

To begin our comparison of the IBC Chapter 34 analysis to the NFPA 101A FSES we looked at the major differences between the two approaches.

1. First and foremost, as everyone knows, the Chapter 34 does not address I occupancies.
2. Chapter 34 looks at the building as a whole, where an FSES goes by zones
3. Chapter 34 does not address smoke compartment boundaries.
4. Chapter 34 does not take into account the occupancy risk factors like Worksheets 4.7.2 – 4.7.5 (NFPA 101A, 2001 edition) do.
5. Chapter 34 does not address oversized suites. The FSES also does not address this but it can be approached by treating the suite as a zone and doing an FSES on the oversized suite. Because of number 2 above the Chapter 34 could not do that.

Next we looked generally at how the point values compared between some of the categories. We found that in some cases they were really close in value but in other areas they varied significantly. Below is our comparison, an A-3 occupancy was assumed for the Chapter 34 analysis.

Parameter	FSES	Chapter 34
Construction (Type, Height, Area)	Could get up to 4 points for the 4 th floor of a Type I (332) based on construction type and floor level	Could get up to 19 points for the 4 th floor of a Type IA based on construction type, building height (10 points) and area (up to 50% of mandatory FS score, 9 points for A-3).
Corridor Walls	Analyses doors and walls separately. Zero point score at <1/2 hour walls and <20 min doors.	Analyses doors and walls together Zero point score at >=1 hour to <2 hour rating with 20 min doors.
Dead Ends	Dead end <=30ft and zone length of 100-150 ft gives zero point score. A 50-100 ft dead end would be -4.	Dead end of 20 ft gives zero point score with no reference to zone length. A 70 ft dead end would be -2.
Standpipes	No credit	If required and comply could add 4 points.
Sprinklers	Zero points for none up to 10 points for entire building	-6 points for required but not compliant up to 6 points for not required but installed and compliant.
Smoke Detection	None gets zero points and provided throughout gets 5 points.	Focuses more on HVAC detection (could lose up to 10 points without it). If provided throughout you get 6 points
Manual Fire Alarm	-4 points if none. With FD connection gives 2 points.	-10 points if none, need fire alarm system, voice/alarm signaling and fire command stations for any positive (5) points.

The final step was to detail out a complete analysis based on an FSES that we had completed more recently. The actual worksheets are attached at the end of this document. Below is how each analysis scored based on looking at 3 zones on the 3rd floor of a hospital in Chicago.

FSES Existing	FAIL -32 for Containment Safety -20 for Extinguishment Safety -24 for People Movement -30 for General Safety	Ch 34 Existing	FAIL -112 for Fire Safety -114 for Means of Egress -117 for General Safety
FSES Modified	PASS 9 for Containment Safety 8 for Extinguishment Safety 3 for People Movement 14 for General Safety	Ch 34 Modified	PASS 11 for Fire Safety 5 for Means of Egress 7 for General Safety

The chapter 34 analysis did not pass based on the existing conditions by a large margin over the FSES. This was mostly due to the downgrading of the construction type from Type IA to Type IIB because of unprotected steel in the building. That just shows how much of an emphasis the IBC places on construction. If it were the FSES it would have only been an 11 point swing not a 75 point swing.

Complete this worksheet for each zone. Where conditions are the same in several zones, one worksheet can be used for those zones.

Worksheet 4.7.2 Occupancy Risk Parameter Factors

Risk Parameters		Risk Factor Values					Total
1. Patient Mobility (M)	Mobility Status	Mobile	Limited Mobility	Not Mobile	Not Movable		4.5
	Risk Factor	<input type="radio"/> 1.0	<input type="radio"/> 1.6	<input type="radio"/> 3.2	<input checked="" type="radio"/> 4.5		
2. Patient Density (D) Zone Floor	No. of Patients	1-5	6-10	11-30	>30		1.5
	Risk Factor	<input type="radio"/> 1.0	<input type="radio"/> 1.2	<input checked="" type="radio"/> 1.5	<input type="radio"/> 2.0		
3. Zone Location (L)	Floor	1st	2nd or 3rd	4th to 6th	7th and above	Basements	1.2
	Risk Factor	<input type="radio"/> 1.1	<input checked="" type="radio"/> 1.2	<input type="radio"/> 1.4	<input type="radio"/> 1.6	<input type="radio"/> 1.6	
4. Ratio of Patients to Attendants (T)	Patients per Attendant	1-2 / 1	3-5 / 1	6-10 / 1	>10 / 1	One or more / None *	1.0
	Risk Factor	<input checked="" type="radio"/> 1.0	<input type="radio"/> 1.1	<input type="radio"/> 1.2	<input type="radio"/> 1.5	<input type="radio"/> 4.0	
5. Patient Average Age (A)	Age	Under 65 years and over 1		65 years and over One year and younger			1.0
	Risk Factor	<input checked="" type="radio"/> 1.0		<input type="radio"/> 1.2			

* A risk factor of 4.0 is charged to any zone that houses patients without any staff in immediate attendance

Worksheet 4.7.3 Occupancy Risk Factor Calculation

	M	D	L	T	A	F
Occupancy Risk	4.5	1.5	1.2	1	1	8.10

Worksheet 4.7.4 (New Buildings)

$$1.0 \times \boxed{8.10} = \boxed{9.0}$$

Worksheet 4.7.5 (Existing Buildings)

