

The sustainability goal of Kirchdorfer Concrete Solutions in a nutshell

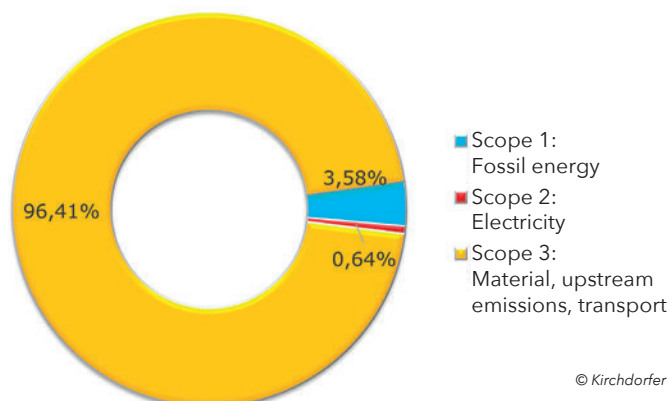
Carbon footprint from the perspective of a precast concrete manufacturer

■ Dipl. Ing. (FH) Franz Buschmüller, Management of MABA Fertigteileindustrie GmbH and CTO of Kirchdorfer Concrete Solutions, Austria

Kirchdorfer Concrete Solutions and its subsidiary MABA Fertigteileindustrie have set themselves the goal of producing more climate-friendly products by 2030. In order to achieve the defined Beton³⁰ concrete sustainability target, the increase of aggregate recycling by 30 % and the reduction of binding agents and transport by 30 % by 2030, a comprehensive approach to climate-neutral and energy-efficient management is needed.

The breakthrough in our strategy came through the formulation of this 30³ vision. The number 30 shows a challenging direction for all areas. It is important to make the vision idea – where do we want to go – tangible for all stakeholders, knowing full well that achieving pinpoint accuracy for any finished product is an illusion.

Together with external support, we defined suitable parameters in the form of CCF (corporate carbon footprint) and PCF (product carbon footprint) to consider all CO₂ emissions and rucksacks. With external support, we first analysed the "Corporate Carbon Footprint" (CCF) at the Wöllersdorf plant, based on the entire business activity, and recorded it over an entire year. Both Scope 1 and 2 were considered, from energy and heating requirements to company cars, as well as Scope 3 via CO₂ rucksacks from the raw materials and built-in components used. At the same time, the "Product Carbon Footprint" (PCF) was calculated for the comprehensive product portfolio in order to consider all CO₂ emissions and rucksacks.



Corporate Carbon Footprint – Wöllersdorf 1 site

We quickly realised that we needed software that could provide us with precise data on materials, components and processes. In collaboration with DI Dr Christian Plas (Denkstatt.at), we have programmed a unique tool that can be used to precisely quantify the PCF for thousands of MABA sub-products.

Now we are able to evaluate the production plants separately from the precast concrete elements and improve all areas efficiently and effectively.

It is essential to concentrate on and prioritise the central drivers

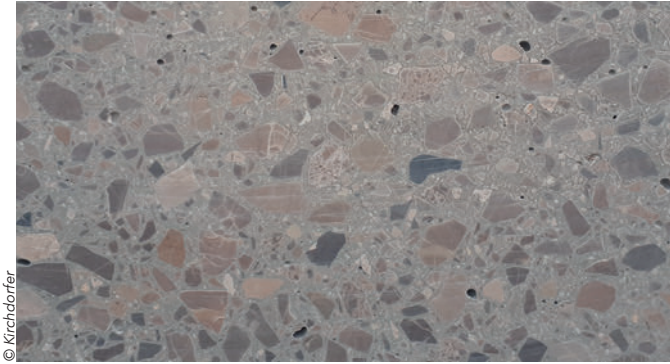
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Our survey has shown that a total of 94 % of the CO₂ emissions of MABA Fertigteileindustrie come from a rucksack that is already delivered to us, so to speak, through the use of concrete, and here in particular the binding agents, as well as the necessary reinforcing steel. Our primary objective now is therefore to keep this rucksack as small as possible!

