

Guidance on the requirements for automatic fire sprinkler systems in Multi-Family Dwellings

Updated to the 2015 IBC and other recent statutory changes!

Introduction

2011 Wisconsin Act 21 (Act 21) requires that an administrative agency have explicit authority to “implement or enforce any standard, requirement, or threshold...” and further states that “a statutory provision containing a specific standard” does not allow for an administrative agency to impose a stricter standard. The Department of Safety and Professional Services (Department) requested an opinion of the Attorney General regarding how, under Act 21, the Commercial Building Code’s automatic fire sprinkler system standards are affected by Wis. Stat. § 101.14(4m).

The direction provided by the Legislature and the Attorney General affects multifamily occupancies (R type occupancy under 2015 IBC § 310). Effective immediately, all provisions of the Wisconsin Administrative Code and the International Building Code that have stricter automatic sprinkler system requirements, or fire resistance requirements as a trade-off to sprinklers, for multifamily dwellings than Wis. Stat. § 101.14(4m) will no longer be enforced by the Department or its delegated/agent municipalities.

What is a multifamily dwelling?

The first thing that must be established is what constitutes a multifamily dwelling for proper application of the sprinkler thresholds found in Wis. Stat. § 101.14(4m).

Considering the statutory definitions of Multifamily dwelling (Wis. Stat. § 101.01(8m)), Modular home (Wis. Stat. § 101.71(6)), Dwelling (Wis. Stat. § 101.71(2)), and Public Building (Wis. Stat. § 101.01(12)), the following observations regarding code application can be made.

- 1) ‘Multifamily dwelling’ does not include facilities licensed under Wis. Stat. ch. 50 Uniform Licensure. Facilities licensed under Wis. Stat. ch. 50 are health care facilities licensed by the Department of Health Services including but not limited to hospitals, nursing homes, hospices, and community based residential facilities. Therefore, buildings containing 3 or more dwelling units licensed under Wis. Stat. ch. 50 still require automatic fire sprinkler system protection.
- 2) A manufactured or modular building used as a hotel or motel is a multifamily dwelling and therefore Wis. Stat. § 101.14(4m) sprinkler thresholds may be applied to such a building.
- 3) A multifamily dwelling consists of 3 or more dwelling units whereas a public building consists of 3 or more tenants. The following scenarios could occur with a public building tenant(s) in combination with one or more dwelling units.

New construction:

- If there are 2 tenants, and 1 is a dwelling unit and the other is commercial, the building shell is commercial, but the interior of the dwelling unit need only comply with the

Uniform Dwelling Code (because the building has less than 3 tenants) and therefore sprinklers are not required based solely on the residential unit.

- If there are 3 tenants or more in a building then the entire building is commercial, with 1 or 2 tenants being a residential dwelling unit(s) and the other tenant(s) some other commercial use, the entire building must be sprinklered. Since there are not 3 attached dwelling units it is not a multifamily dwelling and Wis. Stat. § 101.14(4m) does not apply.
- If there are 3 dwelling units up to 20, depending on the total dwelling unit area, construction type and non-dwelling unit area, neither the dwelling units or non-dwelling unit areas of the building would be required to be sprinklered based on Wis. Stat. § 101.14(4m). The building code may have other provisions such as egress requirements that require sprinklers depending on the specific egress configuration of the units and building.
- A mixed-use condition where the commercial use is required to be sprinklered will require the entire building to be sprinklered or either separate buildings or separate fire areas must be created.
- If there 21 dwelling units or more, the entire building must be sprinklered or firewall separation provided to subdivide the multi-family building or to separate other commercial uses or both.

For existing construction, the above scenarios will need to be evaluated utilizing the 2015 International Existing Building Code depending on the extent of alteration work or change of occupancy that is occurring.

How do the thresholds in Wis. Stat. § 101.14(4m) apply?

Considering the statutory definitions of Non-dwelling unit portions (Wis. Stat. § 101.14(4m)(4)) and Political subdivision (Wis. Stat. § 101.14(4m)(5)) the department has determined the following:

- An attached garage accessed from a common area will be included in the floor area of the ‘nondwelling unit portions’ of the building. An attached garage that serves and is accessed only from an individual dwelling unit will be considered part of the dwelling unit area.
- Any political subdivision in the state may enact a more restrictive sprinkler (or 2-hr fire resistance) ordinance that follows the thresholds of Wis. Stat. § 101.14(4m)(d) and (e). An exception would be delegated municipalities acting under the authority and on behalf of the department as it’s delegated or appointed agent which are bound by the same thresholds as the department.

Wis. Stat. § 101.14(4m) lays out specific requirements for when automatic fire sprinkler systems or 2-hour fire resistance can be required in a multifamily dwelling.

It is important to note that the statutory provisions reference classes of construction as they existed prior to the adoption and effective date of the International Building Code (IBC) on July 1, 2002. These classes of construction correspond roughly to the current IBC classes of construction according to the following Table.

