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Exam : Fire Inspector II

Title : 67 - Fire Inspector II Exam

Version : DEMO

1.A code official may allow the occupant load of a building or room to exceed that specified in the building code if additional exit facilities are provided, all other egress requirements are met, and the maximum occupancy does not exceed one occupant per sq. ft. of occupiable floor area.

- A. 3
- B. 5
- C. 7
- D. 10

Answer: D

Explanation:

A code official may allow the occupant load to exceed the building code requirements if additional exit facilities are provided, all egress requirements are met, and the maximum occupancy does not exceed one occupant per 10 sq. ft. of occupiable floor area.

Reference to Fire Inspector Documentation:

1. 2021 International Building Code (IBC) – Table 1004.5 (Occupant Load Factor)

The minimum safe occupancy load factor is 10 sq. ft. per occupant, meaning no space can have more than 1 person per 10 sq. ft.

Fire code officials can approve increased occupancy only if extra exits are provided, ensuring compliance with egress and fire safety rules.

2. 2021 International Fire Code (IFC) – Section 1004.2 (Increased Occupant Load Allowance)

Allows for an increased occupant load only if additional exits and egress requirements are met but never beyond 1 person per 10 sq. ft.

Detailed Explanation of Answer Choices:

Option A (Incorrect): 1 occupant per 3 sq. ft. is too high and would violate egress safety regulations.

Option B (Incorrect): 1 occupant per 5 sq. ft. still exceeds safety limits.

Option C (Incorrect): 1 occupant per 7 sq. ft. is not the minimum required standard.

Option D (Correct): 1 occupant per 10 sq. ft. is the minimum limit for allowing an increased occupant load under IFC 1004.2 and IBC Table 1004.5.

Thus, the correct and verified answer is: D. 10.

2.What is the maximum number of students permitted in a classroom that measures 20 ft. x 30 ft., and which contains four fixed 4 ft. x 8 ft. tables?

- A. 12
- B. 24
- C. 30
- D. 40

Answer: B

Explanation:

To determine the maximum number of students permitted in a classroom, we must follow the occupant load calculation based on the 2021 International Building Code (IBC) and International Fire Code (IFC).

Step 1: Calculate the Room Area

The classroom measures 20 ft. x 30 ft., so the total area is:

$$20 \times 30 = 600 \text{ sq. ft.}$$

Step 2: Subtract the Area Occupied by Fixed Tables

Each table measures 4 ft. x 8 ft., so its area is:

$4 \times 8 = 32$ sq. ft. per table $4 \times 8 = 32$ sq. ft. per table

Since there are 4 tables:

$32 \times 4 = 128$ sq. ft. occupied by tables $32 \times 4 = 128$ sq. ft. occupied by tables

Step 3: Determine the Usable Space for Students

$600 - 128 = 472$ sq. ft. available $600 - 128 = 472$ sq. ft. available

Step 4: Apply the Occupant Load Factor

According to 2021 IBC Table 1004.5 (Occupant Load Factor), the factor for a classroom with tables and chairs is 20 sq. ft. per person.

$472 \div 20 = 23.6$

Since the occupant load must be rounded down, the maximum number of students is 24.

Reference to Fire Inspector Documentation:

1. 2021 International Building Code (IBC) – Table 1004.5 (Occupant Load Factor) A classroom with tables and chairs requires 20 sq. ft. per occupant.

This method ensures compliance with egress and fire safety requirements.

2. 2021 International Fire Code (IFC) – Section 1004.1 (Occupant Load Determination)

The IFC states that occupant load is based on net usable floor area and must follow IBC Table 1004.5.

Detailed Explanation of Answer Choices:

Option A (Incorrect): 12 students would be too low based on the calculations.

Option B (Correct): 24 students is the accurate calculation following IBC 1004.5.

Option C (Incorrect): 30 students would exceed the available space per code.

Option D (Incorrect): 40 students is far above the allowed maximum.

Thus, the correct and verified answer is: B. 24.

3. Given: A code official permits a sprinkler system to substitute for a required second exit from a small basement.

How long must records related to this decision be maintained by the code official?

