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*Performance Standard for  
Twisted Pair Premise Voice and Data Communications Cables*

*Published by:*

**National Electrical Manufacturers Association**

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## Foreword

Compliance with this Standard may require use of an invention covered by patent rights. By publication of this Standard, no position is taken with respect to the validity of this claim or of any patent rights in connection therewith. The patent holder has, however, filed a statement of willingness to grant a license under these rights on reasonable and non-discriminatory terms and conditions to applicants desiring to obtain such a license. Details may be obtained from the publisher.

This standard has been developed by the Premise Wiring Subcommittee of the High Performance Wire and Cable Section of NEMA in close coordination between manufacturers, users, third party certifying agencies, and others having specialized experience. The High Performance Wire and Cable Section of NEMA periodically reviews this standard for any revisions necessary to keep it up to date. Proposed revisions or comments should be submitted to:

Vice President, Technical Services  
National Electrical Manufacturers Association  
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Rosslyn, Virginia 22209

Section approval of this standard does not necessarily imply that all section members voted for its approval or participated in its development. At the time this revision was approved, the Premise Wiring Committee had the following members:

Belden CDT, Inc.—Richmond, IN  
Berk-Tek a Nexans Company—Elm City, NC  
General Cable—Highland Heights, KY  
Harbour Industries, Inc.—Shelburne, VT  
Judd Wire, Inc.—Turners Falls, MA  
Phelps Dodge High Performance Conductors—Inman, SC

## Section 1 GENERAL

### 1.1 SCOPE

This standard primarily defines minimum electrical performance and allowable conductor sizes, stranding, and shielding for premise wiring cables for voice and data applications. The material and mechanical characteristics for these cables are covered under UL 444/CSA C 22.2 No. 214 where applicable. Definitions and applicable test methods are included herein.

This standard covers Category 3, Category 5, and Category 5e, 100 ohm unshielded and shielded twisted pair, and 150 ohm shielded twisted pair cables for voice and/or data communication systems.

This standard also includes several appendices that were developed for U.S. Government reference.

Requirements for Category 4 cable were removed from this edition as this cable is no longer widely used.

The products covered in this Standard shall conform to the requirements of Part 68 of the FCC rules and regulations, as well as the applicable article(s) of the *National Electrical Code* and/or other national and local codes and safety standards.

The performance requirements contained in this document are for cables as manufactured. The installed cabling system will have different characteristics. The performance of the installed cabling is a function of its components (i.e. cable, connecting hardware, work area, equipment, and patch cords) and installation methods. Requirements for the performance of the installed cabling system are outside the scope of this document.

### 1.2 REFERENCED STANDARDS

Copies of referenced documents may be obtained from the appropriate sources as follows.

#### **American Society for Testing and Materials (ASTM)**

100 Barr Harbor Drive  
West Conshohocken, PA 19428-2959

ASTM B 3- 01	<i>Soft or Annealed Copper Wire</i>
ASTM B 8- 04	<i>Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft</i>
ASTM B 33- 04	<i>Tinned Soft or Annealed Copper Wire for Electrical Purposes</i>
ASTM B 286- 02	<i>Copper Conductors for Use in Hookup Wire for Electronic Equipment</i>
ASTM D 4566-98	<i>Electrical Performance Properties of Insulations and Jackets for Telecommunications Wire &amp; Cable</i>

#### **Federal Communications Commission (FCC)**

1919 M Street, N.W.  
Washington, D.C. 20554

*Code of Federal Regulations, Title 47, Telecommunications, Chapter 1-FCC, Part 68*