

International Existing Building Code – *How it Works*
Presented Fall - 2010

**International Existing
Building Code**
How it works

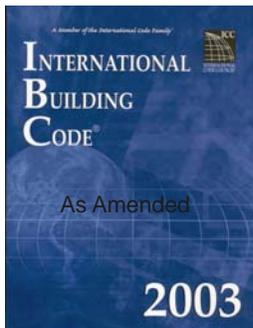
Presented by

Joe Versteeg

Code Compliance & Fire Safety Consultants
86 University Drive
Torrington CT 06790
860.480.3951
jhversteeg@aol.com

Seminar Objective

Provide an understanding of the requirements governing repair, alterations, and improvement work; as well as correction of Fire Safety Code violations



12/31/05: 2005 CT Supplement
08/01/09: 2009 CT Amendment

International Existing Building Code – *How it Works*
Presented Fall - 2010

Application

Applies to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

Application

Exceptions:

1. IRC.
2. Existing buildings undergoing repair, movement, alterations or additions and change of occupancy shall be permitted to comply with the *2003 IEBC*.

Application

Exception 2: *continued*

The choice to comply with *CSBC* or *IEBC* shall be made by the permit applicant at the time of application for the building permit and shall be indicated on the construction documents in writing.

International Existing Building Code – *How it Works*
Presented Fall - 2010

Definitions

Alteration. Any construction or renovation to an existing structure other than repair or addition.

Repair. The reconstruction or renewal of any part of an existing building for the purpose of its maintenance.

Definitions

Existing structure. A structure erected prior to the date of adoption of the appropriate code, or one for which a legal building permit has been issued.

Permits

Required.

Work exempt from permit:

Building – 12 items

Electrical – 3 items

Gas – 3 items

Mechanical – 8 items

Plumbing – 2 items

International Existing Building Code – *How it Works*
Presented Fall - 2010

Existing Buildings

The legal use and occupancy of any building or structure existing on the date of adoption of this code shall be permitted to continue without change, except as specifically covered in this Code or the 2005 Connecticut State Fire Safety Code.

Existing Buildings

No proposed work

- Chapter 34 – Maintenance
- Section 115 – Unsafe structures/equipment
- Section 116 – Emergency measures
- Section 117 – Vacant buildings
- Connecticut Fire Safety Code

Maintenance

Buildings and structures, and parts thereof, shall be maintained in a safe and sanitary condition.

Devices or safeguards which are required by this code shall be maintained in conformance with the code edition under which installed.

International Existing Building Code – *How it Works*
Presented Fall - 2010

Maintenance - *continued*

The owner or the owner's designated agent shall be responsible for the maintenance of buildings and structures.

...the building official shall have the authority to inspect.

...this chapter shall not provide the basis for removal of fire protection and safety systems and devices in existing structures.

Unsafe Structures

Unsafe, insanitary or deficient because of inadequate egress facilities, inadequate light and ventilation, or which constitute a fire hazard, or are otherwise dangerous to human life or the public welfare, or that involve illegal or improper occupancy or inadequate maintenance

A vacant structure that is not secured against entry shall be deemed unsafe.

Vacant Buildings

Buildings, structures and/or premises

- Temporarily unoccupied
- Abandoned premises
- Safeguarding - security
- Fire protection
- Fire separation
- Combustibles – Hazardous materials

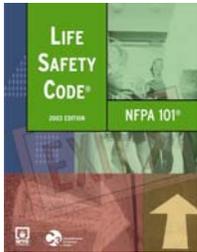
International Existing Building Code – *How it Works*
Presented Fall - 2010

Connecticut Fire Safety Code

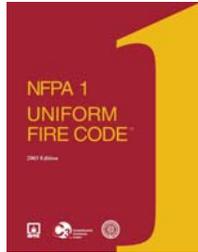
Existing buildings

- **Part I – Administrative**
- **Part II – General**
- **Part III – New Construction, Renovations, or Change of Use**
- **Part IV – Existing Buildings/Occupancies**
- **Part V – Maintenance & Operations**

CT Fire Safety Code



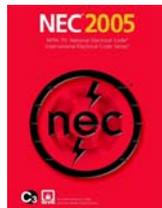
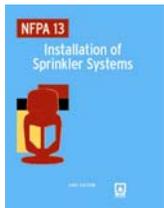
Part IV



Part V

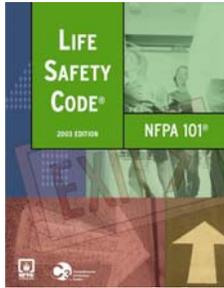
12/31/05: 2005 CT Supplement
08/01/09: 2009 CT Amendment

Part II - General



International Existing Building Code – *How it Works*
Presented Fall - 2010

**Part IV – Existing Buildings/
Occupancies**



As Amended

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

Excess Provisions

++
_____ **New Requirement**

+
_____ **Existing Requirement**

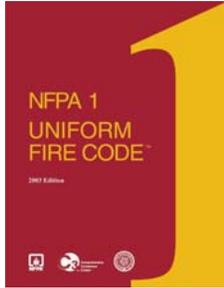


Contents

- Part I – Administrative
- Part II – General
- Part III – New Construction, Renovations, or
Change of Use
- Part IV – Existing Buildings/Occupancies
- Part V – Maintenance & Operations

International Existing Building Code – *How it Works*
Presented Fall - 2010

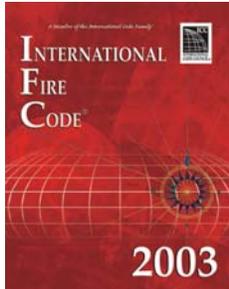
Part V – Maintenance & Operations



- General Fire Safety
- Building Services
- Fire Protection Systems
- Means of Egress
- Occupancy Fire Safety
- Commercial Cooking Equipment

As Amended

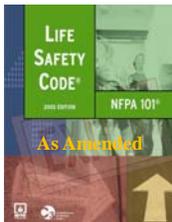
Part III – New Construction, Renovations, Change of Use



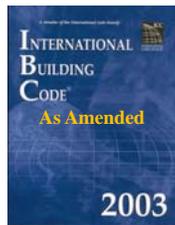
- New buildings
- Repairs, alterations, & additions
- Change of occupancy
- MEP & fire protection

As Amended

CFSC – Abatement Work



and

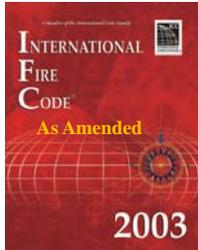


Work to correct cited violations
29-292-10e(4)

