

# The Standards Report

Quarter 1 | 2026

The latest industry changes and what they mean to you

## IEEE 802.3 (Ethernet)

### Published Amendments to IEEE 802.3™-2018 (since last report):

- **IEEE Std. 802.3df™-2024**
  - IEEE Standard for Ethernet - Media Access Control Parameters for 800 Gb/s and Physical Layers and Management Parameters for 400 Gb/s and 800 Gb/s Operation.

### ACTIVE IEEE 802.3 PROJECTS:

- **IEEE P802.3dg - 100 Mb/s Long Reach Single Pair Ethernet**
  - **Objective:** Define a 100 Mb/s Ethernet PHY optimized for long reach (500 m) operation over a single balanced copper pair, primarily targeting industrial, building automation, and similar applications.
- **IEEE P802.3dj - 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet**
  - **Objective:** Specify next generation Ethernet PHYs supporting 200 Gb/s per lane signaling for electrical and optical interfaces, enabling total data rates from 200 Gb/s up to 1.6 Tb/s for data center, AI/ML, and high performance networking.
- **IEEE P802.3dk - Greater than 50 Gb/s Bidirectional Optical Access PHYs**
  - **Objective:** Define bidirectional optical PHYs exceeding 50 Gb/s to support access network applications where simultaneous upstream and downstream transmission over a single fiber is required.
- **IEEE P802.3dp - Cabling Restrictions for Single Pair Power over Ethernet**
  - **Objective:** Define cabling and installation constraints (including sheath sharing in a multi-pair cable) for delivering power over single pair Ethernet while ensuring safety, reliability, and consistent performance.
- **IEEE P802.3ds - 200 Gb/s per Wavelength Multimode Fiber PHYs**
  - **Objective:** Develop PHY specifications that enable 200 Gb/s per optical wavelength over multimode fiber, increasing total link capacity while minimizing fiber count in data centers.
- **IEEE 802.3 - 400 Gb/s/Lane Signaling Study Group**
  - **Objective:** Investigate the feasibility and technical requirements for Ethernet signaling at 400 Gb/s per electrical or optical lane, supporting future ultra high speed Ethernet standards.
- **IEEE 802.3 - FMP Ethernet Interoperability Study Group**
  - **Objective:** Study interoperability challenges and potential frameworks to ensure multi vendor Fault Managed Power compatibility across evolving Ethernet implementations.

### Next Meetings:

- Plenary: July 13 - 17, 2026, Montreal, Quebec, Canada
- Interim: May 11 - 15, 2026, Munich, Germany

## IEEE 802.11 (Wireless)

### Recently Published IEEE 802.11 Standards:

- **IEEE P802.11bf WLAN Sensing (Wi-Fi Sensing) - September, 2025**
  - This standard allows Wi-Fi devices to intentionally measure how radio signals change as they reflect off people, objects, or movement. Typical Applications could include presence detection (home, office), motion or gesture sensing, occupancy monitoring, smart-building automation.

### Active IEEE 802.11 Task Groups:

- **IEEE P802.1bn - Ultra High Reliability capability (aka Wi-Fi 8)**
  - **Objective:** increase throughput by 25% vs 802.3be and reduce latency by 25%. Also reduces power consumption for mobile devices operating over battery power.

## TIA TR 42

### Recently Published

#### TR 42.1 - Generic Telecommunications Cabling and Premises Cabling

- **ANSI/TIA-758-C (Customer Owned OSP):** Discussed dictionary term mis-match; voted to publish, pending updated terms from TR-42.5 this week.
- **ANSI/TIA-5017-A (Physical Network Security):** Document has not closed, will resolve comments in June.
- **TIA-TSB-162-B (Wireless Access Points):** New editor volunteered to complete updates so we can publish, per previous meeting resolution.
- **TIA-568.1-F (consolidation of 568.0, 568.1, and 862):** Comments were resolved, will go out for an approval ballot and expect to resolve comments at our June meeting.
- **TIA TSB-6000 (Application Tables):** Details maximum distance supported by transmission protocol, media used. To be revised annually to add any new network technology and the associated maximum distance supported.
- **TIA 942 (Data Center Infrastructure):** Approved a project request to open an Addendum to address AI needs and specifically liquid cooling to the board level and the rack level. The project will address the fact that there is no redundancy for the flow of coolant - most designs use one in and one out. This poses a risk.
- **TIA TSB-5018 (DAS):** Approved upgrading DAS document to a Standard. Expect to see a draft in June.

