

Section 271313

Communications Copper Cable Splicing and Termination

Part 1 - Part 1 - General

1.1 - Work Included

- A. Provide all labor, materials, tools and equipment required for the complete installation of work called for in the Construction Documents

1.2 - Scope of Work

- A. This document describes the products and execution requirements relating to furnishing and installing Telecommunications Cabling. Copper backbone cabling (copper cabling splicing and terminations) is covered under this document.
- B. The Communication Equipment Room shall support a minimum of (2) 4-pair Unshielded Twisted Pair (UTP) Copper Cables to each work area outlet unless otherwise noted for specific locations. The cables shall be installed from the Work Area Outlet to the Telecommunications Room (TR) located on the same floor, and routed to the appropriate rack serving that area and terminated as specified in this document.
- C. This section includes minimum requirements for the following:
- D. Copper Backbone Cabling System
- E. All cables and related terminations, support and grounding hardware shall be furnished, installed, wired, tested, labeled, and documented by the telecommunications contractor as detailed in this document.
- F. Product specifications, general design considerations, and installation guidelines are provided in this document. Quantities of telecommunications outlets, typical installation details, cable routing and outlet types will be provided as an attachment to this document. If the bid documents are in conflict, this specification shall take precedence. The successful vendor shall meet or exceed all requirements for the cable system described in this document.

1.3 - Regulatory References

- A. All products, services, materials and documentation provided by the Installer shall meet the requirements of the following where applicable:
 - 1. National Electrical Manufacturer's Association (NEMA)
 - 2. American National Standards Institute (ANSI)
 - 3. National Fire Prevention Act (NFPA)
 - a. National Electric Code 2020 (NEC)
 - 4. Relevant State Electric and Fire Codes
 - 5. Institute of Electrical and Electronic Engineers (IEEE)
 - 6. Underwriters Laboratories, Inc. (UL)
 - 7. Telecommunications Industry Association / Electronic Industries Alliance (TIA/EIA)
 - a. TIA-526-7A Fiber-Optical Power Loss Measurements SM
 - b. TIA-526-14C Fiber Optical Power Loss Measurements MM

- c. TIA-568_0-D Generic Telco Cabling Customer Premises
 - d. TIA-568_0-D1 Generic Telecom Cabling for Customer Premise Addendum
 - e. TIA-568_1-D Commercial Building Telcom Infrastructure Std
 - f. TIA-568_1-D1 Commercial Building Infrastructure Standard Addendum
 - g. TIA-568_2D Balanced Twisted Pair Cabling and Components
 - h. TIA-568_3-D Optical Fiber Cabling Components Standards
 - i. TIA-569-E Telecom Pathways and Spaces
 - j. TIA-598-D Optical Fiber
 - k. TIA-598-D Optical Fiber Addendum
 - l. TIA-598-D1 Optical Fiber Color Coding Addendum
 - m. TIA-606-C Admin for Telecom Infrastructure
 - n. TIA-607-D Grounding and Bonding
 - o. TIA-758-B Customer Owned OSP
 - p. TIA-942-B Data-Centers
8. Building Industry Consulting Service International (BICSI) publications:
- a. Telecommunications Distribution Methods Manual (TDMM), 14th ed.
 - b. Outside Plant Design Reference Manual (OSPDRM), 6th ed.
 - c. Information Technology Systems Installation Methods Manual (ITSIMM), 7th ed.
 - d. Telecommunications Project Management Manual (TPMM), 1st edition
 - e. ANSI/BICSI 006, Distributed Antenna System (DAS) Design and Implementation Best Practices
 - f. ANSI/BICSI 008, Wireless Local Area Network (WLAN) Systems Design and Implementation Best Practices
 - g. ANSI/BICSI 005, Electronic Safety and Security (ESS) System Design and Implementation Best Practices
 - h. ANSI/BICSI 007, Information Communication Technology Design and Implementation Practices for Intelligent Buildings and Premises
 - i. ANSI/BICSI 001, Information and Communication Technology Systems Design and Implementation Best Practices for Educational Institutions and Facilities
9. Manufacturer's recommendations and installation guidelines
10. All cabling shall comply with all appropriate requirements of NEC Articles 770 and 800 and shall comply with the State Fire Codes as interpreted by the State Fire Marshall's Dept.
- B. All publications referred to in this document shall be the latest edition thereof together with any amendments and/or addenda.

1.4 - Quality Assurance

- A. Panduit Certification Plus System Warranty shall provide a complete system warranty to guarantee end-to-end high performance cabling systems that meet application requirements. The guarantee shall include cable and connectivity components and have one point of contact for all cabling system issues. The system shall be warranted for a period of at least 25 years.
- B. A factory registered Panduit PCI contractor shall complete network installation.

- C. Contractor shall have completed standards-based product and installation training.
- D. A copy of the PCI Contractor Registration shall be submitted in the proposal.
- E. Product Guarantee:
- F. All Panduit PAN-NET non-consumable products have a 25-year guarantee. When installed per TIA or ISO/IEC standards, the Panduit PAN-NET Network Cabling System will operate the application(s) for which the system was designed to support. Installation shall support 10/100/1000/10,000 Mbps Ethernet (IEEE 802.3).
- G. In order to qualify for the guarantee, the structured cabling system must be installed per the following:
 - 1. Meet all TIA/EIA commercial building wiring standards.
 - 2. Manufacturer categorized products must be used in conjunction with an equivalent or higher Category UL or ETL verified cable.
 - 3. Manufacturer's products must be installed per Manufacturer's instruction sheets.
- H. Note: All Networks shall be installed per applicable standards and manufacturer's guidelines.
- I. If any Panduit PAN-NET product fails to perform as stated above, PANDUIT will provide new components at no charge.
- J. This guarantee is made in lieu of and excludes all other warranties, expressed or implied. The implied warranties of merchantability and fitness for a particular use are specifically excluded. Neither seller nor manufacturer shall be liable for any other injury, loss or damage, whether direct or consequential arising out of the use of, or the inability to use, the product. Before using, user shall determine the suitability of the product for its intended use, and user assumes all risk and liability whatsoever in connection therewith. The foregoing may not be altered except by an agreement signed by officers of seller and manufacturer.

Part 2 - Products

2.1 - Approved Products

- A. Panduit shall manufacture all products, including but not limited to copper backbone cabling (copper cabling splicing and terminations). There will be no substitutions allowed.

2.2 - Backbone Cabling System

- A. The Backbone Cable Subsystem in a building is the part of the premises distribution system that provides connection between equipment rooms, telecommunication rooms, and telecommunications service entrance facilities. A backbone subsystem provides either intra-building connections between floors in multi-story buildings or inter-building connections in campus-like environments.

Part 3 - Execution

3.1 - There shall be no splices to the copper cable plants providing service to the building or within the building.

End Section