Introduction

Course Description

This 6-hour seminar will provide code officials and other interested parties with the fundamental knowledge necessary to administer and enforce applicable code requirements of the 2012 International Property Maintenance Code® (IPMC®).

This information will increase your ability to locate, describe and apply the appropriate code sections of the IPMC in order to determine compliance or noncompliance while performing a residential or commercial inspection.

Goal

Participants will be able to administer and enforce the 2012 IPMC, by locating, describing and applying the specific sections of the code when determining compliance or noncompliance within the built environment.
Target Audience

- Code enforcement officers.
- Property maintenance officials.
- Housing inspectors.
- Community revitalization and rehabilitation staff.

Objectives

Upon completion, participants will be better able to:
1. Identify and locate key sections of the code.
2. Describe the application of the code to inspection and code enforcement.
3. Apply code requirements to problems similar to those encountered in the field.

Module 1
Chapter 1
Administration

IPMC General Organization

- Chapter 1—Administration
- Chapter 2—Definitions
- Chapter 3—General Requirements
- Chapter 4—Light, Ventilation and Occupancy Limitations
- Chapter 5—Plumbing Facilities and Fixture Requirements
- Chapter 6—Mechanical and Electrical Requirements
- Chapter 7—Fire Safety Requirements
- Appendix A—Boarding Standard
Effective application of the property maintenance codes helps to:
- Maintain property values.
- Deter crime.
- Encourage community viability.

The adoption and enforcement of the IPMC will help provide:
- The proper maintenance of buildings to protect against fire hazards.
- A safe, unobstructed means of egress.
- The prevention of potential structural problems, building deterioration or unsafe conditions.
- Clean and sanitary buildings.
- A suitable environment for the public to live, visit, work or conduct business.

The purpose of inspecting structures is to protect the public health, safety and welfare.

Not performing or inadequately performing an inspection could result in:
- Deterioration of the built environment.
- Improper maintenance.
- Decrease in property value.
- Health hazards.
- Delay in emergency egress.
Section 101.2—Scope

- Applies to all structures.
- Details:
  - Administration.
  - Enforcement.
  - Penalties.
- Occupancy limitations.
- Provide minimum maintenance standards.
- Determines responsibility for code compliance.

Section 101.3—Intent

The intent of the code is to ensure public:
- Health.
- Safety.
- Welfare.

Section 102.1—General

Provides for conflict resolution between differing provisions. Where there are differences between the code and referenced standards, the most restrictive section of the code governs.

Section 102.2—Maintenance

Maintenance:
- All required systems and devices must be maintained.
Section 102.3—Application of other codes

Repairs, alterations, additions and changes of occupancy shall comply with the:

- IBC®.
- IFGC®.
- IMC®.
- NFPA 70.

Section 102.6—Historic buildings

The code official may deviate from the strict application of the code.

The building must substantially comply with the spirit and intent of the code.

Section 102.5—Workmanship

Workmanship:

- All work shall be executed in a skilled manner and is subject to the code official's approval.

Section 102.7—Referenced codes and standards

The codes and standards listed in Chapter 8 are part of this code. A referenced code or standard is enforceable to the same extent as the code.

**Exception:**

If the enforcement of the IPMC would violate the conditions of the equipment listing, the condition of the listing shall apply.
Section 104.3—Right of entry

The code official is authorized to enter a structure or premises for the purpose of an inspection only when granted entry by any of the following:
- The owner.
- A person who legally occupies the premises.
- An owner who has properly obtained permission from the occupant.

Tip
To establish probable cause, the code official should either try to view the violation firsthand or provide testimony from another person who can substantiate having seen the violation.

Identification—Section 104

Section 104.5—Notices and orders

The code official is required to
- carry proper identification.
- issue all necessary notices and orders.

Section 104.6—Department records

- The code official shall keep official records.
- Records should be maintained as long as the building or structure is in existence, or as otherwise provided for in regulations.
Section 105.1—Modifications

- The code official may grant modifications to the code upon application from the owner in order to allow improvement and maintenance of existing structures.
- Modification must be in compliance with intent and purpose of code.

Section 105.4—Used materials and equipment

Used materials and equipment can be approved by the code official when the used materials:
- Are in good repair or have been reconditioned.
- Have been tested, when necessary.
- Are in proper working condition.

Violations—Section 106

The code official shall issue a notice of violation once it is determined that a violation exists.

Section 106.2—Notice of violation

- The code official must initiate an action to correct the violation.
- Any action taken on the premises shall be charged against the real estate.
- In accordance with Section 107.
**Section 106.5—Abatement of violation**

Regardless of the imposition of penalties, the jurisdiction may institute action to correct all or part of a violation.

**Notices and Orders—Section 107**

**Section 107.2—Form**

The form is required to:

- Be in writing.
- Clearly identify the property by address or legal description.
- State why the notice is being issued and identify the code violation.
- Include a correction order allowing reasonable time to make the repairs.
- Inform the owner of his right to an appeal.
- Include a statement of the right to file a lien in accordance with Section 106.3.

**Section 107.3—Method of service**

The notice shall be:

- Hand-delivered to the person in violation.
- Sent certified or first class mail.
- Posted in a conspicuous place, if returned by the postmaster.
Section 107.4—Unauthorized tampering

Signs and tags, like permits, correction notices and stop work orders that are posted by the code official are not to be tampered with or removed.

Unsafe Structures and Equipment—Section 108

Any structure or piece of equipment that is considered unsafe, unlawful or unfit for habitation is subject to condemnation.

Section 107.6—Transfer of ownership

Transfer of property with violations cannot take place unless the new owner agrees to accept responsibility for the violations.

Section 108.1.1—Unsafe structure

Any of the following can contribute to an unsafe structure:
- Lack of fire safeguards.
- Unsafe equipment.
- Damage or dilapidation.
- Danger of collapse.
Section 108.1.2—Unsafe equipment

Equipment that is hazardous or in disrepair, such as:
- Boiler equipment.
- Elevator or moving stairway.
- Electric wiring or device.
- Flammable liquid containers.

Section 108.1.3—Structure unfit for human occupancy

Unfit for human occupancy are:
- Insanitary conditions.
- Severe dilapidation or disrepair.
- Infestation or contamination.
- Lack of ventilation or illumination.
- Lack of sanitary or heating facilities or other essential equipment.
- Endangerment due to the location of the structure.

Section 108.1.4—Unlawful structures

Unlawful structures can be those that are:
- Overcrowded.
- Erected unlawfully.
- Occupied unlawfully.

Unlawful structures should be condemned.

Section 108.1.5—Dangerous structure or premises

This section provides for conditions that render a structure dangerous. If any of the conditions exist, a determination can be made that the structure or premises is dangerous.
Section 108.1.5—Dangerous structure or premises

Examples include:
- Inadequate means of egress under the adopted building.
- Damaged by natural disaster, such as a hurricane or earthquake.
- Inadequate light, ventilation, mechanical or plumbing systems.
- An abandoned structure.

Section 108.2—Closing a vacant structure

The code official is authorized to order a vacant structure closed.

Section 108.2.1—Authority to disconnect utility services

The code official can authorize disconnection of utility services to a structure under these conditions:
- In the case of an emergency where there is a hazard to life or property.
- When the utility connection has been made without approval.

Notice shall be given to the utility and, when possible, to the owner and occupant of the structure prior to disconnection.

Section 108.3—Notice

Notice
- The code official must post the condemned structure or equipment with the notice and properly serve the owner or responsible party.

Section 108.4--Placarding

Placarding
- The placard should include a statement of penalties.
Section 108.5—Prohibited occupancy

Structures condemned and placarded by the code official shall be vacated.

Section 108.6—Abatement methods

Allows or various methods of abatement of unsafe conditions by repair, rehabilitation or other approved corrective action.

Section 108.7—Record

The code official shall cause a report to be filed stating the occupancy of the structure and the nature of the unsafe condition.

Emergency Measures—109

Section 109.1—Imminent danger

The code official is required to take emergency measures when the occupant is in danger and could be harmed.

This is not always an easy or obvious decision.
Section 109.2—Temporary safeguards

Emergency repairs can be made to temporarily safeguard the structure or equipment.

Section 109.6—Hearing

Emergency repairs must be completed immediately.
A person ordered to take emergency measures may appeal the action.

Section 110—Demolition

The code official must carefully document the condition of the structure prior to issuing a demolition notice. Before the code official pursues action to demolish a structure, it is imperative that all owners or anyone with an encumbrance or lien against the property be notified.

A structure deemed unreasonable to repair shall be ordered demolished by the code official.
When a structure is capable of being repaired, the owner has the option to raze or repair.
If the code official has the building razed, it should be charged against the property.
Means of Appeal—111

A Board of Appeals must be established.

An appeal (other than imminent danger) prevents the code official from pursuing compliance of the violation.

Section 111.2—Membership of the board

Section 111.3—Notice of meeting

Membership:
- The Board of Appeals is required to consist of at least three qualified members.

Notice of Meeting:
- The appellant is entitled to a prompt hearing.

Section 111.1—Application for appeal

An appeal can be based on:
- Incorrect interpretation.
- Provisions of the code do not apply.
- Requirements are met in another way.

Section 112—Stop work order

Code officials have the authority to issue stop work orders if the work is being performed in a manner that is:
- Contrary to code provisions; or
- Dangerous or unsafe.

Stop work orders shall be:
- In writing (except in the case of an emergency); and
- Given to the owner or owner’s agent.
Practice

1. Why would the city council member consider you derelict in your duties?
2. What action should you have taken when you did not get a response from someone on the premises?
3. Would this be the case had it been another type of violation that was alleged, such as a junk car in the yard?

Activity: Code Violation Identification

Directions: You will be shown a series of slides. They may or may not contain code violations.

List the violations and the corresponding code section number(s).
Activity: Code Violation
Identification: Slide #3
Sections 108.1 and 305.2 – Unsafe structure due to beam incapable of supporting loads.

Activity: Code Violation
Identification: Slide #4
Section 108.1.1 – Unsafe structure due to foundation failure.

Activity: Code Violation
Identification: Slide #5
Sections 108.1.1 and 108.1.3 – Unsafe and unfit structure due to failure of wall.

Section 108.1.1 and 305.2 – Unsafe structure due to beam incapable of supporting loads.

Module 2
Chapter 2
Definitions
Definitions

Significant terms include:

- Anchored
- Approved
- Basement
- Bathroom
- Bedroom
- Code official
- Condemn
- Detached
- Deterioration
- Dwelling unit
- Easement
- Equipment support
- Exterior property
- Garbage
- Guard
- Habitable space

Definitions

Significant terms include:

- Housekeeping unit
- Imminent danger
- Infestation
- Inoperable motor vehicle
- Labeled
- Let for occupancy
- Neglect
- Occupancy
- Occupant
- Owner
- Pest elimination
- Premises
- Public way
- Rooming House

Module 3
Chapter 3
General Requirements
Purpose

The purpose of inspecting:
- Exterior property areas and equipment is to determine if the exterior environment meets minimum code requirements.
- Interior properties for structural, rubbish, garbage or pest elimination violations is to determine if minimum standards are met.

