

The Use of Shrinkage-Compensating Cements in the Metro Building

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The provision of water proof tunnels of the Metro is one of the important problems in the underground building. Caulking of the inter tubing space is made by the use of special cementitious materials. Complicated difficulties consist of the presence of natural water and its flow constantly.

During for many years special cement was developed which was used in industrial tests.

Cement consists of Portland cement, expansive components and gypsum. Mix of alumina cement with gypsum or sulphated components (sulphoalumina, sulphoalumoferrite clinker) were used as the expansive components. The change of correlation between the above mentioned components allows to obtain different number of cements : shrinkage-compensating, expansive and self stressing one. All of them are characterized by the hard bond between cement paste and pig iron tubing in short time even at low temperature.

In conclusion can be said that developed cements are used in the building of the Metro tunnels of Moscow, Minsk and others.