Distance between electrical distribution box and residents

Overview

It lists clearance distances for indoor and outdoor electrical installations at different voltage levels from phase to earth, phase to phase, and minimum working clearances.

Key Takeaways

For residential installations, electrical distribution boxes must maintain a minimum working clearance of 3 feet in front, 30 inches in width, and 6. 5 feet in height, with additional horizontal separation from windows, doors, and other building features.

Minimum Working Space Around Panels

The National Electrical Code (NEC) 2023 specifies that electrical panels in residential areas require a minimum clearance of 36 inches (3 feet) in front, 30 inches in width, and 6. 5 feet in height to allow safe operation, maintenance, and emergency access. The panel door must be able to open at least 90 degrees without obstruction.

This working space must remain free of furniture, storage, or other obstacles to ensure safety.

Horizontal and Vertical Separation

© 2026 CGWEB NETWORK INFRASTRUCTURE - All rights reserved

When overhead service conductors run near residential buildings, the NEC requires at least 3 feet of horizontal clearance from operable windows, doors, porches, balconies, and fire escapes to prevent accidental contact. Conductors passing over roofs must maintain 8 feet of vertical clearance above the roof surface, extending 3 feet beyond the roof edge. Exceptions exist for steep roofs or short overhangs, where clearances can be reduced under specific conditions.

Switchboard and Panel Placement

Switchboards and distribution boxes should be installed in well-ventilated, dry areas with sufficient space for maintenance and emergency access. For domestic setups, a minimum clearance of 0. 6 meters (≈2 feet) around accessible faces is acceptable, though 1 meter is recommended for larger installations.

The area should allow full access to the panel or switchgear for testing, repair, or replacement.

Summary of Key Distances

Front working space: 3 feet (36 inches / 914 mm)Width: 30 inches (or full panel width, whichever is greater)Height: 6. 5 feet (≈2 meters)Horizontal clearance from windows/doors: 3 feetVertical clearance over roof: 8 feet (with 3-foot extension beyond roof edge)Domestic switchboard clearance: 0. 6–1 meter around accessible faces Maintaining these clearances ensures compliance with NEC standards, protects residents from electrical hazards, and allows safe access for electricians during installation or maintenance.

Proper placement also reduces the risk of fire, electrocution, and accidental contact with energized parts.

Article Content

Electrical Clearances: Requirements and Safe Distances

Every electrical panel, breaker box, meter base, and service disconnect needs a clear working zone in front of it so that someone can safely

IEC / BS 7671 Codes for Consumer Unit and Distribution Board

Residential: The recommended height for distribution board and consumer unit is between 1 metre to 1.8 metre from the floor. The suggested height is 1.3 metres for elderly and handicapped people in the

IEC Phase to Phase Clearance Standards | PDF | High Voltage

It lists clearance distances for indoor and outdoor electrical installations at different voltage levels from phase to earth, phase to phase, and minimum working clearances. It also provides minimum ground,

© 2026 CGWEB NETWORK INFRASTRUCTURE - All rights reserved

Minimum Electrical Clearance Standards | PDF | High Voltage

It includes minimum clearances for indoor and outdoor phases, ground clearances, clearances between crossing lines, minimum heights above railways, clearances from buildings, and other spacing

How to Maintain a Safe Distance from the Substation? Guarding ...

It is generally recommended to maintain a minimum safe distance of at least 10 meters (approximately 33 feet) from the substation fencing to guard against potential step voltage risks.

What is a safe distance to live from an electrical substation?

The safe distance to live from an electrical substation is 75 meters for homes and 300 meters for schools, hospitals and other facilities.

Safe Distance Between Substation And Residence

For 400V power distribution rooms within typical residential communities, CHH Power adheres to a minimum safe distance of no less than 5 meters from nearby residences.

Safety Clearance Recommendations for Electrical Panel

Get access to premium HV/MV/LV technical articles, electrical engineering guides, research studies and much more! It helps you to shape up your technical skills in your everyday life

Allowed distance from meter to main breaker panel?

The reason why you haven''t found a definitive answer is that the NEC does not prescribe a specific distance, and this question is subject to local jurisdictions to either determine that an installation

Safe Clearances for Electrical Equipment: Working Space and

In many commercial facilities, electrical equipment rooms have rows of equipment operating at more than 150 volts to the ground. The aisle (s) between pieces of such equipment, with live parts on both

Size determination, installation method and wiring mode of distribution ...

The distribution box is the central hub of the home circuit and the general control of our daily power consumption. It is an indispensable electrical equipment. If there are some potential safety hazards,

Electrical Distribution Box Design Guide

© 2026 CGWEB NETWORK INFRASTRUCTURE - All rights reserved

The document provides details for designing the electrical distribution box and circuits for a residence. It includes specifications for the main circuit breaker such as size, type, and tripping capacity. It also

Electrical Wire Clearance Distances

What distance should be kept between electrical wires or boxes and nearby plumbing pipes or HVAC ducts? Some basic wire clearance distances are given in Carson Dunlop Associates'' skectch above,

CHAPTER 39 POWER AND LIGHTING DISTRIBUTION

ICC user note: About this chapter: Chapter 39 addresses the “rough-in” stage of construction in which the wiring system is installed and receptacle and lighting outlets placed throughout the dwelling. This

Residential Receptacle Requirements (General)

Receptacles shall be installed so that no point measured horizontally along the floor line in any wall space is over 6 feet from the receptacle. This allows for a maximum of 12 feet between receptacles

Design of clearance and creepage distances in electrical equipment

General: Since April 1997 the sising of clearance and creepage distances has been covered by DIN VDE 0110 part 1 “Insulation coordination for electrical equipment in low-voltage systems”.

How to Choose a House Distribution Box | CHINT global

A well-chosen distribution box ensures the safety and efficiency of your household electrical system. This article guides you through selecting a distribution box.

The installation requirements for the distribution box

A distribution box is the heart of any electrical system. It takes the incoming power and safely distributes it to different circuits throughout your

© 2026 CGWEB NETWORK INFRASTRUCTURE - All rights reserved

Contact Us

Continue your research online:

Website: https://cgweb.co.za
Technical inquiry: https://cgweb.co.za/project-enquiry.html

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

© 2026 CGWEB NETWORK INFRASTRUCTURE - All rights reserved