AN OVERVIEW OF ELECTRICAL CODE REQUIREMENTS

Article 525 of the National Electrical Code covers the installation of portable wiring and equipment for carnivals, circuses, exhibitions, fairs, traveling attractions, and similar functions, including wiring in or on all structures. It is the responsibility of each exhibitor or user of electrical equipment to make arrangements for an electrical inspection.

### 525.1 Multiple Sources of Supply
Where multiple separately derived systems or services or both supply rides, games, attractions or other structures that are separated by less than 12 feet, all sources shall be bonded to the same grounding electrode system.

### 525.23 Ground-Fault Circuit-Interrupter Protection
All 125-volt, single phase, 15- and 20-ampere receptacle outlets that are in use by personnel or readily accessible to the general public shall have listed GFCI protection. Manufactured cord sets incorporating listed ground-fault circuit-interrupter protection for personnel shall be permitted. Egress lighting shall not be connected to the load side of a ground-fault circuit-interrupter device.

### 525.3 Attractions Using Contained Volumes of Water
Attractions utilizing pools, fountains and similar installations with contained volumes of water shall be installed per applicable the requirements of NEC Article 680.

### 525.3 Audio Signal and Amplification Equipment
The requirements of NEC Article 640 shall apply to the wiring and installation of audio signal processing, amplification and reproduction equipment.

### 525.21 Portable Wiring Inside Tents
Wiring for temporary lighting, where installed inside tents and concessions, shall be securely installed and shall be protected from accidental breakage by a suitable fixture or lamp-holder with a guard. Overhead lighting may be installed with approved Type SO cord sets. Festoon lighting or cord sets shall be installed at least 10 feet above ground accessible to the public.

### 525.22 Receptacles
Receptacle outlets shall have the proper rating for the circuit amperes, voltage, and number of phases. All receptacles shall be grounded by an equipment grounding conductor installed with the circuit conductors. Unless otherwise protected from the weather, receptacles and switches used outdoors must have weatherproof covers. The grounding prong shall only be used for grounding. Cord and cable plugs and receptacles shall not lie on the ground. Where single-pole separable connectors are used, they shall comply with 530.22.

### 445.13 Generators
Generators or other power supply units and the associated electrical distribution cords and panelboards must be inspected at each engagement during the season. The conductors from the generator terminals to the service equipment, transformer, or generator shall be connected to an approved grounding electrode system with a stranded copper grounding electrode conductor sized not smaller than 4 AWG. This conductor shall be installed without splice from the grounding terminal to the grounding electrode shall be connected with approved clamps.

Generators that supply only loads connected directly to receptacle outlets mounted on the generator and where the equipment grounding terminals of the receptacles are bonded to the generator frame shall not be required to be connected to a grounding electrode system. All 125-volt, single phase, 15- and 20-ampere receptacles shall be GFCI-protected.

**NOTE:** This information is not intended to be your only electrical information resource. Additional information and knowledge are necessary for an electrical installation that complies with the National Electrical Code and is free from fire and electric shock hazards.
FREQUENTLY ASKED QUESTIONS

1. What is the responsibility of the Department of Labor & Industry?
   The Department has the responsibility for inspection of all electrical wiring and equipment for transient events such as carnivals, circuses, festivals, production sites and road construction projects. Portable generators and distribution shall be inspected at each setup. Each ride, concession or similar unit shall be inspected at or before its initial operation each season. Equipment shall be in compliance before it is energized and put into use.

2. What is the responsibility of the user?
   Users of portable power systems are responsible for notifying the department or the inspector sufficiently in advance to permit completion of the inspection, the correction of code violations, and re-inspection if necessary.

3. Is inspection of equipment necessary before the unit can be energized or used?
   Equipment shall not be energized until it has been inspected and approved.

4. Does the Department of Labor & Industry perform electrical inspections in all areas of the state?
   Our inspectors make electrical inspections statewide, except in cities that have made provisions for electrical inspections within their jurisdiction. A list of all electrical inspectors and contact information is available at the website, www.electricity.state.mn.us.

5. How do I request an electrical inspection?
   The request for electrical inspection form is completed and the appropriate inspection fee collected at the time of the inspection.

6. Do I need an inspection every year?
   An initial inspection is required at or before the first setup each season. Portable generators with distribution shall be inspected at each setup.

7. Can the inspection be requested and made before the first appearance of the season?
   Inspections of concession trailers can be arranged in advance by contacting the local inspector directly or the Department of Labor & Industry. Inspections can be made at any mutually agreeable time and location.

8. What if there are code violations?
   Identified code violations are documented on an inspection report form and a copy is provided to the user of the equipment. Equipment shall be in compliance before it is energized and put into use.

9. Are there restrictions about who can do electrical work?
   The installation, repair and correction of code violations of all on-site electrical wiring shall be done by licensed electrical contractors. Owners are not allowed to do any electrical wiring once the equipment is on-site. Persons other than licensed employees of electrical contractors are limited to plugging portable equipment into receptacle outlets.

10. How is the equipment marked to indicate that it has passed inspection?
    When equipment is in compliance, an inspection sticker is placed on the equipment with the date of inspection and the inspection number. The owner’s copy of the inspection form is another record of compliance, which should be kept with the equipment for the remainder of the season.

11. Are special inspections required for amusement rides?
    Amusement rides must be inspected by a level II or III AIMS or NAARSO certified amusement ride inspector in the same calendar year and prior to July 1st or the first operation in Minnesota, whichever is later.

12. How much does an electrical inspection cost?
    The inspection fee for each generator or source of supply is:
    - 0 to 400 amp capacity: $35
    - 401 to 800 amp capacity: $60
    - Above 800 amp capacity: $100

   In addition to the generator inspection, there shall be an inspection of all feeders and distribution equipment at each setup. This fee is at the $80 hourly rate with a one-hour minimum charge.

   The inspection fee for each amusement ride, device, concession, attraction, or similar unit with a supply up to and including 60 amperes is $35.

   The fee for inspection of a unit with a supply over 60 amperes is $40.

   In addition to the above fees, inspections made on Saturdays, Sundays, holidays, or after regular business hours will be charged at the $80 hourly rate with a one-hour minimum charge.

   If re-inspection of corrections is necessary, there is a $35 charge for each re-inspection.

   Inspection fees must be paid by check. Cash and credit cards are not accepted.

Requirements for Portable & Temporary Electrical Power Distribution

This brochure contains important information regarding electrical licensing, electrical inspection, and the requirements of the National Electrical Code for carnivals, circuses, fairs, festivals, and similar transient projects that employ portable or temporary electrical power distribution.

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