

Compañía Minera Santa Luisa mechanises shotcrete thickness control with Geokret 2.0, Putzmeister's system based on scanning the projected surface, significantly improving the process.

Compañía Minera Santa Luisa has been present in the Peruvian market since 1964 and develops all types of mining activities, from exploration to exploitation, metallurgical treatment, and marketing of minerals at two production sites in the country. At the Huanzala mine, located about 400 km north of Lima and 4,000 m above sea level, it mines and processes zinc, lead, and copper in its own concentrator plant.

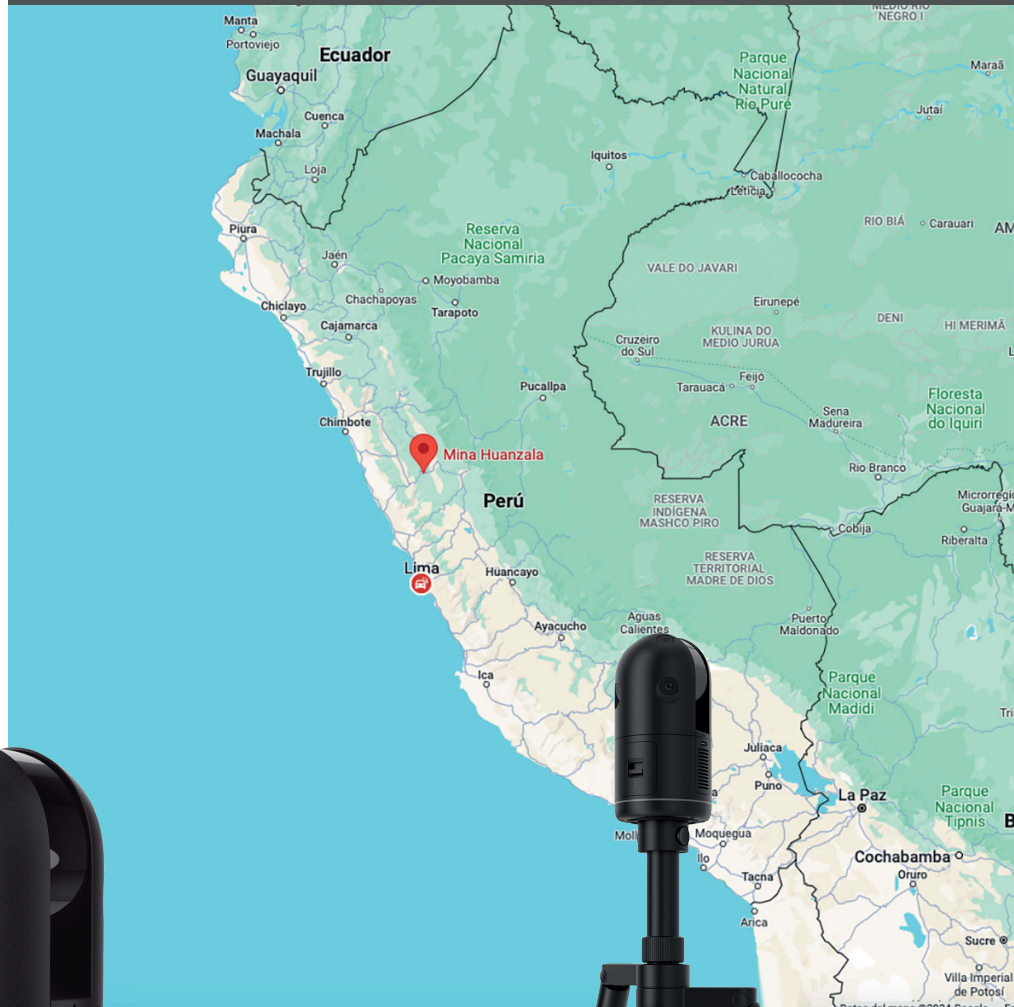
During these more than 50 years of production, the way of working has evolved a lot and today, with the development of the wet method and the robotics of the equipment, they have gone from doing the support work manually to doing it with robotic equipment. To do this, Compañía Minera Santa Luisa relies on Putzmeister robotic concrete distributors and, to complete the cycle, low-profile and very robust concrete mixers from the Putzmeister Mixkret range.