### TR-42.3 - Telecommunications Administration, Pathways, Spaces, Bonding and Grounding

- **ANSI/TIA-569-F (Pathways and Spaces):** Comment resolution started but was not completed. Will issue another Call for Comments and combine unresolved comments with new comments to resolve at June meeting.
- **TIA-606-E (Administration):** Completed comment resolution. Editor will updated draft and send definitions to TR-42.5. Disposition decision will be made at June meeting. Waiting on 568.1 and 569 to get further in the process.
- **February 2026 meeting:** Reviewed Bonding and Grounding contribution. Task group formed to look at inconsistencies and confusion in the 607 standard.

### TR-42.5 - Telecommunications Infrastructure Terms and Symbols

Requested that editors review the use of “Cabling Systems 1-3” and “Distributors 1-3” as these will be replaced in all future revisions with Horizontal Cabling System, Backbone Cabling System, Main Cross-Connect, Horizontal Cross-Connect, etc. Feedback to be reviewed by TR42.5 at the June 2026 meeting.

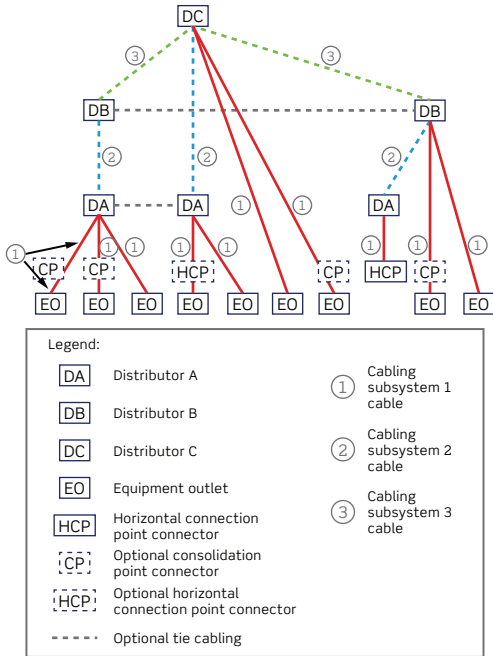
#### New definitions and Acronyms:

SC	Update	Type	Category	Current	Change to
TR42.1	2026 Feb	Modification	Definition	<b>Backbone cabling:</b> Cabling Subsystem 2 or Cabling Subsystem 3.	<b>Backbone cabling:</b> Cabling between horizontal cross-connect, intermediate cross-connect, and main cross-connect.
TR42.1	2026 Feb	Modification	Definition	<b>Backbone:</b> A facility (e.g., pathway, cable, or bonding conductor) for cabling Subsystem 2 and Cabling Subsystem 3.	<b>Backbone:</b> A facility (e.g., pathway, cable, or bonding conductor) between telecommunications spaces (e.g., telecommunications rooms, entrance facilities, and equipment rooms) within or between buildings.
TR42.1	2026 Feb	Modification	Definition	<b>Building backbone:</b> 1) Pathways or cabling between telecommunications service entrance rooms, equipment rooms, telecommunications rooms, or telecommunications enclosures within a building. (758) 2) Cabling for interconnecting telecommunications spaces from the telecommunications entrance facility to a horizontal cross-connect in a building. (570)	<b>Building backbone:</b> Pathways or cabling between telecommunications service entrance rooms, equipment rooms, telecommunications rooms, or telecommunications enclosures within a building.
TR42.3	2026 Feb	Modification	Definition	<b>Consolidation point:</b> A connection facility within Cabling Subsystem 1 for interconnection of cables extending from building pathways to the equipment outlet.	<b>Consolidation point:</b> A connection facility within horizontal cabling for interconnection of cables extending from building pathways to the equipment outlet.
TR42.9	2026 Feb	Modification	Definition	<b>Enclosure, telecommunications:</b> A case or housing that may contain telecommunications equipment, cable terminations, or horizontal cross-connect cabling.	<b>Enclosure, telecommunications:</b> A case or housing designed to contain telecommunications equipment, cable terminations, or cross-connect cabling.
TR42.1	2026 Feb	Modification	Definition	<b>Equipment outlet:</b> Outermost connection facility in a hierarchical star topology.	<b>Equipment outlet:</b> Outermost connection point for structured cabling (formerly known as telecommunications outlet in some contexts).

