WISCONSIN HEALTHCARE ENGINEERING ASSOCIATION

Dedicated to Excellence in Healthcare Engineering

"Lunch & Learn"
2014 Webinar Series

Hosted by Bill Lauzon, PE

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WISCONSIN HEALTHCARE ENGINEERING ASSOCIATION

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2014 Webinar Series

February, 2014

OCCUPANCIES

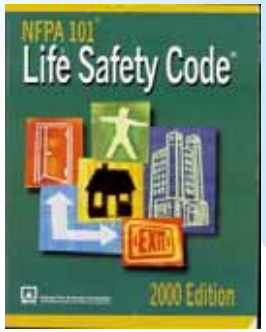
Part 1-Health Care

Unofficial Schedule-UPDATED

Month & Date	Subject	LSC Chapter	Presenter	Topics Covered
01/09/14 ✓	LSC Intro	NFPA 101 (LSC)	Bill Lauzon, PE	Code layout, AHJs, New/Existing
02/13/14	Occupancy -Part 1	LSC 18/19.1	Bill Lauzon, PE	Health Care
03/13/14	Occupancy -Part 2	LSC 20/21; 38/39	Bill Lauzon, PE	Business, Ambulatory, Storage, Others
04/10/14	Marge for Mechanics	none	Marge McFarland,PhD	Infection Control
05/08/14	Fire Doors	LSC 7.2.1, NFPA 80	LaForce	Fire Door Codes, Installation, Inspection
06/12/14	Means of Egress	LSC 18/19.2	Bill Lauzon, PE	Exits, Locking, Travel Distance
07/10/14	Protective Features	LSC 18/19.3	Bill Lauzon, PE	Vertical Openings, Haz Rms, Corridors, Suites, Smoke Compart.
08/14/14	Fire Stopping ?	LSC 8.2.3.2.4	TBD	Fire Stop Methods & Inspection
09/11/14	Building Services	LSC 18/19.5	Bill Lauzon, PE	Sprinkler, Ventilation, Electrical, Med Gas, Elevator
10/09/14	Electrical ?	NFPA 99, Chap 3	TBD	Essential Electrical Sys, Generator Install & Testing
11/13/14	Med Gas ?	NFPA 99, Chap 4	TBD	?Wade R & Tom S?
12/11/14	2012 LSC	NFPA 101	Bill Lauzon, PE	Changes in the New Code

Subject to revision

Have Questions?



During the Live Webinar:

Click on "chat" in the Lower RH corner

(Bill gets disappointed if people don't ask questions)

During viewing the posted Webinar:

Call Bill Lauzon (262-945-4567) or

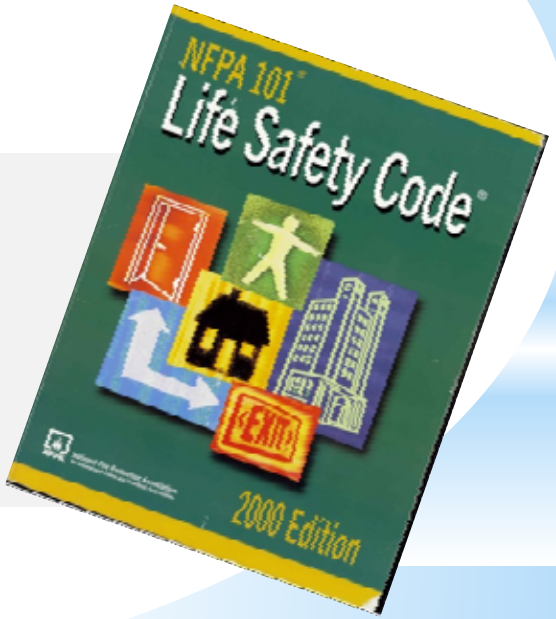
E-Mail at Lauzon.LSC@gmail.com

"Occupancies-Part 1"

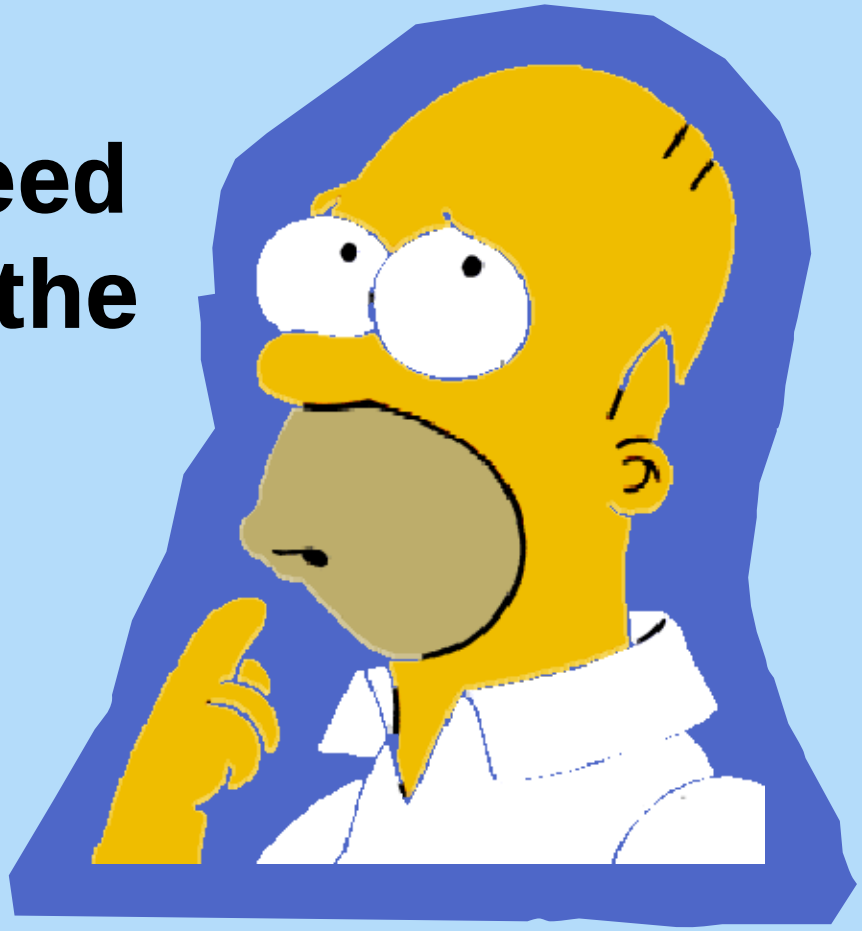
Agenda

1. Occupancy Classifications (Chap 6)
2. LSC vs. IBC Approach
3. Chapter Organization
4. Construction Types
5. **HEALTH CARE**

(Chap 18-19)



You DON'T need to memorize the Codes …

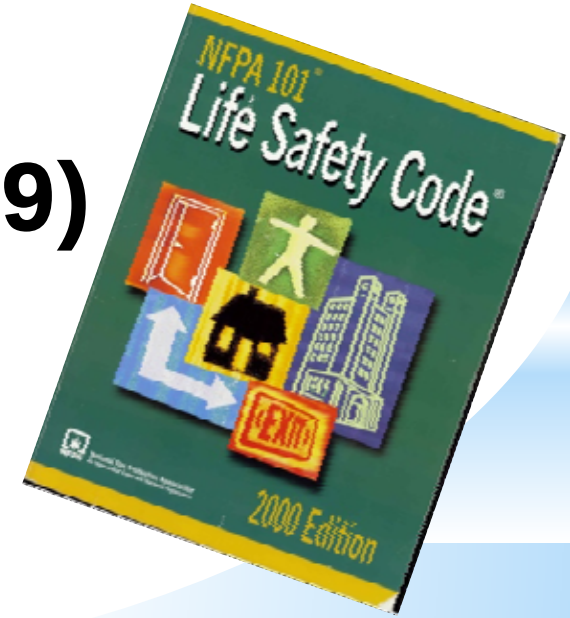


You just need to know where to look

"Occupancies" Agenda

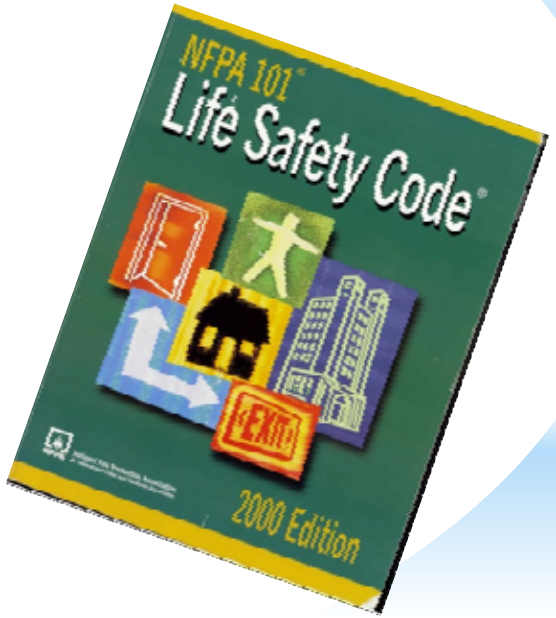
1

1. Occupancy Classifications (Chap 6)
2. LSC vs. IBC Approach
3. Chapter Organization
4. Construction Types
5. Health Care (Chap 18-19)



LSC OCCUPANCIES

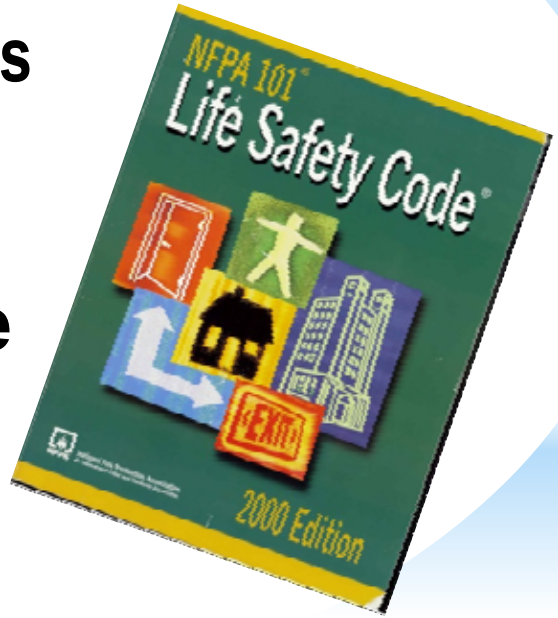
HOW IS A SPACE BEING USED?



LSC OCCUPANCIES

Chapter Names

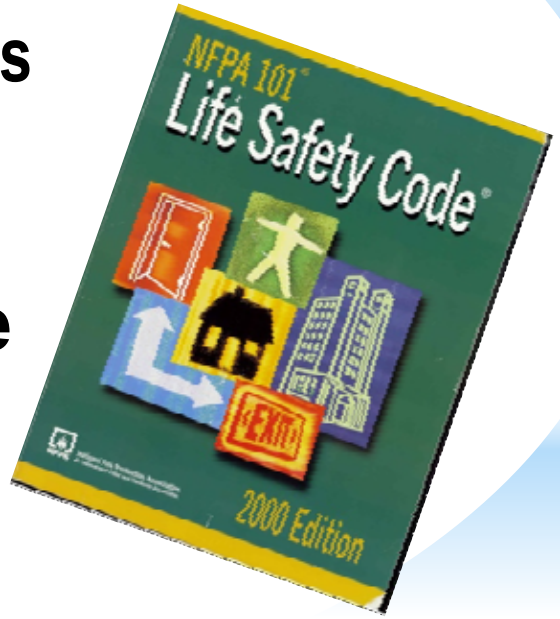
- Assembly
- Educational
- Day-Care
- Health Care
- Ambulatory
- Detention & Correctional
- One & Two Family
- Lodging & Rooming Houses
- Hotels & Dormitories
- Apartment Buildings
- Residential Board &P Care
- Mercantile
- Business
- Industrial
- Storage



LSC OCCUPANCIES

Chapter Numbers

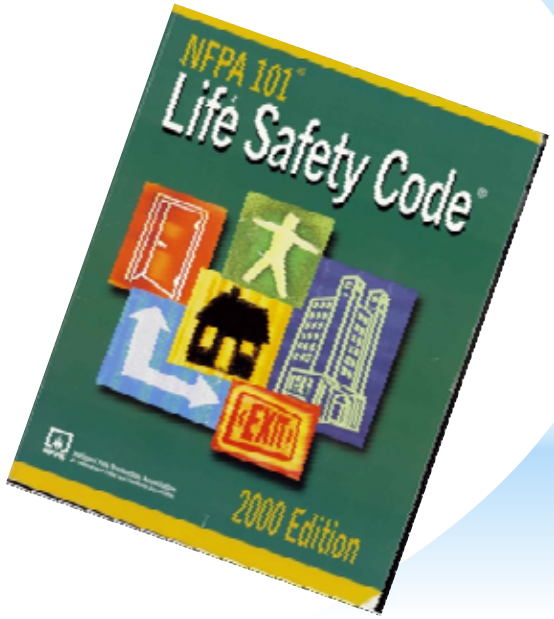
- 12/13 • Assembly
- 14/15 • Educational
- 16/17 • Day-Care
- 18/19 • Health Care
- 20/21 • Ambulatory
- 22/23 • Detention & Correctional
- 24 • One & Two Family
- 26 • Lodging & Rooming Houses
- 28/29 • Hotels & Dormitories
- 30/31 • Apartment Buildings
- 32/33 • Residential Board &P Care
- 36/37 • Mercantile
- 38/39 • Business
- 40 • Industrial
- 42 • Storage



CHAPTER 11

SPECIAL STRUCTURES

- Open Structures
- Towers
- Water-Surrounded
- Piers
- Vehicles & Vessels
- Underground & Windowless
- High-Rise Buildings
- Membrane Structures
- Tents



MIXED OCCUPANCIES

- **Non-Separated**

Follow Most Restrictive Requirement of Each

MIXED OCCUPANCIES

- **Separated**

Follow Requirements of A

RATED SEPARATION WALL

Follow Requirements of B

OCCUPANCY CODES

FACILITY	WIS BLDG CODE[2] (New only)	WIS LICENSE	FED CMS
Hospital	I2 Occup	HFS 124	NFPA 101, Chap 18/19
Nursing Home	I2 Occup	HFS 132	NFPA 101, Chap 18/19
Amb Care/Day Surg (ASC)	[2]B Occup	None	NFPA 101, Chap 20/21[1]
Business (Ofcs/Clinics)	[2]B Occup	None	NFPA 101, Chap 38/39[1]
Dialysis (ESRD)	[2]B Occup	HFS 152	None
Comm Base Res Fac (CBRF)	[2]I1 if Alert; I2 if Confused; UDC if <4	HFS 83	None
Hospice	[2]I1, R2-4 if Alert; I2 if Confused	HFS 131	NFPA 101, Chap 18/19

Footnotes

[1] DHS review if facility bills CMS under a hospital provider #

[2] DHS Review for IBC only if attached to a hosp or Nrs Home (auth stops at ... Ped Walkway or Tunnel); Dept of Safety & Prof. Svcs review & inspect all other

Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

"Occupancies" Agenda

2

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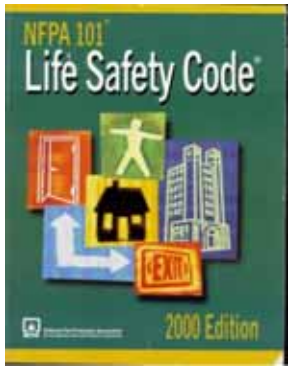
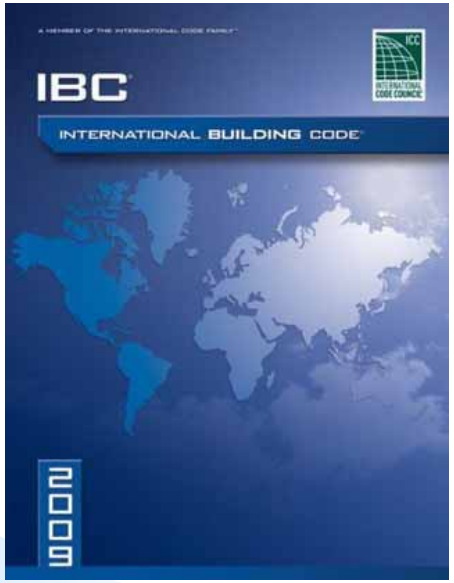
2. LSC vs. IBC Approach
3. Chapter Organization
4. Construction Types
5. Health Care (Chap 18-19)

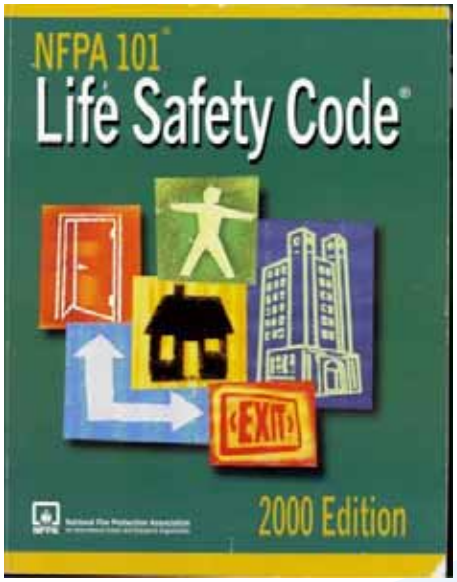


VS

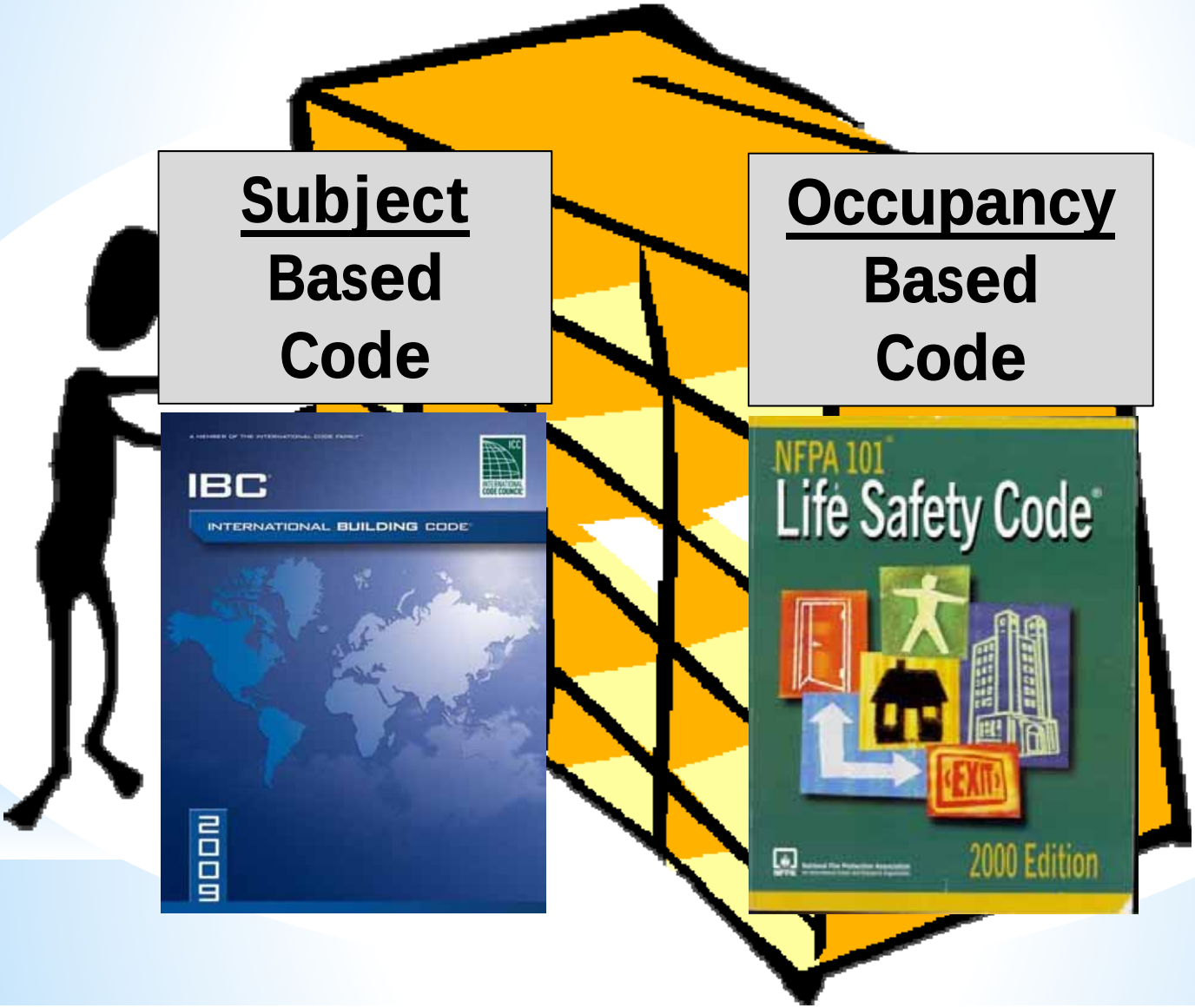
LSC vs. IBC Approach

- **Different Organization**
- **Different Occupancy Classifications**
- **New vs Existing**

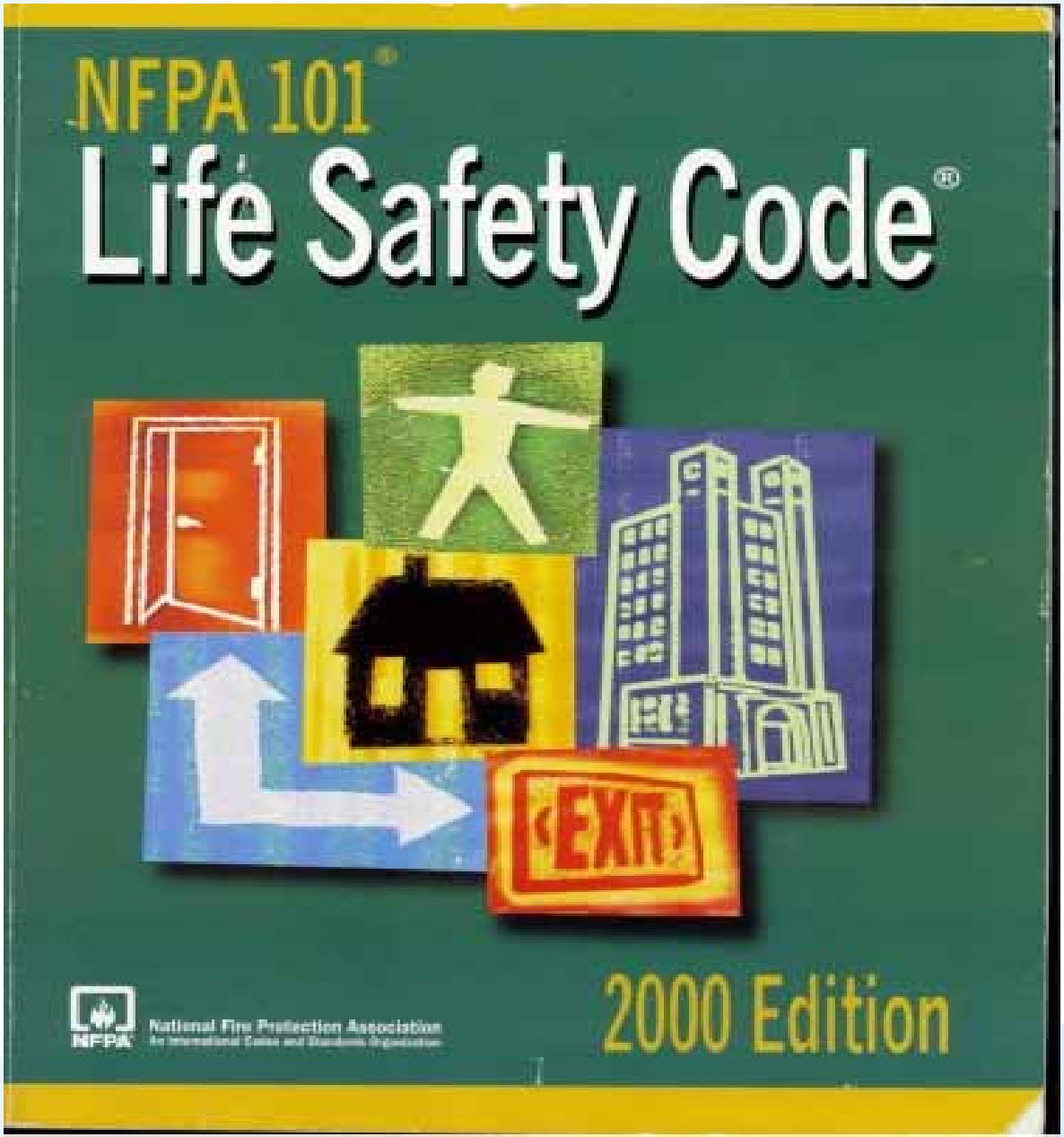




Code Organization



The OCCUPANCY Chapters are the “Keyhole”



The OCCUPANCY Chapters are the “Keyhole”

You look in those Chapters find code requirements

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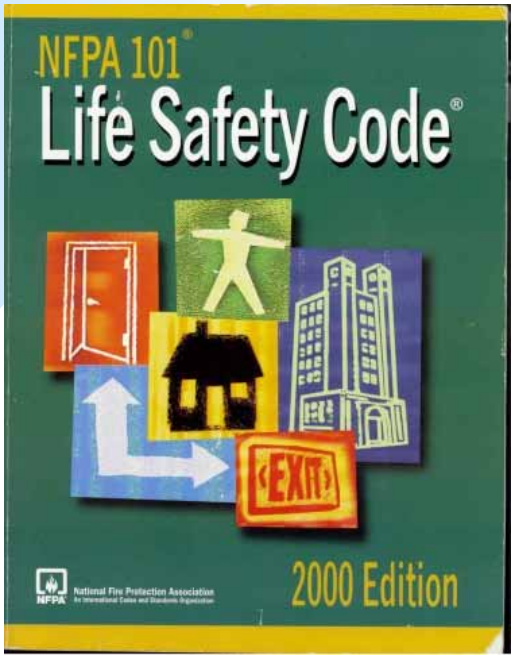
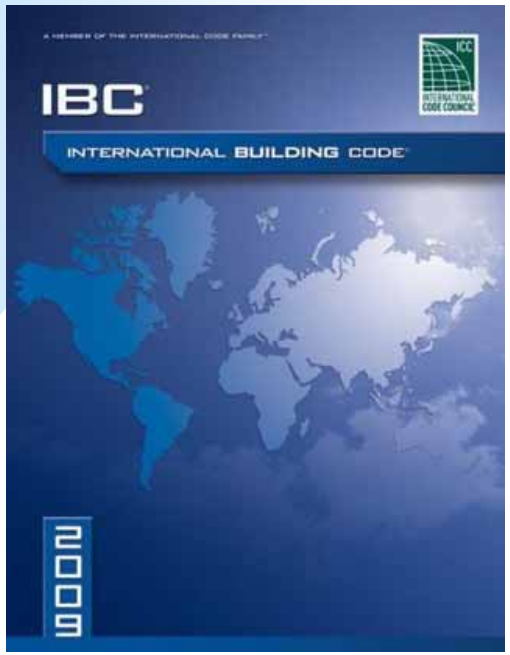
You look in those Chapters find code requirements

Occupancy Based Code



Core Chapters	Referenced Standards
7-Means of Egress	13-Sprinklers
8-Fire Protection	25-Sprinklers
9-Utilities	72-Fire Alarm
10-Finishes	99-Health C
11-Special	etc.

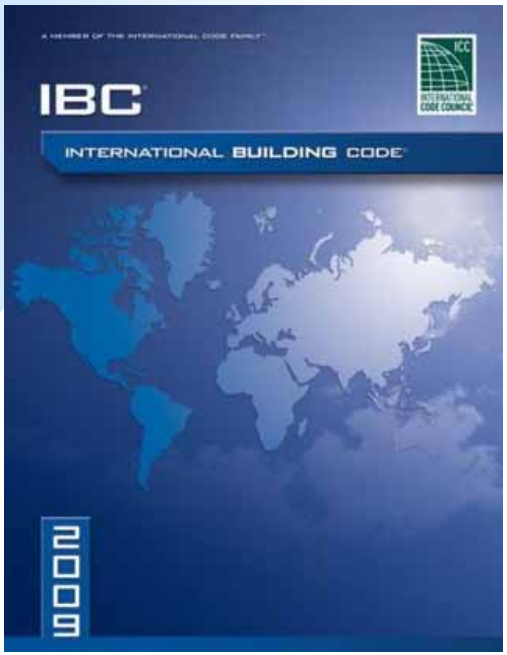
Subject Based Code



IBC Chapters

1 2 Administration
3 Use & Occupancies
4 Special Requirements
5 Height & Area Limits
6 Types of Construction
7 Fire Protection Features
8 Interior Finishes
9 Fire Protection Systems
10 Means of Egress
11 Accessibility
12 Interior Environment
13 Energy Efficiency
14 Exterior Walls
15 Roof Assemblies
16 Structural Design
17 Structural Tests
18 Soils & Foundations

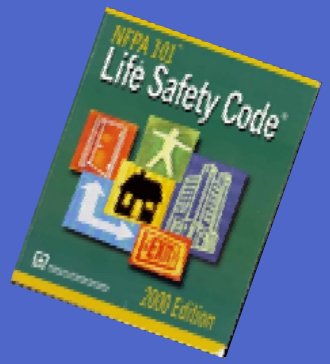
Subject Based Code



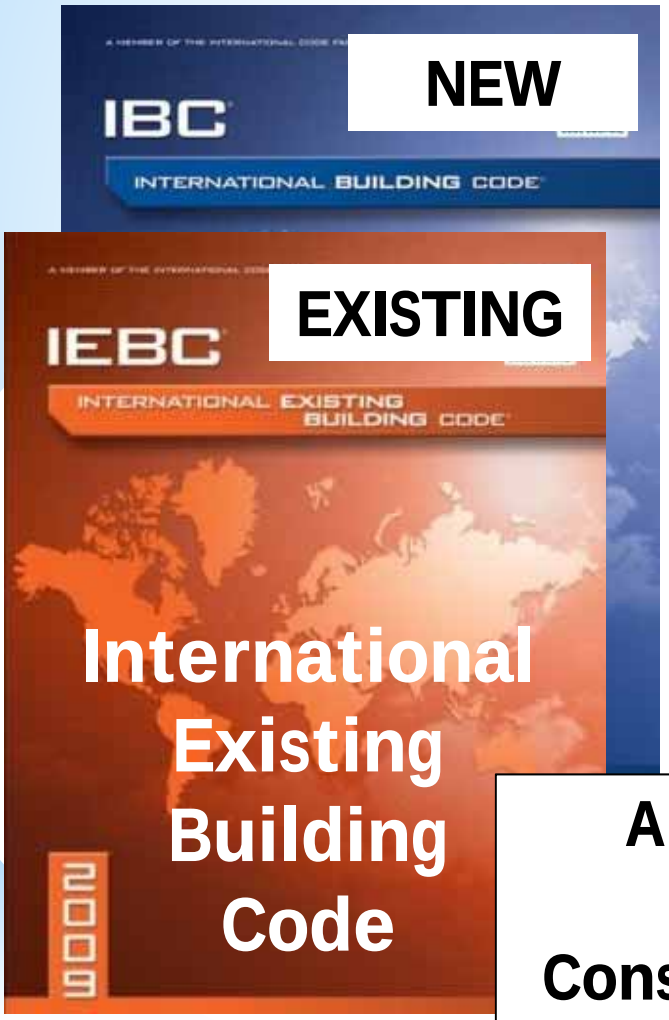
IBC Chapters

19 Concrete
20 Aluminum
21 Masonry
22 Steel
23 **Wood**
24 Glass & Glazing
25 Gypsum Board & Plaster
26 Plastic
27 Electrical
28 Mechanical Systems
29 Plumbing Systems
30 Elevators & Conveying Sys
31 Special Construction
32 Encroachments
33 Construction
34 Existing Buildings
35 Referenced Standards

NFPA-LSC	IBC
• Assembly	← Assembly (A-1 thru 5)
• Educational	← Educational (E)
• Day-Care	← Institutional (I-4)
• Health Care	← Institutional (I-2)
• Ambulatory	← Business (B)
• Detention & Correctional	← Institutional (I-3)
• One & Two Family	← Residential (R-3)
• Lodging & Rm Houses	← Residential (R-2)
• Hotels & Dormitories	← Residential (R-2)
• Apartment Buildings	← Residential (R-2)
• Residential Board/Care	← Residential (R-1)
• Mercantile	← Mercantile (M)
• Business	← Business (B)
• Industrial	← Factory & Industrial (F-1&2)
• Storage	← Storage (S-1 & 2)
	• High Hazard (H-1 thru 5)
	• Utility & Misc. (U)

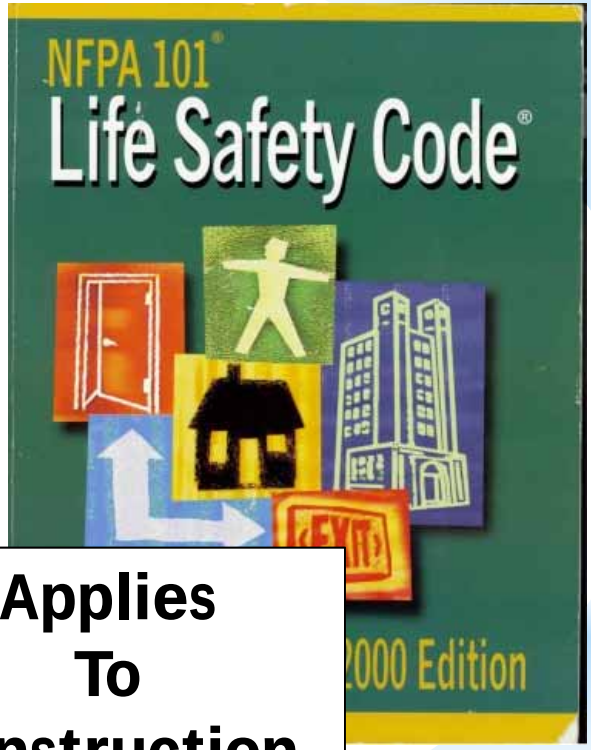


New & Existing



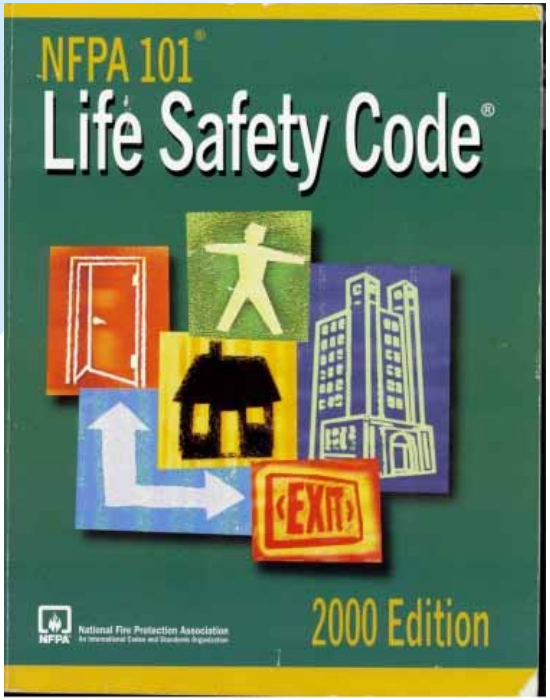
Applies To Construction ONLY

Both in same book



Applies To Construction & Operation

New & Existing



"Existing" Odd # Chapters ⇦

CMS Adoption Mar 11, 2003 ↓

⇨ "New" Even # Chapters

1967-70-73-76-79-82-85-88-91-94-97-00-03-06-09-12

← Years that NFPA published an updated LSC→

This is only a partial list that shows the most frequently cited requirements … Check [illegible] code

LSC-CONSTRUCTION REQUIREMENTS OF PAST EDITIONS

Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

The Life Safety Code (LSC) assumes that facilities were constructed in compliance with the requirements of 'new' construction that were in effect at the time of construction. (LSC 4.6.9.1). All required life sa[illegible] retain there ability to be effective.

