

Abstract

This dissertation investigates tunnel face stability and deformation behavior. In doing so, analytical and empirical, methods are examined and analyzed, and their results are compared.

The dissertation begins by giving an overview of the history of tunneling followed by a description of the most popular tunnel construction methods. A brief summary of the considerations behind preliminary tunnel design and analysis is then given. Next, the dissertation focuses in detail on tunnel face stability and looks at previous publications on the topic. Finally, the effects and advantages of some tunnel face support and soil improvement mechanisms are analyzed.