Consequences

Not performing or inadequately performing an inspection could result in:
- Deterioration.
- Improper storage and disposal practices (interior inspection).
- Inadequate property identification (exterior inspection).
- Improper ingress and egress (exterior inspection).
- Lack of building security.

Exterior Property Areas—302
Section 302.1—Sanitation

Exterior areas should be maintained clean and free from rubbish and garbage.
Accumulation of garbage and rubbish should always be addressed, specifically, car parts, tires and construction materials.

Section 302.2—Grading and drainage

Improperly graded property areas create health and safety hazards.

Solutions to prevent soil erosion include:
- Replacing nonabsorbent soil with absorbent soil.
- Installing underground drain tiles.
- Building an underground leaching pit.
Section 302.3—Sidewalks and driveways

Deteriorated walking surfaces present a hazard to the public. The code official should ensure that the following are usable and kept in proper repair:
- Sidewalks.
- Walkways.
- Driveways.
- Parking surfaces.

Section 302.4—Weeds

Weeds/plant growth:
- Must be under a maximum of 10 inches (254 mm) in order to reduce rodent shelters and pollen problems.
- Are defined by the local jurisdiction.
- That are not cut or destroyed by an owner after receiving a notice violation, will be removed by the jurisdiction and the cost charged to the owner.

Tip
Consult your local or state agricultural department to determine which weeds are considered noxious in your area.

Section 302.5—Rodent harborage

Rodents:
- Carry diseases
- Must be exterminated by an approved process.
### Section 302.6—Exhaust vents

Three common problems are associated with exhaust vent discharges:
- Odor problems caused from exhaust gases emanating from business and industrial properties.
- Noise.
- Health and safety problems created by hazardous discharges.

### Section 302.7—Accessory structures

These accessory structures must be maintained in the same manner as the primary structure:
- Detached garages.
- Fences.
- Walls.
- Sheds.

### Section 302.8—Motor vehicles

Major vehicle repairs are permitted, but only if the work is performed in a structure designed and approved for such use.

Painting is prohibited unless it is done in an approved spray booth.

**Tip**
Section 302.8—Motor vehicles

Major vehicle repairs are permitted, but work is performed in a structure designed and approved for such use. Painting is prohibited unless it is done in an approved spray booth.

Tip

Painting of vehicles is prohibited unless it is done in an approved spray booth.

Section 302.9—Defacement of property

Intentional damage, mutilation, defacement of a property or graffiti is a violation of the code. It is the responsibility of the owner to restore surfaces to an approved state.

Section 303—Swimming Pools, Spas and Hot Tubs

Swimming pools must be maintained in a clean and sanitary condition.

Enclosures:

- Private pools, hot tubs and spas more than 24 inches deep require a 48-inch barrier or fence.
- Gates and doors must meet specific requirements.
- Exception: Spas and tubs that have an approved safety cover. (ASTM F1346)
Exterior Structure—304
Section 304.1.1—Unsafe conditions

- Provides for exterior conditions that render a structure unsafe.
- Repair or replacement must be in compliance with the *International Building Code* or the *International Existing Building Code*.

Examples of unsafe exterior building conditions include:
- A structurally-unsound chimney.
- Wall anchorage that is not capable of resisting nominal loads.
- An improperly anchored awning or sign.
- Structurally-unsound stairs.
- A roof that lets in rain.

Section 304.2—Protective treatment

- All siding and masonry joint, windows and doors should be weather-tight.
- Wood structures require a protective treatment.
- Metal surfaces subject to rust or corrosion must be treated with a rust inhibitor.

### Tip
Metal surfaces prone to rust or corrosion should be treated with a rust inhibitor. All siding and masonry joints, windows and doors should be weather-tight.
Section 304.3—Premises identification

- Street numbers must be displayed in Arabic figures or alphabet letters.
- They must be at least 4 inches in height.
- They must be ½ inch wide.

Section 304.4—Structural members

Structural members must be sound and capable of supporting all the dead and live loads imposed upon them.

Tip

Dead loads are created by the structure itself, e.g., roof, a second story.

Live loads are weight added to the finished structure, e.g., people, furniture, snow and wind.

Section 304.5—Foundation walls

The foundation must safely support the entire structure.

The code official should note any signs of stress, sagging, shifting or movement, as well as damage of deterioration to structural members.
Section 304.6—Exterior walls

- Free form holes, breaks and loose or rotting materials.
- Weatherproof and coated.

Section 304.7—Roofs and damage

- Small leaks can cause thousands of dollars in damage to plaster, rafters and joists.
- A roof drainage system is required to divert water runoff away from the structure.
- Runoff should also be diverted away from neighboring properties, public sidewalks, alleys and streets to prevent possible nuisance problems.

Tip

Roof leaks usually occur along valley areas, around plumbing vents, chimneys, dormers and other penetrations through the roof.
Section 304.8—Decorative features
Section 304.9—Overhand extensions
Routine maintenance is required for:
- Fire escapes.
- Signs.
- Marquees.
- Metal awnings.
- Other similar items.

Sections 304.10 through 304.13.1—Exterior structure
- Stairways, decks, porches and balconies.
- Chimneys and towers.
- Handrails and guards.
- Windows, skylights and door frames.
- Glazing.

Tip
Weather-coating materials may be applied periodically to reduce the effects of the environment on chimneys and towers.