Therefore, existing facilities must comply with the more restrictive requirements of (a) the LSC for new healthcare facilities that was in effect in the year the facility was built or remodeled, or (b) the LSC (2000) for existing healthcare (see [illegible] typically defaults to the 2000 Existing requirements only, but some DQA engineers take the afore mentioned approach and deficiencies cited under method must have the appropriate codes fully referenced.

LSC Edition	2000 (New)	2000 (Existing)	1985 (New)	1981 (New)	1967 (New)	1967 (Existing)
Comply with Code in effect on the Date of Plan Submission	**After 3/11/03**	Before 3/11/03	5/8/88 to 3/11/03	11/26/82 to 5/8/88	10/29/71 to 11/26/82	Prior to 10/29/71
Corridor Width (also Aisles & Ramps)	8' in pt; 44" in adjunct (18.2.3.3)	4' Clear (19.2.3.3)	8' in pt; 44" in adjunct (12-2.3.3)	8' in pt; 44" in adjunct (12-2.5.2)	8' (10-1233)	48" in pt sleep area (10-2233)
Door Widths-Egress	41.5" clear width in pt area; 32" non-pt; 32" in stairs (18.2.3.5)	32" in Pt Use Areas (19.2.3.5)	Opening 44" in pt area; 34" non-pt; 36" in stairs (12-2.3.6)	Opening 44" in pt area; 36" Psych (12-2.2.5(6))	Opening 44" in pt area; 28" non-pt (10-1243)	40" in pt area; 28" non-pt (10-2242)
Dead End Corridor Length (also Aisles & Ramps)	Max 30' (18.2.5.10)	Alter if Possible (19.2.5.10)	Max 30' (12-2.5.6)	Max 30' (12-2.5.8)	Max 30' (10-1234)	Are undesirable & should be altered, if possible (10-2235)
Hazardous Rm: 1 hr Wall OR Sprinkled	None	soiled, trash, paint, kitchens. Laundry boiler, repair, locker; Storage > 50 SF (19.3.2.1)	Laundry, lab, boiler, repair, locker, gift shop (12-3.2.1)	Laundry, lab, boiler, repair, locker, gift shop (12-3.2.1)	soiled, trash, paint, lab, kitchens. Laundry, boiler, repair, locker, gift shop (10-1371)	soiled, trash, paint, lab, kitchens. Laundry, boiler, repair, locker, gift shop (10-2351)
Smoke Barrier Doors	solid Core or 20 min label (18.3.7); Vision Panels (18.3.7.7)	Solid Core-no label (19.3.7.5)	Solid Core, Astragal, no mullion (12-3.7.8); Vision Panels (12-3.7.7)	Solid Core, Astragal, no mullion (12-3.7.8); Vision Panels (12-3.7.7)	Solid Core-no label (6-6111); Vision Panels (10-1317)	Solid Core-no label (10-2313)
Vertical Opening Wall Rating	2-hr if 4 or more; 1-hr if 3 or less (18.3.1.1 & 8.2.3.2.3.1)	1-Hr (19.3.1.1)	2-hr; 1-hr if max 3 stories+spkled) (12-3.1.1)	2-hr; 1-hr if max 3 stories+spkled) (12-3.1.1)	2-hr if 4 or more stories in non-comb bldgs; other 1-hr (10-1341; 6-1114)	1-hr (10-2322)
Vertical Opening Door Rating	90 m if 2hr wall; 60m if 1 hr wall	60 min (45 min if installed) (8.2.3.2.3.1+exception)	90 m if 2hr wall; 60m if 1 hr wall (12-3.1.1)	same as wall (12-3.1.1)	same as wall (6-1114)	same as wall (10-2321)

EXISTING = LEAST RESTRICTIVE OF NEW CONSTRUCTION REQUIREMENTS IN PRIOR EDITIONS

"Occupancies" Agenda

3

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2. LSC vs. IBC Approach
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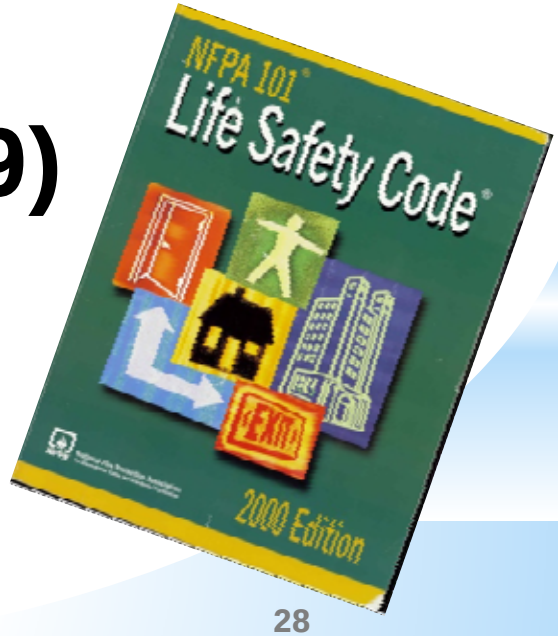
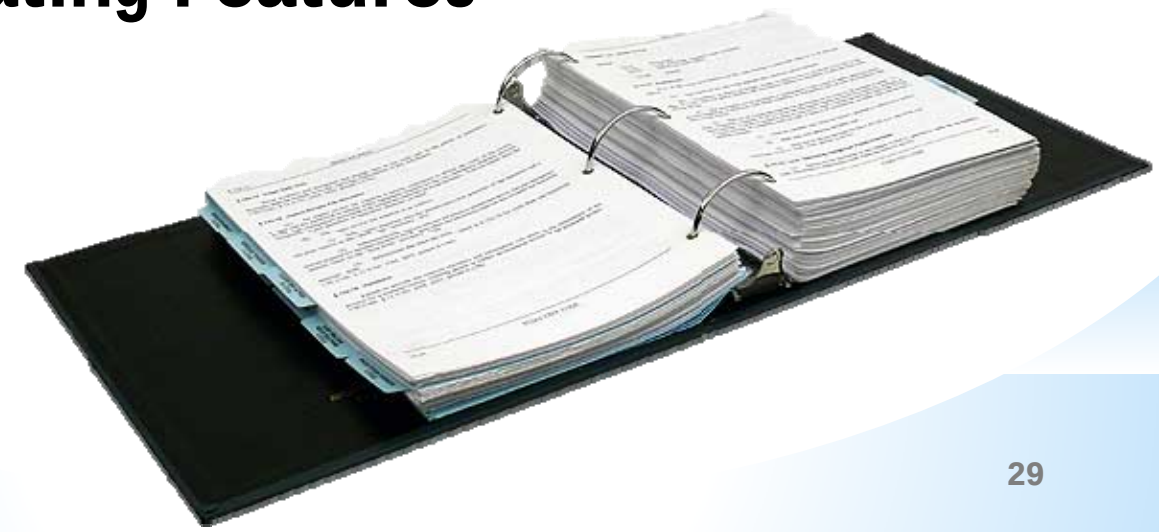
5. Health Care (Chap 18-19)



3. CHAPTER ORGANIZATION

- x.1 General Requirements
- x.2 Means of Egress
- x.3 Fire Protection
- x.4 Special Provisions
- x.5 Building Services
- x.6 Reserved
- x.7 Operating Features



3. CHAPTER ORGANIZATION

	Base Chapters
• x.1 General Requirements	(→ chap 6)
• x.2 Means of Egress	(→ chap 7)
• x.3 Fire Protection	(→ chap 8
• x.4 Special Provisions	(→ chap 11)
• x.5 Building Services	(→ chap 9)
• x.6 Reserved	
• x.7 Operating Features	(→ chap 4)

Relative Quantity of Regulations for New Occupancies (# inches of regs in LSC)							
Occuapancy Chapter	.1 General	.2 Means of Egress	.3 Protection	.4 Special Provisions	.5 Building Services	.7 Operating Features	Total # Inches
Health Care (Chap 18)	37.75"	43.25"	58.75"	1.00"	10.00"	21.00"	171.75"
Ambulatory (Chap 20)	26.75"	12.00"	18.50"	.25"	5.00"	20.75"	83.25"
Business (Chap 38)	10.75"	25.00"	15.50"	.75"	2.00"	1.50"	55.50"
Industrial (Chap 40)	8.25"	29.50"	11.50"	1.25"	1.75"	0	52.25"
Storage (Chap 42)	5.00"	21.75"	9.00"	1.00"	2.00"	0	38.75"
Assembly (Chap 12)	24.25"	86.50"	28.50"	106.50"	2.00"	53.25"	301.00"
Education (Chap 14)	13.00"	22.75"	26.00"	3.50"	2.50"	7.00"	74.75"
Mercantile (Chap 36)	18.25"	29.25"	18.50"	31.25"	2.00"	1.00"	100.25"
Total # Inches	144.00"	270.00"	186.25"	145.50"	27.25"	104.50"	877.50"

Quantity of Regulations

Health Care	Ambulatory	Business	Industrial	Storage
14’	7’	4’	4’	3’





It “pays” to have occupancy separations !

"Occupancies" Agenda

4

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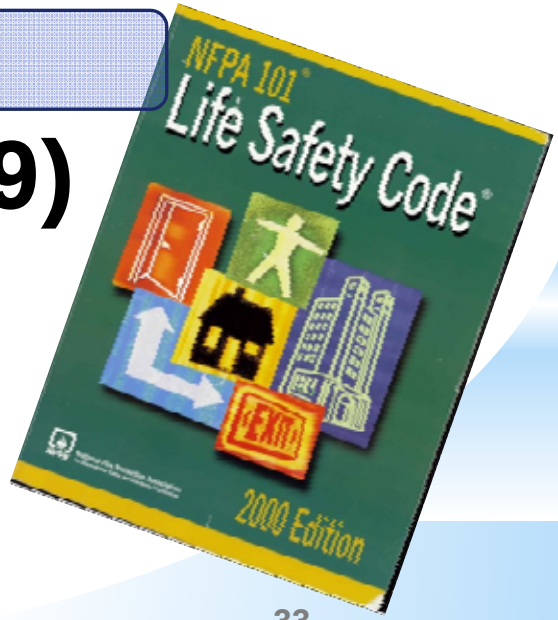
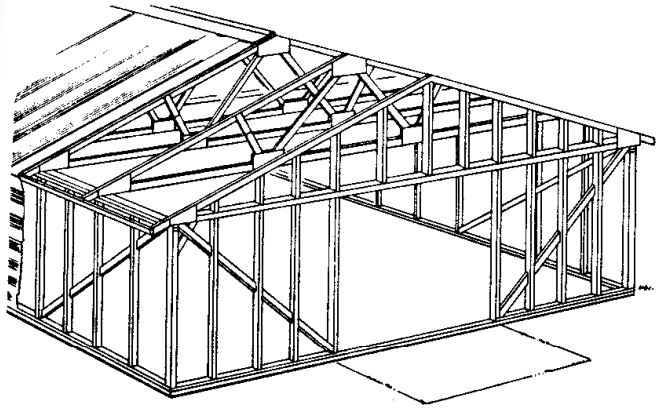
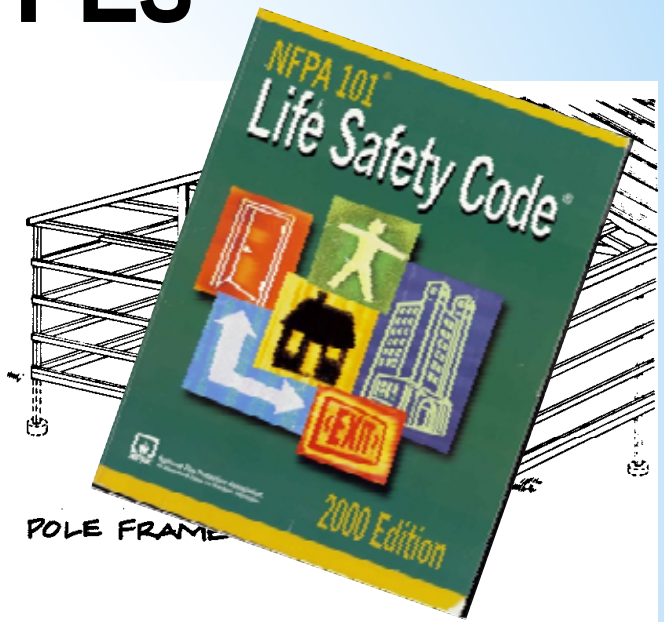


CONSTRUCTION TYPES

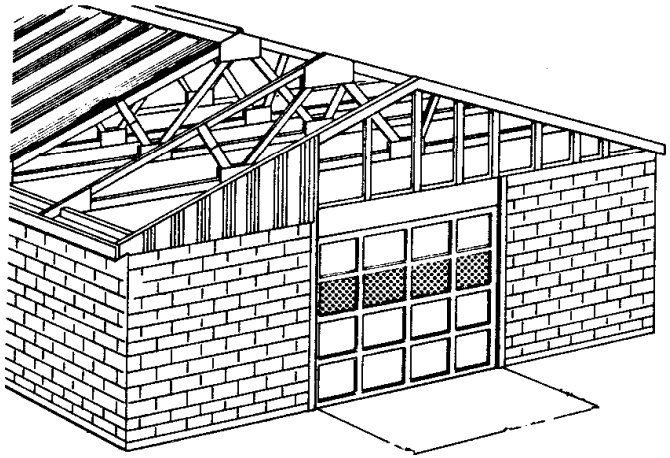
Defined in NFPA 220



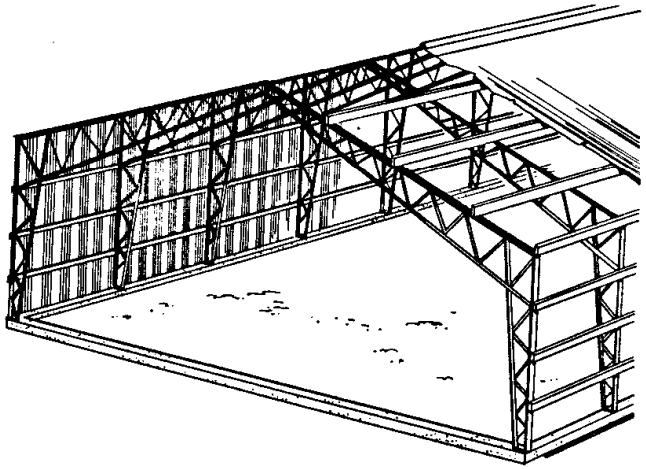
STUD FRAME CONSTRUCTION



POLE FRAME



CONCRETE MASONRY CONSTRUCTION



RIGID ARCH CONSTRUCTION

CONSTRUCTION TYPES

Non-Combustible Construction

Concrete

Steel

CONSTRUCTION TYPES

Combustible Construction

Wood (V)

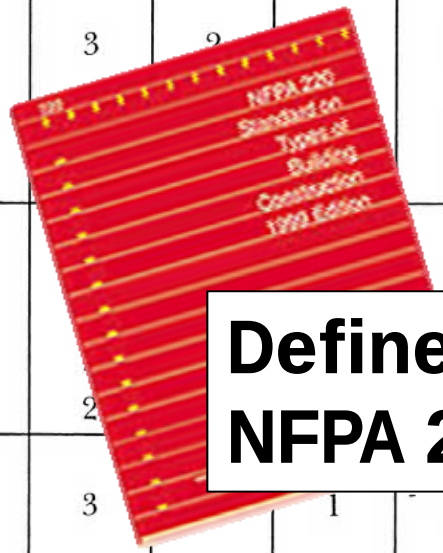
Heavy Timber (IV)

Wood & Masonry or Steel (III)

NFPA 220 Construction Types - LSC - Annex (p.300)

	Type I		Type II			Type III		Type IV	Type V	
	443	332	222	111	000	211	200	2HH	111	000
Exterior Bearing Walls										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0[1]	2	2	2	1	0[1]
Supporting one floor only	4	3	2	1	0[1]	2	2	2	1	0[1]
Supporting a roof only	4	3	1	1	0[1]	2	2	2	1	0[1]
Interior Bearing Walls										
Supporting more than one floor, columns, or other bearing walls	4	3	2		0	1	0	2	1	0
Supporting one floor only	3				0	1	0	1	1	0
Supporting roofs only	3				0	1	0	1	1	0
Columns										
Supporting more than one floor, columns, or other bearing walls	4				0	1	0	H[2]	1	0
Supporting one floor only	3						0	H[2]	1	0
Supporting roofs only	3	2					0	H[2]	1	0
Beams, Girders, Trusses, and Arches										
Supporting more than one floor, columns, or other bearing walls	4	3		1	0	1	0	H[2]	1	0
Supporting one floor only	3	2	2	1	0	1	0	H[2]	1	0
Supporting roofs only	3	2	1	1	0	1	0	H[2]	1	0
Floor Construction	3	2	2	1	0	1	0	H[2]	1	0
Roof Construction	2	$1^1/_2$	1	1	0	1	0	H[2]	1	0
Exterior Nonbearing Walls[3]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]

Those members that shall be permitted to be of approved combustible material.



Defined in NFPA 220

Construction Types: Non-Combustible

	Type I		Type II			Type III		Type IV	Type V	
	443	332	222	111	000	211	200	2HH	111	000
Exterior Bearing Walls										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0[1]	2	2	2	1	0[1]
Supporting one floor only	4	3	2	1	0[1]	2	2	2	1	0[1]
Supporting a roof only	4	3	1	1	0[1]	2	2	2	1	0[1]
Interior Bearing Walls										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	2	1	0
Supporting one floor only	3	2	2	1	0	1	0	1	1	0
Supporting roofs only	3	2	1	1	0	1	0	1	1	0
Columns										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	H[2]	1	0
Supporting one floor only	3	2	2	1	0	1	0	H[2]	1	0
Supporting roofs only	3	2	1	1	0	1	0	H[2]	1	0
Beams, Girders, Trusses, and Arches										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	H[2]	1	0
Supporting one floor only	3	2	2	1	0	1	0	H[2]	1	0
Supporting roofs only	3	2	1	1	0	1	0	H[2]	1	0
Floor Construction	3	2	2	1	0	1	0	H[2]	1	0
Roof Construction	2	1½	1	1	0	1	0	H[2]	1	0
Exterior Nonbearing Walls[3]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]

Those members that shall be permitted to be of approved combustible material.

Construction Types: Combustible

	Type I		Type II			Type III		Type IV	Type V	
	443	332	222	111	000	211	200	2HH	111	000
Exterior Bearing Walls										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0[1]	2	2	2	1	0[1]
Supporting one floor only	4	3	2	1	0[1]	2	2	2	1	0[1]
Supporting a roof only	4	3	1	1	0[1]	2	2	2	1	0[1]
Interior Bearing Walls										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	2	1	0
Supporting one floor only	3	2	2	1	0	1	0	1	1	0
Supporting roofs only	3	2	1	1	0	1	0	1	1	0
Columns										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	H[2]	1	0
Supporting one floor only	3	2	2	1	0	1	0	H[2]	1	0
Supporting roofs only	3	2	1	1	0	1	0	H[2]	1	0
Beams, Girders, Trusses, and Arches										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	H[2]	1	0
Supporting one floor only	3	2	2	1	0	1	0	H[2]	1	0
Supporting roofs only	3	2	1	1	0	1	0	H[2]	1	0
Floor Construction	3	2	2	1	0	1	0	H[2]	1	0
Roof Construction	2	$1^1/_2$	1	1	0	1	0	H[2]	1	0
Exterior Nonbearing Walls[3]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]

Those members that shall be permitted to be of approved combustible material.

Protected vs. Un-Protected

UN-PROTECTED

Bare/Exposed Structural Members (non-concrete)

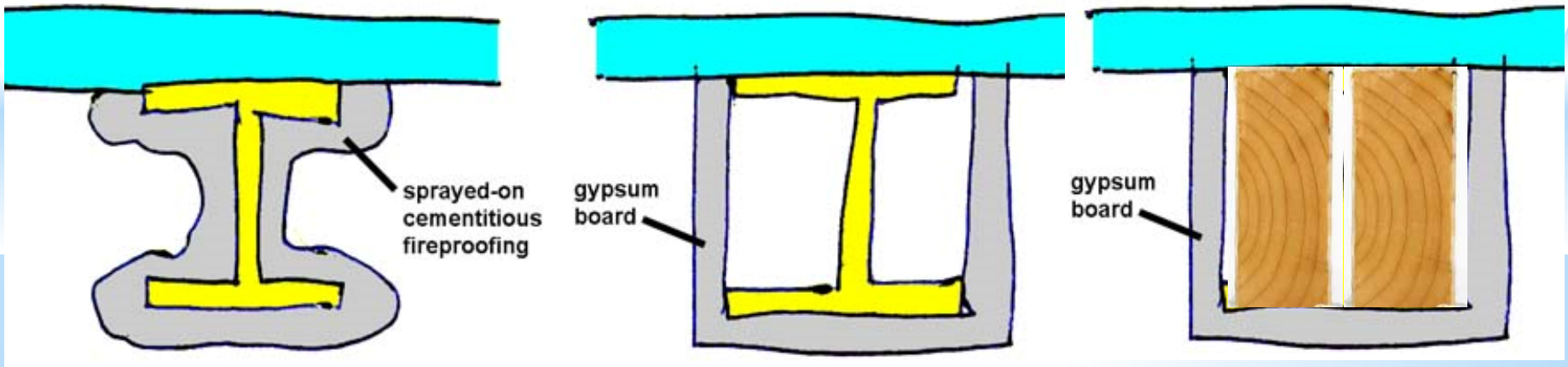
(000) = Un-Protected
(200) = Un-Protected
(2HH)= Un-Protected

"0" hrs of Fire Resistance

Protected vs. Un-Protected

PROTECTED

(111) = Protected
(211) = Protected
(222) = Protected
(332) = Protected
(443) = Protected



Fire Resistance Ratings (hours of protection)

	Type I		Type II			Type III		Type IV	Type V	
	443	332	222	111	000	211	200	2HH	111	000
Exterior Bearing Walls										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0[1]	2	2	2	1	0[1]
Supporting one floor only	4	3	2	1	0[1]	2	2	2	1	0[1]
Supporting a roof only	4	3	1	1	0[1]	2	2	2	1	0[1]
Interior Bearing Walls										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	2	1	0
Supporting one floor only	3	2	2	1	0	1	0	1	1	0
Supporting roofs only	3	2	1	1	0	1	0	1	1	0
Columns										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	H[2]	1	0
Supporting one floor only	3	2	2	1	0	1	0	H[2]	1	0
Supporting roofs only	3	2	1	1	0	1	0	H[2]	1	0
Beams, Girders, Trusses, and Arches										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	H[2]	1	0
Supporting one floor only	3	2	2	1	0	1	0	H[2]	1	0
Supporting roofs only	3	2	1	1	0	1	0	H[2]	1	0
Floor Construction	3	2	2	1	0	1	0	H[2]	1	0
Roof Construction	2	$1^1/_2$	1	1	0	1	0	H[2]	1	0
Exterior Nonbearing Walls[3]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]

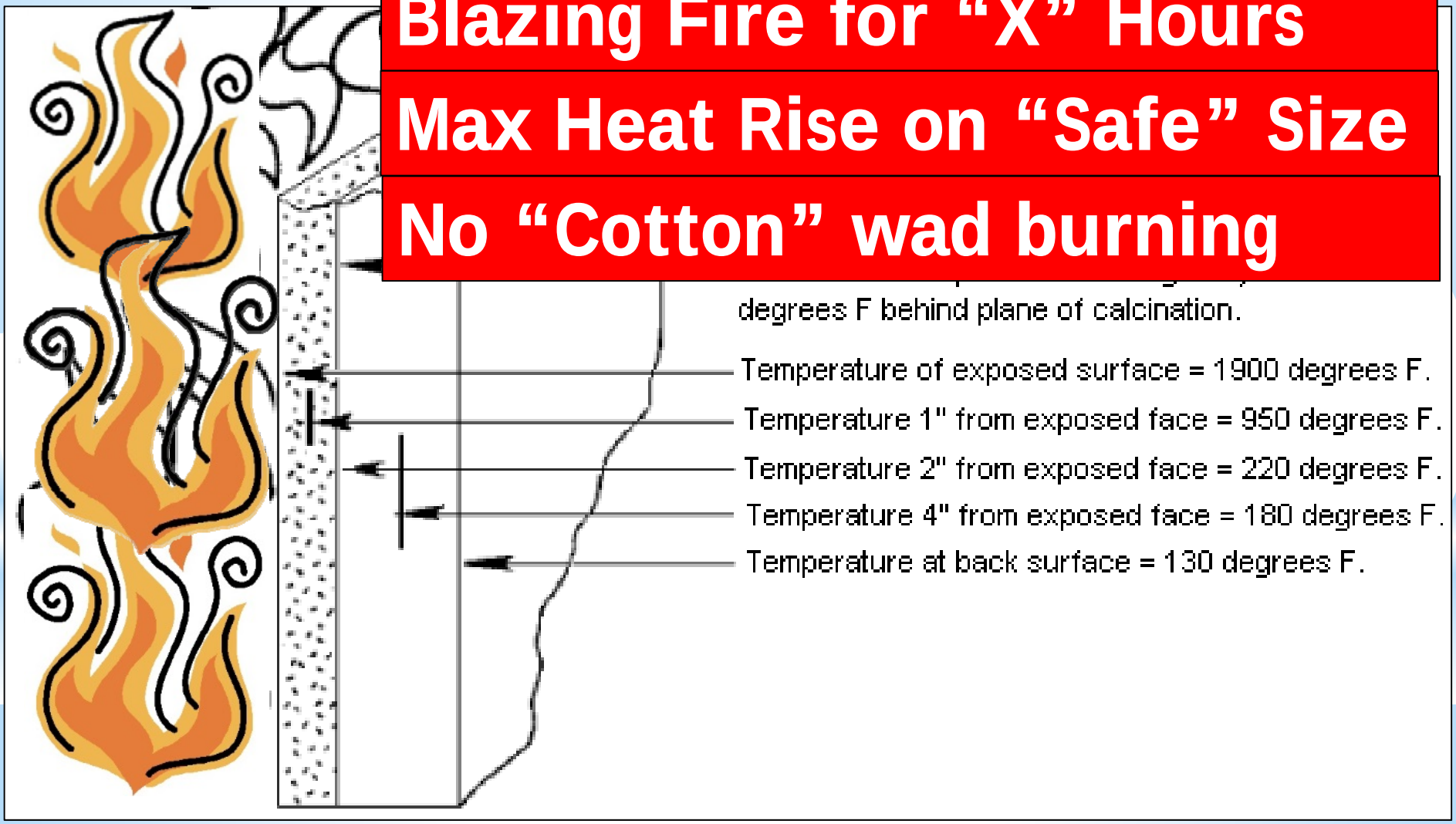
Those members that shall be permitted to be of approved combustible material.

Fire Resistance Rating (FRR)

Blazing Fire for "X" Hours

Max Heat Rise on "Safe" Size

No "Cotton" wad burning



Fire Resistance Rating (FRR)

Fire Hose Spray

Wall Must Remain Intact

Fire Off

Construction Types: "By the Numbers"

	Type I		Type II			Type III		Type IV	Type V	
	443	332	222	111	000	211	200	2HH	111	000
Exterior Bearing Walls										
Supporting more than one floor, columns, or other bearing	4	3	2	1	0[1]	2	2	2	1	0[1]
Supporting one floor only	4	3	2	1	0[1]	2	2	2	1	0[1]
Supporting a roof only	4	3	1	1	0[1]	2	2	2	1	0[1]
Interior Bearing Walls										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	2	1	0
Supporting one floor only	3	2	2	1	0	1	0	1	1	0
Supporting roofs only	3	2	1	1	0	1	0	1	1	0
Columns										
Supporting more than columns, or other be	4	3	2	1	0	1	0	H[2]	1	0
Supporting one floor	3	2	2	1	0	1	0	H[2]	1	0
Supporting roofs only	3	2	1	1	0	1	0	H[2]	1	0
Beams, Girders, Trusses, and Arches										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	H[2]	1	0
Supporting one floor only	3	2	2	1	0	1	0	H[2]	1	0
Supporting roofs only	3	2	1	1	0	1	0	H[2]	1	0
Floor Construction	3	2	2	1	0	1	0	H[2]	1	0
Roof Construction	2	1½	1	1	0	1	0	H[2]	1	0
Exterior Nonbearing Walls[3]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]

Those members that shall be permitted to be of approved combustible material.

