Sifucel
First Cristobalite Production Plant in Portugal

INDUSTRY
Building Materials

PLACE
Rio Maior, Portugal

COMMISSIONING
April 2025

SOLUTION
Design, construction, and commissioning of a cristobalite production plant

CUSTOMER

Sifucel – Sílicas, S.A. was established in 1965 and has been a member of Grupo Parapedra since 1995. The company is located in Rio Maior, Portugal, and processes high-purity silica sand and kaolin for national and international customers. Sifucel uses innovative methods to extract silica sand. The raw materials are processed in a closed-loop system using modern equipment.

INITIAL SITUATION

Sifucel has a deposit of exceptionally pure, high-silica sand. Through a pipeline dredging system, Sifucel efficiently and responsibly extracts its raw materials, ensuring the sustainability of its operations.

For years, this high-silica sand was supplied as a raw material. Today, Sifucel is moving further up the value chain. By entering the cristobalite production market, the company is expanding its product portfolio, creating higher-value solutions, and strengthening its position in global competition.

To achieve this transformation, Sifucel looked for a trusted technology partner—and found it in Grenzebach. Together, they are shaping the future of advanced materials.

» With the cristobalite plant, we have taken our business to a new level. Grenzebach has not just been a supplier to us but a true partner on this journey. «

Manuel Pinheiro
CEO Sifucel

CHALLENGES

Grenzebach's first task was to carry out a comprehensive material analysis. Sifucel submitted silica sand samples, which Grenzebach tested for particle size, purity, and reaction behavior at its in-house laboratory. With the help of special additives, Grenzebach developed a tailored formula for the production process. At its technology center, Grenzebach produced small quantities using that formula and verified the process. The results were convincing: Sifucel chose the German equipment and systems supplier as its technology partner for its cristobalite production facility.

IMPLEMENTATION

Grenzebach then designed, built, and started up the cristobalite plant step by step. The centerpiece of the plant is a rotary kiln, in which the silica sand undergoes thermal conversion into cristobalite at approximately 1,500 degrees Celsius. The capacity is some ten metric tons per hour. The previously unrefined raw material is now processed into a sought-after high-tech material.

Sifucel has invested a total of some 30 million euros in the project, including 1.38 million euros in EU funding under the "Portugal 2020" program.

BENEFITS

New Export Markets

Cristobalite production gives access to international markets with high demand.

Added Value

A raw material becomes a high-tech material—Sifucel boosts sales potential and independence.

Tailor-Made

Grenzebach developed a solution fully tailored to the customer's process.

CONCLUSION

Today, the project is considered a milestone for Sifucel: some 80 percent of the production is exported. The new plant not only strengthens the company's competitive position but also demonstrates how technological know-how and entrepreneurial foresight can create new potential. Grenzebach has been Sifucel's journey partner on the way into this new market segment, with experience, innovative strength, and a clear focus on the customer.

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