

Code Review

Dec 21, 2015

revised 05/17/16

665 Congress Street

IBC 2009

NFPA 101 2009

8 floors above grade

502.1

Sprinklers

NFPA 13

NFPA 13

Fire Alarm

Monitored Fire Alarm Required

Monitored Fire Alarm Required

Smoke and CO Detectors

Smoke and CO detectors required

Smoke and CO detectors required

Occupant Load

T 1004.1.1

Basement = 1,000 sf Merc. accessory space (60 gsf/oc) = 17

7.3.1.2

Basement = 1,000 sf Merc. accesory. (60 gsf/oc) = 17

Basement = 16,843 sf Parking (200 gsf/oc) = 84

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Floor 1 = 16,843 sf Parking (200 gsf/oc) = 84

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Floor 1 = 2,089 sf Mercantile space (30 gsf/oc) = 70

Floor 1 = 2,543 sf Mercantile space (30 gsf/oc) = 85

Floor 1 = 1,528 sf Residential (200 gsf/oc) = 8

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Floor 2 = 11,756 sf Residential (200 gsf/oc) = 59

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Floor 2 = 728 sf (lounge area tables and chairs) (15sf/oc) = 49

Floor 2 = 728 sf (lounge area tables) (15sf/oc) = 49

Floor 2 = 1,479 sf (fitness room with equipment) (50sf/oc) = 30

Floor 2 = 1,479 sf (fitness with equip.) (50sf/oc) = 30

Floor 2 = 1,175 sf Business (100 gsf/oc) = 12

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Floor 3 = 15,119 sf Residential (200 gsf/oc) = 79

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Floor 7 = 13,109 sf Residential (200 gsf/oc) = 66

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Floor 7 = 564 private roof deck for unit 719 (15sf/oc) = 38

Floor 7 = 564 roof deck for unit 719 (15sf/oc) = 38

Floor 7 = 517 private roof deck for unit 718 (15sf/oc) = 35

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Floor 8 = 13,109 sf Residential (200 gsf/oc) = 66

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Total Building Occupant Load = 933**Total Building Occupant Load = 933**

Use Group(s)

309.1

Basement - Mercantile (M) (accessory storage)

6.1.10

Mercantile (accessory storage)

309.1

Floor 1 - Mercantile (M)

6.1.10

Mercantile

		311.3	Basement - Parking (S2)	6.1.13.1	Storage (Vehicles)
		311.3	Floor 1 - Parking (S2)	6.1.13.1	Storage (Vehicles)
		310.1	Floors 2 - 8 - Apartments (R2)	6.1.8.1.5	Apartment Building
High-rise Building		403.2.1		High Rise	
High-rise Building		403.2.2	Seismic Considerations per Chapter 16	11.8.3	Sprinkler control valves + water flow dev. at each floor
		403.2.3	Structural Integrity of Exit Enclosures	11.8.4.1	Emergency VOice/alarm system
		403.2.3.1	Wall Assembly (Not Applicable as occupancy category is II and the building is less than 420 feet tall)	11.8.4.2	Two way Telephone
		403.3.2	Fire Pumps	11.8.5	Emergency Lighting and Standby power
		403.4	Emergency Systems	11.8.5.2.4	Emergency power connected to electric fire pump
		403.4.1	Smoke Detection		Emergency command center, elevator, Mechanical for smokeproof enclosures
		403.4.2	Fire Alarm Systems		
		403.4.3	Emergency Voice/Alarm communication	11.8.6	Emergency command center
		403.4.4	Emergency responder radio coverage	11.8.7	Emergency Plans
		403.4.5	Fire Command		
		403.4.6	Smoke Removal		
		403.4.7	Standby Power		
		403.5.3.1	Stairway Communication System		
		403.5.4	Smokeproof Exit Enclosures		
		403.5.5	Luminous egress path markings		
		403.5.6	Emergency Escape openings are not required		
		403.6.2	Occupant evacuation Elevators		
		403.4.8.1	Emergency Power System		
Construction Type		T 503	1B - non-combustible		II (222) non-combustible
Building Height		T 503	11 stories, 160 feet		
Building Area		T 503	79,000 sf limited by S2, R2 and M are unlimited		
			17,809 sf maximum S2 floor plate		
Building Elements		T 601	2 hr Structural Frame	30.1.6	Apartments (No Minimum Construction requirements)
		T 602	2 hr Bearing Walls Exterior	37.1.6	Mercantile (no minimum requirements)
		T 601	2 hr Bearing Walls Interior	42.1.6	Storage (no minimum requirements)
		T 601	0 hr Non-Bearing Walls Interior		
		T 602	1 hr Non-Bearing Walls Exterior (sep. dist 10' <= 30')		

