

Staff Analysis for Declaratory Statement Request DS2016-083

Issue: Petitioner Paul A. Zilio, PE of Bliss & NyiTray, Inc. seeks a clarification with regard to the application of the live loads as depicted in Table 1607.1 of the 5th Edition (2014) Florida Building Code, Building to the project in question.

Question: Is the live load 40psf for the hotel upper level corridor that serves only private rooms but also serves as exit access from each room to the exit (stairways)?

Background:

Situation:

The Petitioner is currently starting design of a **5-story hotel in Miami**. The elevated floors have private hotel rooms on each side of a central corridor. There is an elevator in the middle and exit stairways at each end.

5th Edition (2014) Florida Building Code, Building Chapter 2 –Definitions

Corridor: An enclosed exit access component that defines and provides a path of egress travel.

Exit: That portion of a means of egress system between the exit access and the exit discharge or public way. Exit components include exterior exit doors at the level of exit discharge, interior exit stairways, interior exit ramps, exit passageways, exterior exit stairways and exterior exit ramps and horizontal exits.

Exit Access: That portion of a means of egress system that leads from an occupied portion of a building or structure to an exit.

Means of Egress: A continuous and unobstructed path of vertical and horizontal egress travel from any occupied portion of a building or structure to a public way. A means of egress consists of three separate and distinct parts: the exit access, the exit and the exit discharge. 2.

Chapter 16 – Structural Design

TABLE 1607.1
MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L_u , AND
MINIMUM CONCENTRATED LIVE LOADS²

OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (lbs.)
1. Apartments (see residential)	—	—
2. Access floor systems		
Office use	50	2,000
Computer use	100	2,000
3. Armories and drill rooms	150 ^a	—
4. Assembly areas		
Fixed seats (fastened to floor)	60 ^a	—
Follow spot, projections and control rooms	50	—
Lobbies	100 ^a	—
Movable seats	100 ^a	—
Stage floors	150 ^a	—
Platforms (assembly)	100 ^a	—
Other assembly areas	100 ^a	—
5. Balconies and decks ^b	Same as occupancy served	—
6. Catwalks	40	300
7. Cornices	60	—
8. Corridors		
First floor	100	—
Other floors	Same as occupancy served except as indicated	—
9. Dining rooms and restaurants	100 ^a	—
10. Dwellings (see residential)	—	—
11. Elevator machine room grating (on area of 2 inches by 2 inches)	—	300
12. Finish light floor plate construction (on area of 1 inch by 1 inch)	—	200
13. Fire escapes	100	—
On single-family dwellings only	40	—
14. Garages (passenger vehicles only)	40 ^a	Note a
Trucks and buses	See Section 1607.7	
15. Handrails, guards and grab bars	See Section 1607.8	
16. Helipads	See Section 1607.6	
17. Hospitals		
Corridors above first floor	80	1,000
Operating rooms, laboratories	60	1,000
Patient rooms	40	1,000
18. Hotels (see residential)	—	—
19. Libraries		
Corridors above first floor	80	1,000
Reading rooms	60	1,000
Stack rooms	150 ^a	1,000
20. Manufacturing		
Heavy	250 ^a	3,000
Light	125 ^a	2,000
21. Marquees	75	—
22. Office buildings		
Corridors above first floor	80	2,000
File and computer rooms shall be designed for heavier loads based on anticipated occupancy	—	—
Lobbies and first-floor corridors	100	2,000
Offices	50	2,000

TABLE 1607.1—continued
MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L_u , AND
MINIMUM CONCENTRATED LIVE LOADS²

OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (lbs.)
23. Penal institutions		
Cell blocks	40	—
Corridors	100	—
24. Recreational uses:		
Bowling alleys, poolrooms and similar uses	75 ^a	—
Dance halls and ballrooms	100 ^a	—
Gymnasiums	100 ^a	—
Reviewing stands, grandstands and bleachers	100 ^a	—
Stadiums and arenas with fixed seats (fastened to floor)	60 ^a	—
25. Residential		
One- and two-family dwellings		
Uninhabitable attics without storage ^{1,2,3}	10	—
Uninhabitable attics with storage ^{1,2,3}	20	—
Habitable attics and sleeping areas ⁴	30	—
All other areas	40	—
Hotels and multifamily dwellings		
Private rooms and corridors serving them	40	—
Public rooms ^a and corridors serving them	100	—
26. Roofs		
All roof surfaces subject to maintenance workers		300
Awnings and canopies:		
Fabric construction supported by a skeleton structure	5 nonreducible	
All other construction	20	
Ordinary flat, pitched, and curved roofs (that are not occupiable)	20	
Primary roof members exposed to a work floor:		
Single panel point of lower chord of roof trusses or any point along primary structural members supporting roofs over manufacturing, storage warehouses, and repair garages		2,000
All other primary roof members		300
Occupiable roofs:		
Roof gardens	100	
Assembly areas	100 ^a	
All other similar areas	Note 1	Note 1
27. Schools		
Classrooms	40	1,000
Corridors above first floor	80	1,000
First-floor corridors	100	1,000
28. Scutlies, skylight ribs and accessible ceilings	—	200
29. Sidewalks, vehicular drive ways and yards, subject to trucking	250 ^a	8,000 ^a

(continued)

OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (lbs.)
30. Stairs and exits One- and two-family dwellings All other	40 100	300' 300'
31. Storage warehouses (shall be designed for heavier loads if required for anticipated storage) Heavy Light	250* 125*	—
32. Stores Retail First floor Upper floors Wholesale, all floors	100 75 125*	1,000 1,000 1,000
33. Vehicle barriers	See Section 1607.8.3	
34. Walkways and elevated platforms (other than exitways)	60	—
35. Yards and terraces, pedestrians	100*	—

For SI: 1 inch = 25.4 mm, 1 square inch = 645.16 mm²,

1 square foot = 0.0929 m²,

1 pound per square foot = 0.0479 kN/m², 1 pound = 0.004448 kN,

1 pound per cubic foot = 16 kg/m³.

- a. Floors in garages or portions of buildings used for the storage of motor vehicles shall be designed for the uniformly distributed live loads of Table 1607.1 or the following concentrated loads: (1) for garages restricted to passenger vehicles accommodating not more than nine passengers, 3,000 pounds acting on an area of 4.5 inches by 4.5 inches; (2) for mechanical parking structures without slab or deck that are used for storing passenger vehicles only, 2,250 pounds per wheel.
- b. The loading applies to stack room floors that support nonmobile, double-faced library book stacks, subject to the following limitations:
 1. The nominal bookstack unit height shall not exceed 90 inches;
 2. The nominal shelf depth shall not exceed 12 inches for each face; and
 3. Parallel rows of double-faced book stacks shall be separated by aisles not less than 36 inches wide.
- c. Design in accordance with ICC 300.
- d. Other uniform loads in accordance with an approved method containing provisions for truck loadings shall also be considered where appropriate.
- e. The concentrated wheel load shall be applied on an area of 4.5 inches by 4.5 inches.
- f. The minimum concentrated load on stair treads shall be applied on an area of 2 inches by 2 inches. This load need not be assumed to act concurrently with the uniform load.
- g. Where snow loads occur that are in excess of the design conditions, the structure shall be designed to support the loads due to the increased loads caused by drift buildup or a greater snow design determined by the building official (see Section 1608).
- h. See Section 1604.8.3 (HVHZ shall comply with Section 1616.5) for decks attached to exterior walls.
- i. Uninhabitable attics without storage are those where the maximum clear height between the joists and rafters is less than 42 inches, or where there are not two or more adjacent trusses with web configurations capable of accommodating an assumed rectangle 42 inches in height by 24 inches in width, or greater, within the plane of the trusses. This live load need not be assumed to act concurrently with any other live load requirements.

Staff analysis:

Question: Is the live load 40psf for the hotel upper level corridor that serves only private rooms but also serves as exit access from each room to the exit (stairways)?

Answer:

Option #1/Petitioner: Petitioner respectfully believes the answer to the question outlined above is “YES”. Clearly the live load for corridors serving private hotel rooms is 40psf. While the live load for Stairs and Exits is 100psf, the corridor is, by definition, an exit access component. Further, corridor meets the definition of exit access (1st part of means of egress), not exit (stairway) (2nd part of means of

egress). If the answer is “NO”, then it seems the 40psf live load for hotel corridors serving private rooms is never applicable.

A change to 100psf would add significant construction cost to this hotel.

Option #2/Staff: Yes. As per Table 1607.1 (Item 25) of the 5th Edition (2014) Florida Building Code, Building, the live load for the corridor in question is 40psf.