Classification of low voltage network wire

Low voltage data transmission cable or wire (also referred to as LAN cables or network cables) are generically called UTP (Unshielded Twisted Pair) and are identified with a Category Rating. This wire is used for telephone, computer (LAN), DSS, and security applications. Category 5, 5E, 6 and 7 wire has become the standard used in telecom and computer installations. The category rating refers to the performance level of the wire. The higher the category, the higher the shielding and data transfer rate. Not only will Category 5, 6 & 7 wire reject more interference than standard phone wire, they will also support high-speed data transmission equipment now and in the future. Each wire has 4 twisted pairs of insulated copper wire and is capable of supporting up to 4 phone lines or one Ethernet connection. Category 5 wire is rated at 100MHz; Category 5E wire is rated at 350MHz; and Category 6 wire is rated at 550MHz

- **EIA/TIA 568 and ISO/IEC 11801 wiring grades definitions:**

- **Grade 1, Grade 2, Category 3 and Category 4** - (Obsolete)

- **Category 5** - Unshielded twisted pair with 100 ohm impedance and electrical characteristics supporting transmission at frequencies up to 100 MHz. (Superseded by Cat5e)

- **Category 5e** - "Enhanced Cat 5" exceeds Cat 5 performance. It has improved specifications for NEXT (Near End Cross Talk), PSELFEXT (Power Sum Equal Level Far End Cross Talk), and Attenuation. (Minimum acceptable wiring grade)

- **Category 6** - In June 2002 TIA approved specification for Cat 6. Cat 6 is backward compatible with lower Category grades and supports the same Ethernet standards as Cat 5e.

- **Category 7** - Proposed standard to support transmission at frequencies up to 600 MHz. One of the distinguishing characteristic of this cable is that each pair is shielded and the then whole cable is shielded. 10 gigbit transmission speeds to 100 meters

NOTES:
1) EIA 568 limits UTP copper cabling to maximum distance of 100 meters (328 feet)
2) Bravo only use Cat 6 or better

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