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Course Rules!

In order to obtain CEUs for this course you will need to ...

- ✓ **be present for the entire course** and
- ✓ **be actively participating in activities and discussions.**

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Course Description

- This seminar will provide code officials and other interested parties with the fundamental knowledge necessary to administer and enforce applicable code requirements of the 2018 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.



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Goal

- Participants will be able to administer and enforce the 2018 IPMC by locating, describing and applying the specific sections of the code when determining compliance or noncompliance within the built environment.



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Objectives

Upon completion, participants will be better able to:

- Identify and locate key sections of the code.
- Describe the application of the code to inspection and code enforcement.
- Apply code requirements to problems similar to those encountered in the field.



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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



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Module 1

Chapter 1 Administration



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Chapter 1—Administration

Effective application of the property maintenance codes helps to:

- Maintain property values.
- Deter crime.
- Encourage community viability.



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Purpose

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



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Purpose

The adoption and enforcement of the IPMC will help provide:

- **A minimum level of protection against fire hazards** (Chapter 7).
- **A safe, unobstructed means of egress** (Chapter 7).
- **A minimum level of protection against unsafe structural conditions, building deterioration or unsafe conditions** (Chapter 3).
- **Clean and sanitary buildings** (Chapter 3).
- **A suitable environment for the public to live, visit, work or conduct business** (Chapter 4, 5 and 6).



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Consequences

Improper application of the IPMC could result in:

- Deterioration of the built environment.
- Unsafe structural conditions.
- Unsafe fire hazards conditions.
- Health hazards.
- Delay in emergency egress.



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Section 101.2—Scope

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



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Section 101.3—Intent

The intent of the code is to ensure public:

- Health.
- Safety.
- Welfare.



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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.



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Section 102.2—Maintenance

- All required systems and devices must be maintained.



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Section 102.3—Application of Other Codes

- Repairs, alterations, additions and changes of occupancy shall comply with the:
 - IBC
 - IEBC
 - IECC
 - IFC
 - IFGC
 - IMC
 - IPC
 - IRC
 - NFPA 70



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Section 102.5—Workmanship

Workmanship:

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



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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.



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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.



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Section 103.4—Liability

- There shall be no personal liability and defense will be provided by the legal representative of the jurisdiction so long as the code official, employee or member of the board of appeals discharges his or her duties:
 - In good faith; and
 - Without malice



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Section 104—Duties and Powers of the Code Official

- So long as in compliance with the intent and purpose of the code, the code official has the authority to:
 - Render interpretations of the code.
 - Adopt policies and procedures to clarify the application of its provisions.
- The code official has a duty to enforce the code and, therefore, cannot waive specific code requirements.



Section 104.3—Right of Entry

The code official may enter a structure or premises for inspection or enforcement when granted permission by:

- The owner.
- A person who has authority to grant access to the premises.
- An owner who has been notified by the code official and permission is refused.

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.



Section 104.4—Identification Section 104.5—Notices and Orders

The code official is required to

- Carry proper identification.
- Issue all necessary notices and orders.



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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.



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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.



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Section 105.2—Alternative Materials, Design and Methods of Construction and Equipment

- Alternative methods of compliance are permitted where found by the code official to meet the specific intent of the code-prescribed method of compliance.
- In order to ensure effective communication and due process of law, the code official is required to provide in writing the reasons for denial of an alternative method in writing to the answer or owner's representative.



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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.



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Section 106—Violations

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



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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.



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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.



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Section 107—Notices and Orders

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 or owner's authorized agent of his right to an appeal.
- Include a statement of the right to file a lien in accordance with Section 106.3.



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Section 107.3—Method of Service

The notice shall be:

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



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Sample Violation Notice

July 30, 2018
Mr. William Fixit
1 North Main Street
West Chester, PA 19999
Re: 123 Violation Lane, West Chester, PA 19999
Tax Parcel #1-1-0248
Dear Mr. Fixit:


In accordance with the 2018 IPMC, an inspection was conducted at this property on July 30, 2018. At the time of the inspection, the following violations were found:

1. Section 302.1 Sanitation:
The occupant shall keep that part of the exterior property which such occupant occupies or controls in a clean and sanitary condition.
 - Remove all trash and rubbish from rear yard.
2. Section 304.2 Protective treatment:
Exterior wood surfaces, other than decay-resistant woods, shall be protected from the elements and decay by painting or other protective treatment.
 - Eliminate all peeling paint on garage and replace with a protective treatment.


You are hereby notified that unless the conditions listed above are fully corrected within thirty (30) days from the date of receipt of this letter, unless stated otherwise, the penalty provisions of the ordinance shall be invoked.

Any owner or person aggrieved with the ruling of the enforcing officer may appeal the decision. This appeal must be filed under the appropriate authority, in writing and with a filing fee of one hundred dollars (\$100.00), within twenty (20) days of this notice.

Your cooperation in this matter is appreciated.
Respectfully,
J.B. Inspector



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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.



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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—Unsafe Structures and Equipment

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



Section 108.1.1—Unsafe Structures

Any of the following can contribute to an unsafe structure:

- Lack of fire safeguards.
- Unsafe equipment.
- Damage or dilapidation.
- Danger of collapse.



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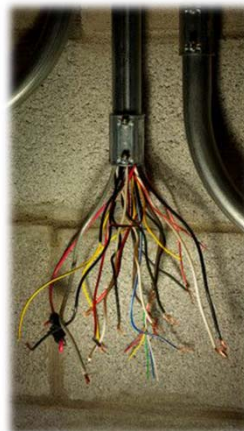


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Section 108.1.2—Unsafe Equipment

Equipment that is hazardous or in disrepair, such as:

- Boiler equipment.
- Elevator or moving stairway.
- Electric wiring or device.
- Flammable liquid containers.



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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.



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Section 108.1.4—Unlawful Structures

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



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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.



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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.



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Section 108.2—Closing of Vacant Structures

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



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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.



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Section 108.3—Notice

Section 108.4—Placarding

Notice:

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

Placarding:

- The placard is required to include a statement of penalties.



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Section 108.5—Prohibited Occupancy

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



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Section 108.6—Abatement Methods

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



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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.



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Section 109—Emergency Measures

Section 109.1—Imminent Danger

- The code official is required to take emergency measures when the occupant is in danger and could be harmed at any time.
- This is not always an easy or obvious decision.



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Section 109.2—Temporary Safeguards

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



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Section 109.6—Hearing

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



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Section 110—Demolition

- The code official needs to 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.



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Section 110—Demolition

- 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 is required to be charged against the property.



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Section 111—Means of Appeal

- A Board of Appeals must be established.
- The appeal process must be complete (other than imminent danger) before the code official can pursue compliance of the violation.



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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.



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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.



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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 authorized agent.




Activity: Practice

Directions: Some of the decisions you make while enforcing the 2018 IPMC may be called into question in a court of law. Analyze the following situation and determine how you would decide to answer the following questions if you were the judge in the case. Use IPMC Section 104.3.




ACTIVITY




Activity: Situation

You receive an anonymous complaint of insanitary conditions with children living on the premises at 456 Main Street, Anytown, USA. You attempt to perform an inspection. No one answers the door when you knock. You walk around the back of the house and attempt to see inside. The windows are covered with plastic and are blocked with furniture. You notice a light on inside. You see toys in the backyard. Before leaving, you leave a note on the door.

Over the next two months, you are inundated with high grass and junk car complaints and forget about the complaint at 456 Main Street. You get a call from Joe Councilman who wants to know the results of your inspection at 456 Main Street. When you tell Joe Councilman that you were unable to get a response at the door, he tells you that you were derelict in your duties and will be subject to disciplinary action.




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ACTIVITY




Activity: Practice


Question #1

1. Why would the city council member consider you derelict in your duties?

The city council member may consider you derelict in your duties because you only made one attempt to make an inspection in two months and failed to follow up on a complaint that could have been dangerous to the occupants.




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ACTIVITY




Activity: Practice Question #2

2. What action should you have taken when you did not get a response from someone on the premises?

Any complaint that alleges a code violation that poses a serious threat to the occupant must be pursued. Alternatives, such as requesting a search warrant, should be explored. Additional attempts to perform an inspection should be made, possibly at different times of the day. The attempts should be documented. Talk to neighbors and try to obtain more information.




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ACTIVITY




Activity: Practice Question #3

3. Would this be the case had it been another type of violation that was alleged, such as a junk car in the yard?

Every complaint should be fully investigated; however, complaints of a less serious nature will not be considered worthy of a search warrant. Some complaints may never be inspected if considered not serious and in an owner-occupied dwelling.



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DISCUSSION

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).

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DISCUSSION

Code Violation Identification: Slide #1



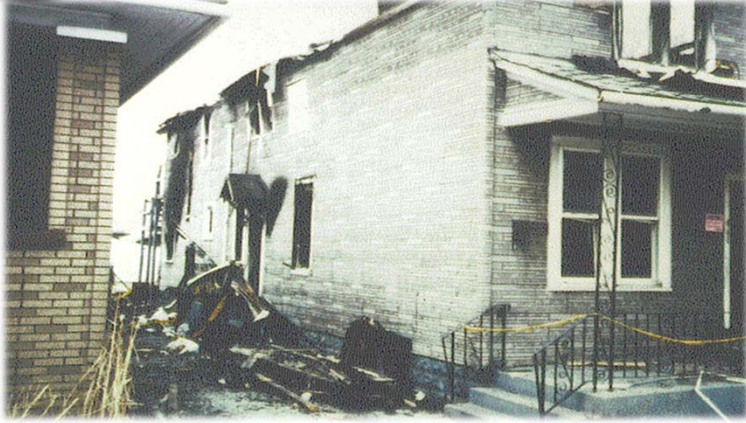
Section 108.1.1 – Unsafe garage structure due to failed wall.

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DISCUSSION

Code Violation Identification: Slide #2




Section 108.1.1 – Unsafe and unfit structure due to fire damage.

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DISCUSSION

Code Violation Identification: Slide #3




Sections 108.1 and 305.2 – Unsafe structure due to beam incapable of supporting loads.

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DISCUSSION

Code Violation Identification: Slide #4




Section 108.1.1 – Unsafe structure due to foundation failure.

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DISCUSSION

Code Violation Identification: Slide #5



Sections 108.1.1 and 108.1.3 – Unsafe and unfit structure due to failure of wall.

