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FEDERAL INFORMATION PROCESSING STANDARDS PUBLICATION  
(Former Draft Federal Standard 1091)

# FEDERAL BUILDING STANDARD FOR TELECOMMUNICATIONS PATHWAYS AND SPACES

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CATEGORY: TELECOMMUNICATIONS STANDARD      SUBCATEGORY: CABLES AND WIRING

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## FEDERAL BUILDING STANDARD FOR TELECOMMUNICATIONS PATHWAYS AND SPACES

CATEGORY: TELECOMMUNICATIONS STANDARD      SUBCATEGORY: CABLES AND WIRING

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## Foreword

The Federal Information Processing Standards Publication Series of the National Institute of Standards and Technology (NIST) is the official publication relating to standards and guidelines adopted and promulgated under the provisions of Section 111(d) of the Federal Property and Administrative Services Act of 1949 as amended by the Computer Security Act of 1987, Public Law 100-235. These mandates have given the Secretary of Commerce and NIST important responsibilities for improving the utilization and management of computer and related telecommunications systems in the Federal Government. The NIST, through its Computer Systems Laboratory, provides leadership, technical guidance, and coordination of Government efforts in the development of standards and guidelines in these areas.

Comments concerning Federal Information Processing Standards Publications are welcomed and should be addressed to the Director, Computer Systems Laboratory, National Institute of Standards and Technology, Gaithersburg, MD 20899.

James H. Burrows, Director  
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## Abstract

This standard, by adoption of ANSI/EIA/TIA-569-1990, Commercial Building Telecommunications Pathways and Spaces, specifies minimum requirements for telecommunications pathways and spaces within a Federal office building and between office buildings in a campus environment. This standard recognizes a background precept of fundamental importance: to have a building successfully designed, constructed, and provisioned for telecommunications, it is imperative that the telecommunications design be incorporated during the preliminary architectural design phase.

Key words: building design; building planning; building wiring; Federal Information Processing Standard; telecommunications equipment; telecommunications pathways; telecommunications spaces.

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**Announcing the Standard for**

**FEDERAL BUILDING STANDARD FOR TELECOMMUNICATIONS  
PATHWAYS AND SPACES**

Federal Information Processing Standards Publications (FIPS PUBS) are issued by the National Institute of Standards and Technology (NIST) after approval by the Secretary of Commerce pursuant to Section 111(d) of the Federal Property and Administrative Services Act of 1949 as amended by the Computer Security Act of 1987, Public Law 100-235.

**1. Name of Standard.** Federal Building Standard for Telecommunications Pathways and Spaces (FIPS PUB 175) (Former Draft Federal Standard 1091).

**2. Category of Standard.** Telecommunications Standard; cables and wiring.

**3. Explanation.** This standard, by adoption of ANSI/EIA/TIA-569-1990, Commercial Building Telecommunications Pathways and Spaces, specifies minimum requirements for telecommunications pathways and spaces within a Federal office building and between office buildings in a campus environment. This standard recognizes a background precept of fundamental importance: to have a building successfully designed, constructed, and provisioned for telecommunications, it is imperative that the telecommunications design be incorporated during the preliminary architectural design phase.

**4. Approving Authority.** Secretary of Commerce.

**5. Maintenance Agency.** National Communications System, Office of Technology and Standards.

**6. Related Documents.**

a. Federal Information Resources Management Regulations subpart 201-20.303, Standards, and subpart 201-39.1002, Federal Standards.

b. Federal Standard 1037B, Glossary of Telecommunications Terms.

c. Federal Information Processing Standards Publication (FIPS PUB) 174, Federal Building Telecommunications Wiring Standard (Former Draft Federal Standard 1090).

d. Federal Information Processing Standards Publication (FIPS PUB) 176, Residential and Light Commercial Telecommunications Wiring Standard (Former Draft Federal Standard 1092).

e. Future Federal Information Processing Standards Publication (FIPS PUB), Grounding and Bonding Requirements for Telecommunications in Federal Buildings (Draft Federal Standard 1093).

f. Future Federal Information Processing Standards Publication (FIPS PUB), Administration Standard for the Telecommunications Infrastructure of Federal Buildings (Draft Federal Standard 1094).

At the time of publication of this standard, the editions indicated above were valid. All publications are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these publications.

**7. Objectives.** The purpose of this standard is to specify design and construction practices for pathways and spaces, which are in support of telecommunications media and equipment, within and between Federal office buildings. Standards are given for rooms, areas, and pathways into and through which telecommunications equipment and media are to be installed.

**8. Applicability.** American National Standard/EIA/TIA-569-1990 shall be used by all departments and agencies of the Federal Government in the planning and design of all office buildings.

**9. Specifications.** This FIPS adopts ANSI/EIA/TIA-569-1990, Commercial Building Telecommunications Pathways and Spaces.

**10. Implementation.** The use of this standard by Federal departments and agencies is compulsory and binding for the acquisition of new equipment and services, effective March 1, 1993.

Adherence to a standard that specifies standardized building architectural design for the accommodation of telecommunications system wiring contributes to the economic and efficient use of resources. Such design is necessary to facilitate development of interoperable inter- and intrabuilding telecommunication systems.

**11. Waivers.** Under certain exceptional circumstances, the heads of Federal departments and agencies may approve waivers to Federal Information Processing Standards (FIPS). The head of such agency may redelegate such authority only to a senior official designated pursuant to Section 3506(b) of Title 44, U.S. Code. Waivers shall be granted only when:

- a. Compliance with a standard would adversely affect the accomplishment of the mission of an operator of a Federal computer system or related telecommunications system, or
- b. Cause a major adverse financial impact on the operator which is not offset by Governmentwide savings.

