

The Standards Report

The latest industry changes and what they mean to you

Quarter 4 2022

{ See a full list of published cabling standards on page 3 }

TIA TR 42

TR-42.1 – Generic Telecommunications Cabling and Premises Cabling

ANSI/TIA-758-C: (OSP)

- Reviewed the draft and the motion passed to reaffirm the document via an industry ballot. Changes mainly included updating references to other industry standards.

ANSI/TIA-1179-A: Healthcare

- Industry ballot comments were resolved. The committee approved an industry ballot. They expect to resolve comments again in January.

ANSI/TIA-942-C: Data Centers

- Industry ballot comments were resolved. The committee approved an industry ballot. Expect to resolve comments again in January.

Three project authorization requests (PARs) were put forward to begin work on the following three documents:

568.1-E-1: Commercial Buildings, Addendum 1

- This addendum will include Single Pair Ethernet cabling and provide additional WAP cabling guidance. Committee approved an industry ballot and comments are expected to be resolved in January.

570-E: Residential Revision

- Expect to review first draft in January.

4966: Education Addendum 1

- This document will include Single Pair Ethernet guidance. The committee approved an industry ballot. Comments are expected to be resolved in January.
- The committee also began discussion on the possible consolidation of 568.0, 568.1, and 862 (intelligent building) documents into one due to redundancy. A presentation will be made in January to the committee. If agreed, a project authorization request will be submitted to begin this work.
- In addition, there was discussion on separating Edge Data Center (EDC) information from the TIA 942 (Data Center) main document. EDC is currently an addendum in the 942 document. Some believe that the information is unique enough to warrant a separate document. A presentation will be made in January to the committee. If agreed, a project authorization request will be submitted to begin this work.
- Finally, the committee is liaising with ASHRAE on cabling in immersion cooling environments.

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

- The committee re-affirmed ANSI/TIA-5048 – Automated Infrastructure Management. No changes to the document.
- The committee also identified that the 5-year maintenance window will require the re-examination of ANSI/TIA-569-E (Pathways and Spaces) and ANSI-TIA-607-D (Bonding and Grounding) beginning in 2023. The committee will submit a PAR for each during the January 2023 meeting.

TR 42.5 – Telecommunications Infrastructure Terms and Symbols

The committee approved this definition for addition into the dictionary of terms:

- Equal level transverse conversion transfer loss: A calculation, expressed in dB, of the difference between measured transverse conversion transfer loss and the differential mode insertion loss of the pair.

TR-42.7 – Telecommunications Copper Cabling Systems

ANSI/TIA-568.5: Balanced Single Twisted-Pair Telecommunications Cabling and Components Standard, Addendum 1: Technical Corrections to Transmission Requirements

- The plenary meeting in January of 2022 initiated an addendum to the 568.5 standard, correcting PSAFEXT requirements to account for channel length. Due to commonalities between the PSAACRF of all channel components, it was decided to specify channel PSAACRF rather than PSAFEXT. Adjustments were made to link and channel requirements, channel ELTCTL, and component PSAFEXT and PSANEXT. Requirements are better aligned with ISO/IEC requirements for SPE.

TIA-TSB-184-A-2: Guidelines for Supporting Power Delivery over Balanced Single Twisted-Pair Cabling

- An update to TSB-184-A will include single pair cabling for supporting power delivery (with current up to 2 amps), including PoDL as defined in IEEE 802.3bu. Ballot comments from the first committee ballot were reviewed and changes made as deemed necessary. The document will go out for a second committee ballot, the results of which will be reviewed at the next meeting in January 2023.

ANSI/TIA-568.6: Single Pair Multi-Drop (SPMD) Cabling and Component Specification

- Technical contributions were made on the basic transmission characteristics for various segments of a multi-drop mixing segment configuration. The IEEE P803.3da task force is still working on many parameters. There is still no initial draft of this document, but one may be submitted in the January 2023 meeting.

ANSI/TIA-568.4-D: Broadband Coaxial Cabling and Components Standard

- The 5-year update to 568.4 has published. This standard covers 75-ohm, Series 6, and Series 11 coaxial cable. Both series are specified up to 3000 MHz, however above 1002 MHz is for cable intended for use in satellite television systems only.

- Cable distribution nomenclature, and related diagrams, were changed. Also, some changes were made to the definition of a shield.

ANSI/TIA-1005-B: Telecommunications Infrastructure Standard for Industrial Premises

- 1005-B is an update to 1005-A that will include SPE cabling. Comments to the second committee ballot for 1005-B were reviewed. The document will go out for first industry ballot, with results to be reviewed at the January 2023 meeting.
- **ANSI/TIA-568.7:** Balanced Single Twisted-Pair Communications Cabling and Components Standard for Industrial Premises
- Comments from the third committee ballot of ANSI/TIA-568.7 were reviewed. The updated document will go out for first industry ballot, with results to be reviewed at the January 2023 meeting.