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Module 2

Chapter 2



Definitions

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Definitions

- Significant terms include:
 - Anchored
 - Approved
 - Basement
 - Bathroom
 - Bedroom
 - Code Official
 - Condemn
 - Cost of Demolition or Emergency Repairs
 - Detached
 - Deterioration
 - Dwelling Unit
 - Easement
 - Equipment Support
 - Exterior Property
 - Garbage
 - Guard



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Definitions

- Significant terms include:
 - Habitable Space
 - Historic Building
 - Housekeeping Unit
 - Imminent Danger
 - Infestation
 - Inoperable Motor Vehicle
 - Labeled
 - Let for Occupancy
 - Neglect
 - Occupancy
 - Occupant
 - Owner
 - Pest Elimination
 - Premises



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Definitions

- Significant terms include:
 - Public way
 - Rooming House
 - Rubbish
 - Sleeping Unit
 - Strict Liability Offense
 - Structure
 - Tenant
 - Toilet Room
 - Ultimate Deformation
 - Vent
 - Workmanlike
 - Yard



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Changes in 2018: Chapter 2 Definitions

- Definition of “Cost of such demolition or emergency repairs” added



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SECTION 202:
DEFINITIONS

Definitions **New Definition Added:** **Cost of Such Demolition or Emergency Repairs**

- **COST OF SUCH DEMOLITION OR EMERGENCY REPAIRS.**
The costs shall include the actual costs of the demolition or repair of the structure less all revenues obtained if salvage was conducted prior to demolition or repair. Costs shall also include, but not be limited to, all expenses incurred or necessitated related to demolition or emergency repairs, such as asbestos survey and abatement if necessary; costs of inspectors, testing agencies or experts retained relative to the demolition or emergency repairs; costs of testing; surveys for other materials that are controlled or regulated from being dumped in a land-fill; title searches; mailing(s); postings; recording; and all attorney fees expended for recovering of the cost of emergency repairs or to obtain or enforce an order of demolition made by a *code official*, the governing body or board of appeals.



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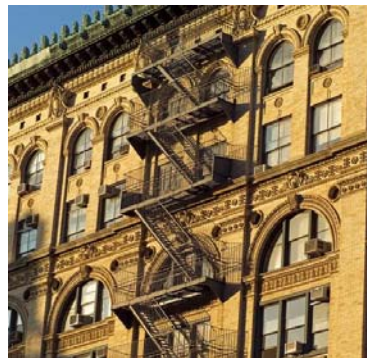
Definitions **New Definition Added:** **Cost of Such Demolition or Emergency Repairs**

- This new definition summarizes the existing language of the code text in Sections 106.3, 109.5 and 110.3, which make reference to the jurisdiction’s ability to recover costs.
- This new definition provides a basis for a jurisdiction to determine reimbursable costs when invoicing the building owner for demolition work performed by others at the direction of the jurisdiction.




Definitions

- General Definitions



Definition for “Historic Building” was added.





REFER TO

CODE BOOK

Definitions **New Definition Added:** **Historic Building**

Section 202
Page 9

SECTION 202: DEFINITIONS


- **HISTORIC BUILDING.** Any building or structure that is one or more of the following:
 1. Listed or certified as eligible for listing, by the State Historic Preservation Officer or the Keeper of the National Register of Historic Places, in the National Register of Historic Places.
 2. Designated as historic under an applicable state or local law.
 3. Certified as a contributing resource within a National Register or state or locally designated historic district.



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Definitions **New Definition Added: Historic Building**

- This new definition provides the code official the means to determine if a building is eligible to be classified as an historic building under the IPMC.
- This new definition was added to allow jurisdictions to consistently evaluate historic buildings.



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Module 3

Chapter 3

General Requirements



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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.



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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.



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Section 302—Exterior Property Areas 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.



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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.



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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.



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Section 302.4—Weeds

Weeds/plant growth:

- Must be under control as determined by the local or state agricultural department to reduce the risk of rodent shelter.
- That are not controlled by the owner after receiving a written notice from the jurisdiction to be removed by the owner.

Tip

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



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Section 302.5—Rodent Harborage

Rodents:

- Carry diseases
- Must be exterminated by an approved process.



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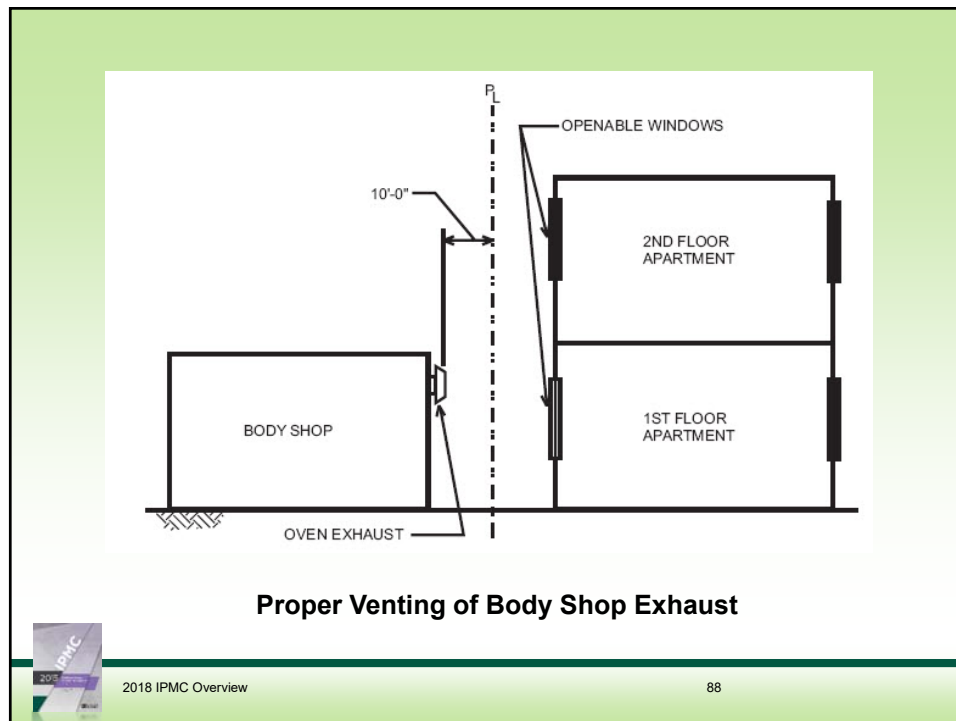
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Section 302.6—Exhaust Vents

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.



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Section 302.8—Motor Vehicles

Major vehicle work is permitted, but 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.



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



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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.



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Section 303—Swimming Pools, Spas and Hot Tubs

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



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Section 303—Swimming Pools, Spas and Hot Tubs

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)



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Section 304—Exterior Structure 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®*.



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Section 304.1.1—Unsafe Conditions

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 joints, windows and doors should be weather-tight.
- Wood structural members should be treated with preservative.
- Metal surfaces prone to rust or corrosion must be treated with a rust inhibitor.

Tip

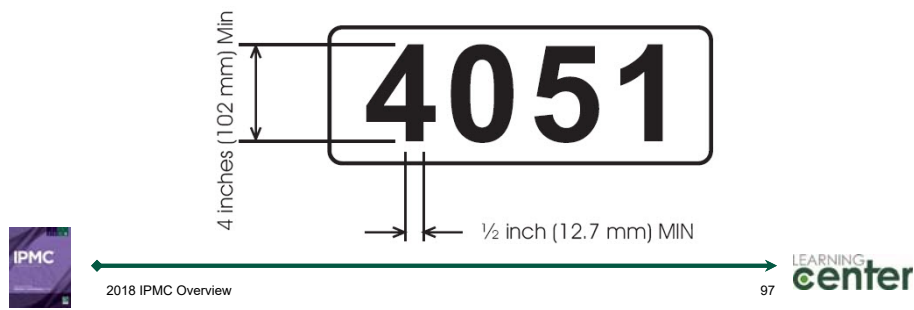
Metal surfaces prone to rust or corrosion should be treated with a rust inhibitor.

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.



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Section 304.4—Structural Members

- Structural members shall be designed and capable of supporting the 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).



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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 or deterioration to structural members.



Major Damage to a Foundation Wall



Section 304.6—Exterior Walls

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



Section 304.7—Roofs and Drainage

- Small leaks can cause thousands of dollars in damage to property.
- A roof drainage system should be designed to divert water runoff from the roof.
- Runoff should be directed to a storm drain, alley, or street to prevent problems.

Tip

Roof leaks usually occur along valley areas, around plumbing vents, chimneys, dormers and other penetrations through the roof.

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Section 304.8—Decorative Features Section 304.9—Overhang Extensions

Routine maintenance is required for:

- Fire escapes.
- Signs.
- Marquees.
- Metal awnings.
- Other similar items.



Sections 304.10 Through 304.13.1—Exterior Structure

The following exterior structure requires good repair:

- Stairways, corridors, and balconies (Section 304.10).
- Chimneys and towers (Section 304.11).
- Handrails and grab bars (Section 304.12).
- Windows, sliding glass doors, and skylights (Section 304.13).
- Glazing (Section 304.13.1).

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.



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Section 304.14—Insect Screens

- Required during the active period of every door, opening required for ventilation.

Tip

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



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Sections 304.15 Through 304.17—Exterior Structure

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



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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.



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Section 304.19—Gates

- Gate assemblies, including operator systems and hardware, must be maintained.



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Section 305—Interior Structure Section 305.1—General

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



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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®).



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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.



