



City of Las Vegas
BUILDING & SAFETY DEPARTMENT

**ELECTRICAL INSPECTION GUIDELINE
FOR SPECIAL EVENTS**

An electrical permit is required for the installation of temporary electrical distribution systems serving special events. In addition, the required electrical permit may only be issued to a Nevada licensed Electrical Contractor. The following guidelines are intended to assist electrical contractors in obtaining electrical inspection approval of temporary wiring installed in conjunction with special events. The below requirements are a summary of the requirements Article 525 of the *2008 National Electrical Code* applicable to carnivals, circuses, fairs and similar special events. However, the electrical contractor is responsible to ensure that such installations conform to all applicable NEC requirements whether or not those requirements are included in the below summary.

PORTABLE AND VEHICLE –MOUNTED GENERATORS (ARTICLE 250.34)

(A) Portable Generators

The frame of a portable generator shall not be required to be connected to a grounding electrode conductor as defined in Article 250.52 for a system supplied by the generator under the following conditions:

- (1) The generator supplies only equipment mounted on the generator, cord-and-plug-connected equipment through receptacles mounted on the generator, or both , and
- (2) The normally non-current-carrying metal parts of equipment and the equipment grounding conductor terminals of the receptacles are connected to the generator frame.

COMMENT:

Portable generators that do not serve subpanels do not require a separate grounding electrode. However, if the portable generator serves a subpanel, then the generator must be connected to an approved grounding electrode.

II. POWER SOURCES

SERVICES (ARTICLE 525.10)

(A) Guarding

Service equipment shall not be installed in a location that is accessible to unqualified persons, unless the equipment is lockable

SERVICES (ARTICLE 525.10[A]) CONTINUED:

(B) Mounting and Location

Service equipment shall be mounted on solid backing and be installed so as to be protected from the weather, unless of weatherproof construction.

COMMENT:

The working clearances specified in Article 110.26 are applicable.

MULTIPLE SOURCES OF SUPPLY (ARTICLE 525.11)

- Where multiple services or separately derived system, or both, supply portable structures, the equipment grounding conductors of all the sources of supply that serve such structures separated by less than 12 feet shall be bonded together at the portable structures.

COMMENT:

Article 250.30 also applies and requires separately derived systems (such as transformers) be grounded. Article 250.52 specifies the type of grounding electrode and Article 250.66 specifies the required size of the grounding electrode conductor.

- The bonding conductor shall be copper and sized in accordance with Table 250.122 based on the largest overcurrent device supplying the portable structures, but not smaller than 6 AEG.

III. WIRING METHODS

WIRING METHODS (ARTICLE 525.20)

(A) Type

- Where flexible cords or cables are used, they shall be listed for extra hard usage where subject to physical damage.
- Where used outdoors, flexible cords and cables shall also be listed for wet locations and shall be sunlight resistant.

COMMENT:

Cables and cords listed and identified as SEW, SEOW, SEOOW, SOW, STW, STOW, STOOW and W are approved for extra hard usage and wet locations pursuant to NEC Table 400.4.

WIRING METHODS (ARTICLE 525.20[A]) CONTINUED:

- Where flexible cords or cables are use and are not subject to physical damage, they shall be permitted to be listed for hard usage.

COMMENT:

Approved cords and cables are listed in NEC Table 400.4

(D) Splices

- Flexible cords or cables shall be continuous without splices or tap between boxes or fittings.

COMMENT:

Splices shall be contained in a junction box.

(E) Cord Connectors

- Cord connectors shall not be laid on the ground unless listed for wet locations.
- Connectors and cable connections shall not be placed in audience traffic paths or within areas accessible to the public unless guarded.

(G) Protection

- Flexible cords or cables accessible to the public shall be arranged to minimize the tripping hazard and shall be permitted to be covered with nonconductive matting, provided that the matting does not constitute a greater tripping hazard than the uncovered cables. It shall be permitted to bury cables. The requirements of Article 300.5 shall not apply.

COMMENT:

Protection of cords or cables does not eliminate the requirement for hard usage rated cords and cables.

(H) Boxes and Fittings

- A box or fitting shall be installed at each connection point, outlet, switchpoint, or junction point.

COMMENT:

Boxes shall be listed for the location in which they are located. For example, boxes installed outdoors shall be listed for wet locations.