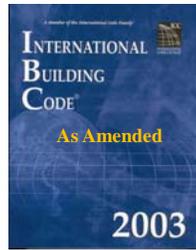
Fire Protection
MEP
Structural
105.1.3

International Existing Building Code – *How it Works*
Presented Fall - 2010

Alterations in Existing Buildings
(non CFSC abatement)



and

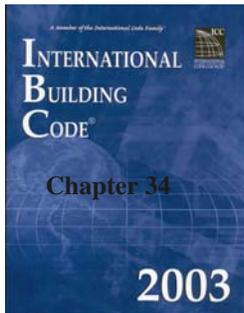


Existing Buildings

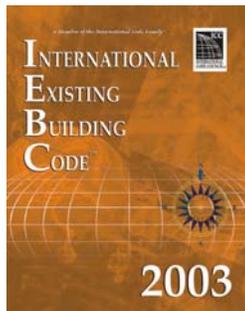
Additions or alterations to any building or structure shall conform with the requirements of the code for new construction.

Portions of the structure not altered and not affected by the alteration are not required to comply with the code requirements for a new structure.

Alternative Compliance

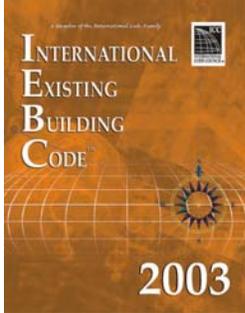


OR



International Existing Building Code – *How it Works*
Presented Fall - 2010

Alternative Compliance



As Amended

Contents

- Administration
- Definitions
- Classification of Work
- Repairs
- Alterations – Level 1, 2, and 3
- Change of Occupancy
- Additions
- Historic Buildings
- Relocated or Moved Buildings
- Compliance Alternatives
- Construction Safeguards

Work Areas

That portion or portions of a building consisting of all reconfigured spaces as indicated on the construction documents.

Work area excludes other portions of the building where incidental work must be performed and where work was not initially intended.

International Existing Building Code – *How it Works*
Presented Fall - 2010

Repair

Patching or restoration of materials, elements, equipment, or fixtures for the purpose of maintaining such materials, elements, equipment, or fixtures in good or sound condition.

Level 1 Alteration

Removal, replacement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose

Level 2 Alteration

Reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment.

International Existing Building Code – *How it Works*
Presented Fall - 2010

Level 3 Alteration

Applies where the work area exceeds 50 percent of the aggregate area of the building.

Dependency of Levels

	<u>Level 1</u>	<u>Level 2</u>	<u>Level3</u>
01	General	General	General
02	Special Use & Occupancy	Special Use & Occupancy	Special Use & Occupancy
03	Building Elements & Materials	Building Elements & Materials	Building Elements & Materials
04	Fire Protection	Fire Protection	Fire Protection
05	Means of Egress	Means of Egress	Means of Egress
06	Accessibility	Accessibility	Accessibility
07	Structural	Structural	Structural
08		Electrical	
09		Mechanical	
10		Plumbing	

Dependency of Levels

01	General	General	General
02	Special Use & Occupancy	Special Use & Occupancy	Special Use & Occupancy
03	Building Elements & Materials	Building Elements & Materials	Building Elements & Materials
04	Fire Protection	Fire Protection	Fire Protection
05	Means of Egress	Means of Egress	Means of Egress
06	Accessibility	Accessibility	Accessibility
07	Structural	Structural	Structural
08		Electrical	
09		Mechanical	
10		Plumbing	

International Existing Building Code – *How it Works*
Presented Fall - 2010

Level 1 Alteration

Flood Hazard Areas

- Substantial improvements – *1612 CSBC*
 - *Costs \geq 50% pre-construction market value, or*
 - *Structure substantially damaged*

Special Use & Occupancy – *new*

Level 1 Alteration

Building Elements & Materials

- Interior finish & carpeting – *new*
- Materials & methods – *new*
- CT Gas & Piping Code

Fire Protection – *maintain existing levels*

Level 1 Alteration

Means of Egress – *CFSC Part IV*

Accessibility

- A building, facility or element that is altered shall comply with applicable provisions of:
 - Sections 506.1.1 through 506.1.12,
 - Chapter 11 CSBC
 - ICC A117.1

International Existing Building Code – *How it Works*
Presented Fall - 2010

Level 1 Alteration

Accessibility - *continued*

- *Unless*
 - Technically infeasible,
 - Not on a required accessible route
 - Accessible means of egress not required
 - Type B units not required in existing

Level 1 Alteration

Structural

- Replacement of equipment supported by the building, or re-roofing permit required
 - Unless additional dead loads $\leq 5\%$,
- Evaluation of the roof diaphragm for wind resistance capabilities required if $> 50\%$ of roofing material removed.

Dependency of Levels

01	General	General	General
02	Special Use & Occupancy	Special Use & Occupancy	Special Use & Occupancy
03	Building Elements & Materials	Building Elements & Materials	Building Elements & Materials
04	Fire Protection	Fire Protection	Fire Protection
05	Means of Egress	Means of Egress	Means of Egress
06	Accessibility	Accessibility	Accessibility
07	Structural	Structural	Structural
08		Electrical	
09		Mechanical	
10		Plumbing	

International Existing Building Code – *How it Works*
Presented Fall - 2010

Level 2 Alteration

Comply with Level 2 and 1 Alterations

New construction, elements, components, systems & spaces – *CSBC*

Except:

- New windows from light & ventilation
- New electrical equipment per 608
- New dead-end corridors per 605.6
- New ceiling heights \geq 7-feet

Level 2 Alteration

Special Use & Occupancy – *Level 1*

Building Elements & Materials

- Vertical openings in Level 2 work areas – *14 variations*
- All vertical openings & egress stairs in work areas > 50% of a floor are governed

Level 2 Alteration

Building Elements & Materials

- Smoke barriers in I-2
- Interior finish in exits & corridors – *new*
- Guards (If not provided or requiring replacement) – *new*

**International Existing Building Code – How it Works
Presented Fall - 2010**

Level 2 Alteration

Fire Protection

- Apply throughout the work area w/ Level 2 Alteration in high-rise if work includes exit or corridor shared by > 1 tenant or OL > 30
- Apply throughout floor if above work > 50% floor area
- But only if there is sufficient water from existing standpipe or sprinkler riser

