What kind of cable is best for a household electrical distribution box



Overview

10 Different Types of Electrical Wire and How to ChooseLearn the different types of electrical wires and cables and how to identify each, so you can choose.

Key Takeaways

For residential distribution boxes, the most commonly used cables are non-metallic sheathed (NM-B) cables like Romex for general circuits, with larger gauge wires or armored/metal-clad cables for high-power appliances and feeders. Common Cable Types1.

Non-

Metallic Sheathed Cable (NM-B / Romex)Used for most indoor residential circuits, including outlets, lighting, and switches. Consists of two or more insulated conductors plus a bare or insulated ground wire inside a plastic sheath. Typical sizes: 14/2 NM-B: 15A circuits (lighting and small outlets)12/2 NM-B: 20A circuits (general outlets and kitchen circuits)12/3 NM-B: For three-way switches or multi-wire branch circuits.

Color-coded jackets indicate gauge and amperage: gray for 14-gauge, yellow for 12-gauge, orange for 10-gauge. 2. Armored Cable (AC / BX) and Metal-Clad Cable (MC)Provides extra protection with a flexible metal sheath, suitable for areas prone to physical damage, basements, or garages.

Includes a grounding conductor, either through the metal sheath or a separate wire. Often used for circuits requiring higher durability or in commercial-style installations within homes. 3.

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Underground Feeder Cable (UF)Designed for outdoor or underground use, moisture-resistant, and can be buried directly in soil. Similar to NM-B but with a solid plastic sheath for added protection. 4.

Individual Conductors (THHN / THWN)Single wires used inside conduits, often for feeders or subpanels.

THH

N: Thermoplastic High Heat-resistant Nylon-coatedTHWN: Thermoplastic Heat and Water-resistant Nylon-coatedSuitable for circuits requiring conduit protection or higher amperage feeders.

Sizing and Ampacity Considerations14 AW

G: 15A circuits12 AWG: 20A circuits10 AWG: 30A circuits (water heaters, dryers)6/3 or 8/3 NM-B: Large appliances or subpanel feeders. Always follow NEC guidelines for ampacity, derating, and temperature ratings. NM-B is rated for 90°C insulation, but final ampacity is limited to the 60°C column per NEC Article 334.

Installation Tips

Secure N

M and NMC cables at intervals not exceeding 4½ feet and within 12 inches of boxes. Avoid running NM-B outdoors or in wet locations; use UF or conduit-protected wires instead. Ensure proper grounding and bonding for safety and code compliance.

Summary: For most household distribution boxes, NM-B (Romex) cables are standard for general circuits, MC or AC cables for areas needing extra protection, UF cables for outdoor or underground circuits, and THHN/THWN wires in conduit for feeders or high-amperage applications. Proper gauge selection and adherence to NEC guidelines are essential for safety and efficiency.

Article Content

10 Different Types of Electrical Wire and How to Choose

Learn the different types of electrical wires and cables and how to identify each, so you can choose the right ones for your next home project.

Wire for house wiring 2025: Essential Safety

Understanding wire for house wiring is like learning the language of your home''s electrical system. Throughout this guide, we''ve explored how wire gauge directly impacts safety and

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Household Electrical Wiring: Wire & Cable Types & Uses

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Commercial SER cable, industrial SER cable, and utility SER cable are proven to minimize downtime and increase the efficiency of your electrical distribution system, providing a secure and reliable

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NM and NMC cables should be secured at intervals that do not exceed 4½ feet, and they should be secured within 12 inches of junction boxes and panels to which they are attached. Cables that do not

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All About Electrical Wiring Types, Sizes & Installation

Learn the basics of electrical wiring for the home, including wire and cable types, wire color codes and labeling, and essential wiring techniques.

Homeowner Electrical Cable Basics | The Family

This would be a good option for distributing electrical power to multiple buildings on a single property, such as a home, a shed, a storage

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