

2015

# Interaction between the shotcrete outer shell and the sealing system

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## Recommended Citation

Dietmar Mähner, "Interaction between the shotcrete outer shell and the sealing system" in "Shotcrete for Underground Support XII", Professor Ming Lu, Nanyang Technological University Dr. Oskar Sigl, Geoconsult Asia Singapore PTE Ltd. Dr. GuoJun Li, Singapore Metro Consulting Eds, ECI Symposium Series, (2015). [http://dc.engconfintl.org/shotcrete\\_xii/6](http://dc.engconfintl.org/shotcrete_xii/6)

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## **Interaction between the shotcrete outer shell and the sealing system**

The construction of tunnels, which are designed as a double-shell construction, a seal between the inner shell and the outer shell is installed in many cases. As a rule, there is this sealing system geomembranes, which are made of PVC or PE material.

The interaction between the components tunnel outer shell - sealing system- inner shell was based on a research project at the Institute for Underground Construction. It was, inter alia, performed within the framework of various parameter studies the issues, which stresses act through mountain and water pressure on the shotcrete lining on the geomembrane. Particularly in oppressive mountain properties, the influence of shotcrete outer shell of particular importance.

It was also investigated the stresses caused by the concreting of the inner shell to the KDB, which is pressed against the shotcrete surface. Thus it was possible to derive recommendations for the practice of forming the sealing system. Further requirements were worked out on the shotcrete surface.