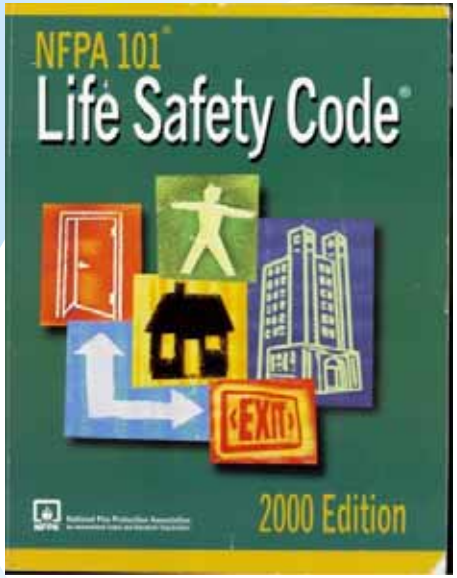
1st #

2nd #

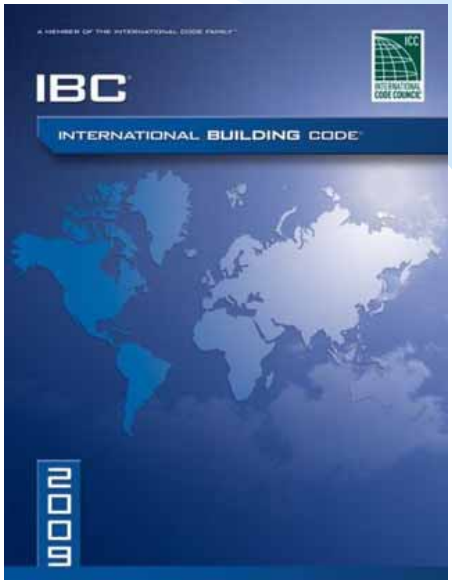
3rd #

CONSTRUCTION TYPES

NFPA vs IBC Nomenclature



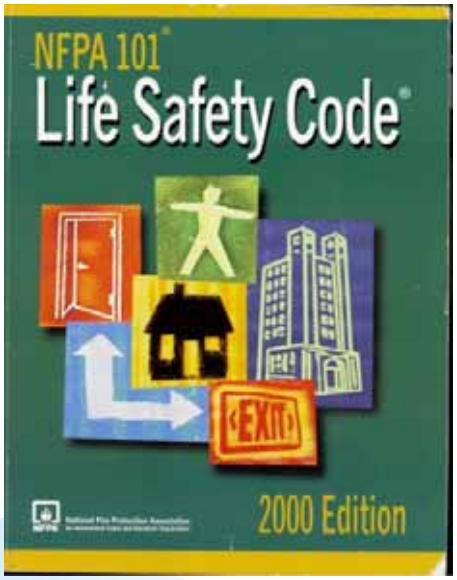
NFPA	vs	IBC
V(000)		VB
V(111)		VA
IV		IV
III		IIIA
II(000)		IIB
II(111)		IIA
II(222)		IIA
I(332)		IA
I(443)		IA



Separation of Construction Types

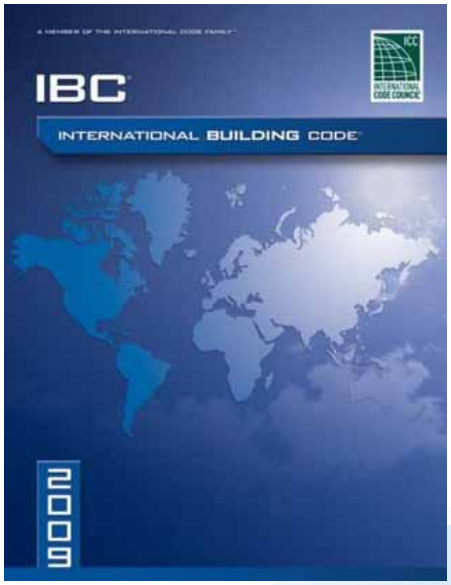
FIRE Barriers

separate buildings with different CONSTRUCTION TYPES



FIRE Walls

separate buildings with different CONSTRUCTION TYPES



FIRE PROOFING Inspection Guides

If structure is required to be rated by it Construction Type, all steel must be encapsulated w/ fire proofing, rated drywall or concrete to keep heat away. Steel is greatly weakened by heat. A structural engr to declare which members are not required for structural support.

Thickness, per specified rating, typically >= 1-1/2"

Fire proofing @ end of flange can be ¼" thick

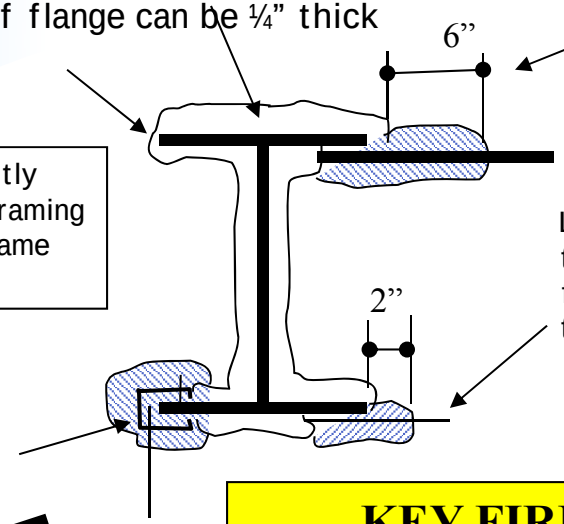
Thick/heavy attachments must be insulated for 6" away from the framing

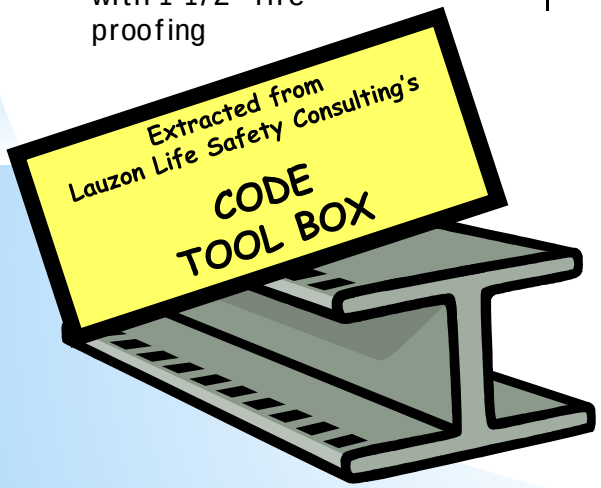
Never remove fire insulation to make room for any plastic pipe or insulation…NO amount of fire proofing will make up for it !

All items that are directly attached to the steel framing must be insulated the same thickness as the steel

Light attachments, such as top track or hat channel, must be fully covered for 2" away from the framing

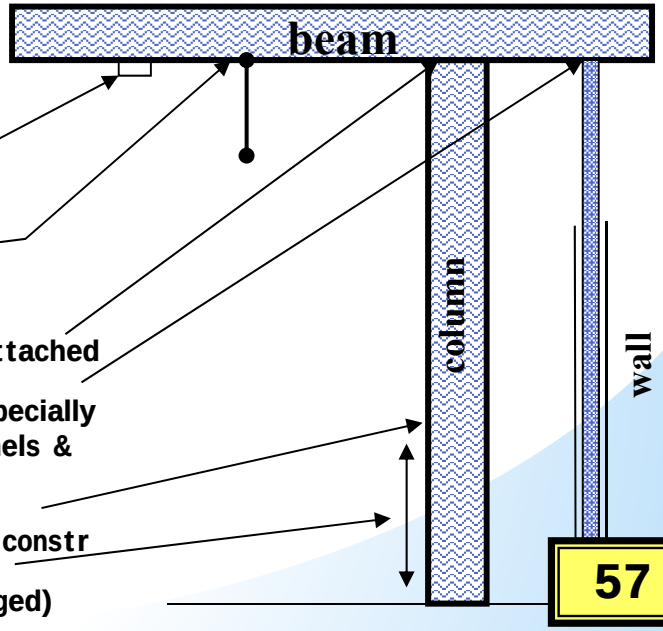
All parts of beam clamps must be covered on all sides with 1-1/2" fire proofing





KEY FIRE PROOFING SPOTS TO CHECK

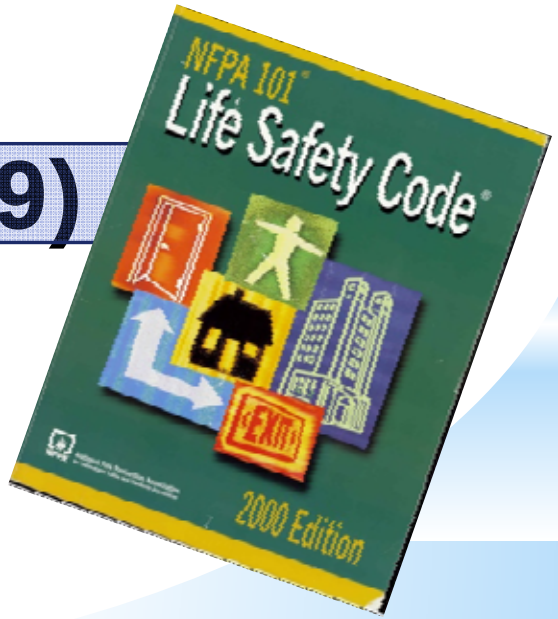
- **Beam clamps**
- **Top of columns where beams are attached**
- **Top of framed walls at beams, especially if parallel to beam (check hat channels & top track)**
- **Safety cables attachments during constr**
- **Bottom of columns (typically damaged)**



"Occupancies" Agenda

5

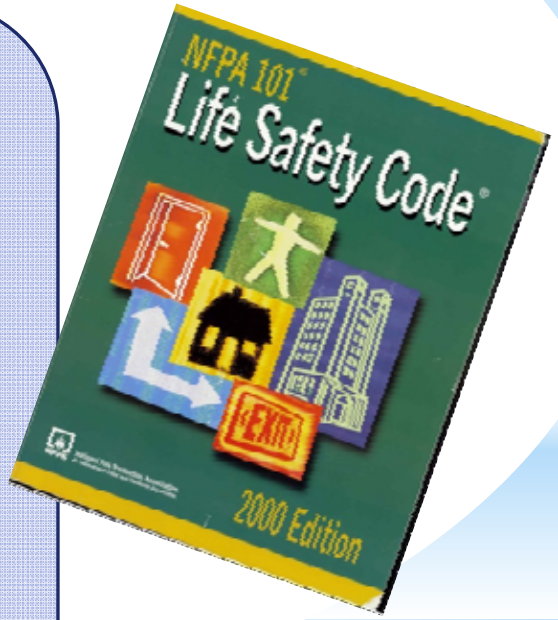
1. Occupancy Classifications (Chap 6)
2. LSC vs. IBC Approach
3. Chapter Organization
4. Construction Types
5. Health Care (Chap 18-19)



"Occupancies" Agenda

1. Occupancy Classifications (Chap 6)
2. LSC vs. IBC Approach
3. Chapter Organization
4. Construction Types
5. Health Care (Chap 18-19)
6. Ambulatory (Chap 20-21)
7. Business (Chap 38-39)
8. Industrial (Chap 40)
9. Storage (Chap 42)
10. Assembly (Chap 12-13)
11. Education (Chap 14-15)
12. Residential (Chap 24-33)
13. Mercantile (Chap 36-37)

5



HEALTH CARE OCCUPANCY

Chapter Organization

	BASE CHAPTER
• 18/19.1 General Requirements	(→ chap 6)
• 18/19.2 Means of Egress	(→ chap 7)
• 18/19.3 Protection	(→ chap 8
• 18/19.4 Special Provisions	(→ chap 11)
• 18/19.5 Building Services	(→ chap 9)
• 18/19.6 Reserved	
• 18/19.7 Operating Features	(→ chap 4)

HEALTH CARE OCCUPANCY

	Amt of Regs	
• 18/19.1 General Requirements	38”	#1
• 18/19.2 Means of Egress	43”	#2
• 18/19.3 Protection	59”	#1
• 18/19.4 Special Provisions	1”	#5
• 18/19.5 Building Services	10”	#1
• 18/19.6 Reserved	--	--
• 18/19.7 Operating Features	21”	#2

What is a Health Care Occupancy?

CMS relies on …

18/19.1.2.1 Mixed Occupancies

As a working definition

1. **Housing**
2. **Treatment**
3. **Customary Access**
4. **Not separated by 2-hr walls**

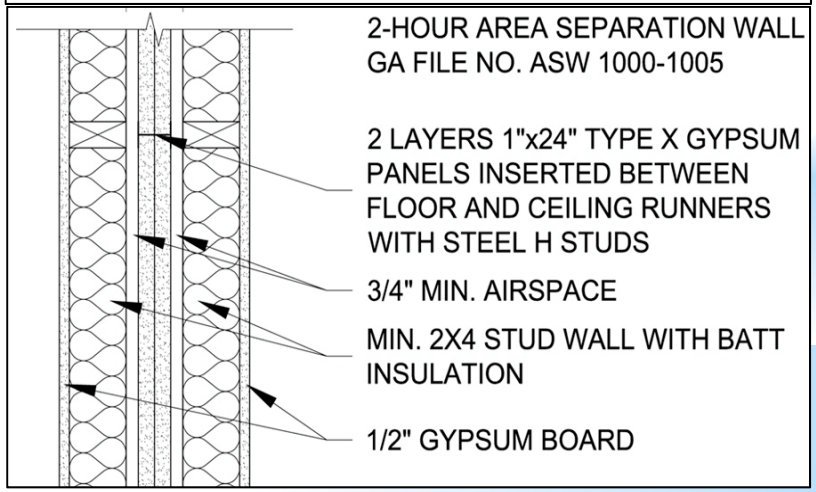
What is a Health Care Occupancy?

Housing

Treatment

Customary Access

Not separated by 2-hr walls



CMS Says:

Health Care

Sleep

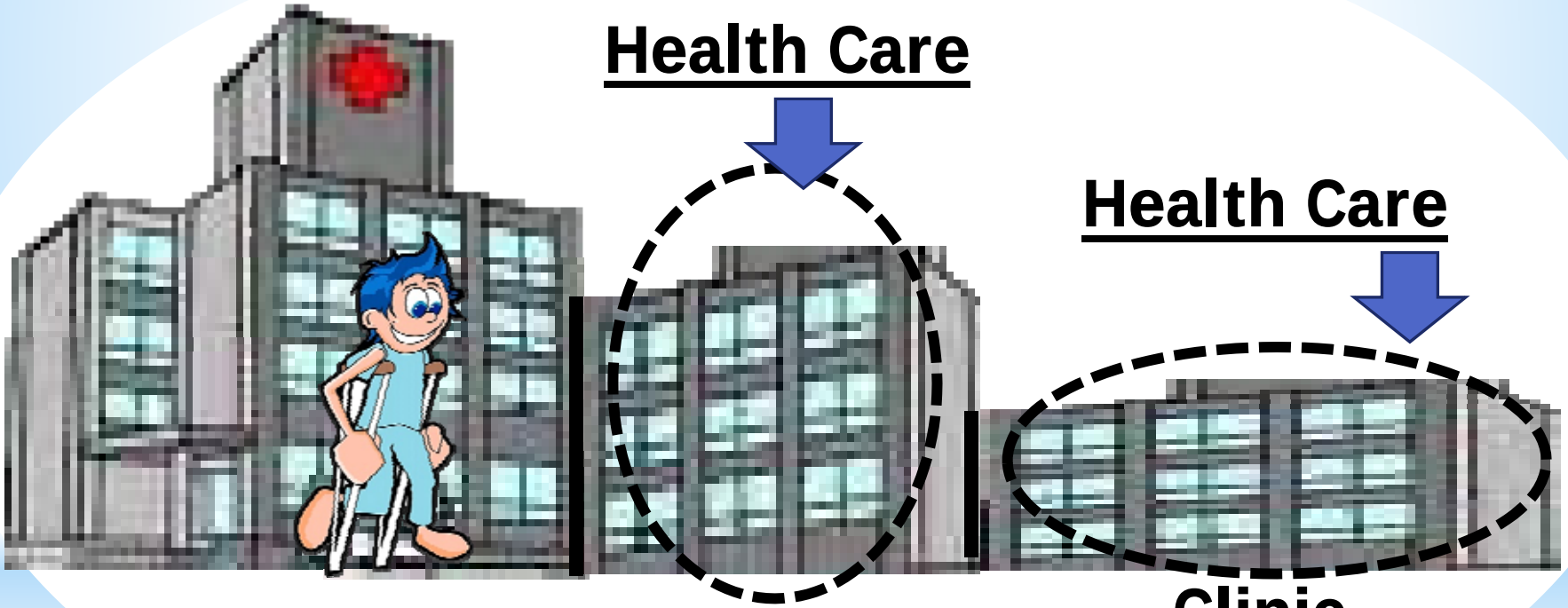
Health Care Travel Thru

Health Care Treatment

CMS Says:

1. **Anywhere is health care**
   - That even one inpatient travels
   - regardless of why,
   - how often they go there, or
   - how many patients

CMS Says: 2. All of that building is considered health care, unless separated by 2 hr walls/floors

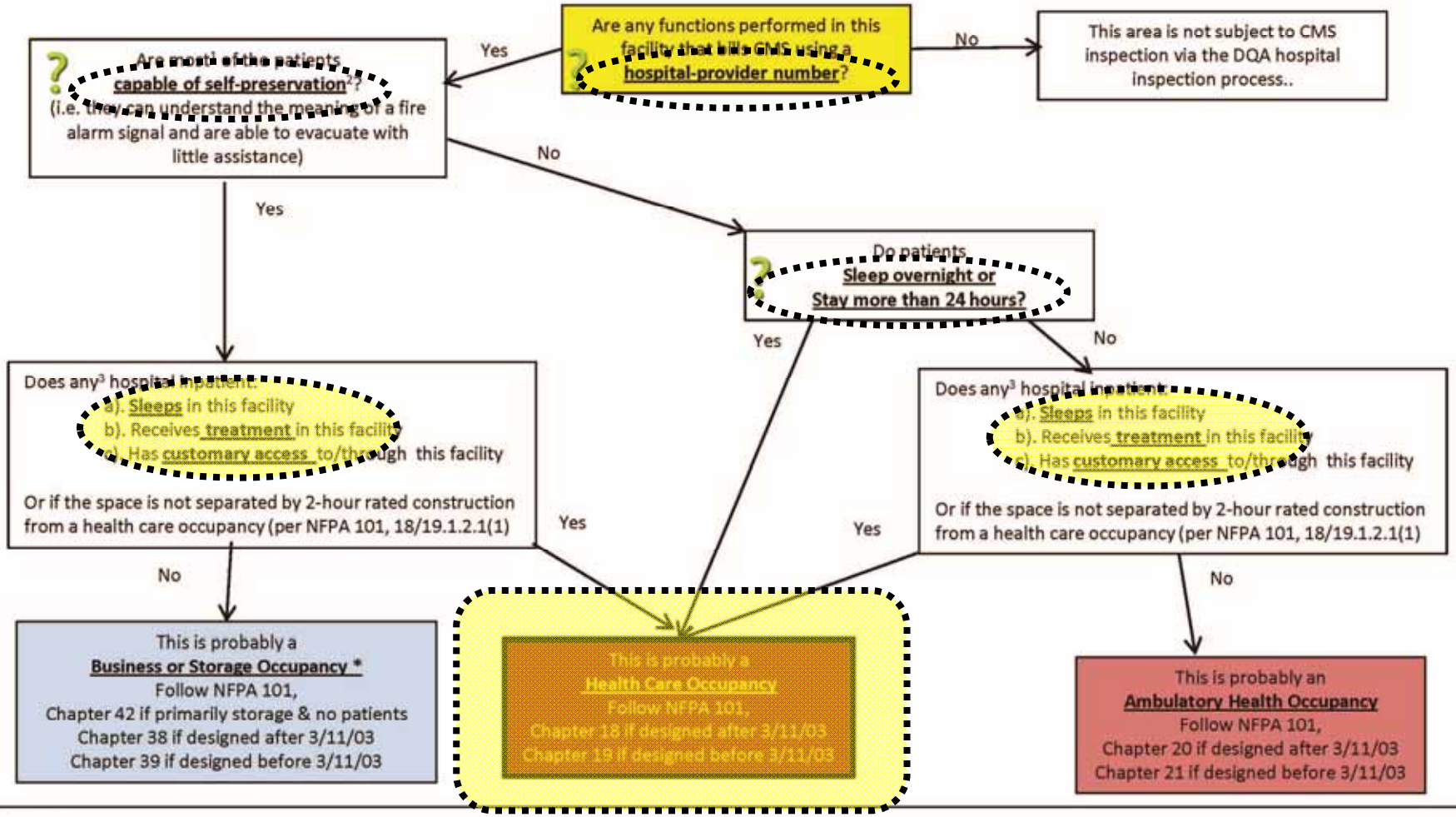


Health Care Decision Tree

Based on CMS's Occupancy S&C Letter 11-05

withdrawn from CMS website (but not retracted)

PATIENT OCCUPANCY DETERMINATION PROCESS

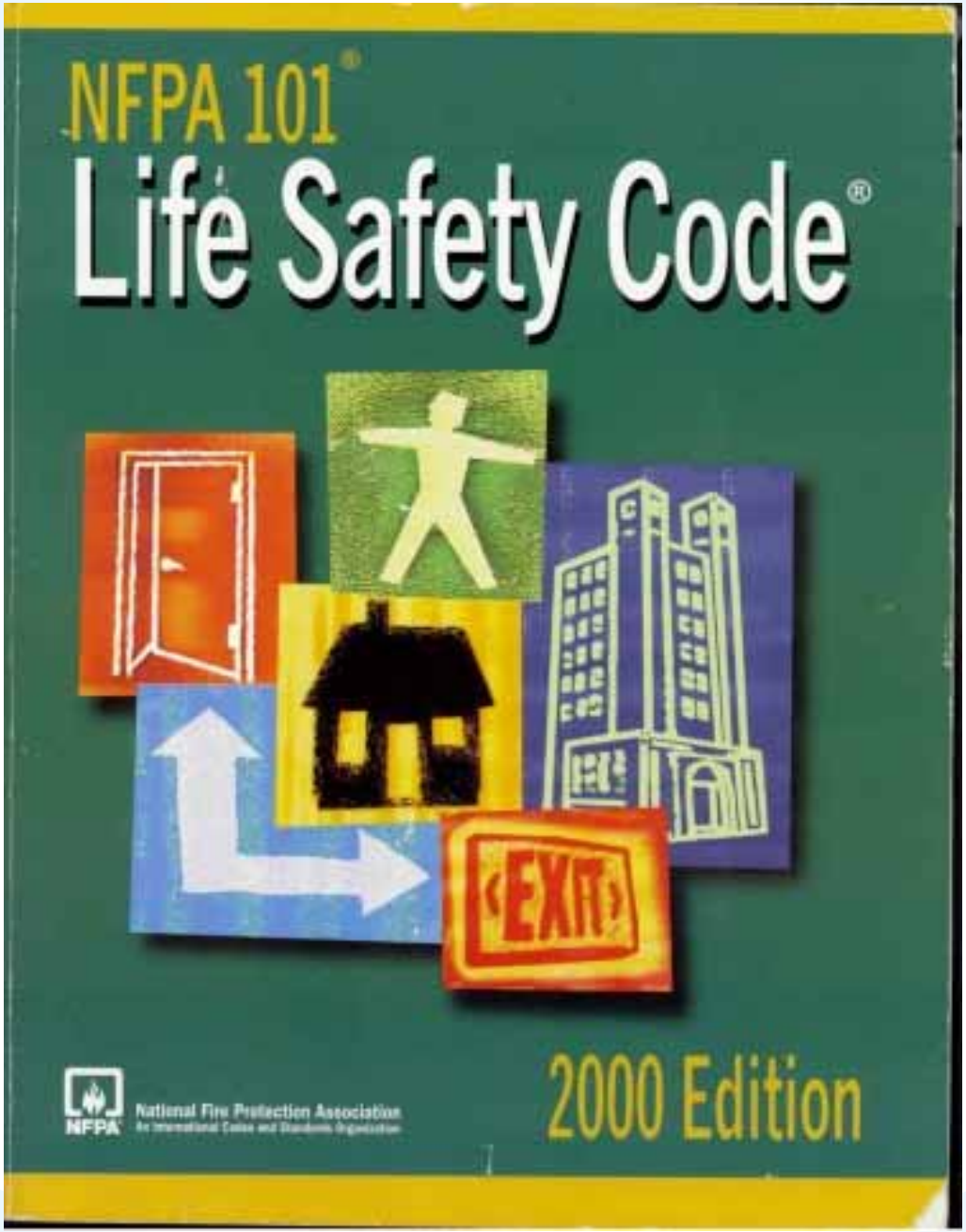


Footnotes

[1] CMS Memo S&C 11-05, revised 2/18/11 (p.1), indicates that if most, but not all, of the current and potential patients are capable of self –preservation , this question can be answered 'yes".

[2] CMS Memo S&C 11-05, revised 2/18/11 (p.4), describes a number of factors to include in the determination of capability of self-preservation, including, but not limited to age, physical and mental disability, medical or therapeutic interventions, medical reactions, etc. Consideration should be given to both the current patients and the characteristics of patients the facility is likely to provide medical treatment or services to, as evidenced by the provider's own advertisements.

[3] CMS Memo S&C 11-05, revised 2/18/11 (p.3), indicates that occupancy classification for CMS purposes is determined regardless of the number of patients served, and less than the trigger quantity of 4 used by the LSC.


NFPA 101®
Life Safety Code®
EXIT
NFPA
National Fire Protection Association
2000 Edition

Health Care Codes

Built around the concept of

DEFEND IN PLACE

Defend in Place

18/19.1.1.3 Total Concept

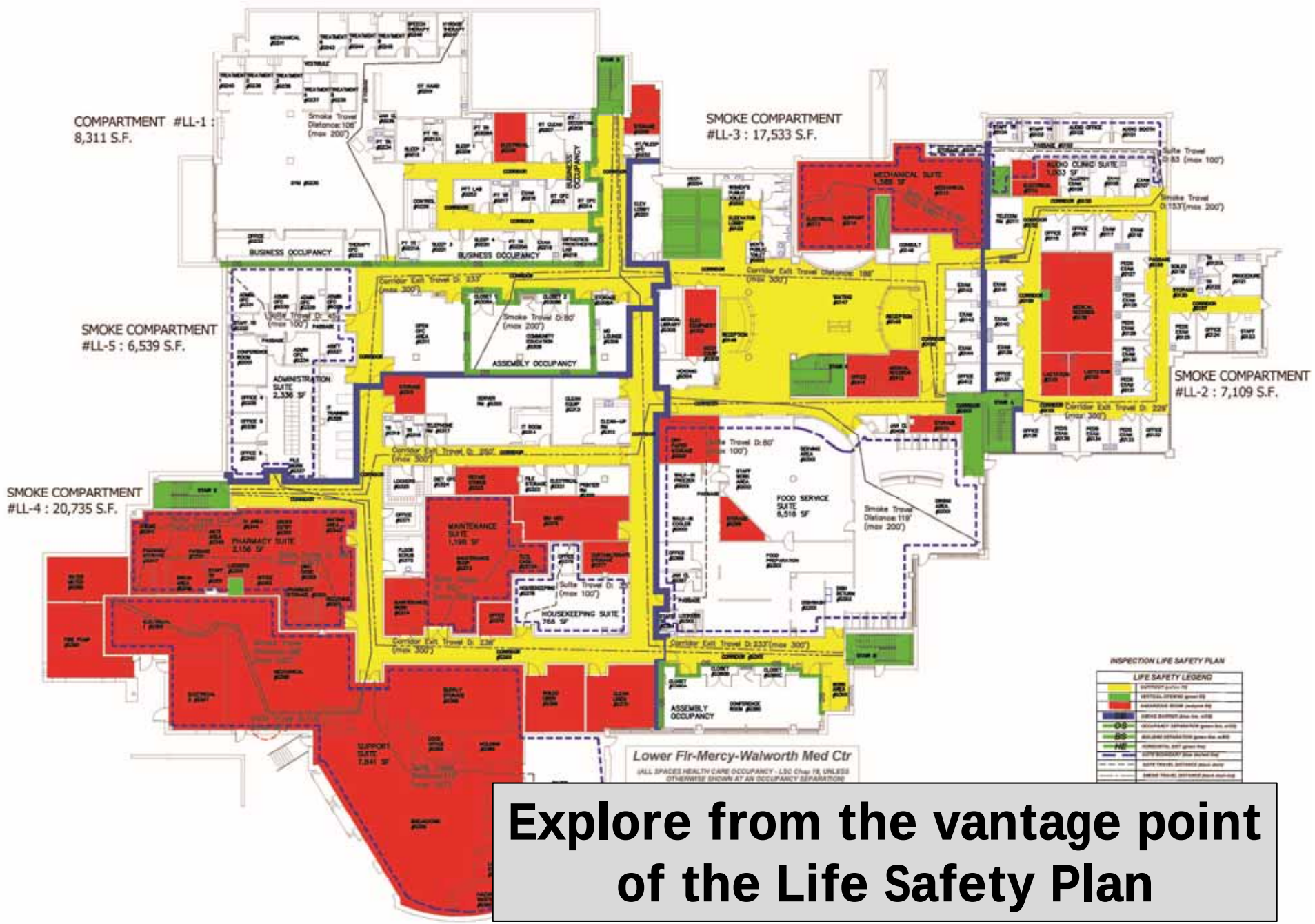
"constructed, maintained & operated to **minimize** the possibility of a fire emergency requiring the **evacuation** of occupants."