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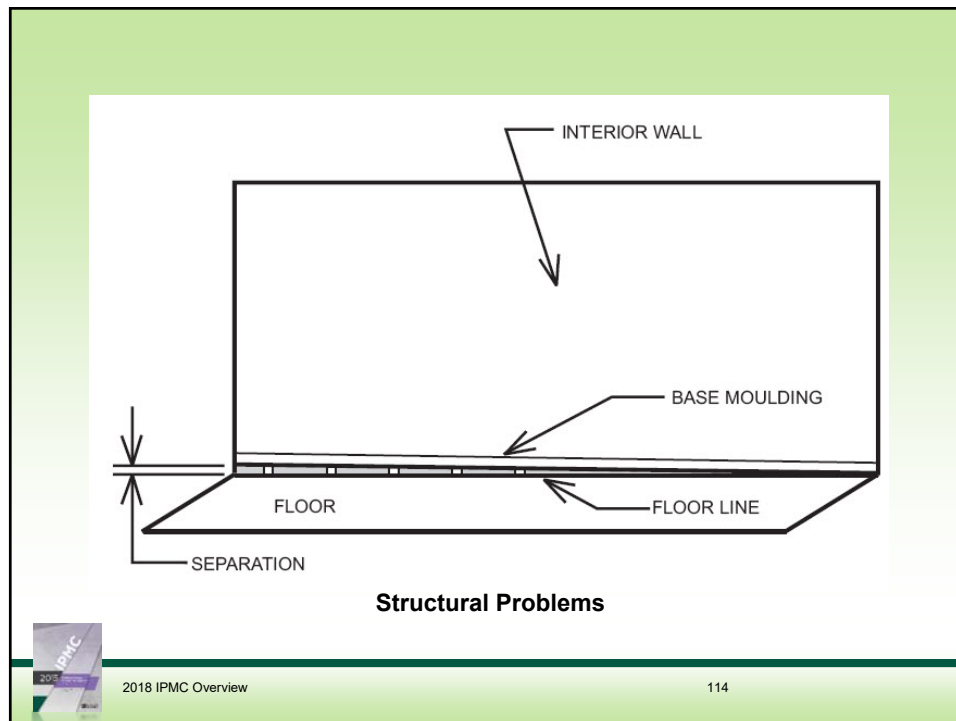
Section 305.2—Structural Members

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.



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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.



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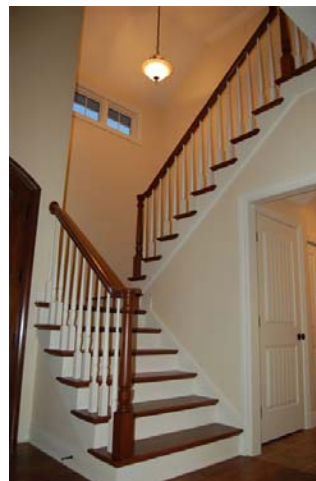
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Section 305.4—Stairs and Walking Surfaces

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



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Section 305.5—Handrails and Guards

- Handrails and guards must be firmly fastened and capable of supporting normally imposed loads.



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Section 305.6—Interior Doors

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



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Section 306.1.1—Unsafe Conditions

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.



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Section 306—Component Serviceability

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.



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Section 307—Handrails and Guards

Handrails:

- All stairs (interior and exterior) with more than four risers require a handrail.
- Handrails must be placed 30 inches to 42 inches from tread or finished floor.



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Section 307—Handrails and Guards

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.



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Section 308—Rubbish and Garbage

Section 308.1—Accumulation of Rubbish or Garbage

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.



Section 308.2—Disposal of Rubbish

Cause of improper disposal:

- Careless occupants.
- Insufficient containers.
- Infrequent rubbish pickup.



Section 308.2.1—Rubbish Storage Facilities

The *owner* is responsible for:

- Removing rubbish on a regular basis; and
- Supplying an approved storage container for rubbish.



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Section 308.2.2—Refrigerators

- Refrigerators shall not be discarded without first removing the doors.



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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.



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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.



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Section 308.3.2—Containers

- Approved containers with tight-fitting lids must be provided.




Section 309—Pest Infestation

- All structures must be kept free from insect and rodent infestations.

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


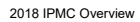



ACTIVITY



Activity: Practice


Directions: Some of the decisions you make while enforcing the 2018 IPMC may be called into question in a court of law. Analyze the following situation and determine how you would decide to answer the question below if you were the judge in this case. Use IPMC Section 309.



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ACTIVITY


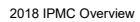



Activity: Practice

You receive a complaint from the tenant of Apartment #3 at 123 Main Street, Anytown, USA, that cockroaches are coming through a hole in the wall of the bedroom closet. Upon arrival, the tenant lets you in. You discover a hole between her apartment and the apartment next door.

- How do you determine responsibility for extermination?

In a multiple-family building, an occupant who is determined to be the cause of an infestation is responsible for extermination. If the inspector entered Apartment #2 and determined that the insects were coming from Apartment #2, then that occupant would be responsible for the extermination. If it cannot be determined who is the cause of the infestation, or the infestation is in a common area or on the exterior, then the property owner is responsible for the extermination. In addition, if the insects are entering due to a defect in the structure, it is the owner's responsibility.



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DISCUSSION

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).

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DISCUSSION

Code Violation Identification: Slide #1




Section 302.7 – Wall not maintained in good repair.

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DISCUSSION

Code Violation Identification: Slide #2




Sections 302.2 and 302.3 – Failure to prevent accumulation of water on property and maintain parking lot.

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DISCUSSION

Code Violation Identification: Slide #3




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

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DISCUSSION

Code Violation Identification: Slide #4




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

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DISCUSSION

Code Violation Identification: Slide #5




Sections 302.4 and 302.8 – Weeds in excess of 10 inches and motor vehicle in major state of disrepair.

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DISCUSSION

Code Violation Identification: Slide #6



Sections 108.1.1, 108.1.3 and 305.2 – Main beam cut to accommodate vent pipe.


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This slide features a circular icon with the word 'DISCUSSION' and a silhouette of two people. The main image shows a close-up of a wooden main beam that has been cut through to allow a vent pipe to pass. The cut is not properly sealed or supported. At the bottom, there is a navigation bar with the IPMC logo, the text '2018 IPMC Overview', the number '139', and the 'LEARNING center' logo.

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DISCUSSION

Code Violation Identification: Slide #7



Sections 305.2 and 306.1.1 – Interior foundation wall bulging, water infiltration, mortar voids.


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This slide features a circular icon with the word 'DISCUSSION' and a silhouette of two people. The main image shows an interior foundation wall made of concrete blocks. The wall exhibits significant bulging, water infiltration, and mortar voids. At the bottom, there is a navigation bar with the IPMC logo, the text '2018 IPMC Overview', the number '140', and the 'LEARNING center' logo.

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DISCUSSION

Code Violation Identification: Slide #8




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

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DISCUSSION

Code Violation Identification: Slide #9



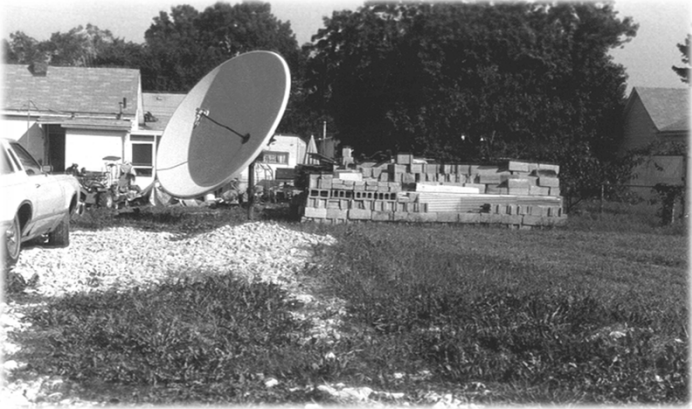
Section 305.3 – Ceiling water damaged, peeling paint, plaster damage.

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DISCUSSION

Code Violation Identification: Slide #10




Sections 308.1 and 308.2 – Accumulation of building materials (occupant).

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DISCUSSION

Code Violation Identification: Slide #11




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

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DISCUSSION

Code Violation Identification: Slide #12




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

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DISCUSSION

Code Violation Identification: Slide #13



Sections 305.3, 305.4, 305.5 and 307.1 – Failure to maintain stairs, railing and interior surface (no railing, holes and uneven treads).

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Code Violation Identification: Slide #14



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



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Module 4 Chapter 4 Light, Ventilation and Occupancy

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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.



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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.



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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.



Section 402—Light

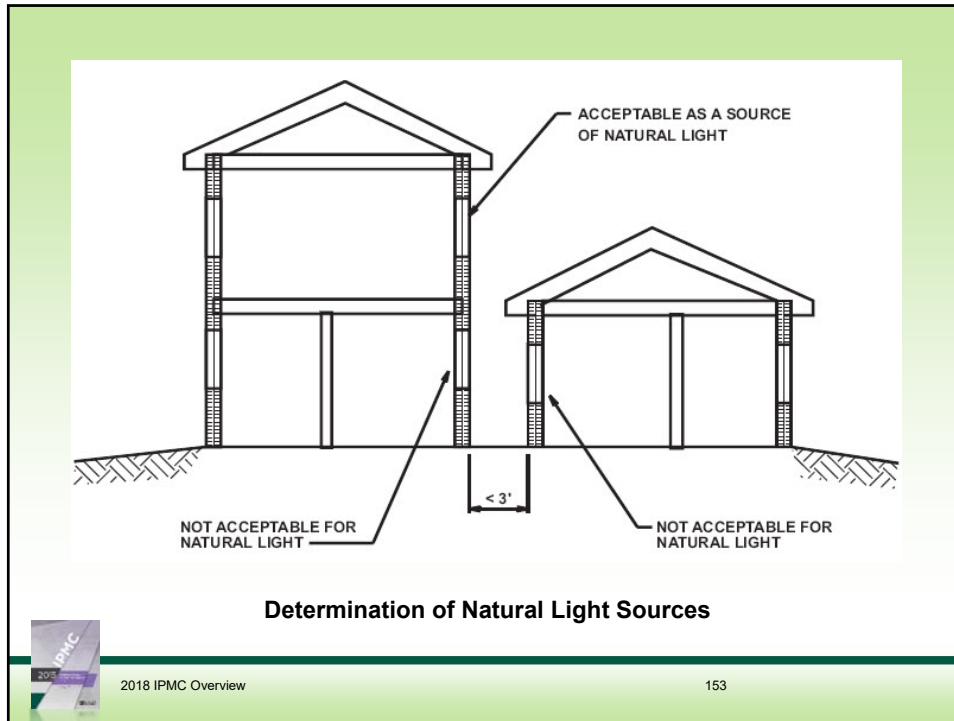
Section 402.1—Light Requirements for Habitable Space

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.

