

Placement of Level 2 and Level 3 Distribution Boxes



Overview

The correct installation of distribution boxes requires proper planning and careful construction techniques.

Key Takeaways

Level 2 distribution boxes should be installed approximately 1.5 meters above the ground near concentrated electrical loads, while Level 3 switch boxes should be positioned within 3 meters of the equipment they control. Level 2 Distribution Box Placement

Level 2 distribution boxes, also known as secondary distribution boxes, are typically installed 1.5 meters above the ground to ensure accessibility and safety during operation and maintenance. They should be located in areas where electrical equipment or loads are relatively concentrated, such as near building entrances or central utility areas. The box should be dry, well-ventilated, and protected from water and dust, with a rainproof top if installed outdoors. The distance between the Level 2 distribution box and the Level 3 switch box should not exceed 30 meters horizontally, ensuring minimal voltage drop and efficient power delivery. Level 2 boxes typically contain large three-phase circuit breakers and may include leakage protection devices as part of a two-level protection system.

Level 3 Distribution Box Placement



Level 3 distribution boxes, or tertiary switch boxes, are installed close to the electrical equipment they control, generally within 3 meters of the load . These boxes are designed for low-power devices such as welding machines, vibrators, or household appliances, and often include single-phase circuit breakers and leakage protection . For safety and compliance, Level 3 boxes should be mounted at a convenient height for operation, typically around 1 to 1.8 meters, depending on local standards and accessibility requirements . The boxes should also be securely grounded, with proper cable management and insulation, and made of durable materials like cold-rolled steel or flame-retardant plastic .

Additional Considerations

- **Protection and Safety:** Both Level 2 and Level 3 boxes should follow the principle of “one machine, one switch, one leakage, one box, one lock” to prevent multiple devices from being controlled by a single switch .
- **Environmental Protection:** Ensure boxes are rainproof, dustproof, and suitable for outdoor or indoor conditions as required .
- **Compliance:** Follow IEC, BS 7671, or local electrical codes for height, accessibility, and clearance requirements .
- **Maintenance:** Label all circuits clearly, perform regular inspections, and ensure surge protection and proper breaker sizing for long-term reliability . By following these placement guidelines, Level 2 and Level 3 distribution boxes can provide safe, efficient, and compliant power distribution for construction sites, residential buildings, or industrial setups.

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The distribution board must be suitable for the environmental conditions in which it operates. Distribution boards shall

Power Distribution Systems

A power distribution system's ultimate purpose is to supply electricity to end consumers while maintaining a high level of reliability

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Distribution boxes are typically made of polyethylene or reinforced concrete with plumbing "knock outs" into the box. The inlet must

1910.269

This table also identifies provisions in § 1910.269 that apply to work by qualified persons directly on, or associated with, installations

Electrical Panel Locations

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Distribution box and switch box shall be made of iron plate or high-quality insulating material, and the thickness of iron plate shall be

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