



Jet-grouted underpinning with sustainable cement for the Friedrich Ebert School in Wiesbaden

Data and facts

Company

PORR Spezialtiefbau GmbH

Type

Underpinning

Runtime

03.2021 - 05.2021

Principal

Bickhardt-Bau AG, Kirchheim

[Project report online](#)

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DSV underpinning with sustainable cement for the Friedrich Ebert School, Wiesbaden, Germany

Sustainable cements reduce CO₂ emissions by up to 39%

Around 570t of CO₂-efficient Portland composite cement CEM II/C-M (S-LL) 42.5 N-NA from Dyckerhoff was used for the cement slurry. Like all large manufacturers, Dyckerhoff, which was founded in Wiesbaden, is working to reduce the fuel and production-related CO₂ emissions of its concretes and cements. Approximately two-thirds of the raw material-related CO₂ emissions generated during conventional cement production are caused by the deacidification of the main constituent: limestone. The production of sustainable CEDUR cements involves replacing up to 35% of the class CEM I Portland cement clinker with calcium-containing, alternative raw materials that have already been deacidified, such as granulated blast furnace slags and limestone flours. This reduces CO₂ emissions by up to 39% compared to conventional cements. The cement plant was only 6km away from the construction site, so the advantageous location was also fully reflected in the carbon balance. “We were able to process the carbon-reduced cement perfectly, and the compressive strength was even higher than required”, confirms branch manager Andre Schürmann. The results of the compressive strength tests performed according to DIN EN 12390-3 were 6.2N/mm² to 6.8N/mm². This clearly exceeded the minimum requirements of 3.5N/mm².

Impressions



Image notes

1

DSV underpinning with sustainable cement for the Friedrich Ebert School, Wiesbaden, Germany

379 m³ of DSV bodies were made with CO₂-reduced cement

3

DSV underpinning with sustainable cement for the Friedrich Ebert School, Wiesbaden, Germany

For the production of sustainable CEDUR cements, up to 35% of Portland cement clinker is replaced by alternative raw materials containing calcium and already deacidified.

2

DSV underpinning with sustainable cement for the Friedrich Ebert School, Wiesbaden, Germany

As the cement plant was only 6 kilometres away from the construction site, the location also had a significant impact on the CO₂ balance.

Do you have questions about the project or would you like to learn more? Feel free to contact us for further information.

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