead of being fired in a gas oven, they are hardened in a CO_2 chamber. To fill this chamber, Vandersanden uses CO_2 released during the combustion of fossil fuels in industries with intensive energy consumption. As a result, a waste product becomes a raw material again and less CO_2 is released into the atmosphere.

Redundant powder delivery

Pirrouet facing bricks at the Groen-Nobelhorst housing project in Almere in the Netherlands. Each square metre of facade permanently stores 8.5kg of CO_2

During the production process, each tonne of Pirrouet facing bricks absorbs as much as 60 kg of CO_2, which bonds permanently with the calcium hydroxide present during the curing. He also added: "We at MCT Italy believes as Vandersanden did that, we are not just doing business for ourselves. We want to contribute to the solutions for the major challenges in our society and for this reason, Together to Zero was created. Vandersanden wants to be completely CO_2 neutral by 2050. With this revolutionary facing brick, they are one step closer to achieving that goal. We also want to inspire others and we're calling on all our sector colleagues to work together towards a neutral footprint. We challenge everyone to join this pledge." ■

FURTHER INFORMATION

VANDERSANDEN

Lanklaar – Pirrouet
Siemenslaan 7D
3650 Dilsen-Stokkem, Belgium
www.vandersanden.com

MCT ITALY
Marcantonini Concrete Technology

MCT Italy S.r.l.
Via Perugia 105
06084 Bettona, Italy
mail@marcantonini.com
www.marcantonini.com

Paul
Maschinenfabrik GmbH & Co. KG
100 1925 - 2025

PAUL supplies

- Prestressing installations incl. planning work
- Anchor grips
- Prestressing machinery (single-/multi-stressing jacks)
- Strand pushing and cutting equipment
- Automatic prestressing machines for railway sleepers
- Prestressing equipment for bridge construction (prestressing cables and stay cables)

The experts in
Prestressed Concrete Technology.
stressing.paul.eu

Paul at YouTube
stressing-channel.paul.eu

Max-Paul-Str. 1
88525 Dürmentingen
Germany
☎ +49 (0) 7371/500-0
🖷 +49 (0) 7371/500-111
✉ stressing@paul.eu