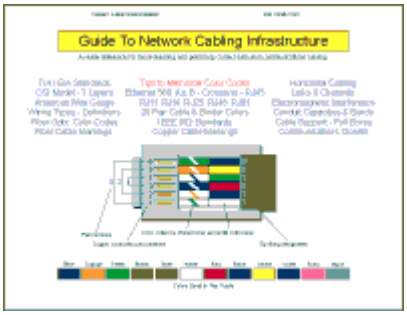
Huffman Reference Materials

Guide To Network Cabling Infrastructure

"Owners Manual"

This manual provides a brief overview of each section of the "Guide to Network Cabling Infrastructure". It explains ways you might take advantage of this guide.

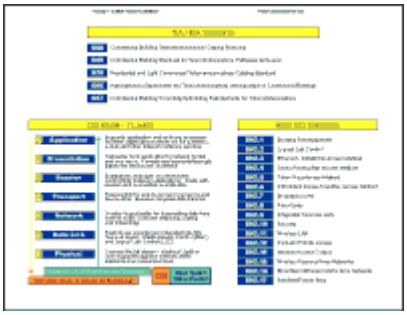


The cover lists the contents of the guide. It is the only place the various colors used throughout the guide are labeled. You will quickly learn these colors by utilizing the tips we provide.

The graphic of the plug shown on the cover includes labels explaining what information is being represented by similar graphics inside the guide.

The wire colors are presented both as striped and solid color wires. You may encounter both styles of wiring while installing network cabling. This side-by-side format is designed to make it easy to transition from one type of wire to another.

Example: You are asked to wire a wall jack to accept an RJ14 plug. You are using striped wire but the color codes embossed on the back of the wall plate refer to solid color wires only. No problem! By glancing at the RJ14 wiring diagram inside the guide, you can immediately tell that the orange wire with the white stripe is used where the yellow wire is called for on the wall jack.

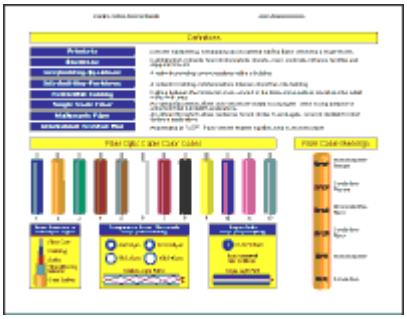


The TIA / EIA Standards listed are those you will encounter most often when installing or working on a network infrastructure.

TIA stands for "Telecommunications Industry Association" and EIA stands for "Electronic Industries Alliance". Both organizations publish standards that apply to network cabling and much more.

The 7 layers of the OSI Model are shown and defined. Included are tips (catch phrases) that will help you memorize the names of the layers in both directions. OSI is an abbreviation for "Open System Interconnection".

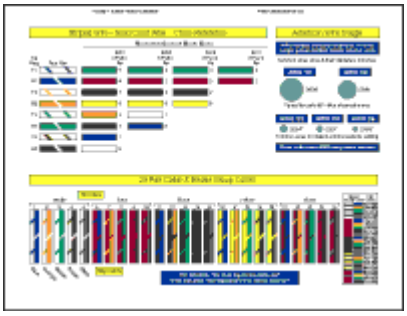
The IEEE 802 Standards listed are from the "Institute of Electrical and Electronics Engineers". They deal with many aspects of networking.



The definitions provided cover many of the types of wiring you will encounter: premises, backbone, horizontal etc.

The fiber optic portion of this page shows you color codes and the basic structure of a fiber cable. It also graphically depicts the differences between multimode and single mode fiber optic cables.

Fiber cable markings are displayed and defined. These are printed repeatedly down the length of a cable to identify its intended (approved) use.

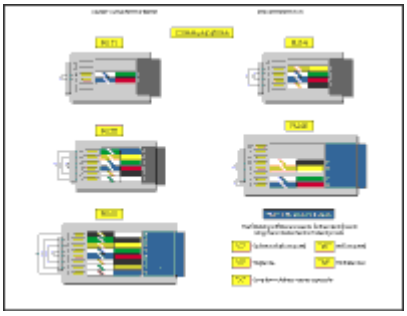


The cross reference chart shows common USOC configurations and lets you instantly see how to switch between solid color and striped wire. USOC means "Universal Service Order Code".

The American Wire Gauge chart demonstrates the fact that a higher AWG number means a smaller wire diameter. Common sizes you will encounter are shown.

25 pair cables are common in communications networks. Memorizing the 10 colors used to code the wire pairs will allow you to properly utilize this type of cable. We provide tips to make remembering the colors, in order, a snap!

The Binder Group Colors may be referred to when you encounter larger cables containing hundreds of pairs of wire. Each 25 pair set within the larger cable is wrapped with color coded "binders" to show its position in the overall cable. The colors shown encompass a cable comprising up to 600 pairs of wire.



RJ = "Registered Jack". These are standard configurations used throughout the telecommunications and data fields.

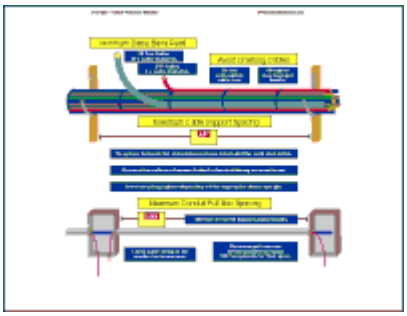
Both solid and striped wire colors are shown, as well as pin numbers, pair numbers and Tip & Ring designations.

The suffixes further identify a jack's configuration.

Wire an Ethernet cable, either straight through or crossover by following this chart. Only striped wires used here!

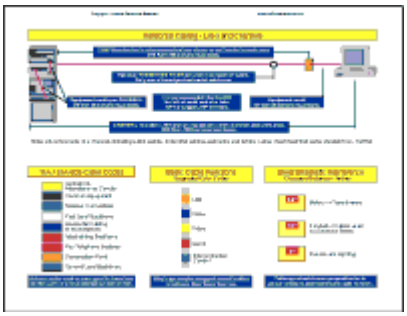
Copper cable markings (printed down the side of the cable) are shown. They indicate the intended use of the cable.

Our conduit chart lets you quickly determine an appropriate size conduit based on the wires you are using.



Installing cabling properly requires adherence to guidelines designed to protect the cables from damage. Proper support and avoiding kinks, knots, stretching and splices are critical to a successful installation.

Conduit pull boxes are used for long cable runs. They must be placed regularly along the cable path as shown. Remember that pull string for future use!



Horizontal cabling includes links and channels. There are specific guidelines that must be followed in order to ensure you install a network infrastructure that will perform properly.

The "606" color codes are spelled out by TIA/EIA for use in telecommunications closets. They denote various types of equipment and their placement on the wall.

The graphic labeled "Basic Cable Functions" demonstrates a handy technique to keep bundles of cables well organized and identifiable. Mark them to show their most basic function: "LAN", "Video", etc. The colors are suggestions – what is most important is that a consistent color scheme be used within an office/campus, etc.

Clearance distances needed to avoid electromagnetic interference are shown. Real-world situations dictate what distances can actually be achieved, but this graphic makes it clear what you will want to avoid with your copper cable runs. Fiber optic cables are immune to this type of interference.

Enjoy your Guide and utilize it to help you create high-quality installations that perform properly and meet industry standards. Every portion of every job is a reflection of your dedication to excellence. Take pride in your work!

FYI:

The "Guide to Network Cabling Infrastructure" is printed on 8½" x 11" 110 lb. low-sheen paper designed for easy viewing without glare. The 3-ring binder holes are reinforced with Mylar® strips for additional strength.

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