

# RULES CERTIFICATE

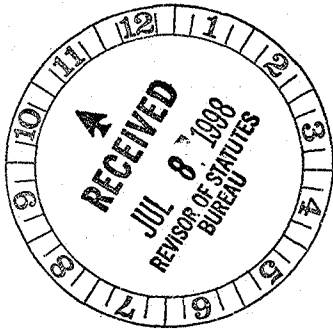
## Department of Commerce

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

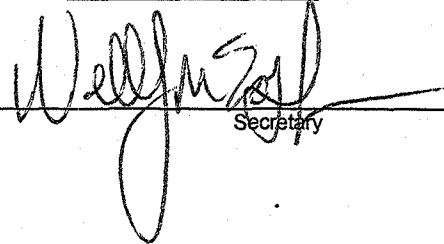
I, William McCoshen, Secretary of the Department of Commerce, and custodian of the official records of said department, do hereby certify that the annexed rule(s) relating to Uniform Multifamily Dwellings, and Building and Heating, Ventilating and Air Conditioning  
(Subject)

were duly approved and adopted by this department.

I further certify that said copy has been compared by me with the original on file in the department and that the same is a true copy thereof, and of the whole of such original.



IN TESTIMONY WHEREOF, I have hereunto set my hand at 201 West Washington Avenue in the city of Madison, this 26 day of June A.D. 19 98

  
Secretary

# ORDER OF ADOPTION

## Department of Commerce

Pursuant to authority vested in the Department of Commerce by section(s) 101.02 (1) and (15), 101.973 (1),

and 101.974 (2) and (4) Stats., the Department of Commerce  creates;  amends;

repeals and recreates;  repeals and adopts rules of Wisconsin Administrative Code chapter(s):

Comm 51 and ILHR 57 and 66

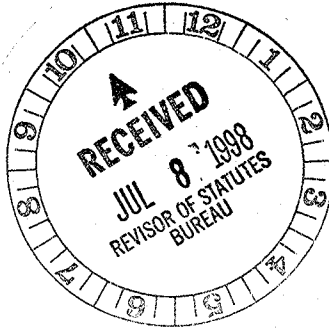
(number)

Uniform Multifamily Dwellings, and Building and Heating, Ventilating and Air Conditioning

(Title)

The attached rules shall take effect on the first day of the month following publication in the Wisconsin

Administrative Register pursuant to section 227.22, Stats.



Adopted at Madison, Wisconsin this

date: 6/26/98

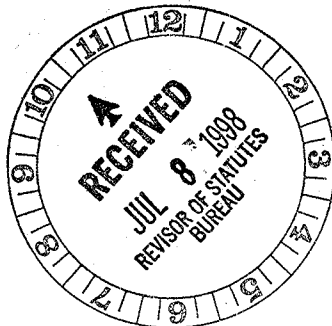
DEPARTMENT OF COMMERCE

[Signature]  
Secretary



State of Wisconsin \ Department of Commerce

# RULES in FINAL DRAFT FORM



**Rule No.:** Chapters Comm 51 and ILHR 57 and 66

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**Relating to:** The Commercial Building Code and the Uniform  
Multifamily Dwelling Code

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**Clearinghouse Rule No.:** 98 - 017

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The Department of Commerce proposes an order to repeal Comm 51.03 (1)(a)1.; to renumber and amend Comm 51.048 (1)(a); to amend Comm 51.047 (1)(a)1. and ILHR 53.63 (1)(intro.), (a), (c), and (d), 57.01 (2)(a)3., 66.32 (4)(b)1.a., and 66.33 (2)(a) and (b)1.; to repeal and recreate Comm 51.049 and ILHR 66.32 (5); and to create Comm 51.01 (2r), (41c), (52m), (81m), and (130d), 51.047 (1)(a)3., 51.048 (1)(b), and Table 51.25-10 line 64, and ILHR 66.38 (4)(a)2. Note, relating to the design and construction of commercial buildings and uniform multifamily dwellings.

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Analysis of Proposed Rules

Statutory Authority: ss. 101.02 (1) and (15) and 101.973 (1)

Statutes Interpreted: ss. 101.02 (15), 101.12, 101.14 (4m) and 101.971 to 101.978

Under sections 101.02 (15), 101.12, and 101.971 to 101.978, Wisconsin Statutes, the Department protects public health, safety, and welfare by promulgating construction requirements for commercial and public buildings including multifamily dwellings. Present requirements include methods for stopping fire in one area of a building from spreading to another area through service openings in walls, floors, and ceilings, such as penetrations for plumbing and electrical components. The methods that were specified have been shown to fail under fire testing conditions.

