

Annual Electrical Inspection of Outdoor Inflatable Amusement Equipment

Notice: All inflatable amusement devices that use electrical power are subject to an annual electrical inspection. Most inflatable amusement devices obtain an annual electrical inspection as part of a fair, festival or other event or celebration, along with other units such as concession trailers, game trailers, food trucks, amusement rides, etc. However, inflatable amusement devices have largely replaced traditional amusement rides at many events, and often are the only amusement devices. Please see Item Number 3 on page two of this bulletin where more than three (3) inflatable amusement devices will be set up at any event.

The owner, operator or appointed representative of an inflatable amusement device must notify the department of its itinerary or schedule and make application for initial inspection a minimum of 14 days before its first engagement or setup. For subsequent engagements or setups not listed on the itinerary or schedule submitted to the department, the department must be notified at least 48 hours in advance. The inspection fees must be calculated in accordance with Minnesota Statutes Section 326B.37. The minimum inspection fee is only \$35, which is very reasonable.

At or before the first appearance and operation of the year, each inflatable amusement device must be inspected for electrical safety. The initial electrical inspection includes blower motors, electrical supply and distribution equipment, portable power distribution cords and cables, disconnecting means (disconnect switches), generators and other equipment or portable or temporary power distribution wiring associated with the operation of the inflatable amusement devices. The inspection must be completed prior to the inflatable amusement device(s) being energized or put into use. Electrical requirements for outdoor inflatable amusement devices include, but are not limited to, the following:

- The factory-installed supply cord to the On/Off switch at the blower motor must include one conductor dedicated as an insulated equipment grounding conductor. The size and type of the factory-installed blower motor supply cord is not regulated by the National Electrical Code. However, the electrical inspector reserves the right to reject any factory-installed blower motor supply cord that is damaged, spliced or otherwise unsafe to be used. Cord connections are not permitted to be laid on the ground.
- All exposed metal parts of the inflatable amusement device blower motor and housing must be bonded to the equipment grounding conductor in the factory-installed supply cord. All cords must have a grounding conductor and grounding type attachment plug. Listed double-insulated inflatable amusement device blower motor equipment is permitted.
- The inflatable amusement device blower motor On/Off switch must simultaneously disconnect all ungrounded (hot) conductors.
- Portable power distribution cords that are part of a field-installed temporary portable power distribution system must be size #12 AWG or larger Type G, PPE, S, SC-family, SE-family, SO-family, ST-family, Type W or other types identified in the National Electrical Code (NEC) for extra-hard usage and must be of the grounding type. The cord type is printed or embossed on approved cords. Two-conductor cords are not allowed. Portable cords and cables with a “J” in the type designation (such as Type SJT) are junior-hard-service rated

443 Lafayette Road N., St. Paul, MN 55155 • (651) 284-5005 • www.dli.mn.gov

and are not permitted to be used where subject to physical damage. When used outdoors, all cords must be listed for wet locations and be sunlight resistant, unless they are an integral part of listed portable equipment. All cords must be continuous and contain no splices. Temporary repair of a cord outer jacket must be made with listed repair kits and is subject to approval from the electrical inspector. The electrical inspector reserves the right to reject the temporary repair of portable cords and cables if they are determined to be unsafe.

- Portable power distribution cords and cables laid on the ground must be approved for extra-hard usage, routed and arranged to minimize a tripping hazard and be protected from accidental and physical damage. Where passing through doorways or other pinch points, physical protection must be provided. Cords and cables may be covered with approved non-conductive mats. Mats must be self-weighted to minimize movement and drape over cords and cables and not constitute a greater tripping hazard than the uncovered cords or cables.
- Cord connectors must not be laid on the ground. Connectors and cable connections must not be placed in audience traffic paths or within areas accessible to the public unless guarded.

IMPORTANT: Additional information regarding portable and temporary power is available at:

<http://www.dli.mn.gov/business/electrical-contractors/portable-and-temporary-power>

