

B60E impresses in German limestone quarry

The first Bell B60E to go into operation in Europe is proving that bigger is better by delivering great flexibility and high cost efficiencies for quarrying company, Schiewe Steinbruchbetriebe, which is using the truck to extract shell limestone.

Schiewe Steinbruchbetriebe, established in 1949 by Heinz Schiewe as a family-owned company, is now managed by the third generation. Over time it has grown to become one of the largest suppliers of aggregate and construction materials in the Eastern Westphalia-Lippe region of Germany. The company also supplies mineral fertiliser and is involved in the recycling of building materials.

The company has three limestone operations in the Detmold/Lemgo area. At both the Detmold/Bentrup main site and Sonneborn/Bartrup, stationary plants with downstream concrete and asphalt production supply the complete range of high grade aggregates for construction.

Plans are afoot to install another large stationary crushing plant at the third site, at Lemgo/Kirchheide, by the end of the decade. Currently this site, which has been in operation since 2000, uses mobile processing equipment to produce about 300 000 tons per annum of coarse grades for gravel layers, frost protection layers and filling material as well as building material for geological barriers.

About half of the Lemgo/Kirchheide total operating area of about 20 hectares is actively worked. Backfilling has already been completed on a large portion of the remaining area, which has been earmarked for the new plant.

The quarry is an all-year-round operation that uses a 120t shovel excavator to extract the material blast-free. The six active levels reach a depth of 60m resulting in a haul

route of up to a kilometre to the mobile 0/100 scalping unit sited uphill to separate oversized rock from smaller stone as the first production stage. The route is characterised by narrow bends and slopes with maximum gradients of 30%.

Before the arrival of the two-axle B60E, the operation made use of 40-ton Articulated Dump Trucks to move large volumes of overburden and material. However, after three passes of the 7,7m³ bottom dump shovel the smaller trucks were only averaging payloads of 35t of material, even with raised sides. In addition, the three axles gave the trucks limited manoeuvrability on the 30m wide berms and necessitated cost-intensive maintenance of the narrow bends on the haul route due to the curve characteristics of rear double axle that also resulted in increased tyre wear.

These issues have been successfully negated by introducing the B60E, which takes only four passes with the same shovel to achieve an average payload of 54t thanks to the traditional flat bottom dumper shape. This allows for a much better filling level for the coarse material without the need for time-intensive manoeuvring. The operation also makes use of the automatic tailgate to avoid losses on slopes. This has been found to increase the dumper capacity by 2m³, so when loading the free-flowing overburden the standard onboard weighing system is particularly useful.

During operation the B60E delivers high standards in performance, driver comfort, safety and fuel

economy. The truck, with its active front chassis, is powered by the EU4/Tier4final certified 430kW Mercedes-Benz/MTU inline 6-cylinder engine combined with Allison's 7-speed transmission.

Braking and retardation of the 42.5-/97.5-t 4x4 is assured by wet brakes on all wheels in combination with powerful Jacobs Vehicle Systems® engine braking while the suspension-strut supported 70-ton rear axle, with 24.00 R35 twin tyres, delivers a nominal payload rated at 55.0 metric tonnes.

Supporting the driver and promoting safe driving practices is Hill Hold, Safe Tip, downhill speed control and auto 4x4 traction control. Other standard features include auto grease systems, rearview camera, onboard diagnostics, and Bell Equipment's Fleetm@tic® telematics with full production data reporting.

Bell prides itself on the philosophy of providing the lowest cost per tonne equipment solutions, and after the first two months of use Schiewe Steinbruchbetriebe reported an average fuel consumption of just under 20l/h for a calculated payload of about 275t/h with their B60E.