The proposed rule impacts all public buildings, which includes multifamily dwellings, and replaces the failed firestopping methods with techniques, materials, and methods that have been tested and nationally recognized. The rule essentially mandates use of tested and listed fire-stop systems for nearly all penetrations of every wall, floor, and ceiling that is required to provide area-separation protection consisting of either a fire-protective membrane or fire-resistive rated construction. The rule also clarifies some problematic, technical provisions that have resulted in confusion and unnecessary costs. Without the proposed rule revisions, firestopping methods that have been proven to be ineffective would still be allowed to be utilized, thereby putting public safety and health at risk.

SECTION 1. Comm 51.01 (2r), (41c), (52m), (81m), and (130d) are created to read:

Comm 51.01 (2r) "Annular space" means the opening around a penetrating item.

Comm 51.01 (41c) "F-rating" means the time period in hours that a through-penetration fire-stop system will limit the spread of flame through the penetrated assembly, including the penetrating elements, when tested in accordance with ASTM E814.

Comm 51.01 (52m) "Fire-stop system, approved" means a fire-stop product or device that is tested and listed by an approved testing laboratory under ASTM E814 regarding the ability, the F-rating, to retard the passage of flame for a specific time period.

Note: See sub. (41c) for the definition of F-rating.

Comm 51.01 (81m) "Membrane penetration" means an opening made through one side of an assembly that is a building element as listed in Table 51.03.

Note: An example of a membrane penetration is a recessed outlet box penetrating the gypsum wallboard (the gypsum wallboard is the "membrane") on one side of stud wall construction.

Comm 51.01 (130d) "Through penetration" means an opening that passes through an entire assembly that is a building element as listed in Table 51.03.

SECTION 2. Comm 51.03 (1) (a) 1. is repealed.

SECTION 3. Comm 51.047 (1) (a) 1. is amended to read:

Comm 51.047 FIRE-RATED DOOR ASSEMBLIES IN FIRE-RATED CONSTRUCTION. (1) FIRE-RESISTIVE RATED DOOR ASSEMBLIES. (a) 1. ~~An~~ Except as provided in subs. 2. and 3., an opening where permitted in a fire-resistive rated wall or wall assembly shall be protected by means of a fire-resistive rated door assembly which conforms to ASTM E-152, ~~except as provided in subd. 2.~~

SECTION 4. Comm 51.047 (1) (a) 3 is created to read:

Comm 51.047 (1) (a) 3. Where the fire-resistive assembly is being used to provide only the protection required as a structural building element, as specified in line 17 of Table 51.03-A, and is not also used for separation purposes, the opening need not be protected in accordance with subd. 1. if the opening is effectively fire stopped to ensure that the fire-resistive integrity of the structural element will not be reduced.

SECTION 5. Comm 51.048 (1) is renumbered Comm 51.048 (1) (a) and amended to read:

Comm 51.048 FIRE WINDOW AND GLASS BLOCK ASSEMBLIES IN FIRE-RATED CONSTRUCTION. (1) WINDOW OPENINGS. (a) ~~Window~~ Except as provided in par. (b), window openings, where permitted in fire-rated walls, shall be protected with fire window or glass block assemblies rated as ¾-hour by an approved laboratory when tested in accordance with ASTM E-162.

SECTION 6. Comm 51.048 (1) (b) is created to read:

Comm 51.048 (1) (b) Where the fire-resistive assembly is being used to provide only the protection required as a structural building element, as specified in lines 17 of Table 51.03-A, and is not also used for separation purposes, the opening need not be protected in accordance with par. (a) if the opening is effectively fire stopped to ensure that the fire-resistive integrity of the structural element will not be reduced.

SECTION 7. Comm 51.049 is repealed and recreated to read:

Comm 51.049 MISCELLANEOUS PENETRATIONS IN FIRE-RESISTIVE CONSTRUCTION. (1) GENERAL. (a) Except as specified in pars. (c) and (d), penetrations into or through fire-resistive assemblies, fire protective membranes, thermal barriers, or construction providing a finish rating as an alternative to a fire resistive assembly shall be protected in accordance with this section.

(b) Where an approved fire-stop system is used, the system shall be tested and listed for the specific application regarding the size of the opening, the size and type of the penetrating objects, the type of assembly penetrated, and the size of the annular space to be fire stopped.

