



POLITECNICO DI TORINO
Dipartimento di Georisorse e Territorio



GEORESOURCES AND ENVIRONMENT ASSOCIATION



ITALIAN TUNNELLING ASSOCIATION

INTERNATIONAL CONGRESS
MECHANIZED TUNNELLING: CHALLENGING CASE HISTORIES

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NEW VIOLA WATER TRANSFER TUNNEL
(Sondrio, Italy)

Abstract

This paper describes the construction of almost 19 km long water diversion tunnel, constructed by means of a double shielded TBM in a mountainous terrain under very restricted environmental conditions.

The tunnel was mainly driven through metamorphic rock formations of which micashist represent the predominant lithotype and in a limited section through limestones and dolomites.

TBM performance monitored against the encountered rock mass conditions, clearly indicates that this project can be considered a good example of how accurate planning and monitoring as well as a good work organization of all activities can successfully aid the construction of a such challenging project.

In addition to describing method of excavation, TBM characteristics and performance achieved, the paper provides information on lining designing concepts and modifications performed to the TBM and its' back-up to better perform in case of squeezing ground was encountered as expected.