

Design of Rigid L-Shaped Retaining Walls

Authors : Ahmed Rouili

Abstract : Cantilever L-shaped walls are known to be relatively economical as retaining solution. The design starts by proportioning the wall dimensions for which the stability is checked for. A ratio between the lengths of the base and the stem, falling between 0,5 to 0,7, ensure the stability requirements in most cases. However, the displacement pattern of the wall in terms of rotations and translations, and the lateral pressure profile, do not have the same figure for all wall's proportioning, as it is usually assumed. In the present work, the results of a numerical analysis are presented, different wall geometries were considered. The results show that the proportioning governs the equilibrium between the instantaneous rotation and the translation of the wall-toe, also, the lateral pressure estimation based on the average value between the at-rest and the active pressure, recommended by most design standards, is found to be not applicable for all walls.

Keywords : cantilever wall, proportioning, numerical analysis, lateral pressure estimation

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