1. Design, construction & compartmentation
2. Detection, alarm & extinguishment
3. Training & drilling programs

HEALTH CARE OCCUPANCY

	BASE CHAPTER
• 18/19.1 General Requirements	(→ chap 6)
• 18/19.2 Means of Egress	(→ chap 7)
• 18/19.3 Protection	(→ chap 8
• 18/19.4 Special Provisions	(→ chap 11)
• 18/19.5 Building Services	(→ chap 9)
• 18/19.6 Reserved	
• 18/19.7 Operating Features	(→ chap 4)

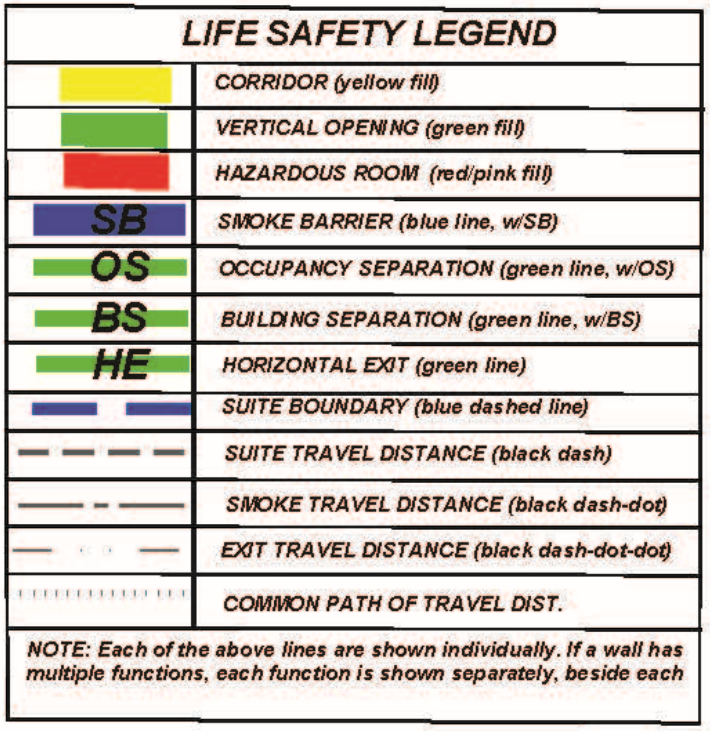
Explore LSC from the vantage point of the Life Safety Plan



Explore from the vantage point of the Life Safety Plan

HEALTH CARE OCCUPANCY

Explore from the vantage point of the Life Safety Plan



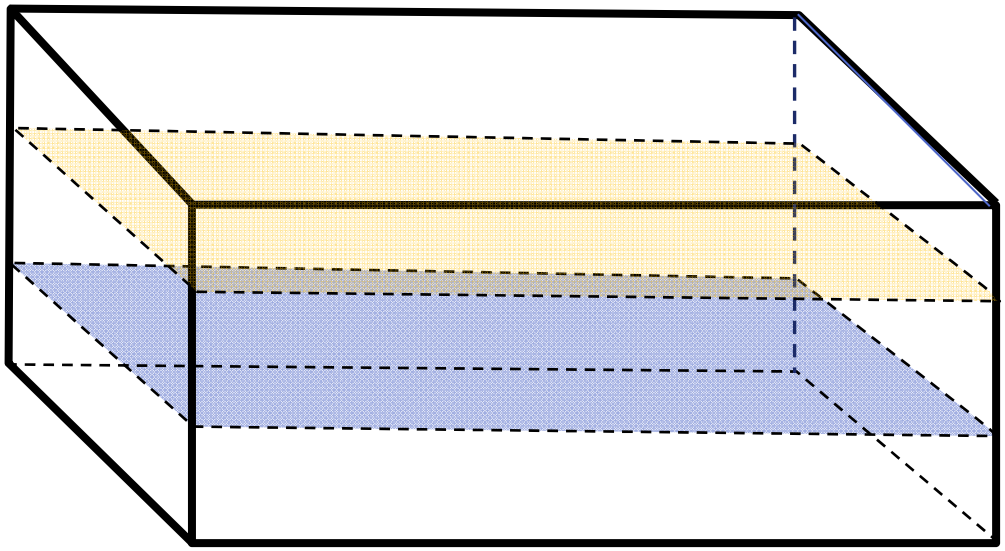
LIFE SAFETY LEGEND	
	CORRIDOR (yellow fill)
	VERTICAL OPENING (green fill)
	HAZARDOUS ROOM (red/pink fill)
SB	SMOKE BARRIER (blue line, w/SB)
OS	OCCUPANCY SEPARATION (green line, w/OS)
BS	BUILDING SEPARATION (green line, w/BS)
HE	HORIZONTAL EXIT (green line)
	SUITE BOUNDARY (blue dashed line)
	SUITE TRAVEL DISTANCE (black dash)
	SMOKE TRAVEL DISTANCE (black dash-dot)
	EXIT TRAVEL DISTANCE (black dash-dot-dot)
	COMMON PATH OF TRAVEL DIST.

NOTE: Each of the above lines are shown individually. If a wall has multiple functions, each function is shown separately, beside each

- Construction Type
- Vertical Openings
- Smoke Compartments
- Corridors & Suites
- Hazardous Spaces
- Exit Paths
- Suppression System
- Fire Alarm System
- Electrical System
- HVAC
- Operating Features

HEALTH CARE OCCUPANCY

CONSTRUCTION TYPE



How strong is the STRUCTURE to withstand fires?

Construction Types

	Type I		Type II			Type III	Type IV	Type V	
	443	332	222	111	000	211	200	2HH	111	000
Exterior Bearing Walls										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0[1]	2	2	2	1	0[1]
Supporting one floor only	4	3	2	1	0[1]	2	2	2	1	0[1]
Supporting a roof only	4	3	1	1	0[1]	2	2	2	1	0[1]
Interior Bearing Walls										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	2	1	0
Supporting one floor only	3	2	2	1	0	1	0	1	1	0
Supporting roofs only	3	2	1	1	0	1	0	1	1	0
Columns										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	H[2]	1	0
Supporting one floor only	3	2	2	1	0	1	0	H[2]	1	0
Supporting roofs only	3	2	1	1	0	1	0	H[2]	1	0
Beams, Girders, Trusses, and Arches										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	H[2]	1	0
Supporting one floor only	3	2	2	1	0	1	0	H[2]	1	0
Supporting roofs only	3	2	1	1	0	1	0	H[2]	1	0
Floor Construction	3	2	2	1	0	1	0	H[2]	1	0
Roof Construction	2	1 1/2	1	1	0	1	0	H[2]	1	0
Exterior Nonbearing Walls[3]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]

Those members that shall be permitted to be of approved combustible material.

HEALTH CARE CONSTRUCTION TYPE

NEW

Table 18.1.6.2 Construction Type Limitations

Construction Type	Stories 1	2	3	4 or More
I(443)	X	X	X	X
I(332)	X	X	X	X
II(222)	X	X	X	X
II(111)	X	X	X	NP
II(000)	X	NP	NP	NP
III(211)	X	NP	NP	NP
III(200)	NP	NP	NP	NP
IV(2HH)	X	NP	NP	NP
V(111)	X	NP	NP	NP
V(000)	NP	NP	NP	NP

X: Permitted type of construction.
NP: Not permitted.

HEALTH CARE CONSTRUCTION TYPE

EXISTING

Table 19.1.6.2 Construction Type Limitations

Construction Type	Stories 1	2	3	4 or More
I(443)	X	X	X	X
I(332)	X	X	X	X
II(222)	X	X	X	X
II(111)	X	X*	X*	NP
II(000)	X*	X*	NP	NP
III(211)	X*	X*	NP	NP
III(200)	X*	NP	NP	NP
IV(2HH)	X*	X*	NP	NP
V(111)	X*	X*	NP	NP
V(000)	X*	NP	NP	NP

X: Permitted type of construction.
NP: Not permitted.
* Building requires automatic sprinkler protection. *(See 19.3.5.1.)*

HEALTH CARE CONSTRUCTION TYPE

N & E
Same

18/19.1.6.3

"All interior walls and partitions in buildings of Type I or Type II construction shall be of noncombustible or limited combustible materials"

See definition in Chapter 3

The NO-WOOD Clause !

HEALTH CARE CONSTRUCTION TYPE

3.3.118* Limited Combustible

"Building construction material... has a potential heat value not exceeding 3,500 Btu/lb, when tested in accordance with NFPA 259."

Material	Potential Heat (Btu/lb)
Douglas Fir:	8,400
Fire Treated Douglas Fir:	7,050
Fiber Glass Insulation:	3,040
Concrete:	3,080
Gypsum Board:	760

Limited Combustible

CONSTRUCTION TYPE (K-12,103) Inspection Guides

This is only a partial list that shows the most frequently cited requirements … Check the full code

Item	What to Check	NEW Requirement	EXISTING Requirement
Above Ceiling	1. Constr Method	1. Spot check to ensure the constr type is what is claimed. Check that Constr Type is permitted for # floors [NFPA 101, Table 18.1.6.2, and NFPA 220, Table 3-1]	1. Same, but per NFPA 101, 19.1.6.2
	2. Stacked Bldg Types	2. A different building construction type cannot be placed ("stacked“) above another type [SOM –Appendix I, K-0012 Interp Guideline]	2. Same, but per NFPA 101, 19.1.6.2
	3. Fire Proofing	3.Thin or missing fireproofing, especially at beam clamps & framing	3. Same as New
	4. Encapsulation	4. Holes in drywall/plaster; not corrected rated	4. Same as New
Floor	1. Penetrations	1. Fire stopped to proper rating [NFPA 101, 18.1.6.2 and 8.2.3.2.4.2]	Same, but per NFPA 101, 19.1.6.2
Wall	1. Materials	1. Combustible materials (including fire-retardant wood, except as blocking) can't be used in a Type I or II construction type [NFPA 101, 18.1.6.3]	Same, but per NFPA 101, 19.1.6.3, However, walls with fire-treated wood studs okay in 1 hr partitions.

See Also info on

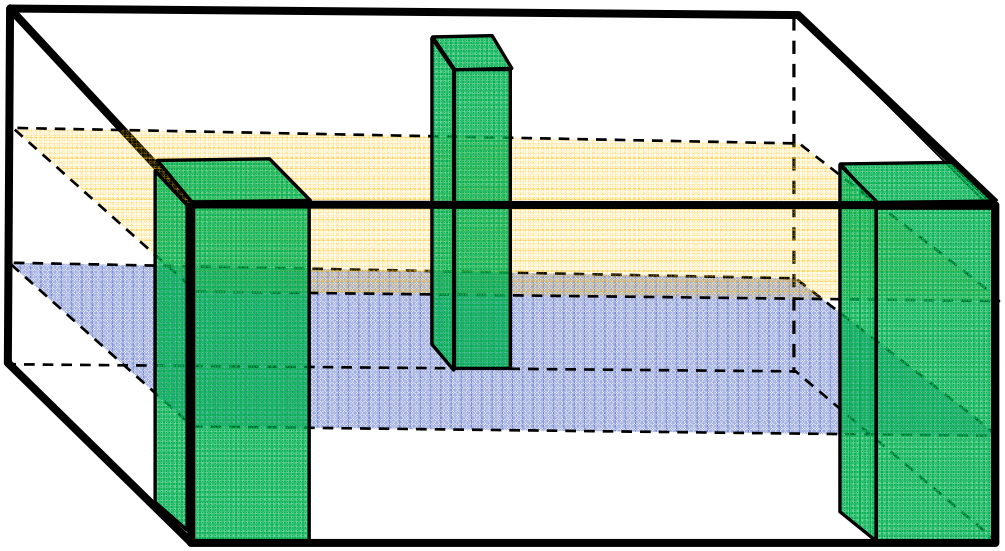
- Fire Pr ting
- ing

Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

Beware of wood 2x4 in a type I or II building. Partitions cannot be made from combustible or limited combustible materials (max 350 btu/lb heat release). Fire Treated Wood has heat release that is double the maximum permitted release.

HEALTH CARE OCCUPANCY

VERTICAL OPENINGS

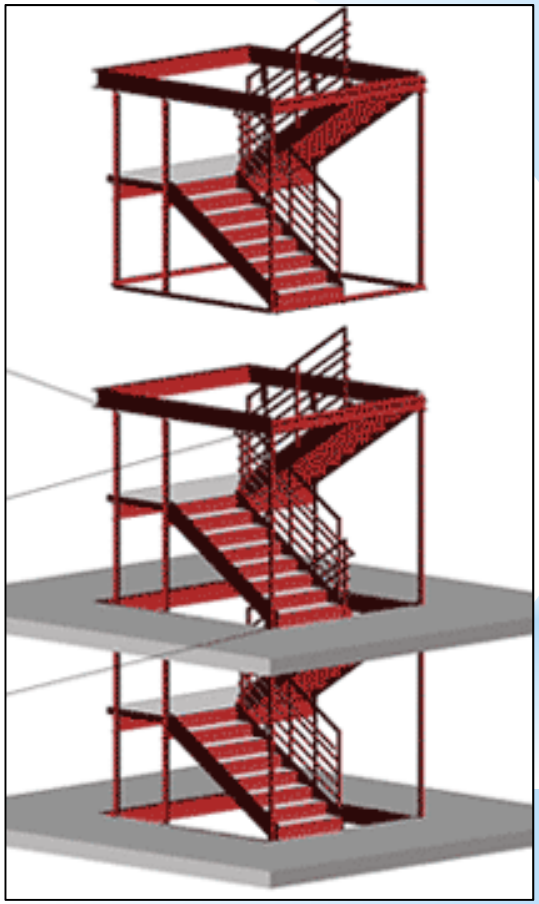


Stairs
Elevators
Escalators
Duct Shafts
Pipe Shafts
Etc.

18/19.3.1.1 Any vertical opening shall be enclosed or protected in accordance with 8.2.5

HEALTH CARE OCCUPANCY

VERTICAL OPENINGS

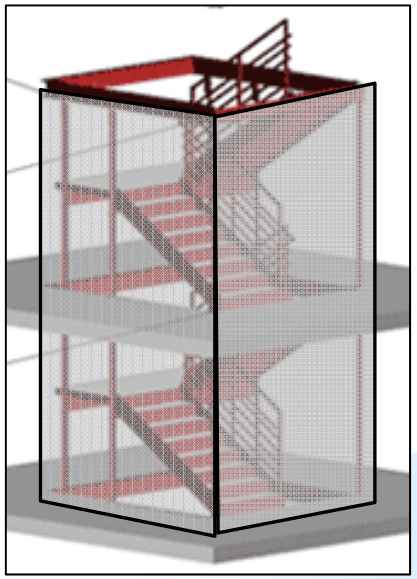


HEALTH CARE OCCUPANCY

VERTICAL OPENINGS

18/19.3.1.1 Any vertical opening shall be enclosed or protected in accordance with 8.2.5

4 Exceptions



HEALTH CARE VERTICAL OPENINGS

NEW

4 Exceptions

18.3.1.1

EXCEPTION 1. "Unprotected vertical openings in accordance with 8.2.5.8 shall be permitted"

8.2.5.8 {Non-Concealed Space}

1. *Max. 1 floor pierced*
2. *1hr/2hr separation from other non-enclosed openings*
3. *Separated from corridors*
4. *Not served as a required egress*

HEALTH CARE VERTICAL OPENINGS

NEW

18.3.1.1

EXCEPTION 2. "Exception No 1 to 8.2.5.6(1) shall not apply to patient sleeping or treatment rooms." {see p. 71}

8.2.5.6 {Atrium Exception}

Exception 1: "Any number of levels shall be permitted to open directly to the atrium without enclosure…"

HEALTH CARE VERTICAL OPENINGS

NEW

18.3.1.1

EXCEPTION 3. "Multilevel patient sleeping areas in psychiatric facilities shall be permitted without enclosure protection between levels, provided 3 conditions are met"

1. *Occupied areas are open*
2. *Egress capacity for simultaneous evacuation of all communicating levels*
3. *Max 13' between highest & lowest floor levels*

HEALTH CARE VERTICAL OPENINGS

NEW

18.3.1.1

EXCEPTION 4. "Unprotected openings in accordance with 8.2.5.5 shall not be permitted." {see p. 71}

8.2.5.5 {Mini-Atrium Exceptio }

HEALTH CARE VERTICAL OPENINGS

~~Four~~ 5 Exceptions

EXISTING

19.3.1.1

EXCEPTION 1. "Unprotected vertical openings in accordance with 8.2.5.8 shall be permitted"

N & E Same

8.2.5.8 {Non-Concealed Space}

1. *Max. 1 floor pierced*
2. *1hr/2hr separation from other non-enclosed openings*
3. *Separated from corridors*
4. *Not served as a required egress*

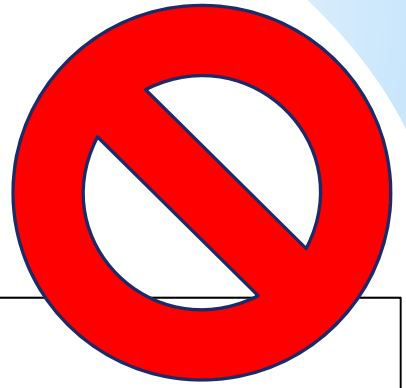
HEALTH CARE VERTICAL OPENINGS

EXISTING

19.3.1.1

EXCEPTION 2. "Exception No 1 to 8.2.5.6(1) shall not apply to patient sleeping or treatment rooms." {see p. 71}

N & E Same



8.2.5.6 {Atrium Exception}

Exception 1: "Any number of levels shall be permitted to open directly to the atrium without enclosure…"

HEALTH CARE VERTICAL OPENINGS

EXISTING

19.3.1.1

EXCEPTION 3. "Multilevel patient sleeping areas in psychiatric facilities shall be permitted without enclosure protection between levels, provided 3 conditions are met"

N & E Same

1. *Occupied areas are open*
2. *Egress capacity for simultaneous evacuation of all communicating levels*
3. *Max 13' between highest & lowest floor levels*

HEALTH CARE VERTICAL OPENINGS

EXISTING

19.3.1.1

EXCEPTION 4. "Unprotected openings in accordance with 8.2.5.5 shall not be permitted."

8.2.5.5 {Mini-Atrium Exceptio }

N & E Same

HEALTH CARE VERTICAL OPENINGS

EXISTING

19.3.1.1

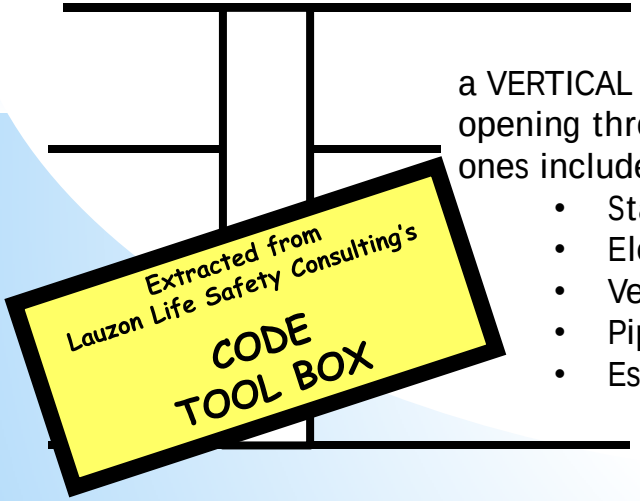
EXCEPTION 5. "Where a full enclosure of a stairway that is not a required exit is impracticable, the required enclosure shall be permitted to be limited to that necessary to prevent a fire originating in any story from spreading to any other story."

Not used much:
"impracticable" & "necessary"
are at the discretion of the AHJ

VERTICAL OPENINGS Inspection Guides (K-20, K-21)

This is only a partial list that shows the most frequently cited requirements … Check the full code

Item	What to Check	NEW Requirement	EXISTING Requirement
Doors	1. Door Rating 2. Closer 3. Self-Latching 4. Undercut 5. Hold-Open	1. Need 90 min label in 2-hr wall; 60 min label in a 1-hr wall [NFPA 101, 18.1.1.; 8.2.3.2.3; 8.2.5.4] 2. Need closer & doesn't fully close [NFPA 101, 18.3.1.1; 8.2.5.4, and 8.2.3.2] 3. Hardware must positively latch by itself; No Deadbolt 4. Max 3/4" undercut 5. Must be electro-magnetic tied to fire alarm, with local Smk Detector < 5' away or corridor detection [NFPA 101, 7.2.1.8]	Same as NEW
Wall	1. Rating 2. Window 3. Grills	1. If 4 or more stories, need min 2 hr (<2 layers 5/8" drywall on both sides; <8" block), If 3 or fewer stories, need min 1 hr. [NFPA 101, 8.2.5 2. Glass no larger than 100 Sq In; Rated glass 3. No grills/louvers permitted	
Above ceiling	1. Penetrations 2. Dampers	1. Must be sealed smoke-tight [NFPA 101, 18.3.6.2.2] 2. Not required	



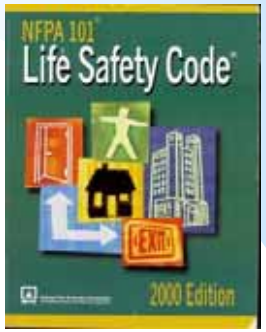
a VERTICAL OPENING is any opening through the floor. Typical ones include:

- Stairs
- Elevators
- Ventilation Shafts
- Pipe Shafts
- Escalators

Walls in Vertical openings must have the same rating as the floor

Check for vertical openings at mechanical rooms for where the main ducts go up or down (see also "Shafts")

Have Questions?



During the Live Webinar:

Click on "chat" in the Lower RH corner

(Bill gets disappointed if people don't ask questions)

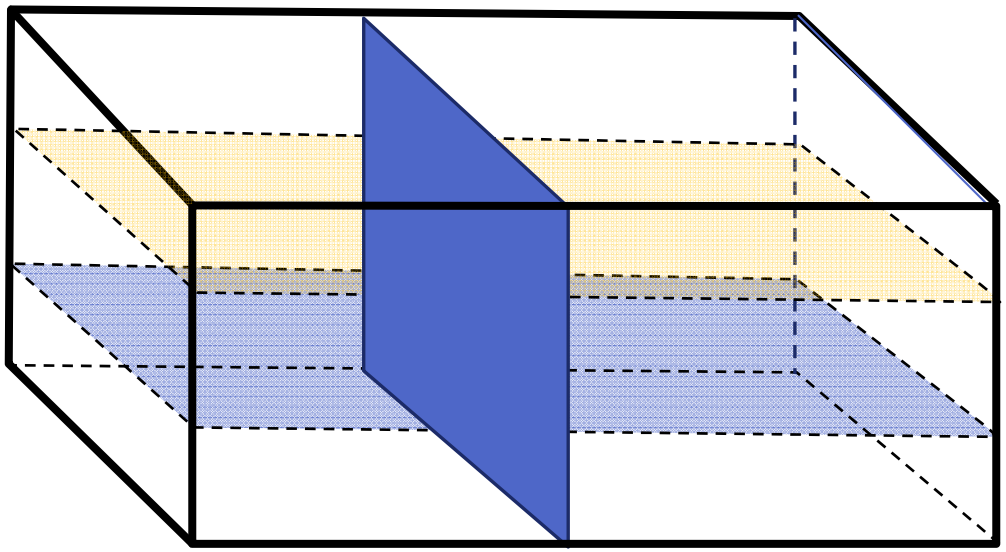
During viewing the posted Webinar:

Call Bill Lauzon (262-945-4567) or

E-Mail at Lauzon.LSC@gmail.com

HEALTH CARE OCCUPANCY

SMOKE COMPARTMENTS

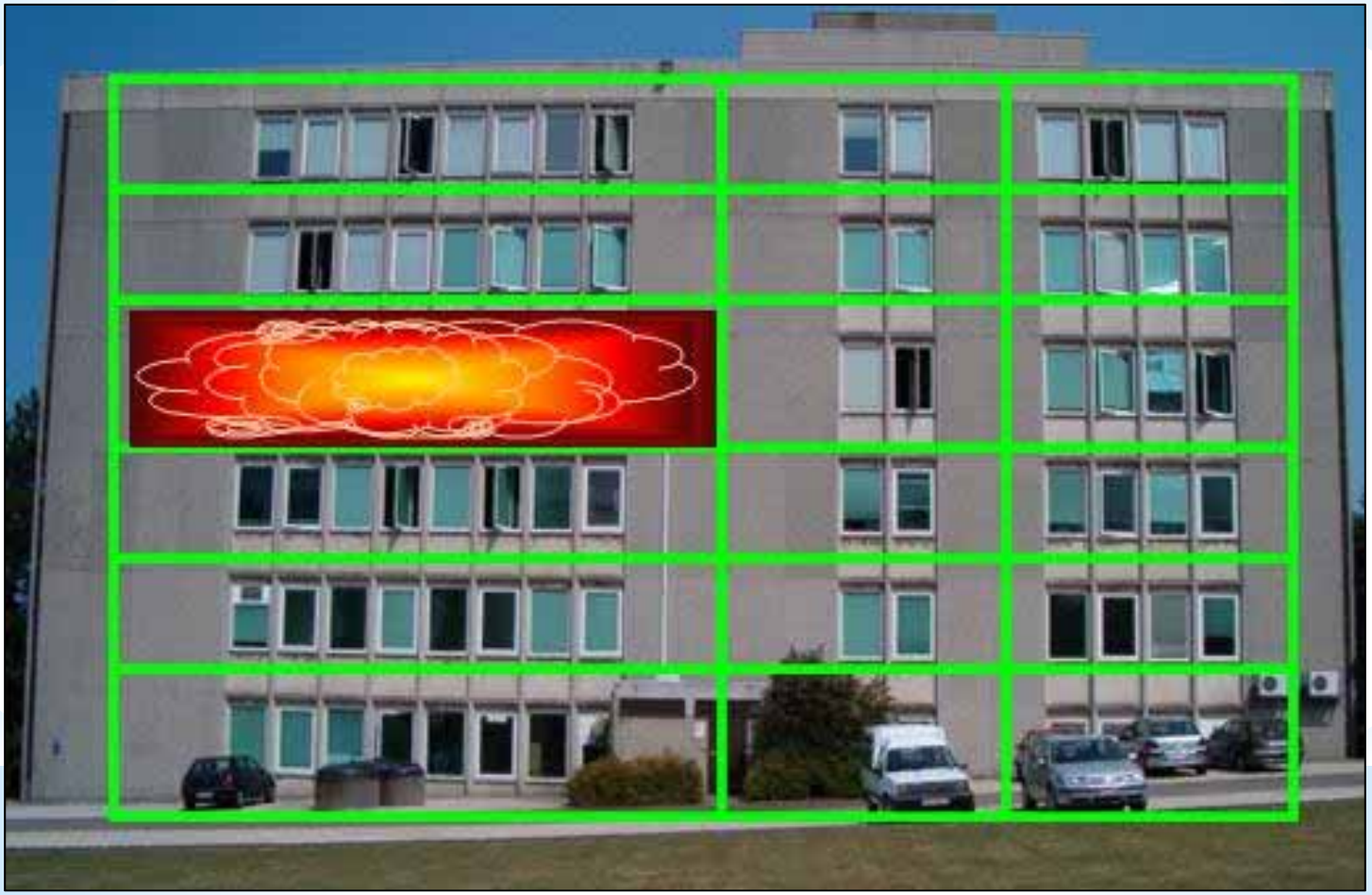


Defend In Place Areas of Refuge during a fire

18.3.7 "Buildings containing health care facilities shall be subdivided by smoke barriers as follows:"

HEALTH CARE OCCUPANCY

SMOKE COMPARTMENTS



HEALTH CARE SMOKE COMPARTMENTS

NEW

18.3.7.1 Subdivision of Building Spaces

(1) Story used by sleeping inpatients or treatment
(2) Story with occupant load of 50 or more
(3) Max compartment size of 22,500 sf
(4) Max 200' travel distance to a door in an adjacent smoke barrier

Exceptions:

1. *Not floors above health care*
2. *Non-health care occupancies separated by 2-hr walls*
3. *Not floors 2 stories below health care*
4. *Not open-air parking structures that are sprinkled*
5. *Atriums not limited in size*

HEALTH CARE SMOKE COMPARTMENTS

EXISTING

19.3.7.1 Subdivision of Building Spaces

(1) Story used by 30 sleeping inpatients

~~**(2) Story with occupant load of 50 or more**~~

(3) Max compartment size of 22,500 sf

(4) Max 200’ travel distance to a door in an adjacent smoke barrier

Exceptions:

~~*1. Not floors above health care*~~

~~*2. Non-health care occupancies separated by 2-hr walls*~~

~~*3. Not floors 2 stories below health care*~~

~~*4. Not open-air parking structures that are sprinkled*~~

1. Travel distance unlimited if length or width is 150’ or less

~~*5*~~*. 2. Atriums not limited in size*

HEALTH CARE SMOKE COMPARTMENTS

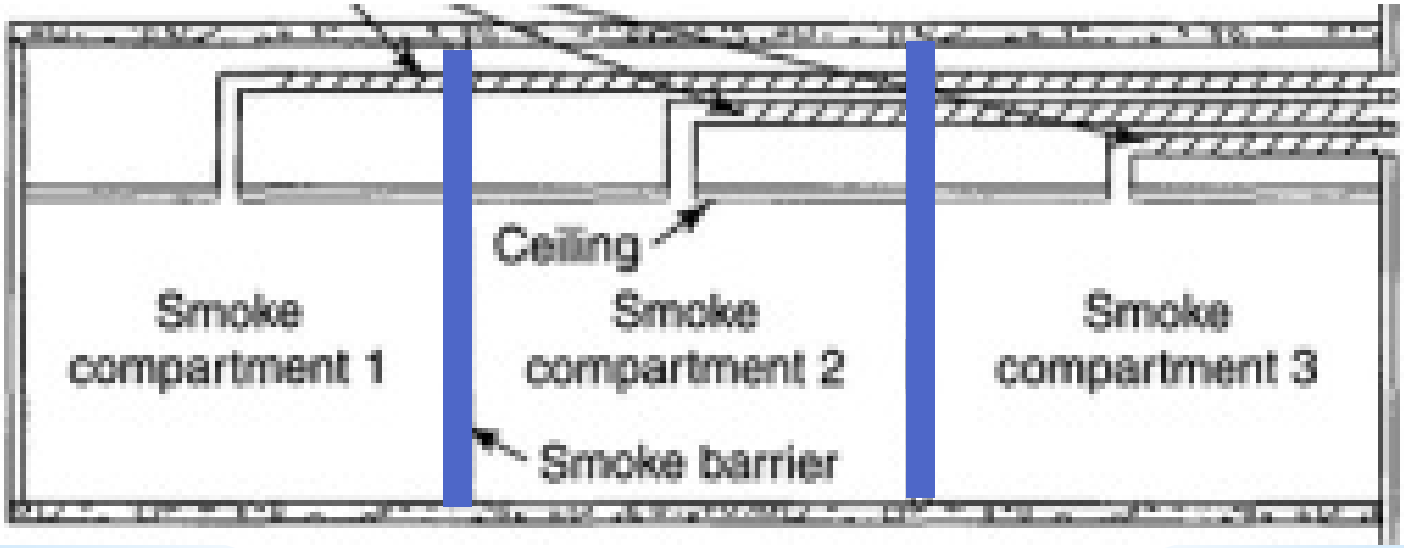
18.3.7.3 Smoke Barrier Walls

NEW

"fire resistance rating of not less than 1 hour"

Exceptions:

1. *Can terminate at Atriums walls*
2. *Smoke dampers not required if fully ducted sys*



HEALTH CARE SMOKE COMPARTMENTS

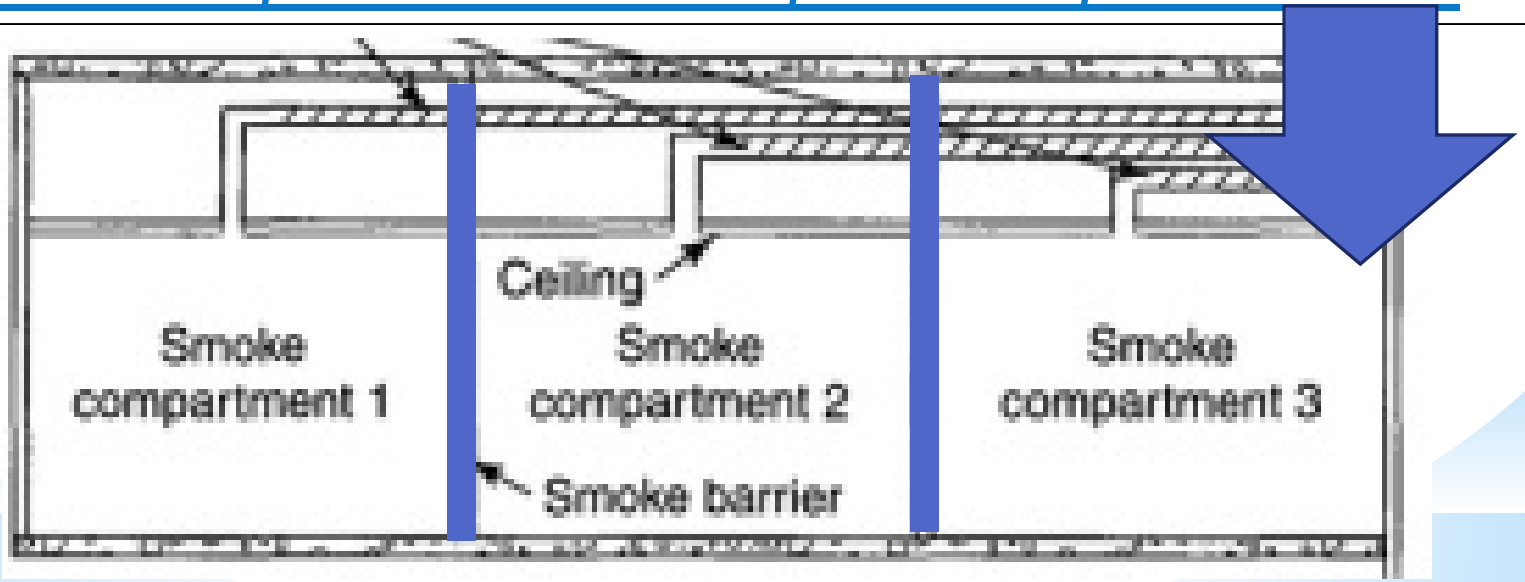
EXISTING

19.3.7.3 Smoke Barrier Walls

"fire resistance rating of not less than ~~1~~ 1/2 hour"

Exceptions:

1. *Can terminate at Atriums walls*
2. *Smoke dampers not required if fully ducted sys & both compartments have sprinklers per 19.3.5.3*



HEALTH CARE SMOKE COMPARTMENTS

19.3.5.3 Extinguishment Requirements

Exceptions for full sprinkling under this section must be:

(1) Installed throughout

(2) Connected to fire alarm

(3) Fully supervised

(4) Quick-Response sprinklers throughout compartments with patient sleeping rooms

Exceptions:

1. *Std response okay if installed prior to QR availability*
2. *Std response okay in hazardous areas*

HEALTH CARE SMOKE COMPARTMENTS

18.3.7.5 Smoke Barrier Doors

NEW

- Substantial doors (1-3/4” solid wood core) or 20 minute rated
- Max 48” hi kick plates
- Cross-Corridor: Pair of opposite swinging doors or horizontal sliding
- Swinging min clear widths:
  - 41.5” in hospital/nursing home
  - 32” in psychiatric/limited care
- Horizontal slider min clear widths:
  - 83” in hospital/nursing home
  - 64” in psychiatric/limited care

HEALTH CARE SMOKE COMPARTMENTS

18.3.7.6 Smoke Barrier Doors

NEW

- **Doors shall comply with 8.3.4**
- **Shall be:**

  self-closing or

  automatic-closing per 18.2.2.2.6

Beware of auto operators with hold-open switches

18.2.2.2.6
Held-open only by an automatic release device that complies with 7.2.1.8.2. The automatic sprinkler system and the fire alarm system and the systems required by 7.2.1.8.2 shall be arranged to initiate the closing action of all such doors throughout the smoke compartment or throughout the entire facility.