TR42.1	2026 Feb	Modification	Definition	<b>Equipment room (telecommunications):</b> An environmentally controlled centralized space for telecommunications equipment that usually houses Distributor B or Distributor C. (569)	<b>Equipment room (telecommunications):</b> An environmentally controlled centralized space for telecommunications equipment that usually houses the intermediate cross-connect or the main cross-connect.
TR42.1	2026 Feb	Modification	Definition	<b>Horizontal cabling:</b> Cabling Subsystem 1. (568 C.1)	<b>Horizontal cabling:</b> Cabling from horizontal cross-connect to equipment outlet.
TR42.1	2026 Feb	Modification	Definition	<b>Horizontal connection point:</b> A connection point within Cabling Subsystem 1 between distributor and equipment outlets or devices supporting intelligent building systems. [TR42.1]	<b>Horizontal connection point:</b> A connection facility within horizontal cabling [TR42.1]
TR42.1	2026 Feb	Modification	Definition	<b>Horizontal cross-connect:</b> Distributor A [TR42.1]	<b>Horizontal cross-connect:</b> Optional connection facility in a hierarchical star topology that is cabled between the equipment outlet and intermediate cross-connect or main cross-connect.
TR42.3	2026 Feb	Modification	Definition	<b>Insulation displacement contact:</b> A connection made using an insulation displacement contact.	<b>Insulation displacement contact:</b> A contact suitable for making an electrical connection with an insulated conductor.
TR42.1	2026 Feb	Modification	Definition	<b>Intermediate cross-connect:</b> Distributor B (568)	<b>Intermediate cross-connect:</b> A cross-connect between first-level and second-level backbone cabling.
TR42.1	2026 Feb	Modification	Definition	<b>Main cross-connect:</b> Distributor C	<b>Main cross-connect:</b> Central connection facility in a hierarchical star topology.
TR42.1	2026 Feb	Modification	Definition	<b>Tie cabling:</b> Cabling between distributors at the same hierarchical level.	<b>Tie cabling:</b> Cabling between cross-connects at the same hierarchical level.
TR42.1	2026 Feb	Modification	Definition	<b>Tip and ring:</b> Respective designators for the positive (ground) conductor and negative (battery) conductor of a pair.	<b>Tip and ring:</b> Respective designators for the positive (signal) conductor and negative (ground) conductor of a pair.
TR42.1	2026 Feb	New	Definition	N/A	<b>Limited energy powering applications:</b> Electrical systems that provide power for communications, signaling, and other low-voltage applications, often described as Class 2, 3, or 4 systems defined in NFPA 70.
TIA	2026 Feb	Others	Others	An editorial suggestion about the table of content format	Match with the format being used in other TIA documents
TR42.1	2026 Feb	Modification	Others	Update Figure 1	

