**Exercise – NFPA 101 – Egress and Life Safety**

Find the answers in **NFPA 101-2021** and include the paragraph reference number below.

1. The 20th floor of a large hotel contains 56 hotel rooms and 2 suites. Use NFPA 101 to calculate the occupant load, if the total area of the floor is 20,000 square feet.
2. Do the exit stairwell doors serving the 20th floor of the hotel in Question 1 require panic hardware, per NFPA 101?
3. According to NFPA 101, the clear opening width of a new swinging door is measured between the face of the door and the stop on the frame, with the door in what position?
4. Per NFPA 101, what is the egress capacity of a pair of doors serving a large college lecture hall, if the doors are equipped with vertical rod panic hardware (less bottom rod) and have 68 inches of clear opening width?
5. What is the minimum width of the touchpad for panic hardware used on a 48-inch-wide egress door in an auditorium?
6. Can panic hardware with cylinder dogging be installed on a fire door?
7. Which occupancy classifications in NFPA 101 require panic hardware for doors serving a certain occupant load, if the door is equipped with a lock or latch?
8. What are the 3 components of a Means of Egress?
9. Are Special Locking Arrangements (delayed egress, sensor release, controlled egress doors, elevator lobby locks) allowed by NFPA 101 to be used in a New Health Care occupancy?
10. Are new cross-corridor horizontal exit doors required to be automatic-closing (self-closing not allowed), according to NFPA 101?
11. Under what conditions does NFPA 101 require egress doors to swing in the direction of egress?
12. When analyzing the encroachment of a door into the required egress width, two points in the opening cycle are important – A) the point at which the door projects furthest into the required egress width (often 90 degrees), and B) the door’s fully-open position. What is the maximum amount that a door can restrict or project into the required egress width at point A and point B?
13. What is the maximum allowable travel distance for a fully-sprinklered new Educational occupancy, per NFPA 101?
14. In an existing day care center that is not equipped with a sprinkler system, what is the maximum length of the common path of travel allowed by NFPA 101?
15. Where automatic flush bolts are used in a means of egress, would it be acceptable to install a dummy lever on the egress side of the inactive leaf?
16. For a new Educational occupancy, what occupant load would trigger the need for a multi-purpose room to have panic hardware, according to NFPA 101?
17. For a door where a key-operated lock is acceptable, what must be stated on the required signage?
18. What is the required fire rating for a fire door assembly (opening protective) in a 1-hour stair enclosure wall?
19. Does NFPA 101 allow a residential dwelling unit entrance door to have a separate deadbolt in addition to the lockset with an active latchbolt that is required for fire protection?
20. According to NFPA 101, is it acceptable for the doors leading to a stair serving 3 stories to be mechanically locked (no remote release) on the stair side?
21. What is the minimum clear opening width for a cross-corridor smoke barrier door leaf in a new hospital, if the required minimum corridor width is 8 feet?
22. Does NFPA 101 require positive latching hardware on cross-corridor smoke barrier doors in a new hospital?
23. What is the maximum opening force allowed by NFPA 101 for interior hinged doors without closers?

**Answers:**

1. Area = 20,000 SF divided by 200 SF/person = occupant load of 100 people. Paragraph 7.3.1.2 (including table)
2. No, because Chapters 28 and 29 for new and existing hotels and dormitories do not require panic hardware.
3. With the door leaf open 90 degrees. Paragraph 7.2.1.2.1.1
4. 68 inches divided by 0.2 inches of egress width per person = egress width is provided by that door opening for 340 people. Paragraph 7.3.3 (including table)
5. 24 inches. Paragraph 7.2.1.7.1(1)
6. No, if panic hardware is installed on a fire door it must be approved fire exit hardware, and mechanical dogging is not allowed. Paragraph 7.2.1.7.3
7. Assembly, Educational, Day Care, and High Hazard (new and existing); paragraphs 12/13.2.2.2.3, 14/15/16/17.2.2.2.2, 7.11.7
8. The exit, the exit access, and the exit discharge. Paragraph 3.3.180
9. Yes. Paragraph 18.2.2.2.4
10. Yes. Paragraph 7.2.4.3.11
11. When serving an occupant load of 50 people or more (with exceptions), when swinging into an exit enclosure (except when serving an individual dwelling unit), or when serving a high hazard area. Paragraph 7.2.1.4.2
12. Cannot restrict more than half of the required egress width at point A, and can’t encroach on the required width more than 7 inches at point B. Paragraph 7.2.1.4.3
13. 200 feet. Paragraph 14.2.6.3
14. 75 feet. Paragraph 17.2.5.2.2
15. No. Paragraph 7.2.1.5.9(2)(a)
16. 100 occupants (IBC is 50 occupants). Paragraph 14.2.2.2.2
17. THIS DOOR TO REMAIN UNLOCKED WHEN THE BUILDING IS OCCUPIED or THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED. Paragraph 7.2.1.5.6.2(3)
18. 1 hour. Table 8.3.3.2.2
19. Yes. Paragraph 7.2.1.5.9.3
20. Yes. Paragraph 7.2.1.5.7 refers to stairs serving more than 4 stories
21. 41 1/2 inches. Paragraph 18.3.7.6(4)
22. No. Paragraphs 8.5.4.3 and 18.3.7.8
23. 5 lbf. Paragraph 7.2.1.4.5(2)

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