


Please remember to bring the following!

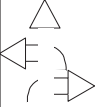
- 2018 *or* 2021 International Building Code
- Any edition of the International Zoning Code
- Legal Aspects of Code Administration
- Basic Code Enforcement (Optional)
- Calculator
- Highlighter
- Pen



DON'T FORGET!

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1




The Complete Permit Technician


Steve Burger, C.B.O., LEED AP

sburger6609@gmail.com

EduCODE
Feb. 26 and 27, 2024



EduCODE international™
Knowledge to build on
Twenty Seven Years of Building Code Education
www.educode.us
February 26 – March 1, 2024
Orleans Hotel & Casino Conference Center and Online Classes



ICC PREFERRED
EDUCATION
PROVIDER

2

WELCOME!

- ❑ Thank You!
- ❑ Use Your Books!
- ❑ Slides vs. Handouts
- ❑ Sorry, but we may not have enough time to go in-depth.
- ❑ Feel free to email me!
- ❑ My Email Address is on The First Slide
- ❑ Disclaimer and Apologies in Advance

3

WELCOME

- ❑ Spectrum of Class Content
- ❑ Cell Phones
- ❑ Ask Questions!!!!!!!!!!!!!!!!!!!!!!
- ❑ Personal Experiences
- ❑ Restroom Location
- ❑ Exits
- ❑ Breaks and Lunch
- ❑ Some of my opinions 😊

4

WELCOME

- ❑ INTRODUCTIONS
- ❑ NAME / TITLE
- ❑ WHERE YOU WORK NOW
- ❑ HOW LONG IN THE “CODE BUSINESS”
- ❑ HAVE YOU EVER TAKEN A CERTIFICATION EXAM BEFORE?

5

ME! (Woo Hoo!)

Started in the Code Industry in 1972

Worked as a:

- Secretary/Permit Tech
- Plans Examiner
- Building Inspector
- Code Compliance Officer (Code Enforcement)
- Senior Plans Examiner
- Assistant Building Official
- Building Official
- Consultant

Worked in:

- Illinois (Schaumburg, Carol Stream, DuPage County, Moline) 1972-1995
- Arizona (Goodyear, Bureau Veritas Code Consultants) 1995-2009
- California (Folsom) 2009-2017
- Now back in Arizona (Shums Coda Code Consultants-2018, Retired-2020)

Taught Permit Tech Classes (and have been *seriously listening* to Permit Techs) since 1998

**AAS Degree-Architectural Technology
11 ICC Certifications
LEED Accredited Professional
2016 ICC Educator of the Year**

6

What We're Going to Cover

- **The Exam**
 - History
 - Reference Materials
 - Tips
 - Contents
- **Brief History of the Codes**
- **Overview of the IBC (Used on Exam)**

7

What We're Going to Cover (cont'd.)

- **Customer Service**
 - You at the Counter
- **International Building Code (Multiple Chapters)**
- **Legal Aspects**
- **International Zoning Code**
- **Permit Process**
 - Plans, Fees, Plan Review, Inspections, C.O.

8

What We're Going to Cover (cont'd.)

- **Records Retention**
- **Permit Revocation**
- **Board of Appeals**
- **Occupancies and Types of Construction**
- **Typical Questions**
- **General Knowledge**

9

What We're Going to Cover

- **We Ain't Gonna Just Cover Exam Stuff!**
- **We Want to **EXPAND** Your Minds
and Way of Thinking About the Code!!!**

10

How This Class is Laid Out

11

**Let's Get
Started!**

12

**ACCORDING TO FINANCIAL
EXPERTS, WHAT IS YOUR
GREATEST ASSET?**

13

**JOB
VS
CAREER?**

14

LAYOFFS

**Reduction in Force
(RIF's)**

How Can I Survive??

**“Quiet Quitting”
vs.
“Quiet Firing”**

15

**SORRY, BUT THE CODE
AIN'T SEXY**

16

WANTED: Permit Technician-
Must be proficient in the
following areas:

- ☐ Public Relations
- ☐ Teacher/Educator
- ☐ Babysitter
- ☐ Politics
- ☐ Language Interpreter
- ☐ Psychologist
- ☐ Referee
- ☐ Initiative
- ☐ Mentor
- ☐ Computer Expert
- ☐ Legal Aspects
- ☐ Secretary/Multi-Task
- ☐ Time Manager
- ☐ Problem Solver
- ☐ Inventory Control
- ☐ Accountant
- ☐ Jr. Bldg. Official
- ☐ AND....

17

www.iccsafe.org

- ☐ **Google: “ICC Search for Certified Professionals”**
- ☐ **Scroll down and click on “Permit Technician”**

18

Selected Certifications AS OF JANUARY 2, 2024

□ AZ	186	(176)	□ ID	83	(72)
□ CO	205	(206)	□ TX	404	(365)
□ WA	279	(277)	□ NM	11	(10)
□ CA	500+	(500+)	□ UT	68	(68)
□ OR	131	(110)	□ MN	51	(51)
□ NV	98	(94)	□ IA	40	(35)
□ CT	4	(5)	□ KS	29	(29)
□ MO	35	(32)	□ IL	89	(80)

19

THE PERMIT TECH EXAM

14 Permit Technician

60 multiple-choice questions
Exam fee: \$189
Open book—2-hour time limit

Content Area	% of Total	References
General Administration	39%	1. 2015 <i>International Building Code</i> ®, chapters 1-3, 6, 12 Store ID: (soft-cover) 3000S15; (M) \$101; (N) \$135
Legal Aspects	22%	Store ID: (loose-leaf) 3000L15; (M) \$114; (N) \$152
Plans and Documents	25%	2. 2015 <i>International Zoning Code</i> ® Store ID: (soft-cover) 3900S15; (M) \$28; (N) \$37
Zoning and Site Development	14%	3. 2002 <i>Legal Aspects of Code Administration</i> Store ID: (soft-cover) 1007S01; (M) \$30; (N) \$38
Total	100%	4. <i>Basic Code Enforcement</i> , Copyright 2008 or newer Store ID: (soft-cover) 1016S12; (M) \$30; (N) \$40, workbook edition
\$290 as of 1-2-24		

Questions from the International Building Code will be taken from Chapters: 1-3, 6, 12, 17 (1704.1-1704.5)

20



“ICC Certification Exam”

OR

www.iccsafe.org/certification-exam-catalog/

21

Exam Subject Areas

- General Administration--39%
 - Determine Customer’s Needs
 - Verify That Application and Documents Are Complete
 - Verify Contractor Licensing
 - Recognize Basic Building Components
 - Calculate Fees
 - Inspection Requests and Approvals
 - Prepare Certificate of Occupancy

22

Exam Subject Areas (cont'd.)

- Legal Aspects--22%
 - Answer Questions About Need for Approvals
 - Testify at Trials and Depositions
 - Retention of Documents
 - Project History and Code Compliance
 - Appeals, Suspensions, Revocations
 - General Liability

23

Exam Subject Areas (cont'd.)

- Plans and Documents--25%
 - Recognize Basic Contents of Documents
 - Determine Level of Review
 - “Recognize” Occupancy Groups
 - “Recognize” Types of Construction
 - Read Maps, Plats and Site Plans
 - Use Scales
 - Calculate Areas and Percentages

24

Exam Subject Areas (cont'd.)

- Zoning and Site Development--14%
 - Explain Site Plan Review Process
 - Explain Land Use Codes
 - Determine Public and Private Easements
 - Verify Structure Location on Lot
 - Verify Required Setbacks
 - Determine Need for Variances

25



“ICC Learning Center”

OR

learn.iccsafe.org

26

Permit Tech Nation

A National ICC Chapter for Permit Techs



PermitTechNation
We Permit You To Build

www.permittechnation.org

27

UPCOMING CLASSES!



www.svabo.org

No Membership
Required!



Also Check Out Arizona Building
Officials @ www.azbo.us



Keep an
Eye on the
Website!



28

THE CODE SPECIALIST EXAM

CS Code Specialist Module

75 multiple-choice questions

Exam fee: \$116

Open book—2-hour time limit

Content Area	% of Total	References
Customer Service and Communication	31%	1. 2015 <i>International Building Code</i> ® Store ID: (soft-cover) 3000S15; (M) \$101; (N) \$135
Financial Management	11%	Store ID: (loose-leaf) 3000L15; (M) \$114; (N) \$152
Personnel Management	25%	2. 2015 <i>International Fire Code</i> ®
Records Management	9%	Store ID: (soft-cover) 3400S15; (M) \$83; (N) \$110
Code Enforcement	24%	Store ID: (loose-leaf) 3400L15; (M) \$92; (N) \$123
		3. 2012 <i>Building Department Administration</i> , 4th ed Store ID: (hard cover) 1013S4; (M) \$89.95; (N) \$112
		4. 2015 <i>International Property Maintenance Code</i> ® Store ID: (soft-cover) 3500S15; (M) \$30; (N) \$40
		5. <i>Human Resources Management for Public and Non-Profit Organizations: A Strategic Approach</i> , 4th edition
		6. 2002 <i>Legal Aspects of Code Administration</i> Store ID: (soft-cover) 1007S01; (M) \$30; (N) \$38
		7. <i>A Budgeting Guide for Local Government</i> , 3rd ed. Store ID: (soft cover) 9624S3; (M) \$73.50; (N) \$81.50
		8. <i>Inspector Skills</i> Store ID: (soft cover) 7104S; (M) \$19.95; (N) \$24.95
Total	100%	

\$190 (as of 1-2-24)

29

Tips On Taking The Exam

- ❑ Your Job Is Based On These Documents
- ❑ This Class Will Not Guarantee You'll Pass
- ❑ Study, Study, Study
- ❑ Experience (Consciously Competent)
- ❑ 2 Hours / 60 Questions = 2 Minutes
- ❑ Open Book
- ❑ Know Where To Look! Use Tabs
- ❑ Become Familiar With Code Layout
- ❑ Highlight Important Information/Tables

30

Taking The Exam (cont'd.)

- ❑ Use Index and Table of Contents
- ❑ Definitions / Index of Terms
- ❑ Try and Determine “Key Words”
- ❑ Read the Entire Section (Turn the Page!)
- ❑ Watch for Exceptions
- ❑ General Vs Specific
- ❑ “Shall” Vs “is authorized” or “is permitted” or “shall be authorized”

31

Taking The Exam (Cont'd.)

- ❑ **Forget Your Local Amendments**
- ❑ No “Trick” Questions
- ❑ Sleep the Night Before!!!

32

Be Nervous, But Don't Be Afraid!

**If By Some Slim Chance You
Don't Pass, Use The
Experience As A Study Guide**

33

Where Can I Take the Exam?



**Proctored Remote Online Testing
Option (PRONTO) [2018 and 2021]**

OR



<https://home.pearsonvue.com/>

2015 Only!

34

Permit Technician Exam

□ History

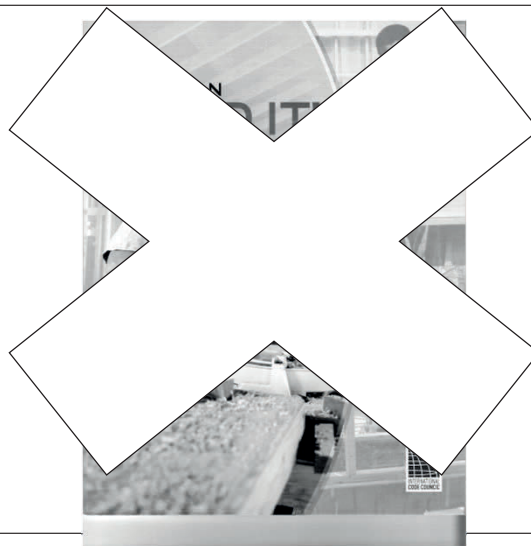
- » See Building Standards (March-April 1999)
- » Scope
- » Survey
- » Questions and References and Scoring

□ Topics

- » Basic Code Enforcement
- » International Zoning Code (2018 / 2021)
- » Legal Aspects of Code Administration (Guidebook)
- » Chapters 1, 2, 3, 6, 12, 17 of the 2015/2018 IBC

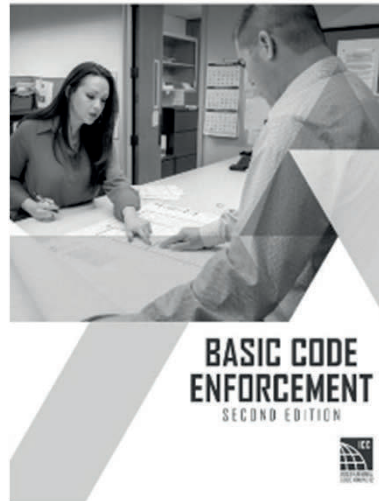
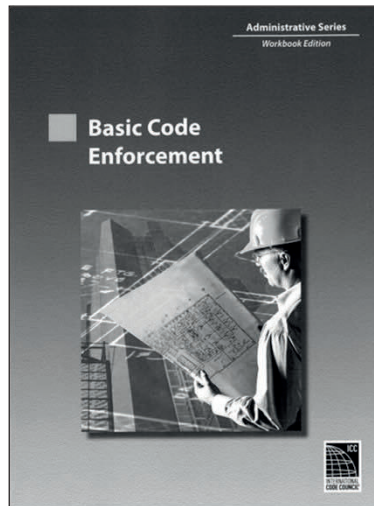
35

You Can Build It!



36

Basic Code Enforcement



37

International Zoning Code



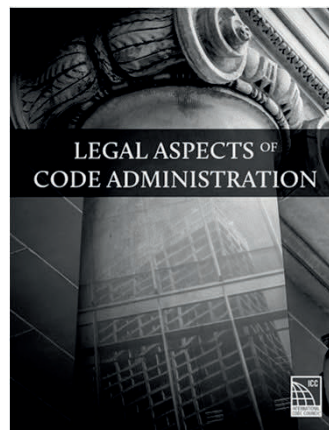
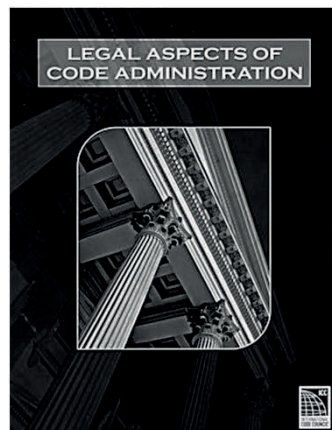
38

International Zoning Code Chapters

- | | |
|--|--|
| 1--Administration | 8--General Provisions |
| 2--Definitions | 9--Special Regulations |
| 3--Use Districts | 10--Sign Regulations |
| 4--Agricultural Zones | 11--Nonconforming
Structures and Uses |
| 5--Residential Zones | 12--Conditional Uses |
| 6--Commercial and
Commercial/Residential
Zones | 13--Planned Unit
Development |
| 7--Factory/Industrial
Zones | |

39

Legal Aspects of Code Administration



40

Legal Aspects of Code Administration

- ▣ **Table of Contents**
- ▣ **Index of Terms (Back of Book)**
- ▣ **Front of Chapters**

41

THE INTERNATIONAL BUILDING CODE



42

International Building Code

Chapter 1, "ADMINISTRATION"

- Title, Scope, Intent, Applicability, Department of Building Safety, Duties and Powers of the Building Official, Permits, Construction Documents, Temporary Structures, Fees, Inspections, Certificate of Occupancy, Service Utilities, Board of Appeals, Violations, Stop Work Order, Unsafe Structures and Equipment

□ Chapter 2, "DEFINITIONS"

43

PERMIT TECHNICIAN STUDY COMPANION



44

A BRIEF HISTORY LESSON



45

FIRES THAT SHAPED HISTORY

- **Rome, 64 AD**
- **Great Fire of London, 1666**
- **The Chicago Fire, October 8, 1871 250 Dead**
- **Triangle Shirtwaist Factory, New York
March 25, 1911 148 Dead**
- **Coconut Grove Nightclub, Boston, 1942 492
Dead**
- **Our Lady of Angels, Chicago, December 1, 1958
95 Dead**

46

FIRE HISTORY (cont'd.)

