

Federal Telecommunications Recommendation 1090-1997

11 August 1997

COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING STANDARD

Federal Telecommunications Recommendations (FTR) are issued by the Technology and Standards Division, National Communications System (NCS), after approval by the Federal Telecommunication Standards Committee and the Deputy Manager, NCS, pursuant to Executive Order 12472, NCS Directive 4-1, and Public Law 104-113.

1. **Name of Recommendation.** Commercial Building Telecommunications Cabling Standard.
2. **Category.** Cables and Wiring.
3. **Explanation.** This recommendation specifies minimum requirements for telecommunications cabling within a building and between buildings in a campus environment. The specifications provide for a cabling system with a recommended topology and recommended distances, for copper and optical-fiber transmission media by parameters that determine performance, and for connectors and their pin assignments to ensure interconnectability. This recommendation is based on ANSI/TIA/EIA-568-A-1995, which replaces ANSI/EIA/TIA-568-1991 (FIPS PUB 174).
4. **Approving Authority.** Deputy Manager, National Communications System.
5. **Maintenance Agency.** Technology and Standards Division, National Communications System.
6. **Related Documents.**
 - a. ANSI/EIA/TIA-569-1990, Commercial Building Standard for Telecommunications Pathways and Spaces.
 - b. ANSI/EIA/TIA-570-1991, Residential and Light Commercial Telecommunications Wiring Standard.
 - c. ANSI/TIA/EIA-606-1993, Administration Standard for the Telecommunications Infrastructure of Commercial Buildings.
 - d. ANSI/TIA/EIA-607-1994, Commercial Building Grounding and Bonding Requirements for Telecommunications.

You may obtain copies of the related documents from:

Global Engineering Documents
7730 Carondelet Avenue
St. Louis, MO 63105
(800) 854-7179; FAX (314) 726-6418

7. Objectives. There are three purposes of this recommendation. First, it will facilitate interoperability and transportability among telecommunications facilities and systems of the Federal Government and compatibility of these facilities and systems at the computer-communications interface with data processing equipment (systems) of the Federal Government by specifying standard characteristics for building telecommunications cabling. Second, it will enable the planning and installation of building cabling with little knowledge of the telecommunications products that subsequently will be installed. Third, it will enable the successful design and provisioning of a building for telecommunications during the preliminary architectural design phase.

8. Applicability. ANSI/TIA/EIA-568-A-1995 is recommended for use (with the deletion of the optional specification as noted in section 11) by all departments and agencies of the Federal Government in the planning and design of all office buildings, when FIPS PUB 176 is not selected. This includes both the wiring of new buildings and the upgrading of existing buildings. Building telecommunications wiring defined by this recommendation is intended to support a wide range of different Federal building sites.

This includes sites with a geographical extent up to 3,000 meters (9,840 feet), up to 1 million square meters (approximately 10 million square feet) of office space, and with a population of up to 50,000 individual users. Telecommunications wiring systems defined by this recommendation are intended to have a useful life in excess of 10 years. This recommendation applies to the telecommunications wiring for Federal buildings that are office oriented. (The term **Acommercial enterprise@** is used in ANSI/TIA/EIA-568-A-1995 to differentiate between office buildings and buildings designed for industrial enterprises.) This recommendation is not intended to hasten the obsolescence of building wiring currently existing in the Federal inventory, nor is it intended to provide systems engineering or application guidelines.

9. Specifications. This recommendation adopts ANSI/TIA/EIA-568-A-1995 with one important change to the industry standard.

In the interest of optimizing transportability, the ANSI/TIA/EIA-568-A-1995 optional eight-position jack pin/pair assignments for the 100-ohm UTP telecommunications work-area outlet specified in figure 10-2 (and referenced in paragraph 2 of section 10.4.5) will not be used.

10. Where to Obtain Copies. Additional copies of this document can be obtained from the National Communications System, Technology and Standards Division (N6), 701 South Court House Road, Arlington, VA 22204-2198. When requesting copies, refer to Federal Telecommunications Recommendation 1090-1997, Commercial Building Telecommunications Cabling Standard.