ZITHA TECH SPECIALTY CABLES (Pty) Ltd

Installation of the main power distribution box for lighting floors



Overview

2024 Electric Service Requirements Manual (LADWP)This manual is for electronic distribution only and is designed to provide you with the most current infor.

Key Takeaways

Proper installation of a main power distribution box ensures safe, efficient, and code-compliant distribution of electricity to lighting circuits across floors.Planning and Preparation

Before installation, carefully plan the location of the distribution box. It should be in a dry, accessible area with good ventilation, typically at a height of around 1.5 meters for easy access and maintenance. Consider the load capacity required for all lighting circuits and ensure the box meets IP/NEMA ratings suitable for the environment. Review the floor plan to identify cable routing paths, obstacles, and integration points with floor boxes or busbars for underfloor power distribution .

Selecting the Distribution Box

Choose a distribution box that is durable, compliant with local electrical codes, and capable of handling the total lighting load. Include protection devices such as circuit breakers, fuses, and surge protectors, ensuring each lighting circuit has its own protection. Modular designs are recommended for easier future upgrades .

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Installation Steps
• Mounting the Box: Secure the distribution box to a wall or support structure, ensuring it is level and stable. Maintain proper clearance around the box for ventilation and maintenance.

• Wiring: Connect the incoming mains supply to the box using the correct wire gauge. Ensure proper grounding and neat cable management. Label all circuits clearly for identification.

• Integration with Floor Power Systems: If using floor boxes or busbars to distribute power to lighting outlets, connect the distribution box to these systems. Busbars should be installed in parallel lines under raised floors, spaced no more than 5 meters apart and 2.5 meters from walls, with tap-off units feeding floor boxes .

• Testing: Perform visual inspections and use a multimeter to verify correct wiring, grounding, and circuit protection before powering on .
Safety and Compliance

Follow local electrical codes (NEC, IEC, or regional standards) and use UL/CE-certified components. Ensure all connections are secure, insulation is intact, and circuits are protected. Schedule regular maintenance and inspections to maintain long-term reliability .

Final Considerations
• Ensure the distribution box is easily accessible for maintenance and emergency shut-off.

• Use fast-fit floor boxes for underfloor lighting connections to simplify installation and future modifications .

• Keep detailed installation records for inspections and future upgrades. By following these steps, the main power distribution box will safely and efficiently manage lighting circuits across multiple floors, integrating seamlessly with underfloor power systems where needed.

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To install a floor box, you create a suitably sized cavity in the floor then place the box inside it so the lid is

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About this chapter: Chapter 39 addresses the “rough-in” stage of construction in which the wiring system is installed and receptacle

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Floor Box Installation Instructions

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