

SECTION 27 15 13

COMMUNICATIONS COPPER HORIZONTAL CABLE

PART 1 - GENERAL

1.1 SUMMARY

- A. This section shall govern the products and installation of category copper horizontal cable.
- B. The cable performance (category 5e, category 6A) shall be as specified on drawings and confirmed with UT ITS-N&T, Facilities Design.

1.2 RELATED DOCUMENTS

- A. The latest versions of the following codes, standards, and guidelines shall be followed. Bring to ITS' immediate attention where construction documents or conditions differ from requirements in codes, standards, guidelines or specifications.
- B. The following codes, as required by law:
 - 1. National Electrical Code® (NEC®)
- C. The following standards:
 - 1. ANSI/TIA-568-C.0, Generic Telecommunications Cabling for Customer Premises
 - 2. ANSI/TIA-568-C.2, Balanced Twisted-Pair Telecommunications Cabling and Components Standards
 - 3. ANSI/TIA-569-C, Telecommunications Pathways and Spaces
- D. The following guidelines:
 - 1. BICSI, Telecommunications Distribution Methods Manual (TDMM)
 - 2. BICSI, Information Transport Systems Installation Methods Manual (ITSIMM)
- E. The following project specifications:
 - 1. 27 05 26 Grounding and Bonding for Communications
 - 2. 27 05 37 Firestopping Systems for Communications Cabling
 - 3. 27 05 53 Identification for Communications Systems
 - 4. 27 08 20 Copper Testing
 - 5. 27 11 19 Communications Terminations Blocks and Patch Panels
 - 6. 27 15 43 Communications Faceplates and Modular Jacks
 - 7. 27 16 19 Communications Patch Cords, Station Cords and Cross Connect Wires

1.3 SUBMITTALS

- A. The following submittals shall be provided at the Pre-Construction Phase, in accordance with submittal requirements in Section 27 00 00 Communications:
 - 1. All submittals that are incomplete shall be returned without review.
 - 2. Product Information

- a) Provide manufacturer's product information cutsheet or specifications sheet with the specific product number identified or filled out.
 - b) Provide manufacturer's product information showing system performance is maintained when using a variety of modular jacks (wall, patch panel) and patch cords (be manufacturer and product specific).
 - 3. Shop Drawings
 - a) Provide scaled drawings (not less than 1/8" = 1'-0") indicating routing of copper horizontal cabling.
- B. The following submittals shall be provided three (3) weeks prior to Substantial Completion, in accordance with the submittal requirements in Section 27 00 00 Communications:
 - 1. Record Drawings
 - a) Provide scaled drawings (not less than 1/8" = 1'-0") indicating actual installed routing of copper horizontal cable. Design or shop drawings modified in the field shall not be accepted.
 - 2. Manufacturer and Maintenance Manuals for all installed equipment.

PART 2 – PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. The Contractor shall utilize a single manufacturer brand for copper horizontal cable.

2.2 BALANCED TWISTED-PAIR TELECOMMUNICATIONS CABLE

- A. Cable shall be balanced twisted-pair, four-pair, unshielded, with an overall jacket.
- B. Cable performance shall meet the performance of ANSI/TIA-568-C.2.
- C. Cable shall be listed by a Nationally Recognized Testing Laboratory (NRTL).
- D. Cable installed in buildings shall be CMP listed per the NEC (Article 800).
- E. Un-listed cable shall only be permitted for entrance to a building and be limited to 50 feet (see NEC Article 800).
- F. Cable sheath shall be blue with white or black lettering. Wet-rated cable sheath shall be black with white lettering. The lettering (marking) shall indicate the following:
 - 1. Manufacturer name
 - 2. Pair count
 - 3. American Wire Gauge (AWG)
 - 4. Listing
 - 5. Performance rating (e.g., category 5e, category 6A)
 - 6. Sequential length markings, in one foot increments
- G. Cable manufacturers
 - 1. Belden
 - 2. Berk-Tek
 - 3. Commscope

4. General Cable
5. Mohawk
6. Panduit
7. Superior Essex
8. Approved equivalent

PART 3 - EXECUTION

3.1 GENERAL

- A. Copper horizontal cable shall have its own support structure. Support all horizontal cable continuously (e.g., conduit, cable tray) or a maximum of every 5 feet with j-hooks. Cable shall not contact suspended ceiling and should be installed such that it is a minimum of 6 inches above any portion of the suspended ceiling. The suspended ceiling nor the suspended ceiling support wire shall be used to support cable.
- B. Cable shall be installed in a continuous length from communications room to outlet.
- C. The maximum installed cable length (physical length) shall be 295 feet.
- D. Cable installation shall be in conformance to ANSI/TIA-568 standards, BICSI methods, industry standards and manufacturer's installation guidelines.
- E. Cable installation shall not exceed 25 lbf pulling tension.
- F. Cable installation shall not exceed a cable bend radius of 4-times the cable diameter while under load or no-load conditions.
- G. Provide at the communications room a minimum of 6 feet of service loop that is dressed on the cable tray above the termination point (typically within the cable tray).
- H. Provide a minimum of 36 inches of cable for service loop above the drop location for the outlet location. Service loops shall be 12 to 18 inches in diameter.
- I. Modular furniture cables shall terminate within the modular furniture and shall have a minimum of 36 inches of cable for service loop above the drop location. Service loops shall be 12 to 18 inches in diameter.
- J. Cable shall be installed with a minimum separation from EMI sources:
 1. 6 inches from power lines enclosed in a grounded metal conduit.
 2. 6 inches from fluorescent light fixtures
 3. 48 inches from electrical motors or transformers.
- K. Coordinate pathways and installation with all other trades prior to installation.
- L. Lubrication shall not be used on cable.
- M. The cable shall not be painted for any length. Cable that is painted shall be replaced at no cost to the owner/project.
- N. All copper horizontal cabling shall be tested in accordance with section 27 08 20 Copper Testing.
- O. For outside-plant cables to be installed as part of the contract documents that are not listed, provide a transition point and enclosure in an accessible location for transition listed to un-listed cable.
 1. Indicate the transition location on the Record Drawings.

END OF SECTION