Level 2 Alteration

Fire Protection

- Apply throughout the work area w/ Level 2 Alteration in Groups A, E, F-1, H, I, M, R-1, R-2, R-4 & S if work includes exit or corridor shared by > 1 tenant or OL > 30, if
 - CBSC requires in new
 - Work area > 50% of floor area
 - Sufficient municipal water supply w/o fire pump

Level 2 Alteration

Fire Protection

- Mixed uses
- Windowless stories
- Standpipes
- Fire alarm & detection

International Existing Building Code – *How it Works*
Presented Fall - 2010

Level 2 Alteration

Means of Egress

- CFSC Part IV *and*
 - Number of exits
 - Fire escapes
 - Group A – main entrance
 - Egress doors
 - Dead-end corridors
 - Egress lighting
 - Handrails & guards

Level 2 Alteration

Accessibility

- Added stairs or escalators require an accessible route between stories
- CSBC Sections 1107 & CH 9 for alarms only apply to the Accessible or Type A units added

Level 2 Alteration

Structural

- Additional equipment supported by the building or reconfiguration that increases gravity loading
- Increased lateral loads
- Increased snow drift loads

International Existing Building Code – *How it Works*
Presented Fall - 2010

Level 2 Alteration

Electrical

- New work – *new*
- Existing wiring in A-1, A-2, A-5, H, & I work areas – *chapter 5 methods and materials*
- Residential features

Level 2 Alteration

Mechanical

- Reconfigured or new habitable spaces–
new
- Min. performance for existing systems if altered, reconfigured or extended
- Exhaust required if airborne matter, odor, fumes, ...allergens, pathogenic organisms in quantities causing discomfort

Level 2 Alteration

Plumbing

- Plumbing fixtures on a story when OL increases more than 20%– *new*

International Existing Building Code – *How it Works*
Presented Fall - 2010

Dependency of Levels

01	General	General	General
02	Special Use & Occupancy	Special Use & Occupancy	Special Use & Occupancy
03	Building Elements & Materials	Building Elements & Materials	Building Elements & Materials
04	Fire Protection	Fire Protection	Fire Protection
05	Means of Egress	Means of Egress	Means of Egress
06	Accessibility	Accessibility	Accessibility
07	Structural	Structural	Structural
08		Electrical	
09		Mechanical	
10		Plumbing	

Level 3 Alteration

Comply with Level 3, 2 and 1 Alterations

Special Use & Occupancy

- High-rise
 - Recirculating air systems
 - Elevators
- Boiler & Furnace Equipment

Level 3 Alteration

Building Elements & Materials

- Egress stairs require enclosure to the LED
- Interior finish in exits governed to LED

International Existing Building Code – *How it Works*
Presented Fall - 2010

Level 3 Alteration

Fire Protection

- Apply throughout the work area in HR if there is sufficient water from existing standpipe or sprinkler riser
- Within rubbish & linen chutes
- Fire alarm though out building

Level 3 Alteration

Means of Egress

- CFSC Part IV *and*
- Egress lighting and signs from highest work area to LED

Change of Occupancy

812.1 Comply with Chapter 7 & 802 – 812

- 802 – Chapter 4 special occupancy stuff
- 803 – Building elements & materials
- 804 – Fire protection
- 805 – Means of egress
- 806 – Accessibility
- 807 – Structural
- 808 – Electrical
- 809 – Mechanical
- 810 – Plumbing
- 811 – Light & ventilation

International Existing Building Code – How it Works
Presented Fall - 2010

Change of Occupancy

Partial change w/o separation

- Entire building

Partial change w/ separation

- Portion undergoing change

Compliance with Level 3 not required per 812.3

Change of Occupancy

TABLE 812.4.1
 HAZARD CATEGORIES AND CLASSIFICATIONS:
 LIFE SAFETY AND EXITS

RELATIVE HAZARD	OCCUPANCY CLASSIFICATION
1 (Highest Hazard)	H
2	I-2, I-3, I-4
3	A, E, I-1, M, R-1, R-2, R-4
4	B, F-1, R-3, S-1
5 (Lowest Hazard)	F-2, S-2, U

Life Safety & Exits

Change to higher hazard (lower number)

- Egress shall meet CH 10 CSBC
 - 7 minor exceptions

Change to equal or lower hazard (higher number)

- Existing egress meet 705
 - unless 812.3 is met
- New egress meet CH 10 CSBC

**International Existing Building Code – How it Works
Presented Fall - 2010**

Change of Occupancy

TABLE 812.4.2
HAZARD CATEGORIES AND CLASSIFICATIONS:
HEIGHTS AND AREAS

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	A-1, A-2, A-3, A-4, I, R-1, R-2, R-4
3	E, F-1, S-1, M
4 (Lowest Hazard)	B, F-2, S-2, A-5, R-3, U

Heights & Areas

Change to higher hazard (lower number)

- H & A shall meet CH 5 CSBC

Change to equal or lower hazard (higher number)

- H & A deemed acceptable
- Separated mixed use meet CH 3 CSBC

Change of Occupancy

TABLE 812.4.3
HAZARD CATEGORIES AND CLASSIFICATIONS:
EXPOSURE OF EXTERIOR WALLS

RELATIVE HAZARD	OCCUPANCY CLASSIFICATION
1 (Highest Hazard)	H
2	F-1, M, S-1
3	A, B, E, I, R
4 (Lowest Hazard)	F-2, S-2, U

International Existing Building Code – *How it Works*
Presented Fall - 2010

Exterior Walls

Change to higher hazard (lower number)

- Walls shall meet CH 6 & 7 CSBC
- exception for 2-hr walls if ≤ 3 stories
and B, M, F, or S & some A w/ OL < 300

Change to equal or lower hazard (higher number)

- Walls & openings deemed acceptable

Change of Occupancy

Change to equal or lower hazard (higher number) in all three categories

- Egress capacity
- Interior finish
- More if I-1, R-1, R-2, or R-3
- More if I-2
- More if I-3
- More if R-3

