

KEMSOLID – a new subsidiary of KEMROC

EXPERTISE IN CIVIL ENGINEERING

KEMROC is bundling all its know-how in ground stabilisation based around the KSI soil mixing attachment into its new subsidiary KEMSOLID. The focus of this new division is not only confined to the development, testing and manufacture of soil mixing attachments but also includes providing the company's knowledge and experience in soil stabilisation projects to help customers find the best solutions for their own projects. In this way, contractors can progress with greater levels of confidence when dealing with soil permeability and load bearing issues in larger infrastructure projects.

With the KEMSOLID brand and the catchy slogan "Build on solid foundations", KEMROC is now promoting the full in-situ soil stabilisation package that has been developed in-house. The package is designed around a mixing attachment mounted on a standard crawler excavator. It has a blade with a moving chain that penetrates into the soil while injecting a binder solution pumped via hoses from a mobile mixing plant. The resulting soil-cement suspension is allowed to harden into a stable, homogenous, dense soil-cement structure. Depending on the blade length, KSI mixing attachments can be used on standard excavators with operating weights from 40 to 120 tons. The KSI 7000 drive unit can be fitted with blades for mixing depths of 5, 6 or 7 meters while the larger KSI 12000 model can be fitted with blades for mixing depths of 6, 8 10 or 12 meters. According to application, the blades can be fitted with milling inserts for various mixing widths. As the equipment has been adapted from rock grinding attachments, there is no problem with soils containing rock. At the same time, it is also possible to incorporate the soil-cement structure into harder ground or bedrock. There are several positive reasons for using the KEMSOLID process, and the main ones include:

- Increasing load bearing capacity while decreasing permeability
- Avoidance of deep excavations and large movement of material
- Minimising disposal of surplus material
- Savings in transport cost while reducing dust and CO2 pollution
- Saving costs related to resources and building materials

KEMSOLID, the new division of KEMROC, is not solely focused on the development, testing and manufacture of the KSI range of mixer attachments. In addition, it has bundled together experience and expertise in special civil engineering applications



KEMSOLID is the name of the KEMROC's process for soil stabilisation and ground improvement. A central element is the KSI mixer attachment mounted on a standard excavator.



The cutter chain penetrates into the ground and mixes it with a binder suspension fluid from a semi-mobile mixing plant. After hardening, a homogenous, dense, load bearing soil-cement structure is created.

which are offered as a consultancy service to planning offices, construction companies, cost appraisers and clients. The new division currently has four employees managed by Mr Gerd Maitschke, a graduate engineer who has been associated with the KEMSOLID process from the beginning. Professionally, he can look back on almost 40 years' civil engineering experience. Amongst other things, he has held senior positions on large infrastructure projects, such as the well-known German Stuttgart 21 transport project. Located in Hämbach, a district of Bad Salzungen, KEMROC started at the end of 2021 to create space dedicated to the production of the KSI mixer attachments with offices for the employees of the new KEMSOLID Division.

Infrastructure of the mobile age

Like all attachments from KEMROC – and unlike other similar processes with expensive soil stabilisation and ground improvement machinery – the KSI mixer attachments used for the KEMSOLID process are compact, relatively easy to transport and they work on standard excavators. As a result, users can expect relatively short reaction and set-up times as well as low transport and installation costs. The only equipment required on site are the excavator, a mobile mixing plant and a grout pump with hoses. Gerd Maitschke calculated that, “similar processes require a budget of six figures for the supply and installation of the equipment, in contrast to the KSI mixing equipment which requires five-digit amounts”.

Solid application expertise

There are a wide range of applications where the KEMSOLID process can be used to improve the load bearing and permeability characteristics of soils. It can be used to seal large excavations or polluted areas. It can also be used to seal dams, dikes and bodies of water as well as creating a barrier to ground-borne vibration. It can be used to shore trenches and strengthen the ground supporting large buildings such as logistic warehouses. It can also be used where traffic routes have to be built on poor ground or where the foundations of existing roads have to be improved to allow for higher traffic loads and speeds. These include, for example, construction sites for rapid transport and motorways.

These are exactly the types of places where the KEMSOLID division of KEMROC will be active. “We offer clients, appraisers and civil engineers our range of KSI mixer attachments as well as the expertise required to tender, support and execute the KEMSOLID process in a practical manner,” says Division Manager Gerd Maitschke. Customers benefit from the well designed, powerful and robust attachments manufactured by KEMROC, and they can call on the solid application expertise gained

KEMSOLID[®]
build on solid foundations



KEMSOLID logo with the climate protection seal.



Graduate Engineer Gerd Maitschke heads KEMROC's newly established specialist foundation engineering division KEMSOLID. This brand will promote the process together with professional expertise and experience internationally.

from experience in applications at actual projects. In addition, the company offers a comprehensive global service, "As an owner-managed, medium sized company", explains Klaus Ertmer, the founder and owner of KEMROC, "we will always remain on an equal footing with customers and dealers". ■



A video showing a KSI 12000 mixer attachment in use is available here:

→ <https://youtu.be/EiooXqkwUxo>

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