Electrical Wire Vs Cable:

An electrical wire is a conductor, a material which conducts electricity. For household wiring, the material is either copper or aluminium (or copper-sheathed aluminium), although aluminum is not really used anymore. It can be stranded wire or solid metal conductor and in most cases, it is insulated, using a non-conductive plastic coating.

On the other hand, a cable is the combination of two or more wires, assembled using a single jacket. In modern homes, the NM (nonmetallic) cable is the most common type. This consists of two or more individual wires wrapped inside a protective plastic sheathing and contains:

- one or more "hot" (current-carrying) wires
- a neutral wire
- a ground wire

Types of Cables/Wires:

1. NM (Nonmetallic) Cable

The most common type of home electrical wiring is the NM cable, also known as the Romex cable, after the most popular electrical wiring brand name. The NM cables consist of two or more individual wires wrapped inside a protective plastic sheathing. This type of cable is designed for interior use in dry locations. Today, the NM cables are color-coded, meaning that the outer jacket of the cable comes in different colors to indicate the wire gauge. Here are the most common NM cables which are used in modern homes:

- 6-gauge, 55-amp circuits comes with black sheathing
- 8-gauge, 40-amp circuits comes with black sheathing
- 10-gauge, 30-amp circuits comes with orange sheathing
- 12-gauge, 20-amp circuits comes with yellow sheathing
- 14-gauge, 15-amp circuits comes with white sheathing

2. UF (Underground Feeder) Cable

It is a type of nonmetallic cable designed for wet locations and direct burial in the ground. It is commonly used for supplying outdoor fixtures, such as lampposts. Like standard NM cable, UF contains insulated hot and neutral wires, plus a bare (uninsulated) copper ground wire. As compared to NM cable, UF cable sheathing is solid plastic. These cables are a bit more expensive than NM cables because of their durable insulation. UF cable is normally sold with gray outer

sheathing. UF cable is also used for major circuit wiring, and it carries a dangerous amount of voltage as long as the circuits are turned on.

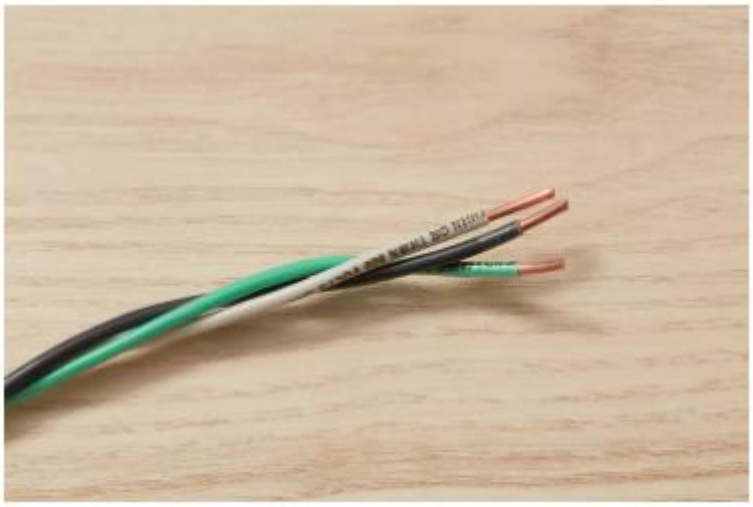
3. THHN/THWN Wire

THHN and THWN are codes for the two most common types of insulated wire used inside conduit. Unlike NM cable, in which two or more individually insulated conductors (copper or aluminum) are bundled inside a plastic sheathing, THHN and THWN wires are single conductors, each with its color-coded insulation. Instead of being protected by NM cable sheathing, these wires are protected by tubular metal or plastic conduit. Here, the letters indicate specific properties of the wire insulation:

- **T:** Thermoplastic
- **H:** Heat-resistant; HH means highly heat-resistant
- **W:** Rated for wet locations
- **N:** Nylon-coated, for added protection

