

Article Overview

French secondary distribution boxes must comply with IEC 61439 standards, include proper RCD protection, and follow specific installation and cable management rules.

Regulatory Framework

In France, secondary distribution boxes (also called consumer units or sub-panels) are governed by IEC 61439, which defines safety, layout, and testing requirements for low-voltage switchgear and control gear assemblies. IEC 61439-3 specifically applies to distribution boards, ensuring that all components meet safety and operational standards. Compliance is verified through a declaration of conformity and accompanying test reports.

Electrical Supply and Protection

- o Standard domestic supply is single-phase 230V, 50Hz, with larger properties often having three-phase 380V.
- o The main supply from EDF includes a meter, fuses, and a main differential circuit breaker (disjoncteur différentiel), which is sealed and rated according to the consumer's tariff.
- o Secondary distribution boxes must include a 30 mA RCD to protect people from earth faults, as the main EDF device (500-650 mA) is not sensitive enough for personal protection.
- o Each circuit should observe a maximum of eight high-current outlets.

Installation and Cable Management

- o Cables must be arranged in single layers within cable trays, avoiding crushing or bending below the manufacturer's minimum radius.
- o Single-pole cables in three-pole links should be arranged to balance impedances with the earth, and parallel conductors must be laid directly beside each other to reduce loop impedance.
- o Cable trays for secondary distribution circuits (lighting, sockets, low-power devices) should not exceed 2 meters in distance between supports.
- o Troughs must include cable trays; cables cannot be laid directly in the trough without support.

Equipment Standards

- o All equipment must be brand new, defect-free, and conform to EC standards, including electromagnetic compatibility.
- o Modular devices allow flexible combinations of sockets, switches, and protection devices, ensuring

integration with the overall distribution system .

o French outlets typically follow the 2P+E 16A, 250V AC standard, compatible with modular distribution systems .

Summary

French secondary distribution boxes must adhere to IEC 61439, include RCD protection, follow cable management and spacing rules, and use certified, compliant equipment. Proper installation ensures safety, operational reliability, and compliance with both French and European electrical standards .

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Choose the right box based on environment (indoor/outdoor), load capacity, and durability. Check for proper IP/NEMA ratings and

In flammable and explosive environments, explosion-proof distribution boxes should be selected and explosion-proof

The NFC15-100 standard was drawn up by AFNOR (the French Standards Association) in 1956 to improve the safety of electrical

If multiple pieces of equipment are being supplied, the successful company must create a distribution box. The available electrical

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Les postes de distribution secondaire sont g n ralement situ s en zone urbaine, o  l'espace est limit . Pour la distribution

Learn how to choose a distribution box and understand its internal structure, including MCBs, busbars, neutral

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Follows the principle of "one machine, one switch, one RCD, one box, one lock," ensuring no single switch controls

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