



## Foundation – Shoes Structural Design

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### Abstract

In this work, the shoes are studied as structural elements, which have the function of receiving the internal forces of beams, columns and slabs and distribute them on the ground. These elements have constant or variable thickness and its support is square, rectangular or trapezoidal, as well as having small height above the base area. Another feature of this superficial foundation is that it works submitted to bending. The objective is to analyze a geometric dimensioning, which is the first stage of the project to be made for a maximum permissible voltage is determined depending on soil conditions and load capacity that is submitted; reiterate that the safety factors are essential for geotechnical problems, because the soil participating in the behavior of a foundation are in most cases heterogeneous, resulting in the difficulty of its precise knowledge; demonstrate that a shallow foundation should be deep enough in order to prevent possible deformations due to volume variation of the land and confirm that through a well-founded technical study, one shoes structure project can be economically viable and safe. The test results of shoes subjected to the action of bending moments in brittle and hard soils demonstrated that they are designed for shallow foundation of reinforced concrete, so that exhibit good performance in terms of resistance to tensile stresses arising therein, which are restricted by the action of armor. The information collected through the in situ geotechnical study, determined that the calculation of base area is obtained by the massive features. Through the data characteristics of testing a submerged soil, caused by the action of water levels, it is eminent to be realized reduction in the foundation of load capacity, since it contributes to the occurrence of settlements and consequently, structural collapses. Therefore, with the diversity of shoes that are available to civil engineers, the quality and the behavior of a foundation depends on an analysis reconciling the technical and economic aspects of each work. Any failure during the project preparation stage and execution can result in high costs of repair or structural collapses or soil.