- ❑ **McCormick Place, Chicago, January 16, 1967**
- ❑ **Beverly Hills Supper Club, Kentucky, May 28, 1977, 165 Dead**
- ❑ **MGM Hotel, Las Vegas, (Is now Bally's) November 21, 1980, 84 Dead**
- ❑ **Second-floor Disco, Sweden October 29, 1998, 60 Dead, 173 Injured**

47

FIRE HISTORY (cont'd.)

- ❑ **Epitome Nightclub - Chicago**
– February 18, 2003 21 Dead
- ❑ **The Station Nightclub - West Warwick, RI**
– February 20, 2003 100 Dead 190 Injured
- ❑ **World Trade Center 9-11-2001 2803+**
- ❑ **Republica de la Cro-Magnon Nightclub – Buenos Aires, Argentina**
– December 30, 2004 714 Injured 185 Dead
- ❑ **Ghost Ship Warehouse Fire, Oakland, CA**
– December 2, 2016 Illegal Use and Occupancy 36 Dead

48

Fire History (cont'd.)

- Local Fires (Listen to the News)
- One Fire Can Change Many Lives

In summary: In the past 5000 years, millions of people have sacrificed their lives to bring about Building and Fire Codes

49

FACT

**BUILDING CODES
ARE A CITY'S
COMMITMENT
TO THE FUTURE**

50

The First Building Code Hammurabi (2000 BC)



51

The First Building Code Hammurabi (2000 BC)

- Law 228. If a builder builds a house for someone and completes it, he shall give him a fee of two shekels in money for each sar of surface.
- Law 229. If a builder builds a house for someone, and does not construct it properly and the house which he built falls in and kills its owner, then that builder shall be put to death.
- Law 230. If it kills the son of the owner, the son of that builder shall be put to death.
- Law 231. If it kills a slave of the owner than he shall pay slave for slave to the owner of the house.
- Law 232. If it ruins goods, he shall make compensation for all that has been ruined, and is as much as he did not construct properly this house which he built and it fell, he shall re-erect the house from his own means.
- Law 233. If a builder builds a house for someone, even though he has not yet completed it; if then the walls seem toppling, the builder must make the walls solid from his own means.

52

The First Building Code Hammurabi (2000 BC)

- Law 228. If a builder builds a house for someone and completes it, he shall give him a fee of two shekels in money for each sar of surface.
- Law 229. If a builder builds a house for someone, and does not construct it properly and the house which he built falls in and kills its owner, then that builder shall be put to death.
- Law 230. If it kills the son of the owner, the son of that builder shall be put to death.
- Law 231. If it kills a slave of the owner than he shall pay slave for slave to the owner of the house.
- Law 232. If it ruins goods, he shall make compensation for all that has been ruined, and is as much as he did not construct properly this house which he built and it fell, he shall re-erect the house from his own means.
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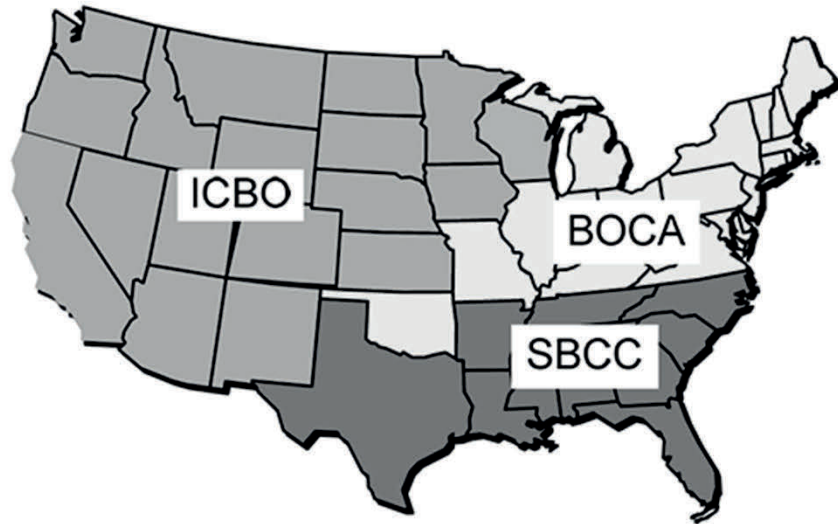
53

WHAT IS THE INTERNATIONAL BUILDING CODE ? (I.B.C.)

- The Building Code is a Law (When Adopted)
- The Three Model (Legacy) Building Codes:
 - The **Uniform Building Code**
 - » International Conference of Building Officials (ICBO)
 - The **National Building Code**
 - » Building Officials and Code Administrators (BOCA)
 - The **Standard Building Code**
 - » Southern Building Code Congress International (SBCCI)

54

Legacy Building Codes



55

How Did We Get to One Code?

COMMON FORMAT

56

Became the International Code Council in 1994

57

Alphabet Soup

- **ICC** (International Code Council)
- **NFPA** (National Fire Protection Association)
- **IAPMO** (International Association of Plumbing and Mechanical Officials)

“Governmental Consensus”
vs.
“True Consensus”

58

THE TWO STYLES OF CODES

- Performance
 - “What goes up, must not come down.”
- Specification or Prescriptive
 - “Do this, then do that.”
- Alternate Materials and Methods (IBC Sec. 104.11)
 - “New stuff, new ways.”
- Modifications (IBC Sec. 104.10)
 - “Due to practical difficulties....”

59

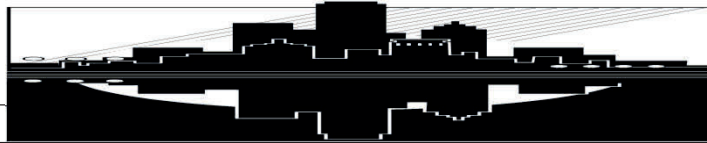
REACTIVE Vs PROACTIVE

- **Did-Happen Vs Might-Happen**
- **Approx. 80% is Fire-Related**

60

FUNDAMENTAL PURPOSES OF THE INTERNATIONAL CODE

- Safety of Building Occupants
 - Fire Prevention, Structural, Environmental, Exiting
- Stop / Reduce Panic
- Safety of Fire Personnel
 - Getting In, Spread of Fire, Structural Collapse
- Safety and Protection of Other Property
- Safety and Protection of Own Property



61

FORMAT and LAYOUT OF THE 2018 I.B.C.

- | | |
|--|---|
| □ <u>Chapter 1 ADMINISTRATION</u> | □ Chapter 11 ACCESSIBILITY |
| □ <u>Chapter 2 DEFINITIONS</u> | □ <u>Chapter 12 INTERIOR ENVIRONMENT</u> |
| □ <u>Chapter 3 USE and OCCUPANCY CLASSIFICATION</u> | □ Chapter 13 ENERGY EFFICIENCY |
| □ Chapter 4 SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY | □ Chapter 14 EXTERIOR WALL |
| □ Chapter 5 GENERAL BUILDING HEIGHTS AND AREAS | □ Chapter 15 ROOFS ASSEMBLIES AND ROOFTOP STRUCTURES |
| □ <u>Chapter 6 TYPES OF CONSTRUCTION</u> | □ Chapter 16 STRUCTURAL DESIGNS |
| □ Chapter 7 FIRE-RESISTANCE-RATED CONSTRUCTION | □ Chapter 17 STRUCTURAL TESTS AND SPECIAL INSPECTIONS |
| □ Chapter 8 INTERIOR FINISHES | □ Chapter 18 SOIL AND FOUNDATIONS |
| □ Chapter 9 FIRE PROTECTION SYSTEMS | □ Chapter 19 CONCRETE |
| □ Chapter 10 MEANS OF EGRESS | □ Chapter 20 ALUMINUM |
| | □ Chapter 21 MASONRY |
| | □ Chapter 22 STEEL |
| | □ Chapter 23 WOOD |
| | □ Chapter 24 GLASS AND GLAZING |

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IBC LAYOUT (Cont'd.)

- Chapter 25 GYPSUM BOARD AND PLASTER
- Chapter 26 PLASTIC
- Chapter 27 ELECTRICAL
- Chapter 28 MECHANICAL SYSTEMS
- Chapter 29 PLUMBING SYSTEMS
- Chapter 30 ELEVATORS AND CONVEYING SYSTEMS
- Chapter 31 SPECIAL CONSTRUCTION
- Chapter 32 ENCROACHMENTS INTO THE PUBLIC RIGHT-OF-WAY
- Chapter 33 SAFEGUARDS DURING CONSTRUCTION
- Chapter 34 RESERVED
- Chapter 35 REFERENCED STANDARDS
- Appendix Chapters A THROUGH M

ALSO LOOK ON PAGES ix
- xix FOR AN
OVERVIEW OF THE
CHAPTERS!

63

Margin Markings

- Solid vertical lines = Technical change from the previous code edition
- Dark arrow = Something has been deleted
- Single asterisk = Text or table relocated within the code
- Double asterisk = Text or table immediately following it has been relocated there from elsewhere in the code
- *Italics* = Definition ('Cept in California)

64

NEW Page Numbering in 2021 IBC and IRC!!

- 2018--- Page 1, 2 , 3, 4, etc.
- 2021--- Based on Chapters:
 - Page 1-7 = Chapter 1, Page 7
 - Page 10-16 = Chapter 10, Page 16
 - Page 12 -4 = Chapter 12, Page 4

65

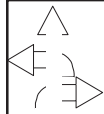
ANY QUESTIONS?



sburger6609@gmail.com

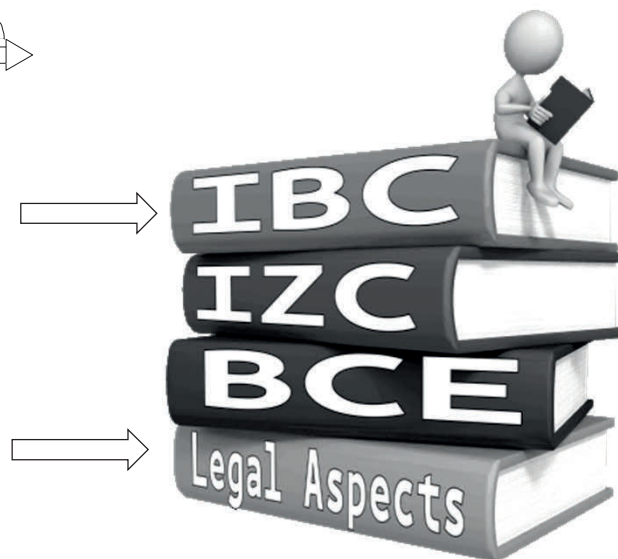
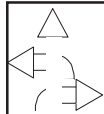
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66



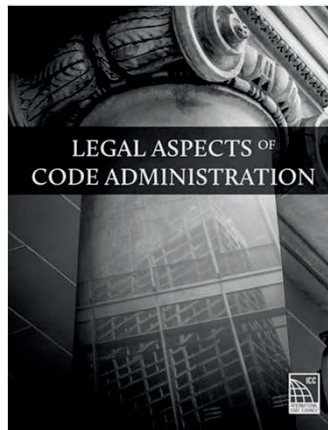
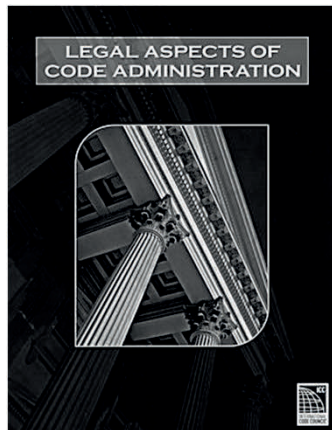
Highlights of IBC Chapter One and Legal Aspects of Code Administration

67



68

Legal Aspects of Code Administration

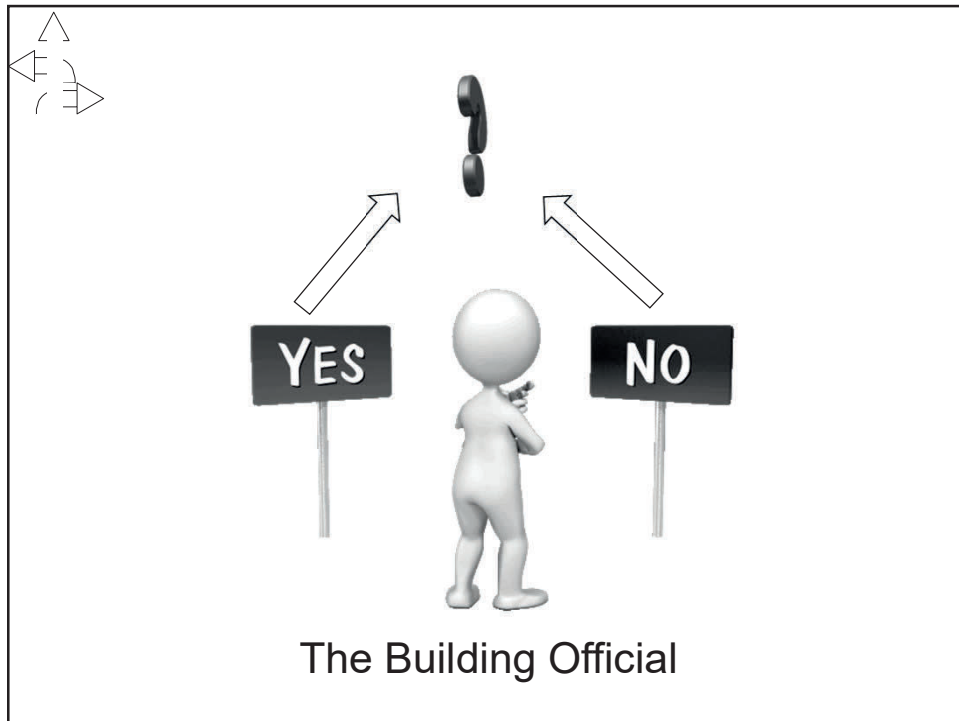


69

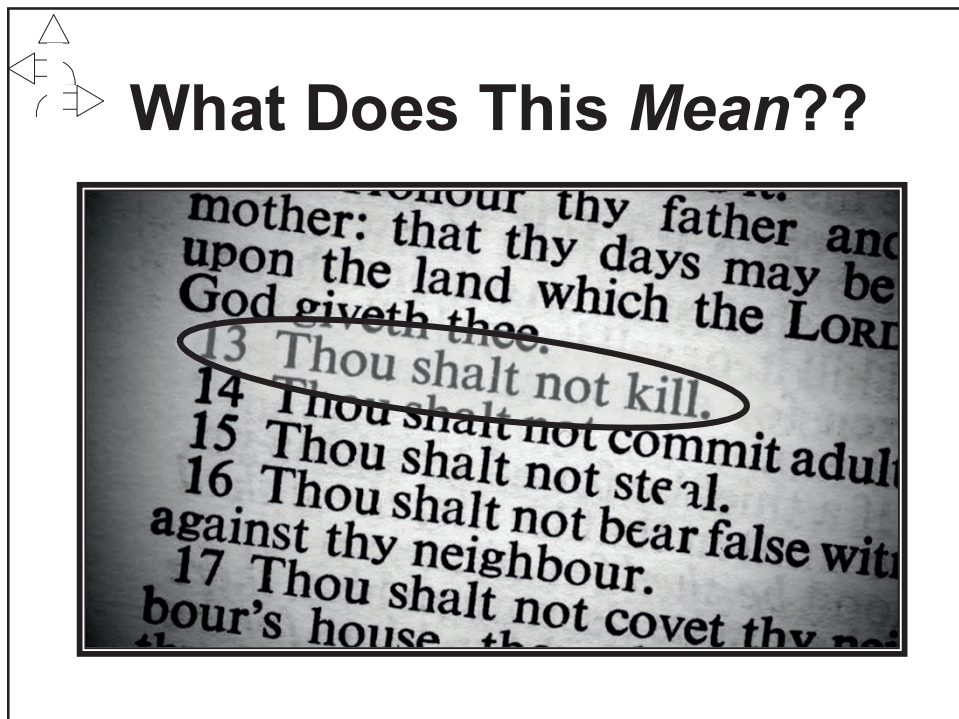
I will highlight the differences between them.