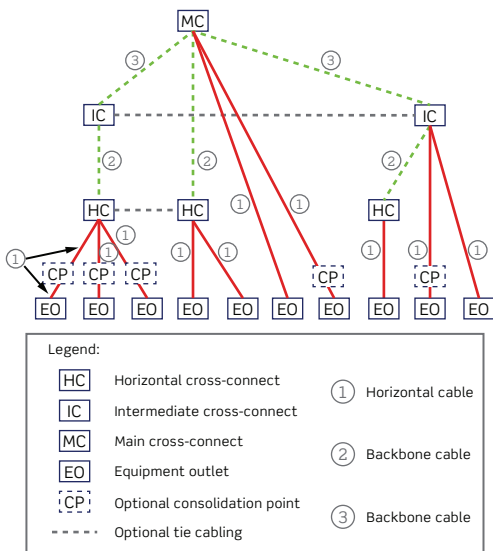
TR42.1	2026 Feb	Modification	Others	Update Figure 1
--------	----------	--------------	--------	-----------------

**Current**



**Note:** All elements shown represent cables and connecting hardware, not spaces or pathways.

**Proposed**



**TR-42.7 – Telecommunications Copper Cabling Systems**

- **ANSI/TIA-568.6 Single Pair Multi-Drop (SPMD) Cabling and Component Specification:** Discussed task group output which did not consist of much and decided to keep on the agenda at the end of each meeting if contributions arise.
- **ANSI/TIA-1152-A, Requirements for Field Test Instruments and Measurements for Balanced Twisted-Pair Cabling:** Timeline extension to March 2028 was submitted. Agreed to submit PAR to start revision and send document out for ballot for comment resolution in June.

- **ANSI/TIA-568.5-A (single balanced twisted-pair cabling and components):** Reviewed initial draft document and agreed to include Addendum 1 contents in the document. Agreed to submit PAR and go for Call for Comments with 45 day comment period. The document will also introduce specifications for a new cable supporting IEEE 802.3dg - 100BASE-T1L to 500 meters. New cable type tentatively to be called SP3-500.
- **TSB-5073 Guidelines for Supporting Extended Distance over 4-pair Balanced Twisted-Pair Cabling:** Reviewed initial draft of document. Agreed to send out for Call for Comments closing May 1st. Task group disbanded. Comment resolution will begin in the June meeting
- **ANSI/TIA-5071 Requirements for Field Test Instruments and Measurements for Balanced Single Twisted-Pair:** Sending ballot out to reaffirm document.
- **ANSI/TIA-568.4-E Broadband Coaxial Cabling and Components Standard:** Document published.

**TR 42.9 – Industrial Telecommunications Infrastructure**

- **ANSI/TIA-1005-B:** Telecommunications Infrastructure Standard for Industrial Premises: Ballot comments in process.
- **ANSI/TIA-568.7 Balanced Single Twisted-Pair Communications Cabling and Components Standard for Industrial Premises:** Sending document to USTAG for submittal to IEC SC25 WG3 and to ODVA.

**TR-42.11 – Optical Fiber Systems**

- **ANSI/TIA-568.3-E-1 Optical Fiber Cabling and Components:** Reviewed 4th call for comments and completed comment resolution. Moving to Call for Comments Ballot of entire document as 568.3-F. Resolution of polarity. Clarifying workaround for using type A array adapters with type B array patch cord and trunk cables to avoid the end face mismatch when using cables with the same end face angles for all connectors. How to handle two row transceivers since the industry hasn't really settled on transceivers yet (top row / bottom row or left side to right side). Vertically oriented equivalents being added.
- **ANSI/TIA-526-7 SM Attenuation and RL Measurement:** Readdressing in June to allow time to review the IEC base standard which is in revision now. Amendment on visual inspection.