		T602	1hr Non-Bearing Walls Exterior (sep. dist 0'<10')		
		705.8 'h'	As footnote 'h' in the 2012 IBC allows exterior walls with unlimited unprotected openings to have a '0' hr fire rating section Section 104.11 allows local jurisdiction to approve this exception even as we are IBC 2009 currently		
		T 602	0 hr Non-Bearing Walls Exterior (sep. dist >30')		
		T 601	2 hr Floor Construction and secondary members		
		T 601	1 hr Roof Construction		
		705.8 (g)	Exterior walls at Open Parking Garages with 10 separation do not need fire rating North wall of parking garage is 1hr rated, all others are greater than 10 feet separation and unrated		
		705.5.11	Per 705.5.11 Parapets are not required per exception #6 as all of the exterior walls are allowed to have more than 25% unprotected openings. Our closest exterior wall is 12' from the centerline of a street and allows 45% unprotected openings in a sprinklered building.		
		1007.3 (5)	Areas of Refuge are not required at exit stairs serving open parking garages		
		1007.3 (7)	Areas of Refuge are not required in Group R-2 Occupancies		
			Exterior Walls to Meet NFPA 285 Test		
Separations					
		508.4	M and R2 = 1 hr	6.1.14.4.1	Mercantile and Apartment = 1hr with sprinkler
		508.4	M and S2 = 1 hr	6.1.14.4.1	Mercantile and Storage (ord.) = 1hr with sprink.
		508.4	S2 and R2 = 1 hr	6.1.14.4.1	Storage (ord.) and Apartment = 1hr with sprink.
		708.4	2 hr Elevator Shaft >= 4 stories	8.6.5	2 hr >= 4 stories
		708	2 hr Mechanical Shaft >= 4 stories		
		708	1 hr Mechanical Shaft < 4 stories		
		1022.1	2 hr Stair Shaft >= 4 stories		
		1022.1	1 hr Stair Shaft < 4 stories		
		709.1	1 hr Between Dwelling Units		
		1018.1	1/2 hr Corridor	30.3.6.1.2	1/2 hr corridor
		508.2.5	1 hr Boiler Room	30.3.2.1.1	1 hr Boiler Room
		508.2.5	1 hr Trash Room	30.3.2.1.1	1 hr Trash Room

		508.2.5	1 hr Storage Room	30.3.2.1.1	1 hr Storage Room
		508.2.5	1 hr Laundry Room	30.3.2.1.1	1 hr Laundry Room
		715.4	90 minute Stairwell Doors (2hr shaft)		
		715.4	20 minute Apartment Entry Doors (1/2 hr corridor wall)	30.3.6.2.1	20 minute Apartment Entry Doors
Distances and Exits		1021.1	2 Exits required (less than 500 occ. per story)	7.4.1.1	2 Means of Egress required
		1016.1	250' Travel Distance to exits with Sprinklers 160' maximum travel distance to exit	30.2.6.3.2	200' Travel distance from apt. door to exit
		1014	Common Path of Travel deleted per MUBEC 38'-9" maximum common path of travel	30.2.5.3.2	50' Common Path of Travel
		1018.4	50' Dead End 38'-9" maximum dead end	30.2.5.4.2	50' Dead End
				30.2.6.2	125' Travel Distance within Dwelling to Corridor
Unprotected Openings		T 705.8	15% when exterior wall sep. dist. is 3'>5'		
		T 705.8	45% when exterior wall sep. dist. is 10'>15'		
		T 705.8	75% when exterior wall sep. dist. is 15'>20'		
		T 705.8	Unlimited when exterior wall sep. dist. is 25'>30' (allows '0' hr exterior walls per footnote 'h' in 2012 and 104.11 in 2009)		
		T 705.8	Unlimited when exterior wall sep. dist. is 25'>30' (allows '0' hr exterior walls per footnote 'h' in 2012 and 104.11 in 2009)		
		T 705.8	Unlimited when exterior wall sep. dist. is >30' (allows '0' hr exterior walls per footnote 'h' in 2012 and 104.11 in 2009)		
			North wall above paring is 40' away from proprty line and unrated, parking garage wall is 1 hr rated		
			West wall is 27' from property line thus is unrated		
			East wall is 28' from property line thus is unrated		
			South wall is 36'-5' from property line thus is unrated		
Elevator Lobby		708.14.1.4	REQUIRED		
Elevator as MoE		1007.2.1.1	REQUIRED		
Generator			Required for means of egress elevator		
Egress Windows		1029.1.1	Not Required as Sprinkled with NFPA13		

Egress Stairs	1009.1	Occ. Load >50 = 44" min width	24.2.5.4	36" min. stair width	
	1009.1	Occ. Load <=50 = 36" min width	7.2.2.2.1.2(B)	44" min. over 50 occ.	
	1003.3	Handrails can protrude into stair 4.5" max	7.2.2.2.1.2	Handrails can protrude into stair 4.5" max	
	1005.2	Door Swings may not reduce egress width by > 1/2			
	1009.2	80" min headroom	7.2.2.2.1.1(a)	6'-8" min. headroom	
	1009.3	7" max. riser	7.2.2.2.1.1(a)	7" max. riser	
	1009.3	11" min Tread depth	7.2.2.2.1.1(a)	11" min. tread	
	1009.6	12' max. total rise between floors or landings	7.2.2.2.1.1(a)	12' max. height between landings	
Ramps	1010.2	1:12 (8%) Max slope	7.2.5.2(a)	1:12 max. slope	
	1010.6	60" long landings at top and bottom			
	1010.6	2% max slope of landings	7.2.5.2(a)	1:48 max. cross slope	
	1010.8	>6" rise must have handrails on both sides of ramp			
Egress Corridors	1018.2	44" min. when Occ. > 50			
	1018.2	36" min. when Occ. <= 50			
	1018.2	24" min. at service corridors to mechanical equipment			
Sound	1207.2	STC > 50 at walls and floors/ceilings			
	1207.3	IIC > 50 at walls and floors/ceilings			
Energy IECC 2006					
Zone 6					
Commercial	T 502.2.1	0.35 Fenestration U-Factor			
		R-20c Ceiling entirely above deck			
		Proposed ceiling above deck is R-33			
		R-13+7.5c Metal Framed wall			
		Proposed Wall is R-22.5			
		R-38 Floor			
		Proposed floor is R-38			
		R-7.5c Basement wall			
		Proposed Basement Wall is R-10			
		R-10 to 4ft Slab			
		Proposed Slab is R-10			
		U 0.45 Storefront			
		U 0.80 Entrance Door			
		U 0.55 Other			

