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Understanding Specialized Ethernet Cable

Solid Vs Stranded Ethernet

When purchasing bulk Ethernet cable, you will be presented with a choice: solid or stranded. If you are not sure of what your choice should be, read on. All UL-rated network cables, both solid and stranded, are manufactured with copper. These two different types refer to each of the internal copper conductors inside the Ethernet cable. [Stranded Ethernet cables](#) have multiple smaller strands of wire that are twisted together to form a single conductor. These are flexible, and typically used for pre-made Ethernet and other network patch cables. A [solid Ethernet cable](#) is just that, it has a solid copper core. Solid cables are fabricated with a single, solid strand of copper for each of the 8 conductors. These cables work best for permanent set-ups, as they are rigid and are not very portable. Solid Ethernet cable is designed to be installed in structured set-ups, such as in-wall installations, as well as to be terminated to a 110-style punch down.

Plenum Vs Non-Plenum

Two of the main questions that we at CableWholesale get about [plenum Ethernet cables](#) are where are they used, and why are they more expensive than other cables on the market? The answer is plenum cables are designed for use in what is known as the "plenum" area of a building. This is the area between floors where air circulates throughout the building. The National Fire Protection Association has outlined fire and building safety standards regarding what type of jacket cables must have if they will be placed in a plenum area. Before installation, these cables must first obtain a "plenum" rating, meaning they must meet certain requirements. This includes being constructed with a fire-retardant jacket constructed out of a non-flammable material, which is typically a low-smoke polyvinyl chloride (PVC) jacket. This will ensure that the cable will not emit toxic smoke in the event of a fire. This will also prevent the cable from reigniting after self-extinguishing. These are important factors when a cable is placed in an area where air is circulating, as the smoke that is emitted from the cable will be pushed out of the air ducts throughout the building. The most popular styles of cable that come in plenum include coax, networking and security cables. Plenum cables are also referred to as a "CMP" type.

Shielded (FTP/STP) Vs Non-Shielded (UTP)

On the quest for cables you may run into the [shielded variety of Ethernet cables](#), and wonder in what situation you might need a shielded option? Shielded cables are necessary in busy electrical environments, where there is a high level of electromagnetic interference, otherwise known as EMI. These cables are designed to block out EMI with aluminum. They are built with an aluminum protective cover

which surrounds the cable's internal wires. This aluminum shield deflects "noise" from other electromagnetic devices.

Non-shielded is also referred to as "UTP" which stands for unshielded twisted pair. Alternately, shielded is referred to as "FTP" which stands for foiled, twisted pair. There is also "STP", which stands for shielded, twisted pair. While an "FTP" cable has a foil shield around the entire cable, an "STP" cable has a foil shield around each of the four individual twisted pairs.

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