ATIS-0600017.202

Non-Halogenated DC Power Wire and Cable For Telecommunications Power Systems

AMERICAN NATIONAL STANDARD FOR TELECOMMUNICATIONS

As a leading technology and solutions development organization, the Alliance for Telecommunications Industry Solutions (ATIS) brings together the top global ICT companies to advance the industry's most pressing business priorities. ATIS' nearly 200 member companies are currently working to address the All-IP transition, 5G, network functions virtualization, big data analytics, cloud services, device solutions, emergency services, M2M, cyber security, network evolution, quality of service, billing support, operations, and much more. These priorities follow a fast-track development lifecycle — from design and innovation through standards, specifications, requirements, business use cases, software toolkits, open source solutions, and interoperability testing.

ATIS is accredited by the American National Standards Institute (ANSI). The organization is the North American Organizational Partner for the 3rd Generation Partnership Project (3GPP), a founding Partner of the oneM2M global initiative, a member of the International Telecommunication Union (ITU), as well as a member of the Inter-American Telecommunication Commission (CITEL). For more information, visit www.atis.org.

AMERICAN NATIONAL STANDARD

Approval of an American National Standard requires review by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer.

Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made towards their resolution.

The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether has approved the standards or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards.

The American National Standards Institute does not develop standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretations should be addressed to the secretariat or sponsor whose name appears on the title page of this standard.

CAUTION NOTICE: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken periodically to reaffirm, revise, or withdraw this standard. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute.

Notice of Disclaimer & Limitation of Liability

The information provided in this document is directed solely to professionals who have the appropriate degree of experience to understand and interpret its contents in accordance with generally accepted engineering or other professional standards and applicable regulations. No recommendation as to products or vendors is made or should be implied.

NO REPRESENTATION OR WARRANTY IS MADE THAT THE INFORMATION IS TECHNICALLY ACCURATE OR SUFFICIENT OR CONFORMS TO ANY STATUTE, GOVERNMENTAL RULE OR REGULATION, AND FURTHER, NO REPRESENTATION OR WARRANTY IS MADE OFMERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS. ATIS SHALL NOT BE LIABLE, BEYOND THE AMOUNT OF ANY SUM RECEIVED IN PAYMENT BY ATIS FOR THIS DOCUMENT, AND IN NO EVENT SHALL ATIS BE LIABLE FOR LOST PROFITS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES. ATIS EXPRESSLY ADVISES THAT ANY AND ALL USE OF OR RELIANCE UPON THE INFORMATION PROVIDED IN THIS DOCUMENT IS AT THE RISK OF THE USER.

NOTE - The user's attention is called to the possibility that 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 whether use of an invention covered by patent rights will be required, and if any such use is required no position is taken regarding the validity of this claim or any patent rights in connection therewith. Please refer to [http://www.atis.org/legal/patentinfo.asp] to determine if any statement has been filed by a patent holder indicating a willingness to grant a license either without compensation or on reasonable and non-discriminatory terms and conditions to applicants desiring to obtain a license.

ATIS-0600017.2020, *Non-Halogenated DC Power Wire and Cable For Telecommunications Power Systems*

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

Published by
Alliance for Telecommunications Industry Solutions
1200 G Street, NW, Suite 500
Washington, DC 20005

ATIS-0600017.2020

[Revision of ATIS-0600017.2014]

American National Standard on

Non-Halogenated DC Power Wire and Cable For Telecommunications Power Systems

Alliance for Telecommunications Industry Solutions

Approved July 16, 2020

American National Standards Institute, Inc.

Abstract

This standard establishes a minimum requirement for Non-Halogenated DC power cable used to connect telecommunications DC power systems to telecommunications load equipment. It will also be used to interconnect elements of the DC power system.

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 leadership:

E. Gallo, STEP Chair (Ericsson)

J. Fuller, STEP Vice-Chair (AT&T)

J. Jackson, STEP NPS Chair (AT&T)

E. Gallo, STEP NPS Vice-Chair (Ericsson)

M. Levitre, Technical Editor (Southwire)

The Network Power Systems (NPS) Subcommittee was responsible for the development of this document.

Table of Contents

Table of Figures

Table of Tables

American National Standard for Telecommunications –

Non-Halogenated DC Power Wire and Cable For Telecommunications Power Systems

1 Scope, Purpose, & Application

1.1 Scope

Power Cables under this standard *shall* meet the minimum requirements of Telcordia "Generic Requirements for Telecommunications Power Cable", GR-347-CORE [Ref 9]. This standard covers requirements for this cable in excess of GR-347-CORE [Ref 9]. For halogenated DLO and XHHW telecommunications DC power cables, see ATIS-0600028-[Ref 7].

1.2 Purpose

This standard establishes a minimum requirement for non-halogenated DC power cable used to connect telecommunications DC power systems to telecommunications load equipment. It will also be used to interconnect elements of the DC power system.

For 16 AWG and smaller conductor sizes, where internal wiring and/or interconnection of equipment is required, refer to Annex D.

2 Normative References

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

[Ref 1] ASTM B3, *Specifications for Soft or Annealed Copper Wire*.[1]

[Ref 2] ASTM B8, Specifications for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft.[1]

[Ref 3] ASTM B33, *Specification for Tinned Soft or Annealed Copper Wire for Electrical Purposes.*[1]

[Ref 4] ASTM B172, *Specifications for Rope-Lay-Stranded Copper Conductors Having Bunch-Stranded Members, for Electrical Conductors.*[1]

[Ref 5] ASTM G21, *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.*[1]

[Ref 6] ASTM G29, *Standard Practice for Determining Algal Resistance of Plastic Films*.[1]

[Ref 7] ATIS-0600028, *DC Power Wire and Cable for Telecommunications Power Systems--for XHHW and DLO Halogenated RHW-RHH Cable Types.*[2]

[Ref 8] ATIS-0600311, *DC Power Systems – Telecommunications Environment Protection.*[2]

[1] This document is available from the ASTM International, < https://www.astm.org/>.

[2] This document is available from the Alliance for Telecommunications Industry Solutions (ATIS). < https://www.atis.org/ >