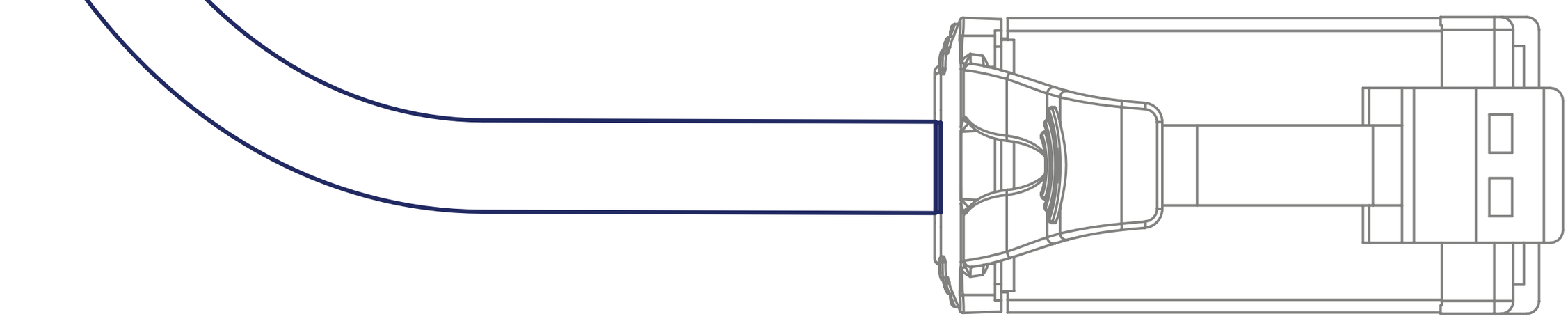
Inside Your Ethernet Cable:

Stranded vs. Solid Patch Cords



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In data cabling, there are two primary types of copper cables:

