

**NC Department of Insurance
Office of the State Fire Marshal - Engineering Division
1202 Mail Service Center, Raleigh, NC 27699-1202
919-647-0000**

Change of Occupancy - Residential

Code: 2018 NC Existing Building Code
Section: 1012.2 & 1401.2

Date: March 20, 2019

Question:

I have a building in the downtown district and I would like to convert the second floor to a residential occupancy. There is an existing mercantile occupancy below. Do I have to install a sprinkler system?

Answer:

Option 1:

Selecting the Work Area Compliance Method and utilizing Chapter 10 for a change of occupancy *may* eliminate the requirement to install a sprinkler system.

If the second floor is changed to an R-3 occupancy (no more than 2 dwelling units), then since R-3 is designated as the lowest hazard for sprinklers in Table 1012.2.1, sprinklers would not be required in accordance with Section 1012.2.1.2. This assumes the alteration work in conjunction with the change of occupancy does not require sprinklers. For a change of occupancy to R-1 or R-2, the requirement for sprinklers depends on the previous occupancy and whether or not the hazard is increased by changing to R-1 or R-2.

For alteration work, sprinkler requirements are triggered if the occupant load or fire area is increased per Section 804.2.2. Since there is no fire area or occupant load threshold for an R occupancy per Section 903.2.8 of the NC Building Code, as long as there is no increase in square footage, such as taking non-habitable area under roof and altering it to create habitable area, or increasing the occupant load, such as changing a mercantile 2nd floor storage use based on 300 gross sq. ft./person to a residential use based on 200 gross sq. ft./person, then no sprinkler system would be required.

Separation requirements would still need to be addressed separately from the sprinkler requirement. All of the sections of Chapter 10 should be considered based on the specifics of the change of occupancy.

Option 2:

Selecting the Performance Compliance Method and utilizing Chapter 14 to analyze the existing building *may* eliminate the requirement to install a sprinkler system.

The existing building should be analyzed as a mixed use building with residential and mercantile occupancies. The building analysis scores should be calculated based on the safety components in the existing building, including designation for no sprinkler system.

If a passing safety score is achieved considering all of the safety elements in the building, the building is considered code compliant without sprinklers.

Keywords: