

NORTH CAROLINA
DEPARTMENT OF INSURANCE

 **OSFM**

OFFICE OF STATE FIRE MARSHAL



Changes in the 2009 Edition of the

NC Building and Fire Codes

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Implementation

All new projects should be designed in accordance with 2009 Codes.

- The overlap period for using the 2006 Codes for previously submitted projects ends June 30th, 2009.

Disclaimer

This talk is only an overview.

Please sign up for our newsletter at the Engineering and Codes page at the DOI website.

- http://www.ncdoi.com/OSFM/Engineering/engineering_home.asp



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Changes

Text with a bold vertical bar in the margin is a change in the IBC.



Underlined text is a NC change from the IBC document.

Global changes

- Many changes are simply coordination or clarification items.
 - 50 people or more requires doors to open in egress direction, exit signs, emergency lighting.
 - Compartmentalization (i.e. occupancy separation, incidental use separation, etc) is clarified to include horizontal assemblies.
 - Standardizes terminology
 - “grade plane” instead of grade
 - “smoke partition” instead of wall to resist passage of smoke

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BC – Chapter 3

- Hazardous occupancies
 - § 307.1 : Basically, the Code is trying to tell you how to avoid an H occupancy classification
 - Keep in mind that you still must comply with the Fire Code and Section 414 of the Building Code if you have hazardous materials in any quantity.



BC – Chapter 4



- §404 – Atriums
 - 404.1 : Clarifies that an opening is either an atrium or a shaft
 - 404.4 : Clarifies that smoke control is not required in a two story atrium
 - 404.5 Exception 1 : Clarifies that water washing for glass wall enclosure requires that there be no obstructions (think horizontal mullions)
 - 404.5 Exception 3 : Changes wording to better coordinate with current design methodology for smoke control systems

BC – Chapter 4

- §406.2 and 406.3 Parking Garages
 - §406.2.5 Vehicle ramps can be used as a required exit provided pedestrian facilities are provided. Slope must be 1:15 or less.
 - § 406.3.6 Includes an additional requirement that open sides must have 30 feet “clear” on the outside to be considered open.

BC – Chapter 5

- §505 Mezzanines:
 - 505.2 Exc. 2: Increases allowable area to ½ room below with sprinklers and approved emergency voice/alarm notification system per 907.2.12.2
 - 505.4 Exc. 5: Mezzanine can be enclosed if:
 - Not H or I occupancy
 - Not more than 2 stories
 - Sprinklered
 - 2 or more means of egress



BC – Chapter 5

TABLE 508.3.3
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)

OCCUPANCY	A ^e , E		I		R ^d		F-2, S-2 ^{c,d} , U ^d		B ^b , F-1, M ^b , S-1		H-1		H-2		H-3, H-4, H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A ^e , E	N	N	1	2	1	2	N	1	1	2	NP	NP	3	4	2	3 ^a
I	—	—	N	N	1	NP	1	2	1	2	NP	NP	3	NP	2	NP
R ^d	—	—	—	—	N	N	1	2	1	2	NP	NP	3	NP	2	NP
F-2, S-2 ^{c,d} , U ^d	—	—	—	—	—	—	N	N	1	2	NP	NP	3	4	2	3 ^a
B ^b , F-1, M ^b , S-1	—	—	—	—	—	—	—	—	N	N	NP	NP	2	3	1	2 ^a
H-1	—	—	—	—	—	—	—	—	—	—	N	NP	NP	NP	NP	NP
H-2	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	1	NP
H-3, H-4, H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP

For SI: 1 square foot = 0.0929 m².

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

N = No separation requirement.

NP = Not permitted.

a. For Group H-5 occupancies, see Section 903.2.4.2.

b. Occupancy separation need not be provided for storage areas within Groups B and M if the:

1. Area is less than 10 percent of the floor area;
2. Area is equipped with an automatic fire-extinguishing system and is less than 3,000 square feet; or
3. Area is less than 1,000 square feet.

c. Areas used only for private or pleasure vehicles shall be allowed to reduce separation by 1 hour.

d. See Section 406.1.4.

e. Commercial kitchens need not be separated from the restaurant seating areas that they serve.

