



DEPARTMENT OF PERMITTING SERVICES

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Compliance Options for Existing Un-Sprinkled High-Rise Buildings

Existing high-rise residential buildings must be sprinkled by January 1st, 2033. Below are the current options available to building owners based on the *Life Safety Code* (NFPA 101) as developed by the State Fire Prevention Task Group and amended locally by Montgomery County Department of Permitting Services (DPS). References are minimally to the 2018 edition of NFPA 101 as adopted and amended by the Maryland State Fire Prevention Code; however, applicants must comply with locally adopted codes and amendments that supersede the 2018 edition when they are ratified. The term “approved” in this document means approved by DPS and in accordance with applicable codes and standards.

A. Option 1 – Building Fire Suppression System

Installation of an approved, supervised automatic sprinkler protection throughout the building in accordance with NFPA 13.

B. Option 2 – NFPA 101 Existing Residential Building Requirements (Chapter 31)

Compliance with all applicable requirements of NFPA 101 for Existing High-Rise Residential Occupancies.

Option 2 Discussion

This means that the building must meet Chapter 31 of NFPA 101. A building must be completely sprinklered, unless:

- 1. Every dwelling unit has exterior exit access, or,*
- 2. An approved, engineered life safety system is provided.*

Other features must be provided, including smoke proof towers and exit door unlocking. Where Option 1 above (complete building suppression) is not selected, this effectively means every dwelling unit must have exterior exit access in accordance with NFPA 101, or have an approved, engineered life safety system. If an engineered life safety system is developed, it must be performed by professional engineer and approved by Montgomery County DPS. It must include partial automatic sprinkler protection, smoke detection systems, smoke control systems, compartmentation, and other approved systems.

C. Option 3 – Alternative Systems and Building Performance

Compliance with all the following:

1. Installation of an approved Class I standpipe system. All piping for required standpipe systems must be supervised by water or air pressure.
2. Installation of an approved fire service elevator.
3. Protection of all fixed cooking equipment in the dwelling units by one of the following:
 - a. Installation and continued maintenance of an approved hood extinguishing system in accordance with UL 300A.

- b. Installation and continued maintenance of an approved ignition prevention system which includes:
 - i. For electric ranges: cooktops must not have more than four heating elements, each heating element is electronically controlled to limit the element temperature to below 670°F, and an approved method for disconnecting power to the range, located in or near the kitchen.
 - ii. For gas ranges: cooktops must not have more than four burners and an approved method for stopping the flow of gas to the appliance, located in or near the kitchen.
 - c. Installation and continued maintenance of another approved automatic fire extinguishing system which provides protection to all cooking surfaces.
4. Installation and continued maintenance of approved smoke alarms and carbon monoxide detectors where applicable in accordance with the provisions of the Maryland Public Safety Article for existing construction apartment buildings.
5. Installation of an approved automatic fire detection system comprised of smoke and heat detectors. The system must be arranged to sound a general evacuation alarm throughout the building upon activation of any detector. If an approved automatic fire suppression system is installed to protect all interior common spaces, including exit access corridors, and associated unseparated spaces, such areas do not need to be covered by the fire detection system.
6. Installation of an approved, supervised manual fire alarm system throughout the building for existing residential occupancies, and which incorporates all the following features:
 - a. Upon activation, provides approved audible and visual notification throughout the building.
 - b. Upon activation, provides alarm annunciation at an approved location within the building.
 - c. Upon activation, automatically transmits the alarm by an approved means for emergency services notification.
7. Protection of all vertical openings.
8. Protection of all areas in the building having a degree of hazard greater than that normal to the general occupancy of the building.
9. If a building has combustible exterior finish or insulation, the building owner's design professional must determine, using representative test samples or a review of building as-built drawings, whether the finish meets the requirements of NFPA 285. If the materials do not meet these requirements, they must be removed, or a risk assessment performed to determine an appropriate risk mitigation approach. The approach must be approved by DPS.
10. Verification that means of egress components comply with the NFPA 101 chapter for "Existing Apartment Buildings". Where the NFPA 101 *Life Safety Code* requires smokeproof enclosures for high-rise buildings that are not fully sprinkled, smokeproof enclosures are permitted.
11. Installation of an approved standby power system for all the following:
 - a. Required emergency lighting.

- b. Required exit markings.
- c. Electric fire pump (if present).
- d. Pressure maintenance pump for fire protection system (if present).
- e. Air compressor serving dry-pipe or pre-action fire protection systems (if present).
- f. Emergency command center equipment and lighting (if present).
- g. Not less than one elevator serving all floors, with standby power transferable to any elevator.
- h. Mechanical equipment for smoke control (if present).

Option 3 Discussion

Option 3 relies to a large extent on NFPA 101 Chapter 31 recommended requirements for existing non-sprinklered low-rise buildings.

FD Elevator Service - The intent of this portion of the option is that at least one elevator serving all floors has fire service operation.

Cooking Area Protection – Cooking is leading cause of apartment fires and associated fire loss and casualties. Where sprinkler protection is provided, it is anticipated that it will contain the fire to the area of origin. All installed fire protection systems in all options must be listed. It is recognized that kitchen protection system technologies are evolving. The State Task Group believed that the authority having jurisdiction should have wide latitude in approving new technologies, for example recognizing international listing/approvals. (e.g., EU 50615 related to cooktop fire safety devices). It is intended that new localized water mist protection systems would meet Option 3.c.

Smoke Alarms – As required by the Maryland Public Safety Article, most existing apartments have hard-wired, single station smoke alarms outside of sleeping rooms (PSC §9-104). The smoke alarm requirements for new construction (requiring smoke alarms inside bedrooms) do not apply to existing high-rises based on compliance with these options.

Fire alarm systems must comply with requirements in conformance with level of repair, alteration, or new installation/upgrade and must always meet minimum sound pressure level requirements of the applicable edition of NFPA 72.

Combustible Exterior Finish Material - Buildings are to be checked for compliance with NFPA 285 Standard Test Method for Evaluation of Fire Propagation Characteristics of Exterior, Non-Load-Bearing Wall Assemblies Containing Combustible Components. The NFPA EFFECT™ risk assessment tool is anticipated to be the appropriate risk tool to be used where non-NFPA 285 compliant materials are identified.

D. Option 4

1. Installation of all the items required by Option 3 listed above, with exception of items #2 and #10. Smokeproof enclosures are required.
2. In buildings greater than 120 feet above lowest level of fire department vehicular access, installation of a fire service elevator with an approved standby power system.

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