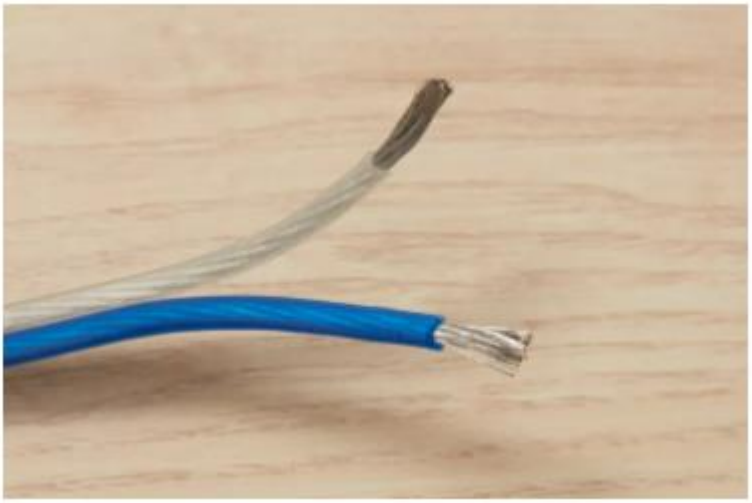
THHN and THWN wires have colored sheathings that are generally used to identify their function in a circuit:

- **Hot wires:** Black, red, orange
- **Neutral wires:** White, brown
- **Ground wires:** Green, yellow-green



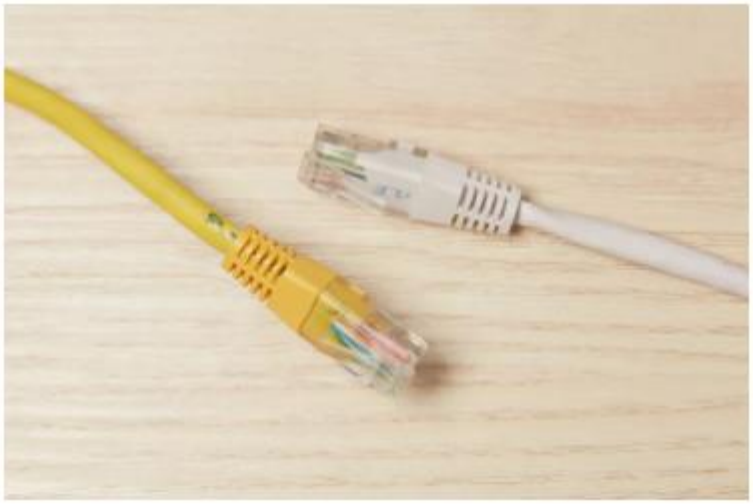
4. Low-Voltage Wire

Low-voltage wiring is used for circuits typically requiring 50 volts or less. Several common types are landscape lighting wire, sprinkler system connections, bell wire (for doorbells), speaker system wires, and thermostat wires. Wire sizes range from about 22 gauge to 12 gauge, and these wires can be made of copper or aluminum. It must be used only for low-voltage applications. These are typically very small wires that are much different from standard circuit wiring, and their costs tend to be lower than other household wires.



5. Phone and Data Wire

Telephone and data wiring are low-voltage wires used for "landline" telephones and internet hookups, typically made from copper. Telephone cables may contain four or eight wires. Category 5 (Cat 5) cable, the most common type of household data wiring, contains eight wires wrapped together in four pairs. It can be used for both phone and data transmission and offers greater capacity and quality than standard phone wire. Like low-voltage wire, it is often cheaper than other types of household wiring like NM or UF cables.



6. Coaxial Cable

Coaxial cable is a round, jacketed cable that features an inner conductor (usually copper) surrounded by a tubular insulating layer, surrounded by a tubular conducting shield made of braided wire. Coaxial cable was once the standard for connecting televisions to antenna or cable service delivery and is still often used to connect satellite dishes or to bring subscription television service to an in-home distribution point. It typically has black or white insulation and is perfectly round in shape, making it easy to distinguish from NM electrical circuit cables.