(c) Where tested and listed fire resistive assemblies under s. Comm 51.044 are being used and the listing provisions regarding membrane penetrations are in conflict with this section, the provisions of the tested and listed assembly shall govern.

(d) Where the fire-resistive assembly is being used to provide only the protection required as a structural building element, as specified in lines 1 through 17, 21 and 22 of Table 51.03-A, is not also used for separation purposes and is a through penetration, the opening need not be protected in accordance with par. (a) if the opening is effectively fire stopped to ensure that the fire-resistive integrity of the structural element will not be reduced.

(2) DUCT OPENINGS. The annular space around the outside of a duct that penetrates into or through fire-resistive construction, as described in sub. (1) (a), shall be protected in accordance with one of the following:

(a) The recommendations of the manufacturer of the fire damper or the fire curtain door, when the duct is provided with a fire damper or fire curtain door at the penetration.

(b) An approved fire-stop system having an F-rating not less than the hourly rating of the assembly being penetrated.

(c) Grout, concrete or mortar for the full depth of the penetrated assembly when the assembly is constructed of concrete or masonry.

Note: See s. ILHR 64.42 for fire damper and fire curtain door requirements.

(3) **NONCOMBUSTIBLE PENETRATING ITEMS.** (a) Through-penetrations. Through-penetrations of fire-resistive assemblies by noncombustible wiring items or noncombustible piping items, excluding glass piping, shall be in accordance with this subsection.

(b) Openings of 100 square inches or less. Where the area of an opening is 100 square inches or less and the total aggregate area of all such openings does not exceed 100 square inches in any 100 square feet of surface area being penetrated, the annular space around the penetrating item shall be protected in accordance with one of the following:

1. Closed with an approved fire-stop system having an F-rating not less than the hourly rating of the assembly being penetrated.

2. Filled to the full depth of the penetrated assembly with grout, concrete, or mortar, when the assembly is constructed of concrete or masonry.

(c) Openings larger than 100 square inches. 1. Wall assemblies. Where a wall assembly opening is larger than 100 square inches or the total aggregate area of all such openings exceeds 100 square inches in any 100 square feet of wall surface area, the annular space around the penetrating item shall be closed with an approved fire-stop system having an F-rating not less than the hourly rating of the assembly being penetrated.

2. Floor assemblies. Where a floor assembly opening is larger than 100 square inches or the total aggregate area of all such openings exceeds 100 square inches in any 100 square feet of surface area and the openings are not contained within a wall or column at the point the floor is penetrated, the annular space around the penetrating item shall be closed with an approved fire-stop system having an F- rating not less than the hourly rating of the assembly being penetrated.

(4) **COMBUSTIBLE PENETRATING ITEMS.** Through-penetrations of fire-resistive assemblies by combustible piping items, glass piping, or combustible wiring items shall be protected with an approved fire-stop system having an F-rating not less than the hourly rating of the assembly being penetrated.

(5) **MEMBRANE PENETRATIONS.** (a) Openings around objects. 1. Except as provided in subds. 2. to 4., the annular space of a membrane penetration into a fire-resistive assembly, or through a fire-protective membrane, a thermal barrier, or construction providing a finish rating as an alternative to a fire resistive assembly, shall be protected in the same manner as that provided for the membrane of a through-penetration of a similar assembly under sub. (2), (3), or (4).

2. The annular space of a membrane penetration that occurs around electrical outlet and switch boxes that are listed by an approved testing laboratory as either "outlet boxes and fittings classified for fire resistance" or "metallic outlet boxes" is not required to be protected in accordance with subd. 1., if the width of the space is 1/8 inch or less.

3. The annular space of a membrane penetration that occurs around a fire sprinkler and which is provided with a metal escutcheon plate is not required to be protected in accordance with subd. 1.

4. Membrane penetrations by electrical outlet and switch boxes that are listed by an approved testing laboratory as "outlet boxes and fittings classified for fire resistance" shall be used subject to the requirements and limitations of the listing.