Section 304.13.2—Openable windows
Windows without hold-open hardware:
1. Frequently propped open with sticks or other objects. These windows can fall, causing injury or death.
2. In the event of a fire, occupants are at risk if windows cannot be opened easily.
Section 304.14—Insect screens

Required during active periods in every door, window or opening required for ventilation.

Tip

Screens are not required where other approved means, such as air curtains or insect repellant fans, are employed or in windows that are not required.

Sections 304.15 through 304.17—Exterior structure

- Doors (Section 304.15).
- Basement hatchways (Section 304.16).
- Guards for basement windows (Section 304.17).

Section 304.18—Building security

- Doors, windows and hatchways in dwelling, rooming and housekeeping units shall have locking devices to provide security.
- All locks shall be operable from the inside and shall not require the use of a key tool or special knowledge.
Interior Structure—305
Section 305.1—General

The interior structure must be maintained so that the occupant’s health and safety are not adversely affected.

Section 305.1.1—Unsafe conditions

Examples of unsafe interior building conditions include:

- Structural members that cannot support nominal loads.
- Improperly anchored floors.
- Structurally unsound stairs or handrails.

Section 305.1.1—Unsafe conditions

- Provides for interior conditions that render a structure unsafe.
- These conditions require repair or replacement in compliance with the International Building Code® (IBC®) or the International Existing Building Code® (IEBC®).

Section 305.2—Structural members

Common construction and repair defects include:

- Undersized structural members that, over time, sag, crack and even collapse.
- Inadequately fastened structural members that loosen and separate from each other.
- Poor-quality construction materials.
- Poorly installed structural members.
Section 305.4—Stairs and walking surfaces

Every interior stair must be kept in sound condition and good repair.

Section 305.3—Interior surfaces

- The code official is required to order the repair of any damaged interior surfaces and require that the cause of the damage be abated.
- Cracked or loose plaster, decayed wood and other defective conditions must be corrected.

Section 305.5—Handrails and guards

Handrails and guards must be firmly fastened and capable of supporting normally imposed loads.
Section 305.6—Interior doors

- All hardware must be present and in good condition.
- All doors must operate properly.

Component Serviceability—306

Examples of unsafe structural components:
- Soils where the bearing capacity is in doubt.
- Concrete deterioration.
- Aluminum corrosion.
- Detached or failing masonry connections.
- Steel that has metal fatigue.
- Wood that has been damaged by insects or rodents.

Component Serviceability—306

Structural components and equipment:
- Conditions that render components unsafe.
- Soil conditions, concrete, aluminum, masonry, steel, and wood components are included.
- Repaired or replaced in compliance with the IBC as required for existing buildings.

Handrails and Guards—307

Handrails:
- All stairs (interior and exterior) with more than four risers require a handrail.
- Handrails should be placed 30 inches to 42 inches from tread or finished floor.
Guardrails:
- Stairs, landing, balconies, porches, decks and ramps or other walking surfaces greater than 30 inches above grade requires a guardrail.
- Guards shall not be less than 30 inches above the finished floor.

Improper storage and disposal of rubbish and garbage can threaten the health and safety of the public. Improper rubbish, garbage disposal can result in:
- Insect and rodent infestation.
- Blocked means of egress.
- Disease.

The owner is responsible for:
- Removing rubbish on a regular basis; and
- Supplying an approved storage container for rubbish.
Section 308.2.2—Refrigerators

Refrigerators shall not be discarded without first removing the doors.

Section 308.3—Disposal of garbage

- Garbage is the animal and vegetable wastes created from the preparation and consumption of food.
- Occupants are responsible for properly disposing of their garbage wastes.

Section 308.3.1—Garbage facilities

Owners of dwelling units must supply one of the following:
- Garbage disposal.
- Incinerator.
- Leak-proof, covered, outside garbage container.

Section 308.3.2—Containers

Approved containers with tight-fitting lids must be provided.
Pest Elimination—309
All structures must be kept free from insect and rodent infestations.

<table>
<thead>
<tr>
<th>Structure</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unoccupied structure prior to occupation</td>
<td>Owner</td>
</tr>
<tr>
<td>In common areas and exterior of all non-</td>
<td>Owner</td>
</tr>
<tr>
<td>residential buildings and dwelling units</td>
<td></td>
</tr>
<tr>
<td>containing two or more units</td>
<td></td>
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<tr>
<td>Single-family dwellings</td>
<td>Occupant</td>
</tr>
<tr>
<td>Infestations caused by a defect in the</td>
<td>Owner</td>
</tr>
<tr>
<td>structure</td>
<td></td>
</tr>
<tr>
<td>Infestations in common areas (multiple</td>
<td>Owner</td>
</tr>
<tr>
<td>occupancy)</td>
<td></td>
</tr>
<tr>
<td>Infestations caused by the occupant in the</td>
<td>Occupant and</td>
</tr>
<tr>
<td>occupant's private unit</td>
<td>Owner</td>
</tr>
</tbody>
</table>

Activity: Code Violation Identification

Directions: You will be shown a series of slides. They may or may not contain code violations.

List the violations and the corresponding code section number(s).

Activity: Practice

How do you decide who is responsible for pest elimination?
Sections 302.2 and 302.3 – Failure to prevent accumulation of water on property and maintain parking lot.

Sections 302.1 and 302.5 – Failure to maintain in a clean and safe manner and keep free from possible rat harborage.

Section 302.7 – Failure to maintain accessory structure (fence) in good repair.

Sections 302.4 and 302.8 – Weeds in excess of 10 inches and motor vehicle in major state of disrepair.
Sections 108.1.1, 108.1.3 and 305.2 – Main beam cut to accommodate vent pipe.