Historic Buildings



International Existing Building Code – *How it Works*
Presented Fall - 2010

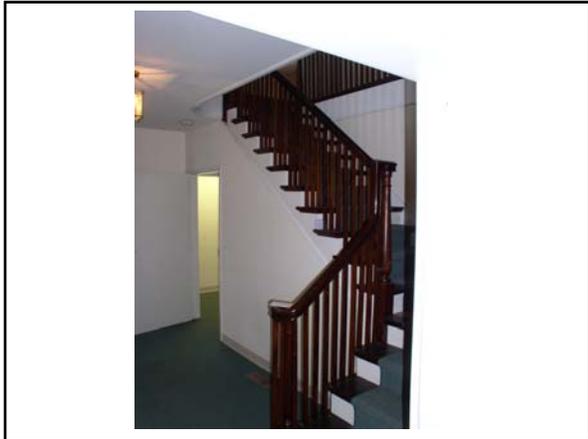
Work Governed

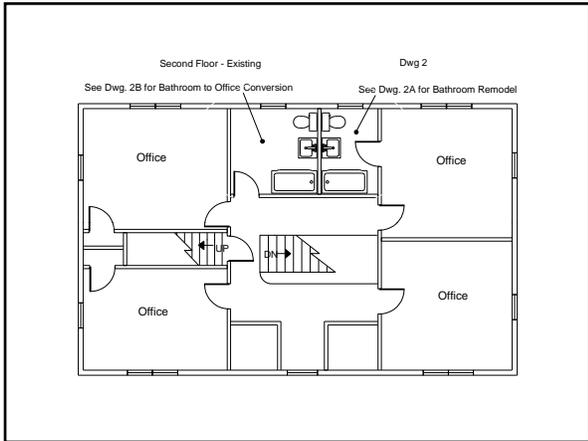
- Evaluation report
- Special occupancy exceptions - museums
- Flood hazard areas
- Repairs
- Fire safety
- Alterations
- Change of occupancy
- Structural

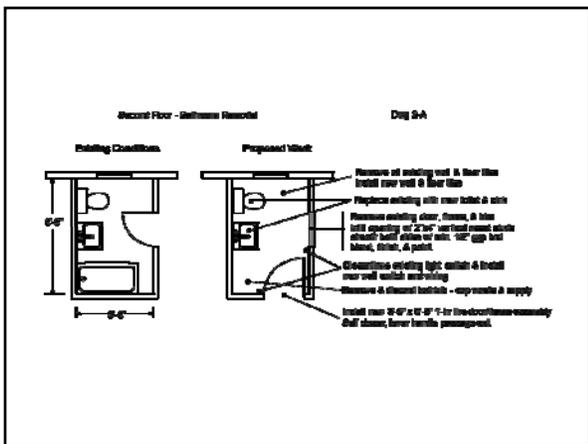
Participant Activity #1



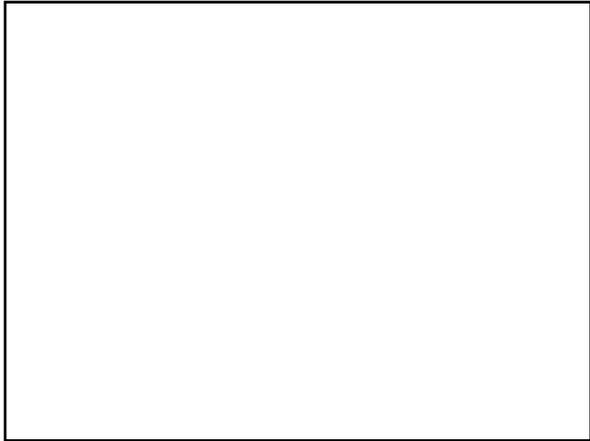
International Existing Building Code – *How it Works* Presented Fall - 2010

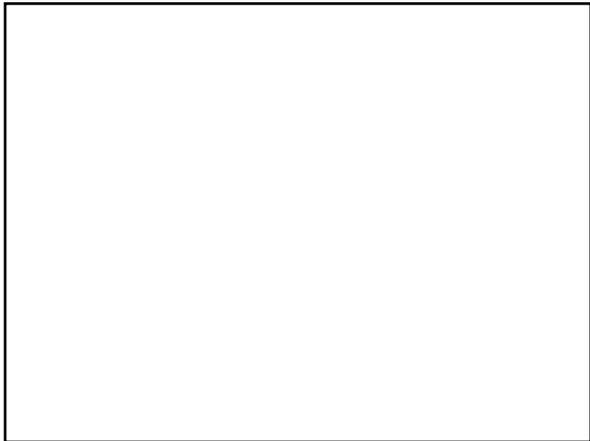


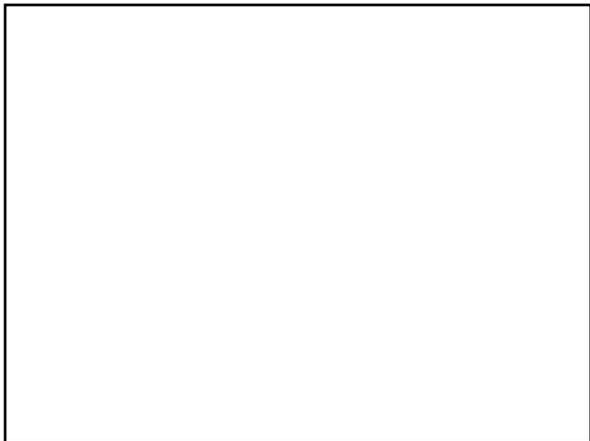




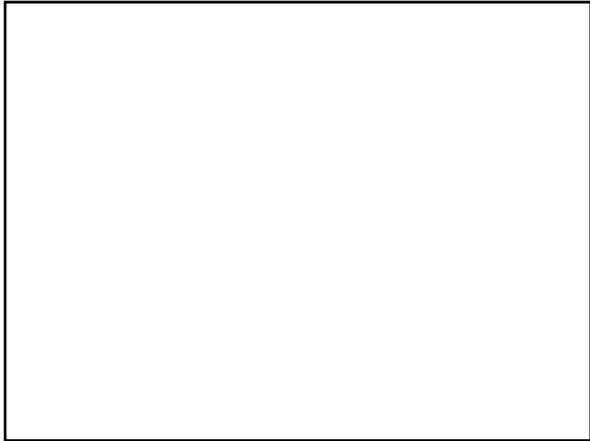
International Existing Building Code – *How it Works*
Presented Fall - 2010