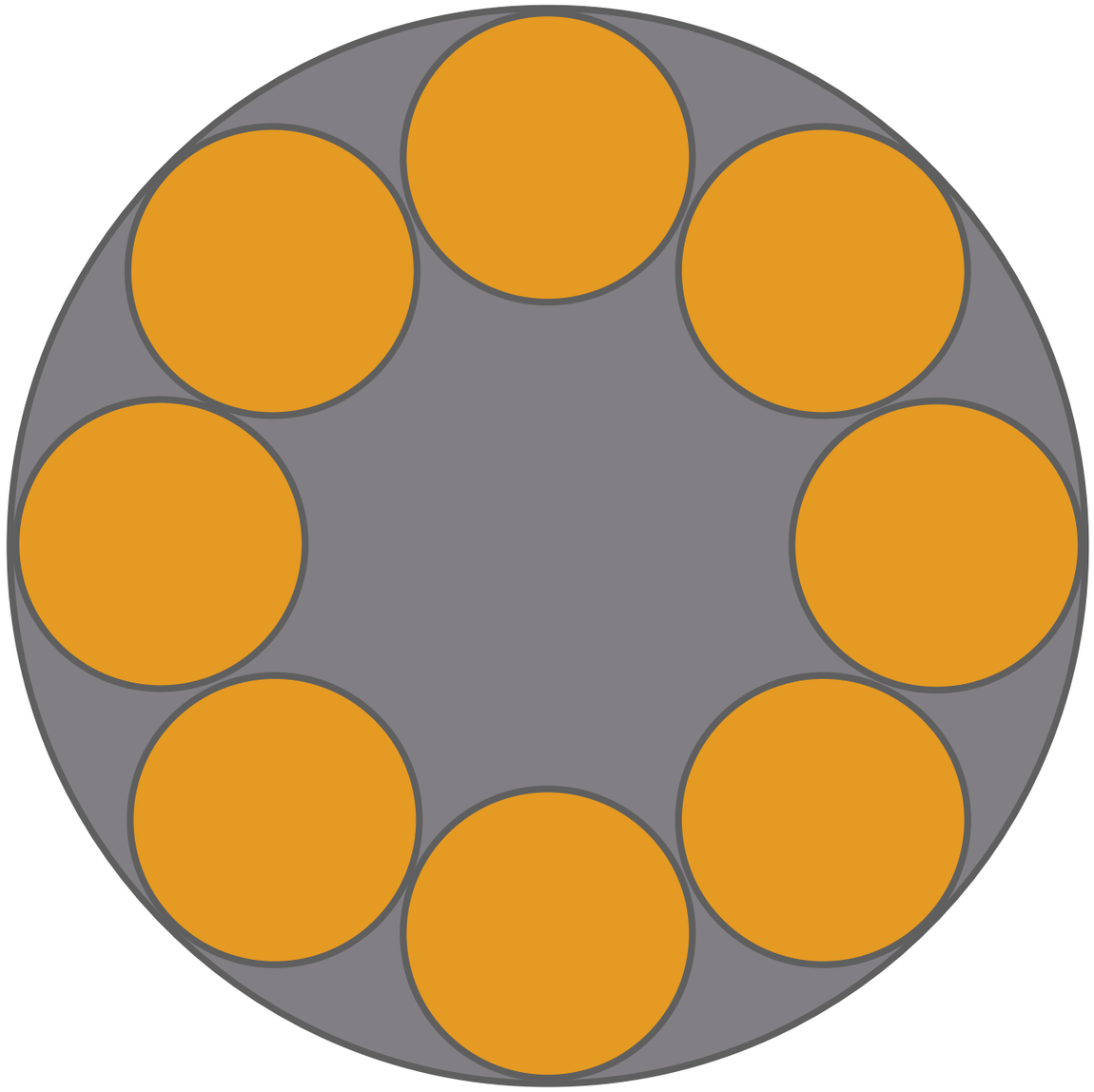
1. Solid conductor

2. Stranded conductor

Each of these cables has their place for typical LAN environments, depending on the network infrastructure application.

Solid Conductor Cables

Solid conductor category rated cables consist of 8 conductors, each made from a single solid piece of copper wire. The size of this piece of copper wire is defined by the gauge size, typically 24 or 23 AWG in data cabling applications.



ADVANTAGES

- Lower cost
- Easily punched down on jacks and patch panels
- Less resistance
- More rigid, making them more durable to impact and abrasion

DISADVANTAGES

- Conductors can break when there is regular flexing or vibration
- Larger bend radius
- Conductors or spades can break when terminated to an RJ-45 plug
- Less portable

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Horizontal permanent links

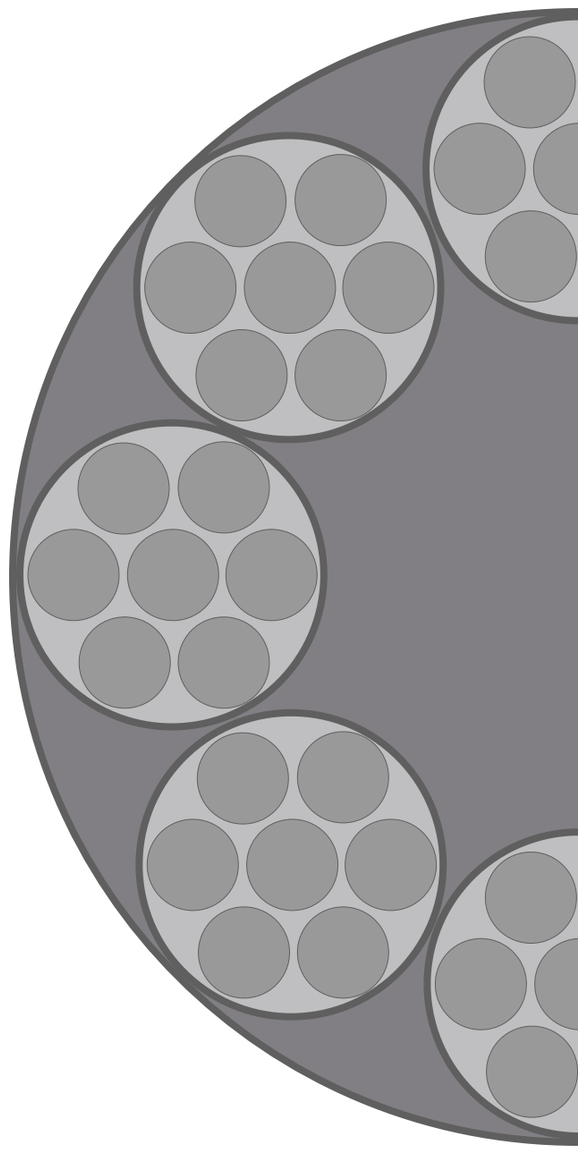
Applications without climate control. These cables generally have a higher temperature rating

