

Bernegger sees the benefit of B60Es in large Austrian quarry



For more than 40 years, limestone has been extracted at Bernegger's Schützenstein quarry near Spital am Pyhrn in Austria up to heights of almost one thousand metres. Together with the sales and application experts from Kiesel Austria, the company optimised its year-round conveyor chain by using two mining excavators in combination with two Bell B60E 4x4 Articulated Dump Trucks (ADTs).

The Schützenstein quarry was opened in 1979 and is part of the family-run Bernegger Group, which today employs around 1 000 people. The extraction of mineral raw materials and concrete production remains a core business of the company that is headquartered in Mölln and is also involved in the construction and environmental technology sectors at 20 locations through subsidiaries and affiliates.

A good 500 000 tonnes of limestone are quarried per year in Spital am Pyhrn and processed into high-quality aggregates, road and civil engineering materials, hydraulic engineering blocks, and lime fertiliser in the plant that was renovated in 2011. A large portion of this does not remain in the region but is transported by block trains to various Bernegger intermediate storage facilities. The materials also reach Bernegger construction projects or customer construction sites throughout the country directly and in an environmentally-friendly manner via a self-developed container exchange system.

Challenging quarrying

The Schützenstein quarry is barely 750 metres away from the plant with its high-silo storage, railway loading, ready-mixed concrete plant, and recycling plant. The quarry's primary crusher site with its 10 000-tonne roofed rock storage facility is connected to the lower-lying plant via a conveyor belt that crosses a federal road. On a mining area of almost 20 hectares there are currently 13 mining levels, the highest at 984 metres, almost

200 metres above the primary crusher. Mining is done by blasting, with wall heights of 15 metres and berm widths of around nine metres.

The loading and transport of the raw material in sizes up to 1 000mm is correspondingly demanding. Individual distances of up to 2 000 metres, the narrowest bends, and gradients of up to 18% characterise the routes for the transport equipment, whose operation is made even more difficult in wet weather or early winter conditions. The use of classic 4x2 rigid trucks is too unsafe here and, until the end of 2021, four articulated 6x6 40-ton trucks supplied the primary crusher, with a total transport capacity of

around 2 000 tonnes per shift with travel times of up to 30 minutes.

Solutions sought

For the upcoming renewal of the Schützenstein conveyor chain, the Bernegger managers also sought talks with the customer advisors of Kiesel Austria and the extraction specialists within the Kiesel organisation in autumn 2021. Based on the application profiles of loading equipment and transport vehicles, the experts drew up precise needs analyses. From the very beginning, the focus was on optimisation potentials, such as higher utilisation, lower personnel expenses, and greater economic efficiency. After a thorough evaluation of the results and alternative offers, Spital am



Satisfied at the on-site meeting (from left): Deputy Bernegger Plant Manager, Patrik Stangl, Kiesel Austria's Area Sales Manager, Mario Popatnik, Kiesel Large-scale Machine Expert, Walter Michels, and Kiesel Austria's Application Consultant, Markus Stäblein.



The bin, specially designed for hard stone use, offers a considerable volume even with large boulders.

Pyhrn finally decided in favour of Kiesel's Hitachi and Bell system solution.

Two Hitachi Excavators were delivered in May 2021 and September 2022 respectively to replace the existing 70- and 50-ton excavators and at the beginning of 2022, two Bell B60E 4x4s replaced the original four 40-ton trucks that were in operation.

In Spital am Pyhrn, as in numerous European and Austrian operations, it was not only the large of 55-ton payload capacity of the 35m³ body that tipped the scales. Once again, the articulated two-axle ADT with all-wheel drive impressed above all with its driving characteristics, which are specially tailored to exposed hard stone quarries: safe 4x4 traction on gradients, large safety reserves thanks to a sensitively dosed

retarder, adjustable speed limiters and high comfort owing to active suspensions and large spring travel on the front and rear axles.

And the two B60Es meet all expectations in terms of economy. With documented shift performances of 2 000 tonnes, two drivers now reliably achieve the daily target. After 13 months of operation, the average consumption was just under 20 litres per hour, which represents a significant cost saving compared to the former 6x6 fleet. It also makes a noticeable contribution to the reduction of the CO₂ balance that is being intensively pursued within the Bernegger Group.

In addition, Spital am Pyhrn expects lower tyre costs compared to the three-axle articulated trucks, which also

require more effort for road maintenance, especially in narrow hairpin bends.

Good prospects

In addition to the economic efficiency, the Bernegger managers also appreciate the versatility of the manoeuvrable sixty-ton trucks – for example, for reloading in the interim storage area, handling large boulders or in overburden and backfilling. The demands on the transport chain in Schützenstein are not diminishing as the planned extension of the mining area by eight to 10 hectares will add another 250 metres in height. With the excavation height then reaching around 1 200 metres, the demand for powerful all-season vehicles will certainly be even higher.

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