

KEMROC chain cutter speeds up site works

# FAST TRENCHING THROUGH GYPSUM DEPOSITS

While excavating a trench at Steinsfeld-Endsee in Franconia (Germany), the contractor LEONHARD WEISS had to work through deposits of gypsum. A KEMROC EK 140 chain cutter with 1,000 mm cutting width, used on these trenches being opened for installing a new waste water drainage system, maintained progress while keeping down costs for excavation and fill material. As a result that the project can probably be completed in time and within budget.

The municipality of Steinsfeld in central Franconia, Germany are making extensive renovations to their infrastructure. As part of the renovation work along the main road in the suburb of Endsee, it was decided to replace the existing mixed water sewer with a rain-water drain and a new, separate, waste water sewer. According to recent soil investigation reports, while excavating trenches to lay the new DN200 and DN250 specification pipes, an experienced, leading contractor LEONHARD WEISS had to excavate through difficult ground conditions consisting of loose soils containing in places some very hard deposits of gypsum which, at times, could be solid to depths of 4.5 m. Under these conditions, the estimated performance for excavating the trench with a conventional, double head drum cutter attachment on a hydraulic excavator didn't appear to meet the levels required. However, the site foreman, Mr Rainer Walch had previous experience of using a chain cutter while excavating trenches for an ICE High Speed Railway project near Hallstadt with positive results. For this reason the Site Manager, Dipl. Ing. (FH) Martin Fuchs decided to use the chain cutter on this project.

## Straight Forward Digging without Slewing

The patent protected chain cutter from KEMROC is a drum cutter with a chain fitted with cutting tools that runs between the two drums at each side of the cutter head. The chain cuts the material away from the space between the two cutter drums. With a conventional drum cutter, this can only be achieved by slewing the drum cutter with the excavator while it is cutting or the material is removed at a later stage with a different excavator attachment. Alternatively, the chain cutter can excavate a trench without the need for slewing while producing a profile with straight, vertical side walls to an exact width. Excavating trenches to an exact width, without over-break, saves time and money since no energy or



While trenching at Steinsfeld in central Franconia, the experienced contractor LEONHARD WEISS meets deposits of gypsum. In these conditions it paid to use a KEMROC chain cutter attachment on a 32-ton excavator.



The chain cutter excavates a trench with the required profile to the required depth. This reduces the amount of material cut and the amount required for backfill which also keeps transport costs to a minimum.

time is wasted in breaking unwanted material, cleaning extra material out of the trench or backfilling a trench that is larger than necessary. For the Site Manager, Martin Fuchs, there was another advantage to using the chain cutter, "Slewing a standard drum cutter side to side between the trench supports would have been difficult and potentially dangerous. Overall, using the chain cutter proved to be better for both the operator and the equipment."

## Quick and Easy

At the beginning of December 2019, trenching through ground containing irregular outcrops of gypsum was in full swing. The estimated time for completion of the trench using the EK 140\_1000 chain cutter (1,000 mm cutting width) mounted on a 32-ton excavator was another two weeks. In an interim report on the performance of the chain cutter, Martin Fuchs commented, "Because the ground conditions are so variable, it is impossible to give accurate production figures for the chain cutter attachment and excavator combination. However, the simplified operating procedure; requiring no slewing of the excavator, gave us a noticeable time advantage. At a section of the trench where we were going through gypsum to a depth of 4.5 m, we achieved an advance of 5 m per day which was definitely 20 percent faster than we would have achieved with a traditional drum cutter."

On completion of this section of work, the contractor LEONHARD WEISS was due to continue trenching in the side streets. Here, they also encountered gypsum deposits along the proposed route for the trenches. Regarding completed works until May 2020, the Site Manager, Martin Fuchs commented, "In those critical locations we have also been continuing using the chain cutter. So far we have been carrying out our work with the fine results we had expected." ■

### Publisher

KEMROC Spezialmaschinen GmbH  
Jeremiasstr. 4  
36433 Leimbach  
Germany

Phone +49 3695 850 2550  
Fax +49 3695 850 2579  
E-Mail [info@kemroc.de](mailto:info@kemroc.de)

[www.kemroc.de](http://www.kemroc.de)

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In contrast to the use of a conventional drum cutter, it isn't necessary to slew the excavator arm and attachment during operation. This makes it easier to work between trench supports; a major advantage when working in ground that is not homogenous.



Trenching contractor LEONHARD WEISS also expects to meet massive rock deposits of soil class 7 in the side streets of Steinsfeld-Endsee. A KEMROC chain cutter is also being used to excavate trenches in these locations.