

Photovoltaic support foundation in goaf area

What is a photovoltaic support foundation?

Photovoltaic support foundations are important components of photovoltaic generation systems, which bear the self-weight of support and photovoltaic modules, wind, snow, earthquakes and other loads.

What are the different types of photovoltaic support foundations?

The common forms of photovoltaic support foundations include concrete independent foundations, concrete strip foundations, concrete cast-in-place piles, prestressed high-strength concrete (PHC piles), steel piles and steel pipe screw piles. The first three are cast-in situ piles, and the last three are precast piles.

Do different foundation forms influence the boundary values of a goaf?

The parameter verification and process analysis proposed in the research process are innovative in demonstration method of the foundation form of buildings or structures passing through the goaf. The influence of different foundation forms on the boundary values of the force and deformation of the goaf are focused in this research.

What is a goaf in mining?

The area where the surrounding rock instability of the underground mining space leads to the overall subsid-ence and bending of the overlying strata. The area caused by surface deformation and damage is called a goaf. The instability leads to sinking and bending of the overlying rock layer, which causes surface deformation and damage.

What are the three conditions of a goaf model?

Specifically, we analyzed the model under three conditions: the completion of the excavation of the goaf in the multi-layer inclined coal seam (working condition 1), the construction of the roadbed or pile foundation (working condition 2), and the grouting of the goaf (working condition 3). The calculation process is shown in Fig. 5.

Can photovoltaic support steel pipe screw piles survive frost jacking?

To study the frost jacking performance of photovoltaic support steel pipe screw pile foundations in seasonally frozen soil areas at high latitudes and low altitudes and prevent excessive frost jacking displacement, this study determines the best geometric parameters of screw piles through in situ tests and simulation methods.

The planned viaduct in Jining, Shandong is a priority project in the city. However, the 63 working faces of a mine in Jining is only 3 m away from the planned viaduct, posing a ...

and 5 columns fixed photovoltaic support, the typical permanent load of the PV support is 4679.4 N, the wind load being 1.05 kN/m², the snow load being 0.89 kN/m² and the seismic load is ...

building above a goaf, grouting treatment was applied to goaf area (Gennaro et al. 2006) and the layout of the ground buildings was optimized to achieve the rational utilization of land above ...

The coal goaf areas are the main cause of accidents involving water intrusion in coal mines. The ground collapse caused by water intrusion in goaf areas pose major threats to further coal mining.

Li et al. (2016) evaluated the long-term stability of the rock strata above an old goaf and its possible influence on the buildings above the rock strata, analyzed the releasable ...

A large area of room mining goaf has been left throughout the history of coal mining worldwide. However, because the pillars cannot perpetually retain stability, the sudden collapse of a large ...

sectional area of the goaf is 135 m², ... the pillar can more effectively support the goaf roof. In ad- ... The size of each pillar foundation was . 700 mm (length) × 700 mm ...

The methods of field investigation, laboratory testing, engineering drilling, geophysical exploration, theoretical calculation, and numerical simulation are combined to ...

Study on the technology of grouting and reinforcing the foundation of a railway bridge above shallow old mine goaf Hui-Quan Sui^{1,a} and Chun-Yuan Bait² ¹Department of Architecture & ...

2.1 Simplified Model of Old Goaf Treated with Grouting. As a geological filler, the grouting material cements the collapse and fault strata, and fills the cracks in the fractured ...

For the high-speed railway built in the goaf sites, if the influence depth of the additional loads reaches the collapse fault zone of the goaf foundation, the overburden rock ...

Download scientific diagram | Layout of goaf of study area from publication: Evaluation theory and application of foundation stability of new buildings over an old goaf using longwall mining ...

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