

Press Release

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Electrification in special foundation engineering: Bauer presents eCSM prototype

- Electrification of the proven Cutter Soil Mixing method (CSM)
- Powerful electric drives instead of hydraulic drives.
- Digital mixing assistant for more precise addition of cement

Munich, Germany – At bauma 2025, BAUER Maschinen GmbH presented a groundbreaking innovation project: the prototype for electronic Cutter Soil Mixing (eCSM). This enhancement of the established CSM method replaces the traditional hydraulic components with a powerful electric drive system. “There is no comparable electrified diaphragm wall equipment currently on the market. With the eCSM, Bauer is positioning itself as the pioneer in this technology,” says Stefan Wegerer, Project Manager at BAUER Maschinen GmbH.

Electrification as an innovative leap

The successful test of the eCSM prototype marks an initial milestone in developing a fully electrified trench cutter. While hydraulic systems reach their technological limits, the electric drive technology delivers significant improvements in efficiency and performance. With this forward-thinking technology, Bauer aims to further expand its leading position in the area of soil mixing through innovative and sustainable solutions.

Powerful and precise: How the eCSM works

The eCSM system uses two powerful electric motors that drive the mixing wheels with an optimal speed of 40 rpm to achieve uniform mixing quality even in difficult soil conditions. In the process, the soil is loosened and simultaneously mixed with cement slurry at the same time to create a homogeneous cut-off wall. Energy supply is delivered via power cable, while two frequency converters ensure precise control of the drives.

Digital support from the mixing assistants

Another key advancement is the introduction of a digital mixing assistant. While equipment operators previously had to control all parameters manually, the system now automatically regulates the pulling speed. This ensures that the defined total quantity of cement is distributed uniformly over the entire trench length. This not only increases precision but also reduces error and optimizes the construction process.

Looking ahead

The next phase of development will focus on creating a robust overall system that is ready for use on sites. In the long run, Bauer aims to provide its customers with a fully electric solution that offers both ecological benefits and enhanced economic efficiency. With the eCSM prototypes and their continuous further development, which represents an important

milestone in the field of research and development, Bauer reaffirms its commitment to creating innovative solutions that lead the construction industry towards a more sustainable future.

Images of the exhibits (© BAUER Group) can be found in the picture gallery at <https://bauer.canto.de/v/bauma/>

About BAUER Maschinen Group

For almost 60 years, equipment from Bauer has represented the highest performance and quality and constant innovation. The BAUER Maschinen Group is the world market leader in the development and manufacture of specialist foundation engineering equipment. BAUER Maschinen GmbH, which is also the holding company for a number of subsidiaries, designs and builds large-diameter drilling rigs, duty-cycle cranes, trench cutters, grabs and vibrators as well as the related tooling at its plants in Schrobenhausen, Aresing and Edelshausen. The subsidiaries manufacture state-of-the-art mixing and separation equipment as well as rotary drive systems and equipment for drilling small-diameter boreholes and wells. The BAUER Maschinen Group also operates manufacturing facilities in the USA, China, Malaysia, Italy, Singapore and Turkey. A component supplier within the Group is Schachtbau Nordhausen. The company operates a global sales and service network. More at <https://equipment.bauer.de/en>.

About Bauer

The BAUER Group is a leading provider of services, equipment and products dealing with ground and groundwater. The Group can rely on a worldwide network on all continents. The Group's operations are divided into three forward-looking segments with high synergy potential: Geotechnical Solutions, Equipment and Resources. Bauer profits enormously from the collaboration of its three business segments, enabling the Group to position itself as an innovative, highly specialized provider of products and services for demanding projects in specialist foundation engineering and related markets. Bauer therefore offers suitable solutions to the world's greatest challenges, such as urbanization, the growing infrastructure needs, the environment, as well as water. The BAUER Group was founded in 1790 and is based in Schrobenhausen, Bavaria. In 2023, it employed about 12,000 people and achieved total Group revenues of EUR 1.8 billion worldwide. More information can be found at <https://www.bauer.de/en>. Follow us on [Facebook](#), [LinkedIn](#), [Instagram](#) and [YouTube](#)!