$$0.6 \times \boxed{8.10} = \boxed{5.0}$$

Worksheet 4.7.6 Safety Parameter Values

Safety Parameters	Parameter Values							Total	
1. Construction Floor or Zone	Combustible Types III, IV and V				Noncombustible Types I and II				
	000	111	200	211+2HH	000	111	222,322,433		
	First	<input type="radio"/> -2	<input type="radio"/> 0	<input type="radio"/> -2	<input type="radio"/> 0	<input type="radio"/> 0	<input type="radio"/> 2		<input type="radio"/> 2
	Second	<input type="radio"/> -7	<input type="radio"/> -2	<input type="radio"/> -4	<input type="radio"/> -2	<input type="radio"/> -2	<input type="radio"/> 2		<input type="radio"/> 4
	Third	<input type="radio"/> -9	<input type="radio"/> -7	<input type="radio"/> -9	<input type="radio"/> -7	<input checked="" type="radio"/> -7	<input type="radio"/> 2		<input type="radio"/> 4
4th and Above	<input type="radio"/> -13	<input type="radio"/> -7	<input type="radio"/> -13	<input type="radio"/> -7	<input type="radio"/> -9	<input type="radio"/> -7	<input type="radio"/> 4	-7	
2. Interior Finish (Corridors and Exits)	Class C	Class B	Class A	(AS in corridor/exit Y/N?)			3		
	<input type="radio"/> -5(0)f	<input type="radio"/> 0(3)f	<input checked="" type="radio"/> 3						
3. Interior Finish (Rooms)	Class C	Class B	Class A	(AS in room Y/N?)			3		
	<input type="radio"/> -3(1)f	<input type="radio"/> 1(3)f	<input checked="" type="radio"/> 3						
4. Corridor Partitions/Walls	None or Incomplete	< 1/2 hr	>=1/2 to <1hr	>=1hr				0	
	<input type="radio"/> -10(0)a	<input checked="" type="radio"/> 0	<input type="radio"/> 1(0)a	<input type="radio"/> 2(0)a					
5. Doors to Corridor	No Door	< 20min FPR	>= 20min FPR	>=20min FPR & Autoclose				-10	
	<input checked="" type="radio"/> -10	<input type="radio"/> 0	<input type="radio"/> 1(0)d	<input type="radio"/> 2(0)d					
6. Zone Dimensions	Dead End			No Dead Ends >30 ft and Zone Length is			-2		
	>100 ft	50-100 ft	30 - 50 ft	>150 ft	100 - 150 ft	<100 ft			
	<input type="radio"/> -6(0)b	<input type="radio"/> -4(0)b	<input type="radio"/> -2(0)b	<input checked="" type="radio"/> -2(0)c	<input type="radio"/> 0	<input type="radio"/> 1			
7. Vertical Openings	Open 4 + Floors		Open 2 or 3 Floors		Enclosed with Fire Resistance			-14	
	<input checked="" type="radio"/> -14		<input type="radio"/> -10		<1 hr	>=1hr, <2 h	>=2 hr		
					<input type="radio"/> 0	<input type="radio"/> 2(0)e	<input type="radio"/> 3(0)e		
8. Hazardous Areas	Double Deficiency		Single Deficiency		No Deficiencies			-6	
	In Zone	Out Zone	In Zone	Adj. Zone					
	<input type="radio"/> -11	<input type="radio"/> -5	<input checked="" type="radio"/> -6	<input type="radio"/> -2	<input type="radio"/> 0				
9. Smoke Control	No Control		Smoke Barrier Serves Zone		Mechanically Assisted Systems by Zone			0	
	<input type="radio"/> -5(0)c		<input checked="" type="radio"/> 0		<input type="radio"/> 3				
10. Emergency Movement Routes	<2 Routes		Multiple Routes				-2		
	<input type="radio"/> -8		Deficient	W/O Horizontal Exit(s)	Horizontal Exit(s)	Direct Exit(s)			
			<input checked="" type="radio"/> -2	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 5			
11. Manual Fire Alarm	No Manual Fire Alarm		Manual Fire Alarm				2		
	<input type="radio"/> -4		W/O F.D. Connection		W/ F.D. Connection				
			<input type="radio"/> 1		<input checked="" type="radio"/> 2				
12. Smoke Detection and Alarm	None	Corridor Only	Rooms Only	Corridor and Habit. Space	Total Spaces in Zone			0	
	<input checked="" type="radio"/> 0(3)g	<input type="radio"/> 2(3)g	<input type="radio"/> 3(3)g	<input type="radio"/> 4	<input type="radio"/> 5				
13. Automatic Sprinklers	None		Corridor and Habit. Space	Entire Building	QR in Zone?	8			
	<input type="radio"/> 0		<input checked="" type="radio"/> 8	<input type="radio"/> 10	N				
Notes: a Use (0) where Parameter 5 is -10. b Use (0) where Parameter 10 is -8. c Use (0) on floor with fewer than 31 patients (existing buildings). d Use (0) where Parameter 4 is -10. e Use (0) where Parameter 1 is based on first floor zone or on an unprotected type of construction (columns marked "U"). f Use () if the area of Class B or C interior finish in the corridor and exit or room is protected by automatic sprinklers and Parameter 13 is 0. g Use this value in addition to Parameter 13 if the entire zone is protected with quick-response automatic sprinklers.									

Complete this worksheet for each zone. Where conditions are the same in several zones, one worksheet can be used for those zones.

Worksheet 4.7.7 Individual Safety Evaluation:

Safety Parameters	Containment Safety (S ₁)	Extinguishment Safety (S ₂)	People Movement Safety (S ₃)	General Safety (S ₄)
1. Construction	-7	-7		-7
2. Interior Finish (Corridors and Exits)	3		3	3
3. Interior Finish (Rooms)	3			3
4. Corridor Partitions and Walls	0			0
5. Doors to Corridor	-10		-10	-10
6. Zone Dimensions			-2	-2
7. Vertical Openings	-14		-14	-14
8. Hazardous Areas	-6	-6		-6
9. Smoke Control			0	0
10. Emergency Movement Routes			-2	-2
11. Manual Fire Alarm		2		2
12. Smoke Detection and Alarm		0	0	0
13. Automatic Sprinklers	8	8	4	8
Total Value	-23	-3	-21	-25

Complete this worksheet for each zone. Where conditions are the same in several zones, one worksheet can be used for those zones.

