Solar Energy South Africa

# Photovoltaic support concrete counterweight pier

## Overview

What is the best foundation support for ground mounted PV arrays?

Drilled concrete piers and driven steel piles have been, and remain the most typical foundation supports for ground mounted PV arrays. However, there has been a push for "out-of-the-box" foundation design options including shallow grade beams, ballast blocks, helical anchors, and ground screws.

What is a concrete pier?

A concrete pier is a drilled and cast-in-place foundation type for small to medium sized projects. The advantages of concrete piers are that minimal equipment is required for installation, and they can be relatively shallow compared to driven steel piles.

What are the advantages and disadvantages of concrete piers?

Using concrete piers for Earth Anchors in PV Ground Mounted Arrays has several advantages. Minimal equipment is required for installation, and they can be relatively shallow compared to driven steel piles. However, there are also disadvantages. Concrete is used, which takes days to cure, and the process is labor intensive. Additionally, the steel post must be embedded the full depth of the pier, or rebar cages must be used.

How is a ground mounted PV solar panel Foundation designed?

This case study focuses on the design of a ground mounted PV solar panel foundation using the engineering software program spMats. The selected solar panel is known as Top-of-Pole Mount (TPM), where it is deigned to install quickly and provide a secure mounting structure for PV modules on a single pole.

Are helical piles a good choice for solar array anchoring?

Depending on ground conditions, helical piles can often be shorter in length and therefore cost less in installation time and energy consumption than

comparable driven piles or drilled shafts. Some manufactures of helical piles for solar array anchoring assert installation rates as high as 500 piles per day.

What type of ground mount system is best for a concrete foundation?

Cast / Ballasted Concrete Ground mount system GTS on a concrete foundation by Solaracks When soil conditions are not right for making any penetration to the ground (rock, for example) then the best choice is to opt for a ballasted footing mount structure in which pre-cast concrete blocks are anchored to an evenly graded surface.

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## PV SYSTEMS - PHOTOVOLTAIC SOLAR SUPPORTS

PV SYSTEMS - PHOTOVOLTAIC SOLAR SUPPORTS - Due to the location, the field configuration, necessary resistance to snow and wind, the geotechnical study, the model, weight and size of the panels and the favorite electric ...

## DIY Concrete Piers for Shed: Step-by-Step Guide

Properly excavated holes ensure that the piers are securely anchored to the ground, providing a solid base for the shed to rest upon. Here's a detailed breakdown of the steps involved in digging the holes for your ...



## How To Anchor Ground-Mounted Solar Arrays

These include drilled shaft piles (also called micropiles or caissons), driven piles and helical piers or ground screws. Racking manufacturers generally specify the depth, diameter and spacing of the anchors based on the ...

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