Prior to July 1, 2002	July 1, 2002 and after
Type 1 fire resistive	Type IA
Type 2 fire resistive	Type IB
Type 3 metal frame protected	Type IIA

Type 4 heavy timber	Type IV
Type 5A exterior masonry protected	Type IIIA
Type 5B exterior masonry unprotected	Type IIIB
Type 6 metal frame unprotected	Type IIB
Type 7 wood frame protected	Type VA
Type 8 wood frame unprotected	Type VB

Two hour fire resistance as defined in Wis. Stat. § 101.14(4m)(a)5m. is an alternative to an automatic fire sprinkler system for multifamily dwellings exceeding the Statutory thresholds.

What other requirements might apply to a multifamily dwelling without sprinklers?

While Wis. Stat. § 101.14(4m) determines when automatic fire sprinklers or 2-hour fire resistance may be required in a multi-family dwelling based on specific criteria or thresholds, numerous other code requirements may impact how buildings are designed in the absence of automatic fire sprinklers. Some of the requirements may include but are not limited to the following from the 2015 International Building Code. When applying these code requirements, please pay close attention to the code language and Table footnotes and which type of sprinkler system is recognized (NFPA 13, 13R, or 13D) as most of the code sections do not consider a building protected with an NFPA 13D system to be sprinklered and some do not consider a building protected with an NFPA 13R system to be sprinklered.

IBC s. 406.3 Attached garages shall also comply with the applicable provisions of this section including area limitations and fire resistance rated separations to be classified as Group U. A private garage not meeting these requirements and located beneath another occupancy requires the building to be sprinklered per IBC s. 903.2.10.

IBC s. 420 requires fire resistance rated dwelling and sleeping unit separations the rating of which depends on whether a sprinkler system is present per IBC s. 708 and 711.

IBC s. 503 Allowable building height and area are less for non-sprinklered buildings.

IBC s. 509 Furnace or boiler rooms and other incidental uses may need to be fire rated depending on the location of the equipment and the appliance system capacity.

IBC s. 705.8 Allowable percentage of openings in exterior walls based on fire separation distance is dependent upon the presence or absence of an automatic sprinkler system.

IBC s. 708.3 Exception 2 Fire partitions between dwelling units cannot be reduced to 0.5 hours without an NFPA 13 system.

IBC s. 711.2.4.3 Exception Horizontal assemblies between dwelling units cannot be reduced to 0.5 hours without an NFPA 13 system.

IBC s. 717.5/IMC 607.5 Fire & smoke dampers may be required to be installed since many of the exceptions require the building to be sprinklered.

IBC s. 718.3.2 Draftstopping in floor/ceiling assemblies which create combustibles concealed spaces in Group R buildings may now be required.

IBC s. 718.4.2 Draftstopping may now be required to subdivide combustibles attic areas so that no area exceeds 3,000 sf or above every two dwelling units, whichever is smaller.

IBC Table 803.11 A higher class of interior finish is typically required in nonsprinklered buildings.

IBC Table 1006.2.1 A minimum of 2 exit access doors are required from every room or space within a dwelling without an automatic fire sprinkler system as the Table does not permit a common path of travel in a nonsprinklered building. SPS 362.1006(5) amends footnote a to Table 1006.2.1 to recognize an NFPA 13D sprinkler system when allowed by other provisions of the code.

IBC Table 1006.3.2(1) Every story of a multi-family dwelling and every story within a dwelling unit must have access to two exits without an automatic sprinkler system.

SPS 362.1006(1) provides an exception to the above egress requirements (Tables 1006.2.1 and 1006.3.2(1)) for town homes meeting certain height limitations and fire separation requirements to be provided with a single exit and maximum 200' common path of travel.

IBC s. 1009.3 Exception 2 Requires a minimum clear width of 48" between handrails if the building is not sprinklered.

IBC s. 1009.3 Exception 5 Area of Refuge required to be installed in stairways if the building is not sprinklered.

IBC Table 1017.2 Exit Access Travel Distance is reduced from 250 ft to 200 ft

IBC Table 1020.1 Corridors serving >10 occupants are not allowed in nonsprinklered buildings and would require an approved petition for variance.

IBC s. 1020.4 Dead Ends for a nonsprinklered building are reduced from 50 ft to 20 ft.

IBC s. 1406.3 Balconies and similar projections shall not exceed 50% of the building's perimeter on each floor unless a listed exception is met. Exception 3. Balconies must be constructed of fire-retardant treated wood or one-hour fire resistance rated in type VA construction when an automatic sprinkler system is not present.

Conclusion

The above information is not exhaustive. Building owners, designers, and supervising professionals are required to ensure that the building plans, and the buildings as constructed, conform with all applicable provisions of Wisconsin Statutes, Wisconsin Administrative Code, and the adopted 2015 International Building Code.

Automatic sprinkler systems and 2-hour fire resistance cannot be required by the Department or by delegated/agent municipalities, unless the building meets or exceeds the thresholds established in Wis. Stat. § 101.14(4m). This does not preclude designers from utilizing these systems to take advantage of various designs that would not be available without an automatic sprinkler system.

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