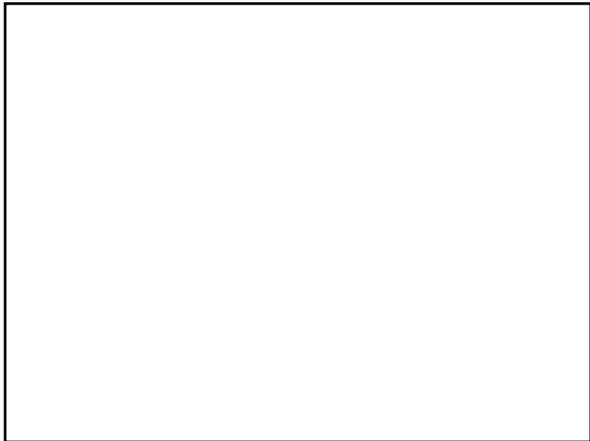


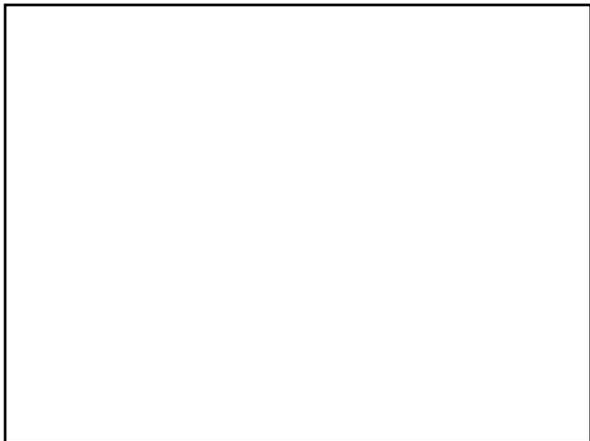




International Existing Building Code – *How it Works*
Presented Fall - 2010





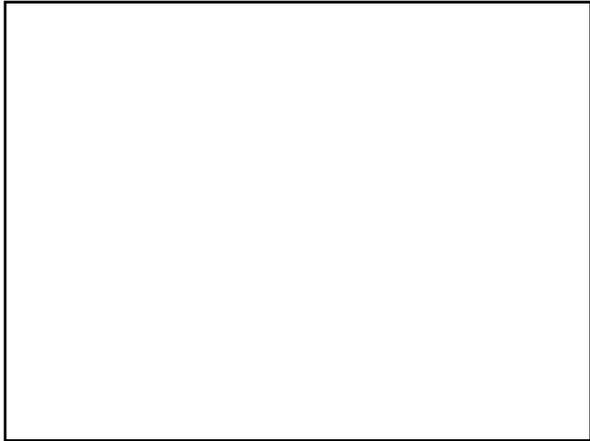


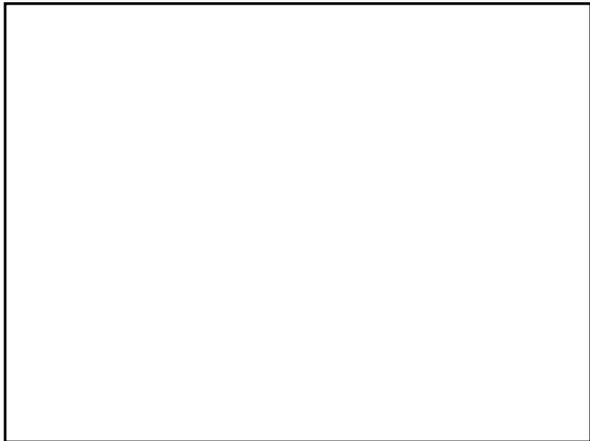
International Existing Building Code – *How it Works*
Presented Fall - 2010

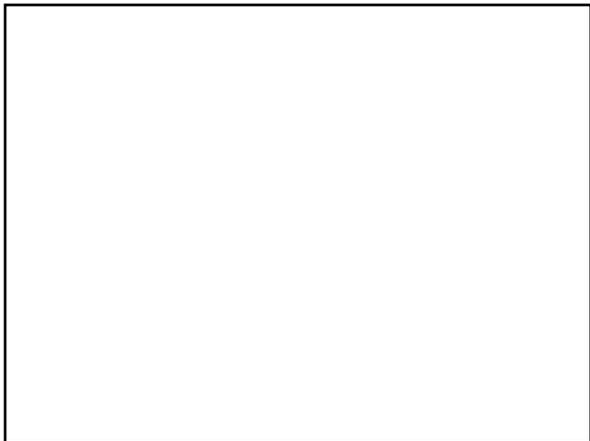
Dependency of Levels

		General	
		Special Use & Occupancy	
		Building Elements & Materials	
		Fire Protection	
		Means of Egress	
		Accessibility	
		Structural	
		Electrical	
		Mechanical	
		Plumbing	

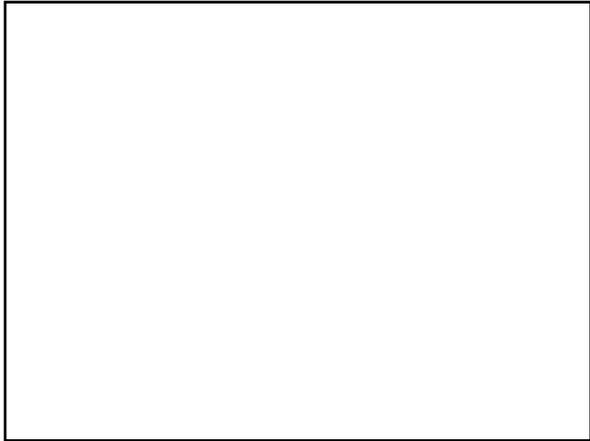
International Existing Building Code – *How it Works*
Presented Fall - 2010

