

عنوان مقاله:

Strategies of Rock Mass Grouting for Tunnel Operations

محل انتشار:

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خلاصه مقاله:

Grouting as an effort to consolidate and seal the rock mass before excavation or subsequently after excavation has become a mayor requirement and demand in modern tunneling. Grouting techniques have improved constantly with the raised demands of various tunnel projects in complex geological situations. Pre-excavation and post grouting techniques have an inherent potential to minimize risks associated with adverse tunnel conditions during excavation and the long term stability of the tunnel. Water ingress in the tunnel often initiates further secondary problems such as surface drainage, drying out of springs as well as surface settlements. Throughout the last decade the development of grouting additives allowed a wider application of cement and silica based grout mixtures, also as an alternative to the cost-intensive chemical grouting. The rheological properties can be sustainable modified through a reasonable usage of these admixtures. These grout mixtures show a remarkable low content of water and are more resistant against wash out phenomena and expulsion of water. This paper describes important aspects of effective and efficient .grouting operations to enable tunnel constructions within the intended time and costs

کلمات کلیدی:

tunneling, water ingress, rock mass grouting, grouting mixtures, grouting additeves

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