

APPENDIX K

BUILDING TELECOMMUNICATIONS CABLING AND INFRASTRUCTURE

1 PURPOSE

This appendix establishes policies and assigns responsibility for use of and compliance with the appropriate Federal Information Processing Standards Publications (FIPS PUBs) and Federal Telecommunications Recommendations (FTRs) as the standards for specifying requirements for Building Telecommunications Wiring and Infrastructure in Federal office buildings and building complexes.

2 BACKGROUND

Before the 1950s, planning for telecommunications facilities was not perceived as a significant factor in the design and construction of a building. However, the economic penalties of this perception became clear in the 1950s and an understanding evolved that the building and telecommunications industries had to work more closely as a team. Technological advances of the past 30 years have continued to reinforce this requirement. Telecommunications managers shall be aware of building codes and standards governing the installation practices and materials used in the construction of telecommunications facilities. The purpose of codes and standards is to ensure the quality of construction and protect life, health, and property.

3 REFERENCES

<u>Source</u>	<u>Publication</u>	<u>Title/Subject</u>
NCS	Federal Standard	Telecommunications: Glossary of Telecommunications Terms 1037C
NCS	Federal Recommendation Commercial (FTR)1090-1997	Telecommunications Blding Telecommunications Cabling Standard
NIST	FIPS PUB 175	Federal Building Standard for Telecommunications Pathways and Spaces

NIST	FIPS PUB 176	Residential and Light Commercial Telecommunications Wiring Standard
NIST	FIPS PUB 187	Administration Standard for the Telecommunications Infrastructure of Federal Buildings
NIST	FIPS PUB 195	Grounding and Bonding Requirements for Telecommunications in Commercial Buildings

4 ABBREVIATIONS

- CIO - Chief Information Officer
- FIPS - Federal Information Processing Standards
- FTR - Federal Telecommunications Recommendations
- GWAC - General Services Administration Wiring and Cabling Contract
- OCIO - Office of Chief Information Officer
- TSO - Telecommunications Services and Operations

5 POLICY

- a The use of the standards specified in the FTR and FIPS PUBs are mandatory and binding for the acquisition of new equipment and services by all Departments and Agencies of the Federal Government.
- b Agencies and staff offices shall specify in solicitations or contracts that all wiring shall comply with FTR 1090-1997, Commercial Building Telecommunications Cabling Standard. The standard shall be used by all agencies and staff offices in the planning and design of all office buildings, including both the wiring of new buildings and the upgrading of existing plant in both Federal and leased non-Federal buildings, when FIPS PUB 176 is not selected.
- c Agencies and staff offices responsible for the architectural design of new buildings shall comply with the provisions of FIPS PUB 175, Federal Building Standard for Telecommunications Pathways and Spaces.

d Agencies and staff offices responsible for wiring small buildings shall comply with the provisions of FIPS PUB 176, Residential and Light Commercial Telecommunications Wiring Standard. The standard shall be used by all agencies and staff offices responsible for the planning and design of premises-wiring systems, when FTR 1090-1997 is not selected.

e Agencies and staff offices responsible for the administration of the telecommunications infrastructure (telecommunications equipment spaces, cable pathways, bonding/grounding, wiring, and termination hardware) shall comply with the provisions of FIPS PUB 187, Administration Standard for the Telecommunications Infrastructure of Federal Buildings.

f Agencies and staff offices responsible for the design, maintenance, renovation, or retrofit of telecommunications grounding systems within new or existing Federal buildings shall comply with the provisions of FIPS PUB 195, Federal Building Grounding and Bonding Requirements for Telecommunications.

g Under certain exceptional circumstances, the heads of Federal departments and agencies may approve waivers to the Federal Information Processing Standards (FIPS). The head of such agency may redelegate such authority only to a Chief Information Officer (CIO) designated pursuant to Section 3506 of Title 44, U.S.C.

Waivers shall be granted only when:

- (1) Compliance with a standard would adversely affect the accomplishment of the mission of an operator of a federal computer system, or
- (2) A major adverse financial impact on the operator, which is not offset by government wide savings, would result.

An agency requesting a waiver to a Federal Information Processing Standard, shall submit a decision paper to the Office of the Chief Information Officer (OCIO). The paper shall include an issue statement, background, and rationale on why the conditions for meeting the standard cannot be met.

6 RESPONSIBILITIES

a The Office of the Chief Information Officer will:

- (1) Represent the United States Department of Agriculture (USDA) in the Federal, National, and industry standards development process; and
- (2) Manage and oversee the implementation of the above FIPS and FTR at the following locations:

- (a) Washington, DC Metropolitan Area (area covered by WITS);
- (b) Kansas City, MO Metropolitan Area;
- (c) Fort Collins, CO Metropolitan Area; and
- (d) Other locations as specified by the CIO.

b Agencies and Staff Offices will:

- (1) When developing telecommunications cost estimates for lease renewals or building moves, determine the cost of applying the standards. Where cost savings can be achieved and improvements in service and safety are realized, they will be included. Agencies should survey the existing building telecommunications infrastructure to ensure that it supports advanced technology and is compatible with modern telecommunications equipment;
- (2) Review the General Services Administration Wiring and Cabling Contract (GWAC) to determine if it is a cost effective solution;
- (3) Obtain waivers and approval from the Office of the Chief Information Officer when the agency or staff office requirements cannot be met under the above standards; and
- (4) Obtain approval for new wiring from OCIO/Telecommunications Services and Operations (TSO) prior to making changes to the building wiring infrastructure in new Departmental buildings such as the Beltsville Office Facility.

7 DEFINITIONS

- a Bonding. The permanent joining of metallic parts to form an electrical conductive path that will assure electrical continuity and the capacity to conduct safely any electrical current likely to be imposed.
- b Ground. A conducting connection, whether intentional or accidental, between an electrical circuit or equipment and the earth, or to some conducting body that serves in place of the earth.
- c Pathway. A facility for the placement of telecommunications cable.
- d Building Telecommunications Infrastructure. A collection of those telecommunications components, excluding equipment, that together provide the basic support for the distribution of all information within a building or campus.

8 COPIES OF RELATED DOCUMENTS

a Copies of FIPS are available from:

National Technical Information Service (NTIS)ATTN: Sales Office, Sills Building, 5285
Port Royal Road, Springfield, VA 22161, TEL (703) 487-4650

Copies of FTR's are available from:

National Communications System,Technology and Standards Division (N6), 701 South
Court House Road, Arlington, VA 22204-2198, TEL (703) 607-6204

b Copies of the specifications and related documents can be obtained from:

ANSI and ISO American National Standards Documents Institute, 11 West 42nd Street,
New York, NY 10036, TEL (212) 642-4900, FAX (212) 302-1286

ITU-T and Phillips Business Information, Inc.

CCITT OMNICOM Documents, 1201 Seven Locks Road, Suite 300, Potomac, MD
20854, TEL (800) 666-4266

ITU-T National Technical Information Service Recommendations, U S Department of
Commerce, Springfield, VA 22161, TEL (703) 487-4650

ANSI/EIA/TIA Global Engineering Documents Recommendations, 7730
Carondelet Avenue, St. Louis, MO 63105, Tel (800) 854-7179, FAX (314) 726-6418