**TR-42.12 –Optical Fibers and Cables**

**FOTPs to be sent out for Comments:**

- **ANSI/TIA-455-86 (FOTP-86)** Optical Fiber Cable Jacket Shrinkage
- **ANSI/TIA-455-25 (FOTP-25)** Impact Testing of Optical Fiber Cables
- **ANSI/TIA-455-85 (FOTP-85)** Fiber Optic Cable Twist Test
- **ANSI/TIA-455-162 (FOTP-162)** Optical Fiber Cable Temperature Humidity
- **ANSI/TIA-455-48 (FOTP-48)** Measurement of Optical Fiber Cladding Diameter Using Laser-Based Instructions

**FOTPs to be sent out for Ballot:**

- **ANSI/TIA-455-33 (FOTP-33)** Optical Fiber Cable Tensile Loading and Bending Test
- **ANSI/TIA-455-41 (FOTP-41)** Compressive Loading Resistance of Optical Fiber Cables
- **ANSI/TIA-455-88 (FOTP-88)** Fiber Optic Cable Bend Test
- **ANSI/TIA-455-89 (FOTP-89)** Optical Fiber Cable Jacket Elongation and Tensile Strength
- **ANSI/TIA-455-91 (FOTP-91)** Fiber Optic Cable Twist-Bend Test
- **ANSI/TIA-455-98 (FOTP-98)** Fiber Optic Cable External Freezing Test

## FOTPs to be Withdrawn:

- **ANSI/TIA-455-38 (FOTP-38)** Measurement of Fiber Strain in Cables under Tensile Load - Superseded by FOTP-133, an adoption of the IEC 60793-1-22:2001 Optical fibers - Part 1-22: Measurement methods and test procedures - Length measurement

## TIA-598-D Optical Fiber Cable Color Coding: Color expert invited for next TIA meeting.

- A task group will be formed to look into multi-core and hollow core fiber.

## TR 42.13 - Passive Optical Devices and Fiber Optic Metrology

### Published Documents (2)

- **ANSI/TIA-623.1** (Adoption IEC 61755-3-1 SM PC optical interface)
- **ANSI/TIA-623.2** (Adoption IEC 61755-3-2 SM APC optical interface)

### Reaffirmed Documents (5)

- **TIA-455-196 FOTP-196** Guideline for Polarization-Mode Measurement in Single-Mode Fiber Optic Components and Devices
- **TIA-455-197 FOTP-197** Differential Group Delay Measurement of Single-Mode Components and Devices by the Differential Phase Shift Method
- **TIA-455-200 FOTP-200** Insertion Loss of Connectorized Polarization-Maintaining Fiber or Polarizing Fiber Pigtailed Devices and Cable Assemblies
- **TIA-455-201 FOTP-201** Return Loss of Connectorized Polarization-Maintaining or Polarizing Fiber Pigtailed Devices or Cable Assemblies
- **TIA-455-240 FOTP-240** Fiber Optic Connector Cleaning System Evaluation

### Withdrawn Documents (1)

- **TIA-455-198 FOTP-198** Measurement of Polarization Dependence of Insertion Loss of Single-Mode Fiberoptic Components by a Mueller Matrix Method (superseded by ANSI/TIA-455-157-A)

### Maintenance Projects (3)

- **ANSI/TIA-455-227-A (Keying accuracy of PM connectors)** - approval ballot passed w/o comments; motion approved for publication
- **TIA-455-2 (Impact)** - motion approved to open document for revision and circulate as call for comment ballot
- **TIA-455-8 (OTDR measurement)** - motion approved to open document for revision and circulate as call for comment ballot

### Ongoing New Projects (1)

- **ANSI/TIA-604-20 (FOCIS-20 AIM connector)** - approval ballot passed w/o comments; motion approved for publication

## ISO/IEC

### ISO/IEC JTC1/SC25 WG3 - CUSTOMER PREMISES CABLING

#### Latest Publications since October 25

- **ISO/IEC 11801-1:2017/Amd 1: 2025, Information technology - Generic cabling for customer premises -**
- **Part 1: General requirements**
- **Corrigendum to ISO/IEC 11801-1:2017/Amd 1: 2025**
- **Corrigendum to ISO/IEC TS 29125:2017/Amd 1: 2020**
- **Corrigendum to ISO/IEC TS 29125:2017/Amd 2: 2024**