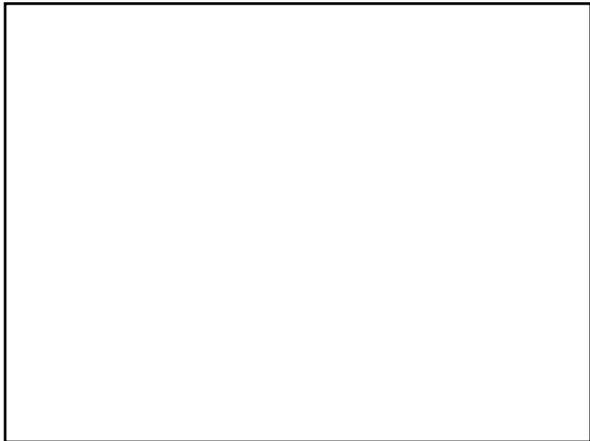


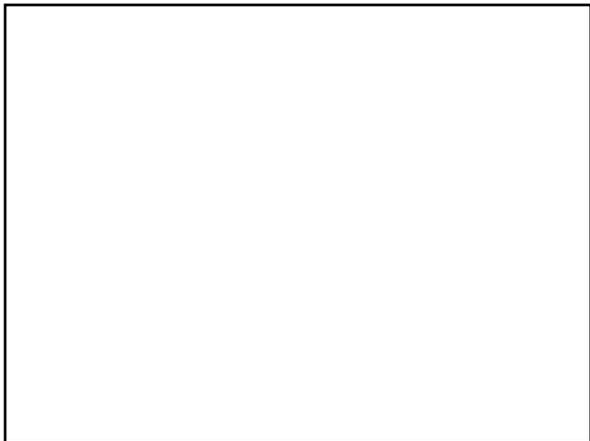




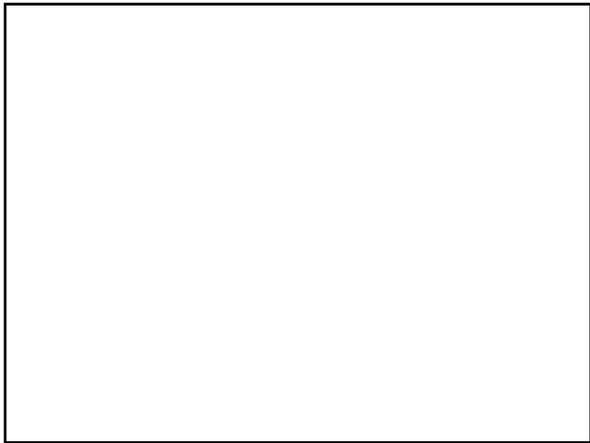
International Existing Building Code – *How it Works*
Presented Fall - 2010

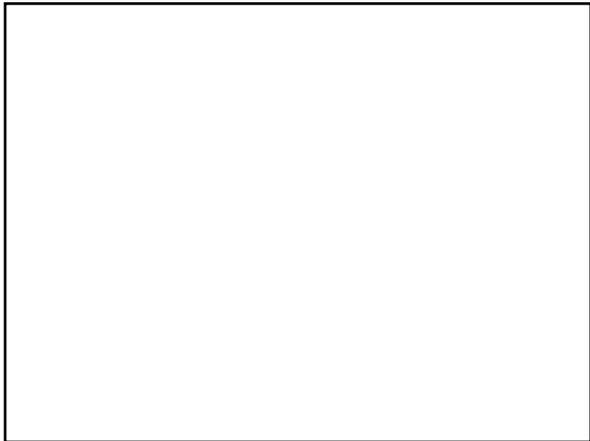


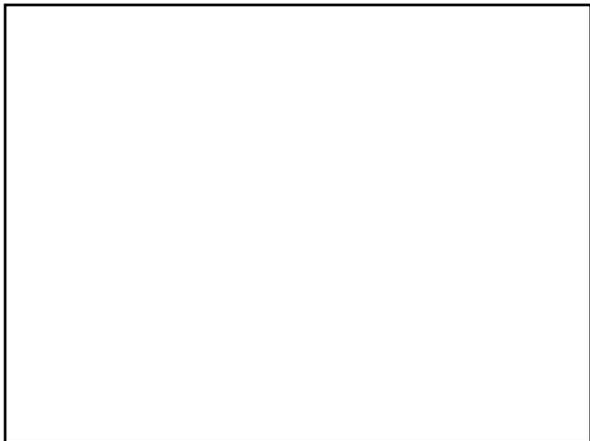




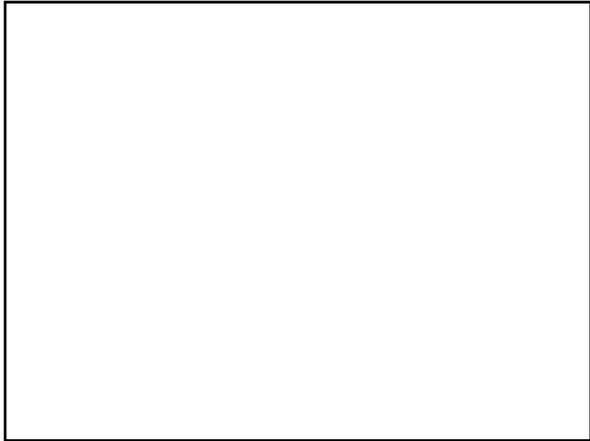
International Existing Building Code – *How it Works*
Presented Fall - 2010

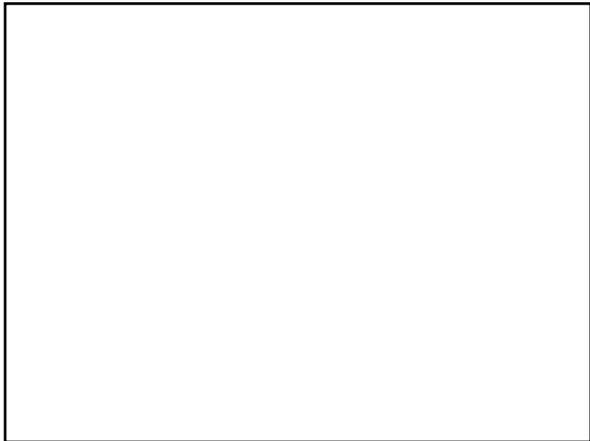


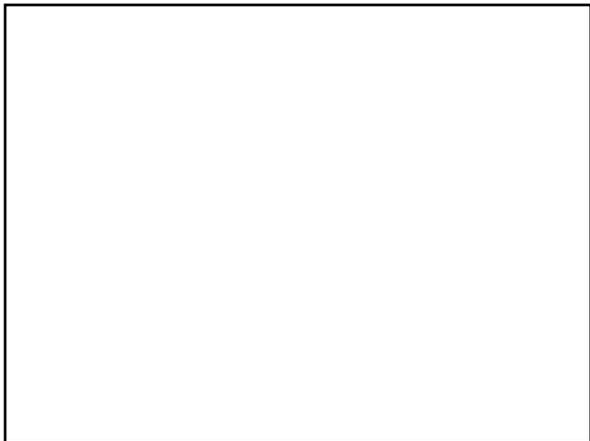




International Existing Building Code – *How it Works*
Presented Fall - 2010





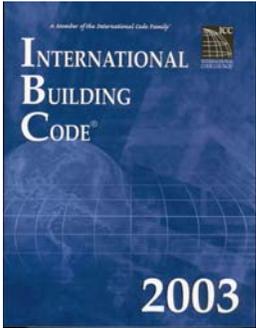


International Existing Building Code – *How it Works*
Presented Fall - 2010

Participant Activity #2



Article 34 - Alternative Compliance



As Amended

International Existing Building Code – How it Works
Presented Fall - 2010

Height value in feet = $\frac{(AH) - (EBH)}{12.5} \times CF$

Height value in stories = $(AS) - (EBS) \times CF$

Where:
AH = Allowable height in feet (Table 503)
EBH = Existing building height in feet
AS = Allowable height in stories (Table 503)
EBS = Existing building height in stories
CF = 1 if $(AH) - (EBH)$ is positive
CF = Type of construction factor shown in Table 3410.6.6(2) if $(AH) - (EBH)$ is negative.

