

CODE ANALYSIS

NFPA 101 Life Safety Code - 2012 Edition

Building Classification:	Existing Industrial (5200 sf), Storage (18,000 sf) & Business (6165 sf) New Addition – Business (4490 sf) Total First Floor Area = 29,810 sf Total Second Floor Area = 4045 sf Building Total Floor Area = 33,855 sf
Hazard Classification:	Ordinary Hazard
Construction Type:	Type II (000)
Occupant Loads:	5200 sf Factory/Industrial @ 500 sf/occupant = 6 occupants 18,000 sf Storage @ 500 sf/occupant = 36 occupants 10,655 sf Business @ 100 sf/occupant = 107 occupants Total Calculated Load: 149 Occupants
Separation of Use Rating:	2 hours (1 Hour) @ Business/Storage; 1 hour @ Storage/Industrial
Janitor, Mech, Stor Rating:	1 hour
Stair Rating:	1 hour (1 Hour)
Elevator Shafts:	2 hours (Existing)
Area of Refuge:	1 hour (None)
Minimum Stair width:	44" clear; 36" if less than 50 occupants
Maximum Riser height:	7"
Minimum Tread width:	11"
Minimum Headroom:	6'-8" at stairs; 7'-6" at occupied areas
Maximum ht between landings:	12'-0"
Handrail height:	34"-38" @ 42" guardrail
Handrail top extension:	12" horz.
Handrail bottom extension:	11" angled + 12" horz.
Handrail diameter:	1-1/4" O.D.
Maximum balluster open space:	less than 4"

Building Uses	Industrial/Storage	Business
“(x)” denotes if building is fully sprinkled		
Max. Allowable Travel Distance:	200' (250')/200' (400')	200' (300')
Max. Allowable Common Path:	50' (100')/50' (100')	75' (100')
Max. Dead End Corridor Length:	50' / 50' (100')	20' (50')
Minimum Egress Corridor Width:	44"/36" if >50 occ	44"/36" if >50 occ.
Minimum Number of Required Exits	2	2 (1 per 38.2.4.6)
Minimum Horz Egress Enclosure rating:	1 hr (none)	1 hr (none)
Minimum Separation of exits:	0.5 diagonal' (0.33)	Same
Minimum Egress Door Width:	36"	36"
Exit Lighting:	Required	Required
Emergency Lighting:	Required	Required
Fire Alarm System:	Required	Required
Fire Sprinkler System:	Required	Required (mixed use)
Portable Fire Extinguishers:	Required	Required
Exit Devices/Panic Hardware	Required	Required
City of Portland Compliance:	NFPA 1 & PFD Technical Standards	

2009 International Building Code

“(x)” denotes if building is fully sprinkled

Use Group Classification: Factory – Use Group F-1 (5200 sf existing)
 Storage – Use Group S-1 (18,000 sf existing)
 Business - Use Group B (6165 sf existing)
 Business – Use Group B (4490 sf new addition)

Construction: Type II – Non-Combustible, Unprotected

Occupant Loads: F-1 @ 100 sf/occupant = 52 occupants
 S-1 @ 500 sf/occupant = 36 occupants
 B @ 100 sf/occupant = 107 occupants
 Total calculated load: 195 occupants

Area Use Separation Ratings: 2 hour (1 Hour)

Janitor, Mech & Storage Rooms: 1 hour

Building Limitations

Construction Type: IIB Unprotected

Maximum Height: 3 story / 55' (+1 story/20') @ B
 2 story / 55' (+1 story/20') @ F-1 & S-1

Maximum Area / Floor: 15,500 sf (31,000) @ F-1
 17,500 sf (35,000) @ S-1
 23,000 sf (46,000) @ B

Actual Area/Height: 5200 sf / 1 Story at F-1
 18,000 / 1 Story @ S-1
 10,655 sf / 2 Story @ B

Fire Resistance Ratings

Load Bearing Exterior Walls: None

Fire Separation Exits (Stairs): 1 hour (1 hour)

Fire Separation of Uses: 2 hours (1 hour)

Shafts & Elevator Hoistways: 2 hours

Exit Corridors: 1 hour (none)

Minimum Number of Exits: 2 per occupancy type (1 if less than
 30 occupants and 75' travel distance to exit
 from 2nd floor to exterior)

Maximum Dead End Corridor Length: 20' (50')

Maximum Common Travel Path: 75' (100')

Maximum Travel Distance: 200' (250') @ F-1 & S-1; 200' (300') @ B

Minimum Corridor Width: 44"/36" if >50 occupants

Minimum Stair Width: 44"/36" if > 50 occupants

Maximum Riser Height: 7"

Minimum Tread Depth: 11"

Minimum Ramp Width: 44"/36" if > 50 occupants

Maximum Ramp Pitch: 1:12

Handrails: Same as NFPA 101

Minimum Ceiling Height: 7'-6"

Fire Alarm System: Required

Fire Sprinkler System: Required

Portable Fire Extinguishers: Required

Exit Lighting: Required

Emergency Lighting: Required

Interior Finishes @ Egress: Class C @ S-1 & F-1
 Class B @ B

Building Live Loads

Office: 50 psf
Lobbies: 100 psf
Corridors: 80 psf
Storage: 125 psf @ light; 250 psf @ heavy

Maine State Plumbing Code/UPC

Occupancy Classification: NEA Business Renovation and Addition
Occupancy Area: 7730 sf – First Floor
Occupancy Load: 78

Factory:	78 Occupants - 39 male/39 female			
<u>FIXTURES</u>	<u>TOILETS</u>	<u>URINALS</u>	<u>LAVS</u>	<u>SHOWERS</u>
Men	1	1	1	NR
Women	1	0	1	NR
Drinking Fountain:	1/150 OCCUPANTS			

MUBEC (Maine Uniform Building Energy Code) MINIMUM INSULATION VALUES

Per 2009 IECC; Table 502.1.2, 502.2(1) and 502.3

<u>ZONE 6A</u>	<u>R-VALUE</u>	<u>U-FACTOR</u>	<u>SHGC</u>
Exterior wall	18.5	0.054	NA
Roof (above deck)	20.0	0.048	NA
Slab (24" band)	15.0	0.052	NA
Frost Wall	7.5	0.133	NA
Doors – Opaque	2.0	0.50	NA
Doors – Glazed	1.25	0.80	NR
Windows	2.9	0.35	NR
Storefront	2.2	0.45	NR

End of Analysis