RIDES, TENTS AND CONCESSIONS (ARTICLE 525.21)

Note: Electrical permits are not required for electrical equipment serving tents. Amusement rides are regulated by the “City of Las Vegas 2010 Amusement and Transportation Rides Code.”

(A) Disconnecting Means

- Each portable structure shall be provided with a disconnection switch located within sight of and within 6 feet of the operator’s station.
- Where accessible to unqualified persons, the enclosure for the switch or circuit breaker shall be of the lockable type.

COMMENT:

A portable stage is a portable structure. Accordingly, all stages with electrical equipment installed in or on the stage shall have a disconnect. The disconnect is required to be readily accessible. In addition, disconnects installed outdoors shall be rated for wet locations. Such disconnects shall be properly supported.

(B) Portable Wiring Inside Tents and Concessions

- Electrical wiring for lighting, where installed inside of tents and concessions, shall be securely installed and, where subject to physical damage, shall be provided with mechanical protection.
- All lamps for general illumination shall be protected from accidental breakage by a suitable luminaire or lampholder with a guard.

PORTABLE DISTRIBUTION OR TERMINATION BOXES (ARTICLE 525.22)

(A) Construction

- Boxes shall be designed so that no live parts are exposed to accidental contact.
- Where installed outdoors, the box shall be of weatherproof construction and mounted so that the bottom of the enclosure is not less than 6 inches above the ground.

(B) Busbars and Terminals

- Busbars shall have an ampere rating of not less than the overcurrent device supplying the feeder supplying the box.
- Where conductors terminate directly on busbars, busbar connectors shall be provided.

PORTABLE DISTRIBUTION OR TERMINATION BOXES (ARTICLE 525.22) CONTINUED:

(C) Receptacles and Overcurrent Protection

- Receptacles shall have overcurrent protection installed within the box.
- The overcurrent protection shall not exceed the ampere rating of the receptacle, except as permitted in Article 430 for motor loads.

**GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION IS REQUIRED
ARTICLE 525.23)**

(A) Where GFCI Protection Is Required.

The ground fault circuit interrupter shall be permitted to be an integral part of the attachment plug or located in the power supply cord, within 12 inches of the attachment plug. Listed cord sets incorporating ground-fault circuit interrupter for personnel shall be permitted.

- (1) 125-volt, single-phase, 15- and 20-ampere non-locking-type receptacles used for disassembly and reassembly or readily accessible to the general public.
- (2) Equipment that is readily accessible to the general public and supplies from 125-volt, single-phase, 15- or 20-ampere branch circuit

COMMENT

Exterior receptacles listed for use in wet locations in the vertical position shall be installed in the vertical position

(B) Where GFCI Protection is Not Required.

Receptacles that only facilitate quick disconnecting and reconnecting of electrical equipment shall not be required to be provided with GFCI protection. These receptacles shall be of the locking type.

(C) Where GFCI Protection Is Not Permitted

Egress lighting shall not be protected by a GFCI.

IV. GROUNDING AND BONDING

EQUIPMENT BONDING (ARTICLE 525.30)

The following equipment connected to the same source shall be bonded:

- (1) Metal raceways and metal-sheathed cable
- (2) Metal enclosures of electrical equipment
- (3) Metal frames and metal parts of portable structures, trailers, trucks, or other equipment that contain or support electrical equipment.

COMMENT:

The metal portions of portable stages shall be bonded.

The equipment grounding conductor of the circuit supplying the equipment in items (1), (2) or (3) that is likely to energize the metal frame or part shall be permitted to serve as the bonding means.

EQUIPMENT GROUNDING

- All equipment to be grounded shall be connected to an equipment grounding conductor of a type recognized by Article 250.118 and installed in accordance with Parts VI and VII of Article 250.
- The equipment grounding conductor shall be connected to the system grounding conductor at the service disconnecting means or, in the case of a separately derived system such as a generator, at the generator or first disconnecting means supplied by the generator.
- The grounded circuit conductor shall not be connected to the equipment grounding conductor on the load side of the service disconnecting means or the load side of a separately derived system disconnecting means.

GROUNDING CONDUCTOR CONTINUITY ASSURANCE

The continuity of the grounding conductor system used to reduce electrical shock hazards as required by Article 250.114, 250.138, 406.3(C), and 590.4(D) shall be verified each time that portable electrical equipment is connected.