



## ICC CODE CORNER

### 2015 International Fire Code®

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#### SECTION 604

##### EMERGENCY AND STANDBY POWER SYSTEMS

###### 604.1 General.

Emergency power systems and standby power systems required by this code or the International Building Code shall comply with Sections 604.1.1 through 604.1.8.

604.1.1 Stationary generators. Stationary emergency and standby power generators required by this code shall be listed in accordance with UL 2200.

604.1.2 Installation. Emergency power systems and standby power systems shall be installed in accordance with the International Building Code, NFPA 70,

NFPA 110 and NFPA 111.

604.1.3 Load transfer. Emergency power systems shall automatically provide secondary power within 10 seconds after primary power is lost, unless specified otherwise in this code. Standby power systems shall automatically provide secondary power within 60 seconds after primary power is lost unless specified otherwise in this code.

604.1.4 Load duration. Emergency power systems and standby power systems shall be designed to provide the required power for a minimum duration of 2 hours without being refueled or recharged, unless specified otherwise in this code.

604.1.5 Uninterruptable power source. An uninterrupted source of power shall be provided for equipment where required by the manufacturer's instructions, the listing, this code or applicable referenced standards.

###### 604.1.6 Interchangeability.

Emergency power systems shall be an acceptable alternative for installations that require standby power systems.

604.1.7 Group I-2 occupancies. In Group I-2 occupancies, where an essential electrical system is located in flood hazard areas established in Section 1612.3 of the International Building Code and where new or replacement essential



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electrical system generators are installed, the system shall be located and installed in accordance with ASCE 24.

604.1.8 Maintenance. Existing installations shall be maintained in accordance with the original approval and Section 604.4.

604.2 Where required. Emergency and standby power systems shall be provided where required by Sections 604.2.1 through 604.2.16.

604.2.1 Elevators and platform lifts. Standby power shall be provided for elevators and platform lifts as required in Sections 607.2, 1009.4, and 1009.5.

604.2.2 Emergency

alarm systems.

Emergency power shall be provided for emergency alarm systems as required by Section 414 of the International Building Code.

604.2.3 Emergency responder radio coverage systems. Standby power shall be provided for emergency responder radio coverage systems as required in Section 510.4.2.3.

The standby power supply shall be capable of operating the emergency responder radio coverage system for a duration of not less than 24 hours.

604.2.4 Emergency voice/alarm communication systems.

Emergency power shall be provided for emergency voice/alarm communication systems as required in Section 907.5.2.2.5. The system shall be capable of powering the required load for a duration of not less than 24 hours, as required in NFPA 72.

604.2.5 Exit signs. Emergency power shall be provided for exit signs as required in Section 1013.6.3. The system shall be capable of powering the required load for a duration of not less than 90 minutes.

604.2.6 Group I-2 occupancies. Essential electrical systems for Group I-2 occupancies shall be in accordance with Section 407.10 of the International Building Code.



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604.2.7 Group I-3 occupancies. Power-operated sliding doors or power-operated locks for swinging doors in Group I-3 occupancies shall be operable by a manual release mechanism at the door. Emergency power shall be provided for the doors and locks in accordance with Section 604.

Exceptions:

1. Emergency power is not required in facilities where provisions for remote locking and unlocking of occupied rooms in Occupancy Condition 4 are not required as set forth in the International Building Code.
2. Emergency power is not required where remote mechanical

operating releases are provided.

604.2.8 Hazardous materials. Emergency and standby power shall be provided in occupancies with hazardous materials as required in the following sections:

1. Sections 5004.7 and 5005.1.5 for hazardous materials.
2. Sections 6004.2.2.8 and 6004.3.4.2 for highly toxic and toxic gases.
3. Section 6204.1.11 for organic peroxides.

604.2.9 High-rise buildings. Standby power and emergency power shall be provided for high-rise buildings as required in Section 403 of the International Building

Code, and shall be in accordance with Section 604.

604.2.10 Horizontal sliding doors. Standby power shall be provided for horizontal sliding doors as required in Section 1010.1.4.3. The standby power supply shall have a capacity to operate not fewer than 50 closing cycles of the door.

