

Commonly used primary distribution boxes on construction sites



Overview

Exploring Construction Site Distribution Box: Composition, Grades, Distribution boxes are typically constructed from premium-grade steel, aluminum, or high.

Key Takeaways

Primary distribution boxes on construction sites are robust electrical cabinets that serve as the main point for incoming power, distributing electricity safely to secondary and tertiary boxes while ensuring protection and metering. Overview of Primary Distribution Boxes

Primary distribution boxes, also known as Class I distribution boxes, are the main electrical cabinets on construction sites. They are designed to handle the incoming power from the public supply grid and distribute it to secondary distribution boxes or directly to high-power equipment. These boxes are typically equipped with:

- Main busbars made of copper for reliable electrical contact
- Main circuit breakers and fuses for overload and short-circuit protection
- Metering systems to monitor energy consumption



- Rainproof tops and IP55 or higher protection to withstand dust, water jets, and harsh outdoor conditions Primary boxes are usually installed with lower incoming and outgoing lines, and their front doors are accessible for maintenance and monitoring. They form the first level of a three-level protection system, ensuring that each downstream circuit is individually protected .

Secondary and Tertiary Distribution Boxes

- Secondary distribution boxes receive power from the primary box and distribute it to temporary site equipment. They often feature inner and outer doors, plastic-sprayed housings, and rainproof tops. They include circuit breakers and leakage protection switches to ensure safety for workers and equipment .
- Tertiary (Level III) distribution boxes are installed under secondary boxes to supply power to specific electrical equipment. They include isolation switches and leakage protection devices, forming the final layer of protection in the three-level system .

Key Features and Standards

Construction site distribution boxes are designed to meet IEC 61439 and IEC 60364 standards, ensuring safety, reliability, and compliance with electrical regulations .

Common features include:

- Robust sheet steel or thermoplastic housings for durability
- CEE and earthed sockets for connecting various equipment
- Upstream safety devices such as fuses and circuit breakers
- Flexibility for rapid deployment and modular expansion for cranes, lighting, and containers

Practical Considerations

When selecting a primary distribution box for a construction site, it is important to:

- Calculate total power demand by listing all equipment and their wattage, including startup surges .
- Ensure sufficient circuit slots for current and future needs.
- Choose appropriate protection class (IP55 or higher) for outdoor use .
- Use professional installation to comply with safety codes and standards . Primary distribution boxes are essential for safe, reliable, and efficient power distribution on construction sites, forming the backbone of temporary electrical infrastructure.

Article Content

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Thermoplastic boards with optimum impact and weather resistance, ideal for primary and secondary distribution on construction

Power supply on the construction site

A site power distribution board is usually an electrical distribution box equipped with various sockets to provide power for different

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2□ The rated value and action setting value of the main distribution box shall be compatible with the rated value and action setting

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

