

KEMROC chain cutter working in Swiss Molasse Rock

REVOLUTIONARY FOUNDATION AND TRENCHING METHODS

The Swiss construction company, Gubler, decided to try something new for the foundations of a large, new residential complex. With an EK 100 chain cutter mounted on their 22 ton excavator, they excavated the foundations, footings and the service trenches with speed and accuracy in the local molasse rock. They also completed the work without creating noise or vibration to annoy people living nearby.

A large job site at the company's home town of Mettmenstetten near Zurich (Switzerland) gave M. Gubler GmbH Tiefbau & Strassenbau the opportunity to try out their new EK 100 chain cutter from the German manufacturer KEMROC. The cutter was purchased specifically for this project and it proved itself during the site preparation phase of the project to build a residential area contain 64 apartments and a 5,000 m² underground car park.

From a geological point of view, the town of Mettmenstetten is situated in the Molasse Basin located in central Switzerland. The difficult ground conditions present a challenge to all construction companies who regularly need to excavate foundations and trenches to lay pipes and services. The overburden contains boulders until they hit solid bedrock. Normally the boulders are removed using by breaking them up with a hammer before lifting them out with a backhoe. This is a time-consuming process for operators and machines. Using the EK100 from KEMROC's EK (ERKATOR) range of chain cutter attachments proved to be quicker, more economical and created less wear and tear on the equipment. It has a patented cutter chain with round attack picks mounted on it that runs between two cutter drums. This allows the attachment to excavate narrow trenches exactly to the width required because there is no gap between the cutter drums which requires standard types of drum cutter to operate with a sideways swinging motion. Compared to a lengthways drum cutter, a chain cutter operates a lot smoother with lower cost for consumables and wear and tear on the machine.

At the job site in Mettmenstetten, the construction company Gubler excavated 2,500 m³ of material while excavating 60 cm wide trenches with depths that on occasions went down to 5 m. The Managing Director, Markus Gubler said, "The EK 100 enabled us to keep the trench width to specification while maintaining vertical side walls resulting in significant savings in time and transport costs for the removal of broken material. In addition, we were able to use the EK100 on our 22 ton excavator. If we had to use a breaker we would have



Construction company Gubler using a KEMROC chain cutter on a 22 ton excavator at a job site in Mettmenstetten near Zurich.



Trenches with depths of around 5 m could be excavated with near vertical side walls. This resulted in significant savings in transport cost and fill material.

had to go up to a larger size excavator. As well as saving time, a large part of the excavation was completed in 170 working hours, we also achieved significant savings in fuel costs.”

At the same time, within an area of 4,500 m² a total of 120 footings and the perimeter of the underground car park foundations were excavated to within ± 5 cm. “We achieved the targets we set for ourselves – when it came to lining the periphery walls for the underground garage, we were able to save an enormous amount on concrete”, commented Markus Gubler. According to the experienced civil engineer, there were additional benefits from using the chain cutter. The quality of the excavations was so good that construction work could start without any delays resulting in additional savings in transport costs and materials.

According to their own calculations, the chain cutter had covered 50% of its cost on its first job site. As well as savings resulting from productivity, transport and material costs compared to conventional methods, the chain cutter was also much quieter. “Compared to using a hydraulic breaker which creates noise levels emanating from the job site over 100 dB(A), with the chain cutter it was down to 70 dB(A)”, said Markus Gubler. “The client as well as the neighbouring residents thanked us for completing the work with so little noise and vibration.” ■

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revolution of cutting



An additional advantage from using a grinder: the extracted material has a fine grain size and can be used straight away as fill material resulting in lower transport costs and savings on fill material.



Both the clients and the neighbouring residents benefitted from the use of the chain cutter. Compared to using a hydraulic hammer, during operation noise levels were low and there was no vibration.