Worksheet 4.7.8 Mandatory Safety Requirements (Hospitals and Nursing Homes)

Zone Location	Containment (S _a)		Extinguishment (S _b)		People Movement (S _c)	
	New	Existing	New	Existing	New	Existing
1st Story	<input type="radio"/> 11	<input type="radio"/> 5	<input type="radio"/> 15 (12) ^a	<input type="radio"/> 4	<input type="radio"/> 8 (5) ^a	<input type="radio"/> 1
2nd or 3rd Story ^b	<input type="radio"/> 15	<input checked="" type="radio"/> 9	<input checked="" type="radio"/> 17 (14) ^a	<input type="radio"/> 6	<input type="radio"/> 10 (7) ^a	<input checked="" type="radio"/> 3
4th and Above	<input type="radio"/> 18	<input type="radio"/> 9	<input type="radio"/> 19 (16) ^a	<input type="radio"/> 6	<input type="radio"/> 11 (8) ^a	<input type="radio"/> 3

Notes: a: Use () in zones that do not contain patient sleeping rooms.
 b: For a 2nd story zone location in a *sprinklered* EXISTING facility, as an alternative to the mandatory safety requirement values set specified in the table, the following mandatory values set shall be permitted to be used:
 S_a=7, S_b=10, S_c=7

Worksheet 4.7.9 Zone Fire Safety Equivalency Evaluation

				S ₁ - S _a = C	Pass?	
Containment Safety (S ₁)	-23	-	Mandatory Containment (S _a)	9	-32	NO
Extinguishment Safety (S ₂)	-3	-	Mandatory Extinguishment (S _b)	17	-20	NO
People Movement Safety (S ₃)	-21	-	Mandatory People Movement (S _c)	3	-24	NO
General Safety (S ₄)	-25	-	Occupancy Risk (R)	5	-30	NO

Worksheet 4.7.11 Conclusions

1. All of the final values in Worksheet 4.7.9 are positive (YES). The level of fire safety is at least equivalent to that prescribed by the <i>Life Safety Code</i> .*	
2. One or more of the final values in Worksheet 4.7.9 are negative (NO). The level of fire safety is not shown by this system to be equivalent to that prescribed by the <i>Life Safety Code</i> .	FAIL
* The equivalency covered by this worksheet includes the majority of the <i>Life Safety Code</i> . There are some considerations that are not evaluated by this method. These must be considered separately. These additional considerations are covered in Table 3-8, the "Facility Fire Safety Requirements Worksheet." One copy of this separate worksheet is to be completed for each facility.	

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TABLE 3412.7 SUMMARY SHEET - BUILDING SCORE

Existing occupancy	I2 (Assume A3)	Proposed occupancy	
Year constructed	1978	Number of stories	10
Type of construction	Type IA	Height (ft.)	120
Percentage of open perimeter	100 %	Area per floor	40,200
Completely Suppressed:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>	Percentage Height Reduction	0 %
Compartmentation:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>	Corridor wall rating	
Fireresistance rating of vertical opening enclosures:		Required door closers:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>
Type of HVAC System:			
Automatic fire detection:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>	, floors served	
Fire alarm system:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>	Type & location	
Smoke control:	Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>	Type	
Adequate exit routes:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>	Dead ends:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>
Maximum travel distance	180	Elevator controls:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>
Emergency lighting:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>	Mixed occupancies:	Yes: <input type="checkbox"/> No: <input type="checkbox"/>

Safety Parameters	Fire Safety (FS)	Means of Egress (ME)	General Safety (GS)
3412.6.1 Building Height	-31.5	-31.5	-31.5
3412.6.2 Building Area	-25.4	-25.4	-25.4
3412.6.3 Compartmentation	0.0	0.0	0.0
3412.6.4 Tenant Separations	-4.0	-4.0	-4.0
3412.6.5 Corridor Walls	-7.0	-7.0	-7.0
3412.6.6 Vertical Openings	-24.0	-24.0	-24.0
3412.6.7 HVAC Systems	0.0	0.0	0.0
3412.6.8 Fire Detection	-5.0	-5.0	-5.0
3412.6.9 Fire Alarm	5.0	5.0	5.0
3412.6.10 Smoke Control	-	2.0	2.0
3412.6.11 Exit Capacity	-	0.0	0.0
3412.6.12 Dead Ends	-	0.0	0.0
3412.6.13 Travel Distance	-	4.0	4.0
3412.6.14 Elevator Control	0.0	0.0	0.0
3412.6.15 Emergency Lights	-	0.0	0.0
3412.6.16 Mixed Use	0.0	-	0.0
3412.6.17 Sprinklers	-6.0	-3.0	-6.0
3412.6.18 Standpipes	4.0	4.0	4.0
3412.6.19 Incidental Use	0.0	0.0	0.0
Building Score - Total Value	-93.9	-84.9	-87.9

TABLE 3412.9 EVALUATION FORMULAS

Formula	Table 3412.7 Value	Mandatory Values	Score	Pass	Fail
FS-MFS>0	-93.9	-	18.0	-111.9	X
ME-MME>0	-84.9	-	29.0	-113.9	X
GS-MGS>0	-87.9	-	29.0	-116.9	X

SECTION 3412.6 EVALUATION

3412.6.1 Building Height

Lesser of Two Values

Height Value (stories) = [Allowable Height - Actual Height] X Construction Factor (C.F.)

Height Value (feet) = [Allowable Height - Actual Height / 12.5] x Construction Factor (C.F.)

CF=1 if [Allowable Height - Actual Height] >= 0

CF From Table 3409.6.6(2) if [Allowable Height - Actual Height] < 0

	Feet	Stories	Basis
Allowable Height:	12	1	1 story (12 ft height assumed)
Actual Height:	120	10	10 stories
Construction Factor:	3.5		
Height Value:	-31.5		Type IIB because of unprotected steel

3412.6.2 Building Area

Area Value = (Allowable Area-Actual Area)/1,200 [1-E(Actual Area/Allowable Area)]

Allowable Area = Area per Table 503 x (100+Sprinkler incr.+ Perimeter incr.)/100

	Value	Basis
Table 503 Area:	11000	11,000 sf
Sprinkler Increase:	200%	fully sprinklered
Perimeter Increase:	50%	approximately 75% of the perimeter is open to a 20+ft area

Allowable Area: 38500 Table 503 plus sprinkler increase and perimeter increase
 Actual Area: 69000 Total area on one floor.

