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# ANSI E1.19 - 2015 Recommended Practice for the use of Class A Ground-Fault Circuit Interrupters (GFCIs) intended for personnel protection in the Entertainment Industry

EP/2001-7012r19

This standard was approved as an American National Standard by ANSI's Board of Standards Review on 11 February 2015.

This standard was originally published when the Entertainment Services and Technology Association was operating under the name of PLASA North America.

ESTA has reverted to its original name, and this document has been rebranded with the current corporate name and logo. No changes have been made to the contents of the standard.

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EP/2001-7012r19

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ANSI E1.19 – 2015

EP/2001-7012r19

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EP/2001-7012r19

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## EP/2001-7012r19

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## ANSI E1.19 - 2015

# EP/2001-7012r19

# Table of Contents

1 Scope and Exclusions	1
1.1 Scope	1
1.2 Exclusions	1
1.2.1 Ground Fault Protection of Equipment	1
1.2.2 Residual Current Devices (RCDs) and Earth Leakage Circuit Breakers (ELCBs)	1
2 Definitions	1
3 Entertainment industry application types defined	2
4 Class A GFCI products	2
4.1 Response time	2
4.2 Types of products	3
4.2.1 Listed GFCI circuit breakers	3
4.2.2 Listed GFCI duplex receptacles	3
4.2.3 Listed GFCI portable adapters, 15-100 ampere 120-240 VAC single or three phase	3
4.2.4 Listed portable power distribution units with GFCI	4
4.2.5 Listed GFCI quad strings	4
4.3 Applications on Specialty Circuits	4
4.3.1 GFCI outlets on dimmed circuits	4
	4
5 Where to place GFCI protection	5
5.1 Wet Locations	5
5.2 Where not to use Class A GFCI devices	5
6 Specific Recommendations for Entertainment industry applications	5
6.1 Places of assembly	5
6.2 I neatres	5
6.2.1 Stage areas indoors.	5
6.2.4 CECI protoction for dimension	5
6.2.4 GFGI protection for diminers	5
6.4 Motion nicture and television studies, and Similar Leastions	с С
6.4 1 Wet Leastions (Indeers and Outdoors)	6
0.4. I Wel Locations (Indoors and Outdoors)	0
7 Successiul Implementation of a Class A GFCI system	6
7.1 Flacement of OFOT units felative to the load	6
7.2 Frevenuive maintenance	6
7.3 1 Off line testing	6
7.3.2 On line measuring and monitoring	6
7.4 Inspecting and testing cords and cables	7
8 Teeting the CECI installation	7
	1

## ANSI E1.19 - 2015

EP/2001-7012r19

#### 1 Scope and Exclusions

#### 1.1 Scope

The scope of this document is to recommend a practice for the safe use of Class A Ground Fault Circuit Interrupters (GFCIs) on 120-240 VAC single and three phase 60 Hz circuits with current ratings of 100 ampere or below where the voltage to ground does not exceed 150 VAC (hereinafter referred to as 15 to 100 ampere, 120-240 VAC, single and three phase circuits). GFCIs are used for personnel protection in entertainment applications encompassing places of assembly; the production of film, video, and broadcast; theatrical productions; carnivals; circuses; fairs; and similar events in North America.

Informational Note: Systems that are 230 VAC to ground (e.g., European power systems) are outside of the scope of the class A GFCI Standard (UL 943) so they are outside the scope of this E1.19 Recommended Practice.

#### 1.2 Exclusions

#### **1.2.1 Ground Fault Protection of Equipment**

Ground Fault Protection of Equipment are designed to provide protection of equipment from line to ground fault currents by disconnecting all ungrounded conductors on a circuit where such a fault occurs. This protection is provided at fault current levels higher than those for GFCI protection for personnel. Ground Fault Protection is equipment protection not personnel protection and ground fault protection of equipment shall not be used anywhere in place of Class A GFCI protection where GFCI protection is required or desired.

#### 1.2.2 Residual Current Devices (RCDs) and Earth Leakage Circuit Breakers (ELCBs)

Residual Current Devices (RCDs) and Earth Leakage Circuit Breakers (ELCBs) are terms used for circuit protection devices commonly used in Europe, Australia and other countries. These devices are considered personnel protection in some countries but not in the USA or Canada and do not meet the requirements of Class A GFCI for personnel protection. RCDs and ELCBs shall not be used to provide Class A GFCI protection for personnel.

Informational Note: RCD and ELCBs can be used to mitigate ground fault risks on circuits where GFCIs are not required. These devices have higher trip thresholds and are frequently rated for higher voltages that would be outside of the scope UL 943, the GFCI standard.

## 2 Definitions

**2.1 Class A GFCI:** A device whose function is to provide personnel protection by de-energizing a circuit, or portion thereof when the fault current to ground exceeds 6 milliamps within a period of time established by the GFCI Standard. GFCI products that meet these requirements are referred to by Nationally Recognized Testing Laboratories (NRTLs) as Class A GFCIs.

**2.2 Nationally Recognized Testing Laboratory (NRTL):** An organization that is recognized by the United States Department of Labor's Occupational Safety and Health Administration (OSHA) in accordance with the requirements of 29 CFR 1910.7 "Definition and Requirements for a Nationally Recognized Testing Laboratory" that accepts equipment or materials and tests for safety, lists and labels accordingly. The equivalent status in Canada is a Standards Council of Canada Accredited Certification Body.

2.3 NEMA: National Electrical Manufacturers Association.

**2.4 Underwriters Laboratories (UL):** A Nationally Recognized Testing Laboratory that also writes safety standards through an open standards process.