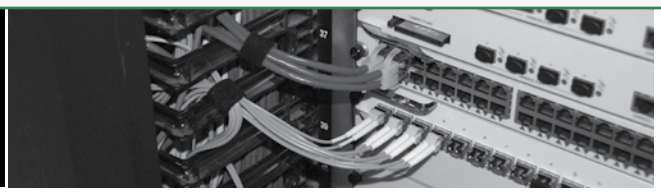
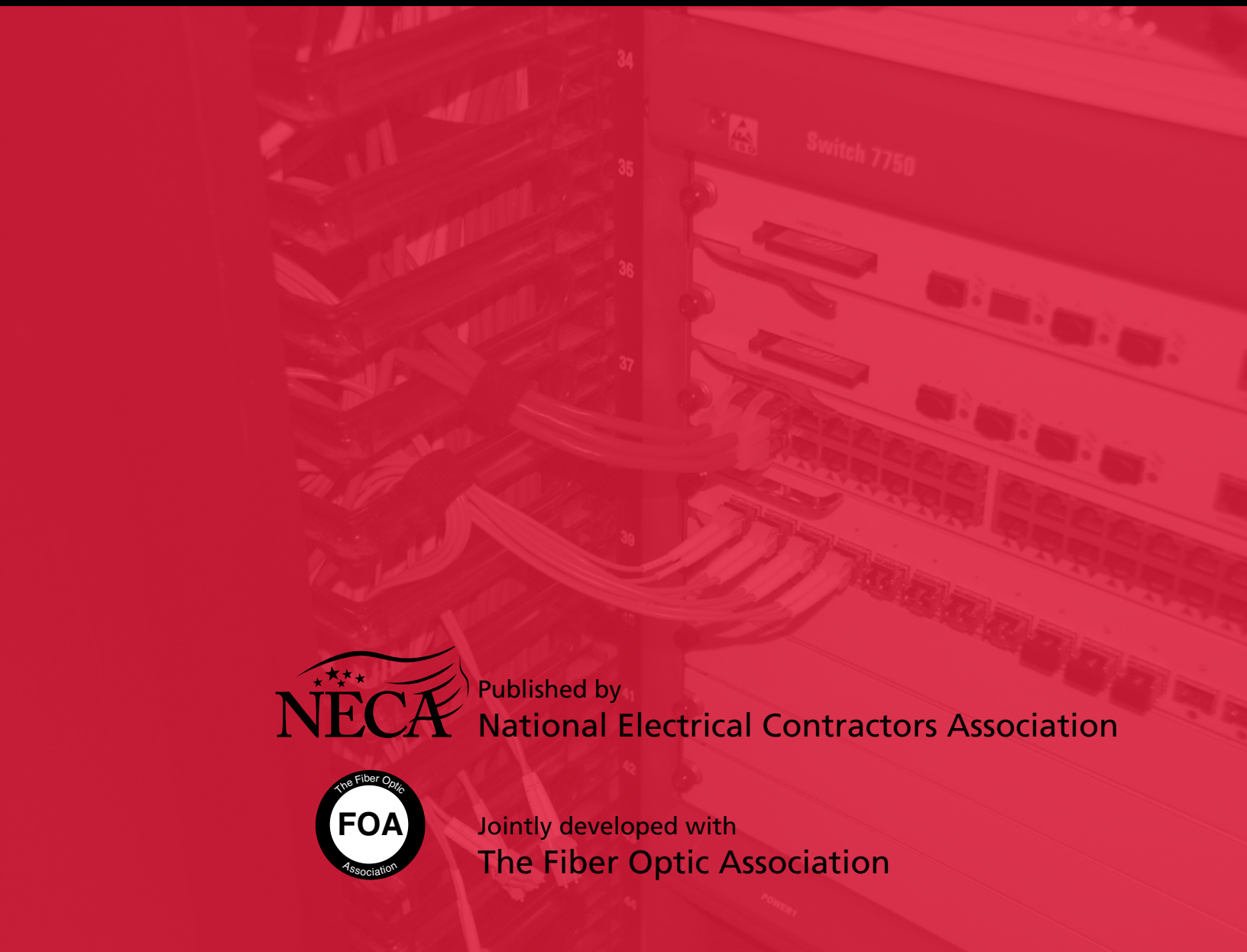