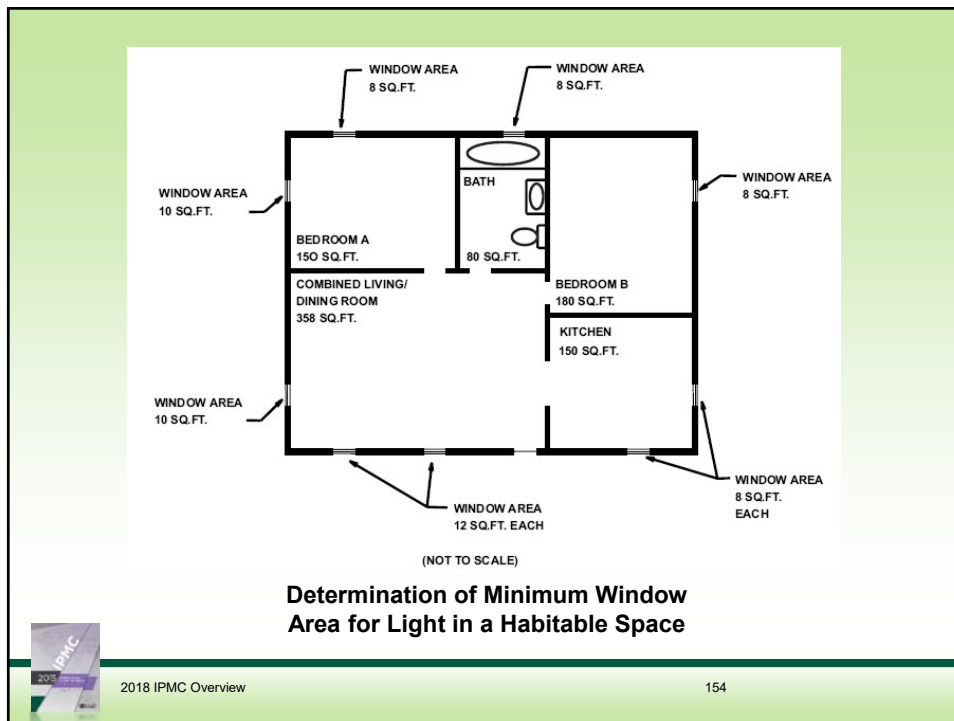
Exception:

- A room without a window may “borrow” light from an adjoining room.

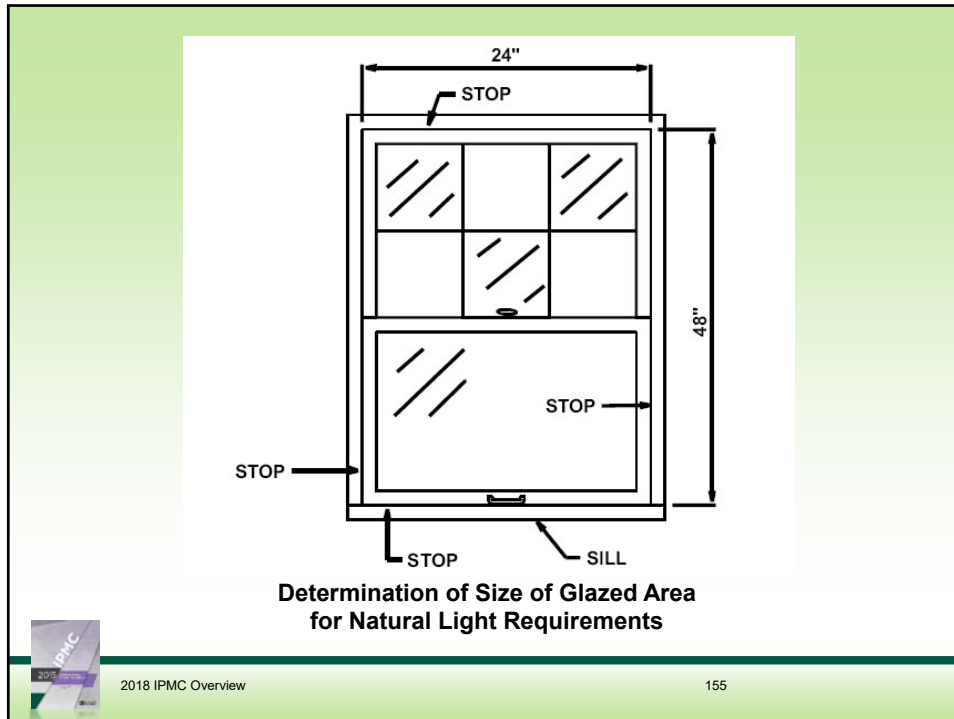




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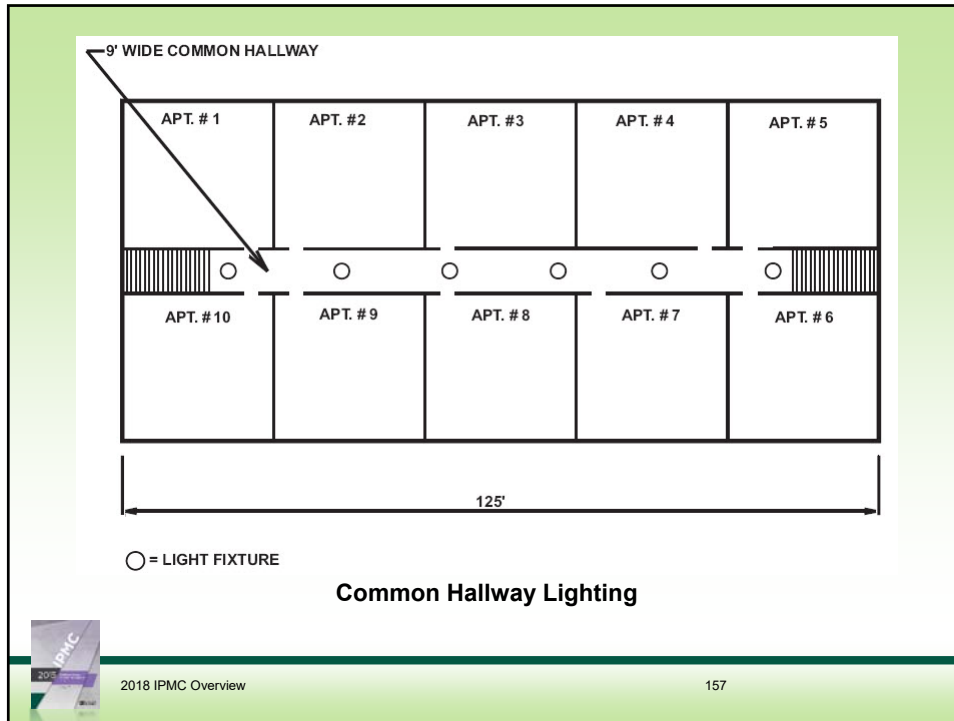
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Section 402.2—Common Halls and Stairways in Residential Occupancies

- 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.

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Section 402.3—Other Spaces


Natural or artificial light is required in all other spaces, such as:

- Basements.
- Laundry.
- Storage areas.





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REFER TO



Section 403—Ventilation

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



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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.



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Section 403.1—Exceptions

- Some spaces may be ventilated through an adjoining room similar to the exception for natural light. To allow this, the unobstructed opening to the adjoining room must:
 - Be at least 8 percent of the floor area of the interior room.
 - Not be less than 25 square feet (2.3 m²).
- The ventilation requirement for the adjoining room should be at least 45 percent of the required window area for both rooms.



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Section 403.2—Bathrooms and Toilet Rooms

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



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Section 403.3—Cooking Facilities

- Coffee pots and microwaves are permitted in dormitories or rooming units without permission from the code official.



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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.



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Section 404—Occupancy Limitations

Section 404.1—Privacy

Privacy is a fundamental need. Every person needs a space to:

- Sleep.
- Dress.
- Relax.



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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.



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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.



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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.



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Section 404.4.1—Room Area

- Every bedroom is required to contain at least 70 square feet (6.5 m²), and not less than 50 square feet (4.6 m²) per occupant.
- Every living room is required to contain at least 120 square feet (11.2 m²).



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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.



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Section 404.4.3—Water Closet Accessibility

- Bathrooms must be accessible without having to pass through another room used as a bedroom.



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Section 404.4.4—Prohibited Occupancy

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



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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).
- Electrical receptacle (Chapter 5).
- Fire safety issues and emergency escape (Chapter 7).



Section 405.5—Overcrowding

- Overcrowding is considered a violation only when the allowable occupancy provisions of Table 404.5 are exceeded.

TABLE 404.5
MINIMUM AREA REQUIREMENTS

SPACE	MINIMUM AREA IN SQUARE FEET		
	1-2 occupants	3-5 occupants	6 or more occupants
Living room ^{a, b}	120	120	150
Dining room ^{a, b}	No requirement	80	100
Bedrooms	Shall comply with Section 404.4.1		



Section 404.6—Efficiency Unit

Efficiency units are permitted and must comply with the following:

- 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.




ACTIVITY




Activity: Practice

Directions: Analyze the situations on the following slides and determine if an overcrowding violation exists.




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ACTIVITY




Activity: Practice Situation #1

You respond to a complaint about insanitary conditions in an apartment unit. You get permission from one of the occupants to do an inspection of the premises. Upon entering, you witness insanitary conditions in the kitchen and bathrooms, a roach infestation and an accumulation of furniture, bedding, clothing and toys throughout the entire unit including the hallway and foyer, resulting in egress violations.


The occupant is a single mother with two children. The unit consists of one bedroom, one bathroom, one living room and one square foot of living space.

The living room is cluttered with furniture, clothing, and toys.

No. Although there are several violations in this unit, it might be difficult to prove the conditions were a result of overcrowding and not the failure of the tenant(s) to maintain the unit in a safe and sanitary condition. The same conditions could occur in the same dwelling unit and be occupied by just one person. Further, the minimum area requirements of Table 404.5 are met. Sections 305, 308, 309 and 702.




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ACTIVITY



Activity: Practice Situation #2


You respond to an overcrowding complaint at a single-family residence. The neighbor next door tells you that 10 people live there. Most of them work at the restaurant on the corner. You find two bedrooms; each 10 feet by 10 feet (3048 mm by 3048 mm) with two sets of bunk beds, sleeping eight people. The living room has a sofa bed that accommodates two people for a total of 10. The residence is clean, sanitary and is sparsely furnished.

Yes. Although it appears that the number of occupants is not creating an unsafe condition, and that reducing the number of people will not have a direct impact on reducing or eliminating the unsafe conditions, in accordance with Section 404.4.1, each bedroom can only accommodate two people. This would bring the total occupants allowed down to six versus ten.

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ACTIVITY



Activity: Practice Situation #3

You respond to a complaint in November about a foul odor coming from the backyard of a residence in an older subdivision. The neighbor/complainant claims that shortly after the widow next door passed away and the family of nine moved in, she has noticed a strong sewer smell when she had her windows open. She had her septic checked and it is in proper working order.

You visit the property next door and encounter a large soggy area with what appears to be raw sewage. The foundation is cracked and there are no gutters. The house shows signs of wear and tear. The house is 170 square feet.