HEALTH CARE SMOKE COMPARTMENTS

18.3.7.7 Smoke Barrier Doors

NEW

- Cross-corridor doors must have vision panels with rated glazing or wire glass in approved frames (at swinging or sliding locations)

18.3.7.8 Smoke Barrier Doors

- Rabbets, bevels or astragals shall be required at the meeting edges and stops shall be required at the head and sides of door frames.
- Positive latching is not required
- Center mullions shall be prohibited

HEALTH CARE SMOKE COMPARTMENTS

EXISTING

19.3.7.5 Smoke Barrier Doors

- **Substantial doors (1-3/4” solid wood core) or 20 minute rated**
- **Max 48” hi kick plates**
- ~~Cross-Corridor: Pair of opposite swinging doors or horizontal sliding~~
- **Swinging min clear widths:**
  - **32”** ~~41.5” in hospital/nursing home~~
  - ~~32” in psychiatric/limited care~~
- **Horizontal slider min clear widths:**
  - **32”** ~~83”in hospital/nursing home~~
  - ~~64” in psychiatric/limited care~~

HEALTH CARE SMOKE COMPARTMENTS

EXISTING

19.3.7.6 Smoke Barrier Doors

- Doors shall comply with 8.3.4
- Not required to swing with egress travel
- Shall be:
  - self-closing or
  - automatic-closing per 19.2.2.2.6

Beware of auto operators with hold-open switches

19.2.2.2.6
Held-open only by an automatic release device that complies with 7.2.1.8.2. The automatic sprinkler system and the fire alarm system and the systems required by 7.2.1.8.2 shall be arranged to initiate the closing action of all such doors throughout the smoke compartment or throughout the entire facility.

HEALTH CARE SMOKE COMPARTMENTS

~~19.3.7.7 Smoke Barrier Doors~~

- ~~Cross-corridor doors must have vision panels with rated glazing or wire glass in approved frames (at swinging or sliding locations)~~

~~19.3.7.8 Smoke Barrier Doors~~

- ~~Rabbets, bevels or astragals shall be required at the meeting edges and stops shall be required at the head and sides of door frames.~~
- **Positive latching is not required**
- ~~Center mullions shall be prohibited~~

EXISTING

SMOKE BARRIER WALL & DOOR

This is only a partial list that shows the most frequently cited requirements … Check the full code

Item	What to Check	NEW Requirement	EXISTING Requirement
Wall	1. Rating	1. Min 1 hr (Min 1 layer 5/8" drywall on both sides; 6" block); Continuous from outside to outside; floor to deck; Must extend through attic & interstitial spaces unless have rated off-set. A horizontal exit is an acceptable smoke barrier wall. [NFPA 101, 18.3.7.3]	1. Min 30 min rating, including supporting framing (no bear supports)
	2. Windows	2. Rated glass or wire glass max 1296 sq.in. in approved frames	
	3. Grills	3. No grills/louvers permitted w/o smoke damper	
Above ceiling	1. Penetrations	1. Rated fire stop material installed per listing; Intumescent at PVC/cable/insulated pipes [NFPA 101, 18.3.7.3]	
	2. Ducts	2. Smoke Dampers not required if fully ducted [NFPA 101, 8.3.6]	
Doors	1. Door Width	1. Min 41.5 in acute & LTC, 32" in psych [NFPA 101, 18.3.7.5]	
	2. Rating	2. 20 Min Rated or 1-3/4" thick Solid-bonded wood core [18.3.7.5]	
	3. Closer	3. Closer required; Door must fully close [NFPA 101, 18.3.7.6]	
	4. Hold-Open	4. Only with Electro- magnet, with Smk Detector < 5' away, connected to alarm sys [NFPA 101, 18.3.2.1 and 8.4.1]	
	5. Self-Latch	5. Not required if cross-corridor	
	6. Grills	6. Grills/louvers not permitted	
	7. Window	7. Cross-Corr doors must have window ; rated glass okay; wire glass max 1296 sq.in. (NFPA 101, 18.3.7.5]	
	8. Undercut	8. Max 3/4" undercut	
	9. Opening Force	9. Max 15 lb to unlatch, 30 lb to start motion, 15 lb to full open	
	10. Dbl Door-Astragal	10 Must have astragal, rabbets, or bevel; Must have Coordinator if astragal can obstruct [NFPA 101, 18.3.7.6 and 8.3.4	
	11 Frame	11. Must have stop on jambs & header; Door must fit snug into frame with no large gaps between door & frame. [SOM, Append I, K-27 Interpretive Guideline)	
	12. Hor Slider	12, Min 83 in acute & LTC, 64" in psych [NFPA 101, 18.3.7.5]; must comply with LSC 7.2.1.14.	
	13. Swing	13. Cross-corridor doors must swing in opposite directions.	
	14. Kick Plate	14. Max 48: high non-rated plate.	

HEALTH CARE SMOKE COMPARTMENTS

N & E Same

18/19.3.7.4 Area of Refuge

Min 30 sf/patient space in hospitals & residents be provided on each side of smoke barrier wall in low-hazard areas (15 sf in limited care, 6 sf/person in non-bed floors)

Do NOT confuse with:

SMOKE COMPARTMENT Inspection Guides (p2/2)
QTY (K-23) SIZE (K-24) REFUGE SPACE (K-26)

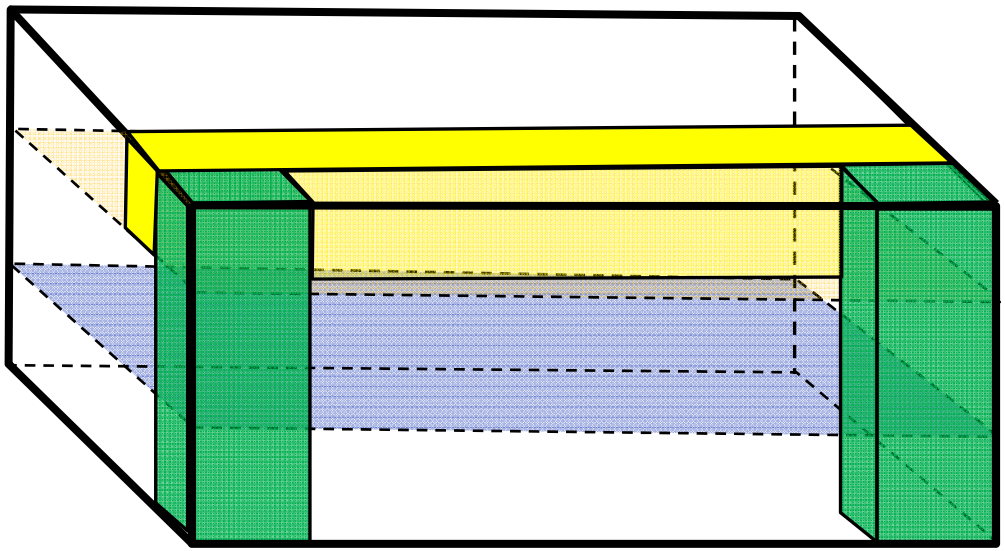
This is only a partial list that shows the most frequently cited requirements … Check the full code

Item	What to Check	NEW Requirement	EXISTING Requirement
Layout	1. # Smk Zones 2. Size 3. Travel Distance 4. Refuge Space	1. Min 2 if floor used (a) for sleeping, or (b) by more than 50 persons [NFPA 101, 18.3.7.1 2. Max 22,500 SF [NFPA 101, 18.3.7.1] 3. Max 200' travel distance from most remote point to nearest unlocked door in adjacent smoke barrier that has adequate refuge space [NFPA 101, 18.3.7.1] 4. Min 30 Sf per patient or 6 SF per non-patient; Spaces may be corridor, patient rooms, lounges, dining rooms, and low haz rooms on each side of barrier wall & be unlocked [NFPA 101, 18.3.7.4]	1. Min of 2 if floor has 30 patients, regardless of size
		Cross-corridor doors used merely for access control/security are allowed and do not need have any requirement for swing or width.	

Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

HEALTH CARE OCCUPANCY

CORRIDORS



"Exit-Access" Connect rooms to exits

18/19.3.6.1 "Corridors shall be separated from all other areas by partitions" (5 exceptions)

HEALTH CARE CORRIDORS

NEW

18.3.6.1 Corridor Separation "Corridors shall be separated from all other areas by partitions" (5 exceptions)

Exception:

1. *Unlimited Open Area if*
   - *Not used for patient sleeping, treatment*
   - *Not used for hazardous storage*
   - *Corridor has full smoke detection OR compartment has full QR sprinklers*
   - *Open space has smoke detector OR visible from nurse station*
   - *Open space doesn't obstruct exit path*

HEALTH CARE CORRIDORS

18.3.6.1 Corridor Separation

NEW

Exception:

2. Open Waiting Area if

- *Max 600 sq feet per compartment*
- *Open space has smoke detector OR visible from nurse station*
- *Open space doesn't obstruct exit path*

HEALTH CARE CORRIDORS

18.3.6.1 Corridor Separation

NEW

Exception:
3. Open Nurse Station

Exception:
4. Open Gift Shop, if protected per 18.3.2.5 (<500 sf)

Exception:
5. Open Group therapeutic spaces in limited care facility, if

- *Space isn't hazardous*
- *Open space has smoke detector OR visible from nurse station*
- *Open space doesn't obstruct exit path*

HEALTH CARE CORRIDORS

19.3.6.1 Corridor Separation

EXISTING

Exception:

1. *Unlimited Open Area if*
   - *Smoke Compartment has full QR sprinklers*
   - *Not used for patient sleeping, treatment*
   - *Not used for hazardous storage*
   - *Corridor has full smoke detection OR compartment has full QR sprinklers*
   - *Open space has smoke detector OR visible from nurse station*
   - *Open space doesn't obstruct exit path*

HEALTH CARE CORRIDORS

19.3.6.1 Corridor Separation

EXISTING

Exception:

2. Open Waiting Area if

- *Smoke Compartment has full QR sprinklers*
- *Max 600 sq feet per compartment*
- *Open space has smoke detector OR visible from nurse station*
- *Open space doesn't obstruct exit path*

HEALTH CARE CORRIDORS

19.3.6.1 Corridor Separation

EXISTING

Exception:
3. Open Nurse Station

Exception:
4. Open Gift Shop, if protected per 18.3.2.5 (<500 sf)

Exception:
5. Open Group therapeutic spaces in limited care facility, if

- *Smoke Compartment has full QR sprinklers*
- *Space isn't hazardous*
- *Open space has smoke detector OR visible from nurse station*
- *Open space doesn't obstruct exit path*

HEALTH CARE CORRIDORS

19.3.6.1 Corridor Separation

EXISTING

Exception:

6. Unlimited Open Area if

- *Not used for patient sleeping, treatment*
- *Not used for hazardous storage*
- *Corridor & Open space has full smoke detection*
- *Open space has full sprinkling OR minimal furnishings so fully developed fire unlikely*
- *Open space doesn't obstruct exit path*

HEALTH CARE CORRIDORS

19.3.6.1 Corridor Separation

EXISTING

Exception:

7. Open Waiting Area if

- *Max 600 sq feet per compartment*
- *Open space has smoke detector*
- *Open space doesn't obstruct exit path*

HEALTH CARE CORRIDORS

19.3.6.1 Corridor Separation

EXISTING

Exception:

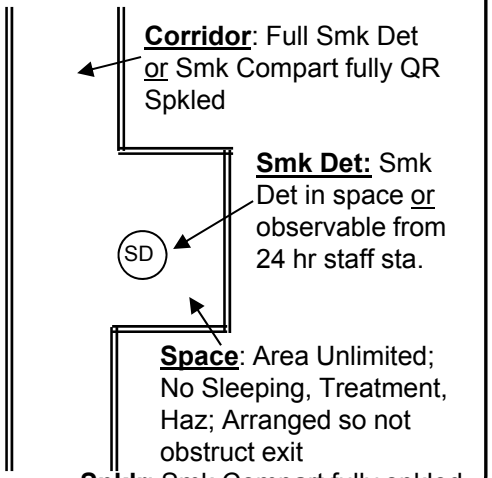
8. Open Group therapeutic spaces in limited care facility, if

- *Continuous supervision of staff*
- *Space isn't hazardous*
- *Max 1500 sq ft*
- *Max one space per smoke compartment*
- *Open space has smoke detector*
- *Open space doesn't obstruct exit path*

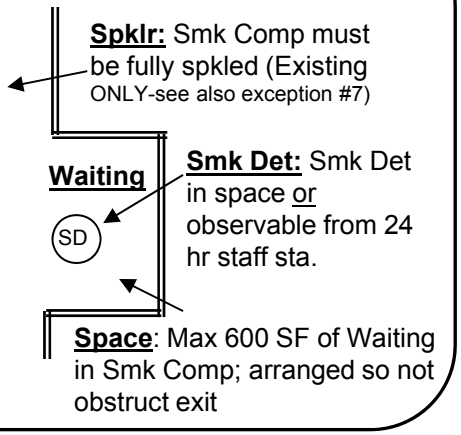
CORRIDOR – Spaces Open to the Corridor - Exceptions

Code Exceptions, when space are not separated from the corridor by full height walls

Exception #1 (N/E)



Exception #2 (N/E)



Limited Care Fac: Except 5 (N/E); Except 8 (Exist)
Not Applicable

Exception #7 (Existing ONLY)

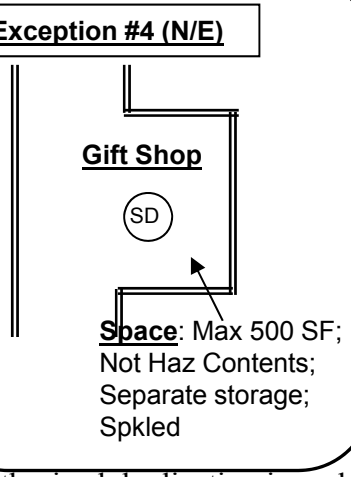
Same as #2, except Spklr in Smk Comp not required, but must have SD in space

BEST PRACTICE: Show which exception is used on your Life Safety Plan

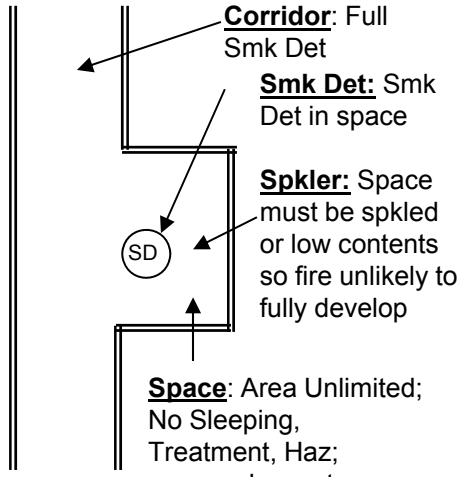
Exception #3 (N/E)

Space: Nurse Sta

Exception #4 (N/E)



Exception #6 (Existing ONLY)



Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

HEALTH CARE CORRIDORS

18.3.6.2 Corridor Walls

NEW

"form a barrier to limit the transfer of smoke ...
No fire resistance rating is required"

Exception:
Can terminate at ceiling where the ceiling is constructed to limit the transfer of smoke.

HEALTH CARE CORRIDORS

EXISTING

19.3.6.2 Corridor Walls

"continuous from floor to underside of floor or deck above, through any concealed spaces ... and have a fire resistance rating of not less than ½ hr"

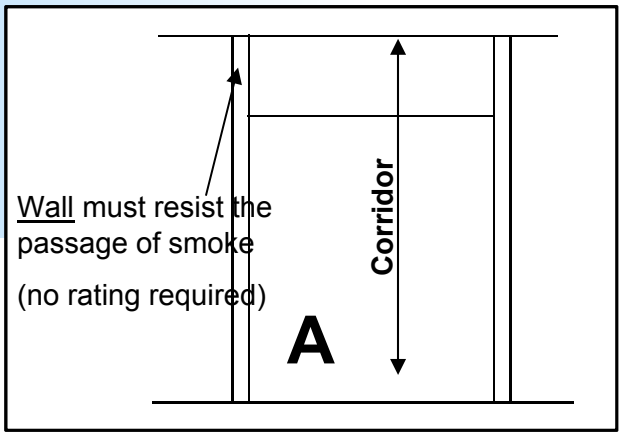
Exceptions:

1. *Non-rated walls can terminate at ceiling that is constructed to limit the transfer of smoke if smoke compartments are fully sprinkled*
2. *Terminate at fire rated ceiling assembly, if meet many conditions*
3. *Terminate at monolithic ceiling that resists the passage of smoke (with smoke-tight joint)*

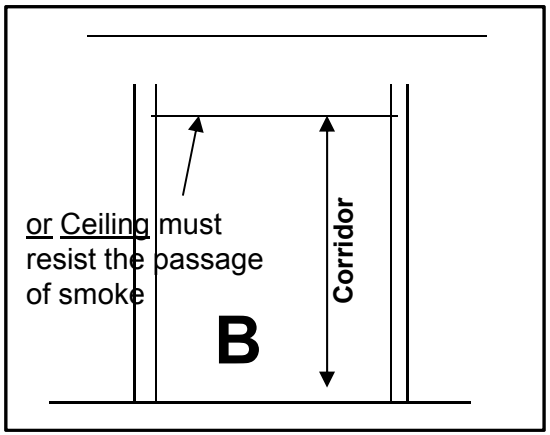
CORRIDOR WALL Inspection Guides (K-17)

Corridor Wall Construction -- Depends on if Sprinkled

Facility Choice in a New, or Existing-Sprinkled Smoke Compartment



Wall provides the Smoke-Tight Separation between the corridor & room

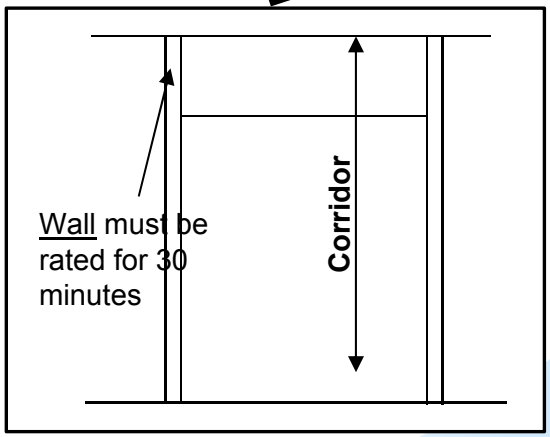


Wall & Ceiling provides the Smoke-Tight Separation between the corridor & room

Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

Best to show which method you are using for compliance on your Life Safety Plan

Wall provides the Smoke-Tight Separation between the corridor & room



Existing-Non-Sprinkled Smoke Compartment

CORRIDOR WALL Inspection Guides (K-17)

This is only a partial list that shows the most frequently cited requirements … Check the full code

Item	What to Check	NEW Requirement	EXISTING Requirement
WALL	1. Smoke-Tightness	1. Must resist the passage of smoke; Must be sealed at deck; no rating required; No openings/holes permitted in wall UNLESS corridor ceiling is smoke-tight; [NFPA 101, 18.3.6.2]	1. Walls must be 30 min rated, full height to above deck, ULESS smoke compartment is fully sprinkled…then only need to be smoke tight. [NFPA 101, 19.3.6.2.1]
	2. Ceiling	2. Ceiling must be free of visible holes that would allow smoke to spread into the area above the ceiling.; Lay-Ins may be ok (clips not required) Check recessed lights for holes. If ceiling isn't smoke-tight then wall must be.	2. Same as New, except if not free of holes, the corridor wall must be 30 min rated.
	3. Windows	3. Must be smoke-tight & latch (satisfy same tests as a door) [NFPA 101, 18.3.6.3.5]	3. Same, but per NFPA 101, 19.3.6.3.5
	4. Grills	4. No grills/louvers permitted [NFPA 101, 18.3.6.4]	4. Same, but per NFPA 101, 19.3.6.4
	5. Mail Slots	5. Max 80 SI in lower half of room height [NFPA 101, 18.3.6.5]	5. Max 20 SI if room not sprinkled, 80 SI if sprinkled, per NFPA 101, 19.3.6.5
Above ceiling	1. Penetrations	1. Must be sealed smoke-tight [NFPA 101, 18.3.6.2.2]	1. Must be fire stopped to 1 hr UNLESS smoke compartment is fully sprinkled…then wall or ceiling must be smoke tight, NFPA 101, 19.3.6.2.1
	2. Dampers	2. Not required	2. Not required
	3. Top of Wall	3. Corridor must be properly sealed to the deck above if required to resist the passage of smoke	

HEALTH CARE CORRIDORS

18.3.6.3 Corridor Doors

NEW

- **Resist the passage of smoke**
- **Does not need to comply with NFPA 80**
- **Max 1” undercut** *(except toilet/tub/jan)*
- **Be positive latching** *(except toilet/tub/jan)*
- **Hold-open device must release when door is pushed or pulled**
- **Closers are not required**
- **Kickplates max 48” above bottom of door**
- **Dutch doors permitted if both leaves have a latching device & meeting joint has astragal, rabbet or bevel**

HEALTH CARE CORRIDORS

18.3.6.3 Corridor Doors

NEW

- **No Transfer grilles, regardless of whether they are protected by fusible link-operated dampers shall be used in these walls or doors**

> *Exception:*
> *Toilets, baths, showers, janitor closets & similar … shall be permitted to have ventilating louvers*

- **Misc openings such as mail-slots, pass-through windows permitted if aggregate are of opening per room is max 80 sq in & located at or below half the distance from floor to ceiling**

HEALTH CARE CORRIDORS

EXISTING

19.3.6.3 Corridor Doors

- **Resist the passage of smoke**
- **Substantial doors: 1-3/4” solid wood core or 20 min rated (if smoke compartment is fully sprinkled, then no door construction requirement)**
- **Does not need to comply with NFPA 80**
- **Max 1” undercut** *(except toilet/tub/jan)*

HEALTH CARE CORRIDORS

EXISTING

19.3.6.3 Corridor Doors

- ~~Be positive latching~~ **Must be provided with a suitable means for keeping the door closed…if a force of 5 lbs is applied to the latch edge of door** *(except toilet/tub/jan)*
- **Hold-open device must release when door is pushed or pulled**
- **Closers are not required**
- **Kickplates max 48” above bottom of door**
- **Dutch doors permitted if both leaves have a latching device & meeting joint has astragal, rabbet or bevel**

HEALTH CARE CORRIDORS

19.3.6.3 Corridor Doors

EXISTING

- **Frames must be labeled and made of steel or other materials to comply with 8.2.3.2.1** *(exception: No requirements if smoke compartment is fully sprinkled)*

HEALTH CARE CORRIDORS

19.3.6.3 Corridor Doors

EXISTING

- **No Transfer grilles, regardless of whether they are protected by fusible link-operated dampers shall be used in these walls or doors**

> *Exception:*
> *Toilets, baths, showers, janitor closets & similar … shall be permitted to have ventilating louvers*

- **Misc openings such as mail-slots, pass-through windows permitted if aggregate are of opening per room is max ~~80~~ 20 sq in & located at or below half the distance from floor to ceiling** *(exception: max 80 sq in if room is sprinkled)*

CORRIDOR DOORS (K-18)

This is only a partial list that shows the most [illegible] Check the full code

Item	What to Check	NEW Requi[illegible]	EXISTING Requirement
		All per NFPA 101, 18.3.6.3	All per NFPA 101, 19.3.6.3
Doors	1. Door Rating	1. Not required; Must Resist the Passage of Smoke by fitting snugly into the frame.	1. 20 Min Label or 1-3/4" Solid Wood Core if zone not spkled; Same as new if spkled
	2. Closer	2. Not required	2. Not required
	3. Self-Latching	3. Hardware must positively latch by itself; No Deadbolt; No Roller Latches; Rolling Fire Shutter door doesn't need to latch (Latching not needed on toilet doors, etc...	3. Door must not open when pushed with 5 lbs force. No Deadbolt; No Roller Latches
	4. Hold-Open	4. No wedge, hook, or blocking open; Door must close with slight push or tug; Electro-Mag must comply with NFPA 72.	4. No wedge, hook, or blocking open; Same as new.
	5. Side-Hinged	5. Doors in egress path must be side-hinged [NFPA 101, 7.2.1.4.1]	5. Must be side-hinged, per 7.2.1.4.1
	6. Grills	6. Grills/louvers not permitted, even w/damper (other than toilet rooms, etc..)	6. No grills/lovers, even wi/damper
	7. Undercut	7. Max 1" undercut	7. Max 1" undercut
	8. Opening Force	8. Max 15 lb to unlatch, 30 lb to start motion, 15 lb to full open, per 7.2.1.4.5	8. Max 50 lbs, per exception 1
	9. Dbl Door-Astragal	9. Must have astragal; Must have Coordinator if astragal can obstruct [NFPA 101, 18.2.3.5-exception 4]	9. Resist the passage of smoke
	10. Dbl Door-Auto-Flush Bolts	10. Must have automatic flush bolt on inactive door [NFPA 101, 18.2.3.5-exception 4]	10. See #3 above
	11. Dutch Door	11. Upper door must self-latch into frame or bottom door & Gap between top & bottom door must have seal	11. Same as new
	12. Frame	12. Must have stop on jambs & header; door fits snugly in frame	12. Frame must be labeled (unless smoke comp fully spkled)
	13. Rolling Fire Shutter Door	13. Shutter door must comply with NFPA 80 and is not required to have a latch [SOM-Appendix I, K-17 Surveyor Guidance]	13. Same as new
	14. Window	14. Windows must be fixed. No restriction in area or fire resistance of glass & frame.	14. Windows must be fixed. Max 1296 sq.in. of wired glass per panel. If sprinkled, No restriction in area or fire resistance of glass & frame.

[LSC 7.2.1; 18.2.3; 18.3.6]

CORRIDORS ('Exit Access')

WHY are they Important

In the "Defend-in-Place" strategy of fire safety in health care corridors are the first level of evacuation away from a fire. Thus, walls, doors & window must keep fire & smoke from leaking into a corridor to ensure that movement is possible. Things can't be left in the corridor that would obstruct their use for evacuation, or be a cause of a fire.

