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PLANNING OF TRENCHLESS REHABILITATION FOR WATER PIPELINES USEING DIFFERENT PRESSURE LININGS

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Abstract

Trenchless renovation plays a key role in maintaining or improving the structural integrity and hydraulic capacity of water pipelines as well as water quality. It can be executed by installation of different pressure linings classified as A, B, C and D according to the European standards. This paper presents the model A-1.1 elaborated to verify whether renovation of water pipelines using specific pressure linings is feasible in given conditions. The model utilizes some AHP principles, however with a few modifications described later. It considers only 3 criteria suitable for subjective evaluation namely: water pipeline characteristics, safety constraints and further installation constraints. Another aspects associated with selection of pressure linings such as static and hydraulic requirements should be free of any subjective opinions and preferences. That is why a peer selection of pressure lining is highly recommended. In result, a decision maker gets an individual ranking of pressure linings. All linings are evaluated basing on the ***FI*** value calculated for each of them. Discrepancies in the ***FI*** values for these linings may not be significant but it is enough to choose the most appropriate lining. However, if the ***fe*** coefficient is assumed the ***FI*** value may be higher for chosen linings by at least 5%.

Keywords: modified AHP method, investment assessment, pressure linings, trenchless technologies, water pipelines

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