70






71



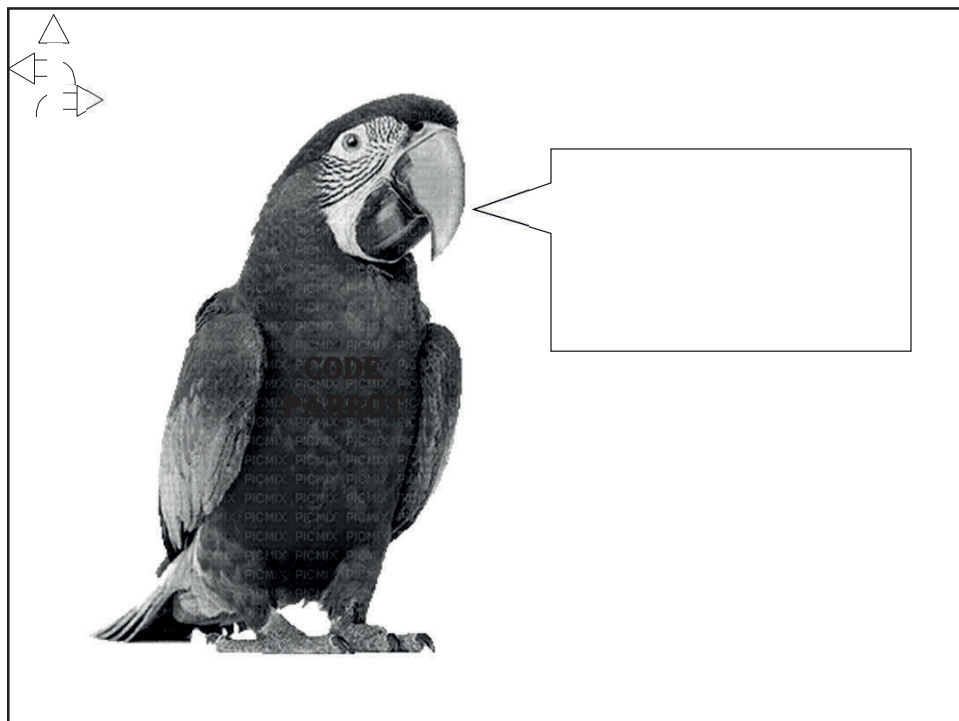
72

Break It Down!
Keep It Simple!
What Are We (and the Code)
Trying To Accomplish?

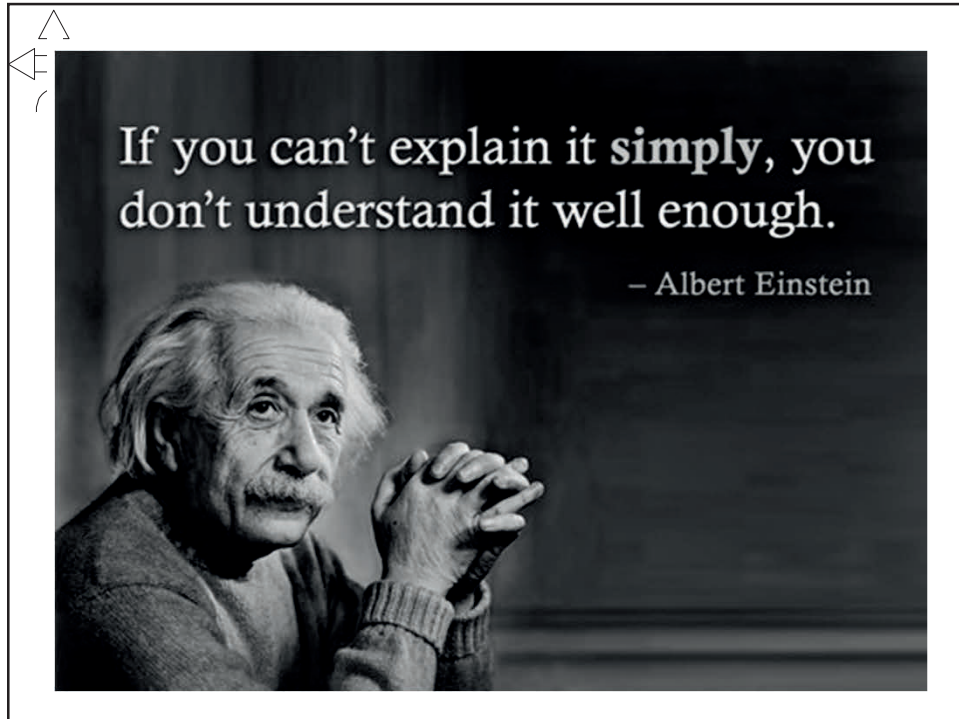
  

Which One Are You?

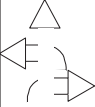
73



74



75



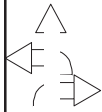
International Building Code

Chapter 1, “ADMINISTRATION”

- Title, Scope, Intent, Applicability, Department of Building Safety, Duties and Powers of the Building Official, Permits, Construction Documents, Temporary Structures, Fees, Inspections, Certificate of Occupancy, Service Utilities, Board of Appeals, Violations, Stop Work Order, Unsafe Structures and Equipment

□Chapter 2, “*DEFINITIONS*”

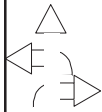
76



Why Building Codes?

IBC, Section 101.3 Purpose. The purpose of this code is to establish the minimum requirements to provide a reasonable level of health, safety general welfare through structural strength, means of egress facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment, safety to firefighters and emergency responders during operations.

77

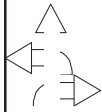


Scope

□ **IBC, 101.2 Scope.** The provisions of the *International Building Code* shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

□ **Exception:** Buildings covered under the *International Residential Code*. ***Can also use the IBC (2018 Change)***

78

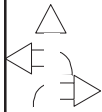


APPLICABILITY

Section 102

- **102.1 General**--General vs. Specific
 - *What if there is a conflict between two sections?*
- **102.4 Referenced codes & standards**--If there is a conflict, this code shall apply.
- **102.5 Partial invalidity**
- **102.6 Existing structures**--The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as specifically covered in this code...

79



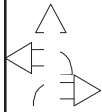
EXISTING STRUCTURES

Section 102.6

102.6.1 Buildings not previously occupied.

Generally, any building not previously used or occupied in accordance with the laws when it was completed, shall comply with the IBC or IRC, as applicable, for new construction or with any current permit for such occupancy.

80



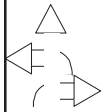
EXISTING STRUCTURES

Section 102.6

102.6.2 Buildings previously occupied.

The legal occupancy of any building existing on the date of adoption of this code shall be permitted to continue without change, except as otherwise specifically provided in this code, the IFC or IPMC, or as deemed necessary for the general safety and welfare of the occupants and the public.

81



DEPT. of BUILDING SAFETY

Section 103

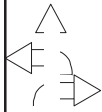
□ 103.1 Creation of enforcement agency-

-The Department of Building Safety is hereby created and the official in charge shall be known as the Building Official.

□ 103.3 Deputies--...the Building Official

shall have the authority to appoint deputies who shall have the powers as delegated by the Building Official...

82

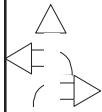


Duties and Powers of Building Official

Section 104

- **104.1 General**--Enforce and interpret code *in compliance with the intent and purpose of this code*, adopt policies and procedures, cannot waive code requirements.
- **104.2---104.7 Applications and permits**, Notices and orders, Inspections, ID, Right of entry, Department records. The Building Official shall keep official records...

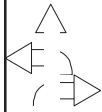
83



Section 104 (Cont'd.)

- **104.8 Liability**--... “while acting in **good faith and without malice**...shall not thereby be civilly or criminally rendered liable personally...” Shall be defended by the legal representative of the jurisdiction until final termination of the proceedings.
- **104.10 Modifications**
- **104.11 Alternate materials, design & methods**
 - **104.11.1 Research Reports**
 - **104.11.2 Tests**

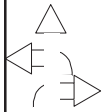
84



I need a permit for....

- **IBC, 105.1 Required.** Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the building official and obtain the required permit.

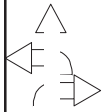
85



Annual Permit

- **IBC, 105.1.1.**
 - Can be used in lieu of an individual permit for each alteration to an *already approved* electrical, plumbing, gas or mechanical permit. Owner needs one or more qualified tradespersons.
- **IBC, 105.1.2.**
 - Shall keep a detailed record of all alterations made under the annual permit. The Building Official shall have access to records or have them filed as designated.

86

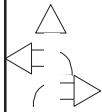


I don't need a permit for...

- ❑ 1. One-story detached accessory structures used as tool and storage sheds, playhouses, and similar uses, provided the floor area does not exceed 120 square feet. IRC = 200 sf!
- ❑ 2. Fences not over 7 feet high. (Went from 6' to 7' in 2012 IBC)
- ❑ 3. Oil derricks.
- ❑ 4. Retaining walls which are not over 4 feet in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge or impounding Class I, II, or III-A liquids.
- ❑ 5. Water tanks supported directly upon grade if the capacity does not exceed 5,000 gallons and the ratio of height to diameter or width does not exceed 2:1.
- ❑ 6. Sidewalks and driveways not more than 30 inches above grade and not over any basement or story below and are not part of an accessible route.

IBC 105.2

87

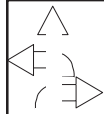


IRC Definition

Accessory Structure: A structure that is accessory to and incidental to that of the dwelling(s) and that is located on the same lot.

Note: There is no definition in the IBC. The IBC has a definition for “Accessory Building”.

88

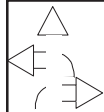


Folsom Dad Builds Tree House, City Says it Violates Code

---Sacramento Bee 9/11/2018



89

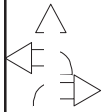


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IBC 105.2

90

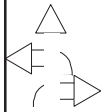


I don't need a permit for...

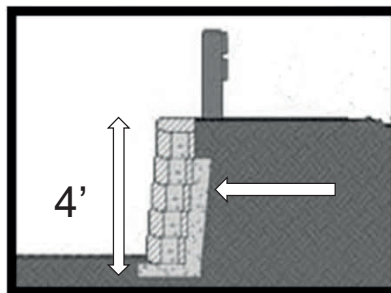
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IBC 105.2

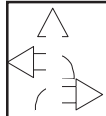
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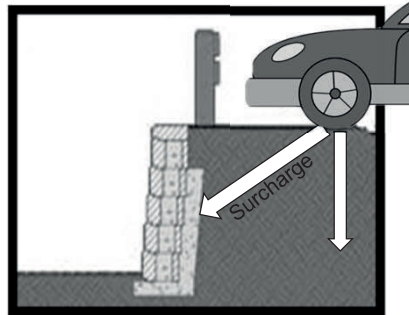
Normal Load



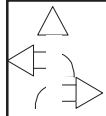
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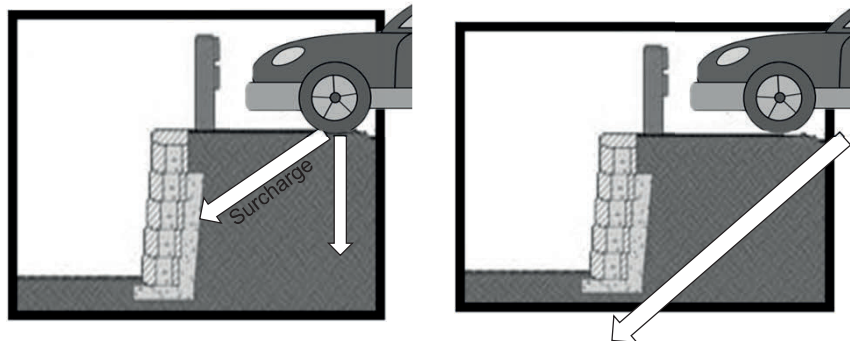
Surcharge and Angle of Repose



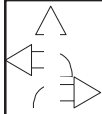
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Surcharge and Angle of Repose

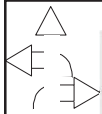


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Courtesy Alpha Structural, Inc.

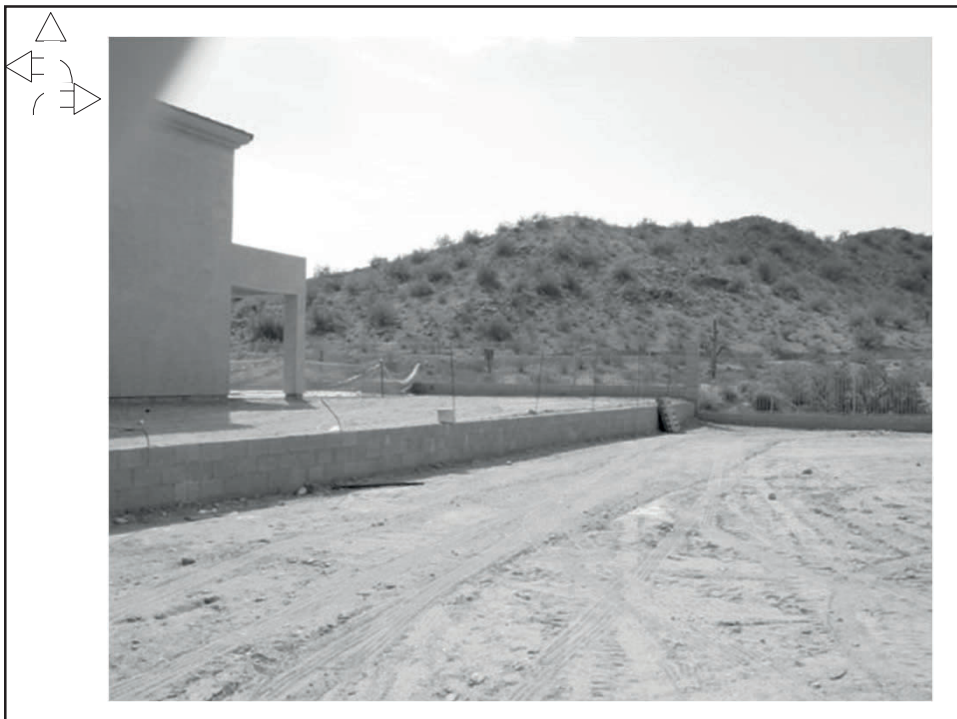
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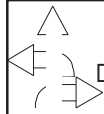
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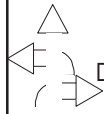
98



- 7. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.
- 8. Temporary motion picture, television and theater stage sets and scenery.
- 9. Prefabricated swimming pools accessory to a group R- 3 Occupancy, as applicable in Section 101.2, which are less than 24 inches deep, do not exceed 5000 gallons and are installed entirely above ground.
- 10. Shade cloth structures constructed for nursery or agricultural purposes and not including service systems.
- 11. Swings and other playground equipment accessory to detached one-and two-family dwellings.
- 12. Window awnings supported by an exterior wall which do not project more than 54" inches from the exterior wall and do not require additional support of a Group R-3, as applicable in Section 101.2, and Group U occupancies.
- 13. Movable cases, counters and partitions not over 5 feet 9 inches in height.

