



ANSI E1.51 – 2018

**THE SELECTION, INSTALLATION, AND USE OF
SINGLE-CONDUCTOR PORTABLE POWER
FEEDER CABLE SYSTEMS FOR USE AT 600
VOLTS NOMINAL OR LESS FOR THE
DISTRIBUTION OF ELECTRICAL ENERGY IN THE
TELEVISION, FILM, LIVE PERFORMANCE AND
EVENT INDUSTRIES IN CANADA**

Approved as an American National Standard by the ANSI Board of Standards Review
on 7 November 2018.

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The ESTA Technical Standards Program

The ESTA Technical Standards Program was created to serve the ESTA membership and the entertainment industry in technical standards related matters. The goal of the Program is to take a leading role regarding technology within the entertainment industry by creating recommended practices and standards, monitoring standards issues around the world on behalf of our members, and improving communications and safety within the industry. ESTA works closely with the technical standards efforts of other organizations within our industry and represents the interests of ESTA members to ANSI, UL, and the NFPA. The Technical Standards Program is accredited by the American National Standards Institute.

The Technical Standards Council (TSC) was established to oversee and coordinate the Technical Standards Program. Made up of individuals experienced in standards-making work from throughout our industry, the Council approves all projects undertaken and assigns them to the appropriate working group. The Technical Standards Council employs a Technical Standards Manager and Assistant to coordinate the work of the Council and its working groups as well as maintain a "Standards Watch" on behalf of members. Working groups include: Control Protocols, Electrical Power, Event Safety, Floors, Fog and Smoke, Followspot Position, Photometrics, Rigging, and Stage Machinery.

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The Electrical Power Working Group, which authored this standard, consists of a cross section of entertainment industry professionals representing a diversity of interests. ESTA is committed to developing consensus-based standards and recommended practices in an open setting. Future Electrical Power Working Group projects will include updating this publication as changes in technology and experience warrant, as well as developing new standards and recommended practices for the benefit of the entertainment industry.

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Key to interest categories:

CP custom-market producer
DE designer
DR dealer or rental company
MP mass-market producer
G general interest
U user

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Scope

This standard covers the selection, installation, and safe use of single-conductor portable power feeder cable for events of a temporary nature in Canada. This includes but is not restricted to

- (a) amusement parks;
- (b) midways;
- (c) carnivals;
- (d) fairs;
- (e) film, television, and radio productions;
- (f) remote broadcasting and recording locations;
- (g) live performance and entertainment events;
- (h) touring shows and productions;
- (i) concerts;
- (j) sporting events; and
- (k) trade shows.

For the purposes of this Standard, "single-conductor portable power feeder cable system" covers any use of these cable types and single-pole separable connectors, both in-line and panel mounted, between the load terminals of the main overcurrent protection device used to energize the system and the line terminals of the feeder inlet of the last disconnecting means or utilization equipment.

Definitions

Accredited certification organization — an organization that has been accredited by the Standards Council of Canada, in accordance with specific criteria, procedures, and requirements, to operate, on a continuing basis, a certification program for electrical equipment.

Ampacity: is the current carrying capacity of electrical conductors expressed in amperes.

Ampere (A): unit of measure for the rate of current flow.

Authority Having Jurisdiction (AHJ): The office or individual responsible for approving installations and/or equipment and materials.

Authorized person: a qualified person who, in his or her duties or occupation, is obliged to approach or handle electrical equipment; or a person who, having been warned of the hazards involved, has been instructed or authorized to do so by someone having authority to give the instruction or authorization.

Bond (Bonded): connect (connected) by bonding.

Bonding: a low impedance path obtained by permanently joining all normally non-current-carrying metal parts to assure electrical continuity and having the capacity to safely conduct any current likely to be imposed on it.

Bonding conductor: a conductor that connects the non-current-carrying parts of electrical equipment,