# MILITARY ASPECTS OF SOIL LIQUEFACTION

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Soil liquefaction of saturated cohesionless deposits has often been observed in connection with earthquakes. Actual liquefaction is an extreme case, wherely the soil completely loses its shear strength as a result of a build-up of pore water pressures to 100 per cent of the effective confining pressures. However, even in the case of smaller rises in the pore water pressure the performance of structures can be severely impaired. The phenomenon is not restricted to earthquake loading, but may be induced also by blast effects.
Beginning with the physical background of soil liquefaction it is shown under what conditions it can result from nuclear and conventional weapons. The effects of blast-induced pore water pressures are discussed together with suitable measures for preventing damage to structures or minimizing other undesirable consequences.
In the last part of the paper the possible ways of simulating weapon-induced liquefaction are described with emphasis on the theoretical prediction and experimental layout of a soil liquefaction field test of a buried structure in Meppen proving ground, October 1978, at which three nations (Germany, Netherlands and Switzerland) have taken part, as referred in the next papers.