

KEMROC EKT 100 milling attachment on 25 t excavator

# ECONOMICAL TRENCHING IN ROCK

Excavating foundations for large factory and warehouse

**At an industrial park at its hometown, Haiger in the German state of Hesse, the construction company Wirth secured a major contract. Before construction of a new factory and warehouse could start, they had to prepare the site and install foundations. A 25-tonne excavator with a KEMROC EKT 100 milling attachment was used to work out the footings through solid and fissured rock – saving time and money compared to the use of hammer and bucket.**

In the town of Haiger (Hesse, Germany), the Kalteiche Technology covers a total of 70 hectares. The construction company Wirth Bau GmbH, which is also based there, secured an extensive construction contract on the industrial site. The contract is to build a 140 x 80 x 8 m production facility including warehouse for a paper processing company within a time frame of two and a half years. Due to the large size of the building, the installation of several individual and strip footings was required to bear the considerable loads from the columns and walls. According to the plans, a total of 132 individual footings (4.00 x 4.00 x 4.00 m to 3.00 x 2.80 x 1.15 m) and 50 strip footings (approx. 3.60 x 1.20 x 0.80 m) would be required. The local geology made conditions more difficult: a site survey showed that after clearing the overburden (approx. 19,000 m<sup>3</sup> of soil was removed to level the property), rock considered to vary from easy to difficult to excavate conforming to ground classes 6 and 7 as well as slope debris would be encountered. “Wirth will do it!” – has been the company credo created by the owner Jens Wirth and this was the way the company approached the project in December 2022.

Wirth Bau GmbH employs a total of 25 people, operating primarily within a 30 km radius from the company base and their focus is mainly in road and sewer construction, but they are also active in demolition, earthworks and civil engineering. Over the past six years, the company’s own inventory of heavy equipment has grown steadily. “We have now reached a point where we keep the existing equipment up to date with the latest technology and replace aging equipment,” notes Lukas Reh, site manager and estimator at Wirth. In line with this strategy, the company invested in a KEMROC EKT 100 milling attachment for use on the company’s own excavators after a convincing test operation at the current location in the beginning of December 2022.



Prior to the construction of a factory and warehouse in Haiger, Germany, Wirth Bau GmbH used a KEMROC EKT 100 milling machine on a 25-tonne excavator to excavate trenches and pits for strip and individual footings.

## Short work in the subsoil

The KEMROC range of EKT rotary drum cutters has models in sizes suitable for working on carriers from 2 to 70 t operating weight; they are productive and strong, robustly built, can work easily underwater and are used in trenching and pipeline construction, quarrying soft to medium-hard rocks, concrete renovation, tunnelling, and profiling. With an operating weight of 1,300 kg, the EKT 100 model delivers a nominal output of 100 kW – according to Lukas Reh, this was the most economical size for Wirth in terms of existing equipment and cost. The conditions at the construction project in the Kalteiche industrial park, for which it was originally purchased, proved to be ideal for this attachment. By mid-June 2023, the operator, excavator and drum cutter accumulated around 200 operating hours excavating footings, trenching and laying pipes, after the site had been blasted and levelled using a road planer. That the contractor would be working in ground conditions of rock classes 6 and 7 was known from the outset, but they had underestimated how difficult it would be to excavate it. Nevertheless, the production process of milling and pouring concrete (including clearing out) resulted in a production rate of 4.00 m of strip footings per hour and a time of 2 to 4 hours for each individual footing. According to Lukas Reh, the fuel consumption for the excavator was similar to what would have been expected using a conventional hammer and bucket, but the production rate of the drum cutter attachment was much faster. In addition, the fine-grained milling material produced by the drum cutter was better for use as backfill than the coarse material produced when using a hammer. “Our expectations were met,” says Lukas Reh. “In addition, our operator did not need any special training because we already have numerous hydraulically operated attachments in operation.”

## Futureproofing built in

The KEMROC range of EKT rotary drum cutters have been designed with another special feature: if required, they can be retrofitted and turned into the EK range of chain cutters. With a cutter chain running between the two cutter heads, they can excavate trenches with a precisely defined width without having to swing sideways to remove the rock left between the two cutter drums. This has several benefits, especially in harder rocks, as can be found again and again in the region around Haiger. “For the time being, we have opted for the basic EKT 100 model without a milling chain,” explains Lukas Reh, “but we can certainly imagine upgrading the attachment with such a conversion kit after a successful demonstration.” As of the end of June, excavation work at Haiger’s Kalteiche Technology Park is likely to continue until August 2023. However, follow-up work is already planned for the drum cutter attachment, either on



Excavation was quicker with the drum cutter compared to a hammer. The fine-grained milled material can easily be used for backfill.



The factory will be built on a total of 132 individual footings. Excavating the pits required for the footings was challenging.

the same excavator as in the Kalteiche industrial park or on another excavator with an operating weight of 25 – 28 tonnes. ■



Short application video is available here:

[https://projector.kemroc.net/  
web/?id=HMgbKl4X1YnQlchmhybW](https://projector.kemroc.net/web/?id=HMgbKl4X1YnQlchmhybW)

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