#### Active Projects

#### Last meeting, 80th 16-27 March 26

- **ISO/IEC 11801-1: Amendment 2**  
Information technology — Generic cabling for customer premises Part 1: General requirements Integrating Single Pair Ethernet, looking to restructure channels and naming convention and other updates
- **ISO/IEC 11801-5: Amendment 1**  
Information technology — Generic cabling for customer premises Part 5: Data centers  
Integrating Single Pair Ethernet and other updates including fiber polarity
- **ISO/IEC 14763-2:**  
Information technology — Implementation and operation of customer premises cabling Part 3: Testing of optical fiber cabling. Updating Polarity and SPE, Working Draft
- **ISO/IEC 14763-2:**  
Information technology — Implementation and operation of customer premises cabling Part 3: Testing of optical fiber cabling. Updates to Visual inspection, MPO, MPO breakout testing and Enhanced 1 Jumper reference for Harsh Environments
- **ISO/IEC 14763-6:**  
Information Technology — Implementation and operation of customer premises cabling Part 6: Best practices for installation and quality control of cabling systems Committee Draft
- **ISO/IEC 24383:**  
Network Infrastructure Security at Committee Draft Vote
- **ISO/IEC 22237-5:**  
Information technology — Data center facilities and infrastructures - Part 5: Telecommunications cabling infrastructure AI Update. Committee Draft

# Key Cabling Standards

Quarter 1 | 2026

## TIA

### Generic Standards

- **ANSI/TIA-568.0** Generic Premises Cabling
- **ANSI/TIA-569** Pathways and Spaces
- **ANSI/TIA-606** Administration
- **ANSI/TIA-607** Grounding and Bonding
- **ANSI/TIA-758** Outside Plant
- **ANSI/TIA-862** Intelligent Building Systems
- **ANSI/TIA-5017** Physical Network Security

### Premises Standards

- **ANSI/TIA-568.1** Commercial Cabling
- **ANSI/TIA-570** Residential
- **ANSI/TIA-942** Data Center Cabling
- **ANSI/TIA-1005** Industrial Cabling
- **ANSI/TIA-1179** Healthcare
- **ANSI/TIA-4966** Education

### Component Standards

- **ANSI/TIA-568.2** Copper Components
- **ANSI/TIA-568.3** Fiber Components
- **ANSI/TIA-568.4** Coaxial Components
- **ANSI/TIA-568.5** Single Pair Ethernet Components
- **ANSI/TIA-1152** Field Test Equipment 2GHz
- **ANSI/TIA-1183** Lab Test Equipment

### Telecommunications System Bulletins

- **TIA TSB-162** Cabling for WAPs
- **TIA TSB-184** Power Delivery
- **TIA TSB-5018** DAS
- **TIA TSB-190** Guidelines on Shared Pathways and Shared Sheaths

## ISO/IEC

### Performance and Design

- **ISO/IEC 11801-1:2017/Amd1: 2025**  
Information technology — Generic cabling for customer premises — Part 1: General requirements Technical Corrigendum 1
- **ISO/IEC 18598:2016/Amd 1: 2021**  
Information technology — Automated infrastructure management (AIM) systems — Requirements, data exchange and applications Amendment 1
- **ISO/IEC 30129:2015/Amd 1: 2019**  
Information technology — Telecommunications bonding networks for buildings and other structures

### Premises Standards

- **ISO/IEC 11801-2:2017/Cor 1: 2018**  
Information technology — Generic cabling for customer premises Part 2: Office premises — Technical Corrigendum 1
- **ISO/IEC 11801-3:2017/Amd 1: 2021**  
Information technology — Generic cabling for customer premises Part 3: Industrial premises Amendment 1
- **ISO/IEC 11801-4:2017/Cor 1: 2018**  
Information technology — Generic cabling for customer premises — Part 4: Single-tenant homes Technical Corrigendum 1
- **ISO/IEC 11801-5:2017/Cor 1: 2018**  
Information technology — Generic cabling for customer premises — Part 5: Data centers Technical Corrigendum 1
- **ISO/IEC 11801-6:2017/Cor 1: 2018**  
Information technology — Generic cabling for customer premises — Part 6: Distributed building services Technical Corrigendum 1

