

TECHNICAL INFORMATION

Grouting Large Fissures and Voids

GROUTING FORMULATIONS

For grouting projects, which involve filling large fissures and voids, the use of stable grouts formulated with locally-available Portland cements are recommended.

Where grouting operations are performed under water-filled conditions, cohesive, thixotropic, water-repellent grout formulations prepared with low water:cement ratios are preferred.

Where it is necessary to place cementitious grout into flowing water conditions, the use of special thixotropic agents are used to obtain a rapid gelation of the grout in order to resist dilution and minimize the extent of grout washouts.

Under extreme grouting conditions involving high water velocities and short flow paths, it may be necessary to combine the use of cementitious grout and water-activated polyurethane resins to obtain very fast setting cementitious grouting materials.

COMPOSITE GROUND CONDITIONS

Many grouting applications involving large fissures also include smaller fissures which are not amenable to penetration by conventional cementitious materials.

In such circumstances, grout formulations are adjusted during grouting operations to enable penetration of smaller fissures. Such adjustments may include eliminating various materials from the grout formulation, as well as substituting microfine cements for conventional Portland cements.



On this raise boring project, the 12-3/4" diameter pilot hole intersected underground water seams and was successfully tremie grouted from a depth of 330 m utilizing a motorized hose reel and swivel to place 21 m³ of cement grout



Cement grouts are used to seal underground cavities such as this underground solution cavern that was discovered at an underground limestone mine where flowing water had eroded weak stone layers