Also see Electrical, Plumbing, Gas, Mechanical, Repairs, etc.

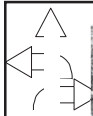
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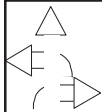
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100



101

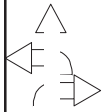


Applications for Permits

The “Contract”

IBC 105.3

102



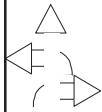
Applications for Permits

Exhibit "A"



IBC 105.3

103



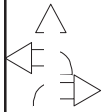
Applications for Permits

Every application (contract) shall:

- ☐ 1. Identify and describe the work to be covered by the permit for which application is made.
- ☐ 2. Describe the land on which the proposed work is to be done by legal description, street address, or similar description that will readily identify and definitely locate the proposed building or work.
- ☐ 3. Indicate the use or occupancy for which the proposed work is intended.

IBC 105.3

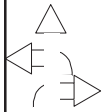
104



- 4. Be accompanied by construction documents and other information as required in 107.
- 5. State the valuation of the proposed work.
- 6. Be signed by the applicant, or the applicant's authorized agent.
- 7. Give such other data and information as may be required by the Building Official.

IBC 105.3

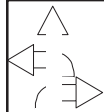
105



Action on Application

- 105.3.1 Building Official shall examine applications within a “reasonable time” after filing. If not in conformance, the Building Official shall reject such application in writing. If in conformance, the Building Official shall issue a permit therefor “as soon as practicable”.

106

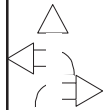


Time Limitation of Application

- 105.3.2 **Application** shall be deemed to have been abandoned 180 days after filing unless pursued in “good faith”. The Building Official is authorized to grant one or more extensions of time for periods not exceeding 90 days. The extension shall be requested in writing and “justifiable cause” demonstrated.

Note: IRC allows extensions of 180 days!

107



Validity of Permit

- 105.4 Issuing a permit shall not be construed to be a permit to violate the code. The Building Official is authorized to require correction of errors in the construction documents and can prevent the occupancy of a structure where in violation of this code or any other ordinance of the jurisdiction.

108

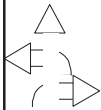


-Expiration-

-Suspension or Revocation- -Placement of Permit-

- 105.5 **Permit** shall be invalid if work has not commenced after 180 days or if work is suspended or abandoned for 180 days. One or more extensions of 180 days.
- 105.6 Building Official can suspend or revoke permit if issued in error or if based on incorrect or incomplete information.
- 105.7 The permit or a copy shall be kept on the job site until project completion.

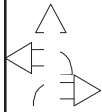
109



Submittal Documents

- **IBC, 107.1.** Construction documents, special inspection and structural observation programs, and other data shall be submitted in two or more sets with each application for a permit. The construction documents shall be prepared by a registered design professional where required...
 - **Exception:** The Building Official is authorized to waive the submission of construction documents...

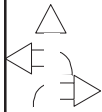
110



Submittal Documents

- **IBC, 107.2.** Construction documents shall be dimensioned and drawn to scale upon suitable material. Electronic media documents are permitted to be submitted when approved by the Building Official. Construction documents shall be of **sufficient clarity** to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and all relevant laws, ordinances, rules and regulations, as determined by the Building Official.
- See Remaining Subsections!

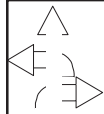
111



Phased Approval

- **IBC, 107.3.3.** The Building Official is authorized to issue a permit for the construction of foundations or other parts of a building or structure before the construction documents for the whole building have been submitted, provided that adequate information and detailed statements have been filed complying with pertinent requirements of this code. The holder of such permit for the foundation or other parts of a building or structure shall proceed at the holder's own risk with the building operation and without assurance that a permit for the entire structure will be granted.

112

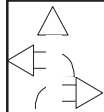


Design Professional in Responsible Charge

- If the plans are prepared by a registered design professional, the Building Official shall be authorized to require a registered design professional in responsible charge be designated.
- The Building Official shall be notified in writing of any change in the designated registered professional in responsible charge.
- The registered design professional in responsible charge shall be responsible for reviewing and coordinating submittal documents prepared by others for compatibility with the building design.

IBC 107.3.4

113

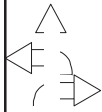


Deferred Submittals

- *A portion of the project documents that may be submitted at a later time.*
- Building Official must approve what items may be deferred.
- Must be listed on the original plans.
- Deferred items must be reviewed by the design professional before submittal.
- Deferred items shall not be installed until approved by the Building Official.

IBC 107.3.4.1

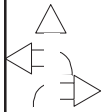
114



Retention of Construction Documents

- **107.5** One set of approved construction documents shall be retained by the Building Official for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws.

115



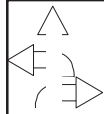
Plan Review Fees IBC Section 109

Inspections Section 110

Certificate of Occupancy Section 111

**Will be discussed
in another webinar.**

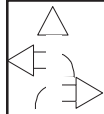
116



Temporary Structures and Uses



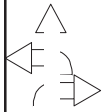
117



Temporary Structures and Uses

- 108.1 General. The Building Official is authorized to issue a permit for temporary structures and uses for not more the 180 days. Can grant extension.
- 108.2 Conformance. Shall comply with Section 3103 (p. **600-2018** p. **31-2--2021**)
- 108.3 Temporary power.
- 108.4 Termination of approval. The Building Official is authorized to terminate permit and to order discontinuance.

118



Service Utilities

Section 112

□ 112.1 Connection of Service Utilities

Cannot make connections until approved by the Building Official

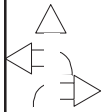
□ 112.2 Temporary Connection

Building Official can authorize temporary connection

□ 112.3 Authority to Disconnect Utilities

In case of emergency, Building Official can authorize disconnection of utilities

119

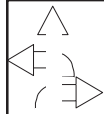


BOARD OF APPEALS

IBC Section 113 *and* Legal Aspects of Code Administration

- Members cannot be employed by the jurisdiction.
- Members must be qualified by experience and training to pass upon matters pertaining to building construction.
- Building Official shall be an ex officio member of the board and act as secretary.
- Building Official shall not have a vote upon any matter before the board.

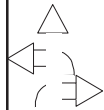
120



- The board of appeals shall be appointed by the governing body and shall hold office at its pleasure.
- They shall adopt rules of procedure for conducting its business.



121

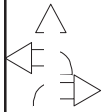


LIMITATIONS

Section 113.2

- An application for appeal shall be based on the claim that the code has been incorrectly interpreted, the code does not fully apply, or an equal or better form of construction is proposed.
- The board shall have no authority to waive requirements of this code.

122

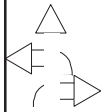


APPEALS PROCEDURES

Legal Aspects of Code Administration

- ☐ Board must establish rules.
- ☐ Hearings to be open to the public.
- ☐ The decisions of the board must be made by a *quorum*.
- ☐ A notice of the hearing must be given to the appellant.
- ☐ Burden of proof rests with the appellant.

123

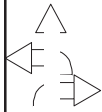


Violations

Section 114

- ☐ **114.1 Unlawful acts.** It shall be unlawful to do any work in conflict or violation of this code.
- ☐ **114.2 Notice of violation.** The Building Official is authorized to serve a notice of violation directing the discontinuance of the illegal action.
- ☐ **114.3 Prosecution of violation.** If the notice is not complied with promptly, the Building Official can request the legal counsel of the jurisdiction to institute legal action.
- ☐ **114.4 Violation penalties.** Violators shall be subject to penalties as prescribed by law.

124

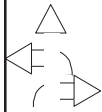


Stop Work Order

Section 115

- **115.1 Authority.** The Building Official is authorized to issue a stop work order when work is being performed contrary to the code or in a dangerous manner.
- **115.2 Issuance.** The order shall be in writing and given to the owner, agent or person doing work. The cited work shall immediately cease. The order shall state the reason and remedies.
- **115.4 Failure to comply.** Any person who continues work after being served shall be subject to penalties as prescribed by law.

125

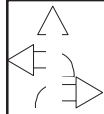


Unsafe Structures and Equipment

Section 116

- **116.1 Unsafe Conditions**
- **116.2 Record**
- **116.3 Notice**
- **116.4 Method of service**
- **116.5 Restoration or Abatement---Shall comply with the *International Existing Building Code***

126



Ready to Move On To “Legal Aspects”?

127

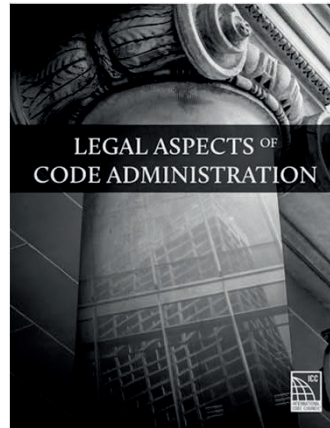
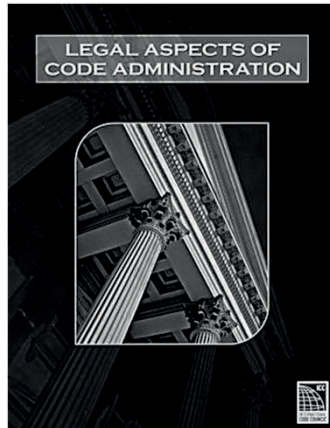


LEGAL ASPECTS OF CODE ADMINISTRATION



128

Legal Aspects of Code Administration

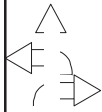


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Legal Aspects of Code Administration

- Table of Contents
- Index of Terms (Back of Book)
- Front of Chapters

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Legal Issues

We'll discuss the following:

- ☐ The Public Duty Doctrine
- ☐ Liability
- ☐ Negligence
- ☐ Breach of Duty
- ☐ Injunction / Injunctive Relief
- ☐ Discriminatory Enforcement
- ☐ Procedural Due Process
- ☐ Statute
- ☐ HOA's vs. Local Ordinances
- ☐ Equitable Estoppel

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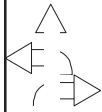
The Public Duty Doctrine

The public duty doctrine makes it difficult to successfully sue a building official for negligence.

Under the public duty doctrine, the courts look to the purpose of the building code to determine to whom the building inspector owes a specific duty. Because the building code is to ensure the safety and protection of the public, the element of negligence cannot be satisfied. Legal Aspects, Chapter 11, IBC 104.8.



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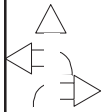
Liability

- A legal obligation to perform some act

- “Absolute” vs. “Qualified” Immunity

Legal Aspects

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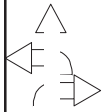


Negligence

- To prove negligence, four elements must be proved. The Permit Technician must have:
- 1) owed a duty to another to act according to a certain standard,
- 2) failed to act in accord with that standard, and, therefore,
- 3) breached that duty;
- 4) thereby causing in the eyes of the law an injury or damage to the other.

Legal Aspects

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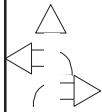


Breach of Duty

- A breach of duty can result from:
 - 1. Misfeasance: Improperly doing something.
 - 2. Nonfeasance: Not doing something that you have the responsibility to do.
 - 3. Malfeasance: Doing something you shouldn't do at all.

Legal Aspects

135

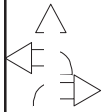


Bribery is a Federal Offense!

New York is prosecuting 19 plumbing inspectors for bribery and signing off on projects without looking at them. One contractor-turned-informant wore a wire and made 69 payments totaling \$9000 to plumbing and boiler inspectors. If convicted of federal charges, each would face up to 20 years in prison and \$250,000 fine.

CODES and STANDARDS Newsletter
(July 2002)

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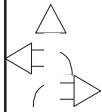


Injunction / Injunctive Relief

- A judicial order prohibiting specified conduct
 - Temporary restraining order
 - Temporary injunction
 - Permanent injunction

Legal Aspects

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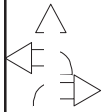


Temporary Restraining Order

- An order issued by the court without notice to the defendant and without an opportunity to be heard.
- Issued only in the most extreme circumstances.

Legal Aspects

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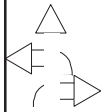


Temporary Injunction

- Issued only after a notice is given to the defendant and a brief hearing has taken place.
- A full hearing by a court is pending.

Legal Aspects

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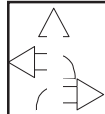


Permanent Injunction

- Issued after the court has heard evidence by both sides in the case.

Legal Aspects

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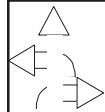


A *temporary* restraining order and *temporary* injunction are subject to four legal requirements:

- Threat of irreparable harm
- Greater harm suffered if not granted;
- Probable cause; and
- In the public interest

Legal Aspects

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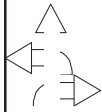


Discriminatory Enforcement

- Prejudicial in nature.
- Looks at WHO is doing the work rather than HOW the work is done.
- If a provision is waived for one person, it should be waived for all.
- Policy decisions should be applicable to everyone or to no one at all.

Legal Aspects

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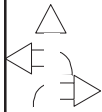


Procedural Due Process

- People whose rights are to be affected are entitled to be heard, and therefore must be notified.
- If an occupancy permit is to be revoked, the occupant must be notified & heard. (Some courts may override this if immediate revocation is crucial to the health & safety of the inhabitants of the building.)

Legal Aspects

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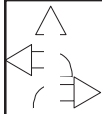
Statute

A law enacted by state or federal legislatures.

The biggest difference between a statute and an ordinance is that a statute is passed by a legislature while an ordinance is passed by a municipal government.

Legal Aspects

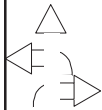
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Homeowners Associations vs. Local Ordinances

Can a city, town or county enforce
HOA requirements if the HOA
requirements are more restrictive?

145

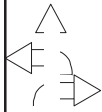


Equitable Estoppel

A doctrine by which a municipality
may be precluded by its action, or
non-action, from asserting a right
which it otherwise would have had.

Legal Aspects

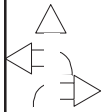
146



What We Covered

- **Highlights of IBC Chapter One**
 - **Applicability, Existing Structures, Building Official Duties, Permits, Application, Expiration, Design Professional, Deferred Submittals, Board of Appeals**
- **Intent vs. Letter of the Code**
- **Basic Legal Concepts**
- **Some of my opinions** ☹️

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ANY QUESTIONS?