SMOKE-TIGHT: Corridor walls, doors & windows must be smoke-tight from adjacent spaces. If the smoke zone is fully sprinkled ceiling can form top of barrier. See ceilings. [LSC 18/19.3.6.2]

RATING: ^{N}**H**=None; **H**^{E}=30 min, unless zone sprkled; ^{N}**A**, ^{N}**B**= 1 hr rating, unless an open ofc, 1 tenant, or fully sprkled [20/38.3.6.1];
A^{E}, **B**^{E}: No Requirements [20/21/39.3.6]

2 EXITS: Must have 2 exits from all points, without passing through a room.

OPEN SPACES: Spaces (except or pt sleep, treatment or haz mtls) can be open to corridor if corridor in smoke zone has smoke detection & space has smoke detector or is adjacent to 24 hour occupied nurse station [LSC 18/19.3.6]

WIDTH: ^{N}**H**= 8' at patient sleeping/treatment areas; 6' in Mental Health areas; 4' in other areas; max 4" projections [LSC 18.2.3.3]
^{E}**H**= per new requirements when built, min 4' [LSC 19.2.3.3]
^{N}**A**=44" [LSC 20.2.3.2] ^{N}**B**^{E}=44" if Occup >50 [LSC 38/39.2.3.2]

HEIGHT: Ceilings min 7'-6" w/7' projections (6'-8" in existing)

WINDOWS: Fixed glass in approved frames. If bldg fully sprkled n… requirements [18/19.3.6]

DOORS: See "Doors"

FIRE EXTINGUISHERS: Max 150' apart

Sliding Windows
Must be smoke-tight via rated seal or room comply as if open to corridor

DEADEND	LIMITS
Healthcare [1004.3.2.3]	NH: <20' EH: Min Possible
Business & Amb Care [1004.3.2.3, LSC 38.2.5.2]	NA,NB: <20', but can be 50' if fully spkled; EB=<50' [39.2.5.2]

Sliding Doors NOT typically approved for a corridor wall unless they positively self latch, are not smoke tight, and have a breakaway feature so they are "side-hinged"

Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

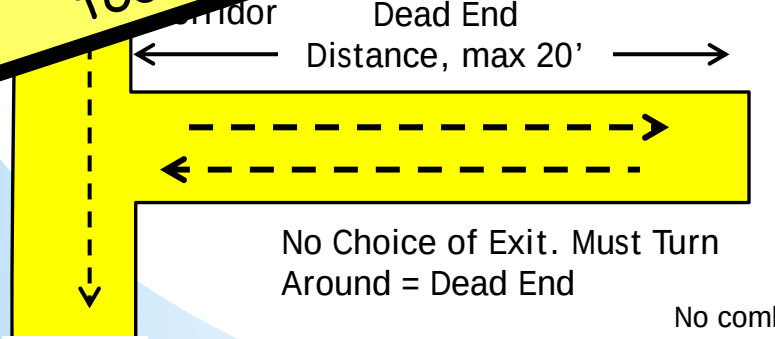
CORRIDOR LAYOUT (K-37,39)

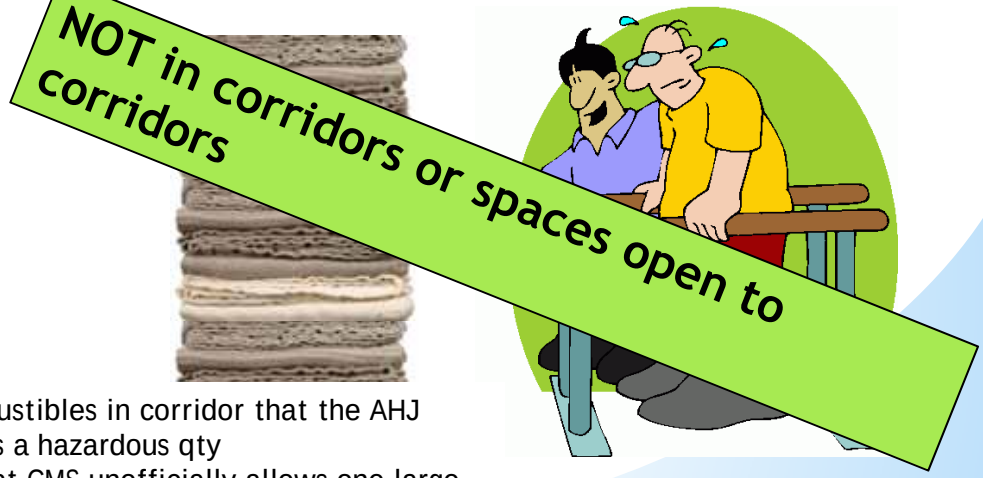
This is only a partial list that shows the most frequently cited requirements … Check the full code

Item	What to Check	NEW Requirement	EXISTING Requirement
		NFPA 101, 18.3.6.1	NFPA 101, 19.3.6.1
Layout	1. Combustible Storage	1. Limited storage of combustibles is permitted in the corridor, per NFPA 101, 18.3.6.1, exception 1	1. Same as NEW
	2. Pt Treatment	2. No open patient treatment is permitted in the corridor, per NFPA 101, 18.3.6.2.1, Exception 1	2. Same as NEW
	3. Space Open to Corr	3. Use spaces must be separated from corridor by smoke-tight walls, unless meets one of exceptions (Illustrated on next page)	3. Same as NEW
	4. Dead End	4. Max 30' long, per NFPA 101, 18.2.5.10; max 20' per IBC	4. Any length permitted, if not practical & feasible to alter, per 19.2.5.10
	5. Width	5. Corridors Min 8'0" in acute; 6' in Psych; 44" if not used by inpatients, per NFPA 101, 18.2.3.3	5. Min 48" when egressing sleeping rooms; 44" where no housing, treatment, use by pts, per 19.2.3.3

Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

Dead Ends

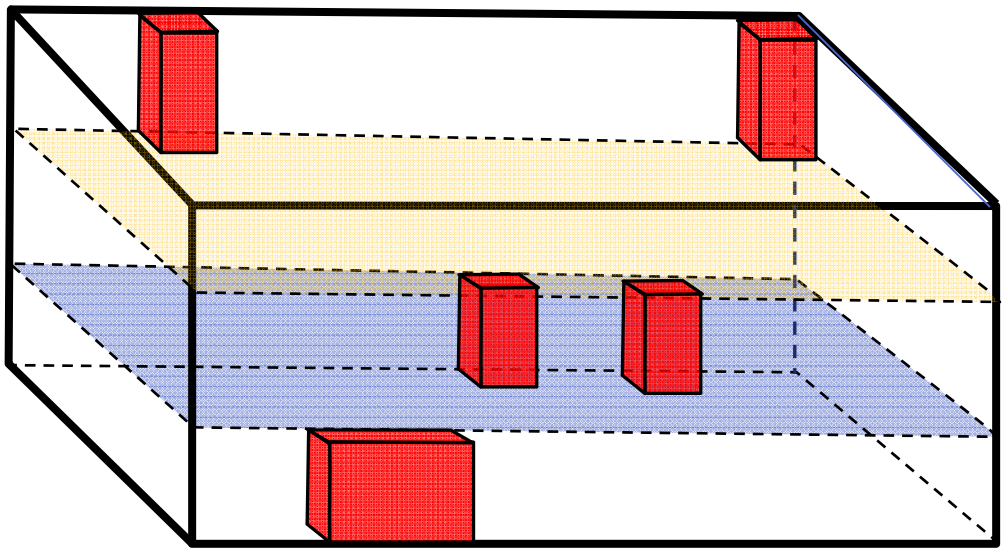




No combustibles in corridor that the AHJ considers a hazardous qty
(Note that CMS unofficially allows one large cart of clean stacked linen to be stored in a corridor as long as it is not an obstruction)

HEALTH CARE OCCUPANCY

HAZARDOUS SPACES



Hazardous if contains more combustibles than a typical room in the occupancy

18/19.3.2.1 “Shall be protected in accordance with section 8.4 … as indicated in Table”

HAZARDOUS SPACES

18/19.3.2.1 “Shall be protected in accordance with section 8.4 … as indicated in Table”

Table 18.3.2.1 Hazardous Area Protection

Hazardous Area Description	Separation/Protection
Boiler and fuel-fired heater rooms	1 hour
Central/bulk laundries larger than 100 ft^2 (9.3 m^2)	1 hour
Laboratories employing flammable or combustible materials in quantities less than those that would be considered a severe hazard	See 18.3.6.3.4
Laboratories that use hazardous materials that would be classified as a severe hazard in accordance with NFPA 99, *Standard for Health Care Facilities*	1 hour
Paint shops employing hazardous substances and materials in quantities less than those that would be classified as a severe hazard	1 hour
Physical plant maintenance shops	1 hour
Soiled linen rooms	1 hour
Storage rooms larger than 50 ft^2 (4.6 m^2) but not exceeding 100 ft^2 (9.3 m^2) storing combustible material	See 18.3.6.3.4
Storage rooms larger than 100 ft^2 (9.3 m^2) storing combustible material	1 hour
Trash collection rooms	1 hour

HEALTH CARE HAZARDOUS AREAS

NEW

Requires door closer

Requires door closer

LAUZON LSP

Haz-1 hr

Haz-Smk Tight

Hazardous areas shall include, but shall not be restricted to, the following:

(1) Boiler and fuel-fired heater rooms
(2) Central/bulk laundries larger than 100 ft^2 (9.3 m^2)
(3) Paint shops
(4) Repair shops
(5) Soiled linen rooms
(6) Trash collection rooms
(7) Rooms or spaces larger than 50 ft^2 (4.6 m^2), including repair shops, used for storage of combustible supplies and equipment in quantities deemed hazardous by the authority having jurisdiction
(8) Laboratories employing flammable or combustible materials in quantities less than those that would be considered a severe hazard.

Exception: Doors in rated enclosures shall be permitted to have non-rated, factory- or field-applied protective plates extending not more than 48 in. (122 cm) above the bottom of the door.

HEALTH CARE HAZARDOUS AREAS

EXISTING

1-hr fire barrier
OR
Sprinkled w/smoke-resisting partitions & doors that are self-closing or automatic-closing.

LAUZON LSP

Haz-1 hr

Haz-Smk Tight

HEALTH CARE HAZARDOUS AREAS

HAZARDOUS STORAGE AREAS

Caution: There is NO agreed on **QUANTITY** of combustible materials that an inspector will deem as hazardous. It is best to consider almost any amount of stored combustibles as hazardous and protect the room according to its size.

	0-50 SF	51-99 SF	100 SF & over
NEW	No Requirements	Smoke Tight	1-Hr Rated Enclosure
EXISTING	No Requirements	Sprinkler & Smoke-Tight OR 1-Hr Rated Enclosure	

HAZARDOUS AREAS & STORAGE

The LSC defines certain rooms as hazardous, based on their ability to burn. The authority having jurisdiction has the final word on the quantity of combustible materials it takes to be classified as hazardous.

How much combustible materials is hazardous? There is no uniformly agreed on answer. Some use the standard of 100 cubic feet or more of burnable materials or 1 lb/ft^2); Some say anything over 32 gallons.

Storage = Anything that is not 'In-Use', i.e. attended & used every 30 minutes [CMS definition]

Hazardous Rooms (LSC 18/19.3.2.1; 20/21.3.2; 38/39.3.2); **Incidental Spaces** (IBC Table 302.1.1)

GIFT SHOPS are hazardous unless there is a separate product storage area. If <500 SF it can be open to the corridor. [LSC 18/19.3.2.5]

BOILER & FUEL-FIRED ROOMS

LAUNDRIES > 100 SF

LABS (See Laboratories)

COMPRESSED GAS STORAGE

OXYGEN STORAGE >3000CF [99:4.3.1.1.2]

PAINT SHOPS & **MAINTENANCE**

SOILED LINEN & **TRASH** ROOMS or **CARTS** > 32 Gallons [LSC 18/19.7.5.5]

STORAGE ROOMS for combustibles:
- NH- If 50-99 SF: (no rating; must have closer)
- NH -If 100 SF or more
- EH – If >50 SF
- A & B – any general storage

LEAD BATTERIES>100 Gal: 2 hr in I 1 h

Boiler rooms, soiled linen rooms, paint shops are considered severe hazard and must be sprinkled with a 1-hr separation [SOM, Append I, K29 Interpretive a Guideline]

Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

Required Enclosure & Protection

1 Hr Enclosed & Sprkled = ^{N}H

1 Hr Enclosed or Sprkled = ^{E}H, ^{N}A^{E}, ^{N}B^{E}

2 Hr Enclosed or Sprkled+1 Hr Enclosed = Garage

HAZARDOUS ROOM (K-29) Inspection Guides

This is only a partial list that shows the most frequently cited requirements … Check the full code

Item	What to Check	NEW Requirement	EXISTING Requirem
Layout	1. Exit Thru Haz Rm 2. Haz Areas	1. Egress not permitted from a less hazardous space thru a more hazardous space 2. A single residential range/oven or residential laundry mch is not haz provided the fuel capacity doesn't exceed that found in a1 or 2 family residence [SOM, Append I, K29 Interpretive Guidelines.	Same as NEW
Doors	1. Door Rating 2. Closer 3. Hold-Open 4. Self-Latching 5. Grills 6. Window 7. Undercut 8. Opening Force 9. Dbl Door-Astragal 10. Frame 11. Kick Plate	1. Min 45 min label [NFPA 101, 18.3.2.1] 2. Closer required; Door must fully close [LSC 18.3.2.1] 3. Only with Electro- magnet, with Smk Detector < 5' away, connected to alarm sys 4. Hardware must positively latch by itself; No Deadbolt [NFPA 101, 8.2.3.2] 5. Grills/louvers not permitted 6. Rated Glass; max 100 Sq In unless listing approv; 7. Max 3/4" undercut 8. Max 15 lb to unlatch, 30 lb to start motion, 15 lb to full open (NFPA 101, 7.2.1.4.5) 9. If meeting gap >1/8" Must have astragal; Must have Coordinator if astragal can obstruct [NFPA 101, 18.3.2.1] 10. Must have stop on jambs & header 11. Max 48" hi non-rated protective kick plate	1. Same as NEW, but if Rm sprinkled no rated required, but must resist passage of smoke. Max 6 heads on isolated sprinkler sys fed via a domestic water supply 2, 3, 4, 5, 7, 9, 10, 11. Same as NEW 6. Same as NEW, except no limit, if Rm sprinkled 8. Same as NEW, except Max 50 lb to open
Wall	1. Rating 2. Windows 3. Grills	1. Min 1 hr (Min 1 layer 5/8" drywall on both sides; 6" block), [NFPA 101, 18.3.2.1] 2. Vision panels in a haz area wall are prohibited [SOM, Append I, K29 Interpretative Guidelines] 3 . No grills/louvers permitted w/o fire damper	1. Same as existing door above 2. Same as NEW, except no limit, if Rm sprinkled 3. Same as NEW
Above ceiling	1. Penetrations 2. Ducts	1. Rated fire stop material installed per listing; Intumescent at PVC/cable/insulated pipes [NFPA 101, 18.3.2.1] 2. Fire Dampers required if duct terminates at wall	1. Same as existing door above 2 . Same as NEW, but damper not required if Rm sprinkled

HEALTH CARE HAZARDOUS AREAS

18/19.3.2.2 -- Laboratories

Labs "employing quantities of flammable, combustible or hazardous materials that are considered as a severe hazard shall be protected in accordance with NFPA 99"

18/19.3.2.3 -- Anesthetizing Locations

"shall be protected in accordance with NFPA 99"

18/19.3.2.4 -- Medical Gas

"Medical gas storage and administration areas shall be protected in accordance with NFPA 99"

All:
N & E
Same

HEALTH CARE HAZARDOUS AREAS

NEW

18.3.2.5 -- Gift Shops

"shall be protected as hazardous areas where used for the storage or display of combustibles in quantities considered hazardous."

"Gift shops not considered hazardous and having separately protected storage shall be permitted as follows:"

1. **Max 500 SF, if open to a lobby or corridor**
2. **Over 500 SF, if separated from a lobby or corridor with non-fire-rated walls**

HEALTH CARE HAZARDOUS AREAS

EXISTING

19.3.2.5 -- Gift Shops

"shall be protected as hazardous areas where used for the storage or display of combustibles in quantities considered hazardous."

"Gift shops not considered hazardous and having separately protected storage shall be permitted as follows:"

1. **Max 500 SF if open to a lobby or corridor and sprinkled**
2. **Over 500 SF if separated from a lobby or corridor with non-fire-rated walls and sprinkled**

GIFT SHOP (K-30) Inspection Guides

This is only a partial list that shows the most frequently cited requirements … Check the full code

Item	What to Check	NEW Requirement	EXISTING Requirement
Layout	1. When Haz? 2.. Exit Thru Haz Rm 3. Open to Corridor	1. Protect as haz when used for storage or display of combustibles in quantities considered hazardous. 2. Egress not permitted from a less hazardous space thru a more hazardous space 3. Can be open if < 500 SF & no storage (See Corridor Inspection Guides)	Same as NEW 2. Same, plus must be sprinkled
Doors (If Haz)	1. Door Rating 2. Closer 3. Hold-Open 4. Self-Latching 5. Grills 6. Window 7. Undercut 8. Opening Force 9. Dbl Doors-Astragal 10. Frame	1. Min 45 min label [NFPA 101, 18.3.2.5] 2. Closer required; Door must fully close LSC, 18.3.2.1 3. Only with Electro- magnet, with Smk Detector < 5' away, connected to alarm sys 4. Hardware must positively latch by itself; No Deadbolt [NFPA 101, 8.3.2.5 5. Grills/louvers not permitted 6. Rated Glass; max 100 Sq In unless listing approv 7. Max 3/4" undercut 8. Max 15 lb to unlatch, 30 lb to start motion, 15 lb to full open 9. If meeting gap >1/8" Must have astragal; Must have Coordinator if astragal can obstruct [NFPA 101, 18.3.2.1] 10. Must have stop on jambs & header	
Wall (If Haz)	1. Rating 2. Windows 3. Grills	1. Miin 1 hr [NFPA 101, 18.3.2.5] 2. Rated Glass; max 100 Sq In unless listing approv 3 . No grills/louvers permitted w/o fire damper	
Above ceiling (If Haz)	1. Penetrations 2. Ducts	1. Rated fire stop material installed per listing; Intumescent at PVC/cable/insulated pipes [NFPA 101, 18.3.2.5] 2. Fire Dampers required if duct terminates at wall	
Storage	1. Product Storage	1. Must be enclosed with required rated walls if combustible materials in display or storage are considered hazardous.	

HEALTH CARE HAZARDOUS AREAS

N & E Same

18/19.3.2.6 -- Cooking Facilities

"shall be protected in accordance with 9.2.3" (which directs compliance with NFPA 96)

Exception: "Where domestic cooking equipment is used for food warming or limited cooking, protection or segregation of food preparation facilities shall not be required"

KITCHEN (K-69) Inspection Guides

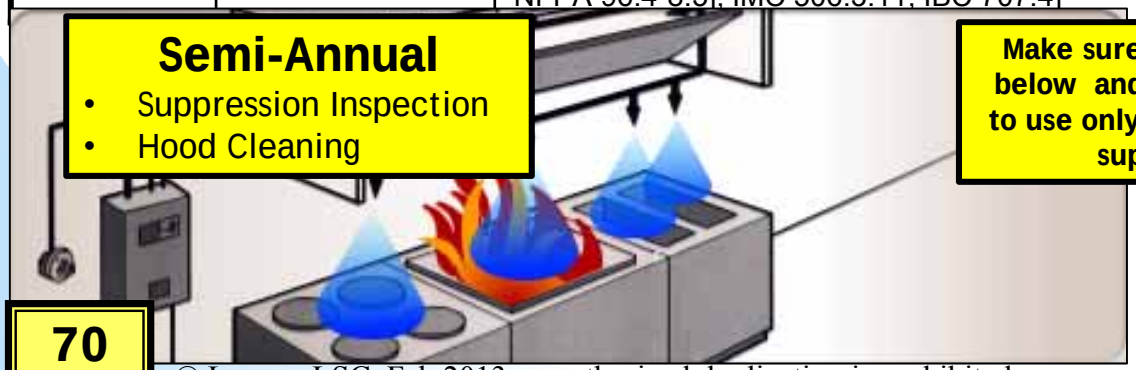
This is only a partial list that shows the most frequently cited requirements … Check the full code

Item	What to Check	NEW Requirement	EXISTING Requirement
Equip	1. Flame to Close to Fryer 2. Portable	1. Min 16" space between fryer and adjacent surface flame [NFPA 101 (2000 edition), 18.3.2.6, 9.2.3 and NFPA 96.9.1.2.3] 2. Portable must be compatible with range extinguisher sys; locate on exit path [CMS SOM Appendix I]	Same as NEW
Hood	1. Hood per NFPA 96 2. Inspections 3. Cleaning	1. kitchen hood and suppression system must have *liquid-tight seams, a manual means of activation located near the hood and on the path of egress, suppression sys interconnected to the fire alarm system, hood must have mesh filters rather than baffle filters, suppression automatically disconnects the fuel/electrical sources. [NFPA 101 (2000 edition), 18.3.2.6, 9.2.3 and NFPA 96] 2. Suppression sys must be inspected semi-annually [96:8-3.1] 3. Hood & exhaust sys must be cleaned semi-annually	Same as NEW
Fan	1. Roof Fan 2. Wall Fan	1. Roof exhausts must be at least 40" above the roof and directed upward. [NFPA 101, 9.2.3 and NFPA 96.4-8.2, IMC 506.3.1.3.1] 2. Wall exhausts must be at least 10' above grade, air inlets, operable windows or doors, electrical equipment, and combustible construction. [NFPA 101, 1983.2.6, 9.2.3 and NFPA 96.4-8.3], IMC 506.3.11, IBC 707.4]	Same as NEW

Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

Semi-Annual

- Suppression Inspection
- Hood Cleaning



Make sure NOTHING is in front or below and there are signs that say to use only as a back-up to the auto suppression system.

HEALTH CARE HAZARDOUS AREAS

NEW

18.3.2.7 -- Heliports

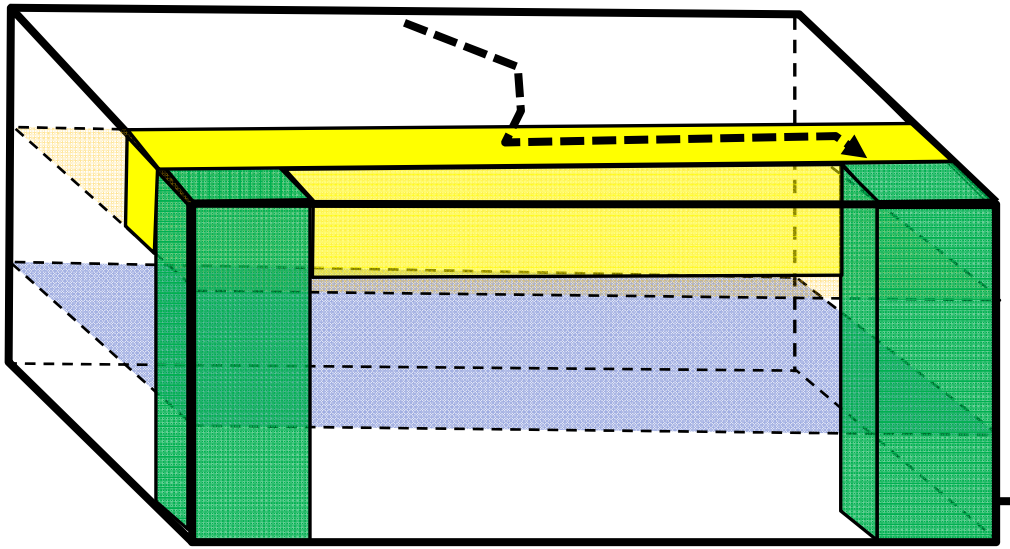
"Buildings … that have rooftop heliports shall be protected in accordance with NFPA 418, Standard for Heliports."

HEALTH CARE OCCUPANCY

EXIT PATHS

Exit Access: "Corridor"

Means of Egress: "Anywhere in building"



Exit: "Protected Egress Path"

Exit Discharge: "From exit door to a public way"

18/19.2 "Every aisle, passageway, corridor, exit discharge, exit location, and access shall be in accordance with Chapter 7."

Except as modified by this chapter

N & E Same

HEALTH CARE EXIT PATHS

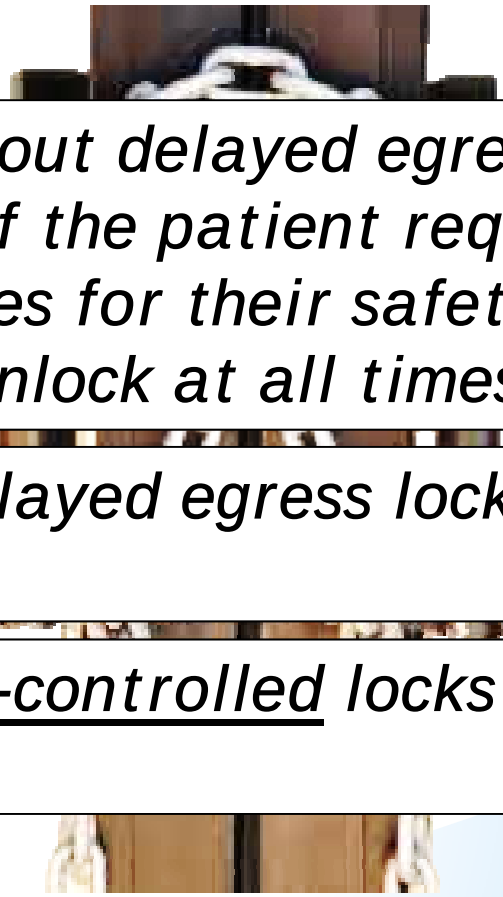
18/19.2 MEANS OF EGRESS REQUIREMENTS

1. Components
   - Doors
   - Stairs
   - Horizontal Exits
   - Ramps
   - Exit Passageways
2. Capacity (widths)
3. Number of Exits
4. Arrangements of Exits
5. Travel Distances
6. Exit Discharge
7. Exit Illumination
8. Exit Marking

HEALTH CARE EXIT PATHS-Doors

18/19.2.2.2.4 "Doors within a required means of egress shall not be equipped with a latch or lock that requires the use of a tool or key from the egress side"

{NO LOCKING RULE}



N & E Same

Exception 1: Can lock (without delayed egress) where the CLINICAL NEEDS of the patient require specialized security measures for their safety, provided staff can readily unlock at all times

Exception 2: Can use one delayed egress lock (per 7.2.1.6.1) per egress path

Exception 3: Can use access-controlled locks (per 7.2.1.6.2)

DOOR LOCKING

BASIC RULE

You Can NOT lock any door that is needed to get out of a space (i.e. in the means of egres

This is only a partial list that shows the most frequently cited requirements … Check the full code

ONLY EXCEPTIONS

1. DELAYED EGRESS DOORS: [LSC 7.2.1.6]

1. Entire bldg must be sprinkled
2. Can only have 1 in entire path of egress
3. Sign of how to use, w/1" hi letters
4. Unlock with fire alarm or sprinkler activation
5. Unlock with power loss
6. Unlock within 15 sec of being pushed for < 3 sec w/<15lb force
7. Audible signal by door
8. Can only relock manually

2. ACCESS-CONTROLLED LOCKS On egress side must have: a). an auto sensor, b). large secondary release button within 5', c). Unlock on power loss, d). Sign on how to use, e). Unlock with fire alarm [LSC 7.2.1.6.2]

3. MEDICAL NECESSITY Exit Doors can be locked if there is a written order by a person with medical responsibility

Locking	1. Delayed Egress	1. Must release within 15 seconds of max 3 sec activation (max 3 sec of max 15 lbs); building must be fully sprinkled; must have required signage on the door; must be manually relocked; must release with fire alarm and loss of power. [NFPA 101 (2000 edition), 7.2.1.6.1]; May unlatch in up to 30 sec if approv by AHJ [SOM, Append I, K38 Interpretive Guidelines]	Same as NEW
	2. 2 Delayed Egress	2. Can have only 1 DEL in any path of egress [NFPA 101, 18.2.2.2.2.4 (exception 2)]	
	3. Locked Egress	3. No egress door can be locked; check all exterior gates on egress path. Exception: Psych, ICF/MR, & Alzheimer's if all locked exit doors are keyed to a master lock so same key can open each locked door, and all staff carry a key at all times they are on duty. If electronic, must unlock on loss of power or activation of sprinkler or fire alarm sys, with an over ride sys.[SOM, Append I, K38 Interpretive Guidelines]	
	4. Fences/Gates	4. Egress to a public way can not be restricted by locked doors, fences w/o gates, or locked gates.	

Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

HEALTH CARE EXIT PATHS-Doors

18/19.2.2.2.6 **Doors that are required to be rated can be "held-open only by an automatic release device that complies with 7.2.1.8.2."**

{HOLD-OPEN RULE}

NOT permitted at boiler, heater, or mechanical rooms.
NOT required at corridors or non-rated doors.

N & E Same

7.2.1.8.2: Self-Closing Devices – Hold-Opens

(1) Door self-closes upon release of hold-open
(2) Must also release manually
(3) Activated by smoke detector per NFPA 72
(4) Doors release on loss of power
(5) In stairs, smoke detector will release all doors in stairs

HEALTH CARE EXIT PATHS-Doors

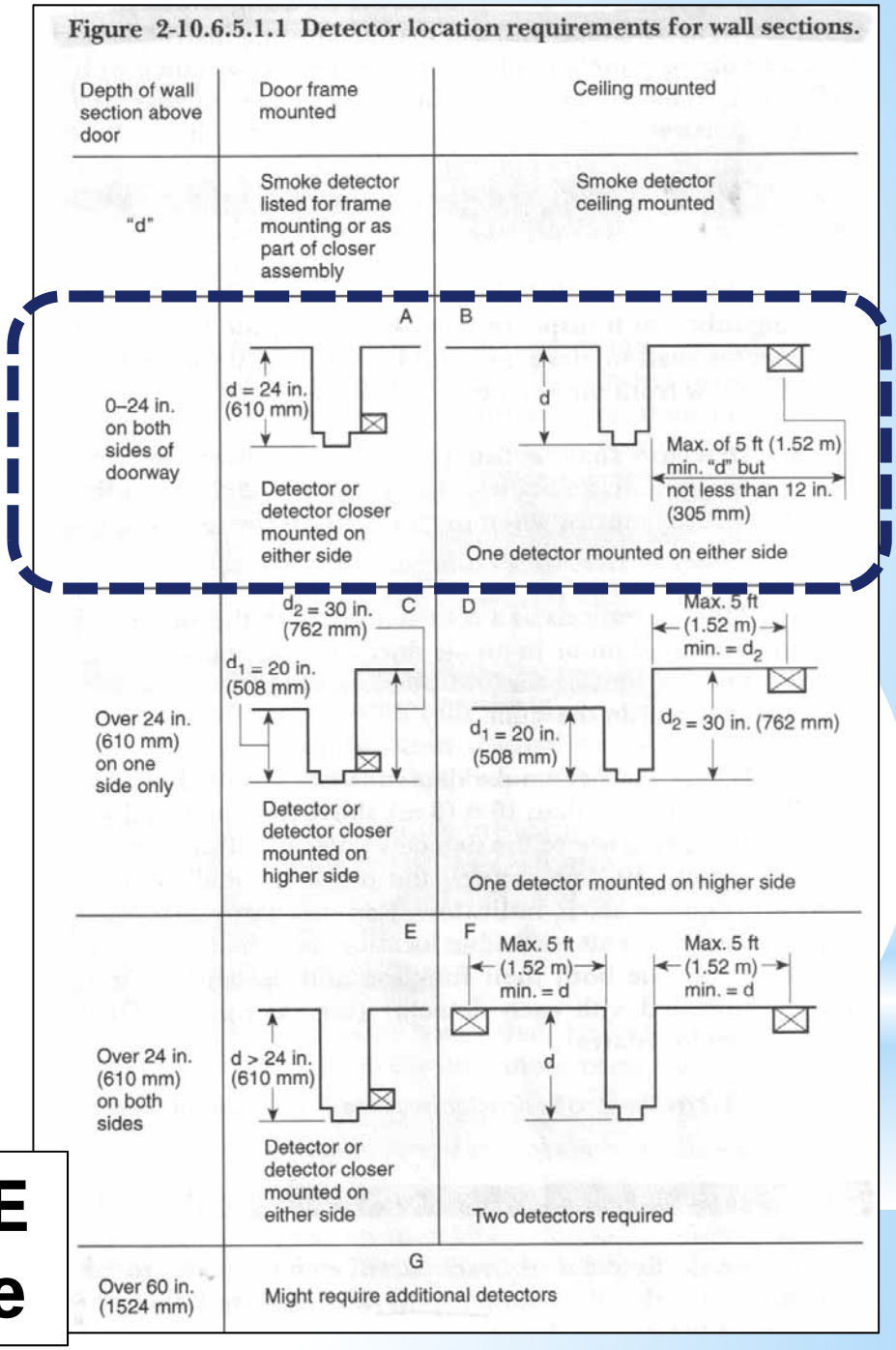
NFPA 72, 2-10.6 Smoke Detectors for Door Release Service

2-10.6.5.1: Door release if smoke is from either direction … Follow Chart →

i.e. smoke barriers, separation walls

If detector is frame mounted only one device is needed, if installed per recommendation of the manufacturer

N & E Same



HEALTH CARE EXIT PATHS-Doors

N & E Same

2-10.6.5.2: Door release if smoke is from one direction, must have detector on side deemed more hazardous

i.e. Hazardous Rooms,
Stairs,
Exit Passageway

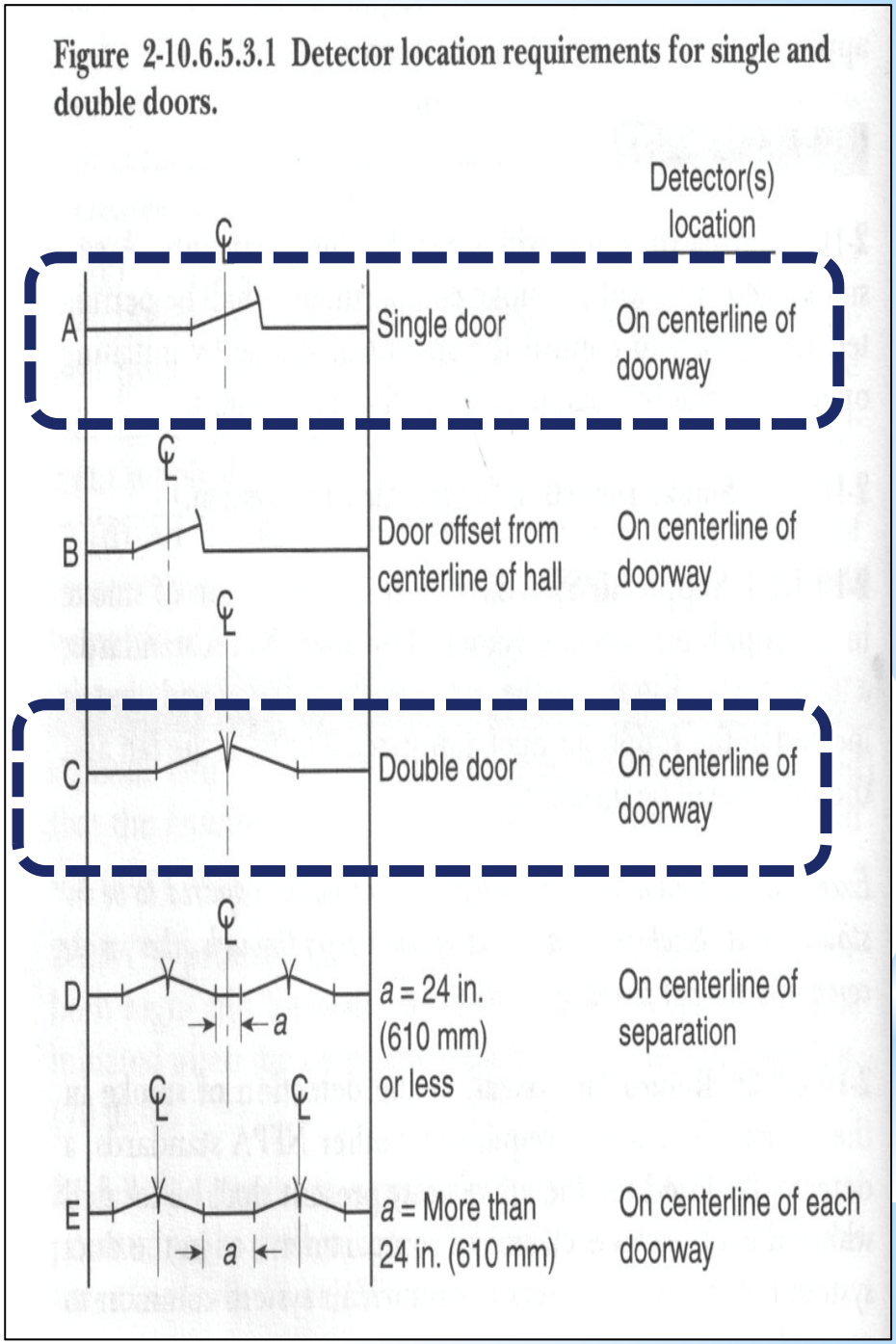
HEALTH CARE EXIT PATHS-Doors

2-10.6.5.3: Location of Detector … Follow Chart →

N & E Same

If detector is not ceiling mounted or not on a smooth ceiling an engineering evaluation is required

Figure 2-10.6.5.3.1 Detector location requirements for single and double doors.