Yes. An overcrowding violation can be cited in accordance with Table 404.5 as it exists, the structure provides sleeping space for only seven occupants. In addition, a hazardous condition caused by the raw sewage in the backyard should be cited. Sections to be cited include 404.4.1, 404.5 and 506 and required the repairs to the septic system to be made within seven days. Section 304.2 should also be cited with a deferment to complete the work the following spring.

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Module 5
Chapter 5
Plumbing Facilities and Fixture Requirements



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Purpose

The purpose of inspecting interior property areas for plumbing compliance with minimum requirements herein is to:

- Protect health, human dignity and privacy.
- Guard against disease.
- Provide a safe water supply.

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Consequences

The consequences of not inspecting or inadequately inspecting is:

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



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Section 502—Required Facilities

Each dwelling must contain one:

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



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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.



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Section 503—Toilet Rooms

Section 503.1—Privacy

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



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Section 503.2—Location

Bathrooms must not be located more than one floor away in:

- Hotels.
- Rooming houses.
- Dormitories.
- Housekeeping units.



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Section 503.3—Location of Employee Toilet Facilities

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



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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.



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Section 504—Plumbing Systems and Fixtures

Defective or leaking plumbing fixtures can:

- Contaminate the air with sewer gases.
- Contaminate the water supply.
- Cause deterioration of structural members.



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Section 504.2—Fixture Clearances

- Inadequate clearance can contribute to the spread of disease and odor by not allowing proper use and cleaning.



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Section 504.3—Plumbing System Hazards

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



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Section 505—Water System

Section 505.1—General

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



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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.

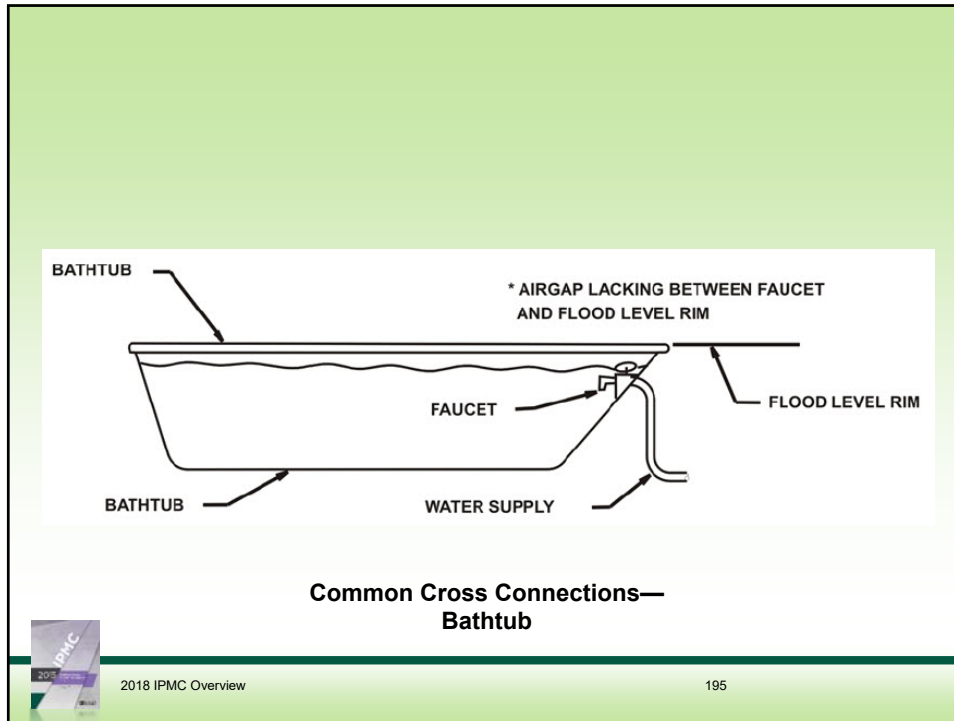


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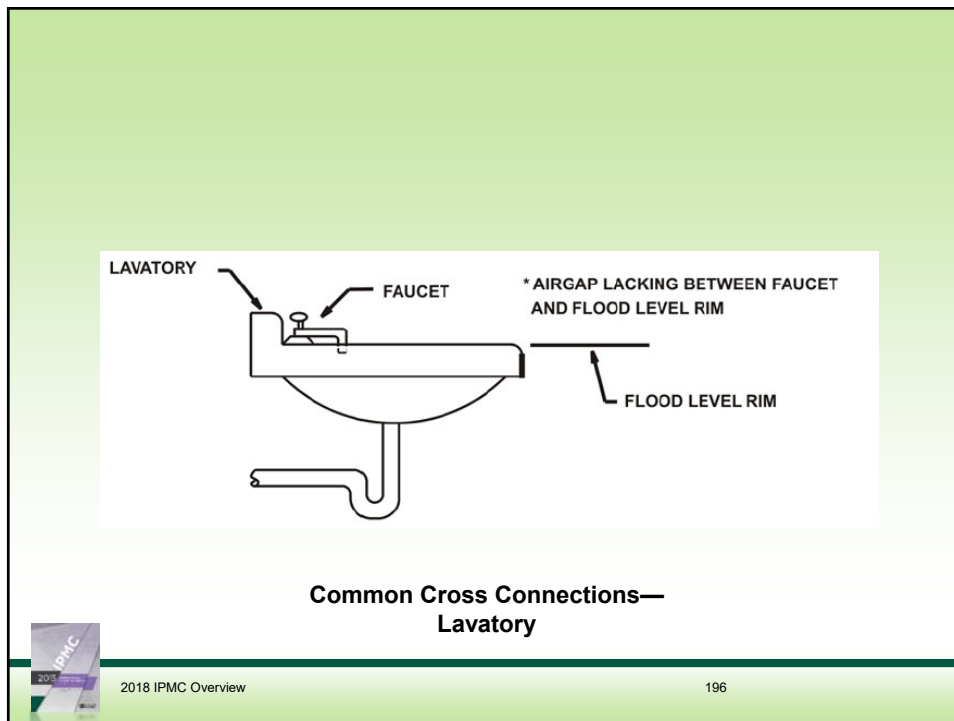
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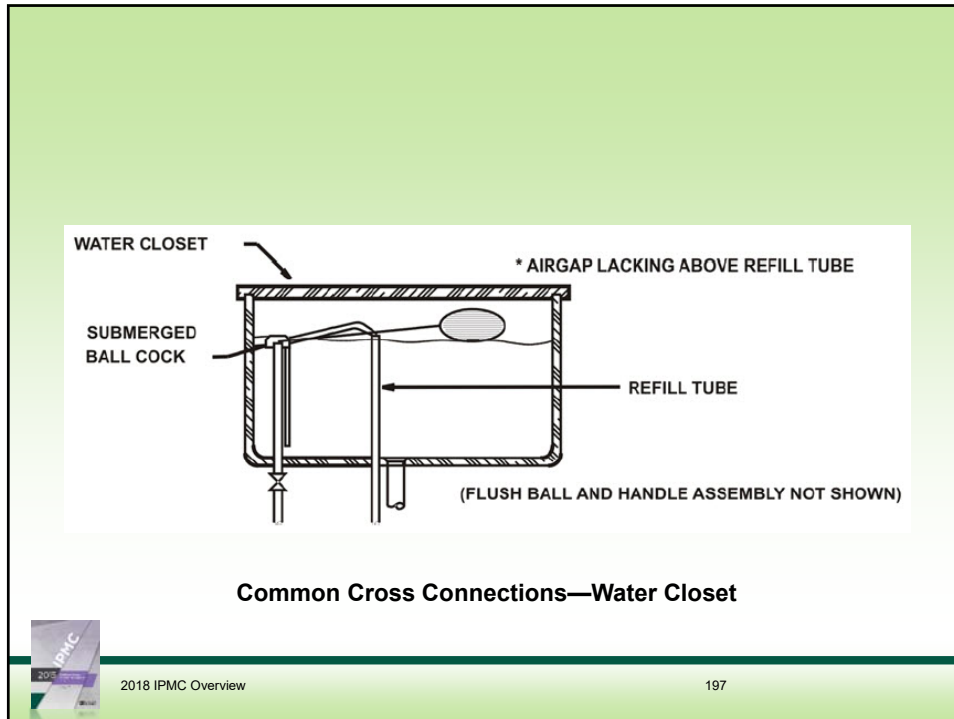
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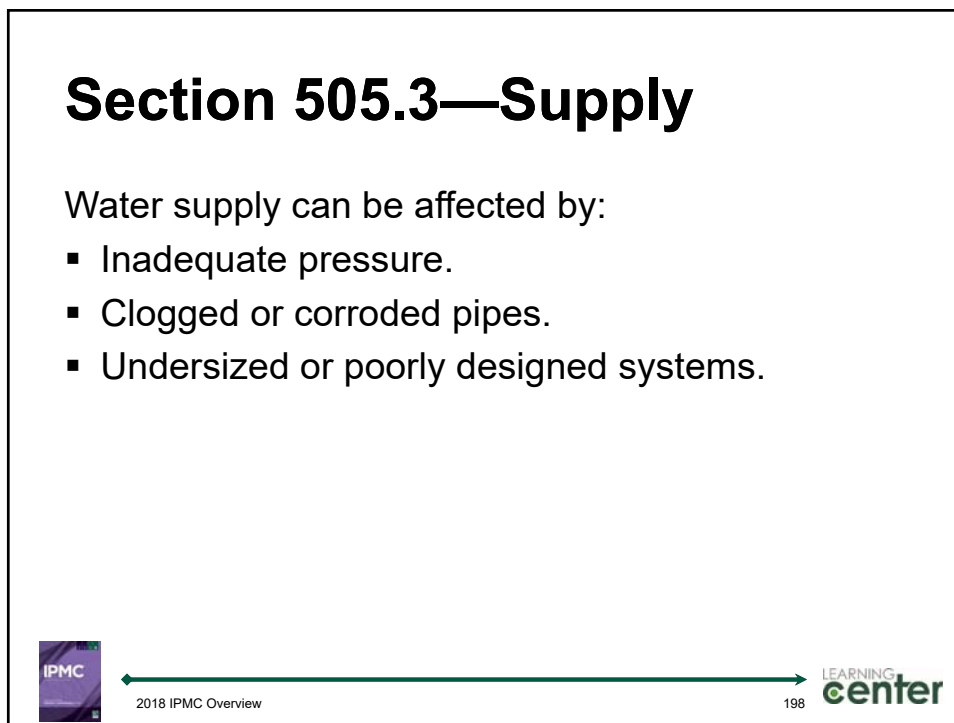


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Section 505.3—Supply

Water supply can be affected by:

- Inadequate pressure.
- Clogged or corroded pipes.
- Undersized or poorly designed systems.



