

## Fire and Life-Safety Group (FLS)

# Emergency Lights Policies and Procedures

### Introduction

This document was prepared to list some but not all of the requirements based on the latest edition of adopted codes in 2004. Please ensure that all the requirements of applicable codes at the time of new installations or changes to existing installations are verified and implemented. The following text summarizes the code requirements for “Performance of System” and for “Testing Maintenance.”

### Performance of System

Section 7.9.2.1 of the 2009 *Life Safety Code* (NFPA-101) states that emergency illumination is to be provided for not less than 1½ hour in the event of failure of the normal lighting system. Emergency lighting facilities are to be arranged to provide initial illumination of not less than an average of 10.8 lux (1 ft-candles) along the path of egress at the floor level.

Emergency illumination levels are permitted to decline to not less than an average of 6.5 lux (0.6 ft-candle), and not less than 6.5 lux (0.6 ft-candle) at the end of the 1½ hours at any point. Additionally, a maximum-to-minimum illumination uniformity ratio of 40 to 1 is not to be exceeded.

Section 7.9.2.2 of NFPA-101 states that the emergency lighting system is to be arranged to provide the required illumination automatically in the event of any interruption of normal lighting due to any of the following:

- Failure of a public utility or other outside electrical power supply,
- Opening of a circuit breaker or fuse, and
- Manual act(s), including accidental opening of a switch controlling normal lighting facilities.

Section 7.9.2.3 of NFPA-101 states that if emergency generators are used for back-up, then the generators providing power to emergency lighting systems are to be installed, tested and maintained in accordance with NFPA-110, *Standard for Emergency and Standby Power Systems* .

Section 7.9.2.4 of NFPA-101 states that when battery-operated emergency lights are utilized, they are to use only reliable types of rechargeable batteries provided with suitable facilities for maintaining them in proper charge condition. Batteries used in such lights or units are to be approved for their intended use and are to comply with NFPA-70, *National Electrical Code* .

Section 7.9.2.5 of NFPA-101 states that the emergency lighting system is to be either continuously in operation or is to be capable of repeated automatic operation without manual intervention.

### Testing and Maintenance

Section 7.9.3.1 of NFPA-101 states that required emergency lighting systems are to be tested in accordance with one of the three options offered in the following sections.

Section 7.9.3.1.1 of NFPA-101 states that testing of required emergency lighting systems is to be permitted as follows:

- Functional testing is to be conducted at 30-day intervals for not less than 30 seconds.

- Functional testing is to be conducted annually for not less than 1½ hours if the emergency lighting system is battery powered.
- The emergency lighting equipment is to be fully operational for the duration of the test required by 7.9.3.1.1 (1) and 7.9.3.1.1 (2).
- Written records of visual inspections and tests are to be kept by the owner for inspection by the authority having jurisdiction.

Section 7.9.3.1.2 of NFPA-101 states that testing of required emergency lighting systems utilizing self-testing/self-diagnostic battery operated equipments is to be permitted as follows:

- Self-testing/self-diagnostic battery-operated emergency lighting equipment is to be provided.
- Self-testing/self-diagnostic battery-operated emergency lighting equipment is to automatically perform not less than once every 30 days a test for not less than 30 seconds and diagnostic routine
- Self-testing/self-diagnostic battery-operated emergency lighting equipment is to indicate failures by a status indicator.
- A visual inspection is to be performed at intervals not exceeding 30 days.
- Functional testing is to be conducted annually for not less than 1½ hours.
- Self-testing/self-diagnostic battery-operated emergency lighting equipment is to be fully operational for the duration of the 1½ hour test.
- Written records of visual inspections and test are to be kept by the owner for inspection by the authority having jurisdiction.

Section 7.9.3.1.3 of NFPA-101 states that testing of required emergency lighting systems utilizing computer-based, self-testing/self-diagnostic battery operated equipment is to be permitted as follows:

- Computer-based, self-testing/self-diagnostic battery operated emergency lighting equipment is to be provided.
- The emergency lighting equipment is to automatically perform not less than once every 30 days a test for not less than 30 seconds and a diagnostic routine.
- The emergency lighting equipment is to automatically perform annually a test for not less than 1½ hours.
- The emergency lighting equipment is to be fully operational for the duration of the tests required by 7.9.3.1.3(2) and 7.9.3.1.3(3).
- The computer based system is to be capable of provided a report of the history of the test and failures at all times.