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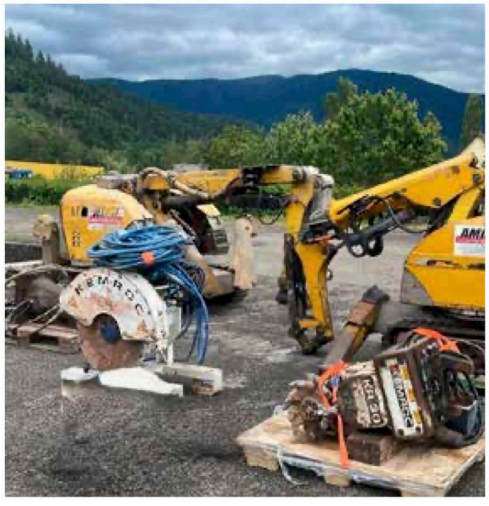

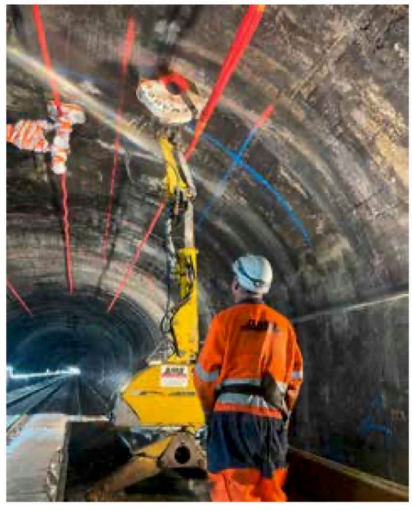

KEMROC USED IN FRENCH TUNNELLING JOB

A Kemroc KDS 20 diamond saw has been successfully used on a SNCF project tunnel cutting in France. Attached to a Brokk 180E, the KDS 20 performed vertical cuts in limestone rubble and concrete with an excellent result.

In a recent SNCF (French National Railway) tunnel project in France, Alsacienne de minage et demolition was tasked with executing precision cutting in a confined and challenging underground environment. The project involved cutting through a combination of limestone rubble and concrete with compressive strengths ranging between 15 MPa and 20MPa.

Kemroc diamond saw attached to a Brokk 180

Alsacienne de minage et demolition selected the Kemroc KDS 20 diamond saw, equipped with a concrete blade (800mm diameter), and mounted it on a Brokk 180E robot with an extendable arm, an ideal setup for operating within narrow tunnel profiles. The project spanned a duration of two months, requiring cutting a total of 400m along the vertical tunnel walls. The target cutting depth varied between 10cm and 15cm, with an expected production rate of approximately 40 linear meters per day, adjusted for non-continuous operation cycles dictated by site logistics.

Application challenges

Tunnel environments present significant operational limitations, such as space constraints that limited the use of larger hydraulic equipment. Dust suppression and cooling were critical, with water supply being available onsite to enable wet cutting. The job required vertical cuts, demanding high stability and precise control. In addition, the material composition, a mix of concrete with embedded limestone rubble, presented a variable cutting profile, placing additional demands on tool performance and wear resistance.

Faced with these challenges, the project team evaluated multiple cutting options. The Kemroc KDS 20 was chosen for its high productivity in confined spaces, the ability to achieve precise, clean vertical cuts as well as deliver minimal vibration and noise when compared to impact tools. The proven performance when fitted to the Brokk electric demolition robot delivered the required manoeuvrability in the tunnel, with the combination delivering efficient blade consumption, with only one diamond disc being used over the entire 400m.

Performance onsite

Once mounted on the Brokk robot, the KDS 20 delivered excellent results. The cutting process was stable and smooth, with operators able to maintain consistent depth and line across all wall sections. The Brokk 180E's extendable arm provided the reach and positioning flexibility required for vertical cutting along the tunnel walls. Water cooling effectively managed dust and blade temperature, ensuring safe and efficient operation.

Productivity averaged 40 linear meters per day – which aligned with the project's targets – serving as a testament to the reliability of the diamond saw as a smart solution under continuous use. The project team reported high satisfaction with the Kemroc solution. One operator stated that the KDS 20 proved to be an excellent choice, enabling the completion all the required vertical cuts as specified, with minimal blade consumption and without the vibration issues associated with conventional cutting methods. The setup with Brokk 180E was said to be ideal for the confined work area.

Kemroc's KDS 20 solution demonstrated its value in a critical infrastructure application, enabling safe, precise, low vibration, and efficient cutting in a challenging SNCF tunnel environment. The success of the project is said by Kemroc to reinforce its position as a trusted partner for smart cutting solutions in railway, tunnelling, demolition, and civil engineering sectors across Europe.