BC – Chapter 5

- §508 Mixed Use and Occupancy
 - This section is relocated from Chapter 3.
 - It has been reorganized to match other sections.
 - Occupancy separation table has been changed.

BC – Chapter 6

- Table 601: deleted
Footnote C Part 3
 - Fire-retardant-treated wood roof construction in Type I and II buildings is no longer allowed unless all parts of the roof are over 20 feet from the floor below.
 - Heavy timber may still be used anywhere requiring 1-hour or less rating.



BC – Chapter 7

- §703.5 Identification.
 - Requires any wall or partitions which require protected openings to be permanently identified with signs or stenciling.
 - Fire walls
 - Fire barriers
 - Fire partitions
 - Smoke barriers
 - Smoke partitions

BC – Chapter 9

- §903.2.7 Sprinklers are required in all buildings with a Group R fire area.
 - Exception is for Group R-3 and R-4 adult and child day care facilities
 - This is not really new, but there had been a proposed rule revision in the last Code cycle so it may look new. Same requirement became effective August 7th, 2008.

BC – Chapter 9

- §903.2.1.2
Sprinklers required
in A2 occupancies
with more than 100
people
 - There is a proposal to
change it back to 300 for
all but nightclubs



BC – Chapter 10

- §1003.2 Minimum ceiling height in the means of egress changed to 7'-6" (from 7'-0")
 - Exceptions have not changed.

BC – Chapter 10

- §1004 Occupant Load
 - There is a new exception for areas without fixed seating to allow reduced occupant load!!!
 - Previously only reduction in occupant load was through AMM procedure – this exception allows the Code Official to reduce occupant load.
 - Intent is to allow reduction in very limited instances and still requires justification.
 - Do not try to sneak this one past the Code Official.

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BC – Chapter 10



- §1004 Occupant Load, cont.
 - There is a new clarification for areas with fixed seating.
 - Areas without fixed seating, such as waiting spaces and wheelchair spaces shall have an occupant load that is added to the number of fixed seats.

BC – Chapter 10

- §1007 Accessible Means of Egress
 - This section was previously deleted in the NC Codes, so it's all new. (No bars because not new in IBC)
 - Interesting items:
 - 1007.2.1 Elevator becomes a required means of egress for buildings with 4 or more stories above or below the level of exit discharge, unless you have a horizontal exit or ramp. Elevator will need standby power.

BC – Chapter 10

- §1007
 - Interesting items, cont.:
 - 1007.3 Exception 2: This exception to providing an area of refuge (basically an ARA) is only for unenclosed exit stairs. So all enclosed exit stairs must have areas of refuge.

BC – Chapter 11 Accessibility

- As of right now, the NC Accessibility Code and Chapter 10 are in effect.
 - Legislation is pending to either allow the switch to Chapter 11 as mandated by the Building Code Council or to keep the NCAC.
 - Chapter 11 has some variation from ADA requirements, so if codified it will be especially important for designers to verify compliance with federal law.
 - Whichever document is decided upon, all parts of Chapter 10 are in effect unless changes are adopted by the Building Code Council.

BC – Chapter 10

- §1008 Doors, Gates and Turnstiles
 - 1008.1.8.7 Exc. 3 In stairways serving less than 4 floors, you may lock the doors from opposite of egress side provided that all locks be simultaneously released from a fire command center or single location inside main entrance.
 - 1008.1.9 Panic hardware required in A or E occupancy with occupant load of 50 or more (used to be 100).
 - 1008.1.9 Certain electrical rooms also require panic hardware. This is coordinated with the NEC.

