



Andhra Pradesh State Skill Development Corporation



AutoCAD(CIVIL)

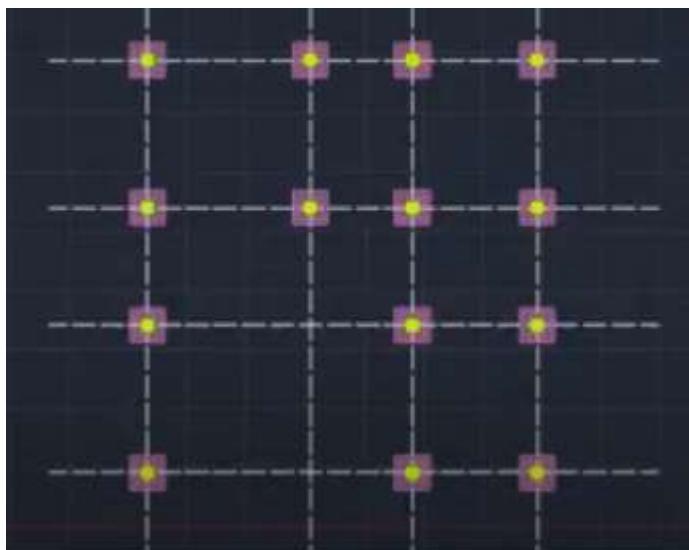
Footing Layout



DETAILS OF THE STRUCTURAL ELEMENTS, TITLE BLOCK AND PRINT OPTIONS FOOTING LAYOUT

FOOTING LAYOUT

A foundation is the element of a structure which connects it to the ground, and transfers loads from the structure to the ground. Foundations are generally considered either shallow or deep. Foundation engineering is the application of soil mechanics and rock mechanics (Geotechnical engineering) in the design of foundation elements of structures.

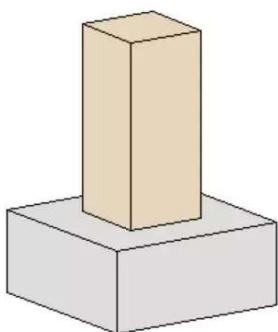


The foundation of a building is constructed in order to transfer the superstructure's load to the ground. An isolated footing is one of the most used types of foundation to support single-columns when they are arranged at a long distance.

The categories of isolated foundation footings are the following:

1. Pad or simple footing
2. Sloped footing
3. Stepped footing

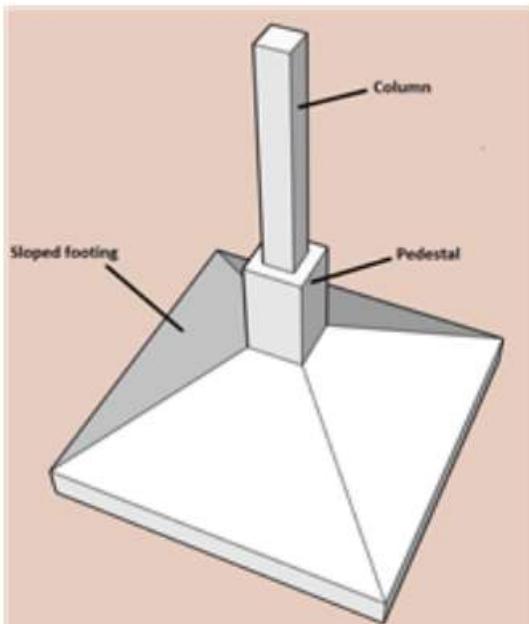
1. PAD FOOTING





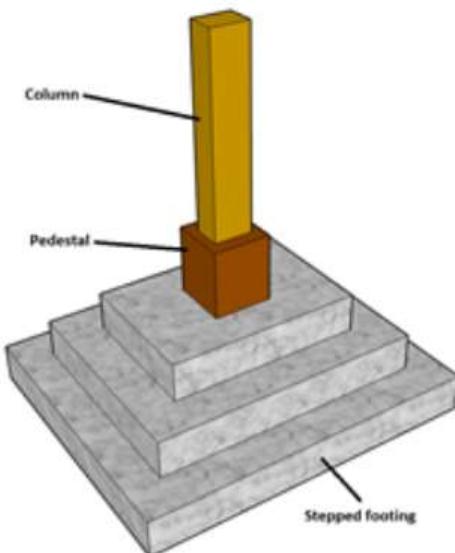
A pad or flat isolated footing is constructed by plain or reinforced concrete. Its thickness is constant and its shape can be circular, rectangular or square. It is economical and requires less excavation but its size is highly dependent on the load and it is less resistant in lateral forces.

2. SLOPED FOOTING

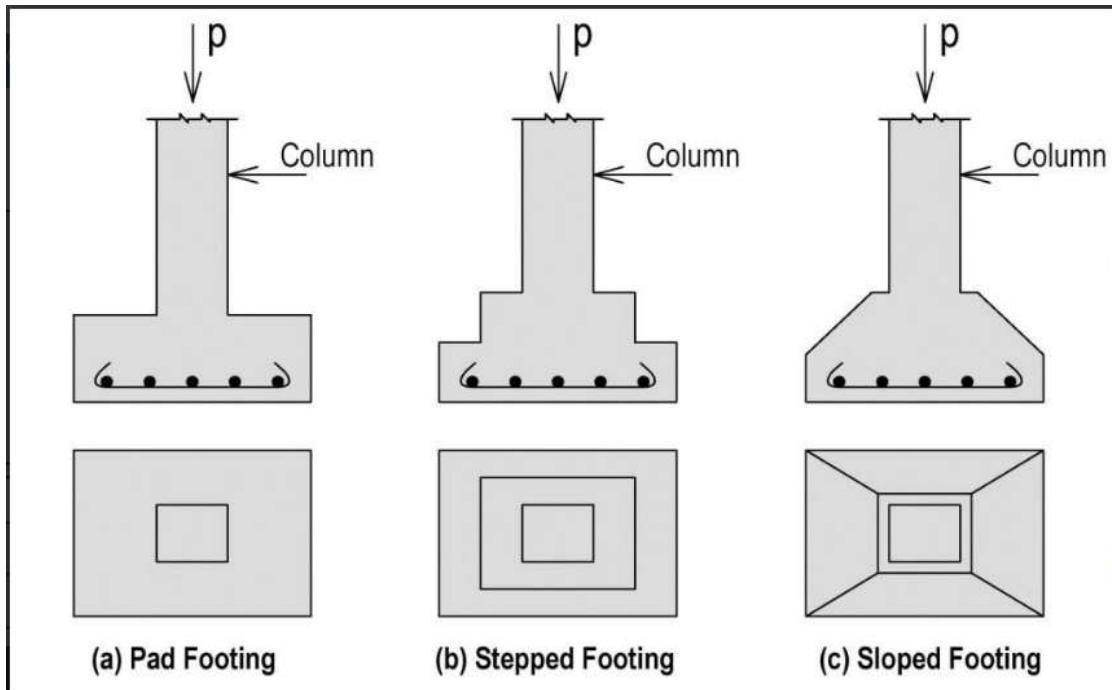


Sloped isolated footing requires less concrete and reinforcements bars than pad footing. It is constructed cautiously in order to maintain a 45-degree inclination from all sides. The concrete mix used must be stiff in order to avoid sustaining viscous deformation.

3. STEPPED FOOTING



This type of footing includes the construction of a footing step by step until it reaches the desired width. This technique is mostly used in residential buildings but its utilization has decayed over the last decades.



PURPOSE

Foundations provide the structure's stability from the ground:

- To distribute the weight of the structure over a large area in order to avoid overloading the underlying soil (possibly causing unequal settlement).
- To anchor the structure against natural forces including earthquakes, floods, frost heaves, tornadoes and wind.
- To provide a level surface for construction.
- To anchor the structure deeply into the ground, increasing its stability and preventing overloading.
- To prevent lateral movements of the supported structure (in some cases).