But Santa Luisa is going one step further and since 2023, in its commitment to develop a modern mining industry that respects the environment and the communities near its operations, as well as the safety of its personnel and the desire to improve its projections, it has mechanised the shotcrete thickness control with Putzmeister's Geokret 2.0 system.

Compañía Minera Santa Luisa relies on Putzmeister Geokret 2.0 system for safe and intelligent shotcrete in its operations.



Sistema Geokret 2.0 de Putzmeister



How Geokret 2.0 works

"The system is very simple, light and easy to transport," says Néstor Valdez Collque, Operations Manager at the Huanzala mine. *"It consists of a laser without cables, and with the tripod it can be placed in the best area of the gallery to avoid dead spots, and it does not interrupt the normal work cycle, as the entire scanning process takes a maximum of 5 minutes (between the location and the scanning itself),"* he adds.

GEOKRET 2.0

Sprayed concrete thickness control



Before (2022): Thickness testing with cores / Now (2023): Testing with Geokret 2.0

And he is right, Geokret 2.0 was developed in collaboration between Putzmeister and Leica Geosystems, the renowned Swiss company for surveying systems and lenses, with the aim of creating a simple, fast and millimetre-accurate system:



Thickness control with Putzmeister Geokret 2.0 in Huanzala mine, Perú

01

Positioning the laser in an already supported safe area and **initial scanning of the non-sprayed surface.**

02

Standard shotcrete process

03

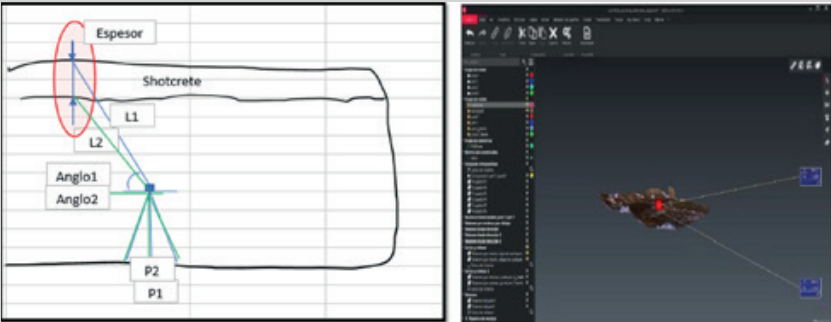
Second scan positioning the laser in a similar area to the first scan. Putzmeister and Leica's system is so accurate that it does not have to be the same location, as it is able to overlap both scans by using the geo-refraction of the first scan and a large point cloud, over 800,000 at the lowest resolution.

04

Thickness visualization via a heat map on the red-hot tablet almost instantly. This allows the operator to identify areas of under-thickness and over-thickness against the required thickness set by the operator at the start of the process, and to take corrective action.

05

Comprehensive analysis of the data collected by the Cyclone 3DR desktop software and decision making to improve the cycle.



Comprehensive thickness analysis with Putzmeister Geokret 2.0 Cylcone 3DR software.

Developed jointly with: **Leica**

After more than a year of using the system, the Huanzala mine is already reaping the benefits. ***"We have eliminated the exposure of our personnel to unsafe areas, which is essential for us, and we have better control of the shotcrete, both in terms of thickness and rebound, which allows us to take sustainable and effective corrective action. We expect to recoup our investment in just three and a half years. We are very pleased,"*** says Néstor Valdez Collque, who adds: ***"The underground construction industry must work together and promote the most advanced technology, such as shotcrete thickness scanning, to lay the groundwork for the regulatory body to implement these standards with the safety of workers exposed to this work in mind."***

Néstor Valdez Ccollque
Operations Manager at the Huanzala mine



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