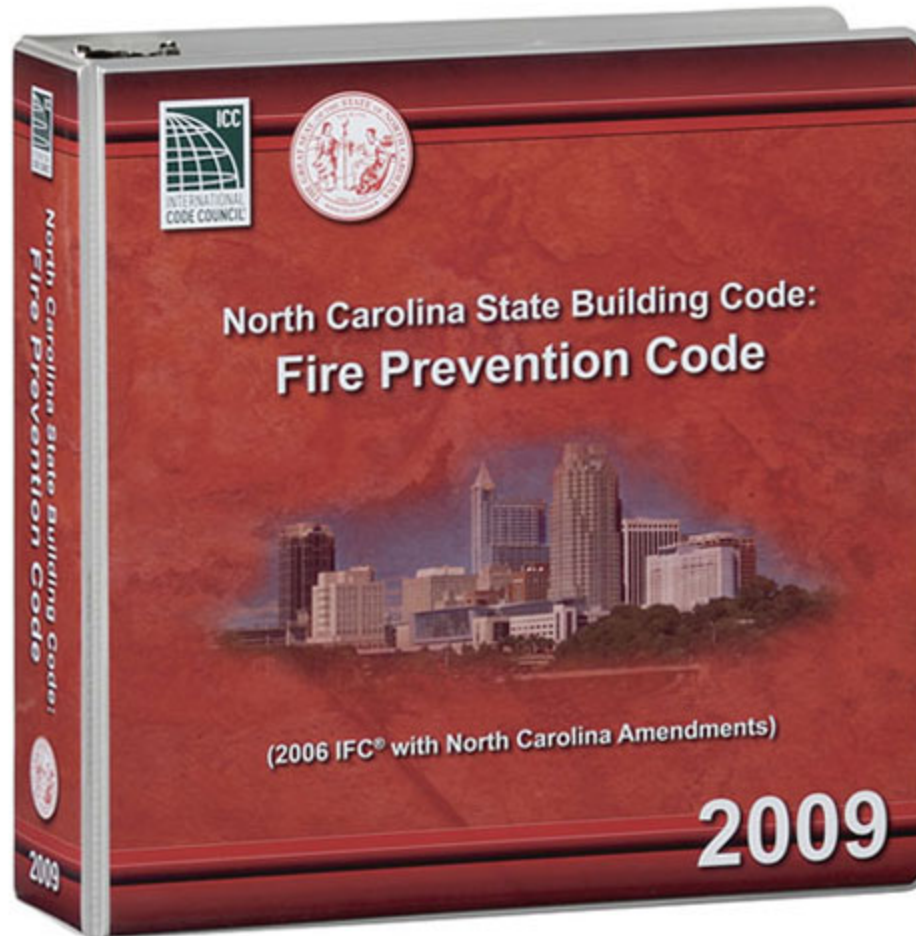
BC – Chapter 10

- §1014 Exit Access
 - 1014.2 ¶ 2 Exc. 2: Means of egress allowed through a stockroom in M occupancies if:
 - Stock does not have an increased hazard classification
 - Not more than 50 percent of exit access is through the stockroom
 - Stockroom is not able to be locked from egress side
 - There is a minimum 44” wide aisle defined by full or partial height fixed walls that lead directly to exit without obstruction

BC – Chapter 10

- 1014.2.1 Exiting through adjacent tenant space is allowed if such space is less than 10% of the tenant space, are the same or similar occupancy group, a discernable path of egress is provided, and if it cannot be locked from the egress side.
 - A larger tenant space cannot exit through a smaller tenant space.
- 1014.3 Exc. 4: Common path of travel for R-2 occupancies is increased to 125 feet with a sprinkler system.

