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Abstract

Prediction of Deformation of Diaphragm Wall

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For many deep excavations, to retain the soil and also to keep existing adjacent structures in tact, diaphragm wall must be constructed. For designing the diaphragm wall, one needs to predict the lateral deformation of the wall. This investigation deals with the measurement of the lateral deformation of the diaphragm wall in the various stages of excavations with the help of inclinometers; the diaphragm walls had been constructed for the market of S. Domingos in Macau. Mathematical model had been developed to predict the lateral deformation of the diaphragm wall, by beam on nonlinear foundation method and finite difference program; namely, FLAC. Crack effect had been considered in this investigation. The deformation predicted by these mathematical models developed in this investigation had been compared with the observed deformations. It had been found that the prediction of lateral deformations obtained by these mathematical models were quite satisfactory.