



ANSI E1.58 – 2017
Electrical Safety Standard for Portable Stage and
Studio Equipment Used Outdoors

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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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Foreword

The entertainment industry often uses standard electrical equipment to create performance spaces in outdoor locations that are subject to weather and damp conditions. As a general requirement, the National Electrical Code specifies that all electrical equipment must be approved as suitable for the installation and use. [NEC 110.2] Suitability of equipment may be evidenced by listing or labeling. [NEC 110.3(A)] It is also required that the equipment shall be installed and used in accordance with any instructions included with the listing or labeling. [NEC 110.3 (B)]. While this would preclude the use of indoor listed equipment in an outdoor setting, the NEC provides an exception for temporary theatrical and motion picture installations provided the installation is supervised by qualified personnel. (See Annex A for citations from NEC Article 110.)

1 General

1.1 Scope

The scope of this Standard is the planning and execution of temporary outdoor portable electrical installations in compliance with the intent of NFPA 70, National Electrical Code, Sections 520.10 and 530.6 which state that “Portable stage and studio lighting equipment and portable power distribution equipment not identified for outdoor use shall be permitted for temporary use outdoors, provided the equipment is supervised by qualified personnel while energized and barriered from the general public.” (This quote is from 520.10; 530.6 is similar.) Safety is the primary concern. Conditions that degrade the operational performance or life of the electrical equipment are secondary.

FPN: While this scope focuses on outdoor installations, it can be noted that the same principles would apply to an indoor facility that is also identified as a damp or wet location.

1.2 Purpose

The purpose of this document is to provide guidance for qualified persons tasked with supervising portable stage and studio lighting equipment and portable power distribution equipment not identified for outdoor use when used outdoors where weather such as damp or wet conditions and temperature extremes exist; recognizing the hazards involved and identifying ways to mitigate the hazards to reduce the risk of either injury to persons or damage to property.

2 Identify Outdoor Conditions

The qualified person responsible for the outdoor electrical installation shall check the forecast weather conditions to determine what can be expected during the installation, use, and removal of all electrical equipment. This includes the forecast for precipitation, flood potential, the range of ambient temperatures, and wind conditions.

FPN: Professional weather services may be the best source for accurate forecasts.

2.1 The National Electrical Code (NFPA 70, Article 100 Definitions) includes definitions for damp and wet locations. It also provides descriptions of various weather and rain