Sections 308.1, 308.2 and 308.3 – Improper disposal of rubbish and garbage.

Sections 305.2 and 305.3 – Interior foundation wall bulging, water infiltration, mortar voids.

Section 305.3 – Ceiling water damaged, peeling paint, plaster damage.
Sections 308.1 and 308.2 – Accumulation of building materials (occupant).

Section 308.3 – Failure to maintain exterior property in clean manner and failure to dispose of rubbish properly.

Sections 305.3, 307.1 and 604.3 – Failure to maintain railing, windows, ceiling (holes), and electrical wiring.

Sections 305.3, 305.4, 305.5 and 307.1 – Failure to maintain stairs, railing and interior surface (no railing, holes and uneven treads).
Activity: Code Violation Identification: Slide #14

Section 308.3.2 – Failure to keep garbage in a leak-proof container with close fitting covers until removed.

Introduction

This chapter:
- Introduces the appropriate procedures and calculations required when inspecting interior property areas for light, ventilation and occupancy code compliance.
- Addresses the concepts of “borrowed” light and ventilation and the size of location of bedrooms and living rooms.

Purpose

The purpose of inspecting interior property areas for light, ventilation and occupancy violations is to:
- Protect the safety, health and welfare of the public.
- Provide for private occupancy of the space.
- Provide for the mental health of the building occupants.
- Prevent the spread of communicable disease.
Consequences

The consequences of not inspecting or inadequately inspecting is:

- Accidental injury or death resulting from inadequate lighting sources.
- Spread of disease as a result of poor or improper ventilation.
- Invasion of privacy as a result of overcrowding.

Light—402

Section 402.1—Light requirements for habitable space

All habitable spaces need to provide at least one window that is a minimum of 8% of the floor area, which faces directly to the outdoors or to a court.

Exception:
A room without a window may “borrow” light from an adjoining room.
Determination of size of glazed area for natural light requirements

Section 402.2—Common halls and stairways in residential occupancies

Common areas in other than one- and two-family dwellings need to be lighted at all times with a minimum 60-watt bulb for every 200 square feet (19 m²) of floor area.

Section 402.3—Other spaces

Natural or artificial light is required in all other spaces, such as:
- Basements.
- Laundry.
- Storage areas.
Ventilation—403

**VENTILATION.** The natural or mechanical process of supplying conditioned or unconditioned air to, or removing such air from, any space.

Section 403.1—Habitable spaces

- Every habitable space must have at least one window that is *openable* for ventilation purposes.
- The openable area of the window shall be equal to 45% of the window area required for light in Section 402.1.

Section 403.2—Bathrooms and toilet rooms

Bathrooms do not have to have a window when a mechanical exhaust fan is installed.

Section 403.3—Cooking facilities

Coffee pots and microwaves are permitted in dormitories or rooming units without permission from the code official.
Section 403.5—Clothes dryer exhaust

A clothes dryer’s exhaust system needs to be separate from all other systems and exhausted in accordance with manufacturer’s instructions.

Exception:
Listed and labeled condensing clothes dryers.

Section 404.2—Minimum room widths

The code establishes a minimum dimension of 7 feet as the narrowest width of all habitable rooms, except for kitchens.

Section 404.3—Minimum ceiling heights

The primary requirement for ceiling height in habitable rooms is 7 feet.

Exceptions:
- Beams and girders.
- Basement rooms.
- Rooms with a sloped ceiling.

Occupancy Limitations—404 Section 404.1—Privacy

Privacy is a fundamental need. Every person needs a space to:
- Sleep.
- Dress.
- Relax.
Section 404.4—Bedroom and living room requirements

The size and arrangements of bedrooms contribute to the comfort and safety of occupants. The code establishes minimum sizes for bedrooms and living rooms and restricts certain configurations in regard to bathrooms, means of egress and other habitable rooms.

Section 404.4.1—Room area

- Every bedroom is required to contain at least 70 square feet (6.5 m²).
- Every living room is required to contain at least 120 square feet (11.2 m²).
- Any number of persons may occupy or sleep in these areas as long as all of the other requirements of this code are met.

Section 404.4.2—Access from bedrooms

Bedrooms cannot be the only means of ingress or egress to other habitable spaces.

**Exception:**
This is acceptable in units fewer than 2 bedrooms.

Section 404.4.3—Water closet accessibility

Bathrooms must be accessible without having to pass through another room used as a bedroom.
**Section 404.4.4—Prohibited occupancy**

Kitchens and other nonhabitable spaces cannot be used for sleeping purposes.

**Section 404.4.5—Other requirements**

Bedrooms must comply with:
- Ventilation and light (Chapter 4).
- Room area, width and ceiling height (Chapter 4).
- Plumbing and heating facilities (Chapter 5).
- Fire safety issues and emergency escape (Chapter 7).

**Section 405.5—Overcrowding**

Overcrowding is considered a violation only when the code official believes it creates conditions endangering the health, safety or welfare of occupants.

