



ATIS-0600333.2013 (S2023)

GROUNDING AND BONDING OF TELECOMMUNICATIONS EQUIPMENT

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ATIS-0600333.2013(S2023) *Grounding and Bonding of Telecommunications Equipment*

Is an American National Standard developed by the **Network Electrical Protection (NEP) Subcommittee** under the **ATIS Sustainability in Telecommunications: Energy and Protection (STEP) Committee**.

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American National Standard for Telecommunications

Grounding and Bonding of Telecommunications Equipment

Alliance for Telecommunications Industry Solutions

Approved January 7, 2013

American National Standards Institute, Inc.

Abstract:

This standard defines and describes the grounding and bonding topologies commonly used for the installation of network telecommunications equipment in central offices and similar type facilities. It addresses the baseline grounding and bonding requirements for telecommunications equipment, the associated dc and ac power facilities, and the interfacing of co-located telecommunications systems installed in central offices and similar facilities. In addition, the document defines a harmonized grounding and bonding terminology, using the terminology developed by the Telecommunication Standardization Sector of the International Telecommunication Union (ITU-T). Grounding and bonding information from other standards related to telecommunications equipment is also included.

Foreword

The information contained in this Foreword is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. As such, this Foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the standard.

The Alliance for Telecommunication Industry Solutions (ATIS) serves the public through improved understanding between providers, customers, and manufacturers. The Sustainability in Telecom: Energy and Protection (STEP) Committee – formerly the Network Interface, Power, and Protection Committee (NIPP) – engages industry expertise to develop standards and technical reports for telecommunications equipment and environments in the areas of energy efficiency, environmental impacts, power and protection. The work products of STEP enable vendors, operators and their customers to deploy and operate reliable, environmentally sustainable, energy efficient communications technologies. STEP is committed to proactive engagement with national, regional and international standards development organizations and forums that share its scope of work.

In addition, the subject matter experts recognized the need for defining a harmonized grounding and bonding terminology, using the terminology developed by the Telecommunication Standardization Sector of the International Telecommunication Union (ITU-T). This standard was expected to contain verbatim or near-verbatim excerpts from ITU Recommendation K.27. Grounding and bonding information from other standards pertinent to telecommunications equipment was to be incorporated into the new standard.

Although a large number of sources of information exists within the telecommunications industry regarding grounding and bonding of telecommunications installations, electrical protection, control of EMI and ESD, and related subjects. Information exists in ANSI-TIA-607-B, *Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises*.

Some existing standards incorporate aspects of bonding and grounding relevant to telecommunications equipment. Examples of such standards are: American National Standard ANSI/NFPA 70 National Electrical Code, American National Standard for Telecommunications ATIS-0600311, *DC Power Systems – Telecommunications Environment Protection*; and American National Standard for Telecommunications ATIS-0600313, *Electrical Protection for Telecommunications Central Offices and Similar Type Facilities*. It is not intended that the requirements of this standard supersede any pertinent requirements of any other standard, but rather that it provide practical and supplemental information on bonding and grounding of telecommunications equipment consolidated in a single document.

Although it represents a consensus of the subject matter experts in bonding and grounding of telecommunications equipment, this standard is in no way intended to guarantee against damage or injury that may result from events such as lightning, ac or dc power faults, EMI, ESD or other similar occurrences.

There are five annexes to this standard. All annexes are informative and are not considered a part of this standard.

ANSI guidelines specify two categories of requirements: mandatory and recommendation. The mandatory requirements are designated by the word *shall* and recommendations by the word *should*. Where both a mandatory requirement and a recommendation are specified for the same criterion, the recommendation represents a goal currently identifiable as having distinct compatibility or performance advantages.

Suggestions for improvement of this document are welcome. They should be sent to the Alliance for Telecommunications Industry Solutions, NIPP, 1200 G Street NW, Suite 500, Washington, DC 20005.

At the time of consensus on this document, STEP, which was responsible for its development, had the following roster:

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The Network Electrical Protection (NEP) Subcommittee was responsible for the development of this document.

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American National Standard for Telecommunications –

Grounding and Bonding of Telecommunications Equipment

1 Scope, Purpose, & Application

1.1 Scope

This standard is intended to define and describe the grounding and bonding topologies commonly used for the installation of network telecommunications equipment in central offices and similar type facilities. It addresses the requirements for grounding and bonding of network telecommunication equipment, the associated dc and ac power facilities, and the interfacing of co-located telecommunications systems.

1.2 Purpose

Within its scope, the purpose of this standard is to:

1. Consolidate grounding and bonding information from other standards pertinent to telecommunications equipment installed in central offices and similar type facilities;
2. Define and promote the use of harmonized grounding and bonding terminology; and
3. Define baseline grounding and bonding requirements.

1.3 Application

This standard applies to the grounding and bonding of network telecommunications equipment installed in central offices and other similar facilities.

2 Normative References

The following standards contain provisions that, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this American National Standard should investigate the possibility of applying the most recent editions of the standards indicated below.

ATIS-0600313.2008, *Electrical Protection for Telecommunications Central Offices and Similar Type Facilities*.¹

ATIS-0600334.2008, *Electrical Protection of Communications Towers and Associated Structures*.¹

ANSI/IEEE, *Standard Dictionary of Electrical and Electronics Terms*.²

ANSI/NFPA 70-2011, *National Electrical Code*.³

¹ ATIS documents are available from the Alliance for Telecommunications Industry Solutions, 1200 G Street N.W., Suite 500, Washington, DC 20005. < <http://www.atis.org> >

² This document is available from the Institute of Electrical and Electronics Engineers (IEEE). < <http://standards.ieee.org/catalog/olis/index.html> >

³ NFPA 70 is available from the National Fire Protection Association, One Batterymarch Park, Quincy, MA 02269. < <http://www.nfpacatalog.org> >