Height value in feet = $\frac{(40) - (26)}{12.5} \times 1$

Height value in feet = 1.12

Height value in stories = $(2) - (3) \times 1$

Height Value in stories = -1

Allowable Area = $\frac{(SP + OP + 100) \times (\text{area in Table 503})}{100}$

Where:
SP = Percent increase for sprinklers (506.3)
OP = Percent increase for open perimeter (506.2)

Area value $i = \frac{\text{Allowable area } i}{1,200 \text{ sq. ft.}} \left[1 - \left[\frac{\text{Actual area } i}{\text{Allowable area } i} \right] \right]$

Where:
i = Value for an individual separated occupancy on a floor
n = Number of separated occupancies on a floor

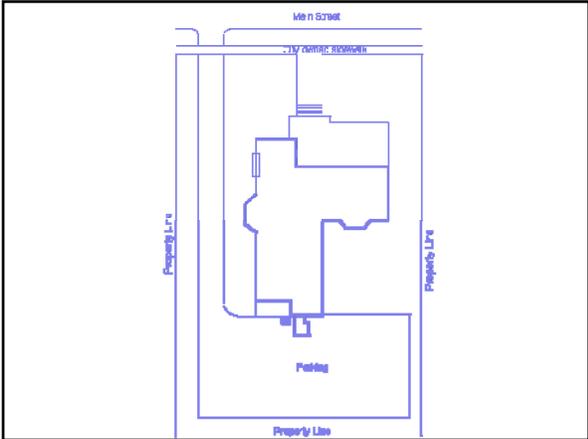
International Existing Building Code – *How it Works* Presented Fall - 2010

Allowable Area = $\frac{(0 + OP + 100) \times (9000)}{100}$

OP = Percent increase for open perimeter (506.2)

$$OP \text{ or } I_f = 100 \left[\frac{F}{P} - 0.25 \right] \frac{W}{30}$$

Where:
F = Bldg perimeter with 20' minimum open area
P = Total building perimeter
W = Weighted average of perimeter having a 20' min open area



Allowable Area = $\frac{(0 + 75 + 100) \times (9000)}{100}$

Allowable Area = 15,750 sq. ft.

$$OP \text{ or } I_f = 100 \left[\frac{220}{220} - 0.25 \right] \frac{30}{30}$$

OP = 75

International Existing Building Code – *How it Works*

Presented Fall - 2010

$$\text{Area value } i = \frac{15750}{1200} \left[1 - \left[\frac{1450}{15750} \right] \right]$$

Area value = 11.9

Compartmentation Values					
Occupancy	Categories				
	a ≥ 15,000 sq. ft.	b 10,000 sq. ft.	c 7,500 sq. ft.	d 5,000 sq. ft.	e ≤ 2,500 sq. ft.
A-1, A-3	0	6	10	14	18
A-2	0	4	10	14	18
A-4, B, E, S-2	0	5	10	15	20
F, M, R, S-1	0	4	10	16	22

1,450 sq ft per floor x 4 floors	7500.....10
	7000.....11
	6500.....12
5,800 sq ft total	6000.....13 ← 13.5
	5500.....14
	5000.....15

Compartmentation Values					
Occupancy	Categories				
	a	b	c	d	e
A-1	0	0	0	0	1
A-2	-5	-3	0	1	3
R	-4	-2	0	2	4
A-1, A-4, B, E, F, M, S-1	-4	-3	0	2	4
S-2	-5	-2	0	2	4

- a. No partitions or incomplete partitions
- b. Fire partitions < 1-hr
- c. ... or with only one tenant within the fire area
- d. Fire barriers ≥ 1-hr < 2-hr
- e. Fire barriers ≥ 2-hr

International Existing Building Code – *How it Works* Presented Fall - 2010

Corridor Wall Values				
Occupancy	Categories			
	a	b	c ^a	d ^a
A-1	-10	-4	0	2
A-2	-30	-12	0	2
A-3, F, M, R, S-1	-7	-3	0	2
A-4, B, E, S-2	-5	-2	0	5

Note a: Corridors not providing at least ½ the travel distance for all occupants on a floor shall use Category b.

a. No partitions or incomplete partitions
 b. Fire partitions < 1-hr
 c. ... or without corridors permitted by 1016
 d. Fire barriers > 2-hr

VO = PV x CF

Protection	Value
None (Unprotected opening)	-2 multiplied by number of floors connected
Less than 1-hour	-1 multiplied by number of floors connected
1 to less than 2-hour	1
2-hours or more	2

Factor	Type of Construction									
	1A	1B	2A	2B	2C	3A	3B	4	5A	5B
1	1	1.2	1.5	2.2	3.5	2.5	3.5	2.3	3.3	7

a. Plenums not meeting IMC 602: -10 points
 b. Air movement in egress elements: -5 points
 c. Both categories above: -15 points
 d. Compliant HVAC: 0 points
 e. 1 story system or central boiler: 5 points

International Existing Building Code – *How it Works*

Presented Fall - 2010

Automatic Fire Detection Values					
Occupancy	Categories				
	a	b	c	d	e
A-1, A-3, F, M, R, S-1	-10	-5	0	2	6
A-2	-25	-5	0	5	9
A-4, B, E, S-2	-4	-2	0	4	8

a. None
 b. Existing SD in HVAC
 c. New SD in HVAC per IMC
 d. Common space detection
 e. SD throughout

Fire Alarm System Values				
Occupancy	Categories			
	a	b ^a	c	d
A-1, A-2, A-3, A-4, B, E, R	-10	-5	0	5
M, F, S	0	5	10	15

