

# Study Confirms: By-products from Lithium Production can be used in Cement Production

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- Byproducts from Europe's first lithium converter can compensate for the slowly reducing fly ash from the phasing-out of coal power, effectively reducing CO2 emissions in the construction industry.
- Product properties of Portland cement are improved - Patent for production and use has been filed.
- [Rock Tech Lithium](#) pursues a zero-waste strategy in Guben.

TORONTO, July 22, 2024 - [Rock Tech Lithium Inc.](#) (TSXV: RCK) (OTCQX: RCKTF) (FWB: RJIB) (WKN: A1XF0V) ("Rock Tech" or the "Company") is pleased to announce the findings of a peer-reviewed study published by the German Lithium Institute. The study finds that by-products from Rock Tech's Lithium conversion process can be used as precursor material in the cement industry. Specifically, it has been confirmed that leached spodumene concentrate (LSC) generated during the production of lithium from spodumene holds substantial industrial potential. The material, primarily composed of aluminosilicates, can be used in the cement industry as an additive for cement, replacing previously used fly ash, a now slowly depleting by-product of coal-fired power generation. This means that the by-products of Rock Tech's lithium production can ensure the regional supply security of the German cement industry with LSC and help reduce CO2 emissions.

Furthermore, it has been shown that the compressive strength of Portland cement, the most used type of cement worldwide, increases by ten percent when 20 percent LSC is added-regardless of the origin of the spodumene used. The process for producing and utilizing the LSC has been submitted for a patent.

The study was conducted within the Mineralogy and Geochemistry research group at the Martin Luther University Halle-Wittenberg by doctoral candidate and ITEL scholarship holder Julia Woskowski. Dr. Andreas Neumann, a member of the research group, explains: "The phase-out of coal and the transformation of the steel industry will sooner or later lead to changed or disappearing material streams that have been significant for the cement industry in terms of CO2 savings and product portfolio. The LSC from lithium production has the potential to compensate for these depleting material streams in the future."

Jannik Schmitz, Supply Chain Manager at ITEL shareholder Rock Tech Lithium, adds: "ITEL's study takes us a big step further on our path to CO2 neutrality and becoming the first zero-waste lithium company worldwide. It is important to note that the suitability of LSC as a cement additive is independent of the origin of the spodumene used. This confirms our choice of production process and our procurement strategy to source spodumene from several sustainably producing sources."

The study was supported by ITEL's shareholding companies, Rock Tech Lithium Inc., GP Günter Papenburg AG, and SCHWENK Zement GmbH & Co. KG. SCHWENK offers comprehensive supply of cement, concrete, sand & gravel, and pumping services in Germany. Dr. Thomas Neumann, Head of Research and Development at SCHWENK, explains: "The use of industrial residues from lithium production in cements and concretes significantly contributes to the conservation of valuable natural resources. Through innovative material use, we make an important contribution to achieving our sustainability goals. By integrating these residues, we can not only reduce environmental impact but also decrease CO2 emissions."

Rock Tech plans to build Europe's first lithium converter in Guben, Brandenburg. With an annual production capacity of 24,000 tons of lithium hydroxide, the converter can provide material for the construction of 500,000 electric batteries. Thus, the converter forms an important component of the battery value chain. Soon, capacities for material recycling will be developed. Additionally, the company aims to become the first zero-waste lithium company in the world through the complete reuse of byproducts. The company benefits from regional value chains and short distances.

ORIGINAL STUDY: J Woskowski, A Neumann, H Roggendorf, R Wehrspohn, S Stöber, "Properties of low sulfur leached spodumene as supplementary cementitious material in ordinary Portland cement" in Construction and Building Materials, Volume 438, page 137096 (2024), <https://doi.org/10.1016/j.conbuildmat.2024.137096>; as well as the associated patent application EP 2415 6323 at the European Patent Office.

## ABOUT ROCK TECH

Rock Tech's vision is to supply the electric vehicle and battery industry with sustainable, locally produced lithium, targeting a 100% recycling rate. To ensure resilient supply chains, the company plans to build lithium converters at the doorstep of its customers, beginning with the Company's proposed Lithium Hydroxide Converter in Guben, Brandenburg, Germany. The second Converter is planned to be built in Red Rock, Ontario, Canada. Rock Tech Lithium plans to source raw material from its own Georgia Lake spodumene project in the Thunder Bay Mining District of Ontario, Canada, and procure from other ESG-compliant mines. Ultimately, Rock Tech's goal is to create a closed-loop lithium production system. Rock Tech has gathered one of the strongest teams in the industry to close the most pressing gap in the clean mobility story. The Company has adopted strict environmental, social and governance standards and is developing a proprietary refining process to increase efficiency and sustainability further.

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