- A. Five years
- B. Three years
- C. Until the building is sold
- D. For as long as the building and the condition exist

Answer: D

Explanation:

Retention of Fire Code-Related Records

According to the International Fire Code (IFC) 2021, Section 104.6, records related to code enforcement decisions, including modifications or substitutions (such as a sprinkler system replacing a second exit), must be retained for as long as the building and the condition exist.

This ensures that future inspections, property owners, and authorities can verify past decisions and compliance history.

2. Why the Records Must Be Retained Permanently

Modifications that impact life safety (such as exit requirements) must remain on record for the lifetime of the building to ensure ongoing compliance and safety.

If the condition (sprinkler substitution for an exit) still exists, any future inspector or building official must be able to verify the original approval and rationale.

3. Verification of Other Options

Option A (Five years) – Incorrect, as fire code modifications must remain on record permanently if they affect egress or fire protection systems.

Option B (Three years) – Incorrect, as this timeframe applies to temporary inspection reports, not major code modifications.

Option C (Until the building is sold) – Incorrect, as ownership changes do not affect the need for record retention on fire safety decisions.

Reference Sources:

International Fire Code (IFC) 2021 – Section 104.6 (Fire Code Record Retention Requirements)

NFPA 1: Fire Code (Retention of Code-Related Decisions)

ICC Fire Inspector II Study Guide (2021)

Thus, the correct and verified answer is: D. For as long as the building and the condition exist. #

4. Paint spray booths must have a clearance of ____ in. from unprotected combustible materials.

A. 12

B. 18

C. 24

D. 36

Answer: B

Explanation:

Paint Spray Booth Clearance Requirements

According to the International Fire Code (IFC) 2021, Section 2404.3.2, paint spray booths must have a minimum clearance of 18 inches from unprotected combustible materials.

This clearance requirement helps prevent heat transfer, fire spread, and ignition of nearby combustible materials due to the operation of the spray booth.

2. Why 18 Inches is the Correct Answer

Spray booths generate overspray, vapors, and heat, making clearance essential for fire prevention.

The requirement applies to combustible walls, ceilings, and storage materials surrounding the spray booth.

If combustibles are within 18 inches, additional fire protection such as fire-rated barriers or sprinkler protection may be required.

3. Verification of Other Options

Option A (12 inches) – Incorrect, as the IFC mandates a minimum 18-inch clearance.

Option C (24 inches) – Exceeds the standard clearance requirement but is not the official minimum. Incorrect.

Option D (36 inches) – Some jurisdictions may require larger clearances, but IFC mandates 18 inches as the minimum. Incorrect.

Reference Sources:

International Fire Code (IFC) 2021 – Section 2404.3.2 (Paint Spray Booth Clearance Requirements)

NFPA 33: Standard for Spray Application Using Flammable or Combustible Materials (Clearance Guidelines)

ICC Fire Inspector II Study Guide (2021)

Thus, the correct and verified answer is: B. 18 inches

5.Churches, schools, apartment dwellings, and mercantile structures are commonly built using what type of construction?

- A. Type I
- B. Type II
- C. Type III
- D. Type IV

Answer: C

Explanation:

Understanding Type III Construction

According to the International Building Code (IBC) 2021, Section 602.3, Type III construction is a mix of noncombustible and combustible materials.

Exterior walls must be noncombustible or fire-retardant-treated wood, while interior structural elements (such as floors, roofs, and partitions) can be wood.

2. Common Uses of Type III Construction

Churches, schools, apartment buildings, and mercantile (retail) structures are often built using Type III construction because it balances fire resistance with cost-effectiveness.

Many low-rise residential and commercial buildings use this type due to its ability to support multiple stories while maintaining some fire protection.

3. Verification of Other Options

Option A (Type I) – Incorrect, as Type I construction is entirely noncombustible (steel/concrete) and used for high-rises, not typical for churches, schools, or apartments.

Option B (Type II) – Incorrect, as Type II construction is fully noncombustible but has lower fire resistance than Type I, mainly used for commercial buildings, warehouses, and low-rise offices.

Option D (Type IV) – Incorrect, as Type IV (heavy timber) is rarely used for schools and apartments, though some older churches may use it.

Reference Sources:

International Building Code (IBC) 2021 – Section 602.3 (Type III Construction Definition)

NFPA 220: Standard on Types of Building Construction

ICC Fire Inspector II Study Guide (2021)

Thus, the correct and verified answer is: C. Type III. #