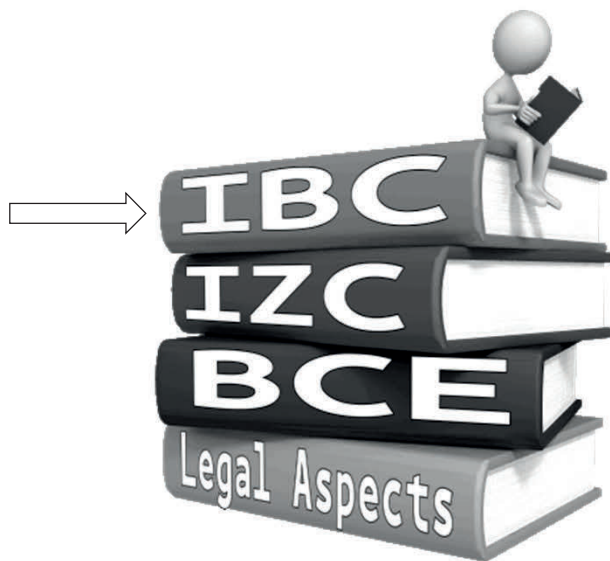
sburger6609@gmail.com

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Occupancy Groups and Types of Construction

149



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**Before We Get Into
Occupancies and
Construction Types...**

151

OCCUPANCY CLASSIFICATION and USE Chapter 3

- **Why classify occupancies?**
- **Always Ask!!!!**
- **So, how many *general* types of occupancies are there?**

152

Two (and a Half)

□ BUSINESS

– Products and Services

□ PEOPLE

– Living, Entertainment, Health, Worship

□ MISCELLANEOUS

153

10 OCCUPANCY TYPES & GROUPS

(Chapter 3, Section 302.1)

- A - Assembly
- B - Business
- E - Educational
- F - Factory and Industrial
- H - Hazardous

Remember: “or a portion thereof.”

- I - Institutional
- M - Mercantile
- R - Residential
- S - Storage
- U - Utility

Code says: Do the best you can!
Sec. 302.1

154

Two (and a Half)

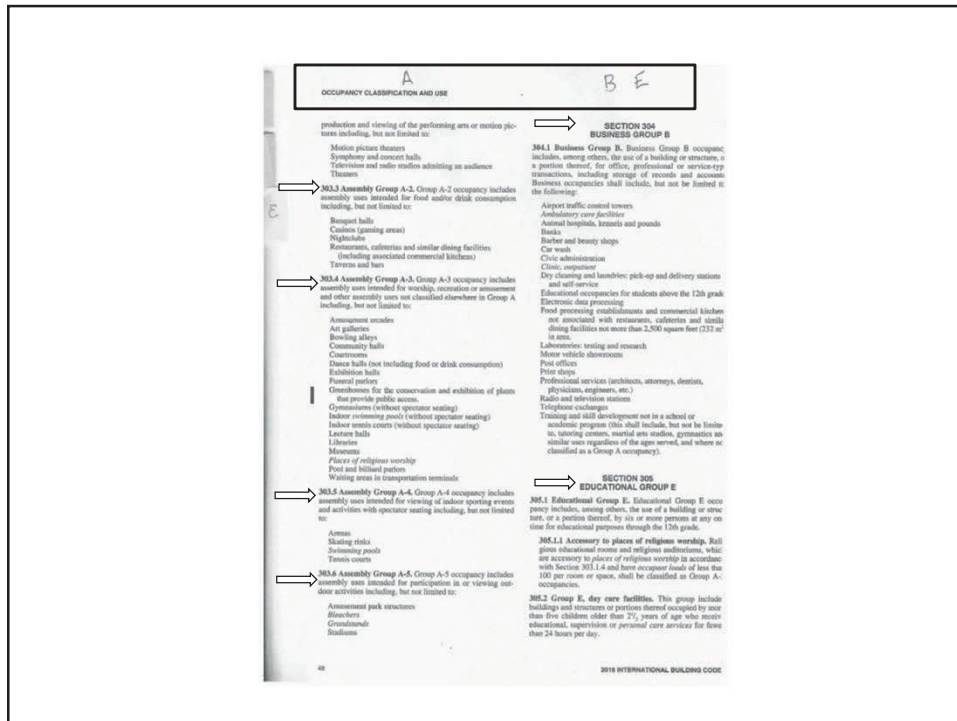
<u>Business</u>	<u>People</u>
B, F, H, M, S	A, E, I, R
<u>Half</u>	
U	

155

Chapter 3 Occupancy Classification and Use

- “Laundry Lists” of Various Occupancies
- Suggestion: Write the Occupancy Type at Top of Page in Your Code Book

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157

CONTENTS-RELATED HAZARDS

- ❑ Quantity of Contents
- ❑ Type of Contents
- ❑ Environment of Contents

158

ASSEMBLY

Section 303.1

- **A-1** Usually fixed seating, performing arts and motion picture theaters
- **A-2** Food and/or drink such as banquet halls, restaurants, night clubs, taverns and bars
- **A-3** Worship, recreation or amusement such as churches, bowling alleys, museums, libraries
- **A-4** Viewing of indoor sports such as skating, tennis, swimming
- **A-5** Viewing of outdoor activities such as stadiums, grandstands, bleachers
- **Exception:** Less than 50 occupants = B (Sec. 303.1.1)
- **2018:** Occupied roofs: Whatever they most nearly resemble

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ASSEMBLY

Section 303.1

Sec. 303.1.2-- Small assembly spaces shall **not** be classified as Assembly occupancies if:

- **Less than 50 persons** and accessory to another occupancy. They shall be classified as a **B occupancy** or **as part of the main occupancy**.
- **Less than 750 square feet** in area and accessory to another occupancy. They shall be classified as a **B occupancy** or **as part of that occupancy**.

160

BUSINESS

Section 304

- **A building or structure or portion thereof, for office, professional or service-type transactions, including storage of records and accounts such as:**

Banks, Car Washes, Civic Administration, Fire/Police Stations, Motor Vehicle Showrooms, Post Offices, Educational Occupancies (above 12th grade), Professional Services (attorneys, doctors, dentists, architects/engineers), Training and skill development not in a school or academic program (yoga, ballet, tutoring, etc.), ambulatory care facilities (2021 See Sec. 304.3. Four or more...)

161

EDUCATIONAL

Section 305

- **Building or structure or portion thereof by 6 or more persons at any one time for educational purposes through the 12th grade.**
- **Day Care. Building or structure or portion thereof for educational, supervision or personal services for more than 5 children older than 2-1/2 years of age fewer than 24 hours.**

162

FACTORY

Section 306

- **F-1 Moderate hazard**
- **F-2 Low hazard facilities that involve the fabrication or manufacturing of noncombustible materials which do not involve a significant fire hazard such as:**

Foundries Ceramic Products
Ice Glass Products

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HAZARDOUS

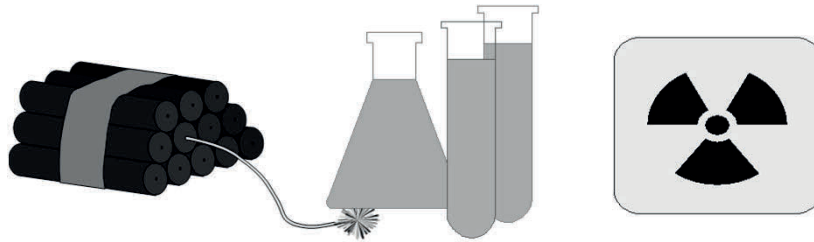
Section 307

- **H-1 High explosion (detonation) hazard**
- **H-2 Moderate explosion or accelerated burning hazard**
- **H-3 High fire or physical hazard**
- **H-4 Health hazards**
- **H-5 Semiconductor fabrication facilities**

164

HAZARDOUS OCCUPANCIES

- What percentage of buildings contain hazardous materials?
- Maximum Allowable Quantities



165

INSTITUTIONAL

Section 308

- I-1 More than 16 persons, 24-hour basis, **ambulatory, capable of self-preservation** such as assisted living facilities, group homes, rehab facilities. (5 or less = R-3, more than 5 and up to 16 = R-4)
- I-2 24-hour basis, **incapable of unassisted self preservation** such as hospitals, nursing homes, mental hospitals, detox facilities.

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INSTITUTIONAL (Cont'd.)

- **I-3 More than 5 persons under restraint or security such as jails, prisons, reformatories, detention centers, correctional centers**
- **Has 5 Different Conditions**
 - “Free movement” allowed vs. restricted

167

INSTITUTIONAL (Cont'd.)

- **I-4 Day care facility. Any age, less than 24 hours, custodial care by other than parents, guardians or relatives and in a place other than the home of the person cared for.**

Adult care: <24 hours, >5 unrelated adults
Child care: <24 hours, > 5 children of ANY age

Exception: >5 but no more than 100, $\leq 2\frac{1}{2}$ years of age, room on level of exit discharge with door directly to exterior = Group E.
(Also see Section 305.2)

168

MERCANTILE

Section 309

- **Buildings that display and sell merchandise that are accessible to the public such as:**
 - **Wal-Mart**
 - **Nordstrom**
 - **Target**
 - **Costco / Sam's Club**
 - **Gas stations**

169

RESIDENTIAL

Section 310

- **R-1 Mainly transient in nature such as: hotels, motels, boarding houses (*primarily transient*) Note: See definition of "Transient".**
- **R-2 More than 2 dwelling units, primarily permanent in nature such as: apartments, convents/monasteries, dormitories. Also hotels, motels and boarding houses if non-transient**
- **R-3 One- and two-family dwellings**
- **R-4 Residential Care/Assisted Living Facilities with more than 5 and less than 16 occupants, excluding staff on a 24-hour basis.**

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STORAGE

Section 311

- **S-1 Moderate hazards that are not S-2 such as:**
- **Aircraft Hangars, Motor Vehicle Repair Garages, Books, Shoes, Grains, Lumber, Tires**
- **S-2 Low hazard storage of noncombustible materials such as products on wood pallets or in paper cartons such as cement in bags, foods, dry cell batteries, glass, parking garages**

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ACCESSORY STORAGE SPACES

Section 311.1.1

- **A room or space used for storage purposes that is accessory to another occupancy shall be classified as a part of that occupancy.**
- **2018: Deleted the 100 s.f. requirement**

172

UTILITY

Section 312

- **Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy such as:**
- **Agricultural buildings, *Residential Aircraft Hangars, Barns , Carports, Fences over 6’(2018) 7’ (2021), Greenhouses, Private Garages, Retaining Walls***
- **2021-Private Garages and Residential Aircraft Hangars—See Sections 406.3 and 412.4**

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CHAPTER 4 SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE

- | | |
|--|--|
| • Covered and Open Malls | • Special Amusement Areas |
| • High-Rise Buildings | • Aircraft-Related Occupancies |
| • Atriums | • Combustible Storage |
| • Underground Buildings | • Hazardous Materials |
| • Motor-Vehicle-Related Occupancies | • Groups H-1, H-2, H-3, H-4, H-5 |
| • Group I-2 | • Spray Application of Flammable Liquids |
| • Group I-3 | • Drying Rooms |
| • Motion Picture Projection Rooms | • Organic Coatings |
| • Stages, Platforms and Technical Production Areas | • Artificial Decorative Vegetation |
| | • Groups 1-1, R-1, R-2, R-3, R-4 |

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CHAPTER 4 (Continued)

SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE

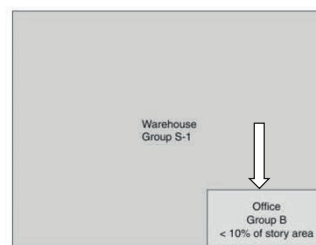
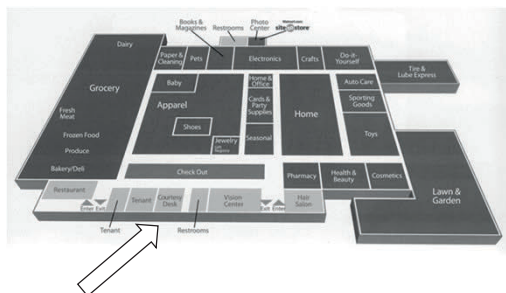
- Hydrogen Fuel Gas Rooms
- Ambulatory Care Facilities
- Storm Shelters
- Play Structures
- Hyperbaric Facilities
- Combustible Dusts, Grain Processing and Storage
- Medical Gas Systems
- Higher Education Laboratories

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OTHER AREAS

Chapter 5

- **Accessory occupancies--Section 508.2**
These are ancillary to the main occupancy and, *generally*, shall not occupy more than **10% of the floor area of the story in which they are located.**

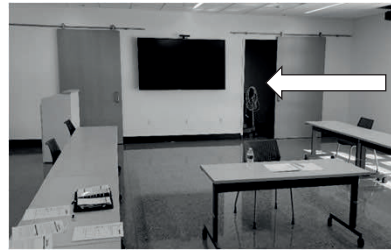
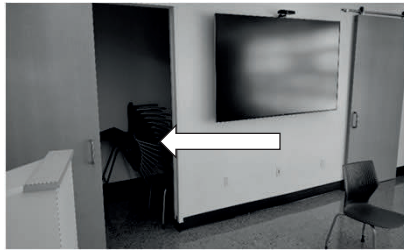


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OTHER AREAS

Chapter 5

- **Accessory occupancies--Section 508.2**
These are ancillary to the main occupancy and, *generally*, shall not occupy more than 10% of the floor area of the story in which they are located.
- **Mixed Occupancies**
 - Nonseparated (Sec. 508.3)
 - Separated (Sec. 508.4 & Table 508.4)

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NON-SEPARATED VS. SEPARATED

Chapter 5

If non-separated occupancies is used, the total allowable building size (including area, height, and number of stories per IBC Table 503) is limited to the most restrictive of the occupancies in the area of non-separated occupancies, regardless of positioning.

This design route will generally result in smaller allowable building sizes than those permitted when using separated occupancies. However, it does have the benefit of potentially requiring fewer or no rated assemblies separating occupancies.

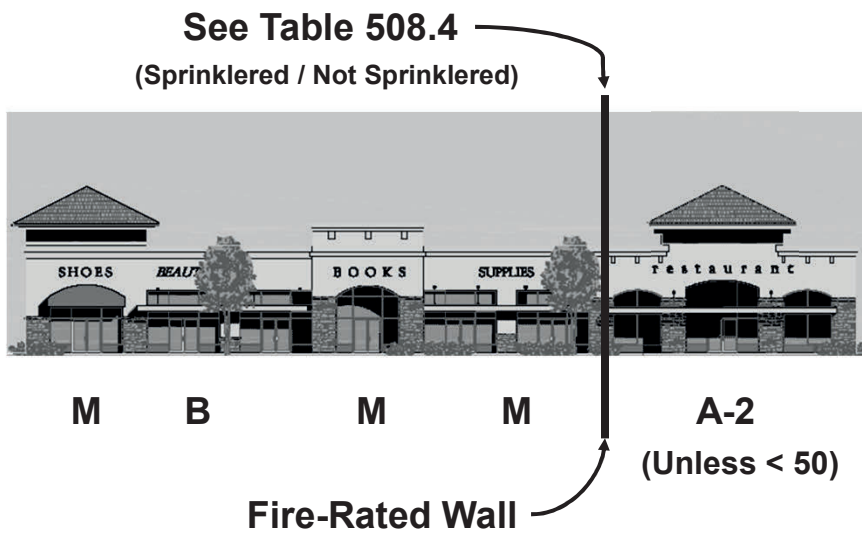
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MIXED OCCUPANCIES

Table 508.4

REQUIRED SEPARATION OF OCCUPANCIES (HOURS)

OCCUPANCY	A, E		I-1, I-3, I-4		I-2		R ^a		F-2, S-2 ^b , U		B, F-1, M, S-1		H-1		H-2		H-3, H-4		H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A, E	N	N	1	2	2	NP	1	2	N	1	1	2	NP	NP	3	4	2	3	2	NP
I-1, I-3, I-4	—	—	N	N	2	NP	1	NP	1	2	1	2	NP	NP	3	NP	2	NP	2	NP
I-2	—	—	—	—	N	N	2	NP	2	NP	2	NP	NP	NP	3	NP	2	NP	2	NP
R ^a	—	—	—	—	—	—	N	N	1 ^c	2 ^c	1	2	NP	NP	3	NP	2	NP	2	NP
F-2, S-2 ^b , U	—	—	—	—	—	—	—	—	N	N	1	2	NP	NP	3	4	2	3	2	NP
B, F-1, M, S-1	—	—	—	—	—	—	—	—	—	—	N	N	NP	NP	2	3	1	2	1	NP
H-1	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	NP	NP	NP	NP	NP	NP
H-2	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	1	NP	1	NP	NP
H-3, H-4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1 ^d	NP	1	NP	NP
H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

N = No separation requirement.

