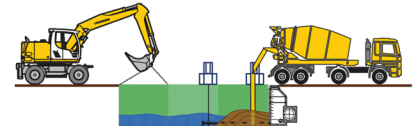


Information on the tremie method Underwater placement of RSS Flüssigboden®

The tremie method is usually used for placing concrete under water. The concrete is poured through a funnel into a pouring tube whose lower end must always remain below the surface of the freshly poured concrete. This will prevent the concrete from mixing with the liquid (water) above. The pouring tube must be pulled up steadily during the process. On the sides, a watertight formwork is required. The method is also used for works in a caisson. It can be used in the same way for working with RSS Flüssigboden®.



Backfilling a trench by means of the tremie method

General

RSS Flüssigboden® soil must be placed in a technologically correct way and then needs to solidify undisturbedly in the backfill area. The level of additional load from flowing water or from removing shoring elements must be determined by means of prior verification. The required mix design must be checked for suitability for the tremie method and usually has to be adjusted. If necessary, use a form to determine the requirements for the desired type of RSS Flüssigboden® in advance, knowing the technologically relevant requirements. Special requirements for the conditions on site should be requested from the technical planner.

Procedure

A suitable mix design must be determined beforehand in order to be able to ensure not only the final properties but also the temporal behaviour and technologically relevant properties. Among other things, the following parameters are to be observed: Resistance against abrasion and suffosion, shear strength, maximum hydrostatic pressure, time constraints of the process, etc. For safety reasons, a CEM I R cement has to be used. CEM II or other cements cause a reconsolidation reaction distinctly different in terms of time. The diameter of flow should be checked ex works and before placement, as a higher diameter of flow increases the risk of mixing with the surrounding water, and as the technological specifications depend also on the viscosity of the RSS Flüssigboden®. After production and placement, 7 cylinders with reference samples are to be taken for the verification of the specified properties. Furthermore, the specified technology must be complied with. If necessary, consult a technical planner for RSS Flüssigboden® applications. It is imperative to use a placement aid such as a pipe or hose etc. in such a way that mixing with the water at the placement site is avoided. When vertically suspended, the pipe must stand on the bottom of the backfill area, so that the RSS Flüssigboden® will build up in the pipe at the start of backfilling. Only then, the pipe is raised slightly and the RSS Flüssigboden® can displace the surrounding water. This will certainly avoid mixing with the surrounding water. If the RSS Flüssigboden® can flow from another position, mixing cannot be safely prevented. The intervals of the required external monitoring (at least every 3,000 m³ or once per construction site) must be observed. An annual check of the mix designs is also essential for such special applications.



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