



Miami Beach Fire Department
FIRE PREVENTION DIVISION
STANDARDS



TOPIC: **Fire Alarm – Balconies**
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STANDARD NO: **NEWC-S05**
Revision 0

This standard will clarify the requirements for fire alarm notification appliances in balconies of residential dwelling units.

The Florida Fire Prevention Code (FFPC)-2001 consists of *The Life Safety Code*, NFPA 101-2000 Edition and the *Fire Prevention Code*, NFPA 1-2000 Edition. The Life Safety Code mandates the installation of a fire alarm system for each occupancy. For example, in new apartment occupancies, a fire alarm system is required as indicated in NFPA 101, Section 30.3.4. The fire alarm system shall be provided in accordance with NFPA 101, Section 9.6.

NFPA 101, Section 9.6.1.4 states that the fire alarm system shall be installed in accordance with NFPA 70, *The National Electrical Code*, and NFPA 72, *The National Fire Code*.

NFPA 101, Section 9.6.3.1 states that occupant notification shall provide signal notification to alert occupants of a fire. Also, Section 9.6.3.7 states that the general evacuation alarm signal shall operate throughout the entire building. In addition, audible alarm notification appliances shall be distributed as to be effectively heard above the average ambient sound level occurring under normal conditions of occupancy.

The commentary under NFPA 101, Section 9.6.3.8 indicates that there should be some balance between excessive notification appliances, cost, and meeting the objective of life safety.

The Fire Alarm Code, Section 4-3.2 addresses the minimum decibel output of the notification appliances for proper audibility. Section 4-3.2.2 states that audible signals shall have a sound level at least 15 dBA above the average ambient sound level or 5 dBA above the maximum sound level. The ambient sound level can be easily measured inside the building using a sound level meter.

The balconies or terraces in apartment occupancies are open to the outside. Therefore, the "ambient sound level" varies constantly. A 24-hour test can be conducted; however, it will only reflect the average sound level for that day. Due to the outside conditions, a 15 dBA above that number may or may not register in the sound level meter during the day of the fire alarm acceptance test. During the acceptance testing, the occupants in the balconies can sometimes clearly hear the alarm signal, but the specific dB reading does not register in the meter due to the outside conditions. The Fire Alarm Code is not clear on how to handle these situations.

In summary, it is a reasonable expectation for someone in the balcony of the 20th floor to be alerted somehow that there is a fire alarm on that floor. However, a measurable criteria for the

open balcony is not specified in the code. It is also not practical to install a notification appliance in every balcony or terrace.

Therefore, the minimum audibility requirement for balconies would be that the alert tone of the voice evacuation signal be heard by the people in the balcony. It would be advisable for the designer to locate appliances near the doors or walls of the balcony during the design phase, but it is not required if the design intent still provides audibility in the balcony. The fire inspector will deem the audibility acceptable if he/she can hear the alert tone in the balcony with the door(s) open and closed. The plans should have a statement indicating the design intent (For example: "The fire alarm system will provide minimum audibility in the balcony to alert occupants of an alarm signal -- the alert tone can be heard by the occupants in the balcony").


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