ATIS-0600319.2020

Equipment Assemblies – Fire Propagation Risk Assessment Criteria

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ATIS-0600319.2020, *Equipment Assemblies – Fire Propagation Risk Assessment Criteria*

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American National Standard for Telecommunications

Equipment Assemblies – Fire Propagation Risk Assessment Criteria

Alliance for Telecommunications Industry Solutions

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American National Standards Institute, Inc.

Abstract

The purpose of this standard is to provide fire propagation hazard risk assessment criteria for communications equipment assemblies used in telecommunications network facilities.

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 Telecommunications 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 communications equipment and telecommunications 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.

Originally, this standard established a fire testing method for characterizing the fire propagation hazard of telecommunications equipment assemblies. The evolution of the communications industry has expanded the scope of relevant equipment to encompass both historic telecommunications equipment and emerging communications equipment. The standard was based on the 1992 research findings of Underwriters Laboratories (UL) who was commissioned to study the burning phenomena of then-current representative communications products, and to develop a fire testing methodology considered representative of how communications equipment fires are initiated and propagated. Included in UL's study was the determination that summing the fuel load and heat release rate of a standardized array of circuit packs using an oxygen calorimeter could effectively characterize the fire propagation hazard associated with a communications system. The size and construction of equipment used for communications purposes has substantially changed since this standard was initially published.

This standard was revised to include fire propagation hazard risk assessment criteria that can be applied to products according to their physical characteristics and performance results of fire testing. The criteria are based in part on the findings of UL, which was commissioned in the year 2000 to study the potential for applications of the established fire test methodology according to equipment size and construction. Additionally, the risk assessment criteria are based on extensive equipment fire test performance experience gathered since the standard was originally published.

This standard contains an informative annex (Annex B), which is 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, 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 leadership:

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1 Scope, Purpose, & Application

1.1 Scope

The fire hazard risk assessment criteria defined in this standard are considered applicable to frame and cabinet-mounted equipment intended to be installed in environmentally controlled telecommunications network facilities. Examples of such locations are Central Offices, Controlled Environmental Vaults, and aboveground Huts.

This standard does not apply to auxiliary monitoring equipment such as oscilloscopes, personal computers, portable test equipment, etc., which are not integral to the equipment.

It also does not apply to network equipment that is designed to be solely used in an outside plant cabinet/enclosure, or equipment intended to be located solely at a customer premises location.

Smoke, contamination, or other byproducts of combustion data for assessing the fire hazard of equipment is considered outside the scope of this standard

1.2 Purpose

The purpose of this American National Standard is to provide fire propagation hazard risk assessment criteria for communications equipment assemblies used in telecommunication network facilities.

1.3 Application

This standard is intended for equipment installed in telecommunications network facilities. The hazard assessment criteria provided by this standard may be used as one of the elements of a fire hazard risk assessment for a telecommunications facility and spaces with similar functions.

The results of standardized fire propagation testing or constructional evaluation may be used as elements of a fire propagation hazard analysis or risk assessment. Such an analysis should consider all of the factors pertinent to assessing the fire hazard within a telecommunications network facility and spaces with similar functions.

However, the results of evaluating communications equipment in compliance with this standard does not, unto itself, eliminate the potential risk of a fire hazard in a telecommunications network facility and in spaces with similar functions.

1.4 Units of Measure

Units of measure in this standard are shown in both SI and American Standard Units. Where a unit of measure is followed by a value enclosed in parentheses, the second value may be a mathematical approximation of the first value.