

On the Starting Block: Major New IKT Product Test on “Liquid Soils”



What are liquid soils capable of? Let's find out together – in IKT's new “Liquid soils” product test

What can, and can't **liquid soils** be used for? When is it feasible to use liquid soils? Which liquid-soil **methodologies** deliver convincing performance? How can you **save money and time** using liquid soils? All these issues will be investigated in **IKT's major new “Liquid soils” product test**, which is now on the starting block. Interested **wastewater network operators** are invited to **participate** : to be there right from the start, **contribute** to the design of the project and be the first to **benefit** from the results.

Comparative testing

The two-year “**Liquid soils**” **product test** is intended to provide wastewater network operators with important information on the **selection of products** and methods. It will generate reliable, impartial, independent **information** on (boundary) conditions for the use of liquid soils, make **recommendations** for tendering procedures, identify on-site

implementation procedures and set out how to apply **quality assurance**.



Backfilling of pipe trenches using liquid soils offers advantages. But what are the important factors for performance?

TFSBs – liquid soils

The use of “temporarily flowable, self-compacting backfilling materials” (TFSBs) offers wastewater network operators the potential to **optimise pipe bedding** and reinstatement for both new lay and the renewal of existing systems. The quality of the bedding achieved using liquid soils may have beneficial effects on the **cost-efficiency** of a sewer project, on the **load-bearing performance** of the installed pipes, on their interaction with the surrounding ground and on **service-life** of the system.

However, to date, sewer network operators have only used

liquid soils in isolated cases. There is a lack of clarity concerning evaluation of the **implementation risks** and, in the past, the selection of bedding material has been made primarily on the basis of information provided by manufacturers and from subjective experience. The **lack of quality specifications** and the differing information provided in codes, standards and application guidelines has also caused uncertainties during the tendering and award procedures. There are, at present, no independent methods for checking of the quality of materials under various practical conditions.

Market survey, test results, specimen STCCs



Well bedded, longer service-life

IKT's "Liquid soils" product test will supply a wide range of **information** and practical based **assistance** on the subject of TFSBs: a detailed **market survey**, impartial test results, and useful **specimen supplementary technical contractual conditions** (STCCs). Those participating in this research project will firstly work with IKT to identify and compile **quality requirements** for liquid soils, produce a **product requirements document** and derive from this a **programme of tests** using standardised test criteria and boundary conditions. Selected, commercially available liquid soil products will then be **comparatively tested and analysed** for their properties, performance, and installation risks; both under repeatable

conditions in the laboratory and also in situ on construction sites.

Interested network operators are needed!

Technische Werke Burscheid (Burscheid Technical Utilities), in cooperation with the IKT, submitted a funding application for this project, which the State of North Rhine-Westphalia has now been approved. The federal state will bear 80 percent of the project costs. Other **system operators** willing to contribute both subject matter and financial contributions to the project are, of course, also very welcome to join the **project steering committee** and leverage their contribution.

I expect from the IKT product test a profound insight into the subject of TFSBs and many practically relevant results for the aware use of liquid soils. In future, we will benefit from savings on sewer operation and from longer service-lives for our sewers. Get involved, and benefit from this intensive interchange and the joint work in the steering committee!



Dipl.-Ing. Frank W. Grauvogel, Technische Werke Burscheid, Head of System Operation, Development, Sewer and Highway Construction

The members of the **steering committee** for this product test will directly influence the project scope and the test programme. They will also benefit directly from the **exchange of knowledge** and experience with other network operators. The product test project will include a **market survey**, development of **supplementary technical contractual conditions** (STCCs) and notes for practical on-site implementation of liquid soil methods. The **potential applications** for the methods tested will be determined, and qualified statements provided on the technical performance of liquid soils on the basis of a

standardised, well-founded product requirements document and testing concept.



The IKT product test will analyse quality of procedures under laboratory conditions and in situ on construction sites

The **benefits** for the participating network operators will be numerous and diverse:

- A **qualified market survey** of temporarily flowable self-compacting backfill materials (TFSBs), complete with information on product features and application limitations
- A standardised and well-founded **product requirements document** for TFSBs, incorporating quality assurance requirements with respect to installation, operation, removal and disposal
- Well-founded information concerning the **scope of application** and qualified statements concerning the **technical performance** of the products and methods

examined

- Useful notes for the inclusion of **specific input parameters for pipe structural analysis** for the use of liquid soils (Design Concept for Pipes in Liquid Soils, with reference to DWA-A 127)
- Basic information concerning on-site **implementation of “standard procedures”**
- **Impartial, independent product recommendations** concerning the TFSBs available on the market
- **Supplementary technical contractual conditions** (STCCs), complete with specific notes on quality assurance and recommendations for tendering, award and supervision of construction work
- Direct **expansion of available knowledge** via involvement in the test programme, requirement profile and interchange of experience with other network operators through participation in steering committee meetings

IKT product tests

IKT's comparative product testing projects test products and methods to the limit under laboratory and practical conditions. Every product test is supported by a group of network operators. The members of these groups – referred to as “steering committees” – benefit directly from insights into the testing and methodological procedures and from technical exchange with other network operators.

Test subject matter, procedures and criteria are defined by the respective steering committee. Decisions concerning the final evaluations are also taken jointly by the network operators in these supervisory bodies. This ensures that the tests are performed on a strong practical basis, impartially, and without any influence from commercial interests.

The aim

The results provide the network operators with well-founded, dependable information on the strengths and weaknesses of the products and procedures available on the market. This then

enables them to base their purchasing decisions on solid facts, rather than solely on the manufacturers' advertising. IKT's product tests at the same time provide the various suppliers with indications for the improvement of the products and procedures tested, and thus also for the strengthening of their market position. Ultimately, these are all benefits for the entire industry.

To the IKT Product Test results

Generating knowledge

In two years, we will, jointly, have attained greater **knowledge on liquid soils** and generated greater certainty and reliability in their use. What we need now is **your support**, as a network operator, for IKT's longest and largest product test to date.

Support us! Get involved! Get the benefits!

Contacts

- **Dipl.-Ing. (FH) Serdar Ulutaş, MBA**
IKT, Product Test Manager
Tel.: ++49 (0) 209 17806-32
E-Mail: ulutas@ikt.de
- **Dipl.-Ing. Martin Liebscher**
IKT, Project Manager
Tel.: ++49 (0) 209 17806-23
E-Mail: liebscher@ikt.de
- **Dipl.-Ing. Frank W. Grauvogel**
Technische Werke Burscheid
Tel.: ++49 (0) 2174 7878-404
E-Mail: f.w.grauvogel@tw-burscheid.de