

RSS Flüssigboden TS mix design

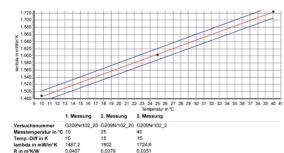
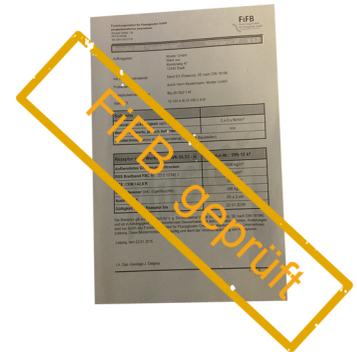
The basis for the production of RSS Flüssigboden® (liquid soil) is the application of a valid mix design. From 31 December 2012 on, the sole mix design developers for RSS Flüssigboden® are the Forschungsinstitut für Flüssigboden GmbH and the LOGIC Logistic Engineering GmbH. The most important requirement for thermally stabilizing liquid soil is the strong heat dissipation, broadly independent from interferences.

Mix design development

The requirements for thermally stabilizing liquid soils are usually significantly higher than for normal liquid soil. Additional requirements are usually a defined or maximum thermal conductivity, very low settling dimensions, and good heat transfer, which is defined by the contact pressure. Often, a relatively high diameter of flow in the range between 50 and 60cm and temperature stability are required.

Generally, a mix design for RSS Flüssigboden is developed in our lab as follows::

We obtain a sufficient quantity of source material (depending on the desired application at least 50 litres, with protocol of sample collection) and the cement to be used (CEM I R). Additionally, the customer provides the desired nominal values of the mix design properties. For this purpose, we use the form "Mix design Specification". In addition to the nominal values stated by the customer, the nominal values required for the liquid soil from our perspective are also relevant. We produce liquid soil in the soil laboratory, check the processability and test the test specimens we produced. If the results are meet the requirements, you get a preliminary mix design in hard copy. An employee of our company adjusts the mix design at your company/site. There may be deviations to the laboratory conditions during the adjustment. Therefore, again, test specimens are taken and tested. If the results of the mix design adjustment are as required, you get an adjusted mix design. The functionality / quality of the mix design / production is ensured by initial testing / self-monitoring / external monitoring.



Advantages

- Mix design adjustment on site
- Testing institute accredited by RAL
- External monitoring person accredited by RAL
- Developer of RSS Flüssigboden TS
- Successful application of RSS Flüssigboden TS on numerous construction sites

Data

- Costs basic mix design: €1092
- + samples thermal conductivity €1200
- + 3 samples surface friction each €270
- + 2 samples settlement rate each €74,03 , additional costs possible
- Validity of mix design: 1 year
- typical q_u value after 28 d: 0.1–0.3 N/mm²
- typical λ value (after 28 d): 1.3–2.0 W/mK

If required, the properties can be adjusted within limits.

Some properties of the liquid soil according to further requirements and source material

- defined temperature-dependent thermal conductivity (after 28 d)
- defined static friction values (after 28 d)
- special additive: RSS FB-TS
- low settlement rate (at least <1%)
- temporarily flowable
- self-compacting
- no settlement
- defined properties through quality management
- homogeneously with properties which are largely similar to the original soil properties



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