



ACADEMIC YEAR 2014 – 2015

TITLE OF DIPLOMA THESIS:

Risk identification for diaphragm wall construction with the use of bentonite slurry

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ABSTRACT

Diaphragm walls of reinforced concrete, as well as the rest earth retaining constructions, are threatened by several risks arising either from internal or external factors. These risks, depending on the probability of their occurrence and effect size, can have a negative impact on the unobstructed execution and final success of a project. The development of risk management is most an international and widely known trend among construction industry due to the changing conditions caused by the complexity and uniqueness of each project and it's used to eliminate the aforementioned risks. The efficient risk management requires the creation and implementation of an integrated and highly qualified risk management plan along with appropriate activation of human, material and financial resources. The risk management plan refers to the four phases of the typical and repetitive process of their management, which are risk identification, risk analysis, risk addressing and risk monitoring. This project consists of six chapters and focuses on risk identification, aiming to record in detail the potential risks during the construction of a diaphragm wall with the use of bentonite slurry, which is a thixotropic liquid that provides continuous support to the excavation. The purpose of the project is the creation of a complete, applicable and easy-to-use risk catalogue in the form of a checklist, which is intended to help the project managers to attain fast and effective risk identification and lead to the next phases of risk management. This is achieved with the analytical presentation of the construction method and the labeling of the potential risks in every construction phase. Finally, the identified risks are classified and presented in the aggregate in the form of a risk catalogue.

KEYWORDS

Diaphragm wall, Bentonite slurry, Risk management, Risk identification, Risk catalogue