TR-42.11 – Optical Fiber Systems

- **ANSI/TIA-568.3-E:** Optical Fiber Cabling Component Standard, was published on September 29, 2022
- **ANSI/TIA-PN-526-14-D:** Optical Power Loss Measurement of Installed Multimode Fiber Cable Plant, passed committee ballot and was moved to publish.
- Work started on an addendum, to become ANSI/TIA-568.3-E-1, to incorporate the polarity content from TSB-5069.

TR-42.12 –Optical Fibers and Cables

- **TIA-455-111-B:** Adoption of IEC 60793-1-34 – Procedure for the Measurement of Optical Fiber Curl was approved and moved to publish.

There is additional work underway to adopt, or adopt with modifications, several IEC documents related to optical fibers, these include:

- **ANSI/TIA-4920000-C** with IEC 60793-2:2019, Generic Specification for Optical Fibers
- **ANSI/TIA-492AAAF** with IEC 60793-2-10:2019, Detail Specification for Class 1a Graded-Index Multimode Optical Fibers
- **ANSI/TIA-492CAAC** with IEC 60793-2-50:2018, Detail Specification for 850-nm Laser- Optimized, 50-µm Core Diameter/125-µm Cladding Diameter Class 1a Graded-Index Multimode Optical Fibers
- **TIA-455-133-A** with IEC 60793-1-22:2001, Measurement Methods and Test Procedures- Length Measurement
- **TIA-455-203-A** with IEC 61280-1-4, Light Source Encircled Flux Measurement Method
- **TIA-455-204-A** with IEC 60793-1-41:2010, Measurement of Bandwidth on Multimode Fiber

Discussion began regarding the withdrawal of three standards that still show as active:

- **TIA-455-30:** Frequency Domain Measurement of Multimode Optical Fiber Information Transmission Capacity
- **TIA-455-54:** Mode Scrambler Requirements for Overfilled Launching Conditions to Multimode Fibers
- **TIA-455-124:** Polarization-Mode Dispersion Measurement for Single-Mode Optical Fibers by Interferometry

TR-42.13 –Passive Optical Devices and Fiber Optic Metrology

Several documents related to SM connector interfaces were adopted from IEC.

- **ANSI/TIA-621.1** (Adoption of IEC 61755-1:2022) general and guidance IEC document has been published.
- **ANSI/TIA-622.1** (Adoption of IEC 61755-2-1:2022) non-angled IEC document has been published.

- **ANSI/TIA-622.2** (Adoption of IEC 61755-2-2:2022) angled IEC document has been published.
- **ANSI/TIA-622.4** (Adoption of IEC 61755-2-4:2015) non-angled, reference connection TIA Industry ballot closed on July 5, 2022. Ballot passed.
- **ANSI/TIA-622.5** (Adoption of IEC 61755-2-5:2015) angled, reference connection TIA Industry ballot closed on July 5, 2022. Ballot passed.

ISO/IEC

ISO/IEC 11801-1 Amendment: Single-pair components and channels for Generic Cabling

- Being updated as a 7th Committee Draft (CD) for comment.

ISO/IEC 11801-6 Amendment: Single-pair components and channels for Distributed Building Systems

- Being updated as a 7th CD for comment.

ISO/IEC 11801-9903: Matrix Modeling of Channels and Links

- A preliminary working draft will be distributed for information
- Given concerns about redundancy with other standards areas, further discussions will be held on whether work should continue.

ISO/IEC 11801-9906: Application Specific SPE Channels

- This document was a preliminary working draft. The next step will be creation of a first working draft for comment.

ISO/IEC 11801-9911: SPE Cable Sharing

- Much discussion occurred on the transmission of the top level of SPE power (2 amps) if the use of cable sharing (transmission of four Single-Pair signals and power over all four pairs of a 4-pair cable). There is a lot of concern about cable overheating in this scenario.
- A working draft will be distributed, available for comment.

ISO/IEC 14763-2: Planning and Installation:

- The updated document will now be distributed as the first working draft.

ISO/IEC 14763-3: FO cabling testing

- Comments were reviewed during the last meeting in September
- This document will now move to a CDV (Committee Draft for Vote) with CDV comments to be discussed at the February 2023 meeting.

ISO/IEC 14763-5: Sustainability

- The document will now be updated to create a second CD for review.

ISO/IEC 24383: Infrastructure Security

- The next step is creation of a new CD to be distributed for comment

ISO/IEC 29125: Remote Powering

- The next step will be the issue of a first working draft.

ISO/IEC 30129: Bonding

- The next step will be another working draft which will be brought for review. The eventual publication will be an amendment to the existing specification.