Area Value: -25.4 ◀ Enter 50% of mandatory Fire Safety score as limit.

3412.6.3 Compartmentation

Net area between fire separation assemblies and fire rated floors.

Walls shall be fire barriers per 706 and of 2-hour construction with horizontal exit door. Door gasketed to provide substantial barrier to passage of smoke.

Floor assemblies to be continuous to exterior walls with penetrations sealed.

If floors are not properly subdivided the total building floor area shall be considered the compartment area.

Category	Fire Area	Compartmentation Values				
		A	B	C	D	E
A	≥15,000 s.f.	0	6	10	14	18
B	10,000 s.f.	0	4	10	14	18
C	7,500 s.f.	0	5	10	15	20
D	5,000 s.f.	0	4	10	16	22
E	<2,500 s.f.					

Interpolate as needed to determine compartmentation values.

Compartmentation Value: 0 Category A

3412.6.4 Tenant and Dwelling Unit Separations

- | Category | Space Division |
|----------|---|
| A | No or incomplete partitions or non-self-closing doors |
| B | Partition to ceiling, self-closing doors; < 1hr. |
| C | Fire Partitions to deck, self-closing doors, ≥ 1 hr. (708); 1 hr. floor assy. (711); or only 1 tenant in area |
| D | Fire Barriers to deck, self-closing doors, ≥ 1 hr. (706); 2 hr. floor assy. (711) |
| E | Fire Barriers to deck and floor assy. ≥ 2 hr. (706 and 711) |

Use Group	Fire Area Values				
	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-3,A-4,B,E,F,M,S-1	-4	-3	0	2	4
S-2	-5	-2	0	2	4

Tenant and Dwelling Value -4 Category A - NOT SURE IF THIS WOULD WORK BUT I WAS USING THIS FOR THE HAZARDOUS ROOM EVALUATION

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3412.6.5 Corridor Walls

- | | |
|-----------------|---|
| Category | Corridor Walls |
| A | No Partitions or non-self-closing doors |
| B | Partitions < 1 hour or not per 708.4 |
| C | Partitions > 1 hr., < 2 hr. (706), 20 minute doors (715) or no required corridors |
| D | Partitions ≥ 2 hrs , 1-1/2 hr. doors per 715 |

Corridor Wall Values				
Use Group	A	B	C	D
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

Corridor Wall Value -7 Category A - penetrations above the ceiling (graded as "<1/2hr" on FSES) and inactive leaves on corridor doors (graded as "no door" on FSES).

3412.6.6 Vertical Openings

Vertical Opening Value = Protection Value X Construction Type Factor

- | | |
|-----------|----------------------------|
| | Protection Value |
| -2 X F.C. | None (Unprotected Opening) |
| -1 X F.C. | <1 hr. enclosure |
| 1 | 1 to 2 hr. enclosure |
| 2 | 2 or more hour enclosure |

F.C.= Floors Connected

Construction-Type Factor									
Construction Type	IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
Factor	1.2	1.5	2.2	3.5	2.5	3.5	2.3	3.3	7

Protection Value: -20 10 floors connected by stairs with penetrations
Construction Type Value: 1.2 Type IA

Vertical Opening Value -24

3412.6.7 HVAC Systems

- | | |
|-----------------|--|
| Category | HVAC Systems |
| A | Plenums not in accordance with 602 of IMC |
| B | Air movement in egress not in accordance with 1018.5 |
| C | Categories A & B are applicable |
| D | Full Compliance |
| E | Serves 1 story; or a boiler/chiller system w/o ductwork to ≥ 2 stories |

Category	Points
A	-10
B	-5
C	-15
D	0
E	5

HVAC System Value 0 Category D - ASSUMED

3412.6.8 Automatic Fire Detection

- | | |
|-----------------|--|
| Category | Automatic Fire Detection System |
| A | None |
| B | Smoke detectors in HVAC and maintained per IMC |
| C | Smoke detectors in HVAC installed as required for new buildings in IMC |
| D | Smoke detectors throughout except individual guest rooms, tenant spaces and dwelling units |
| E | Smoke detectors throughout fire area |

Automatic Fire Detection Values					
Occupancy	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

Fire Detection Value -5 Category B - per FSES we meet 90A

SECTION 3412.6 EVALUATION

3412.6.14 Elevator Controls

- Category Elevator Controls**
- A No elevator
 - B Any elevator without Phase I and II recall
 - C All elevators with Phase I and II recall
 - D Meets C; or B where permitted w/ 1 serving all occupied floors

Elevator Travel	Elevator Control Value			
	A	B	C	D
< 25 ft. of Travel	-2	0	0	2
≥ 25 ft. of Travel	-4	NP	0	4

Elevator Control Value 0 Category - 3rd floor is approx 24 ft above 1st floor (Actual recall information not in report)

3412.6.15 Egress Emergency Lighting

- Category Emergency Lighting**
- A Lighting and exit signs with no emergency power (2702)
 - B Lighting and exit signs with emergency power (2702)
 - C Lighting & exit signs w/ emergency power for loss of site power

Number of Exits Required	Egress Emergency Lighting Value		
	A	B	C
2 or More Exits	NP	0	4
Minimum of 1 Exit	0	1	1

Emer. Lighting Value 0 Category - no information about emergency lighting provided in report.