NP = Not permitted.

a. See Section 420.

b. The required separation from areas used only for private or pleasure vehicles shall be reduced by 1 hour but to not less than 1 hour.

c. See Section 406.3.4.

d. Separation is not required between occupancies of the same classification.

183

MIXED OCCUPANCIES

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REQUIRED SEPARATION OF OCCUPANCIES (HOURS)

OCCUPANCY	A, E		I-1, I-3, I-4		I-2		R ^a		F-2, S-2 ^b , U		B, F-1, M, S-1		H-1		H-2		H-3, H-4		H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A, E	N	N	1	2	2	NP	1	2	N	1	1	2	NP	NP	3	4	2	3	2	NP
I-1, I-3, I-4	—	—	N	N	2	NP	1	NP	1	2	1	2	NP	NP	3	NP	2	NP	2	NP
I-2	—	—	—	—	N	N	2	NP	2	NP	2	NP	NP	NP	3	NP	2	NP	2	NP
R ^a	—	—	—	—	—	—	N	N	1 ^c	2 ^c	1	2	NP	NP	3	NP	2	NP	2	NP
F-2, S-2 ^b , U	—	—	—	—	—	—	—	—	N	N	1	2	NP	NP	3	4	2	3	2	NP
B, F-1, M, S-1	—	—	—	—	—	—	—	—	—	—	N	N	NP	NP	2	3	1	2	1	NP
H-1	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	NP	NP	NP	NP	NP	NP
H-2	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	1	NP	1	NP	NP
H-3, H-4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1 ^d	NP	1	NP	NP
H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

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	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A, E	N	N	1	2	2	NP	1	2	N	1	1	2	NP	NP	3	4	2	3	2	NP
I-1, I-3, I-4	—	—	N	N	2	NP	1	NP	1	2	1	2	NP	NP	3	NP	2	NP	2	NP
I-2	—	—	—	—	N	N	2	NP	2	NP	2	NP	NP	NP	3	NP	2	NP	2	NP
R ^a	—	—	—	—	—	—	N	N	1 ^c	2 ^c	1	2	NP	NP	3	NP	2	NP	2	NP
F-2, S-2 ^b , U	—	—	—	—	—	—	—	—	N	N	1	2	NP	NP	3	4	2	3	2	NP
B, F-1, M, S-1	—	—	—	—	—	—	—	—	—	—	N	N	NP	NP	2	3	1	2	1	NP
H-1	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	NP	NP	NP	NP	NP	NP
H-2	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	1	NP	1	NP	NP
H-3, H-4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1 ^d	NP	1	NP	NP
H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	NP

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

N = No separation requirement.

NP = Not permitted.

a. See Section 420.

b. The required separation from areas used only for private or pleasure vehicles shall be reduced by 1 hour but to not less than 1 hour.

c. See Section 406.3.4.

d. Separation is not required between occupancies of the same classification.

185

OTHER AREAS

Chapter 5

- **Incidental Uses--Section 509 and Table 509 (Furnace rooms, incinerator rooms, laundry rooms, etc.)**
 - Fire-rated Separation and/or Sprinklers
 - Shall not occupy more than 10% of the building area of the story in which they are located.



186

Occupancy Examples

187

TYPES OF CONSTRUCTION Chapter 6

- Very Simply, How Many Different Types of Construction Are There?
- Fire Resistive Vs Non-combustible



188

CONSTRUCTION TYPES (cont'd.)

- **Mixed Construction Types**
- **Portions of Buildings Separated With Approved FIRE WALLS May be Considered as Separate Buildings for Classification of Construction Type (Section 706)**

189

Fire Wall



190

THE FIVE BUILDING CODE CONSTRUCTION TYPES

Chapter 6

Non-Combustible

Types I and II
(A & B)

Combustible

Types III, IV(HT) and V
(A & B)



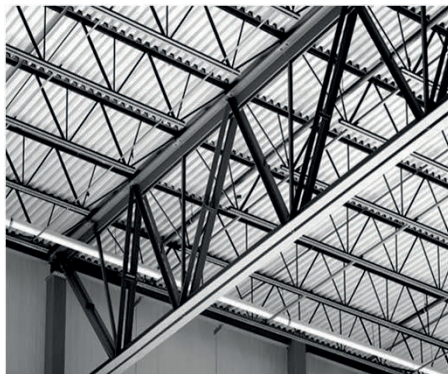
Note! 2021 IBC also has Type IV (A, B, C and HT)

191

THE FIVE BUILDING CODE CONSTRUCTION TYPES

Chapter 6

UNPROTECTED



PROTECTED



192

THE FIVE BUILDING CODE CONSTRUCTION TYPES

Chapter 6



**Types I
and II**



Type III



Type IV (H.T.)



Type V

193

Pages 104-110 2018 IBC Pages 5-3 to 5-8 2021 IBC

OCCUPANCY CLASSIFICATION		SEE FOOTNOTES	TYPE OF CONSTRUCTION									
			TYPE II		TYPE III		TYPE IV		TYPE V			
A-1			NS	UL	UL	UL	UL	UL	UL	UL	UL	UL
			S1	UL	UL	UL	UL	UL	UL	UL	UL	UL
			SM	UL	UL	UL	UL	UL	UL	UL	UL	UL
			NS	UL	UL	UL	UL	UL	UL	UL	UL	UL

TABLE 504.3 ^a ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE												
OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION										
		TYPE II		TYPE III		TYPE IV		TYPE V				
		A	B	A	B	A	B	HT	A	B	A	B
A, B, E, F, M, S, U	NS ^b	UL	160	60	60	60	60	60	60	60	60	60
	S	UL	180	80	80	80	80	80	80	80	80	80
H-1, H-2, H-3, H-5	NS ^{c, d}	UL	160	60	60	60	60	60	60	60	60	60
	S	UL	180	80	80	80	80	80	80	80	80	80
H-4	NS ^{c, d}	UL	160	60	60	60	60	60	60	60	60	60
	S	UL	180	80	80	80	80	80	80	80	80	80
I-1 Condition 1, I-3	NS ^{e, f}	UL	160	60	60	60	60	60	60	60	60	60
	S	UL	180	80	80	80	80	80	80	80	80	80
I-1 Condition 2, I-2	NS ^{e, f, g}	UL	160	60	60	60	60	60	60	60	60	60
	S	UL	180	80	80	80	80	80	80	80	80	80
I-4	NS ^{g, h}	UL	160	60	60	60	60	60	60	60	60	60
	S	UL	180	80	80	80	80	80	80	80	80	80
R	NS ^{g, h}	UL	160	60	60	60	60	60	60	60	60	60
	S13R	60	60	60	60	60	60	60	60	60	60	60
	S	UL	180	80	80	80	80	80	80	80	80	80

TABLE 504.4 ^{a, b} ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE												
OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION										
		TYPE II		TYPE III		TYPE IV		TYPE V				
		A	B	A	B	A	B	HT	A	B	A	B
A-1	NS	UL	5	3	2	3	2	3	2	1		
	S	UL	6	4	3	4	3	4	3	2		
A-2	NS	UL	11	3	2	3	2	3	2	1		
	S	UL	12	4	3	4	3	4	3	2		
A-3	NS	UL	11	3	2	3	2	3	2	1		
	S	UL	12	4	3	4	3	4	3	2		
A-4	NS	UL	11	3	2	3	2	3	2	1		
	S	UL	12	4	3	4	3	4	3	2		
A-5	NS	UL	11	3	2	3	2	3	2	1		
	S	UL	12	4	3	4	3	4	3	2		
B	NS	UL	11	3	2	3	2	3	2	1		
	S	UL	12	4	3	4	3	4	3	2		

But let's keep it simple for now!

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Table 503 Page 96 in 2012 IBC

TABLE 503 ALLOWABLE HEIGHT AND BUILDING AREAS Height limitations shown as stories and feet above grade plane. Area limitations as determined by the definition of "Area, building," per floor.											
GROUP	Height	TYPE OF CONSTRUCTION									
		TYPE I		TYPE II		TYPE III		TYPE IV		TYPE V	
		A	B	A	B	A	B	A	B	A	B
A-1	S	UL	160	65	55	65	55	65	50	40	
	A	UL	15,500	8,500	8,500	14,000	8,500	15,000	11,500	5,500	
A-2	S	UL	11	3	2	3	2	3	2	1	
	A	UL	15,500	9,500	9,500	14,000	9,500	15,000	11,500	6,000	
A-3	S	UL	11	3	2	3	2	3	2	1	
	A	UL	15,500	9,500	9,500	14,000	9,500	15,000	11,500	6,000	
A-4	S	UL	11	3	2	3	2	3	2	1	
	A	UL	15,500	9,500	9,500	14,000	9,500	15,000	11,500	6,000	
A-5	S	UL	UL	UL	UL	UL	UL	UL	UL	UL	
	A	UL	UL	UL	UL	UL	UL	UL	UL	UL	
B	S	UL	11	5	4	5	4	5	3	2	
	A	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000		
E	S	UL	5	3	2	3	2	3	1	1	
	A	UL	26,500	14,500	23,500	14,500	25,500	15,500	9,500		
F-1	S	UL	11	4	2	3	2	4	2	1	
	A	UL	25,000	15,500	19,000	12,000	33,500	14,000	8,500		
F-2	S	UL	11	5	3	4	3	5	3	2	
	A	UL	37,500	23,000	28,500	18,000	50,500	21,000	13,000		
H-1	S	1	1	1	1	1	1	1	1	NP	
	A	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	NP	
H-2	S	UL	3	2	1	2	1	2	1	1	
	A	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	3,000	
H-3	S	UL	6	4	2	4	2	4	2	1	
	A	60,000	26,500	14,000	17,500	13,000	25,500	10,000	5,000		
H-4	S	UL	7	5	3	5	3	5	3	2	
	A	UL	37,500	23,500	17,500	28,500	17,500	36,000	18,000	6,500	
H-5	S	UL	3	3	3	3	3	3	3	2	
	A	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000		
I-1	S	UL	9	4	3	4	3	4	3	2	
	A	55,000	19,000	10,000	16,500	10,000	18,000	10,500	4,500		
I-2	S	UL	4	2	1	1	NP	1	1	NP	
	A	UL	15,000	11,000	12,000	NP	12,000	9,500	NP		
I-3	S	UL	4	2	1	2	1	2	2	1	
	A	UL	15,000	11,000	10,500	7,500	12,000	7,500	5,000		
I-4	S	UL	5	3	2	3	2	3	1	1	
	A	60,500	26,500	13,000	23,500	13,000	25,500	18,500	9,000		
M	S	UL	11	4	4	4	4	4	3	1	
	A	UL	21,500	12,500	18,500	12,500	20,500	14,000	9,000		
R-1	S	UL	11	4	4	4	4	4	3	2	
	A	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000		
R-2 ^a	S	UL	11	4	4	4	4	4	3	2	
	A	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000		
R-3 ^a	S	UL	11	4	4	4	4	4	3	3	
	A	UL	UL	UL	UL	UL	UL	UL	UL	UL	
R-4	S	UL	11	4	4	4	4	4	3	2	
	A	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000		
S-1	S	UL	11	4	3	3	3	4	3	1	
	A	UL	48,000	26,000	17,500	26,000	17,500	25,500	14,000	9,000	
S-2 ^{b, c}	S	UL	11	5	4	4	4	5	4	2	
	A	UL	79,000	30,000	26,000	30,000	26,000	38,500	21,000	13,500	
U ^d	S	UL	5	4	2	3	2	4	2	1	
	A	UL	35,500	19,000	8,500	14,000	8,500	18,000	9,000	5,500	

195

Unlimited Area Buildings

507.3 Nonsprinklered, one-story buildings.

The area of a Group F-2 or S-2 building not more than one *story* in height shall not be limited where the building is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

507.4 Sprinklered, one-story buildings.

The area of a Group A-4 building not more than one *story above grade plane* of *other than Type V* construction, or the area of a Group B, F, M or S building no more than one *story above grade plane* of *any* construction type, shall not be limited where the building is provided with an *automatic sprinkler system* throughout in accordance with Section 903.3.1.1 and is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

196

Question!

OK, So What's the difference
between
"Occupancy" and "Use"?

302.1 "Occupancy Classification"

302.2 "Use Designation"

197

IBC Chapter 5

General Building Heights and Areas
**Building Occupancy + Type of
Construction =
How Big and How Tall**

***Important! We Need Both on the
Application and the Plans!***

198

HEIGHT and AREA

- So...Why Do We Determine Occupancy and Construction Type?



Type V-B



Type I-A

199

What We Covered

- Permit Tech Exam Contents
- “Recognizing” Basic Occupancy Types
- “Recognizing” Basic Construction Types
- The Importance of Classifying Occupancies and Types of Construction
- Asking many questions!!!
- Some of my opinions ☹️

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ANY QUESTIONS?



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**Permit Fees,
Basic Plan Review
and
Inspections**

202

WELCOME!

You'll also need your Fee Schedule and Calculator in a few minutes...



Building Permit Fees (Based on Total Valuation)	
\$1-\$500	\$23.50
\$501 to \$2,000	\$23.50 for the first \$500 plus \$3.05 for each additional \$100, or fraction thereof, to and including \$2,000
\$2,001-\$25,000	\$69.25 for the first \$2,000 plus \$14.00 for each additional \$1,000, or fraction thereof, to and including \$25,000
\$25,001 to \$50,000	\$391.25 for the first \$25,000 plus \$10.10 for each additional \$1,000, or fraction thereof, to and including \$50,000
\$50,001 to \$100,000	\$643.75 for the first \$50,000 plus \$7.00 for each additional \$1,000, or fraction thereof, to and including \$100,000
\$100,001 to \$500,000	\$993.75 for the first \$100,000 plus \$5.60 for each additional \$1,000, or fraction thereof, to and including \$500,000
\$500,001 to \$1,000,000	\$3,233.75 for the first \$500,000 plus \$4.75 for each additional \$1,000, or fraction thereof, to and including \$1,000,000
\$1,000,000 and up	\$5,608.75 for the first \$1,000,000 plus \$3.65 for each additional \$1,000, or fraction thereof

Also in Appendix L of the 2018 IRC

203

What We're Going to Cover

- Permit / Plan Review Fee Calculations
- Simple Structural Engineering Concepts
- Basic Plan Review Items
- Construction Documents Contents
- Basic Inspection Types
- Special Inspections
- The Certificate of Occupancy
- Some of my opinions ☺.....

204

Exam Subject Areas

- General Administration--39%
 - Determine Customer's Needs
 - Verify That Application and Documents Are Complete
 - Verify Contractor Licensing
 - Recognize Basic Building Components
 - Calculate Fees
 - Inspection Requests and Approvals
 - Prepare Certificate of Occupancy

205

Exam Subject Areas (cont'd.)