RECOMMENDED APPLICATIONS

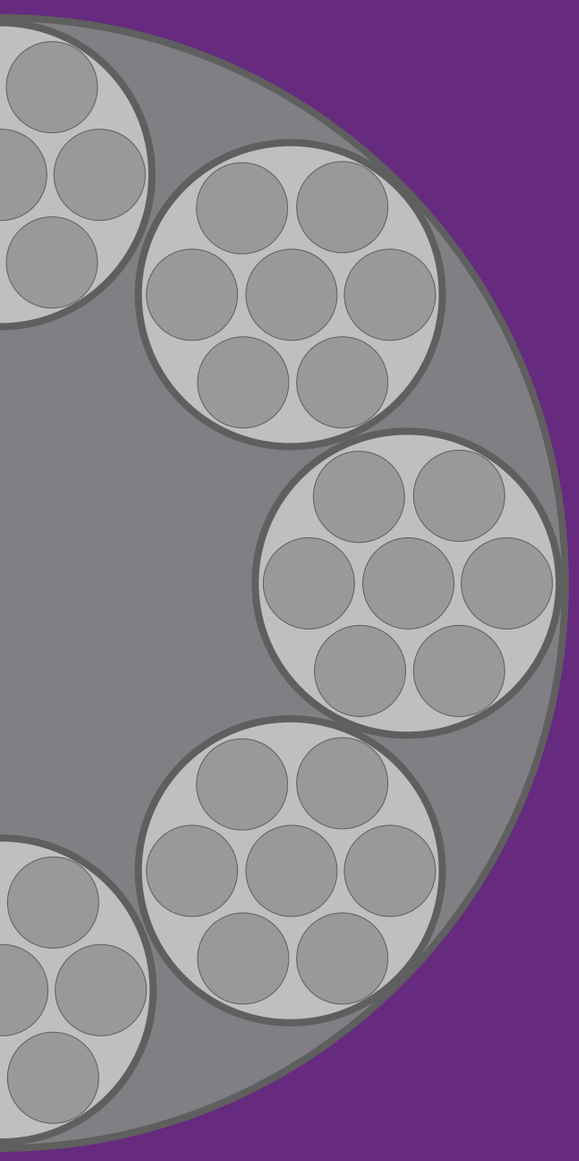
Applications where there is not a lot of manipulation of the cable after installation

High levels of PoE or large bundles. Larger conductors carry electricity more efficiently

Stranded Conductor Cables



Stranded conductor category rated cables consist of 8 conductors, each made from multiple strands of small gauge wires wound together to form a single conductor, like a rope or braid. Stranded conductor size is represented using 2 numbers. For example, 7x32 indicates that there are 7 strands of 32 AWG conductor making up a single conductor.



ADVANTAGES

- More flexible
- Can withstand flexing without fatigue and breaking
- Smaller bend radius

DISADVANTAGES

- More expensive to produce
- Higher resistance

Patch cords for equipment connections

Patch cords for cross connects

RECOMMENDED APPLICATIONS

Work area cords

Installations with limited space – cable flexibility is critical when bending to fit

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In summary, both solid and stranded conductor cables have uses within the cabling infrastructure of a building, however based on demands of the application **solid conductor cables are best utilized for horizontal cabling,** and **stranded** are designed for **patching**.

Want to learn more about stranded and solid patch cords? Visit Leviton.com/PatchCords