1. Examples of inflatable amusement devices include, but are not limited to, bounce houses, spacewalks, jolly jumpers, jumping castles, party jumpers, movie screens, arches, climbing attractions, slides and other similar inflatable amusement devices involving interactive play.
2. Disconnecting Means: The general requirement of National Electrical Code Section 525.21 that a disconnecting means be located within 6-feet of the operator's station is not practical for, or applicable to, inflatable amusement devices. However, the disconnecting means must be readily accessible to the operator and within sight of the inflatable amusement device. This allowance applies only to the inflatable amusement device and not to any perimeter auxiliary lighting or other electrical equipment located in the vicinity of the inflatable amusement device. The inflatable amusement device blower motor On/Off switch must not be used as the emergency disconnecting means. The inflatable amusement device blower motor On/Off switch is permitted to serve only as the normal On/Off switch for the blower motor.
3. Special Notice for Operators of More Than Three (3) Inflatable Amusement Devices: The generator and the electrical supply and distribution equipment and all portable power distribution cables and cords must be inspected at each subsequent outdoor public event where there are more than three (3) inflatable amusement devices, such as festivals, fairs, circuses and similar events. A Request for Electrical Inspection (permit) must be filed for each event location, and the owner, operator or appointed representative must arrange for the electrical inspection.
4. In addition to the requirements in the National Electrical Code, the owner, operator or appointed representative must comply with the inflatable amusement device manufacturer's installation and operational instructions. In the event of any conflict between the National Electrical Code and the manufacturer's instructions, the most restrictive code, regulations or instructions will control.
5. Additional information about inflatable amusement device safety can be found at the U.S. Consumer Product Safety Commission website:
<https://cpsc.gov/Global/Safety%20Education/Sports%20and%20Recreation/AmusementRideSafetyBulletinInflatablesAugust.pdf>

Examples of temporary portable electrical distribution equipment

NEC 525.23(D) GFCI Protection for Receptacles Supplied by Portable Cords

Is listed open neutral protection required?

Feeder Cord

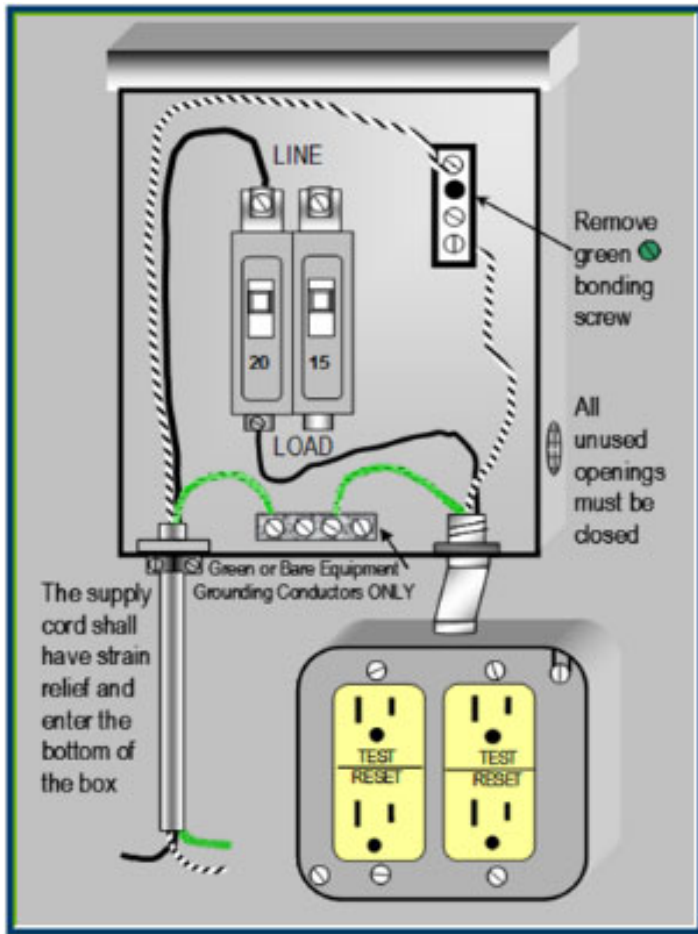
Branch Circuit Cord

GFCI receptacles in do-it-yourself quad-box not allowed

Feeder Cord

Permanent Branch Circuit Wiring

mi DEPARTMENT OF LABOR AND INDUSTRY



National Electrical Code Article

Disconnecting Means

Every concession, game, or similar attraction or unit must have an enclosed fusible disconnect switch or circuit breaker in or adjacent to each exhibitor's space which will disconnect all power

March 28, 2019 Construction Codes and Licensing Division

Disconnecting Means

- Must be readily accessible, within sight of, and within 6 feet of the operator's station
- Fuse-holders with switches mounted on box covers and switch controlled multi-outlet strips are **NOT ACCEPTABLE**
- Enclosures for disconnects installed outdoors must be rainproof, unless otherwise protected from the weather

March 28, 2019 Construction Codes and Licensing Division