

Keynote Paper

Latest Developments in Shield TBM Selections & Design for Mechanized Tunneling

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ABSTRACT

The development and application of tunnel boring machine (TBM) technology has seen significant advances throughout the last years internationally and in Korea. Especially the closed face tunneling method with shield machines has been successfully used in a number of completed and ongoing projects in Korea. Therefore, the selection of the best suitable type of TBM and its key parameters has grown in importance. This paper highlights the key selection criteria between the TBM types of earth pressure balance machine (EPB) and slurry machine (MIXshield) as well as introduces selection criteria for the innovative variable density machine (VD). The paper highlights recent successfully completed project experiences with each of these machine types. The evaluated projects in Korea are the Wonju-Gangneung Railway Tunnel using a 8.39m MIXshield and the Goseong Green Power Plant project using a 8.19m EPB machine. The Lyon Metro Line B project in France has used a 9.68m variable density TBM in very challenging ground conditions and is introduced in this paper to highlight the capability of VD machines in such difficult conditions.

REFERENCES

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