3412.6.16 Mixed Use Groups

- Category Mixed Uses**
- A Minimum 1 Hr. fire barriers between occupancies
 - B Fire barriers between occupancies per 302.3.2
 - C Fire barriers between occupancies w/ fire resistance ≥ twice that req'd by 302.3.2

Use Group	Mixed Use Group Values		
	A	B	C
A-1, A-2, R	-10	0	10
A-3, A-4, B, E, F, M, S	-5	0	5

Mixed Use Group Value 0 Enter category and description here

3412.6.17 Sprinklers

- Category Sprinkler System**
- A Req'd throughout but is not provided or not adequate (903)
 - B Req'd partially but is not provided or not adequate (903)
 - C Not req'd and not provided
 - D Req'd partially and comply (903)
 - E Req'd throughout and comply (Chapter 9)
 - F Not req'd but are provided throughout and comply (Chapter 9)

Use Group	Sprinkler System Values					
	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

Sprinkler Value -6 Category A - missing in elec closets and wardrobes

3412.6.18 Standpipes

- Category Standpipe System**
- A Req'd but is not provided or not adequate (905.3)
 - B Not req'd and not provided
 - C Req'd and comply (905)
 - D Not req'd but are provided and comply (905)

Use Group	Standpipe System Values			
	A	B	C	D
A-1, A-3, F, M, R, S-1	-6	0	4	6
A-2	-4	0	2	4
A-4, B, E, S-2	-12	0	6	12

Sprinkler Value 4 Category C

3412.6.19 Incidental Use

Protection Required (508.2.5)	Specific Occupancy Area Values							
	None	1Hr.	AFSS	AFSS with SP	1Hr. & AFSS	2 Hours	2Hr. & AFSS	
2 Hr. & AFSS	-4	-3	-2	-2	-1	-2	0	
2 Hr.; or 1 Hr. & AFS	-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 AFS w/ SP	-1	0	-1	0	0	0	0	
AFSS w/ SP	-1	-1	-1	0	0	-1	0	

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1 Hr.; or AFSS	-1	0	0	0	0	0	0
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AFSS = Automatic fire suppression system; SP = Smoke partition

Occupancy Value 0 Enter category and description here

Complete this worksheet for each zone. Where conditions are the same in several zones, one worksheet can be used for those zones.

Worksheet 4.7.2 Occupancy Risk Parameter Factors

Risk Parameters		Risk Factor Values					Total
1. Patient Mobility (M)	Mobility Status	Mobile	Limited Mobility	Not Mobile	Not Movable		4.5
	Risk Factor	<input type="radio"/> 1.0	<input type="radio"/> 1.6	<input type="radio"/> 3.2	<input checked="" type="radio"/> 4.5		
2. Patient Density (D) Zone Floor	No. of Patients	1-5	6-10	11-30	>30		1.5
	Risk Factor	<input type="radio"/> 1.0	<input type="radio"/> 1.2	<input checked="" type="radio"/> 1.5	<input type="radio"/> 2.0		
3. Zone Location (L)	Floor	1st	2nd or 3rd	4th to 6th	7th and above	Basements	1.2
	Risk Factor	<input type="radio"/> 1.1	<input checked="" type="radio"/> 1.2	<input type="radio"/> 1.4	<input type="radio"/> 1.6	<input type="radio"/> 1.6	
4. Ratio of Patients to Attendants (T)	Patients per Attendant	1-2 / 1	3-5 / 1	6-10 / 1	>10 / 1	One or more / None *	1.0
	Risk Factor	<input checked="" type="radio"/> 1.0	<input type="radio"/> 1.1	<input type="radio"/> 1.2	<input type="radio"/> 1.5	<input type="radio"/> 4.0	
5. Patient Average Age (A)	Age	Under 65 years and over 1		65 years and over One year and younger			1.0
	Risk Factor	<input checked="" type="radio"/> 1.0		<input type="radio"/> 1.2			

* A risk factor of 4.0 is charged to any zone that houses patients without any staff in immediate attendance

Worksheet 4.7.3 Occupancy Risk Factor Calculation

	M	D	L	T	A	F
Occupancy Risk	4.5	1.5	1.2	1	1	8.10

Worksheet 4.7.4 (New Buildings)

	F		R
1.0 X	8.10	=	9.0

Worksheet 4.7.5 (Existing Buildings)

	F		R
0.6 X	8.10	=	5.0

Complete this worksheet for each zone. Where conditions are the same in several zones, one worksheet can be used for those zones.