<table>
<thead>
<tr>
<th>TABLE 404.5</th>
<th>MINIMUM AREA REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPACE</td>
<td>1-2 occupants</td>
</tr>
<tr>
<td>Living room</td>
<td>120</td>
</tr>
<tr>
<td>Dining room</td>
<td>No requirement</td>
</tr>
<tr>
<td>Bedrooms</td>
<td>Shall comply with Section 404.4.1</td>
</tr>
</tbody>
</table>

**Section 404.6—Efficiency unit**

An efficiency unit cannot be occupied by more than three persons. It must also have:
- Minimum square footage for the number of occupants:
  - 120 square feet (11 m²) for one person.
  - 220 square feet (20 m²) for two persons.
  - 320 square feet (29 m²) for three persons.
- A kitchen sink, cooking appliance and a refrigerator.
- A separate bathroom.
- Occupancy by no more than three persons.
Section 404.7—Food preparation

- Kitchens must provide a sanitary means for storage of food at appropriate temperatures.
- Food preparation areas must be provided with garbage disposals or containers that allow temporary storage of garbage and refuse.

Module 5
Chapter 5
Plumbing Facilities and Fixture Requirements

Activity: Practice

Do you have an overcrowding violation?

Purpose

The purpose of inspecting interior property areas for plumbing violations is to:
- Protect health, human dignity and privacy.
- Guard against disease.
- Provide a safe water supply.
Consequences

The consequences of not inspecting or inadequately inspecting is:

- Invasion of privacy.
- Unsanitary living conditions.
- Spread of disease.

Section 502.5—Public toilet facilities

- Public toilet facilities are to be maintained in a safe sanitary and working condition.
- Public access must be provided to the toilet facilities at all times during occupancy of the premises, except for periodic maintenance or cleaning.

Required Facilities—502

Each dwelling must contain one:

- Water closet.
- Bathtub or shower.
- Lavatory.

Toilet Rooms—503
Section 503.1—Privacy

A door and interior lock is required for each water closet compartment in multi-occupant or shared bathrooms.
Section 503.2—Location

Bathrooms should not be located more than one floor away in:
- Hotels.
- Rooming houses.
- Dormitories.

Section 503.3—Location of employee toilet facilities

A toilet room should be no more than one story above or below and within 500 feet (152 m) of the employees' work area.

Section 503.4—Floor surface

- Toilet rooms shall have a smooth, hard and nonabsorbent floor for good sanitation.
- This does not apply to dwelling units.

Plumbing Systems and Fixtures—504

Defective or leaking plumbing fixtures can:
- Contaminate the air with sewer gases.
- Contaminate the water supply.
- Cause deterioration of structural members.
Section 504.2—Fixture clearances

Inadequate clearance can contribute to the spread of disease and odor.

Section 504.3—Plumbing system hazards

The code official must require that plumbing system hazards be abated.

Water System—505

Section 505.1—General

Water systems must be capable of providing an adequate and safe supply of hot and cold water.

Section 505.2—Contamination

Every potable water system is at risk for contamination by cross-connection and unprotected outlets. Contamination from cross-connections can be prevented by:

- Providing an air gap between the water outlet and the flood level rim of plumbing fixtures.
- Installing a backflow prevention device or vacuum breaker on outdoor spigots.
- Eliminating the use of hoses in bathtubs and sinks.
Common cross connections—bathtub

Common cross connections—lavatory

Common cross connections—water closet

Section 505.3—Supply

Water supply can be affected by:

- Inadequate pressure.
- Clogged or corroded pipes.
- Undersized or poorly designed systems.
Section 505.4—Water heating facilities

Adequate water for all heating facilities shall be provided at 110 degrees Fahrenheit.

Water Heater Inspection Checklist

<table>
<thead>
<tr>
<th>Appliance Type</th>
<th>Electrical</th>
<th>Fuel Burning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspect electric service for adequacy</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Inspect electrical wiring</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Identify fuel type</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Inspect fuel supply piping</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Inspect water supply lines</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Capability of heating water to minimum of 110°F</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Inspect tank</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Inspect safety controls:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Shut-off valve</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>- Thermostat</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>- Pressure/temperature relief valve</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>- Discharge pipe</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Inspect vent pipe:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Connection</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>- Chimney clearout</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>- Venting condition</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>- Vent function</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>- Production of carbon monoxide</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Inspect possibility to combustible materials</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Sanitary Drainage System—506
Section 506.1—General

A sanitary drainage system must properly dispose of all liquid and solid wastes deposited into the plumbing fixtures to eliminate the spread of disease.
Section 506.2—Maintenance

Every part of the system must be in good working order.

Section 506.3—Grease interceptors

Requires grease interceptors and automatic grease removal devices undergo on-going routine maintenance in order to perform their intended function.
Storm Drainage—507
Section 507.1—General

Water runoff must be properly directed away from foundations. It cannot be discharged to another property.

23 Basic Principles of Plumbing

1. Potable Water
2. Adequate Water Supply
3. Hot Water Required
4. Water Conservation
5. Hot Water Vessels
6. Public Water and Sewer Systems
7. Required Plumbing Fixtures
8. Smooth Surfaces Required
9. Adequately Sized Drainage System
10. Durable Materials and Workmanship
11. Liquid Seal Traps
12. Trap Protection
13. Exhaustion of Foul Air
14. Testing the System
15. Excluding Water and Substances from the Sanitary Drainage System
16. Prevent Contamination
17. Light, Heat and Ventilation
18. Individual Sewage Disposal Systems
19. Prevent Flooding of Sewers
20. Proper Maintenance
21. Accessible Fixtures
22. Regard for Structural Safety
23. Protecting Ground Water from Contamination

Activity: Practice

1. What is the most serious violation and how soon will it have to be remedied?
2. What is the tenant’s responsibility?
3. What code sections would you use?
Activity: Code Violation Identification

Directions: You will be shown a series of slides. They may or may not contain code violations.

List the violations and the corresponding code section number(s).