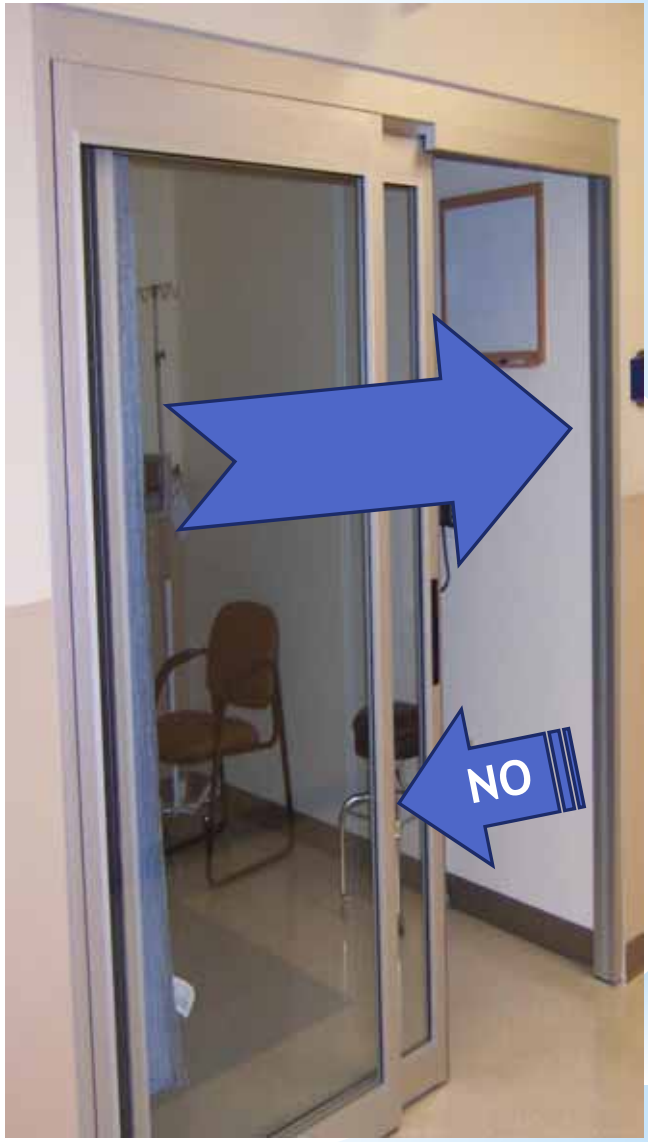


HEALTH CARE EXIT PATHS-Doors

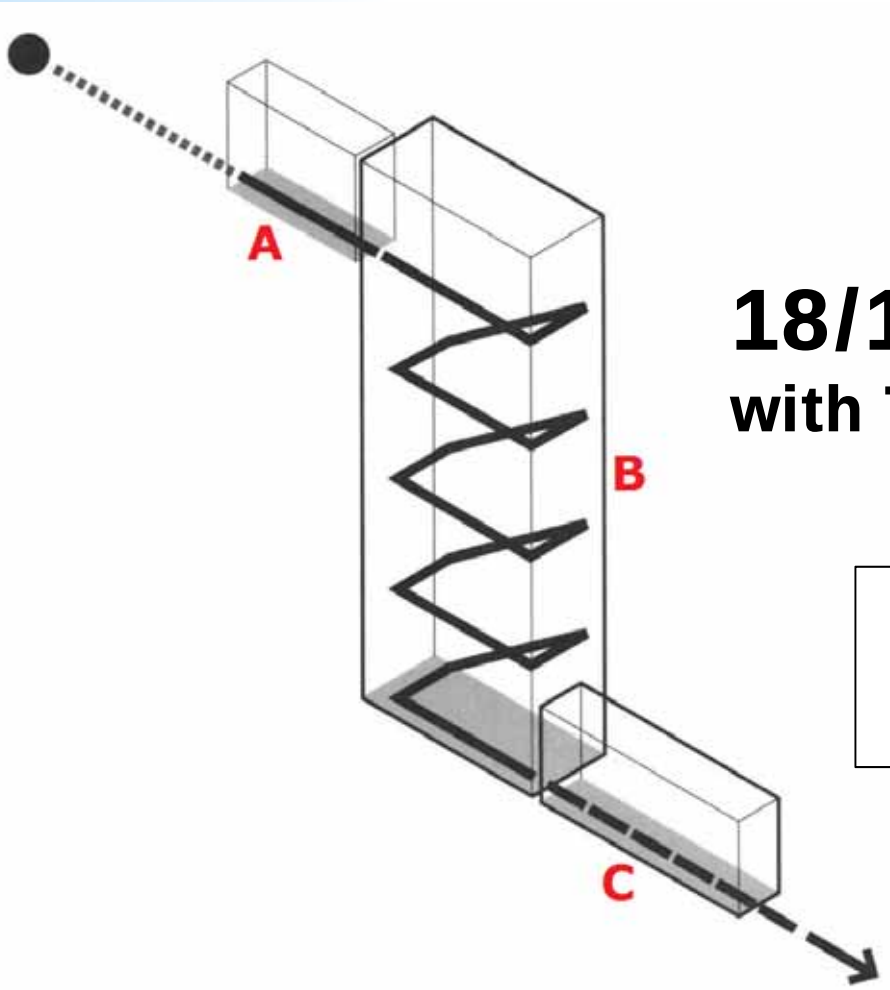
18/19.2.2.2.9 Non-auto closing horizontal sliding doors permitted by 7.2.1.14 shall be limited to a single leaf & shall latch that "ensures that doors will not rebound into a partially open position if forcefully closed in an emergency"

{THE SLIDER SLAM TEST}

N & E Same



HEALTH CARE EXIT PATHS - Stairs



18/19.2.2.3 Stairs complying with 7.2.2 shall be permitted

N & E Same

HEALTH CARE EXIT PATHS – Horizontal Exits

18.2.2.5 Horizontal exits complying with 7.2.4 shall be permitted, as modified by this section

NEW

Area of Refuge: On each side of H.E. must have space for min 30 SF per hospital/SNF patient (15 SF in limited care, 6 SF on floors with no litter borne pts)

Quantity: Max 2/3 of exits can be H.E.

Door: if egress in both directions in 8' corridor must have a pair of doors; swing in opposite direction; min 41.5" clear width if swinging, 83" if horizontal slider; if >=6' wide corridor, min 31" swinging & 64" slider.

Door: Must have vision panel; Center mullion prohibited.

HEALTH CARE EXIT PATHS – Horizontal Exits

19.2.2.5 Horizontal exits complying with 7.2.4 shall be permitted, as modified by this section

EXISTING

Area of Refuge: On each side of H.E. must have space for min 30 SF per hospital/SNF patient (15 SF in limited care, 6 SF on floors with no litter borne pts)

Quantity: Max 2/3 of exits can be H.E.

Door: ~~if egress in both directions must have a pair of doors; swing in opposite direction~~**; min** ~~41.5"~~ **32" clear width if swinging,** ~~83"~~ **32" if horizontal slider**~~; if >=6' wide corridor, min 31" swinging & 64" slider.~~

~~Door: Must have vision panel; Center mullion prohibited~~.

HEALTH CARE EXIT PATHS - Ramps

18/19.2.2.6 Ramps complying with 7.2.5 shall be permitted

N & E Same

HEALTH CARE EXIT PATHS – Exit Passageways

18/19.2.2.7 Exit Passageways complying with 7.2.6 shall be permitted

N & E Same

HEALTH CARE EXIT PATHS - Capacity

NEW

18.2.3.1 Capacity of any required means of egress shall be based on its width, as defined in Section 7.3

Conversion Factors: Stairs: provide .3" per person
Doors: provide .2" per person

Exit Access Width-Hospital & SNF: min 8' clear width

Exception 1: min 44" in Adjunct areas not used by pts

Exception 2: Not applicable in suites of rooms

Exit Access Width-Limited Care & Psych: min 6' clear

Exception 1: min 44" in Adjunct areas not used by pts

Exception 2: Not applicable in suites of rooms

HEALTH CARE EXIT PATHS - Capacity

NEW

Doors-Hospital & SNF: min 41.5” clear width in pt use
-Limited Care & Psych: min 32” clear width

Exception 1: min 32” if not used by pts
Exception 2: min 32” in stairwells
Exception 3: min 32” in newborn nurseries
Exception 4: if a pair of doors are provided:

- *One door at least 32” clear width*
- *Meeting edge has rabbet, bevel or astragal*
- *Inactive leaf must have an automatic flush bolt to provide positive latching*

HEALTH CARE EXIT PATHS - Capacity

EXISTING

19.2.3.1 Capacity of any required means of egress shall be based on its width, as defined in Section 7.3

Conversion Factors: Stairs: provide ~~.3"~~ .6" per person
Doors: provide ~~.2"~~ .5 per person

Exception: if sprinkled use .3" at stairs, .2" at doors

Exit Access Width~~-Hospital & SNF~~: min ~~8'~~ 4' width

"Must be arranged to avoid any obstruction to the convenient removal of nonambulatory persons carried on stretchers or on mattresses serving as stretchers."

Exception 1: min 44" in Adjunct areas not used by pts

Exception 2: Not applicable in suites of rooms

~~Exit Access Width-Limited Care & Psych: min 6' clear~~

~~*Exception 1: min 44" in Adjunct areas not used by pts*~~

~~*Exception 2: Not applicable in suites of rooms*~~

HEALTH CARE EXIT PATHS - Capacity

EXISTING

Doors-~~Hospital & SNF:~~ min ~~41.5"~~ 32" clear width in pt use

-~~Limited Care & Psych: min 32" clear width~~

Exception 1: existing min ~~32"~~ 28" if not used by pts for evacuation by bed, gurney or wheelchair

~~*Exception 2: min 32" in stairwells*~~

~~Exception 3: min 32" in newborn nurseries~~

~~Exception 4: if a pair of doors are provided:~~

- ~~One door at least 32" clear width~~
- ~~Meeting edge has rabbet, bevel or astragal~~
- ~~Inactive leaf must have an automatic flush bolt to provide positive latching~~

HEALTH CARE EXIT PATHS – # of Exits

18/19.2.4 "Not less than two exits … remotely located from each other, shall be provided for each floor or fire section of the building"

{"2-Exit Rule"}

N & E Same

Smoke Compartments: "Not less than two exits … shall be accessible from each smoke compartment. Egress shall be permitted through an adjacent compartment(s) but shall not require return through the compartment of the fire origin"

{"Non-Return Rule"}

HEALTH CARE EXIT PATHS – Arrangement

18/19.2.5 "Every habitable room shall have an exit access door leading directly to an exit access corridor"

N & E Same

Exceptions

1. Door directly to outside at ground level

2. Patient sleeping room < 8 beds can pass through one intervening room

3. Special nursing suite can pass through one intervening room if arranged for direct & constant visual supervision by nursing personnel

4. Non-patient sleeping suite of rooms can pass through not more than two intervening rooms if within travel distance limits.

HEALTH CARE EXIT PATHS – Arrangement

18/19.2.5.2 &.3 -- Multiple Egress Doors

1. **Sleeping Room/Suite > 1,000 SF shall have not less than 2 remotely located exit access doors**

2. **Non-Sleeping Room/Suite > 2,500 SF shall have not less than 2 remotely located exit access doors**

N & E Same

HEALTH CARE EXIT PATHS – Arrangement

18/19.2.5.4 to .8 -- Suites

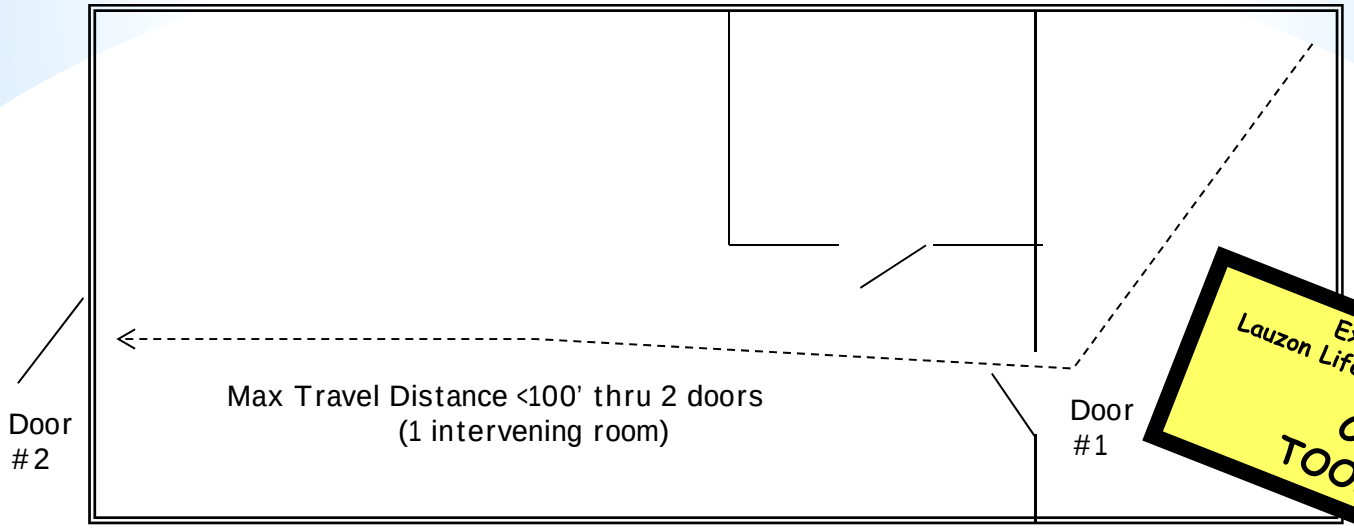
N & E Same

1. **Suites may be subdivided with non-fire-rated, noncombustible, or limited-combustible partitions**
2. **Intervening rooms shall not be hazardous areas**
3. **Sleeping Suite: max 5,000 SF**
4. **Non-Sleeping Suite: max 10,000 SF**
5. **Non-Sleeping Suite: max 100’ travel distance through one intervening space to an exit access door & max 50’ through two**

SUITES-SLEEPING K-36 [LSC 18/19.2.5; 20/21.2.4.2] Inspection Guides

Patient Sleeping Suites: Max 5,000 SF; if =>1,000 SF need 2 exits
[LSC 18/19; 20/21.2.4.2]

Travel Distance in patient sleeping suites:



Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

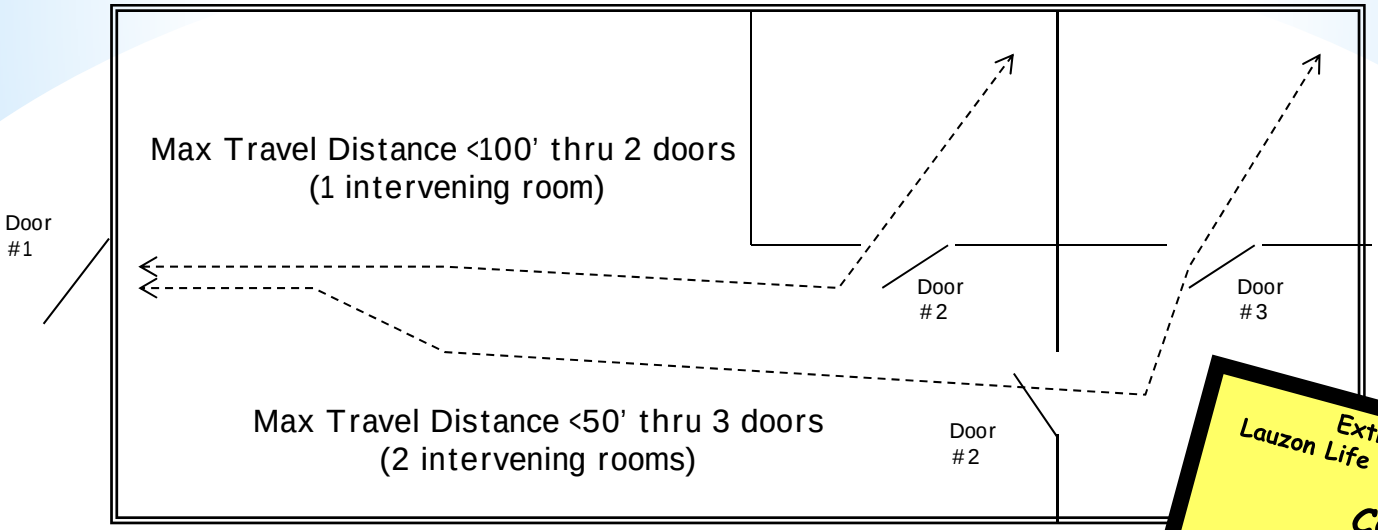
Inside of suites there are no corridors

There are no min widths or door latching requirements.
Doors can slide without breaking away or latching

SUITES-NON SLEEPING [LSC 18/19.2.5; 20/21.2.4.2] Inspection Guides

Non-Sleeping Suites: Max 10,000 SF; if =>2,500 SF need 2 exits [LSC 18/19; 20/21.2.4.2]

Travel Distance in Non-sleeping suites:



Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

Inside of suites there are no corridors

There are no min widths or door latching requirements. Doors can slide without breaking away, latching or single motion release

HEALTH CARE EXIT PATHS – Arrangement

18.2.5.9 & .10 -- Corridors

NEW

1. **"Every corridor shall provide access to not less than two approved exits in accordance with Sections 7.4 and 7.5 without passing through any intervening rooms or spaces other than corridors or lobbies"**

2. *Every exit or exit access shall be arranged so that no corridor, aisle, or passageway has a pocket or dead end exceeding 30'*

HEALTH CARE EXIT PATHS – Arrangement

19.2.5.9 & .10 -- Corridors

EXISTING

1. **"Every corridor shall provide access to not less than two approved exits in accordance with Sections 7.4 and 7.5 without passing through any intervening rooms or spaces other than corridors or lobbies"**

2. ~~*Every exit or exit access shall be arranged so that no corridor, aisle, or passageway has a pocket or dead end exceeding 30'*~~
   "Existing dead-end corridors shall be permitted to be continued to be used if it is impractical and unfeasible to alter them so that exits are accessible in not less than two different directions from all points"

HEALTH CARE EXIT PATHS – Arrangement

18.2.6 -- Travel Distances

NEW

1. Measure travel distances per Section 7.6

2. Max 150’ between any door required as an exit access and an exit

3. Max 200’ between any point in a room and an exit

4. Max 50’ between any point in a patient sleeping room and an exit access door

5. Max 100’ between any point in a patient sleeping suite and an exit access door

HEALTH CARE EXIT PATHS – Arrangement

19.2.6 -- Travel Distances

EXISTING

1. **Measure travel distances per Section 7.6**

2. **Max ~~150'~~ 100' between any door required as an exit access and an exit**
    1. *Exception: add 50' if bldg fully sprinkled*
3. **Max ~~200'~~ 150' between any point in a room and an exit**
    1. *Exception: add 50' if bldg fully sprinkled*
4. **Max 50' between any point in a patient sleeping room and an exit access door**

5. **Max 100' between any point in a patient sleeping suite and an exit access door**

HEALTH CARE EXIT PATHS – Arrangement

18/19.2.7 – Discharge from Exits

"shall be arranged in accordance with section 7.7"

18/19.2.8 – Illumination of Means of Egress

"shall be illuminated in accordance with section 7.8"

18/19.2.9 – Emergency Lighting

"shall be in accordance with section 7.9"

All:
N & E
Same

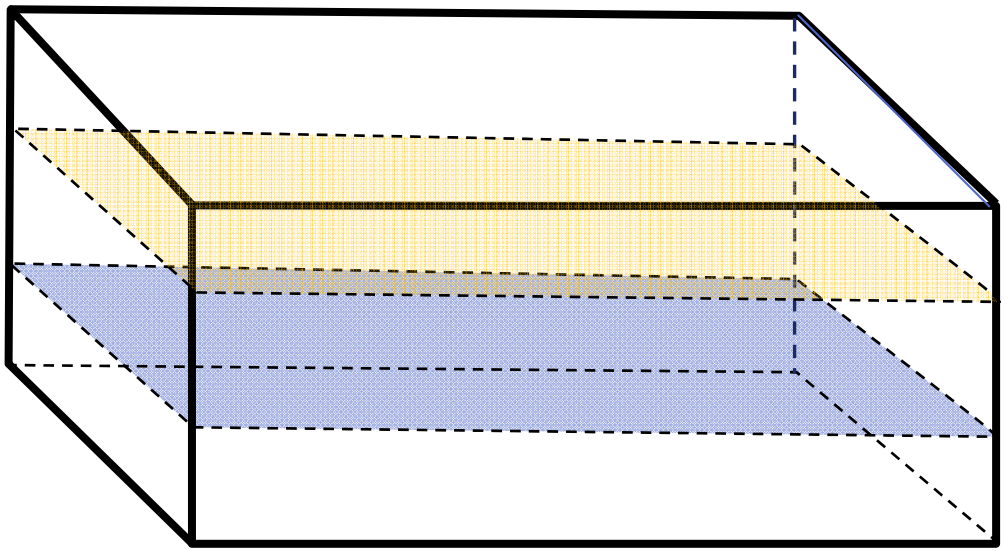
18/19.2.10 – Marking of Means of Egress

"shall be in accordance with section 7.10"

NEW ONLY: if patients require use of life-support systems
illumination of signs powered by the life safety branch per NFPA 99

HEALTH CARE OCCUPANCY

SUPPRESSION SYSTEM



NEW

18.3.5 "shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7."

HEALTH CARE SUPPRESSION

NEW

FULLY SPRINKLER EXCEPTION:
"In Type I & II construction, where approved by the AHJ, alternative protection measures shall be permitted to be substituted for sprinkler protection in specific areas where the AHJ has prohibited sprinklers, without causing a building to be classified as non-sprinklered"

QUICK-RESPONSE SPRINKLERS: "shall be used throughout smoke compartments containing patient sleeping rooms."

PORTABLE FIRE EXTINGUISHERS: "shall be provided in accordance with Section 9.7.4.1"

SPRINKLERS - PROPERTIES

Two Spare Sprinklers must be on premises for each individual configuration used at the facility. There are many sprinkler properties that must be taken into account

PHYSICAL CONFIGURATION

Conventional

Upright

Pendent

Horizontal Sidewall

Vertical Sidewall

Recessed Pendent

Recessed Pendent

Concealed Horizontal Sidewall

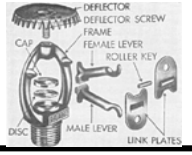
Concealed Pendent

Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

THERMAL RESPONSE

Quick Response

Standard Response



TEMPERATURE

COLOR		TEMP to ACTIVATE	
Red	-	Ordinary	135-170d F
Green	-	Intermediate	175-225d F
Blue	-	High	250-300d F

ORIFICE K-Factors

1.4	5.6	16.8
1.9	8.0	19.6
2.8	11.2	22.4
4.2	14.0	25.2

SPRINKLER (K-56,60,61,74) Inspection Guides

This is only a partial list that shows the most frequently cited requirements … Check the full code

Item	What to Check	NEW Requirement	EXISTING
Missing	1. 2-Hr Exception – missing element 2. Canopy, Extr Roof 3.Room	1.Exception for NOT sprinkling electrical spaces requires a 2-hour enclosure around space, which includes: a 2-hour rated wall, sealed penetrations, fire damper, door closer, positive latching, rated door. An exception permits AHJ to approve non-electrical spaces in Type I & II bldgs if there is a heat/smoke detector. [NFPA 101, 18.3.5.1 (exception)] 2. Roof projections >4' wide must be sprinkled unless made of non-combustible mtls. [NFPA 13 (1999), 5-13.8.1] 3. All portions of rooms must be sprinkled [NFPA 101 (2000), 18.2.2.2.4 and 7.2.1.6.1]	Same as NEW
Spacing	1. Ceiling Dist 2. Too Close 3. Too Far	1. Max 22" below ceiling [NFPA 13 (1999 edition), 5-5.4.1] 2. Min 4" to wall; Min 60" apart (closer if have a 6" baffle between) [NFPA 13 (1999), 5-6.3] 3. Max 15' apart; Max 7-1/2' apart (9' in small rm <800 sf) [NFPA 13 (1999), 5-6.3]	Same as NE W
Obstructions	1. Ceiling 2. Wall	1. Items can't be placed within 18" below the deflector, except at the room perimeter. [NFPA 13 (1999), 5-6.5] 2. Wall must not block sprinkler water from reaching an unprotected area [NFPA 13 (1999), 5-6.5]	Same as NEW
Cubical Curtains	1. Cubical Curtain-Mesh Top	1. Cubical curtain must have mesh top with 1/2" openings if they could obstruct sprinkler water distribution; [NFPA 13 (1999), 5-6.5.2.3 and explanatory material in Appendix A.]	Same as NEW
Flow Switch	1. Flow Switch	1. Sprinkler sys must have a water flow switch [NFPA 101 (2000), 18.7 and 9.6.2.1, and NFPA 72, 3-8.3.1.2]	Same as W
Valve	1. Supervised	1. All isolation control valves must be supervised [NFPA 101 (2000 and NFPA 72]	
Outage	1. Outage Policy	1. Sprinkler outage for 4 hr in any 24 hr period must notify Wis DQA; and either evacuate or have documented fire watch by dedicated trained staff in portions w/o sprinkler. staff notified & instructed what to do incase of a fire. [NFPA 101 (2000), 9.7.6.1]	NE

SPRINKLER (K-56,60,61) Inspection Guides

This is only a partial list that shows the most frequently cited requirements … Check the full code

Item	What to Check	NEW Requirement (More Info: P36)	EXISTING Requirement
Flow Switch	1. Flow Switch	1. Sprinkler sys must have a water flow switch [NFPA 101 (2000 edition), 18.3.4.2 and 9.6.2.1, and NFPA 72, 3-8.3.1.2]	Same as NEW
Valve	1. Supervised	1. All isolation control valves must be supervised [NFPA 101 (2000 edition), 9.7.2.1 and NFPA 72]	Same as NEW
Outage	1. Outage Policy	1. Sprinkler outage for 4 hr in any 24 hr period must notify Wis DQA; and either evacuate or have documented fire watch by dedicated trained staff in portions w/o sprinkler. staff notified & instructed what to do incase of a fire. [NFPA 101 (2000 edition), 9.7.6.1]	Same as NEW

Hydraulic Design must be submitted for new piping over 20 heads.

Light Haz: typ hosp/nrsg home (.1gpm/sf)
Ord 1 Haz: kitchen, laundry, mech (.15gpm/sf)
Ord 2 Haz: lab, storage>8'hi (.2gpm/sf)

KEY AREAS TO INSPECT

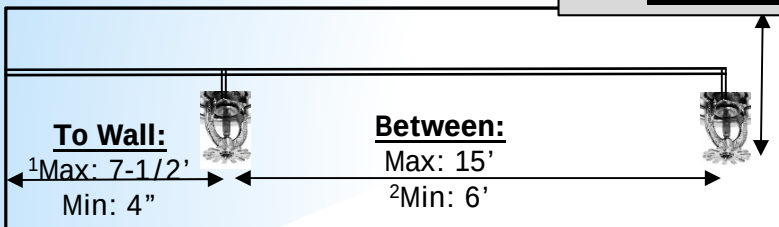
- Shelving in center of room
- Irregular-shaped rooms with alcoves, columns, etc..
- Window wells without sprinklers can be max 360 CF
- Rooms without ceilings must have full-height walls
- Small closets or rooms
- Open ceilings with exposed beams & soffits
- Hanging pipes, surface or hanging light fixtures, signs, headers, soffits
- Tall Built-In Cabinets must be sprinkled if large enough to contain a hazardous amount of combustible materials (d>18"x h>72",or can walk-in) that can't be controlled by sprinklers in the room. [CMS Ltr 05-38]

1. All rooms in NEW healthcare construction MUST be sprinkled as a light hazard (only exception: Main Elec Switchgear rooms with 2-hr walls all around); Patient areas must be Quick Response type.
2. **POTENTIAL BLOCKAGE RED FLAGS:** a). Anything projecting from ceiling (lights, signs, soffits, etc..) b). Anything on floor within 20" of ceiling c). Any Non-Rectangular shaped room (alcoves, protruding columns, etc..)

Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

SPRINKLER INSTALL – PENDENT & UPRIGHT

SPRINKLER DISTANCES



To Wall:
[1]Max: 7-1/2'
Min: 4"

Between:
Max: 15'
[2]Min: 6'

Down at a Smooth Ceiling: Max: 12"

Down at a Beamed Ceiling: Max: 22"

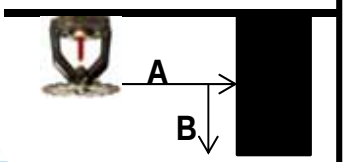
Down at a Sloped Ceiling: Max: 3' from peak

Coverage: Max 225 SF

Wide Objects (ducts, overhead doors, etc..: Install Sprinkler under if > 4' wide

Exceptions:
[1] Can be 9' from wall if in a small room <800 SF
[2] Can be closer if a 8" x 6" hi baffle is midway between the heads to prevent "Cold-soldering"

SPRINKLER OBSTRUCTIONS



HANGING DOWN FROM CEILING

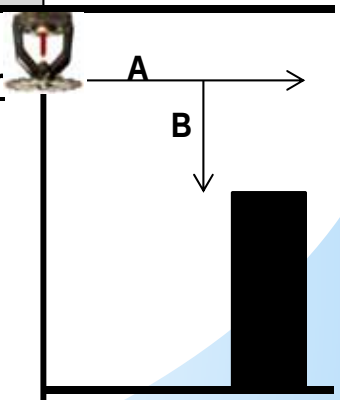
A – Distance to Obstruction	B – Max Distance Below Deflector
<12"	0"
12-18"	2.5"
18-24"	3.5"
24-30"	5.5"
30-36"	7.5"
36-42"	9.5"
42-48"	12"
48-54"	14"
54-60"	16.5"
>60"	18"

NFPA 13-1999, Table 5-6.5.1.2

FLOOR MOUNTED ITEMS

A – Horiz Dis to Obstruction	B – Min Distance Below Deflector
<6"	3"
6-9"	4"
9-12"	6"
12-15"	8"
15-18"	9.5"
18-24"	12.5"
24-30"	15.5"
>30"	18"

NFPA 13-1999, Table 5-6.5.2.3



Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

HEALTH CARE SUPPRESSION

NEW

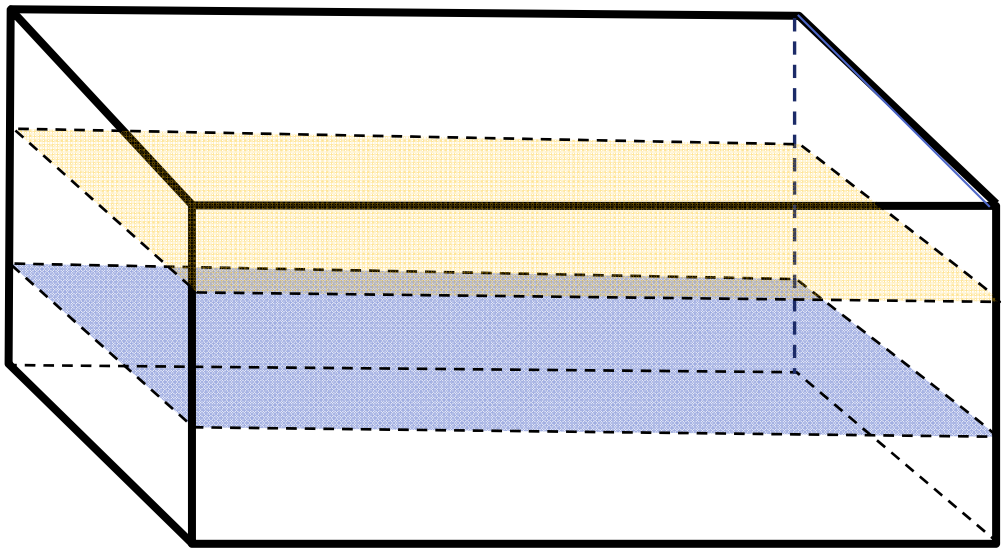
CUBLICAL CURTAINS:
"shall be in accordance with NFPA 13, Standard for Installation of Sprinkler Systems"

NFPA 13, Section 5-6.5.2.3*
"The distance from sprinklers to privacy curtains, free standing partitions, room dividers, and similar obstructions in light hazard occupancies shall be in accordance with Table 5-6.5.2.3 and Figure 5-6.5.2.3"

A-5-6.5.2.3 "The distances given in Table 5-6.5.2.3 were determined through tests in which privacy curtains with either a solid fabric or close mesh (1/4") top panel were installed. For broader-mesh top panels – for example ½") or greater measured on the diagonal – the obstruction of the sprinkler spray is not likely to be severe and the AJH might not need to apply the requirements in 5-6.5.2.3"

HEALTH CARE OCCUPANCY

SUPPRESSION SYSTEM



EXISTING

19.3.5 "Where required by 19.1.6 ... shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7."

HEALTH CARE SUPPRESSION

EXISTING

FULLY SPRINKLER EXCEPTION:
"In Type I & II construction, where approved by the AHJ, alternative protection measures shall be permitted to be substituted for sprinkler protection in specific areas where the AHJ has prohibited sprinklers, without causing a building to be classified as non-sprinklered"

~~QUICK-RESPONSE SPRINKLERS: "shall be used throughout smoke compartments containing patient sleeping rooms."~~

PORTABLE FIRE EXTINGUISHERS: "shall be provided in accordance with Section 9.7.4.1"

FIRE EXTINGUISHER (K-64) Inspection Guides

This is only a partial list that shows the most frequently cited requirements … Check the full code

Item	What to Check	NEW Requirement	EXISTING Requirement
Layout	1. Location	1. Must be conspicuously located, with unobstructed access, securely mounted, kept fully charged and operable, max 75' travel distance to a unit. [NFPA 101 (2000 ed), 9.7.4.1 and NFPA 10]	Same as NEW
Install	1. Height	1. Extinguishers weighing under 40 pounds to be installed at or below 60" above the floor and over 40 pounds at or below 40". NFPA 10 (1998 ed) 1-6.10]	Same as NEW

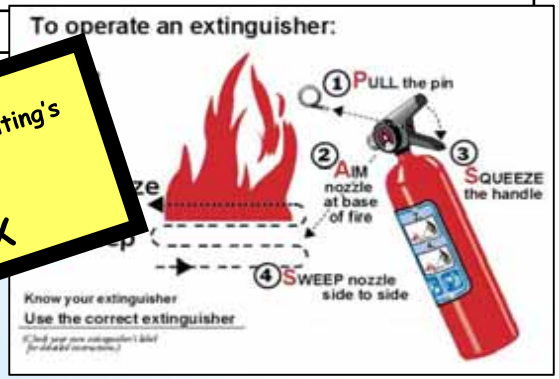
MONTHLY INSPECTIONS (NFPA 10-1998)

Tags on each unit or list;

Make sure your monthly Inspection procedures includes: (per NFPA 10-1998, *§4-3.2)*

1).No Obstructions,
2).Visible Instructions
3).Seal in place;
4). Pin in place
5). No Visible damage
6).Heft for fullness;
7).Gauge in range

Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX



Colour	Agent Type		Class A	Class B	Class C	Class E	Class F	Comments
	Water		✓	✗	✗	✗	✗	Dangerous if used on flammable liquid, energised electrical equipment and cooking oil/fat fires
	Dry Chemical Powder	ABE	✓	✓	✓	✓	✗	Look carefully at the extinguisher to determine if it is a ABE or BE unit. The capability is different.
		BE	✗	✓	✓	✓	✓	
	Air Foam		✓	✓	✗	✗	Limited	Dangerous if used on energised electrical equipment
	Wet Chemical		✓	✗	✗	✗	✓	Dangerous if used on energised electrical equipment

HEALTH CARE SUPPRESSION

EXISTING

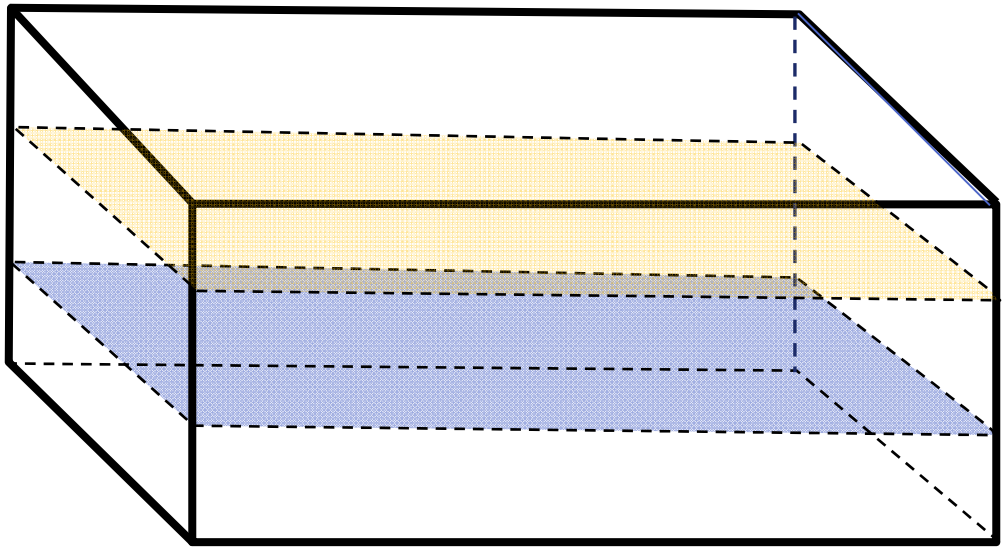
CUBLICAL CURTAINS:
"newly introduced ... shall be in accordance with NFPA 13, Standard for Installation of Sprinkler Systems"

NFPA 13, Section 5-6.5.2.3*
"The distance from sprinklers to privacy curtains, free standing partitions, room dividers, and similar obstructions in light hazard occupancies shall be in accordance with Table 5-6.5.2.3 and Figure 5-6.5.2.3"

A-5-6.5.2.3 "The distances given in Table 5-6.5.2.3 were determined through tests in which privacy curtains with either a solid fabric or close mesh (1/4") top panel were installed. For broader-mesh top panels – for example ½") or greater measured on the diagonal – the obstruction of the sprinkler spray is not likely to be severe and the AJH might not need to apply the requirements in 5-6.5.2.3"

HEALTH CARE OCCUPANCY

ALARM SYSTEM



N & E Same

18/19.3.4.1 “shall be provided with a fire alarm system in accordance with Section 9.6.”

HEALTH CARE ALARM SYSTEM

New

18.3.4.2 – INITIATION. "shall be by manual means in accordance with 9.6.2 and by means of any required sprinkler system waterflow alarms, detection devices, or detection systems."

Exception 1: Manual fire alarm boxes in patient sleeping areas shall not be required at exits if located at all nurses' control stations … provided [they] are visible, continuously accessible, and within travel distance

HEALTH CARE ALARM SYSTEM

Existing

19.3.4.2 – INITIATION. "shall be by manual me… accordance with 9.6.2 and by means of any required sprinkler system waterflow alarms, detection devices, or detection systems."

Exception 1: Manual fire alarm boxes in patient sleeping areas shall not be required at exits if located at all nurses' control stations … provided [they] are visible, continuously accessible, and within travel distance

Exception 2: Fixed extinguishing systems protecting commercial cooking equipment in fully sprinkled kitchens shall not be required to initiate the alarm sys

Exception 3: Detectors required by exceptions to 19.7.5.2 & 5.3 {furniture & mattress exception]

HEALTH CARE ALARM SYSTEM

New

18.3.4.3.1 – OCCUPANT NOTIFICATION. "shall be accomplished automatically in accordance with 9.6.3," but exception 3 shall be prohibited {auto door release detectors don't have to activate the evac alarm}

Exception 1: In lieu of audible alarm signals, visual appliances shall be permitted in critical care areas

HEALTH CARE ALARM SYSTEM

Existing

19.3.4.3.1 – OCCUPANT NOTIFICATION. "shall be accomplished automatically in accordance with 9.6.3~~," but exception 3 shall be prohibited {auto door release detectors don't have to activate the evac alarm}~~

Exception 1: In lieu of audible alarm signals, visual appliances shall be permitted in critical care areas

Exception 2: Where visual devices have been installed in patient sleeping areas in place of audible alarm, they shall be permitted where accepted by the AHJ

HEALTH CARE ALARM SYSTEM

New

18.3.4.3.2 – EMERGENCY FORCES NOTIFICATION. "Fire department notification shall be accomplished in accordance with 9.6.4"

Exception 1: "Smoke detection devices … or systems equipped with reconfirmation features shall not be required to automatically notify the fire department unless the alarm condition is reconfirmed after a period not exceeding 120 seconds."

18.3.4.3.3 – Alarm annunciation shall be provided in accordance with 9.6.7"

Exception 1: "The alarm zone shall be permitted to coincide with the permitted area for smoke compartments"

HEALTH CARE ALARM SYSTEM

Existing

19.3.4.3.2 – EMERGENCY FORCES NOTIFICATION. Fire department notification shall be accomplished in accordance with 9.6.4”

Exception 1: “Smoke detection devices … or systems equipped with reconfirmation features shall not be required to automatically notify the fire department unless the alarm condition is reconfirmed after a period not exceeding 120 seconds.”

~~18.3.4.3.3 – Alarm annunciation shall be provided in accordance with 9.6.7”~~

~~*Exception 1: “The alarm zone shall be permitted to coincide with the permitted area for smoke compartments”*~~

HEALTH CARE ALARM SYSTEM

New

18.3.4.5.1 – DETECTION. "Detection systems, where required, shall be in accordance with section 9.6"

18.3.4.5.2 – SPACES OPEN TO CORRIDORS. "See 18.3.6.1"

18.3.4.5.3 – NURSING HOMES. "detection system shall be installed in corridors throughout smoke compartments containing patient sleeping rooms"

Exception 1: not required where each patient sleeping room has approved smoke detection

Exception 2: not required where each patient room door has an auto door-closing device with integral smoke detector on the room side

HEALTH CARE ALARM SYSTEM

Existing

~~19.3.4.5.1 – DETECTION. "Detection systems, where required, shall be in accordance with section 9.6"~~

19.3.4.5.2 – SPACES OPEN TO CORRIDORS. "See 19.3.6.1"

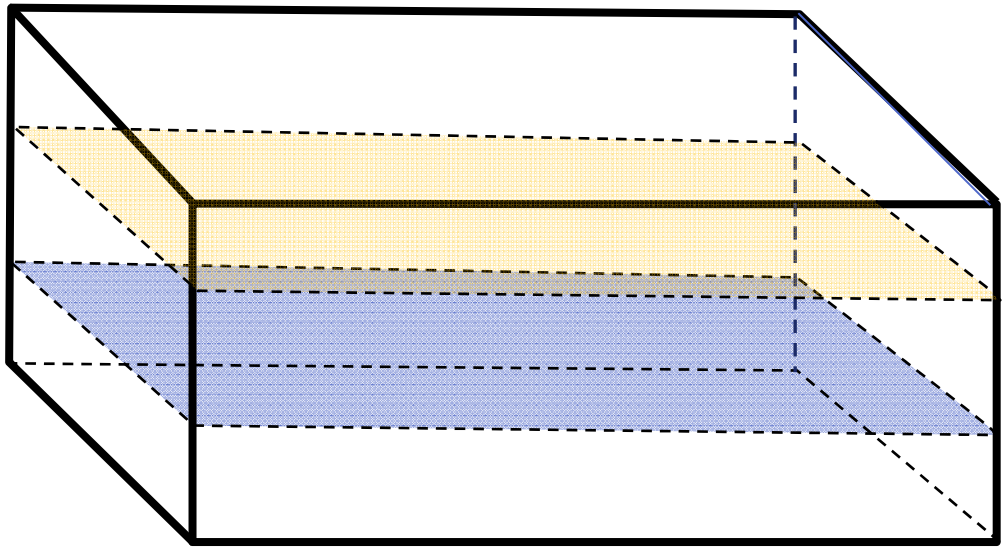
19.3.4.5.~~3~~ 1 – ~~NURSING HOMES.~~ LIMITED CARE FACILITIES. "detection system shall be installed in corridors throughout smoke compartments containing patient sleeping rooms, in accordance with section 9.6"

Exception 1: not required where each patient sleeping room and smoke barrier has approved smoke detection

Exception 2: not required ~~where each patient room door has an auto door-closing device with integral smoke detector on the room side~~ in fully sprinkled smoke compartments

HEALTH CARE OCCUPANCY

ELECTRICAL



N & E Same

18/19.5.1.1 “Utilities shall comply with the provisions of Section 9.1”

HEALTH CARE ELECTRICAL SYSTEM

New

18.5.1.2 "power for alarms, emergency communication system and illumination of generator set location shall be in accordance with the essential electrical system requirements of NFPA 99."

18.5.1.3 if normally used, life-supporting devices shall have electrical systems designed and installed in accordance with NFPA 99

Exception 1: not apply if use life-support equipment for emergency purposes only

HEALTH CARE ELECTRICAL SYSTEM

Existing

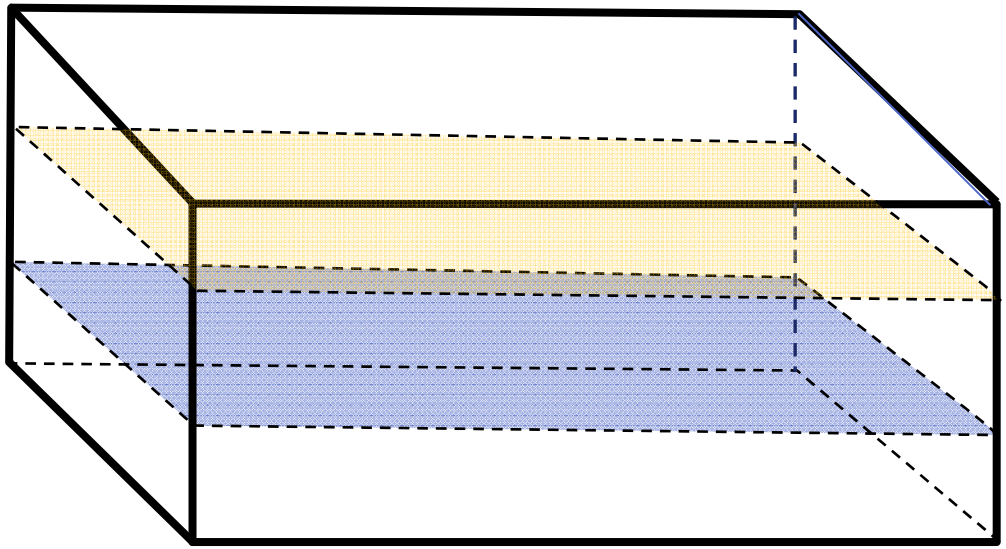
18.5.1.2 “power for alarms, emergency communication system and illumination of generator set location shall be in accordance with the essential electrical system requirements of NFPA 99.”

18.5.1.3 if normally use life-supporting devices shall have electrical systems designed and installed in accordance with NFPA 99

Exception 1: not apply if use life-support equipment for emergency purposes only

HEALTH CARE OCCUPANCY

HVAC



N & E Same

18/19.5.2.1 HVAC shall comply with the provisions of Section 9.2 and shall be installed in accordance with the manufacturer's specifications"

HEALTH CARE HVAC SYSTE

N & E
Same

18/19.5.2.2

- **other than central plant, heating devices shall be installed so combustible materials will not be ignited**

- **Fuel-fired devices shall**
  - **be chimney or vent connected**
  - **take air for combustion directly from outside**
  - **Combustion system completely separated from occupied spaces**

- **Have safety features to immediately stop the flow of fuel & shut down in case of excessive temperatures or ignition failure**

HEALTH CARE HVAC SYSTE

N & E Same

18/19.5.2.2

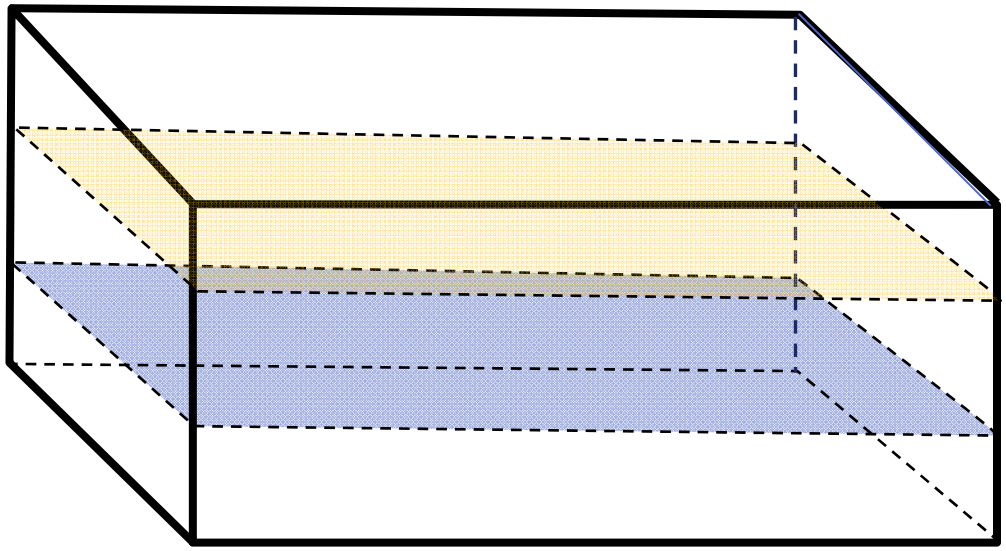
Exception 1. Approved suspended unit heaters not located in means of egress & patient sleeping areas, provided they are out of reach of occupants

Exception 2. Fireplaces permitted in non-patient sleeping areas, provided

- *Area 1-hr separated from patient sleeping areas*
- *Fireplaces comply with section 9.2.2 {NFPA 54, 70 & 211}*
- *Has hearth raised not less than 4”*
- *Has enclosure guaranteed against breakage up to a temperature of 650° & constructed of tempered glass*
- *Must lock the enclosure or other precautions, if AHJ feels there is a special hazard*

HEALTH CARE OCCUPANCY

OPERATING FEATURES



HEALTH CARE OPERATING FEATURES

N & E Same

18/19.7.1.1 – EVACUATION & RELOCATION PLAN
Shall have in effect a plan:

1. **For the protection of all persons in a fire**
2. **For their evacuation to areas of refuge**
3. **For their evacuation from the building if necessary**

- **Available to all supervisory staff:**
- **Written**
- **Employees periodically instructed & kept informed to their duties**
- **Readily available at all times in the telephone operator's position or the security center**

HEALTH CARE OPERATING FEATURES

18/19.7.1.2 – FIRE DRILLS. Shall include:

1. **Transmission of signal**
2. **Simulation of emergency fire condition**
3. **Conducted quarterly on each shift**
4. **Conducted under varied conditions to familiarize staff with signals and emergency actions**

N & E Same

- **If conducted between 9 pm and 6 am, a coded announcement shall be permitted instead of audible alarms**
- **Infirm or bedridden patients shall not be required to be moved during drills to safe areas or to the exterior of the building**

FIRE DRILL Guides (K-50)

Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

FIRE DRILL LOG FOR YEAR _____

	1st SHIFT			2nd SHIFT			3rd SHIFT		
	Date	Time	Loc	Date	Time	Loc	Date	Time	Loc
Jan									
Feb									
Mar									
Apr									
May									
Jun									
Jul									
Aug									
Sep									
Oct									
Nov									
Dec									

FIRE DRILL DOCUMENTATION MUST INCLUDE:

NFPA 101-2000 *§18/19.7.1.2*

1).Quarterly per Shift,
2).Staff Activate Alarms;
3). Verify Transmission;
4).Vary Locations & Times;
5) Qualified Leader;
6).Staff Participation;
7).Evaluation Report

HEALTH CARE OPERATING FEATURES

18/19.7.2.1 – PROCEDURES IN CASE OF FIRE

N & E Same

Shall include:

1. **Removal of all occupants directly by fire**
2. **Transmission of alarm signal to warn occupants and summon staff**
3. **Confinement of fire by closing doors to isolate the fire area**
4. **Relocation of patients**

RACE

HEALTH CARE OPERATING FEATURES

Fire Emergency Response

R Rescue

A Alarm

C Contain

E ~~Extinguish~~ → Evacuate

HEALTH CARE OPERATING FEATURES

18/19.7.2.2 –FIRE SAFETY PLAN

N & E Same

Shall include:

1. **Use of alarms**
2. **Transmission of alarm to fire department**
3. **Response to alarms**
4. **Isolation of fire**
5. **Evacuation of immediate area**
6. **Evacuation of smoke compartment**
7. **Preparation of floors & building for evacuation**
8. **Extinguishment of fire**

9. **Staff instructed in the use of & response to fire alarms**
10. **Staff instructed in the use of a code phrase**

HEALTH CARE OPERATING FEATURES

N & E
Same

18/19.7.2.3 – STAFF INSTRUCTION

Cover the use of & response to fire alarms

Cover use of a code phrase when

- **The person who discovers a fire must go to aid of an endangered person**
- **If fire alarm system malfunctions**

When hearing the code phrase, staff must

1. **Activate the nearest manual fire alarm pull**
2. **Immediately execute their fire response duties**

HEALTH CARE OPERATING FEATURES

N & E Same

18/19.7.4 – SMOKING

Smoking regulations shall be adopted and shall include not less than the following provisions:

1. **Smoking shall be prohibited in any room where combustible liquids/gases or oxygen is used or stored and any hazardous location and shall have signs that read NO SMOKING**

   Exception: Do not need room signs if NO SMOKING signs are posted at major building entrances if all smoking is prohibited

2. **Smoking by patients classified as not responsible shall be prohibited (unless under direct supervision)**

HEALTH CARE OPERATING FEATURES

N & E Same

18/19.7.4 – SMOKING

3. **Ashtrays of noncombustible material and safe design shall be provided in all areas where smoking is permitted.**

4. **Metal containers with self-closing cover devices into which ashtrays can be emptied shall be readily available to all areas where smoking is permitted.**

HEALTH CARE OPERATING FEATURES

New

18.7.5 – FURNISHINGS & DECORATIONS

1. **Drapery, curtains & other loose hanging fabrics … shall be in accordance with 10.3.1 (NFPA 701)**

2. **Newly introduced upholstered furniture shall meet the criteria when tested per 10.3.2(2) & 10.3.3**

3. **Newly introduced mattresses shall meet the criteria when tested per 10.3.2(3) & 10.3.4**

HEALTH CARE OPERATING FEATURES

New

18.7.5 – FURNISHINGS & DECORATIONS

4. Combustible decorations shall be prohibited unless they are flame-retardant

Exception: Combustible decorations such as photographs & paintings, in such limited quantities that a hazard of fire development is not present

HEALTH CARE OPERATING FEATURES

New

18.7.5 – FURNISHINGS & DECORATIONS

5. Soiled Linen & trash collection receptacles shall not exceed 32 gal;

- **avg density of container capacity shall not exceed .5 gal/SF;**
- **capacity of 32 gal shall not be exceeded in any 64 SF.**
- **Mobile receptacles with capacities greater than 32 gal shall be located in a room protected as a haz area**

Exception: container size & density shall not be limited in hazardous areas

HEALTH CARE OPERATING FEATURES

Existing

19.7.5 – FURNISHINGS & DECORATIONS

1. **Drapery, curtains & other loose hanging fabrics … shall be in accordance with 10.3.1 (NFPA 701)**

2. **Newly introduced upholstered furniture shall meet the criteria when tested per 10.3.2(2) & 10.3.3**
   Exception: Furniture belonging to patient in sleeping room with a smoke detector
3. **Newly introduced mattresses shall meet the criteria when tested per 10.3.2(3) & 10.3.4**
   Exception: Mattress belonging to patient in sleeping room with a smoke detector

HEALTH CARE OPERATING FEATURES

N & E Same

19.7.5 – FURNISHINGS & DECORATIONS

4. Combustible decorations shall be prohibited unless they are flame-retardant

Exception: Combustible decorations such as photographs & paintings, in such limited quantities that a hazard of fire development is not present

HEALTH CARE OPERATING FEATURES

N & E Same

19.7.5 – FURNISHINGS & DECORATIONS

5. **Soiled Linen & trash collection receptacles shall not exceed 32 gal;**
   - **avg density of container capacity shall not exceed .5 gal/SF;**
   - **capacity of 32 gal shall not be exceeded in any 64 SF.**
   - **Mobile receptacles with capacities greater than 32 gal shall be located in a room protected as a haz area**

   Exception: container size & density shall not be limited in hazardous areas

HEALTH CARE OPERATING FEATURES

N & E Same

19.7.8 – PORTABLE SPACE HEATERS

Portable space-heating devices shall be prohibited in all health care occupancies.

Exception: Portable space-heating devices shall be permitted to be used in non-sleeping staff and employee areas where the heating elements of such devices do not exceed 212°F

SPACE HEATERS/FIREPLACES (K-70, 71) Inspection Guides

Item	What to Check	NEW Requirement	EXISTING Requirement
Space Heaters	1. Policy	1. Space heaters permitted only in non-sleeping areas, with elements not exceeding 212 degrees [NFPA 101, 18.7.8]	Same as NEW

NONE in patient sleeping area
NON-PATIENT: max 212º element

FIREPLACE IN NON-PATIENT SLEEPING ZONE:
- 1-hr separated from Pt Sleeping Zone
- Hearth raised 4"
- Tempered glass front rated for non-breakage up to 650º
- Lockable front if AHJ requires

(LSC18/19.5.2.2, exception 2)

FIREPLACE IN PATIENT SLEEPING ZONE: Must be sealed combustion unit with direct outside air supply & discharge & comply with NFPA 211 (LSC18/19.5.2.2)

CMS LETTER 12-21: Permits use of slightly more permissive rules contained in the 2012 edition of the LSC, such as use of direct vent fire places

Extracted from Lauzon Life Safety Consulting's CODE TOOL BOX

HEALTH CARE OPERATING FEATURES

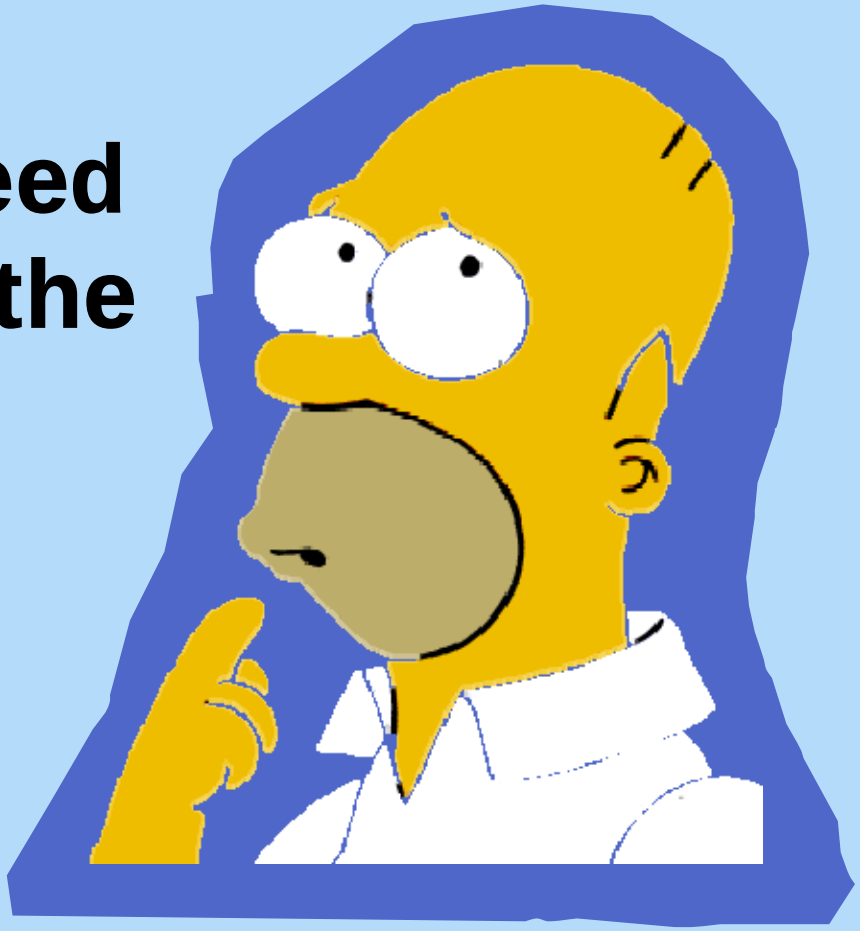
N & E Same

19.7.9 – CONSTRUCTION

Construction operations shall comply with 4.6.10

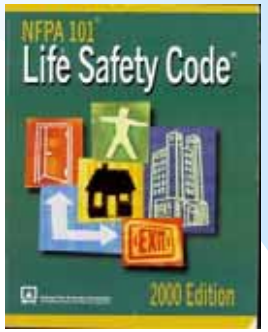
The means of egress of any area undergoing construction shall be inspected daily for compliance with 7.1.10.1 and shall also comply with NFPA 241

You DON'T need to memorize the Codes …



You just need to know where to look

Have Questions?



During the Live Webinar:

Click on "chat" in the Lower RH corner

(Bill gets disappointed if people don't ask questions)

During viewing the posted Webinar:

Call Bill Lauzon (262-945-4567) or

E-Mail at Lauzon.LSC@gmail.com