

Beam-Spring Model Used in Design of Temporary Earth-retaining Wall

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In the design of temporary earth-retaining system, the beam-spring model is often adopted. In this method, the determination of the coefficient of horizontal subgrade reaction affects the evaluation of the deformation and the cross-section force of the retaining wall. However, in the current design, the coefficient is calculated uniformly, not depending on the type, the extension and the penetration depth of the retaining wall. Therefore, the calculation result may not be appropriate. In this paper, a new method of calculating the horizontal subgrade reaction force for retaining walls was proposed and the efficiency of the method was examined through comparison of the trial calculations with the measurement at the field and the current design method. Furthermore, the information-oriented construction method, where the prediction analysis of the retaining wall was conducted after the back analysis satisfies the field measurement, was proposed and its efficiency was evaluated through trial calculations.