ISO/IEC 11801-991x: SP Multidrop

- It was agreed to proceed to develop a technical report, targeting completion in September 2024.

Key Cabling Standards

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IEEE

- **IEEE Std. 802.3-2018** Standard for Ethernet*
- **IEEE Std. 802.3bt-2018** 4-pair POE (up to 90W)
- **IEEE Std. 802.3cg-2019** 10Mb/s Single Pair Ethernet
- **IEEE Std. 802.3ca-2020** 25/50 Gb/s PON
- **IEEE Std. 802.3cm-2020** 400 Gb/s over MM Fiber
- **IEEE Std. 802.3cn-2020** 50/200/400 Gb/s over SM Fiber
- **IEEE Std. 802.3cu-2021** 100/400 Gb/s over SM Fiber at 100 Gb/s per Wavelength
- **IEEE Std. 802.11-2020** Wireless LAN*
- **IEEE Std. 802.11ax-2021** High Efficiency WLAN (Wi-Fi 6)

* Every 3 years, IEEE 802.3 and IEEE 802.11 are revised to include all amendments and maintenance work since the last publication.

- **ANSI/TIA-568.2-D** Copper Components
- **ANSI/TIA-568.3-D** Fiber Components
- **ANSI/TIA-568.4-D** Coaxial Components
- **ANSI/TIA-1152-A** Field Test Equipment 2GHz
- **ANSI/TIA-1183-A** Lab Test Equipment

Telecommunications System Bulletins

- **TIA TSB-162-B** Cabling for WAPs
- **TIA TSB-184-A** Power Delivery
- **TIA TSB-5018** DAS

TIA

Generic Standards

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

Premises Standards

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

Component Standards

ISO/IEC

Performance and Design

- **ISO/IEC 11801-1 ED1: 2017** Generic Cabling Systems
- **ISO/IEC 18598 ED1: 2016** Automated Infrastructure Management
- **ISO/IEC 30129 ED1: 2015** Grounding and Bonding

Premises Standards

- **ISO/IEC 11801-2 ED1: 2017** Office Premises Cabling
- **ISO/IEC 11801-3 ED1: 2017** Industrial Cabling
- **ISO/IEC 11801-4 ED1: 2017** Residential Cabling
- **ISO/IEC 11801-5 ED1: 2017** Data Center Cabling
- **ISO/IEC 11801-6 ED1: 2017** Distributed Building Cabling

Technical Reports

- **ISO/IEC TR 11801-9904:2017** 2.5G and 5GBASE-T Cabling
- **ISO/IEC TR 11801-9910:2020** MPTL Cabling

Implementation

- **IEC 14763-2 ED2: 2019** Planning and Implementation

Testing and Validation

- **IEC 61935-2 ED3: 2010** Testing Copper Cables (4-pair)
- **ISO/IEC 14763-3 ED2: 2014** Testing of Optical Fibre

CENELEC

Performance and Design

- **EN 50173-1: 2018** Generic Cabling Requirements
- **EN 50310:2016** Grounding and Bonding
- **EN 50667:2016** AIM Management Systems
- **EN 50174-99-1: 2015** Remote Powering (POE)

Premises Standards

- **EN 50173-2: 2018** Commercial Office Premises
- **EN 50173-3: 2018** Industrial Cabling
- **EN 50173-4: 2018** Cabling for Homes
- **EN 50173-5: 2018** Data Center Cabling
- **EN 50173-6: 2018** Distributed Building Systems

Implementation

- **EN 50174-1: 2018** Installation and Quality Assurance
- **EN 50174-2: 2018** Cabling Installation Inside Plant
- **EN 50174-3: 2013** Cabling Installation Outside Plant

Testing and Validation

- **EN 50346: 2002** Testing of installed cabling

BICSI

- **BICSI 001-2017** Educational Facilities
- **BICSI 002-2019** Data Center Design
- **BICSI 003-2014** BIM
- **BICSI 004-2018** Healthcare
- **BICSI 005** Electronic Safety & Security (ESS)
Withdrawn (content in BICSI-007)
- **BICSI 006-2020** Distributed Antenna Systems (DAS)
- **BICSI 007-2020** IoT/Intelligent Buildings
- **BICSI 008-2018** WLAN
- **BICSI 009-2019** Data Center Operations
- **BICSI N1-2019** ICT Installation
- **BICSI N2-2017** PoE Installation
- **BICSI N3-2020** Bonding & Grounding
- **BICSI G1-2017** Outside Plant (OSP)
- **TDMM-2020** Telecommunications Distribution
Methods Manual
- **ITSIMM-2017** Information Technology Systems Installation
Methods Manual
- **TPMM-2016** Telecommunications Project
Management Manual
- **OSPDRM-2018** Outside Plant Design Reference Manual