Worksheet 4.7.6 Safety Parameter Values

Safety Parameters	Parameter Values							Total	
1. Construction Floor or Zone	Combustible Types III, IV and V				Noncombustible Types I and II				
	000	111	200	211+2HH	000	111	222,322,433		
	First	<input type="radio"/> -2	<input type="radio"/> 0	<input type="radio"/> -2	<input type="radio"/> 0	<input type="radio"/> 0	<input type="radio"/> 2		<input type="radio"/> 2
	Second	<input type="radio"/> -7	<input type="radio"/> -2	<input type="radio"/> -4	<input type="radio"/> -2	<input type="radio"/> -2	<input type="radio"/> 2		<input type="radio"/> 4
	Third	<input type="radio"/> -9	<input type="radio"/> -7	<input type="radio"/> -9	<input type="radio"/> -7	<input type="radio"/> -7	<input type="radio"/> 2		<input checked="" type="radio"/> 4
4th and Above	<input type="radio"/> -13	<input type="radio"/> -7	<input type="radio"/> -13	<input type="radio"/> -7	<input type="radio"/> -9	<input type="radio"/> -7	<input type="radio"/> 4	4	
2. Interior Finish (Corridors and Exits)	Class C	Class B	Class A	(AS in corridor/exit Y/N?)			3		
	<input type="radio"/> -5(0)f	<input type="radio"/> 0(3)f	<input checked="" type="radio"/> 3						
3. Interior Finish (Rooms)	Class C	Class B	Class A	(AS in room Y/N?)			3		
	<input type="radio"/> -3(1)f	<input type="radio"/> 1(3)f	<input checked="" type="radio"/> 3						
4. Corridor Partitions/Walls	None or Incomplete	< 1/2 hr	>=1/2 to <1hr	>=1hr				0	
	<input type="radio"/> -10(0)a	<input checked="" type="radio"/> 0	<input type="radio"/> 1(0)a	<input type="radio"/> 2(0)a					
5. Doors to Corridor	No Door	< 20min FPR	>= 20min FPR	>=20min FPR & Autoclose				0	
	<input type="radio"/> -10	<input checked="" type="radio"/> 0	<input type="radio"/> 1(0)d	<input type="radio"/> 2(0)d					
6. Zone Dimensions	Dead End			No Dead Ends >30 ft and Zone Length is			-2		
	>100 ft	50-100 ft	30 - 50 ft	>150 ft	100 - 150 ft	<100 ft			
	<input type="radio"/> -6(0)b	<input type="radio"/> -4(0)b	<input type="radio"/> -2(0)b	<input checked="" type="radio"/> -2(0)c	<input type="radio"/> 0	<input type="radio"/> 1			
7. Vertical Openings	Open 4 + Floors		Open 2 or 3 Floors		Enclosed with Fire Resistance			3	
	<input type="radio"/> -14		<input type="radio"/> -10		<1 hr	>=1hr, <2 h	>=2 hr		
					<input type="radio"/> 0	<input type="radio"/> 2(0)e	<input checked="" type="radio"/> 3(0)e		
8. Hazardous Areas	Double Deficiency		Single Deficiency		No Deficiencies			0	
	In Zone	Out Zone	In Zone	Adj. Zone					
	<input type="radio"/> -11	<input type="radio"/> -5	<input type="radio"/> -6	<input type="radio"/> -2	<input checked="" type="radio"/> 0				
9. Smoke Control	No Control		Smoke Barrier Serves Zone		Mechanically Assisted Systems by Zone			0	
	<input type="radio"/> -5(0)c		<input checked="" type="radio"/> 0		<input type="radio"/> 3				
10. Emergency Movement Routes	<2 Routes		Multiple Routes				-2		
			W/O Horizontal Exit(s)	Horizontal Exit(s)	Direct Exit(s)				
	<input type="radio"/> -8		<input checked="" type="radio"/> -2	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 5			
11. Manual Fire Alarm	No Manual Fire Alarm		Manual Fire Alarm				2		
			W/O F.D. Connection		W/ F.D. Connection				
	<input type="radio"/> -4		<input type="radio"/> 1		<input checked="" type="radio"/> 2				
12. Smoke Detection and Alarm	None	Corridor Only	Rooms Only	Corridor and Habit. Space	Total Spaces in Zone			0	
	<input checked="" type="radio"/> 0(3)g	<input type="radio"/> 2(3)g	<input type="radio"/> 3(3)g	<input type="radio"/> 4	<input type="radio"/> 5				
13. Automatic Sprinklers	None		Corridor and Habit. Space		Entire Building		QR in Zone?	8	
	<input type="radio"/> 0		<input checked="" type="radio"/> 8		<input type="radio"/> 10		N		
Notes: a Use (0) where Parameter 5 is -10. b Use (0) where Parameter 10 is -8. c Use (0) on floor with fewer than 31 patients (existing buildings). d Use (0) where Parameter 4 is -10. e Use (0) where Parameter 1 is based on first floor zone or on an unprotected type of construction (columns marked "U"). f Use () if the area of Class B or C interior finish in the corridor and exit or room is protected by automatic sprinklers and Parameter 13 is 0. g Use this value in addition to Parameter 13 if the entire zone is protected with quick-response automatic sprinklers.									

Complete this worksheet for each zone. Where conditions are the same in several zones, one worksheet can be used for those zones.

Worksheet 4.7.7 Individual Safety Evaluation:

Safety Parameters	Containment Safety (S ₁)	Extinguishment Safety (S ₂)	People Movement Safety (S ₃)	General Safety (S ₄)
1. Construction	4	4		4
2. Interior Finish (Corridors and Exits)	3		3	3
3. Interior Finish (Rooms)	3			3
4. Corridor Partitions and Walls	0			0
5. Doors to Corridor	0		0	0
6. Zone Dimensions			-2	-2
7. Vertical Openings	3		3	3
8. Hazardous Areas	0	0		0
9. Smoke Control			0	0
10. Emergency Movement Routes			-2	-2
11. Manual Fire Alarm		2		2
12. Smoke Detection and Alarm		0	0	0
13. Automatic Sprinklers	8	8	4	8
Total Value	21	14	6	19

Complete this worksheet for each zone. Where conditions are the same in several zones, one worksheet can be used for those zones.

Worksheet 4.7.8 Mandatory Safety Requirements (Hospitals and Nursing Homes)

Zone Location	Containment (S _a)		Extinguishment (S _b)		People Movement (S _c)	
	New	Existing	New	Existing	New	Existing
1st Story	<input type="radio"/> 11	<input type="radio"/> 5	<input type="radio"/> 15 (12) ^a	<input type="radio"/> 4	<input type="radio"/> 8 (5) ^a	<input type="radio"/> 1
2nd or 3rd Story ^b	<input type="radio"/> 15	<input checked="" type="radio"/> 9	<input type="radio"/> 17 (14) ^a	<input checked="" type="radio"/> 6	<input type="radio"/> 10 (7) ^a	<input checked="" type="radio"/> 3
4th and Above	<input type="radio"/> 18	<input type="radio"/> 9	<input type="radio"/> 19 (16) ^a	<input type="radio"/> 6	<input type="radio"/> 11 (8) ^a	<input type="radio"/> 3

Notes: a: Use () in zones that do not contain patient sleeping rooms.
 b: For a 2nd story zone location in a *sprinklered* EXISTING facility, as an alternative to the mandatory safety requirement values set specified in the table, the following mandatory values set shall be permitted to be used:
 S_a=7, S_b=10, S_c=7

Worksheet 4.7.9 Zone Fire Safety Equivalency Evaluation

				S ₁ - S _a = C	Pass?	
Containment Safety (S ₁)	21	-	Mandatory Containment (S _a)	9	12	YES
Extinguishment Safety (S ₂)	14	-	Mandatory Extinguishment (S _b)	6	8	YES
People Movement Safety (S ₃)	6	-	Mandatory People Movement (S _c)	3	3	YES
General Safety (S ₄)	19	-	Occupancy Risk (R)	5	14	YES

Worksheet 4.7.11 Conclusions

1. All of the final values in Worksheet 4.7.9 are positive (YES). The level of fire safety is at least equivalent to that prescribed by the <i>Life Safety Code</i> .*	PASS
2. One or more of the final values in Worksheet 4.7.9 are negative (NO). The level of fire safety is not shown by this system to be equivalent to that prescribed by the <i>Life Safety Code</i> .	
* The equivalency covered by this worksheet includes the majority of the <i>Life Safety Code</i> . There are some considerations that are not evaluated by this method. These must be considered separately. These additional considerations are covered in Table 3-8, the "Facility Fire Safety Requirements Worksheet." One copy of this separate worksheet is to be completed for each facility.	

