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◆Research Paper◆

Analysis of Lateral Soil Pressures for Reinforced Earth Retaining Wall Based on Tensile Failure

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Abstract: Considering the effect of reinforcement, and applying the cohesive force theory and Coulomb's earth pressure theory, thus the tensile failure theoretical formulae of lateral soil pressure for reinforced earth retaining wall is obtained. Analytical results show that cohesive force of reinforced earth has increment for the tensile failure. The lateral soil pressures value of wall back using proposed formula are smaller than using classical earth pressure theories or variable coefficient method. And the lateral soil pressure will increase with increasing of vertical spacing of reinforcement and decrease with increasing of the tensile strength of the reinforcement. The calculating results of this proposing method basically accord with results of the site tests in geo grid reinforced earth retaining wall.

Keywords: strength model; lateral soil pressure; reinforced earth retaining wall; vertical spacing; tensile failure