

Wolfgang Menzel, Wolfgang Schreiner, Leipzig *)

Rock mechanical observations and results in the construction of salt caverns in salt deposits in Central Germany and their use as underground storages

In Central Germany there are thick Zechstein (Stassfurt series) rock salt deposits at depths < 1000 m.

At various locations a large number of caverns with volumes from 50,000 to 500,000 m³ have been solution mined for the brine extraction for the chemical industry, for the flooding of salt mines as well as for underground storages. The construction as well as the use of the caverns have been rock mechanically monitored by the authors for over 25 years.

The paper contains interesting observations and investigation results as follows:

- stability and dimensioning
- convergence behaviour
- surface subsidence
- stress and loading ability of the borehole installation
- results from in situ measurements and tests
- evaluations of rock mechanical events and damage.