### Technical Reports

- **ISO/IEC TR 11801-9902: 2017**  
Information technology — Generic cabling for customer premises Part 9902: Specifications for end-to-end link configurations
- **ISO/IEC TR 11801-9910: 2020**  
Information technology — Generic cabling for customer premises Part 9910: Specifications for modular plug terminated link cabling

## Implementation

- **IEC 14763-2 ED2: 2019**  
Information technology. Implementation and operation of customer premises cabling. Planning and installation
- **IEC 14763-4**  
Information technology. Implementation and operation of customer premises cabling. Measurement of end-to-end (E2E) links, modular plug terminated links (MPTLs) and direct attach cabling

## Testing and Validation

- **IEC 61935-2: 2022**  
Specification for the testing of balanced and coaxial information technology cabling. Part 1: Installed balanced cabling as specified in ISO/IEC 11801-1 and related standards
- **ISO/IEC 14763-3: 2024**  
Information technology — Implementation and operation of customer premises cabling Part 3: Testing of optical fiber cabling
- **ISO/IEC 14763-5: 2025**  
Information technology. Implementation and operation of customer premises cabling. Part 5: Sustainability Published 15/5/2025

## CENELEC

### Performance and Design

- **EN 50173-1: 2018**  
Information technology. Generic cabling systems. General requirements
- **EN 50173-20: 2022**  
Information technology. Generic cabling systems. Alternative cabling configurations
- **EN 50173-10: 2025**  
Information technology. Generic cabling systems. Single pair cabling Published 26/6/2025
- **EN 50173-20: 2022**  
Information technology. Generic cabling systems. Alternative cabling configurations Published 9/11/2022
- **EN 50310:2016+A1: 2020**  
Telecommunications bonding networks for buildings and other structures
- **EN 50667:2016+A1: 2021**  
Information technology. Automated infrastructure management (AIM) systems. Requirements, data exchange and applications

### Premises Standards

- **EN 50173-2: 2018**  
Information technology. Generic cabling systems. Office spaces
- **EN 50173-3: 2018**  
Information technology. Generic cabling systems. Industrial spaces
- **EN 50173-4: 2018**  
Information technology. Generic cabling systems. Homes
- **EN 50173-5: 2018**  
Information technology. Generic cabling systems. Data center spaces

- **EN 50173-6: 2018**  
Information technology. Generic cabling systems. Distributed building services

## Implementation

- **EN 50174-1:2018+A1: 2020**  
Information technology. Cabling installation. Installation specification and quality assurance
- **EN 50174-2: 2018**  
Information technology. Cabling installation. Installation planning and practices inside buildings
- **EN 50174-3:2013+A1: 2017**  
Information technology. Cabling installation. Part 3: Installation planning and practices outside buildings

## Testing and Validation

- **EN 50346:2002+A2: 2009**  
Information technology. Cabling installation. Testing of installed cabling
- **EN 50174-4: 2025**  
Information technology. Cabling installation. Testing of installed optical fiber cabling Published 18/12/2025

## BICSI

- **BICSI 001** Educational Facilities
- **BICSI 002** Data Center Design
- **BICSI 003** BIM
- **BICSI 004** Healthcare
- **BICSI 006** Distributed Antenna Systems (DAS)
- **BICSI 007** IoT/Intelligent Buildings
- **BICSI 008** WLAN
- **BICSI 009** Data Center Operations
- **BICSI N1** ICT Installation
- **BICSI N2** PoE Installation
- **BICSI N3** Bonding & Grounding
- **BICSI G1** Outside Plant (OSP)
- **TDMM** Telecommunications Distribution Methods Manual
- **ITSIMM** Information Technology Systems Installation Methods Manual
- **TPMM** Telecommunications Project Management Manual
- **OSPDRM** Outside Plant Design Reference Manual