



Sustainable Technology

Cavity Grouting of subterranean voids

Cavity Grouting of macro voids with bulk materials has become commonplace, where new structures at the ground surface are proposed above former mine workings. Although the activity is not limited to mine workings, it is frequently a requirement in urban areas, where new developments are burdened with the need to backfill mine workings, beneath building footprints, in order to eliminate the risk of structural damage due to the migration of the void to the surface, resulting from progressive collapse of the roof of the workings.



Design of the cavity grouting has progressed from a requirement for 100% filling of the void, to a reasoned approach, where partial filling of the void is considered sufficient to eliminate the effects of any roof collapse into the workings being evidenced at the surface.

The basic method of cavity grouting for mine workings expressed simply involves drilling bores into the workings and pumping cement based grout into the cavity, there is however, a variety of matters to be considered. This type of work fits very well into the range of activities offered by Austress Menard, with its range of in-house drilling rigs and its experience in designing purpose specific backfill materials to accommodate different design requirements and achieve economic solutions.

Issues for consideration:

- Whether mine working are flooded
- Whether there has been roof collapse in the mine workings
- Whether the fluid backfill material needs to be contained
- The need for plugging drill holes
- Availability of information action concerning the mine workings
- Depth of the mine workings hence the ability to intersect them with the drilling
- Pattern of drill holes required to achieve the design outcome



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