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Section 505.4—Water Heating Facilities

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

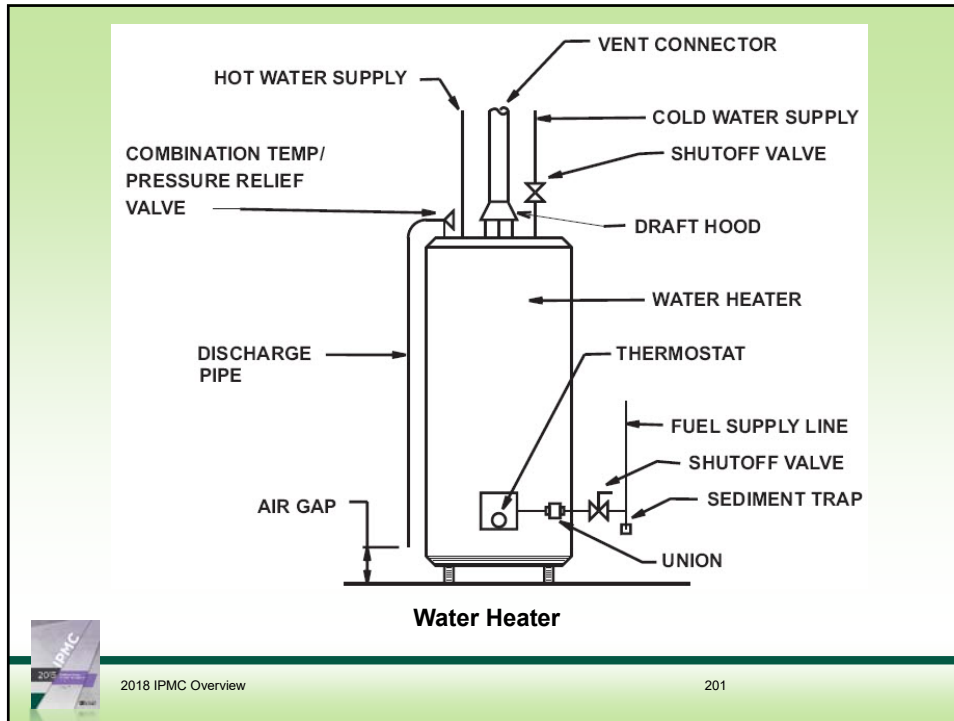


Water Heater Inspection Checklist

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

Water Heater Inspection Checklist





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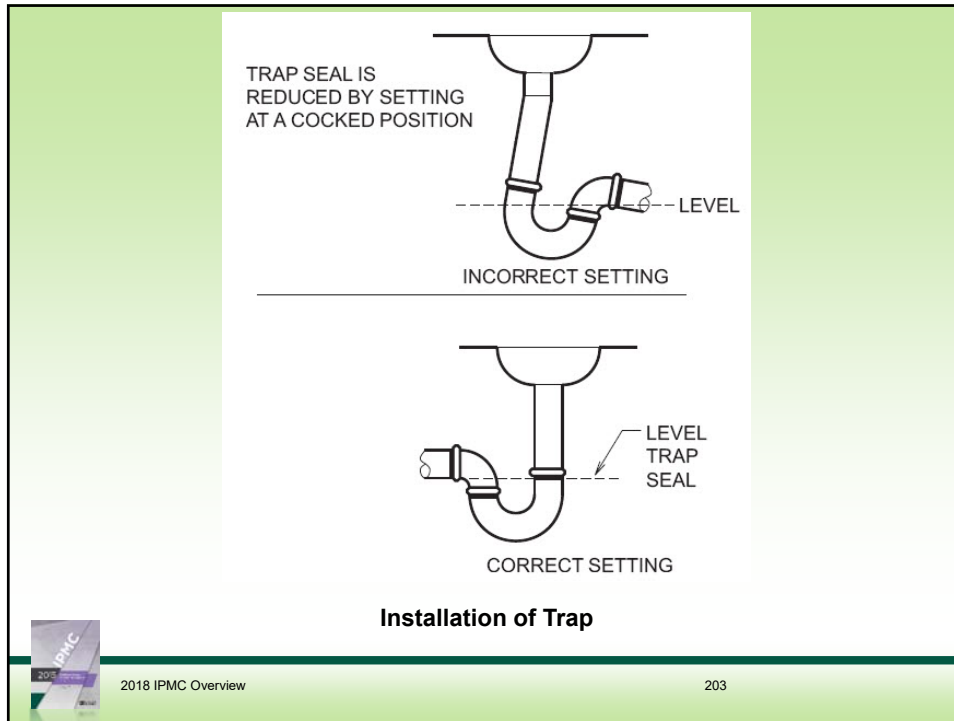
Section 506—Sanitary Drainage System Section 506.1—General

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

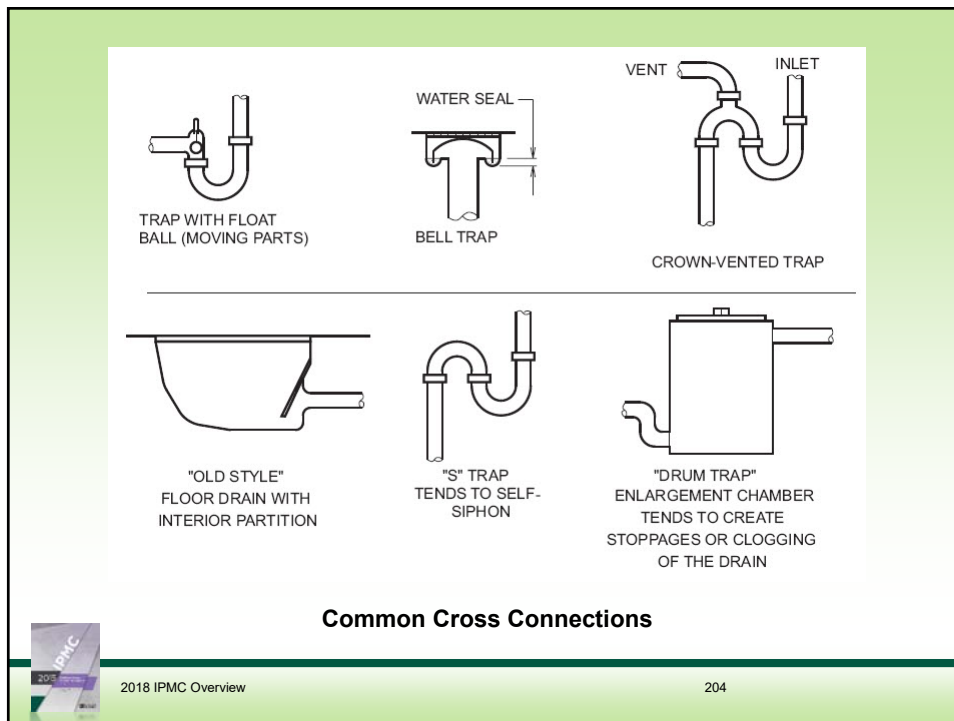
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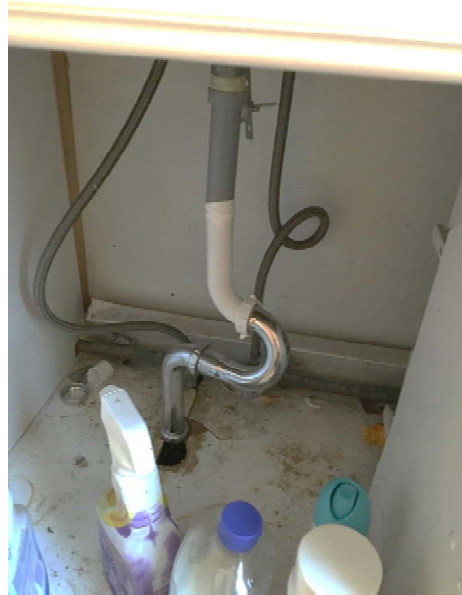
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Section 506.2— Maintenance

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



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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.



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Section 507—Storm Drainage

Section 507.1—General

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



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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



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23 Basic Principles of Plumbing

- | | |
|--|--|
| 14. Testing the System | 19. Prevent Flooding of Sewers |
| 15. Excluding Water and Substances from the Sanitary Drainage System | 20. Proper Maintenance |
| 16. Prevent Contamination | 21. Accessible Fixtures |
| 17. Light, Heat and Ventilation | 22. Regard for Structural Safety |
| 18. Individual Sewage Disposal Systems | 23. Protecting Ground Water from Contamination |



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Activity: Practice

Directions: Analyze the situation and determine how you would address the code violations and answer the questions provided.

You respond to a complaint from a tenant, Nancy Nurse, alleging poor water pressure, a stopped-up water closet and slow drains. She tells you that her landlord, Thomas Thrifty, makes all repairs only on weekends because he works at another job during the week. She said that the landlord told her that the low water pressure was just something that happens when houses get old and she needs to get used to it. When inspecting the sewer stack in the basement, you see evidence of a recent sewer backup at the floor drain and some very unusual waste pipe configurations under the kitchen sink and bathrooms. The first-floor water closet is stopped up. When you check the water closet upstairs, you find little Jimmy attempting to retrieve several Lego pieces from the water closet with a tropical fish net. In little Susie's bedroom, the register covers have been removed. The heat vents are crammed with stuffed animals.




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ACTIVITY



Activity: Practice Question #1


1. What is the most serious violation and how soon will it have to be remedied?

The presence of raw sewage can be a serious health hazard and requires immediate attention. The stopped-up water closet is a moderate code violation if another bathroom is functional. The low water pressure is a moderate code violation. The blocked heat vents are a moderate code violation.

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ACTIVITY



Activity: Practice Question #2


2. What is the tenant's responsibility?

Tenants should maintain and operate all appliances and fixtures in a safe manner and keep them free from obstructions. However, the owner or owner's agent is in violation and should receive a notice of violation for the blocked heat ducts and toilet.

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ACTIVITY



Activity: Practice Question #3


3. What code sections would you use?

Sections 504.1, 504.3, 506.2 and 607.1.