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TABLE 3412.7 SUMMARY SHEET - BUILDING SCORE

Existing occupancy	I2 (Assume A3)	Proposed occupancy			
Year constructed	1978	Number of stories	10	Height (ft.)	120
Type of construction	Type IA	Area per floor	40,200		
Percentage of open perimeter	100 %	Percentage Height Reduction	0 %		
Completely Suppressed:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>	Corridor wall rating			
Compartmentation:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>	Required door closers:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>		
Fireresistance rating of vertical opening enclosures:					
Type of HVAC System:	, floors served				
Automatic fire detection:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>	Type & location			
Fire alarm system:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>	Type			
Smoke control:	Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>	Type			
Adequate exit routes:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>	Dead ends:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>		
Maximum travel distance	180	Elevator controls:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>		
Emergency lighting:	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>	Mixed occupancies:	Yes: <input type="checkbox"/> No: <input type="checkbox"/>		

Safety Parameters	Fire Safety (FS)	Means of Egress (ME)	General Safety (GS)
3412.6.1 Building Height	10.0	10.0	10.0
3412.6.2 Building Area	9.0	9.0	9.0
3412.6.3 Compartmentation	0.0	0.0	0.0
3412.6.4 Tenant Separations	0.0	0.0	0.0
3412.6.5 Corridor Walls	0.0	0.0	0.0
3412.6.6 Vertical Openings	2.4	2.4	2.4
3412.6.7 HVAC Systems	0.0	0.0	0.0
3412.6.8 Fire Detection	-5.0	-5.0	-5.0
3412.6.9 Fire Alarm	5.0	5.0	5.0
3412.6.10 Smoke Control	-	3.0	3.0
3412.6.11 Exit Capacity	-	0.0	0.0
3412.6.12 Dead Ends	-	0.0	0.0
3412.6.13 Travel Distance	-	4.0	4.0
3412.6.14 Elevator Control	0.0	0.0	0.0
3412.6.15 Emergency Lights	-	0.0	0.0
3412.6.16 Mixed Use	0.0	-	0.0
3412.6.17 Sprinklers	4.0	2.0	4.0
3412.6.18 Standpipes	4.0	4.0	4.0
3412.6.19 Incidental Use	0.0	0.0	0.0
Building Score - Total Value	29.4	34.4	36.4

TABLE 3412.9 EVALUATION FORMULAS

Formula	Table 3412.7 Value	Mandatory Values	Score	Pass	Fail
FS-MFS>0	29.4	-	18.0	X	
ME-MME>0	34.4	-	29.0	X	
GS-MGS>0	36.4	-	29.0	X	

SECTION 3412.6 EVALUATION

3412.6.1 Building Height

Lesser of Two Values

Height Value (stories) = [Allowable Height - Actual Height] X Construction Factor (C.F.)

Height Value (feet) = [Allowable Height - Actual Height / 12.5] x Construction Factor (C.F.)

CF=1 if [Allowable Height - Actual Height] >= 0

CF From Table 3409.6.6(2) if [Allowable Height - Actual Height] < 0

	Feet	Stories	Basis
Allowable Height:	500	50	Unlimited - 500/50 was entered as an arbitrary number
Actual Height:	120	10	10 stories
Construction Factor:	1		Allowable height is unlimited
	30.4		
Height Value:	10.0		

3412.6.2 Building Area

Area Value = (Allowable Area-Actual Area)/1,200 [1-E(Actual Area/Allowable Area)]

Allowable Area = Area per Table 503 x (100+Sprinkler incr.+ Perimeter incr.)/100

	Value	Basis
Table 503 Area:	100000	Unlimited - 100,000 was entered as an arbitrary number
Sprinkler Increase:	200%	fully sprinklered
Perimeter Increase:	50%	approximately 75% of the perimeter is open to a 20+ft area

Allowable Area: 350000 Table 503 plus sprinkler increase and perimeter increase
 Actual Area: 69000 Total area on one floor.

Area Value: 9.0 ◀ Enter 50% of mandatory Fire Safety score as limit.

3412.6.3 Compartmentation

Net area between fire separation assemblies and fire rated floors.

Walls shall be fire barriers per 706 and of 2-hour construction with horizontal exit door. Door gasketed to provide substantial barrier to passage of smoke.

Floor assemblies to be continuous to exterior walls with penetrations sealed.

If floors are not properly subdivided the total building floor area shall be considered the compartmentation area.

Category	Fire Area
A	≥15,000 s.f.
B	10,000 s.f.
C	7,500 s.f.
D	5,000 s.f.
E	<2,500 s.f.

Use Group	Compartmentation Values				
	A	B	C	D	E
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

Interpolate as needed to determine compartmentation values.