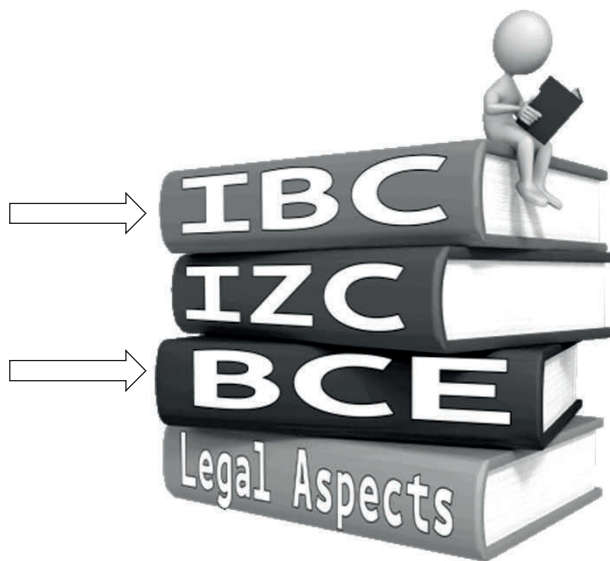
- Plans and Documents--25%
 - Recognize Basic Contents of Documents
 - Determine Level of Review
 - “Recognize” Occupancy Groups
 - “Recognize” Types of Construction
 - Read Maps, Plats and Site Plans
 - Use Scales
 - Calculate Areas and Percentages

206

Exam Subject Areas (cont'd.)

- Zoning and Site Development--14%
 - Explain Site Plan Review Process
 - Explain Land Use Codes
 - Determine Public and Private Easements
 - Verify Structure Location on Lot
 - Verify Required Setbacks
 - Determine Need for Variances

207



208

International Building Code

Chapter 1, “ADMINISTRATION”

- Title, Scope, Intent, Applicability, Department of Building Safety, Duties and Powers of the Building Official, Permits, Construction Documents, Temporary Structures, Fees, Inspections, Certificate of Occupancy, Service Utilities, Board of Appeals, Violations, Stop Work Order, Unsafe Structures and Equipment
- Chapter 2, “DEFINITIONS”

209

Fees

Section 109

- **109.1 Payment of Fees.** Permit not valid until fees are paid.
- **109.2 Schedule of Permit Fees.** To be established by the governing authority.
- **109.3 Building Permit Valuations.** Applicant to provide estimated value. Final valuation to be set by the Building Official. (For calculating fees *only!*)
- **109.4 Work Commencing Before Permit Issuance.** Subject to an additional fee in addition to permit fee. (Formerly “Investigative Fee”)
- **109.5 Related Fees.** Must pay other fees.
- **109.6 Refunds.** The Building Official is authorized to establish a refund policy.

210

PERMIT FEES

- Typically, multiply the square footage of a project by the valuation factor which can be found on the ICC web site.
Google: “Building Valuation Data”
- This valuation is then compared to the Fee Schedule.
- Don’t forget the “fraction thereof”!!
- Grab those calculators!

211

Group (2018 International Building Code)	IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
A-1 Assembly, theaters, with stage	239.41	231.54	226.03	216.67	203.74	197.86	209.82	186.11	179.13
A-1 Assembly, theaters, without stage	219.07	211.20	205.68	196.33	183.65	177.76	189.48	166.01	159.03
A-2 Assembly, nightclubs	188.23	182.77	178.14	170.93	161.13	156.68	164.92	145.88	140.94
A-2 Assembly, restaurants, bars, banquet halls	187.23	181.77	176.14	169.93	159.13	155.68	163.92	143.88	139.94
A-3 Assembly, churches	220.05	212.18	206.66	197.31	185.99	180.11	190.46	168.36	161.38
A-3 Assembly, general, community halls, libraries, museums	185.05	177.18	170.67	162.31	148.58	143.75	155.46	131.00	125.02
A-4 Assembly, arenas	218.07	210.20	203.68	195.33	181.65	176.76	188.48	164.01	158.03
B Business	192.02	185.04	179.30	170.56	155.93	150.11	164.01	137.00	131.05
E Educational	197.52	190.73	185.77	177.32	165.32	156.97	171.23	144.39	140.26
F-1 Factory and industrial, moderate hazard	114.08	108.82	102.59	98.59	88.51	84.45	94.44	74.21	69.43
F-2 Factory and industrial, low hazard	113.08	107.82	102.59	97.59	88.51	83.45	93.44	74.21	68.43
H-1 High Hazard, explosives	106.73	101.48	96.25	91.25	82.38	77.32	87.10	68.08	N.P.
H234 High Hazard	106.73	101.48	96.25	91.25	82.38	77.32	87.10	68.08	62.30
H-5 HPM	192.02	185.04	179.30	170.56	155.93	150.11	164.01	137.00	131.05
I-1 Institutional, supervised environment	191.30	184.81	179.46	171.90	158.36	154.06	171.99	141.86	137.45
I-2 Institutional, hospitals	321.25	314.27	308.52	299.78	284.17	N.P.	293.24	265.24	N.P.
I-2 Institutional, nursing homes	222.99	216.01	210.27	201.52	187.89	N.P.	194.98	168.96	N.P.
I-3 Institutional, restrained	218.28	211.30	205.55	196.81	183.43	176.62	190.27	164.50	156.55
I-4 Institutional, day care facilities	191.30	184.81	179.46	171.90	158.36	154.06	171.99	141.86	137.45
M Mercantile	140.27	134.81	129.18	122.96	112.68	109.23	116.95	97.44	93.50
R-1 Residential, hotels	193.08	186.60	181.24	173.68	159.89	155.58	173.77	143.39	138.97
R-2 Residential, multiple family	161.05	155.46	150.40	143.64	130.52	126.22	142.64	113.02	108.61
R-3 Residential, one- and two-family ^d	151.10	146.99	143.20	139.61	134.50	130.95	137.27	125.85	118.45
R-4 Residential, care/assisted living facilities	191.30	184.81	179.46	171.90	158.36	154.06	171.99	141.86	137.45
S-1 Storage, moderate hazard	105.73	100.48	94.25	90.25	80.38	76.32	86.10	66.08	61.30
S-2 Storage, low hazard	104.73	99.48	94.25	89.25	80.38	75.32	85.10	66.08	60.30
U Utility, miscellaneous	83.66	79.00	74.06	70.37	63.47	59.32	67.24	50.19	47.80

a. Private Garages use Utility, miscellaneous

b. For shell only buildings deduct 20 percent

c. N.P. = not permitted

d. Unfinished basements (Group R-3) = \$21.00 per sq. ft.

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FEE SCHEDULE SAMPLE

Building Permit Fees (Based on Total Valuation)		
1	\$1-\$500	\$23.50
2	\$501 to \$2,000	\$23.50 for the first \$500 plus \$3.05 for each additional \$100, or fraction thereof, to and including \$2,000
3	\$2,001-\$25,000	\$69.25 for the first \$2,000 plus \$14.00 for each additional \$1,000, or fraction thereof, to and including \$25,000
4	\$25,001 to \$50,000	\$391.25 for the first \$25,000 plus \$10.10 for each additional \$1,000, or fraction thereof, to and including \$50,000
5	\$50,001 to \$100,000	\$643.75 for the first \$50,000 plus \$7.00 for each additional \$1,000, or fraction thereof, to and including \$100,000
6	\$100,001 to \$500,000	\$993.75 for the first \$100,000 plus \$5.60 for each additional \$1,000, or fraction thereof, to and including \$500,000
7	\$500,001 to \$1,000,000	\$3,233.75 for the first \$500,000 plus \$4.75 for each additional \$1,000, or fraction thereof, to and including \$1,000,000
8	\$1,000,000 and up	\$5,608.75 for the first \$1,000,000 plus \$3.65 for each additional \$1,000, or fraction thereof

213

- Given: If the valuation factor per square foot for a single family dwelling is \$85.04 and the valuation per square foot for an attached garage is \$28.50, what is the permit fee for a 2300 square foot house with a 600 square foot attached garage?

Dwelling: \$85.04 x 2300 = \$

Garage: \$28.50 x 600 = \$

Total Valuation = \$

Rounded **up!!** = \$

214

FEE SCHEDULE SAMPLE

	TOTAL VALUATION	FEE
1	\$1.00 to \$500.00	\$23.50
2	\$501.00 to \$2,000.00	\$23.50 for the first \$500.00 plus \$3.05 for each additional \$100.00, or fraction thereof, to and including \$2,000.00
3	\$2,001.00 to \$25,000.00	\$89.25 for the first \$2,000.00 plus \$14.00 for each additional \$1,000.00, or fraction thereof, to and including \$25,000.00
4	\$25,001.00 to \$50,000.00	\$391.25 for the first \$25,000.00 plus \$10.10 for each additional \$1,000.00, or fraction thereof, to and including \$50,000.00
5	\$50,001.00 to \$100,000.00	\$643.75 for the first \$50,000.00 plus \$7.00 for each additional \$1,000.00, or fraction thereof, to and including \$100,000.00
6	\$100,001.00 to \$500,000.00	\$993.75 for the first \$100,000.00 plus \$5.60 for each additional \$1,000.00, or fraction thereof, to and including \$500,000.00
7	\$500,001.00 to \$1,000,000.00	\$3,233.75 for the first \$500,000.00 plus \$4.75 for each additional \$1,000.00, or fraction thereof, to and including \$1,000,000.00
8	\$1,000,001.00 and up	\$5,608.75 for the first \$1,000,000.00 plus \$3.65 for each additional \$1,000.00, or fraction thereof

\$993.75 then \$5.60 x 113 = \$632.80 So, \$993.75 + \$632.80 = \$1626.55

215

- Given: If the valuation factor per square foot for a single-family dwelling is \$85.04 and the valuation per square foot for an attached garage is \$28.50, what is the permit fee for a 2300 square foot house with a 600 square foot attached garage?

Dwelling: \$85.04 x 2300 = \$ _____

Garage: \$28.50 x 600 = \$ _____

Total Valuation = \$ _____

Permit = \$ _____

Plan Review Fee (65%)

\$1626.55 x .65 = \$ _____

216

We Good With Fee Calculations??



☐ Remember! Always
Round UP to the
Nearest Thousand!!

So...\$200,000.01 = \$201,000.00

217

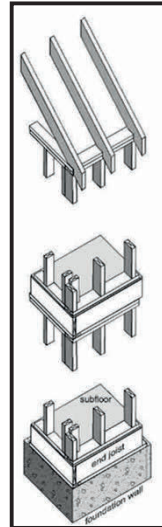
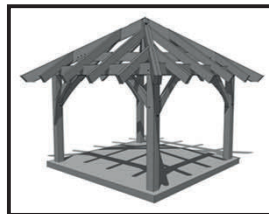
BASIC RESIDENTIAL REVIEW

- Identify parts of a structure on plans
- Identify parts to a complete set of plans
- Check code requirements
- Calculations

218

Typical Parts of a Building

- Footing
- Foundation (or Stem)
- Floor(s)
- Walls or Supports
- Roof



219

Some *Really* Basic Structural Terms

Everything in Equilibrium!

220

Dead Load vs. Live Load

(DL) (LL)

Dead Load is the weight of materials of construction incorporated into the building, including but not limited to walls, floors, roofs, ceilings, stairways, built-in partitions, finishes, cladding, and other similarly incorporated architectural and structural items, and fixed service equipment, including the weight of cranes, plumbing and electrical pipes, HVAC and fire sprinklers.

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Dead Load vs. Live Loads

Live Loads are those loads produced by the use and occupancy of the building or other structure and do not include construction or environmental loads such as *wind load, snow load, rain load, earthquake load, flood load or dead load.*

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IRC LIVE LOADS

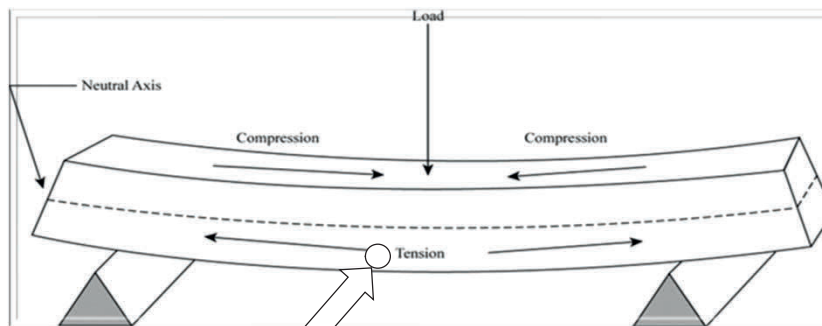
(Also in Table 1607.1 of IBC)

TABLE R601.5 MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS (in pounds per square foot)

USE	LIVE LOAD
Uninhabitable attics without storage ^a	10
Uninhabitable attics with limited storage ^{a, b}	20
Habitable attics and attics served with fixed stairs	30
Balconies (exterior) and decks ^a	40
Fire escapes	40
Guards and handrails ^a	200 ^b
Guard in-fill components ^d	50 ^b
Passenger vehicle garages ^a	50 ^a
Rooms other than sleeping rooms	40
Sleeping rooms	30
Stairs	40 ^c

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Dead Load *Plus* Live Load

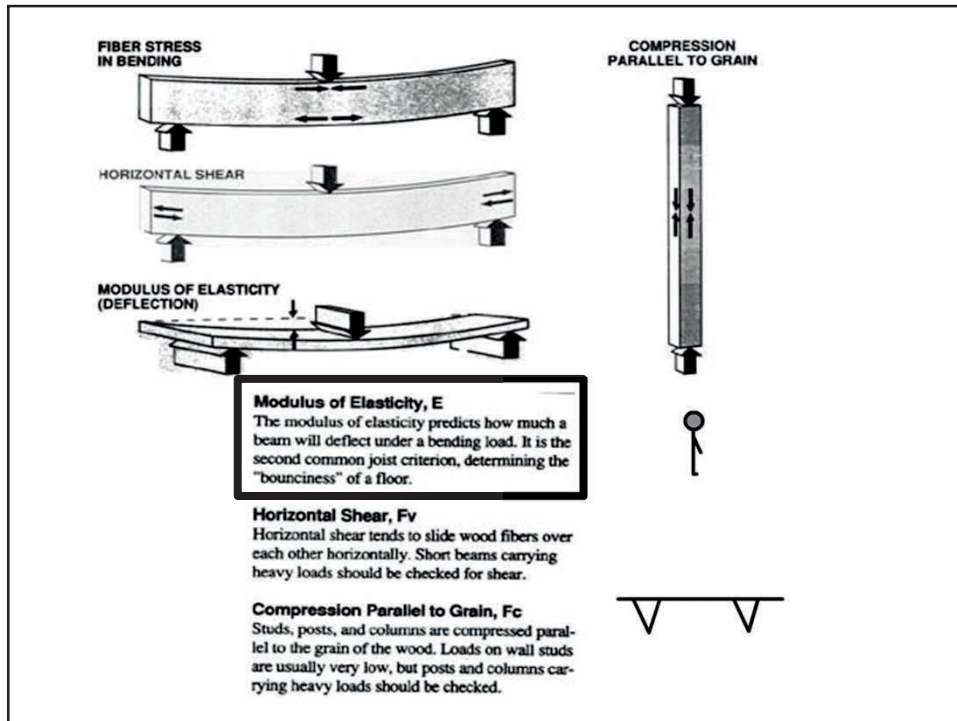


Courtesy: Chegg

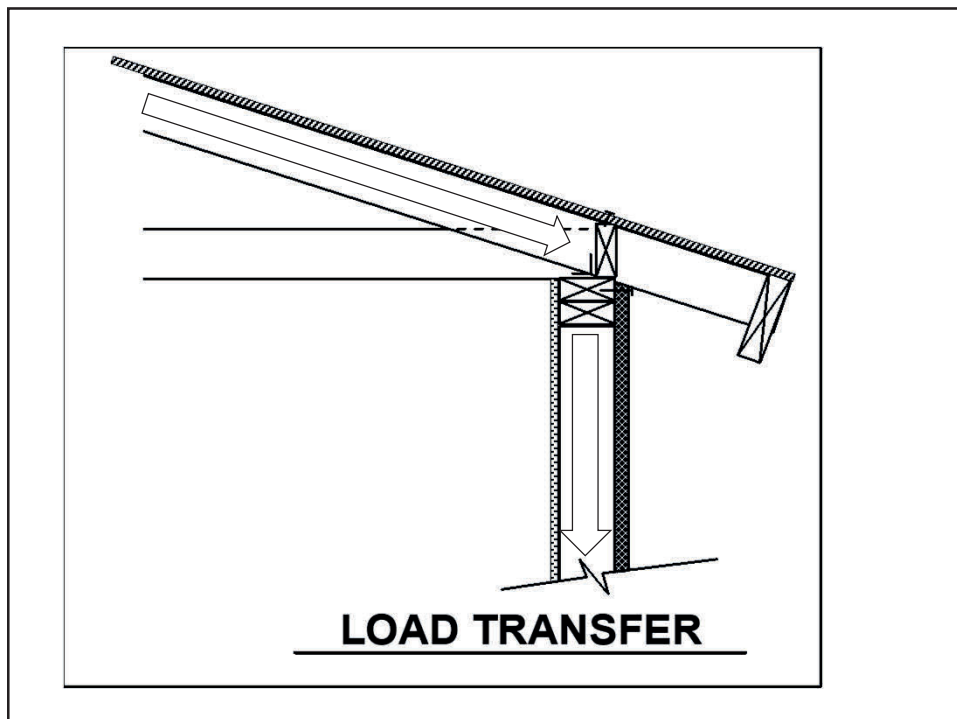
Don't drill or notch here!