NECA/FOA 301-2009

Standard for

Installing and Testing Fiber Optics

AN AMERICAN NATIONAL STANDARD



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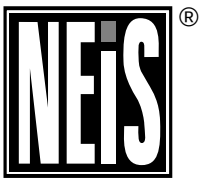

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(This foreword is not a part of the standard)

Foreword

National Electrical Installation Standards™ are designed to improve communication among specifiers, purchasers, and suppliers of electrical construction services. They define a minimum baseline of quality and workmanship for installing electrical products and systems. *NEIS*® are intended to be referenced in contract documents for electrical construction projects. The following language is recommended:

> Fiber optic cables shall be installed in accordance with NECA/FOA 301, *Standard for Installing and Testing Fiber Optic Cables.*

Use of *NEIS*® is voluntary, and neither the National Electrical Contractors Association nor the Fiber Optic Association assumes any obligation or liability to users of this publication. Existence of a standard shall not preclude any member or nonmember of NECA or FOA from specifying or using alternate construction methods permitted by applicable regulations.

The installation and maintenance practices recommended by this publication are intended to comply with the edition of the National Electrical Code (NEC) in effect at the time of publication. Because they are quality standards, *NEIS*® may in some instances go beyond the minimum requirements of the NEC. It is the responsibility of users of this standard to comply with state and local electrical codes when installing electrical products and systems.

Suggestions for revisions and improvements to this standard are welcome. They should be addressed to:

NECA Codes and Standards
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To purchase *National Electrical Installation Standards*®, contact the NECA Order Desk at (301) 215-4504 tel, (301) 215-4500 fax, or *orderdesk@necanet.org*. *NEIS*® can also be purchased in .pdf download format from *www.neca-neis.org/catalog*.

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1. Scope

This standard describes procedures for installing and testing cabling networks that use fiber optic cables and related components to carry signals for communications, security, control and similar purposes. It defines a minimum level of quality for fiber optic cable installations.

1.1 Products and Applications Included

This standard covers fiber optic cabling installed indoors (premises installations) with the addition of outside plant (OSP) applications involved in campus installations where the fiber optic cabling extends between buildings.

1.2 Regulatory and Other Requirements

This publication is intended to comply with ANSI/NFPA 70, the National Electrical Code (NEC). It is the responsibility of users of this publication to comply with state and local electrical codes, OSHA occupational safety regulations as well as follow manufacturer's installation instructions when installing electrical products and systems.

The information in this publication is also intended to comply with the following:

- ANSI/IEEE C2-2007, National Electrical Safety Code
- ANSI/TIA/EIA 568-C, Commercial Building Telecommunications Cabling Standard
- ANSI/TIA/EIA 569-B, Commercial Building Standard for Telecommunications Wiring Pathways and Spaces
- ANSI/TIA/EIA 606-A, Administration Standard for Commercial Telecommunications Infrastructure
- ANSI/TIA/EIA 607-A, Commercial Building Grounding and Bonding Requirements for Telecommunications
- NECA/BICSI 568-2006 Standard for Installing Commercial Building Telecommunication Cabling (ANSI)

Only qualified persons familiar with installation and testing of fiber optic cabling should perform the work described in this publication. The term "qualified person" is defined in Article 100 of the NEC.

Other *National Electrical Installation Standards* provide additional guidance for installing particular types of electrical products and systems. A complete list of *NEIS* is provided in Annex C.

The Fiber Optic Association, Inc., the professional society of fiber optics, maintains an extensive technical reference web site on fiber optics. This website covers topics related to fiber optic technology, components, installation, testing, troubleshooting and standards in depth. Visit www.thefoa.org/tech/ref for more complete information.

1.3 Fiber Optic Topologies

In premises applications, fiber optic cables can be used as the backbone cabling in a standard structured cabling network, connecting network hardware in the computer room/main cross connect to local network hardware in a telecom closet.

In an optimized fiber optic network, cables go directly to the work area with only passive connections in the links. This architecture is called "centralized fiber optic cabling." Backbone cables typically contain larger numbers of fibers than horizontal fiber optic