604.2.11 Hydrogen fuel gas rooms. Standby power shall be provided for hydrogen fuel gas rooms as required by Section 5808.7.

604.2.12 Means of egress illumination. Emergency power shall be provided for means of egress illumination in accordance with Sections 1008.3 and 1104.5.1.



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604.2.13 Membrane structures. Standby power shall be provided for auxiliary inflation systems in permanent membrane structures in accordance with Section 2702 of the International Building Code. Auxiliary inflation systems shall be provided in temporary air-supported and air inflated membrane structures in accordance with Section 3103.10.4.

604.2.14 Semiconductor fabrication facilities. Emergency power shall be provided for semiconductor fabrication facilities as required in Section 2703.15.

604.2.15 Smoke control systems. Standby power shall be provided for smoke control systems

as required in Section 909.11.

604.2.16 Underground buildings. Emergency and standby power shall be provided in underground buildings as required in Section 405 of the International Building Code and shall be in accordance with Section 604.

604.3 Critical circuits. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196. Electrical circuit protective systems shall be installed in accordance with their listing requirements.

604.4 Maintenance. Emergency and standby power systems shall be maintained in accordance with NFPA

110 and NFPA 111 such that the system is capable of supplying service within the time specified for the type and duration required.

604.4.1 Schedule. Inspection, testing and maintenance of emergency and standby power systems shall be in accordance with an approved schedule established upon completion and approval of the system installation.

604.4.2 Records. Records of the inspection, testing and maintenance of emergency and standby power systems shall include the date of service, name of the servicing technician, a summary of conditions noted and a detailed description of any



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conditions requiring correction and what corrective action was taken. Such records shall be maintained.

#### 604.4.3 Switch maintenance.

Emergency and standby power system transfer switches shall be included in the inspection, testing and maintenance schedule required by Section 604.4.1. Transfer switches shall be maintained free from accumulated dust and dirt. Inspection shall include examination of the transfer switch contacts for evidence of deterioration. When evidence of contact deterioration is detected, the contacts shall be replaced in accordance with the transfer switch

manufacturer's instructions.

604.5 Operational inspection and testing. Emergency power systems, including all appurtenant components, shall be inspected and tested under load in accordance with NFPA 110 and NFPA 111.

Exception: Where the emergency power system is used for standby power or peak load shaving, such use shall be recorded and shall be allowed to be substituted for scheduled testing of the generator set, provided that appropriate records are maintained.

604.5.1 Transfer switch test. The test of the transfer switch shall consist of electrically

operating the transfer switch from the normal position to the alternate position and then return to the normal position.

604.6 Emergency lighting equipment. Emergency lighting shall be inspected and tested in accordance with Sections 604.6.1 through 604.6.2.1.

604.6.1 Activation test. An activation test of the emergency lighting equipment shall be completed monthly.

The activation test shall ensure the emergency lighting activates automatically upon normal electrical disconnect and stays sufficiently illuminated for not less than 30 seconds.

604.6.1.1 Activation



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test record. Records of tests shall be maintained. The record shall include the location of the emergency lighting tested, whether the unit passed or failed, the date of the test and the person completing the test.

604.6.2 Power test. For battery-powered emergency lighting, a power test of the emergency lighting equipment shall be completed annually. The power test shall operate the emergency

lighting for not less than 90 minutes and shall remain sufficiently illuminated for the duration of the test.

604.6.2.1 Power test record. Records of tests shall be maintained. The record shall include the location of the emergency lighting tested, whether the unit passed or failed, the date of the test and the person completing the test.

604.7 Supervision of maintenance and testing. Routine

maintenance, inspection and operational testing shall be overseen by a properly instructed individual.

Next Month: SECTION 605 (page 1779)

ELECTRICAL  
EQUIPMENT, WIRING  
AND HAZARDS



The International Code Council, a membership association dedicated to building safety and fire prevention, develops the codes used to construct residential and commercial buildings, including homes and schools. Most U.S. cities, counties and states that adopt codes choose the International Codes developed by the International Code Council.

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