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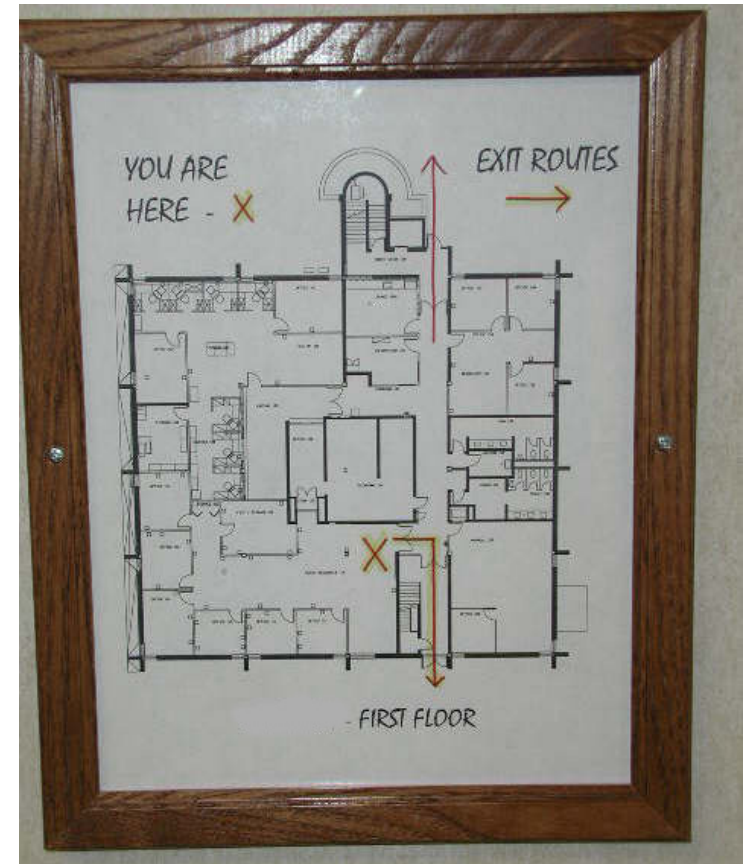
FC – Chapter 1

- §106.4 Approvals

Approved as the result of an inspection shall not be construed to be an approval of a violation of the provisions of the this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel provisions of this code or of other ordinances of the jurisdiction shall not be valid.

FC – Chapter 4

- §404.2 Fire evacuation plans added for:
 - Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge
 - Group R-2 college and university buildings
 - Other occupancy groups having a fire alarm system



FC – Chapter 4

- §405.2 Adds annual fire drills for:
 - Employees in high rise buildings
 - Employees in certain B group buildings
 - All occupants of college and university R-2 dormitory buildings

FC – Chapter 7

- §703.1 Adds to the list of items which must be maintained:
 - Smoke barriers
 - Fire resistive coatings
 - Sprayed fire-resistive materials applied to structural members
 - Fire resistive joint systems

FC – Chapter 9

- §901.9 Added new requirement that fire-protection-system components that are subject to voluntary or mandatory recall under federal law are to be replaced and the fire code official notified.

"CENTRAL"
"GB"

PENDENT
SHOWN



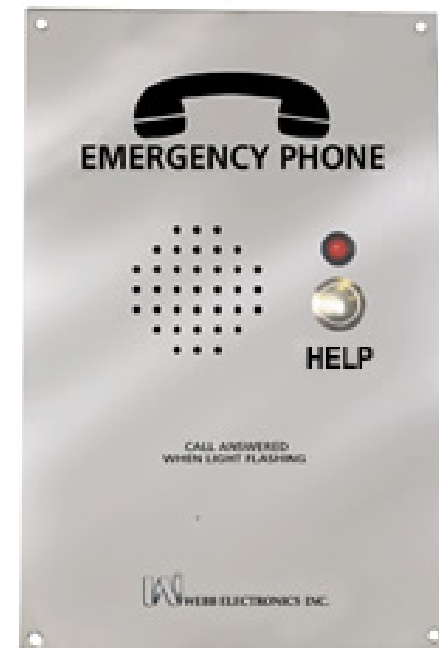
FC – Chapter 10

- §1028.4 Exit signs
 - Signs must be maintained.
 - Anything that impairs visibility of the signs, or creates confusion to prevent identification of the signs will not be allowed.



FC – Chapter 10

- §1028.7 Area of refuge (ARA) two-way communication system must be inspected and tested annually.



FC – Chapter 27

- §2703.8.3.4 An exception is added that recognizes the combination of a 1 hour floor assembly plus a sprinkler system as sufficient protection in certain construction types, thus easing the significant expense impact of providing floor separations in existing buildings, especially Group B laboratory occupancies.

FC – Chapter 34

- Flammable and combustible liquids



- Number of storage cabinets in a fire area is no longer limited
- Still must comply with maximum allowable quantities based on the type of material to be stored

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Questions?

Thank you for your attention.

Contacts

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