Note c: For buildings equipped throughout with an automatic sprinkler system, add 2 points for activation by a sprinkler water flow device.

a. None
 b. Manual fire alarm
 c. Manual fire alarm & FD notification
 d. FA w/ voice & command center

Smoke Control Values						
Occupancy	Categories					
	a	b	c	d	e	F
A-1, A-2, A-3	0	1	2	3	6	6
A-4, E	0	0	0	1	3	5
B, M, R	0	2 ^a	3 ^a	3 ^a	3 ^a	4 ^a
F, S	0	2 ^a	2 ^a	3 ^a	3 ^a	3 ^a

a. None
 b. AS & exterior windows
 c. Enclosed exit w/exterior windows
 d. Smokeproof enclosures
 e. AS & mechanical smoke control
 f. All stairs have windows or SP enclosures

International Existing Building Code – *How it Works*

Presented Fall - 2010

Means of Egress Values					
Occupancy	Categories				
	a ¹	b	c	d	e
A-1, A-2, A-3, A-4, E	-10	0	2	8	10
M	-3	0	1	2	4
B, F, S	-1	0	0	0	0
R	-3	0	0	0	0

a. Min. number & a fire escape
 b. Min. number & compliant capacity
 c. Min. number & 125% capacity
 d. > min. number
 e. Meets both c and d above

Dead-end Values			
Occupancy	Categories ^a		
	a	b	c
A-1, A-3, A-4, B, E, F, M, R, S	-2	0	2
A-2, E	-2	0	2

a. 35' w/AS 70' w/o AS
 b. 20'; or 50' in B w/AS
 c. None or L:W < 2.5:1

$$\text{Points} = 20 \times \frac{\text{Max Allowable TD} - \text{Max Actual TD}}{\text{Max Allowable TD}}$$

$$9 = 20 \times \frac{200 - 110}{200}$$

International Existing Building Code – *How it Works* Presented Fall - 2010

Elevator Control Values				
Elevator Travel	Categories			
	a	b	c	d
Less than 25 feet of travel above or below the primary level of elevator access for emergency fire fighting or rescue personnel	-2	0	0	2
Travel of 25 feet or more above or below the primary level of elevator access for emergency fire fighting or rescue personnel	-4	NP	0	4

a. No elevator
 b. Elevator w/o Phase I or II
 c. All elevators w/Phase I & II
 d. New elevators serve all floors

Egress Emergency Lighting Values			
No. of Exits Required by Section 1010.0	Categories		
	a	b	c
Two or more exits	NP	0	4
Minimum of One	0	1	1

a. EL and exit signs not provided w/EP
 b. EL and exit signs provided w/EP
 c. Generator

Mixed Use Group Values ^a			
Occupancy	Categories		
	a	b	c
A-1, A-2, R	-10	0	10
A-3, A-4, B, E, F, M, s	-5	0	5

a. Min. 1-hr separation
 b. Separated occupancy requirements
 c. 2 x Separated occupancy requirements

 No mixed occupancies – Value = 0

International Existing Building Code – *How it Works*

Presented Fall - 2010

Sprinkler System Values						
Occupancy	Categories					
	a	b	c	d	e	f
A-1, A-3, F, M, R, S-1	-6	-3	0	2	4	6
A-2	-4	-2	0	1	2	4
A-4, B, E, S-2	-12	-6	0	3	6	12

a. Required throughout & not provided or wrong
 b. Required partially & not provided or wrong
 c. Not required – Not provided
 d. Required partially and provided partially
 e. Required throughout and provided throughout
 f. Not required and provided

Incidental Use Area Values							
Protection Required by Table 302.1.1	Protection Provided						
	None	1-hr	AFSS	AFSS w/ SP	1-hr & AFSS	2-hr	2-hr & AFSS
2-hr & AFSS	-4	-3	-2	-2	-1	-2	0
2-hr; or 1-hr & AFSS	-3	-2	-1	-1	0	0	0
1-hr & AFSS	-3	-2	-1	-1	0	-1	0
1-hr	-1	0	-1	0	0	0	0
1-hr; or AFSS w/SP	-1	0	-1	0	0	0	0
AFSS w/SP	-1	-1	-1	0	0	-1	0
1-hr; or AFSS	-1	0	0	0	0	0	0

If none use 0

TABLE 3410.7 SUMMARY SHEET – BUILDING CODE	
Existing occupancy _____	Proposed occupancy _____
Year building was constructed _____	Number of stories _____ Height in feet _____
Type of construction _____	Area per floor _____
Percentage of open perimeter _____ %	Percentage of height reduction _____ %
Completely suppressed: Yes _____ No _____	Corridor wall rating _____
Compartmentation: Yes _____ No _____	Required door closers: Yes _____ No _____
Fire-resistance rating of vertical opening enclosures _____	
Type of HVAC system _____, serving number of floors _____	
Automatic fire detection: Yes _____ No _____	type and location _____
Fire alarm system: Yes _____ No _____	type _____
Smoke control: Yes _____ No _____	type _____
Adequate exit routes: Yes _____ No _____	Dead ends: Yes _____ No _____
Maximum exit access travel distance _____	Elevator controls: Yes _____ No _____
Means of egress emergency lighting: Yes _____ No _____	Mixed occupancies: Yes _____ No _____

International Existing Building Code – *How it Works* Presented Fall - 2010

**TABLE 3410.9
EVALUATION FORMULAS^a**

FORMULA	T.3408.7	T.3409.8	SCORE	PASS	FAIL
FS-MFS ≥ 0	(FS) -	(MFS) =	_____	_____	_____
ME-MME ≥ 0	(ME) -	(MME) =	_____	_____	_____
GS-MGS ≥ 0	(GS) -	(MGS) =	_____	_____	_____

a. FS = Fire Safety MFS = Mandatory Fire Safety
 ME = Means of Egress MME = Mandatory Means of Egress
 GS = General Safety MGS = Mandatory General Safety

**Table 3410.9
EVALUATION FORMULAS^a**

Formula	Table 3408.7	Table 3408.8	Score	Pass	Fail
FS - MFS ≥ 0	-28.7 (FS) -	24 (MFS) =	-53	_____	X
ME - MME ≥ 0	-17.7 (ME) -	34 (MME) =	-52	_____	X
GS - MGS ≥ 0	-17.7 (GS) -	34 (MGS) =	-52	_____	X

Questions or Comments

International Existing Building Code – *How it Works*
Presented Fall - 2010