(b) Metallic outlet boxes. The membrane penetration of vertical fire-resistive construction having a rating of 2 hours or less, including a fire-resistive wall assembly, a fire-protective membrane, a thermal barrier, or construction providing a finish rating as an alternative to a fire resistive assembly, that is created by electrical outlet and switch boxes that are listed by an approved testing laboratory as "metallic outlet boxes," shall be subject to all of the following:

1. The surface area of an individual box may not exceed 16 square inches.
2. The aggregate surface area of the boxes may not exceed 100 square inches per 100 square feet of wall surface.
3. Boxes shall not be installed on opposite sides of walls or partitions of staggered stud construction unless tested and listed for use in staggered stud construction by an approved testing laboratory.
4. Where boxes are located on opposite sides of a non-staggered stud wall or partition, the boxes shall be separated by a minimum horizontal distance of 24 inches, unless installed in accordance with all of the following:
  - a. The boxes shall be protected by a wall opening protective material that is listed for the use by an approved testing laboratory.
  - b. The wall opening protective material shall be installed in accordance with the requirements and limitation of the listing.

SECTION 8. Table 51.25-10 line 64 is created to read:

Table 51.25-10  
(partial table)

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ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, Pennsylvania 19103
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64. E814-94b	Standard Test Method for Fire Tests of Through-Penetration Fire stops.
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SECTION 9. ILHR 53.63 (1) (intro.), (a), (c), and (d) are amended to read:

ILHR 53.63 (1) ~~FIRE STOPS-FIREBLOCKING~~. ~~Fire stops~~ Fireblocks shall be provided at all intersections of interior and exterior walls with floors, ceilings and roof in such manner as to effectively cut off communication by fire through hollow concealed spaces and prevent both vertical and horizontal drafts.

(a) Furred walls shall have ~~fire stops~~ fireblocks placed immediately above and below the junction of any floor construction with the walls, or shall be ~~fire-stopped~~ fireblocked the full depth of the joist.

(c) All concealed spaces between stair stringers at the top and bottom of the stair run shall be ~~firestopped~~ fireblocked.

(d) All wood ~~fire stops~~ fireblocks as required in this section shall be lumber not less than 2 inches in nominal thickness, or 3/4 inch thick plywood with joints backed, and not less in width than the enclosed space within the partition except as provided for chimneys. ~~Fire stops~~ Fireblocks may also be of 1/2 inch gypsum board, fiberglass or ~~other~~ noncombustible materials, securely fastened in place.

SECTION 10. ILHR 57.01 (2) (a) 3. is created to read:

ILHR 57.01 (2) (a) 3. a. The annular space around ducts, pipes, and conduits or other penetrating items that penetrate fire-protective membranes required under this paragraph shall be protected as specified in s. Comm 51.049.

b. For the purpose of protecting the annular spaces under subpar. a., the methods of protection shall be the same as the membranes for at least a one-hour rated assembly.

SECTION 11. ILHR 66.32 (4) (b) 1. a. is amended to read:

ILHR 66.32 (4) (b) 1. a. An attached garage which is 600 square feet or less in area, or which is divided into areas of 600 square feet or less by walls construction having at least one-hour fire-resistive rating, shall be separated from the rest of the multifamily dwelling by the construction specified in sub. (2). Any opening in a wall separating the garage from the rest of the multifamily dwelling shall be protected by means of a self-closing door assembly providing a minimum fire-resistive rating of 3/4 hours, except as provided in subpar. b.

SECTION 12. ILHR 66.32 (5) is repealed and recreated read:

ILHR 66.32 (5) PENETRATIONS. (a) Fire-resistive assemblies. Openings that occur around ducts, pipes, and conduits or other penetrating items that penetrate required fire-resistive assemblies shall be protected in accordance with s. Comm 51.049.

(b) Fire-protective membranes. The annular space around ducts, pipes, and conduits or other penetrating items that penetrate fire-protective membranes required under or referenced in subs. (2) (a), (3) (a), and (4) (b) 1. a., s. ILHR 66.33 (2) (a) and (b) 1., and s. ILHR 66.42 (2) shall be protected in the same manner as required for 1-hour fire-resistive rated assemblies in s. Comm 51.049.

Note: The reference to 1-hour fire-resistive rating does not require that the fire-protective membranes as described in s. ILHR 66.32 (2) provide a 1-hour rating as a listed assembly.

(c) Ceiling ducts. 1. Except as provided in subd. 2. a duct larger than 20 square inches that penetrates a ceiling fire protective membrane required under or referenced in subs. (2) (a), (3) (a), and (4) (b) 1. a., s. ILHR 66.33 (2) (a) and (b) 1., and s. ILHR 66.42 (2) shall be protected in the same manner as required for 1-hour rated assemblies in accordance with one of the following:

- a. A fire damper as specified in s. ILHR 64.42.
- b. A listed duct outlet protection system.
- c. At least six feet of continuous steel ductwork from the membrane penetration toward the air handling unit.

