New product can revolutionize the concrete industry - reduces the climate footprint by 95 percent

Boliden has made a significant technical breakthrough where slag from existing metal production in smelters can be converted into a cement substitute material. Now the company announces that an initial project with the Swedish company Thomas Concrete Group confirms both product and production performance. Åke Roos, Program Manager at Boliden, elaborates:

- At Boliden, we want to drive the transformation of the industry and our new product is a perfect example of how innovation, adaptation and 100 years of engineering can contribute to a brighter future for future generations. Cement accounts for a large part of the global carbon dioxide emission, which of course makes the industry keen to find new, alternative products without compromising on quality. The project with a leading actor like Thomas Concrete Group was therefore a natural step in the process, and also a fine example of a collaboration born from the same level of ambition, says Åke Roos.

As the first mining and metal company in the world, Boliden has made a groundbreaking breakthrough where slag from existing metal production in smelters is modified into a cement substitute material. Compared to traditional concrete production, Boliden's new product means that the climate impact can be reduced by approximately 95 percent for every share of cement that is replaced. The technology also enables a better metal exchange for Boliden.

An initial project together with the Swedish company Thomas Concrete Group confirms both product and production performance, and the product has now been further improved, with a doubled reactivity compared to the first prototype. This results in a higher yield rate, which further lowers the carbon footprint.

Thomas Concrete Group invests heavily in research and development to reduce concrete's climate impact. Research also takes place at RISE and at universities and colleges. The tests together with Boliden have been going on for 18 months and the prototype blocks were produced in Thomas Concrete Group's subsidiary Thomas Betong's plant in Lane-Ryr, Sweden.

- Our ambition is to continuously reduce our carbon footprint and be a pioneer for a more sustainable construction sector. The Swedish construction industry needs to change to climate neutrality, but the pace needs to increase while maintaining competitiveness. And then research and projects of this kind are absolutely crucial, says Lennart Björnström, COO at Thomas Concrete Group.

Patent applications submitted

Patent applications for Boliden's cement replacement have been submitted and a preliminary study regarding the commercialization of the product has been initiated. Furthermore, a feasibility study for a production plant with a capacity for at least 250,000 tonnes per year has been started. The study is expected to be completed in the first quarter of 2025.