Compartmentation Value: 0 Category A

3412.6.4 Tenant and Dwelling Unit Separations

- | Category | Space Division |
|----------|---|
| A | No or incomplete partitions or non-self-closing doors |
| B | Partition to ceiling, self-closing doors; < 1hr. |
| C | Fire Partitions to deck, self-closing doors, ≥ 1 hr. (708); 1 hr. floor assy. (711); or only 1 tenant in area |
| D | Fire Barriers to deck, self-closing doors, ≥ 1 hr. (706); 2 hr. floor assy. (711) |
| E | Fire Barriers to deck and floor assy. ≥ 2 hr. (706 and 711) |

Use Group	Fire Area Values				
	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-3,A-4,B,E,F,M,S-1	-4	-3	0	2	4
S-2	-5	-2	0	2	4

Tenant and Dwelling Value 0 Category C - NOT SURE IF THIS WOULD WORK BUT I WAS USING THIS FOR THE HAZARDOUS ROOM EVALUATION

SECTION 3412.6 EVALUATION

3412.6.5 Corridor Walls

- | | |
|-----------------|---|
| Category | Corridor Walls |
| A | No Partitions or non-self-closing doors |
| B | Partitions < 1 hour or not per 708.4 |
| C | Partitions > 1 hr., < 2 hr. (706), 20 minute doors (715) or no required corridors |
| D | Partitions ≥ 2 hrs , 1-1/2 hr. doors per 715 |

Corridor Wall Values				
Use Group	A	B	C	D
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

Corridor Wall Value 0 Category C - graded as "<1/2hr" on FSES and "<20min" doors

3412.6.6 Vertical Openings

Vertical Opening Value = Protection Value X Construction Type Factor

- | | |
|-----------|----------------------------|
| | Protection Value |
| -2 X F.C. | None (Unprotected Opening) |
| -1 X F.C. | <1 hr. enclosure |
| 1 | 1 to 2 hr. enclosure |
| 2 | 2 or more hour enclosure |

F.C.= Floors Connected

Construction-Type Factor									
Construction Type	IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
Factor	1.2	1.5	2.2	3.5	2.5	3.5	2.3	3.3	7

Protection Value: 2 2 hour rated
Construction Type Value: 1.2 Type IA

Vertical Opening Value 2.4

3412.6.7 HVAC Systems

- | | |
|-----------------|--|
| Category | HVAC Systems |
| A | Plenums not in accordance with 602 of IMC |
| B | Air movement in egress not in accordance with 1018.5 |
| C | Categories A & B are applicable |
| D | Full Compliance |
| E | Serves 1 story; or a boiler/chiller system w/o ductwork to ≥ 2 stories |

Category	Points
A	-10
B	-5
C	-15
D	0
E	5

HVAC System Value 0 Category D - ASSUMED

3412.6.8 Automatic Fire Detection

- | | |
|-----------------|--|
| Category | Automatic Fire Detection System |
| A | None |
| B | Smoke detectors in HVAC and maintained per IMC |
| C | Smoke detectors in HVAC installed as required for new buildings in IMC |
| D | Smoke detectors throughout except individual guest rooms, tenant spaces and dwelling units |
| E | Smoke detectors throughout fire area |

Automatic Fire Detection Values					
Occupancy	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

Fire Detection Value -5 Category B - per FSES we meet 90A

SECTION 3412.6 EVALUATION

3412.6.14 Elevator Controls

- Category Elevator Controls**
- A No elevator
 - B Any elevator without Phase I and II recall
 - C All elevators with Phase I and II recall
 - D Meets C; or B where permitted w/ 1 serving all occupied floors

Elevator Travel	Elevator Control Value			
	A	B	C	D
< 25 ft. of Travel	-2	0	0	2
≥ 25 ft. of Travel	-4	NP	0	4

Elevator Control Value 0 Category - 3rd floor is approx 24 ft above 1st floor (Actual recall information not in report)

3412.6.15 Egress Emergency Lighting

- Category Emergency Lighting**
- A Lighting and exit signs with no emergency power (2702)
 - B Lighting and exit signs with emergency power (2702)
 - C Lighting & exit signs w/ emergency power for loss of site power

Number of Exits Required	Egress Emergency Lighting Value		
	A	B	C
2 or More Exits	NP	0	4
Minimum of 1 Exit	0	1	1

Emer. Lighting Value 0 Category - no information about emergency lighting provided in report.

3412.6.16 Mixed Use Groups

- Category Mixed Uses**
- A Minimum 1 Hr. fire barriers between occupancies
 - B Fire barriers between occupancies per 302.3.2
 - C Fire barriers between occupancies w/ fire resistance ≥ twice that req'd by 302.3.2

Use Group	Mixed Use Group Values		
	A	B	C
A-1,A-2,R	-10	0	10
A-3,A-4,B,E,F,M,S	-5	0	5

Mixed Use Group Value 0 Enter category and description here

3412.6.17 Sprinklers

- Category Sprinkler System**
- A Req'd throughout but is not provided or not adequate (903)
 - B Req'd partially but is not provided or not adequate (903)
 - C Not req'd and not provided
 - D Req'd partially and comply (903)
 - E Req'd throughout and comply (Chapter 9)
 - F Not req'd but are provided throughout and comply (Chapter 9)

Use Group	Sprinkler System Values					
	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

Sprinkler Value 4 Category E - elec closets 2hour and wardrobes protected by adjacent sprinklers

3412.6.18 Standpipes

- Category Standpipe System**
- A Req'd but is not provided or not adequate (905.3)
 - B Not req'd and not provided
 - C Req'd and comply (905)
 - D Not req'd but are provided and comply (905)

Use Group	Standpipe System Values			
	A	B	C	D
A-1,A-3,F,M,R,S-1	-6	0	4	6
A-2	-4	0	2	4
A-4,B,E,S-2	-12	0	6	12

Sprinkler Value 4 Category C

3412.6.19 Incidental Use

Protection Required (508.2.5)	Specific Occupancy Area Values						
	None	1Hr.	AFSS	AFSS with SP	1Hr. & AFSS	2 Hours	2Hr. & AFSS
2 Hr. & AFSS	-4	-3	-2	-2	-1	-2	0
2 Hr.; or 1 Hr. & AFS	-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 AFS w/ SP	-1	0	-1	0	0	0	0
AFSS w/ SP	-1	-1	-1	0	0	-1	0

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1 Hr.; or AFSS	-1	0	0	0	0	0	0
----------------	----	---	---	---	---	---	---

AFSS = Automatic fire suppression system; SP = Smoke partition

Occupancy Value 0 Enter category and description here