Agency heads may act upon a written waiver request containing the information detailed above. Agency heads may also act without a written waiver request when they determine that conditions for meeting the standard cannot be met. Agency heads may approve waivers only by a written decision which explains the basis on which the agency head made the required finding(s). A copy of each such decision, with procurement sensitive or classified portions clearly identified, shall be sent to: National Institute of Standards and Technology; Attn: FIPS Waiver Decisions, Technology Building, Room B-154; Gaithersburg, MD 20899.

In addition, notice of each waiver granted and each delegation of authority to approve waivers shall be sent promptly to the Committee on Government Operations of the House of Representatives and the Committee on Government Affairs of the Senate and shall be published promptly in the *Federal Register*.

When the determination on a waiver applies to the procurement of equipment and/or services, a notice of the waiver determination must be published in the *Commerce Business Daily* as a part of the notice of solicitation for offers of an acquisition or, if the waiver determination is made after the notice is published, by amendment to such notice.

A copy of the waiver, any supporting documents, the document approving the waiver and any supporting and accompanying documents, with such deletions as the agency is authorized and decides to make under 5 U.S.C. Sec. 552(b), shall be part of the procurement documentation and retained by the agency.

**12. Special Information.** This standard has been reviewed by the Metrication Operating Committee of the Interagency Committee on Metric Practice, for consistency with accepted metric practice only, and is designated an *accepted metric standard*. Use of this standard in its area of applicability complies with the provision of the Omnibus Trade and Competitiveness Act of 1988 (Pub. L. 100-418, section 5164) that requires Federal agencies, with certain limitations and exceptions, to use the metric system of measurement in procurements, grants, and other business-related activities. (See also 15 CFR Part 19 as amended February 1, 1991.)

**Metric Data.** Where this standard contains dual dimensions, the metric data shall be controlling, and the inch-pound data shall be understood to be for information only. Nothing in this standard shall be interpreted, however, as requiring any departure from standard trade sizes, as for conduit and electrical conductors, in common use in the United States.

**Exception.** The following is substituted for Section 8.2.1.2, *Floor Loading*, of the industry standard:

Floor loading capacity in the equipment room shall be sufficient to bear both the distributed and concentrated load of the installed equipment. The capacity for distributed loading shall be greater than 1220 kilograms per square meter. The capacity for a concentrated load shall be greater than 450 kg.

**13. Where to Obtain Copies.** Copies of this publication are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161. (Sale of the included specifications document is by arrangement with the Electronic Industries Association.) When ordering, refer to Federal Information Processing Standards Publication 175 (FIPSPUB175), and the title. Payment may be made by check, money order, purchase order, credit card, or deposit account.

## APPENDIX

By adoption of ANSI/EIA/TIA-569-1990, this document provides Federal departments and agencies with an architecture for the pathways and spaces in Federal office buildings for the accommodation of the building wiring recommended in Federal Information Processing Standard 174 (Former Draft FED-STD-1090). This standardization will facilitate the use of the telecommunications wiring infrastructure specified in FIPS 174, thus enhancing the interoperability and transportability of terminals for Federal users.

The industry standard adopted by this Federal Information Processing Standard (Former Draft FED-STD-1091), ANSI/EIA/TIA-569-1990, Commercial Building Standard for Telecommunications Pathways and Spaces, is the result of a joint Canadian and United States effort by the Canadian Standards Association (CSA) and the Telecommunications Industry Association (TIA)<sup>1</sup>.

This standard has a special relationship to the ANSI/EIA/TIA-568-1991, Commercial Building Telecommunications Wiring Standard (adopted as Federal Information Processing Standard 174, Former Draft FED-STD-1090). This latter standard recognizes that building wiring cannot be standardized without standardizing also the architecture of the building itself into which building wiring systems are to be installed – the purpose of this document.

Another companion standard, ANSI/EIA/TIA-570-1991, Residential and Light Commercial Telecommunications Wiring Standard, is adopted as Federal Information Processing Standard 176 (Former Draft FED-STD-1092).

During the development of this family of building telecommunications standards, significant concern was raised, by both Government and industry, about the need to specify electronic system grounding. This concern resulted in proposed ANSI/TIA/EIA-607, Grounding and Bonding Requirements for Telecommunications in Commercial Buildings (to be adopted as a future Federal Information Processing Standard – Draft FED-STD-1093).

The complex telecommunications building infrastructure addressed by this family of standards requires continuing documentation of all building wiring and the related pathways and spaces containing that wiring. Recognizing the need for a standardized method of telecommunications administration, TIA has developed proposed ANSI/TIA/EIA-606, Administration Standard for the Telecommunications Infrastructure of Commercial Buildings, to expedite collection and updating of such information. This standard is to be adopted as a future Federal Information Processing Standard (Draft FED-STD-1094).

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<sup>1</sup> In 1988, the Telecommunications sector (specifically, the TR- and FO- Technical Committees, Subcommittees, and Working Groups) of the Electronic Industries Association (EIA) became a part of the Telecommunications Industry Association (TIA). TIA conducts the standard-developing activities, and EIA continues to publish the resultant standards, which bear the prefix "EIA/TIA," as well as "ANSI" for those documents adopted by the American National Standards Institute. Beginning in 1992, the prefix reads "TIA/EIA."









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