

Installation location of the primary power distribution box on the construction site



Overview

The main service panel must have a main disconnect or breaker that can disconnect all power to the building.

Key Takeaways

The primary power distribution box should be installed close to the main power supply in a dry, ventilated, and accessible location, typically 1.5–1.8 meters above ground.

Location and Accessibility
The main distribution box should be positioned near the incoming power source to reduce power loss and ensure efficient distribution to secondary boxes and equipment. It must be installed in a dry, well-ventilated area away from harmful gases, liquids, heat sources, or areas prone to impact and vibration. Ensure there is sufficient space around the box for at least two people to work simultaneously without obstruction from equipment, debris, or vegetation.

Height and Mounting

The bottom edge of the distribution box is generally installed 1.5 to 1.8 meters above the ground, which allows convenient operation and inspection. The box should be firmly fixed using appropriate mounting brackets or screws to prevent movement or tilting due to vibration or accidental impact.



Safety and Protection

- Use a metal or high-quality insulating enclosure with proper thickness (≥ 1.5 mm for metal boxes) to protect internal components .
- Ensure grounding of the metal box, mounting plate, and electrical appliances inside the box, with the protective neutral connected through a terminal board .
- Install leakage protection devices and separate circuits for power and lighting to enhance safety .
- Maintain proper IP55 or higher protection rating to safeguard against dust and water ingress, especially in outdoor or harsh environments .

Wiring and Distance Considerations

- Use insulated, high-temperature-resistant copper wires with cross-sectional areas suitable for the load .
- The distance between the main distribution box and secondary distribution or switch boxes should not exceed 30 meters, and the distance to controlled equipment should not exceed 3 meters .
- Ensure neat cable management, secure connections, and no exposed live parts to prevent short circuits or fire hazards . By following these guidelines, the primary power distribution box will be safely and efficiently installed, ensuring reliable power distribution and compliance with construction site safety standards.

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