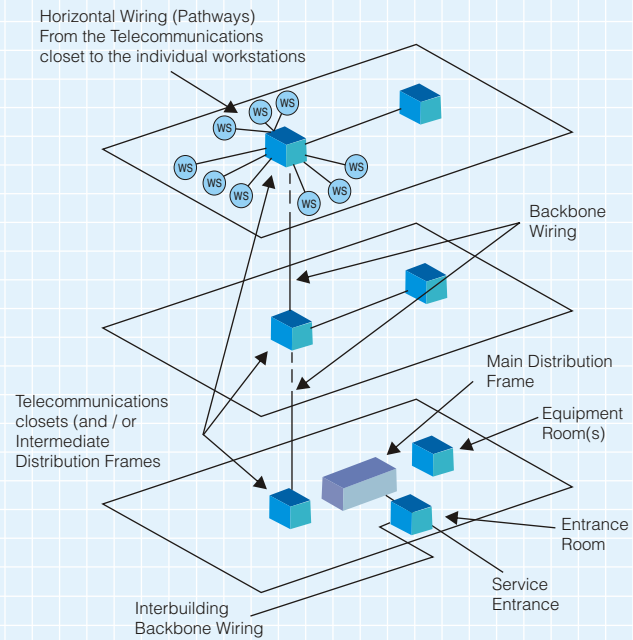
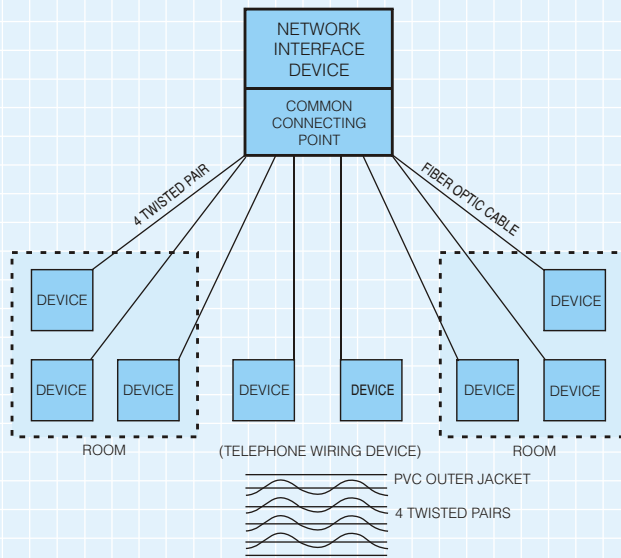


## General Installation Tips



### TIA Preferred Wiring Method

The wiring method preferred by the Telecommunication Industry Association (TIA) is a star wiring method (see fig below). Each individual workstation in a residential or commercial building is wired directly to the distribution device with four-pair twisted wire or fiber optic cable.

### Star Topology

The star topology uses a hierarchical series of distribution frames. The backbone includes the main distribution frame (MDF) and the optional intermediate distribution frame (IDF). The first level, the MDF, links to other levels via the backbone cabling. The MDF may link to the third and final level, the telecommunications closet (TC) directly, or in large installations it may link to some TCs via an optional second level, the intermediate distribution frame (IDF). The TC terminates the backbone cable and cross-connects to the horizontal cabling. The horizontal cabling terminates in the work area at the workstation (WS).

### General

Horizontal cabling is the cabling from the telecommunications closet to the work-area. It includes the cross-connections in the telecommunications closet; horizontal cabling; and the outlet at the work areas.

Commercial building horizontal cabling should be installed such that it will :

- Facilitate ongoing maintenance, relocations, and additions
- Accommodate future equipment and service changes
- Accommodate a diversity of user applications, including voice, data, LAN, switching, and other building services

### Roughing In Correctly

The following are general rules for running cable, whether residential, or commercial:

- **Always make a quick check for shorts, opens, and ground when the rough-in is completed.** Lightweight telephone wiring is much easier to damage than non-metallic cable. The jacket can be caught on sharp edges or nail points and inside conductors grounded, shorted, or broken. It will take just a few minutes to insure that no connections or splicing were forgotten and that no wiring was damaged as it was pulled in or secured during rough-in.
- **Do not splice wires on the cable runs.** Pull a new wire if things go wrong.
- **Do not exert more than 25 pounds of pulling tension on 4-pair cables.** Larger capacity cables should be pulled as per the manufacturers directions.
- **Do not run cables in parallel with power wiring.** Consult industry standards for minimum separation of telecommunications cable from interference sources.
- **DO not bend cable sharply or nick the protective sheath covering the insulated wires.**
- **Maintain polarity.** (i.e., carefully match wire colors) of the Tip (+) and Ring (-) pairs from the demarcation point to the outlets. Polarity reversal causes problems with some devices.
- **Maintain the access line number correlation with the pair number.** (i.e., access line once goes to pair one, and so forth) when wiring connectors.
- **Use the two inner pairs of housing for telecommunications.** Use the outer pairs of the connector for other purposes (if any) to provide compatibility with two-line telephones.
- **Use plastic non-metallic staples** to support wire, and leave the wire loose inside the staples-do not drive staples all the way in. Driving staples in tightly may crimp wire and damage the insulation or wire, impairing its ability to carry voice or data.