

Saalfelden quarry

Generating electricity from stones

Mineral Group, a member company of STRABAG SE, operates around 150 quarries and gravel pits across Europe, thereby ensuring a steady supply of the quality raw materials that make construction possible in the first place. Top priorities for the group include long-term quarry planning and resource extraction as well as efficient raw materials management.

In 2006, STRABAG took over Austria-based Diabaswerk Saalfelden GmbH and its quarry near Saalfelden – with the aim of setting new standards in efficiency and sustainability in operations. Thanks to several large investments in recent years, the Saalfelden quarry is now one of the most modern facilities in Austria – not only, but also, in terms of energy efficiency.

As the deposits in the area were close to being exhausted, the predecessor company had already been looking for new quarrying opportunities – and found them higher up on the mountain at an elevation of 1,500 meters. STRABAG was now faced with the challenge of how to efficiently transport the quarried material away from the site with low impact on the landscape and in a climate-friendly manner. The solution: an underground tunnel with a continuous conveyor belt system. That cut down on the need for heavy goods vehicles and reduced the level of carbon emissions.

Cover The Diabaswerk Saalfelden GmbH quarrying site in Austria



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1 Tunnel with conveyor belt, track and pedestrian pathwa / 2 Train loadout

Energy from the quarry, for the quarry

A special highlight at Saalfelden is the predominantly energy-autonomous operation of the conveyor system. The tunnel and conveyor cover a relatively steep drop with an elevation difference of 700 m over a distance of 3.2 km.

“The heavy excavated material on the conveyor forces a lot of weight downwards. This drives a generator that brakes the belt in order to produce electricity,” explains technical group lead Thomas Rödhammer, who is in charge of the Saalfelden quarry along with three other facilities. In this way, the mountain itself provides the energy needed in the quarry.

The conveyor belt can transport a maximum of 500 t of rock per hour. This generates an electrical output of up to 550 kW – energy that is used directly on site to operate the processing plant and which allows the quarry to cover around 20 % of its electricity needs itself. There are plans to increase this amount even further through the installation of a photovoltaic system. And if at any time more electricity is produced than is required, the surplus energy is fed into the public grid.

From mountain to rail

STRABAG also succeeded in significantly reducing the site's vehicle-related transport and loadout – and the emissions that go with these activities. All products obtained from the quarry can now be transported directly from the product silos and intermediate storage to the rail loadout facility via conveyor belts. This also benefits the transport to the customers. Thanks to a sustainable partnership with ÖBB Rail Cargo, around 520 t of CO₂ can be avoided on a delivery volume of 30,000 t of material a year.

Additionally, STRABAG ensures that dust and noise emissions during all modernisation activities are kept to a minimum. Most recently, the company built a new high-grade aggregate production line, which over the last five years reduced the quarry's carbon emissions per tonne of material produced by around 30 %.

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