Activity: Code Violation Identification: Slide #1

Section 505.4 – Failure to properly install water heating facilities – no temperature relief discharge pipe, missing electrical, fitting and poor vent condition.

Activity: Code Violation Identification: Slide #2

Sections 504.3 and 505.2 – Exterior faucet/hose bib lacking a vacuum breaker. Hose is a possible source of contamination.

Activity: Code Violation Identification: Slide #3

Section 506.2 – Waste pipe improperly downsized.
Activity: Code Violation Identification: Slide #4

Sections 504.3 and 506.2 – Broken soil stack, waste pipe.

Activity: Code Violation Identification: Slide #5

Sections 505.2, 504.1 and 506.2 – Failure to maintain water supply that is free from contamination, cross-connection and is in working order and free from defects. CC improper slope on drain, taped trap and venting problem.

Activity: Code Violation Identification: Slide #6

Sections 504, 504.3 and 506.2 – Another type of “S” trap unvented. Improper hose connection to sink drain pipe is cause of violation.

Module 6
Chapter 6
Mechanical and Electrical Requirements
Purpose

The purpose of inspecting interior property areas for mechanical, electrical and fire is to:

- Protect the safety, health and welfare of the public.
- Provide for safe occupancy.
- Verify all mechanical appliances and equipment are in safe, working condition.
- Verify the proper installation and operation of electrical facilities.

Consequences

The consequences of not inspecting or inadequately inspecting can be:

- Injury or death resulting from a fire, explosion or asphyxiation.
- Malfunctioning of appliances, mechanical and electrical facilities.
- Substandard or hazardous living conditions.

Heating Facilities—602

Section 602.2—Residential occupancies

- Adequate heat is required for health and comfort.
- Inadequately sized, improperly installed, old or faulty systems may not provide the required heat.
- A room temperature of 68°F (20°C) is required in every dwelling.

Exceptions:

- When the winter outdoor design temperature falls below the outdoor design temperatures listed in Appendix D of the International Plumbing Code® (IPC®).
- In areas where the average monthly temperature is above 30°F (-1°C), a minimum temperature of 65°F (18°C) shall be maintained.
**Section 602.3—Heat supply**

The same minimum requirement (68° F) applies to all other types of dwellings, including rooming units, dormitories, or guestrooms.

**Section 602.4—Occupiable work spaces**

A minimum temperature of 65°F is required in indoor work spaces during the time that the workspace is occupied.

**Exceptions:**
- Processing, storage and operation areas that require cooling or special temperature conditions.
- Areas in which persons are primarily engaged in vigorous physical activities.
Section 602.5—Room temperature measurement

When necessary, the temperature of a room should be measured in several places, three feet above the floor and two feet away from an exterior wall.

Section 603.2—Removal of combustion products

All fuel-burning appliances are required to safely discharge the products of combustion which can be toxic and can cause:
- Nausea.
- Headache.
- Dizziness.
- Confusion.
- Rapid breathing.
- Fatigue.

Mechanical Equipment—603

Section 603.1—Mechanical appliances

Appliances and mechanical equipment are subject to aging, wear and deterioration.

Periodic inspection and servicing are required.

Section 603.3—Clearances

Clearances
- Proper clearances between combustible materials and all heat producing appliances must be maintained to prevent fires.

Safety controls
- All safety controls must be periodically tested, inspected and maintained to verify their reliability.
Section 603.5—Combustion air

A lack of combustion air will result in the incomplete combustion of fuel, which in turn causes:
- Soot production.
- Increased carbon monoxide production.
- Serious appliance malfunction.
- Risk of fire or explosion.

Section 604.2--Service

- Every dwelling is required to have a minimum 60 amp, three wire, 120/240 volt main service.
- The code official should evaluate the electrical usage or load.

Electrical Facilities—604 Section 604.1—Facilities required

- Every occupied building is required to have a compliant electrical system, in accordance with Section 605.
- Reference standard NFPA 70.

Section 604.3—Electrical system hazards

Electrical problems range from:
- An inadequate (undersized) system.
- Improper fusing.
- Lack of sufficient receptacles.
- Improperly installed wiring.
- Unprotected wiring.
### Section 604.3.1—Abatement of electrical hazards associated with water exposure

- Governs the replacement and repair of electrical systems that have been exposed to water.
- In general, all electrical equipment that has been exposed to water shall be replacement.
- Replacement must comply with the *International Building Code*.

### Section 604.3.2—Abatement of electrical hazards associated with fire exposure

Electrical switches, receptacles, and fixtures are allowed to be repaired instead of replaced when an inspection report from the equipment manufacturer or approved manufacturer’s representative indicates that damage has not been sustained so as to require replacement.

### Section 604.3.1—Abatement of electrical hazards associated with water exposure

- Repair of certain equipment is allowed (in lieu of replacement) when an inspection report from the equipment manufacturer or approved manufacturer’s representative shows that damage has not been sustained so as to require replacement.

### Electrical Equipment—605 Section 605.1—Installation

All electrical equipment, wiring and appliances must be properly installed and maintained in a safe and approved manner.
Section 605.2--Receptacles

- Every habitable space in a dwelling must be provided with at least two separate receptacle outlets in proper working order.
- Every bathroom must have at least one receptacle outlet. New receptacles shall have GFCI protection.
- Every laundry room is required to have at least one ground receptacle outlet or a receptacle with a ground fault circuit interrupter (GFCI).

Section 605.3--Luminaires

Luminaries must be provided to illuminate:
- Hallways.
- Stairways.
- Toilet rooms.
- Bathrooms.
- Laundry rooms.
- Kitchens.
- Furnace rooms.