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DISCUSSION



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).


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DISCUSSION

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.




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DISCUSSION

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.


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DISCUSSION

Code Violation Identification: Slide #3

- Section 506.2 – Waste pipe improperly downsized.

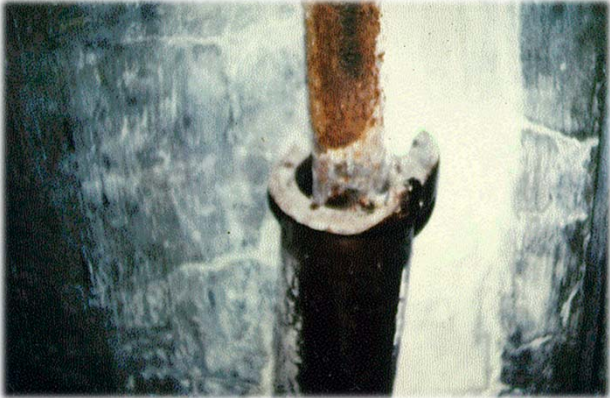


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DISCUSSION

Code Violation Identification: Slide #4



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


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DISCUSSION

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.




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DISCUSSION

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.



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Module 6
Chapter 6
Mechanical and Electrical Requirements



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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.

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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.



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Section 602—Heating Facilities 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.



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Section 602.2—Residential Occupancies

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.



DEGREE DAY AND DESIGN TEMPERATURES

This appendix is informative and is not part of the code.

TABLE D101
DEGREE DAY AND DESIGN TEMPERATURES^a FOR CITIES IN THE UNITED STATES

STATE	STATION ^b	HEATING DEGREE DAYS (yearly total)	DESIGN TEMPERATURES			DEGREES NORTH LATITUDE ^c
			Winter	Summer		
			97 ¹ / ₂ %	Dry bulb 2 ¹ / ₂ %	Wet bulb 2 ¹ / ₂ %	
AL	Birmingham	2,551	21	94	77	33°30'
	Huntsville	3,070	16	96	77	34°40'
	Mobile	1,560	29	93	79	30°40'
	Montgomery	2,291	25	95	79	32°20'
AK	Anchorage	10,864	-18	68	59	61°10'
	Fairbanks	14,279	-47	78	62	64°50'
	Juneau	9,075	1	70	59	58°20'
	Nome	14,171	-27	62	56	64°30'
AZ	Flagstaff	7,152	4	82	60	35°10'
	Phoenix	1,765	34	107	75	33°30'
	Tucson	1,800	32	102	71	33°10'
	Yuma	974	39	109	78	32°40'

IPC Appendix D, Table D101



Section 602.3—Heat Supply

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



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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.



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Section 602.4—Occupiable Work Spaces

Exceptions:

- Processing, storage and operation areas that require cooling or special temperature conditions.
- Areas in which persons are primarily engaged in vigorous physical activities.



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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.



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Section 603—Mechanical Equipment

Section 603.1—Mechanical Appliances

- Appliances and mechanical equipment are subject to aging, wear and deterioration.
- Periodic inspection and servicing are required.



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Section 603.2—Removal of Combustion Products

Unless labeled for unvented operation, 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.



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Section 603.3—Clearances

Section 603.4—Safety Controls

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.



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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.



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Section 604—Electrical Facilities

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.



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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.



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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.



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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.



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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.



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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.



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Section 605—Electrical Equipment

Section 605.1—Installation

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



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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 ground fault circuit interrupter (GFCI) protection.
- Every laundry room is required to have at least one ground receptacle outlet or a receptacle with a GFCI.



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Section 605.3—Luminaires

Luminaires must be provided to illuminate:

- Hallways.
- Stairways.
- Toilet rooms.
- Bathrooms.
- Laundry rooms.
- Kitchens.
- Furnace rooms.



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Section 605.4—Wiring

Flexible cords should not be:

- Used for permanent wiring.
- Running through doors, windows or cabinets.
- Concealed within walls, floors or ceilings.

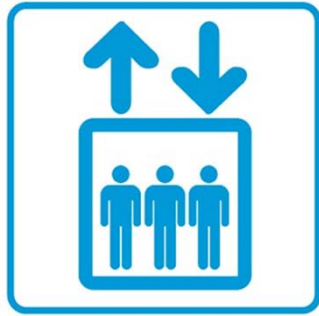


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Section 606—Elevators, Escalators and Dumbwaiters



- 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.



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Section 606—Elevators, Escalators and Dumbwaiters

Exception:

- Where there is only one elevator, it may be temporarily out of service only when service or testing is needed.



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Section 607—Duct Systems

- 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.




Activity: Practice

Directions: Some of the decisions you make while enforcing the 2018 IPMC may be called into question in a court of law. Analyze the following situation and determine how you would decide to answer the following questions if you were the judge in the case.




ACTIVITY




Activity: Practice

An elderly woman in Chicago, Illinois lives in a 50-year-old apartment building heated with a boiler. It is January in Chicago. The current temperature is 30°F (-1°C). The average temperature is 25°F (-4°C) in January. The outdoor design temperature for Chicago is 2°F (-17°C). The elderly woman complains that the landlord turns the heat down at night and it takes several hours into the early morning to get it warm again. She has a thermostat, but she says it has never worked. The landlord claims he keeps the heat set at a comfortable 72°F (22°C) for all his elderly tenants and that he sets the temperature for each floor separately depending on his tenant preferences. He says some of his tenants do not like a lot of heat at night. Upon your inspection at 9am, you measure the temperature to be 58°F (14°C) in the elderly woman's apartment. You stop by the elderly woman's apartment on your way home at 5pm and measure the temperature reading to be 65°F (18°C) at the window.




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ACTIVITY




Activity: Practice

Question #1


1. Is the landlord in violation?

The landlord is probably in violation. Obtaining a temperature reading next to a window is not the proper place to obtain an accurate room temperature. If another reading of 67°F (19°C) or less is taken in the middle of the room away from the walls and floor, then the answer is "yes." He is in violation of Section 602.3, which requires a minimum of 68°F (20°C) at all times in a rental unit.




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ACTIVITY




Activity: Practice Question #2

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

No, not unless the temperature outside is below the outdoor design temperature for the locality as indicated in Appendix D of the IPC. The average monthly temperature exception does not apply either since it is 25°F (-4°C) for this area at this time of the year.




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ACTIVITY




Activity: Practice Question #3

3. Is this a dangerous situation?

This situation could be dangerous if prolonged. Lack of adequate heat is more dangerous to the elderly and infants.



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Module 7

Chapter 7



Fire Safety Requirements

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Fire Safety

- 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 utilizing a **means of egress**.



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Purpose

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 and products of combustion (e.g., smoke and hot gases).



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Consequences

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.



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Section 702—Means of Egress

Section 702.1—General



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



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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.



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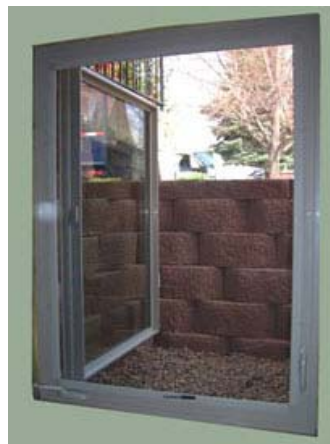
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Section 702.3—Locked Doors

- 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.



REFER TO




CODE BOOK

2018 IBC
Definition
Section 202


Section 703—Fire-Resistance Ratings

- **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).



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Section 703.1—Fire-Resistance-Rated Assemblies

- 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-resistance-rating.



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Section 703.2 Unsafe Conditions

- A building's fire-resistance-rated construction must be maintained at the original level of safety.
- Failure to maintain fire-resistant components to that level of safety will result in the component being declared unsafe in accordance with Section 111.1.1 of the IFC and being repaired or replaced as necessary.



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Section 703.3 Maintenance

- Components of fire-resistance-rated assemblies must be maintained. These include walls, firestops, shaft enclosures, partitions, smoke barriers, floors, fire-resistive coatings and sprayed fire-resistant materials applied to structural members and joint systems.
- The building owner must provide annual visual inspections of these assemblies and maintain records of such inspections.



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Section 703.4—Opening Protectives

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



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Section 703.5 Ceilings

- Fire-resistance-rated floor/ceiling and roof/ceiling assemblies must not have hanging or displaying of salable goods or decorations from acoustical ceiling systems.



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Section 703.6 Testing

- Annual inspection and testing is required to determine that required fire doors operate freely and close completely.
- Written records of inspection and testing are also required to be maintained.



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Section 703.7 Vertical Shafts

- Vertical openings connecting two or more stories require enclosure or protection per Chapter 11 of the IFC.
- It retroactively requires the enclosure of vertical openings between floors with approved fire barriers in some scenarios.



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Section 703.8 Opening Protectives Closers

- Fire door assemblies are required to be self-closing or automatic-closing by smoke detection.
- Existing buildings may already be equipped with heat-actuated closing devices rather than the smoke-detector-actuated devices.
- Such devices are acceptable, provided that the temperature rating of their fusible element is a maximum of 135°F (57°C).



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Section 704—Fire Protection Systems Section 704.1—Inspection, Testing and Maintenance

- All systems installed to detect, suppress or control a fire shall be maintained in operable condition per IFC.
- Existing systems shall be maintained per original installation standards.



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Section 704.2 Standards

**TABLE 704.2
FIRE PROTECTION SYSTEM MAINTENANCE STANDARDS**

SYSTEM	STANDARD
Portable fire extinguishers	NFPA 10
Carbon dioxide fire-extinguishing system	NFPA 12
Halon 1301 fire-extinguishing systems	NFPA 12A
Dry-chemical extinguishing systems	NFPA 17
Wet-chemical extinguishing systems	NFPA 17A
Water-based fire protection systems	NFPA 25
Fire alarm systems	NFPA 72
Smoke and heat vents	NFPA 204
Water-mist systems	NFPA 750
Clean-agent extinguishing systems	NFPA 2001



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Section 704.3 Systems out of service

- The fire department and the fire code official must be notified of any service interruptions.
- Fire code official may require building evacuation or possibly a fire watch.
- For emergency impairments an impairment coordinator implements IFC Section 901.7.4 provisions.



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Section 704.4 Removal of or tampering with equipment

- A person who unlawfully tampers with fire protection equipment could face potential criminal charges.
- Tampering could include intentionally pulling a manual fire alarm box when no emergency exists, playing with matches to set off a smoke detector or flowing a city fire hydrant.



