ATIS-0600329.2014(R2019)

Network Equipment – Earthquake Resistance

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

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American National Standard for Telecommunications

Network Equipment – Earthquake Resistance

Alliance for Telecommunications Industry Solutions

Approved February 25, 2014

American National Standards Institute, Inc.

Abstract

This standard, when used with established earthquake qualification practices, sets forth test methods, performance requirements, and acceptance criteria for determining the earthquake resistance of telecommunications equipment. Earthquake resistance is the equipment's ability to maintain a defined level of functionality without physical damage, disruption of service, or personnel hazard, during and after an earthquake. The purpose of this standard is to establish minimum levels of robustness for telecommunications equipment that may provide a level of survivability to preserve telecommunications services during and after an earthquake. This American National Standard establishes methods for determining equipment functionality within a defined earthquake environment. The test processes and performance requirements described in this standard apply to all telecommunications equipment fastened to the floor, walls, or other structural elements of telecommunications infrastructure.

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.

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, STEP, 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:

K. Biholar, STEP Chair (Alcatel-Lucent)

B. Pipkin, STEP Vice-Chair (AT&T)

R. Ivans, STEP NPP Chair (Underwriters Laboratories)

C. Forbes, STEP NPP Vice-Chair (NTS)

The Network Physical Protection (NPP) Subcommittee was responsible for the development of this document.

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1.1 Scope

This standard, when used with established earthquake qualification practices, sets forth test methods, performance requirements, and acceptance criteria for determining the earthquake resistance of telecommunications equipment. Earthquake resistance is the equipment's ability to maintain a defined level of functionality without physical damage, disruption of service, or personnel hazard during and after an earthquake.

Unless specifically indicated, this standard does not include performance requirements for the equipment mounting hardware, such as concrete anchor bolts. It is expected that the mounting hardware used at the installation will be sufficient to withstand earthquake loads.

1.2 Purpose

The purpose of this standard is to establish minimum levels of robustness for telecommunications equipment that may provide a level of survivability to preserve telecommunications services during and after an earthquake. This standard establishes methods for determining equipment functionality within a defined earthquake environment.

1.3 Application

The test processes and performance requirements described in this standard apply to all telecommunications equipment fastened to the floor, walls, or other structural elements of telecommunications infrastructure.

Examples of telecommunications equipment are switching equipment, transmission equipment, dc power systems, network/operations support, and data equipment.

Equipment may be tested to either of two earthquake risk levels, low risk or high risk, as specified. Equipment (mounted in a frame or cabinet) tested and found compliant for the high risk level requirements is considered compliant with the low risk level requirements. No additional testing is necessary.