This allows us to derive measures directly and prioritise the implementations. The potentials are put in a nutshell. Successful reduction of the CO₂ rucksack starts with product development, continues with the use of reinforcement and the selection of the concrete formulation and ends with the manufacturing and transport processes. Only with an interwoven view and corresponding data quality can challenging goals like our 30³ be achieved.

Last year, a first pilot project in the area of railway sleepers was launched in cooperation with ÖBB-Infrastruktur AG and the concrete technology experts of the Austrian Federal Railways. Here, it was possible to make CO₂ savings of almost



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Kirchdorfer Concrete Solutions is pursuing a comprehensive sustainability goal with Beton³⁰

30 % by changing the recipes for the production of the L2 sleeper. At the beginning of 2023, all concrete technology test results were already available and production of the optimised sleepers is underway. ÖBB has already selected an appropriate test route for operational testing.

We are particularly proud of numerous measures and projects that have been initiated, including the following:

- the preparation, quality testing and approval for the use of recycled concrete. A basic study together with Smart Minerals/TU Vienna.
- the use of recycled concrete in noise protection applications.
- the optimisation of self-compacting concrete recipes using artificial intelligence.
- the efficient energy supply of our MABA production sites in Wöllersdorf, Sollenau, Gerasdorf and Micheldorf with customised photovoltaic systems.

The orientation of value creation according to ecological criteria is therefore based on the determination of a detailed carbon footprint for all product groups and production

plants. On this basis, our Kirchdorfer precast concrete elements are supplied to our users and customers with a lower CO₂ content.

About Kirchdorfer Concrete Solutions

Kirchdorfer Fertigteilverwaltung GmbH (= Kirchdorfer Concrete Solutions) bundles all precast activities of the internationally active Kirchdorfer Group. This division produces concrete system components for a wide range of applications. Customers from the five core product areas of building construction, industrial construction, underground construction, road, rail and tunnel rely on intelligent product innovations and quality that has been proven for decades. Kirchdorfer Fertigteilverwaltung GmbH achieves an average annual turnover of over 250 million euros.

About the Kirchdorfer Group

The Kirchdorfer Group is a privately owned international building materials group based in Kirchdorf an der Krems (Upper Austria), which operates in the Cement, Construction Minerals, Concrete Solutions and Road & Traffic divisions. ■

FURTHER INFORMATION



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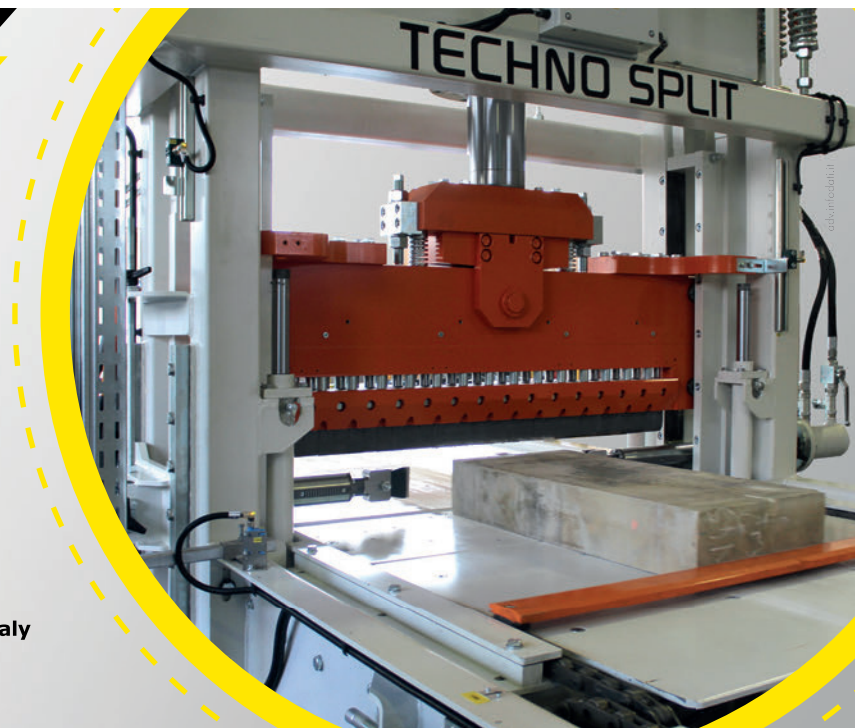
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