Section 704.5—Fire Department Connection

- Signage shall be provided indicating the location of the fire department connection when it is not visible from access roads.
- Clear access to the FDC must be provided.



Section 704.6.1—Smoke Alarms

- Single- or multiple-station smoke alarms are required in existing Groups R and I-1 occupancies.



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Section 704.6.1—Smoke Alarms

Exceptions

- Smoke alarms installed as regulated by the code in effect when the building was built are sufficient.
- Smoke alarms complying with the code in effect when the smoke alarms were installed are sufficient.
- Smoke detectors connected to a fire alarm system are sufficient.



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Section 704.6.1.1—Smoke Alarm Locations for Group R-1

Smoke alarms are required:

- In all rooms creating the means of egress from the sleeping unit to the outside.
- In every sleeping room.
- On every story of a dwelling, including basements.



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Section 704.6.1.2—Smoke Alarm Locations for Groups R-2, R-3, R-4 & I-1

Smoke alarms are regulated:

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



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Section 704.6.1.3—Installation Near Cooking Appliances

- Unless required by other location regulations in Sections 704.6.1.1 or 704.6.1.2, smoke alarms are prohibited within certain distances of cooking appliances.

Type of Alarm	Minimum Distance
Ionization	20 feet
Ionization with alarm silencing switch	10 feet
Photoelectric	6 feet



Section 704.6.1.4—Installation Near Bathrooms

- Unless required by other location requirements in Section 704.6.1.1 or Section 704.6.1.2, smoke alarms are prohibited within 3 feet of a door opening to a bathroom that contains a bathtub or shower.



Section 704.6.2—Interconnection

- Where buildings are altered or repaired, including the removal of interior wall or ceiling finishes, more than one smoke alarm is required to be installed. They are required to be interconnected.



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Section 704.6.3—Power Source

The primary source of power shall have:

- The building's electrical system of "AC."
- Battery backup.

Exception:

Battery operated smoke detectors are permitted in some cases. (No construction, no commercial power source, no interior finishes being removed)



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Section 704.6.4—Smoke Detection System

- Allowance for smoke detectors provided as part of a fire alarm system as an alternative to providing smoke alarms.



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Section 706 Carbon Monoxide Alarms and Detection

- Carbon Monoxide Alarms are retroactively required for dwellings per the IFC and IRC.
- Carbon monoxide alarms and detectors must be maintained in accordance with NFPA 720.

Tip

Although not specifically referenced NFPA 72 contains requirements for the inspection and testing of these alarms.



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DISCUSSION

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).

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DISCUSSION

Code Violation Identification: Slide #1



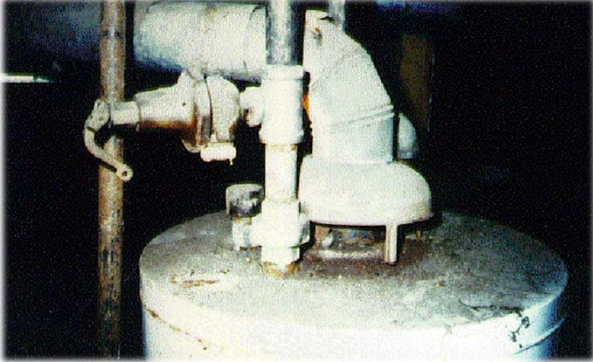
Sections 702.1 and 702.2 – Accumulation of storage obstructs the means of egress.

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DISCUSSION

Code Violation Identification: Slide #2



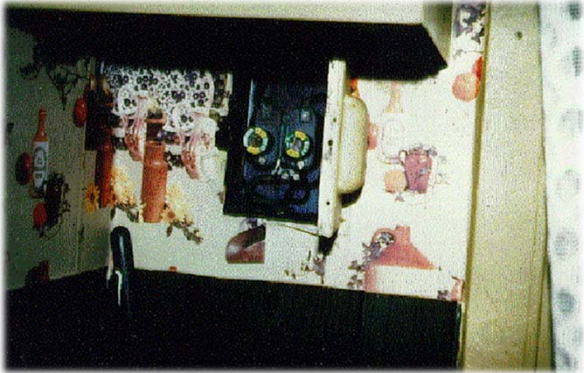
Sections 603.1 and 603.5 – Failure to maintain a safe working condition and provide proper venting.

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DISCUSSION

Code Violation Identification: Slide #3




Section 604.2 – 30 amp electrical service inadequate/undersized.

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DISCUSSION

Code Violation Identification: Slide #4



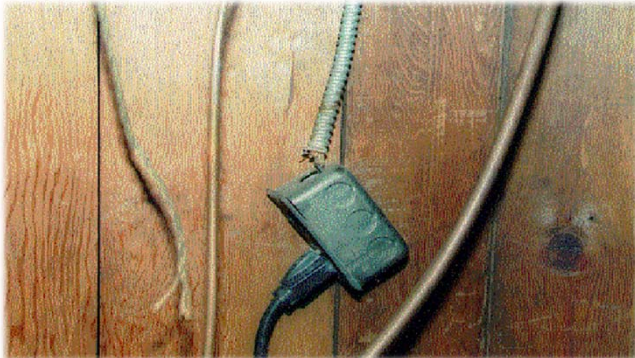
Sections 605.3 and 605.1 – Improperly installed light fixture.

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DISCUSSION

Code Violation Identification: Slide #5



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

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Code Violation Identification: Slide #6



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.)



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Module 8

Appendix A Boarding Standard

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Purpose

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



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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.



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Please Note

- The provisions of Appendix A are not mandatory unless they are specifically referenced in the adopting ordinance of the authority having jurisdiction.



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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.



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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.



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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.

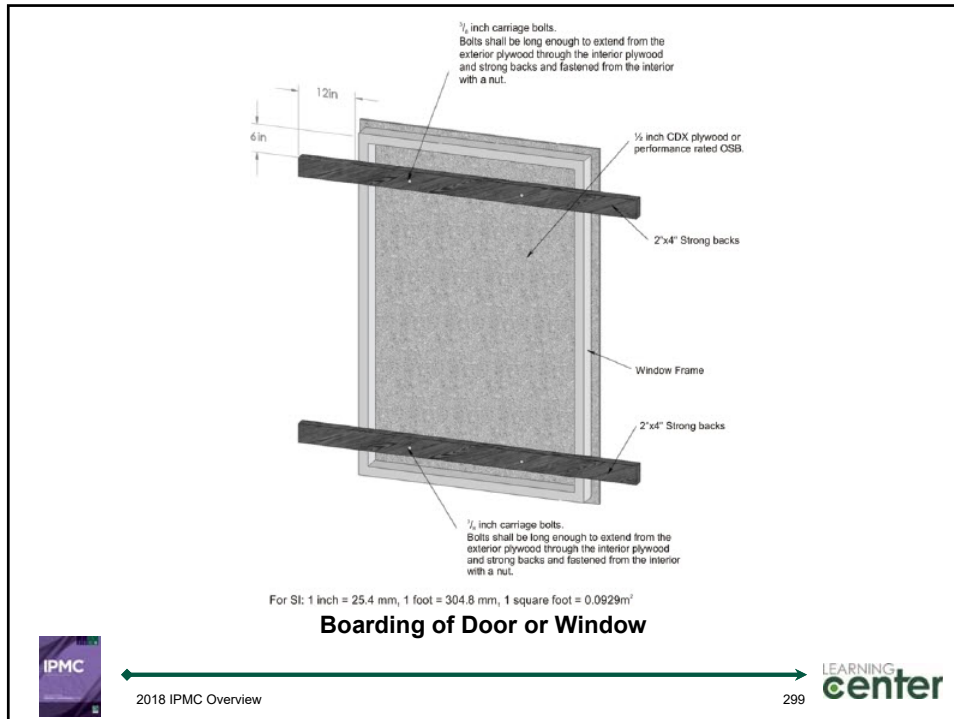


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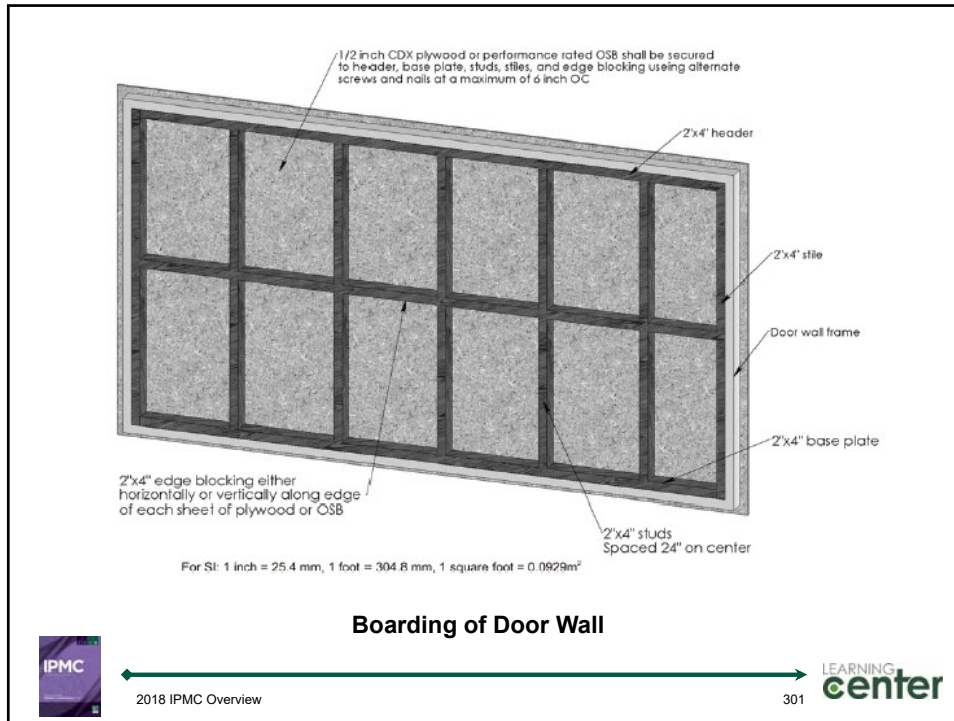
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Door Walls

- 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 sheeting material is required to be secured with screws and nails alternating every 6 inches (152 mm).



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Questions and Answers

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 **Final Reflection**


- **What?** What happened and what was observed in the training?
- **So what?** What did you learn? What difference did this training make?
- **Now what?** How will you do things differently back on the job as a result of this training?

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