Elevators, Escalators and Dumbwaiters—606

- Compliance with ASME A17.1, Appendix N required.
- Routine safety checks must be made by competent elevator and service technicians.
- Check to see that the most current certificate of inspection is on display or available.

Duct Systems—607

- Duct systems accomplish the transfer of fresh or condition air from one area to another.
- Duct systems shall be maintained free of obstructions and shall be capable of performing the required function.
The code provides a minimum level of fire protection for existing structures; however, it is not a replacement for the enforcement of a fire prevention code.

Protection from fire requires evacuation or relocation of the occupants of a building to a place of safety via a means of egress.

The purpose of inspecting interior property areas for fire compliance is to:
- Protect the safety, health and welfare of the public.
- Provide for protection from fire.

The consequences of not inspecting or inadequately inspecting for fire safety can be:
- Injury or death resulting from a fire, explosion or asphyxiation.
- Substandard or hazardous living conditions.
Means of Egress—702
Section 702.1—General

Every occupant must have an unobstructed path of travel to the outdoors.

Section 702.2—Aisles

Aisles shall have a minimum clear width. Minimum width requirements vary based on the building classification and occupant load specified in the *International Fire Code*® (IFC®), Chapter 11.
- Aisle widths are typically 36 to 44 inches.
- Chairs are not permitted to encroach upon aisle widths.

Section 702.3—Locked doors

Only locking devices that are readily openable from the side from which egress is to be made are allowed.

Section 702.4—Emergency escape openings

- Required emergency escape openings shall be maintained as approved at the time of original construction.
- Escape or rescue openings should be operational from the inside without any special force or use of a key.
Fire-resistance Ratings—703

FIRE-RESISTANT RATING. The period of time a building element, component or assembly maintains the ability to confine a fire, continues to perform a given structural function, or both, as determined by the tests, or the methods based on tests, prescribed in Section 703 (of the IBC).

Section 703.2—Opening protective

Fire doors must be kept closed when not in use. Only approved hold-open devices are permitted.

Section 703.1—General

Fire-resistant walls and separations reduce the spread of smoke or flames and provide additional time to evacuate. An altered wall or separation must be returned to its original fire-resistant strength.

Fire Protection Systems—704

Section 704.1—General

All systems installed to detect, suppress or control a fire shall be maintained in operable condition. Automatic sprinkler systems are governed by NFPA 25.
Section 704.2—Smoke alarms

Smoke alarms are required in existing Groups R-2, R-3, R-4 occupancies and in dwellings not regulated in Group R must have single or multi-station smoke alarms.

Smoke alarms are required:
- On the ceiling or wall outside sleeping areas.
- In every sleeping room.
- On every story of a dwelling, including basements.

Section 704.3—Power source

The primary source of power shall have:
- The building’s electrical system of “AC.”
- Battery backup.

Battery operated smoke detectors are permitted in some cases.

Section 704.4—Interconnection

Where more than one smoke alarm is required to be installed, they are required to be interconnected.
1. Is the landlord in violation?

2. Can the landlord claim an exception to the 68°F (20°C) rule due to it being middle of winter?

3. Is this a dangerous situation?

Directions: You will be shown a series of slides. They may or may not contain code violations.

List the violations and the corresponding code section number(s).

Sections 702.1 and 702.2 – Accumulation of storage in a means of egress.

Sections 603.1 and 603.5 – Failure to maintain a safe working condition and provide proper venting.
Section 604.2 – 30 amp electrical service inadequate/undersized.

Sections 605.1 and 604.3 – Receptacle outlet box not properly installed. Loose, hanging, defective conduit and exposed wiring.

Sections 605.3 and 605.1 – Improperly installed light fixture.

Sections 603.1, 603.3, 602.2 and 702.1 – Only heat source in dwelling. Accumulation next to heating appliance. Mechanical equipment not maintained. (Also, means of egress, rubbish and condemnation issue.)
Module 8
Appendix A
Boarding Standard

Purpose
- Have windows and doors boarded in an approved manner.
- Prevent unauthorized entry.

Consequences
Some consequences of improper boarding of structures include:
- Injury or death of children – nonabatement of attractive nuisance.
- Use of property by criminals or vagrants.
- Further property damage by vandals.

Please Note
The provisions of Appendix A are not mandatory unless they are specifically referenced in the adopting ordinance of the authority having jurisdiction.
Section A102—Materials

- The boarding sheet material can be no less than ½-inch (12.7 mm) thick wood structural panels.
- Boarding framing material is required to be a minimum nominal 2-inch by 4-inch (51 by 102 mm) solid sawn lumber.
- Boarding fasteners are required to be a minimum of 3/8-inch (9.5 mm) diameter carriage bolts.
- All materials must comply with the IBC.

Windows

- The 2 x 4 framing material has to be cut a minimum of 2 inches wider than the window opening.
- The framing material must be placed in the inside of the window opening and can be no less than 6 inches above the bottom and below the top of the window opening.
- Both the framing and the boarding must be predrilled.

Section A103—Installation

- The boarding sheet is required to fit the door or window opening neatly or provide equal overlap at the door/window perimeter.
- The same method can be used to secure doors that used to secure windows or door openings.
- For authorized entry, one door must be made available; this door is required to be secured in an approved manner.
### Door Walls

- The framing material must be secured at the entire perimeter and vertical members no greater than 24 inches (610 mm) on center.
- Blocking cannot be more than 48 inches (1219 mm) on center.
- The sheathing material is required to be secured with screws and nails alternating every 6 inches (152 mm).

### Questions and Answers

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