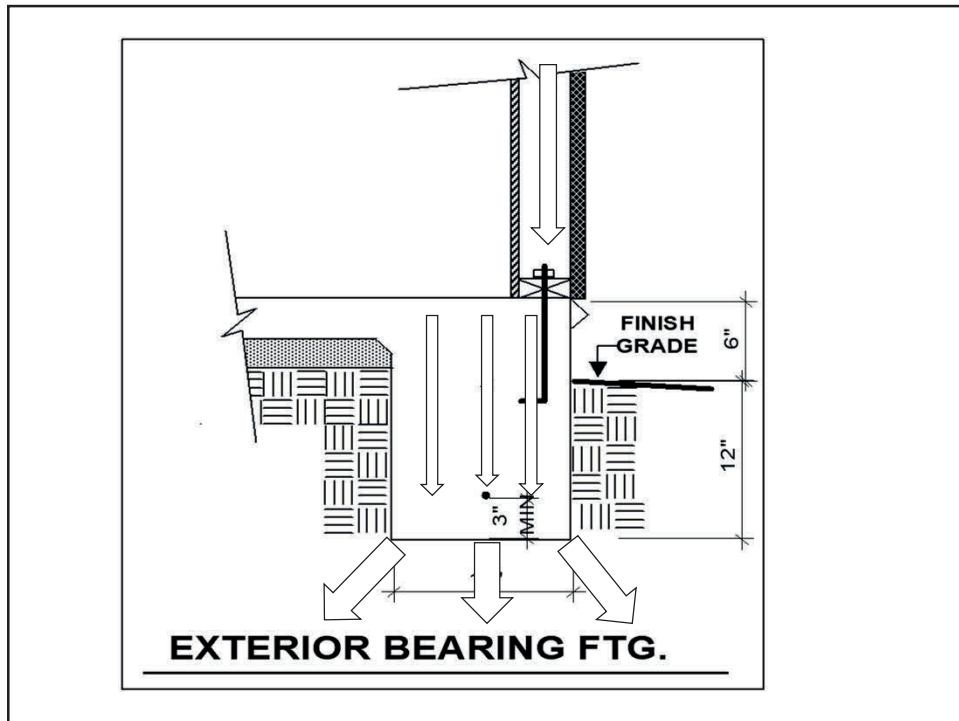
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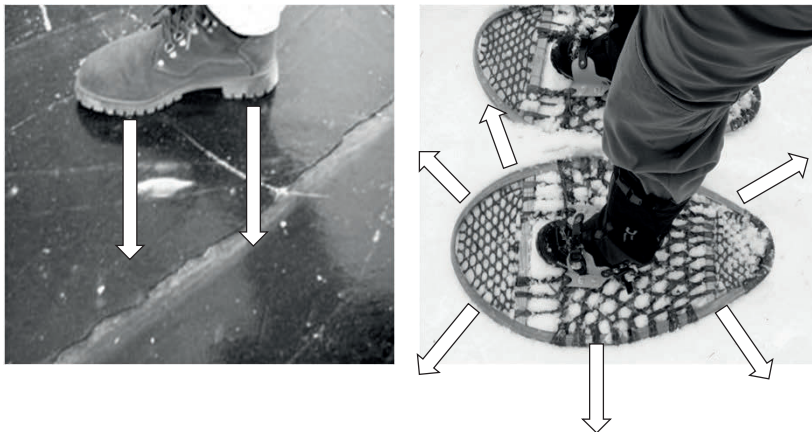


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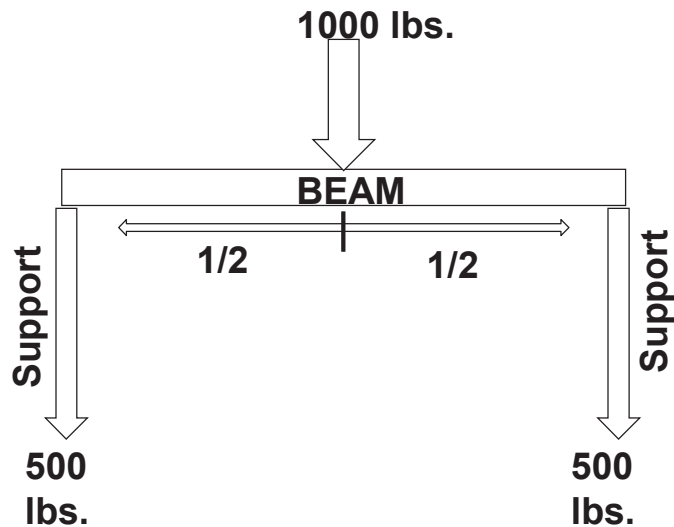
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Why Are Soil Tests Required?



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Tributary Area



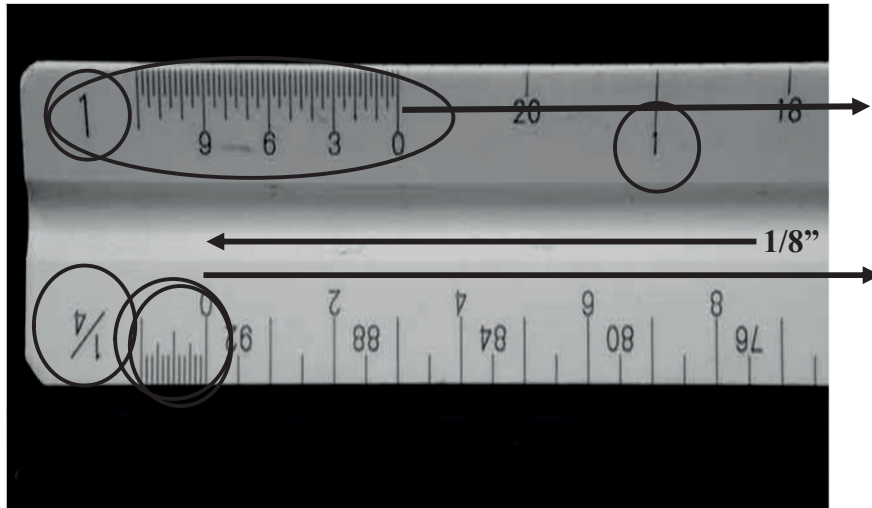
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SCALES

The scale will have a long mark to the left of a zero, which is the beginning of the feet, and several shorter marks to the right of the zero, which represents the inches. Line up the zero mark with the beginning of the section you want to measure. The nearest mark the line passes, is the foot measurement. Often, since the same side will have two scales on it, the marks will alternate one scale and then the other, even to odd. You must make sure you know which one you should be using. Once you count up the feet, slide the ruler left to meet up the end of the line with the nearest foot mark. The beginning of the line will bleed over the zero mark to the right. The shorter 'inch' mark that the line meets up with will be the amount of inches you need. The first measurement gives you the feet, the second the inches. No math involved, and after a bit of practice, it will become second nature.

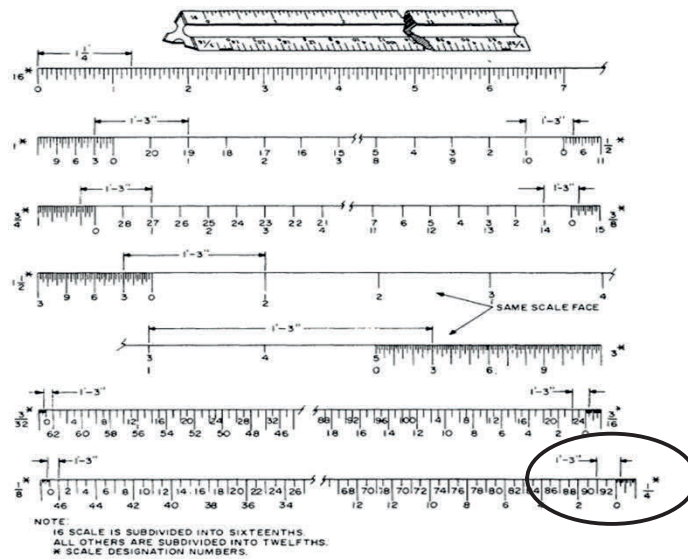
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Architect's Scale



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Architect's Scale



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Architect's Scale

Using an Architect's Scale

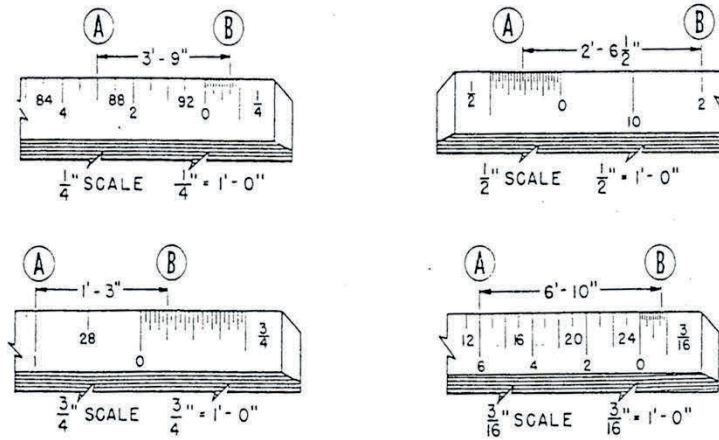


Fig. 6-5

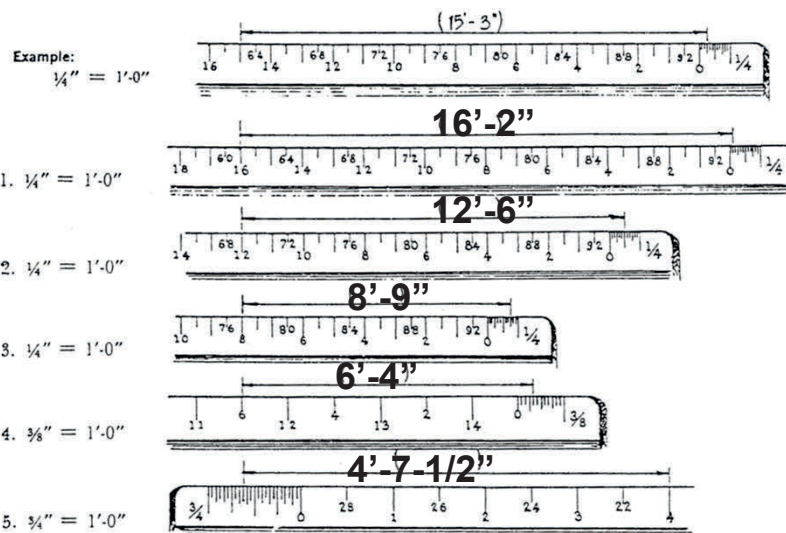
The scale is placed so that full feet are measured on one side of the line marked "0" and inches on the other side of the line.

Notice that the $\frac{3}{16}"$ scale and $\frac{1}{4}"$ scale provide divisions in feet and inches. The $\frac{1}{2}"$ scale and $\frac{3}{4}"$ scale provide divisions in feet, inches, and half inches.

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Architect's Scale

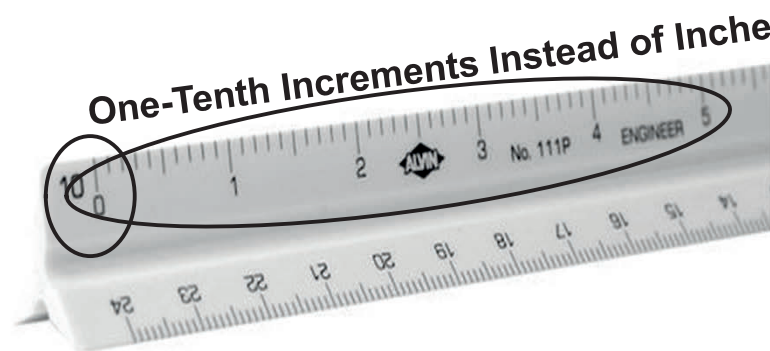
EXERCISE



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Engineer's Scale

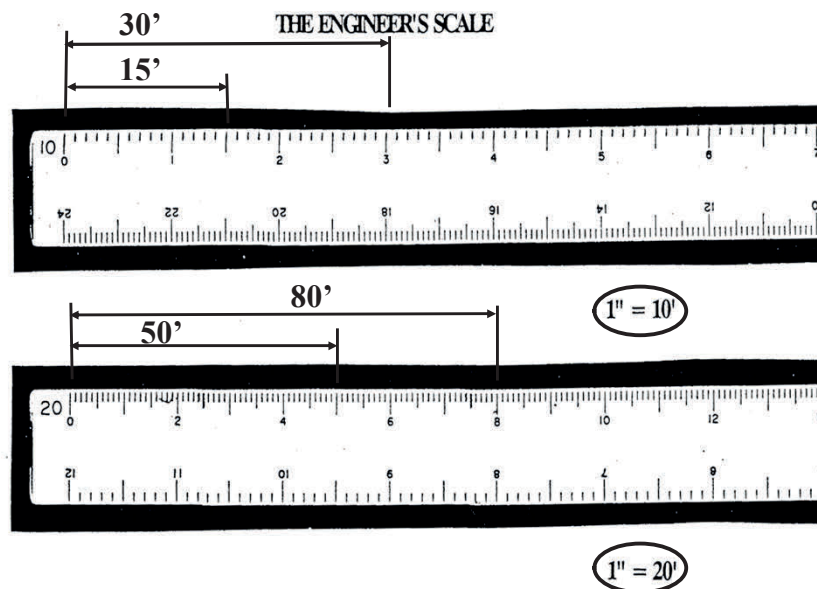
Usually used on _____ ?



So, 10.5 feet = 10'-6"...NOT 10'-5"!!

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Engineer's Scale



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Any Last Question???

End of Day 1

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