2. A duct is not required to be protected in accordance with subd. 1 provided the floor-ceiling assembly has been tested and listed without protecting the duct penetration and maintains the fire resistance rating of the assembly.

Note: The reference to 1-hour fire-resistive rating does not require that the fire-protective membranes as described in s. ILHR 66.32 (2) provide a 1-hour rating as a listed assembly.

SECTION 13. ILHR 66.33 (2) (a) and (b) 1. are amended to read:

ILHR 66.33 (2) (a) Buildings exceeding the thresholds in sub. (1). Buildings protected by an automatic fire sprinkler system or 2-hour fire resistance in accordance with sub. (1) are not limited in area or height, up to the 60-foot maximum in s. ILHR 66.03 (6), except that buildings of Type 7 or 8 construction may have no more than 4 occupied floor levels of wood frame construction; any additional floor levels shall be of Type 5 or better construction, and the total number of stories may not exceed 4. For Type 8 buildings, the structural ~~parts and the enclosing walls and ceilings~~ building elements as listed in Table 51.03-A, and the dwelling unit separations listed in s. ILHR 66.32 (2), but not those elements specified in sub. (1) (a) 1., shall be protected with at least the 5/8-inch type X wallboard or equivalent as specified in s. ILHR 66.32 (2).

Note: There are other requirements that impact or affect the fire resistive ratings or properties of exterior walls and elements, such as the setback limitations for property lines under s. Comm 51.03.

(b) Buildings at or below the thresholds in sub. (1). 1. Buildings without the sprinkler protection or 2-hour fire resistance required by sub. (1) shall comply with Table 66.33-B, except

that Type 8 buildings may be built to the Type 7 limits in that table if the structural parts and the enclosing walls and ceilings, as building elements listed in Table 51.03-A for Type 8, but not those elements specified in sub. (1) (a) 1., are protected with at least the 5/8-inch type X wallboard or equivalent as specified in s. ILHR 66.32 (2).

Note: There are other requirements that impact or affect the fire resistive ratings or properties of exterior walls and elements, such as the setback limitations for properties lines under s. Comm 51.03.

SECTION 14. ILHR 66.38 (4) (a) 2. Note is created to read:

ILHR 66.38 (4) (a) 2. Note: Stairs adjacent to an accessible ramp are considered to be stairs on an accessible route.

(End)

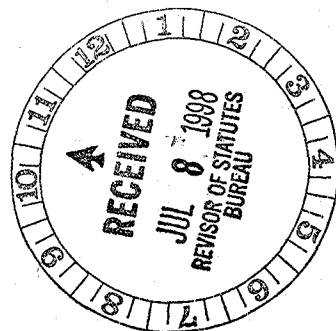
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EFFECTIVE DATE

Pursuant to s. 227.22 (2)(intro.), Stats., these rules shall take effect on the first day of the month following publication in the Wisconsin Administrative Register.

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file ref: 66legrev 98



July 7, 1998

Gary Poulson  
Assistant Revisor of Statutes  
Suite 800  
131 West Wilson Street  
Madison, Wisconsin 53703-3233

Douglas LaFollette  
Secretary of State  
10th Floor  
30 West Mifflin Street  
Madison, Wisconsin 53703

Dear Messrs. Poulson and LaFollette:

### TRANSMITTAL OF RULE ADOPTION

CLEARINGHOUSE RULE NO.: 98-017

RULE NO.: Chapters Comm 51 and ILHR 57 and 66

RELATING TO: The Commercial Building Code and the Uniform Multifamily Dwelling Code

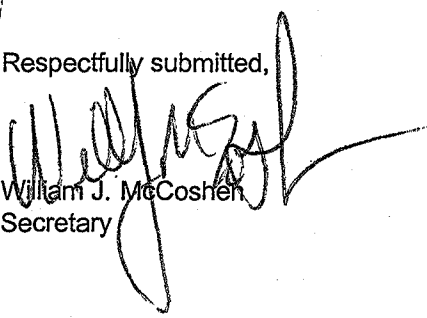
Pursuant to section 227.20, Stats., agencies are required to file a certified copy of every rule adopted by the agency with the offices of the Secretary of State and the Revisor of Statutes.

At this time, the following material is being submitted to you:

1. Order of Adoption.
2. Rules Certificate Form.
3. Rules in Final Draft Form.

Pursuant to section 227.114, Stats., a summary of the final regulatory flexibility analysis is also included.

Respectfully submitted,

  
William J. McCoshen  
Secretary

