

What level is the electrical distribution box on the construction site



Overview

How to Choose Distribution Boards for Temporary Construction Power?

Level 2: Secondary Distribution Box (Zone Management) – These units distribute power to.

Key Takeaways

Construction sites typically use a three-level distribution box system: primary (main), secondary (sub), and tertiary (equipment-level) boxes. Overview of the Three-Level System

Construction sites adopt a tiered power distribution model to safely and efficiently deliver electricity from the main supply to various equipment and temporary facilities . The system consists of:

- Primary Distribution Box (Level I)
- Acts as the main hub for incoming three-phase power from the transformer .
- Equipped with main circuit isolation, main circuit breaker, and main fuse .
- Connects to secondary distribution boxes and includes a metering system.
- Typically located near the main power supply and designed for outdoor, rainproof use .



- Secondary Distribution Box (Level II)
 - Receives power from the primary box and redistributes it to multiple switch boxes or tertiary boxes .
 - Includes general isolation, circuit breakers, and fuses for branch circuits .
 - Installed in areas with concentrated electrical equipment, ensuring the distance to switch boxes does not exceed 30 meters .
 - Constructed with durable, insulated materials suitable for field conditions.
- Tertiary Distribution Box (Level III)
 - Located closest to the end-use electrical equipment, such as tower cranes, construction elevators, or temporary sheds .
 - Provides final protection with leakage protection switches and isolation for individual machines .
 - Ensures the principle of "one machine, one switch, one protection" to prevent overloading and enhance safety .
 - Typically installed within 3 meters of fixed equipment and may be movable or fixed depending on the site layout .

Installation and Safety Considerations

- Distribution boxes must be installed in ventilated, dry, and temperature-stable locations, away from harmful gases, liquids, or heat sources .
- Boxes should be made of iron or high-quality insulating materials, with metal plates electrically connected to the box for grounding .
- Adequate space must be provided around boxes for maintenance, and connections should use insulated wires with no exposed live parts .
- Load capacity of a single distribution box typically ranges from 50–150 kW, with the main switch rating determined by the number of lower-level boxes and equipment power consumption .

Summary

On construction sites, primary boxes handle incoming power, secondary boxes distribute it to site areas, and tertiary boxes provide final protection and connection to equipment. This hierarchical system ensures safety, efficient power distribution, and compliance with construction power standards .

Article Content

How to Install a Cable Distribution Box Safely and Correctly?

In modern electrical systems, cable distribution boxes (also known as electrical distribution boxes or distribution

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