2018 IFC Significant Changes

Based on the
International Fire Code® (IFC®)

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GOAL

- Identify significantchanges between the 2015 and 2018 IFC

- Apply code requirements to design, plan submittals and/or inspection.

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2018 IFC Significant Changes

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OBJECTIVES

- Identify the differences between 2015 IFC and 2018 codes.
- Explain differences between current and previous code years.
- Identify changes in organization and code requirements.
- Identify design, plan review and inspection requirements.

Nick Youngson - link to - http://nyphotographic.com/

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Tips

- Guide to a successful class:
- Slides contain some text and iconic images to help you learn.
- Text and commentary is in the handout.
- Follow along in the course handout.
- Ask Questions, ask questions, ASK QUESTIONS!!!!

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2018 IFC Significant Changes

LEARNING center

Course Icons

Addition **Deletion** **Modification** **Clarification**

Chapter 3

General Requirements

314 Ceiling Clearance for Indoor Storages

Minimum 24"

Minimum 18"

315.3.1 Outdoor Pallet Storage

Chapter 4

Emergency Planning and Preparedness

Section 403.12.3 Crowd Managers

404.2.3 Lockdown Plans

FIRE SAFETY
and
EVACUATION PLAN

Laurelwoods Elementary School

987 6th Street
Smithville, CA

May 20, 2017

Table of Contents

I.   School Information
     a. Site plan
     b. Fire Department access routes
     c. Floor plans
     d. Evacuation routes
     e. Fire protection systems
     f. Building hazards
     g. Record keeping

II. Fire Drills
     a. Fire alarm notification
     b. Frequency of training
     c. Staff responsibilities
     d. Assembly location
     e. Roll call

III. Lockdown Drills
     a. Notification
     b. Frequency of training
     c. Staff responsibilities
     d. 2-way communication

IV. Earthquake Drills
     a. Notification
     b. Frequency of training
     c. Evacuation
     d. Assembly location
     e. Release to parents

Chapter 6

Building Services and Systems

Section 603.3 Fuel-fired Appliances

TABLE 603-1 Maximum Capacity of Fuel Oil Based on Type of Tank and Automatic Sprinkler System Design

TANK DESIGN	NONSPRINKLERED BUILDING	FIRE SPRINKLERS PROVIDED IN THE ROOM	FIRE SPRINKLERS PROVIDED IN THE BUILDING
UL 80	660 gallons	660 gallons	660 gallons
UL 142	660 gallons	660 gallons	1,320 gallons
UL 2085	660 gallons	3,000 gallons	3,000 gallons

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Section 605.13 Refrigerants with Lower Flammability Hazards

Chance of Flame Occurring
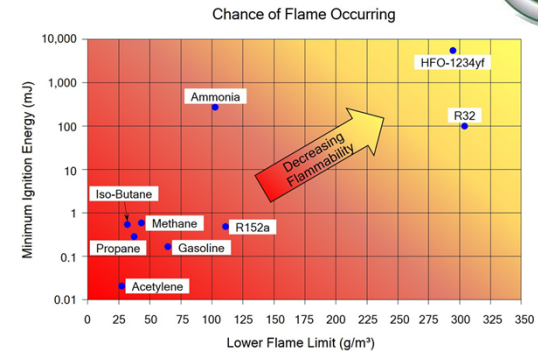
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Section 608.3 Non-metallic Cooking Oil Storage Tanks

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Chapter 8

Interior Finish, Decorative Materials and Furnishings

Section 807.1 Combustible Decorative Materials

2018 IFC Significant Changes

Section 807.4 Combustible Decorative Materials

2018 IFC Significant Changes

Chapter 9

Fire Protection and Live Safety Systems

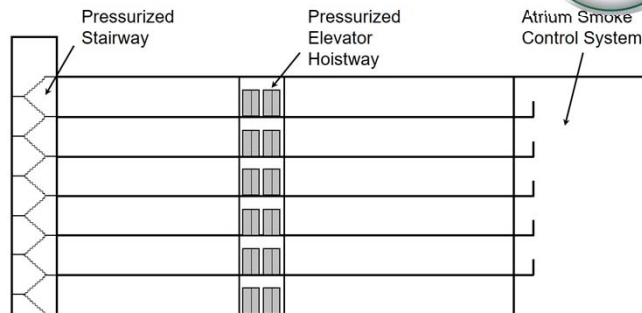## Section 901.4.6 Fire Pump and Sprinkler Riser Rooms

2018 IFC Significant Changes

901.6.2 Integrated Fire Protection System Testing

Pressurized Stairway

Pressurized Elevator Hoistway

Atrium Smoke Control System

901.8.2 Removal of Occupant Use Hoselines

903.2.1 Sprinkler Protection of Spaces under Grandstands

Automatic sprinkler system required on the story with the Group A

Group A-2

Automatic sprinkler system required on all stories to all levels of exit discharge serving the Group A
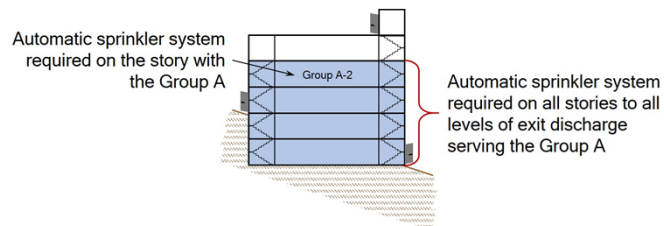
903.2.3 Sprinkler Protection of Group E Occupancies

Automatic sprinkler system required on the story with the Group A

Group A-2

Automatic sprinkler system required on all stories to all levels of exit discharge serving the Group A
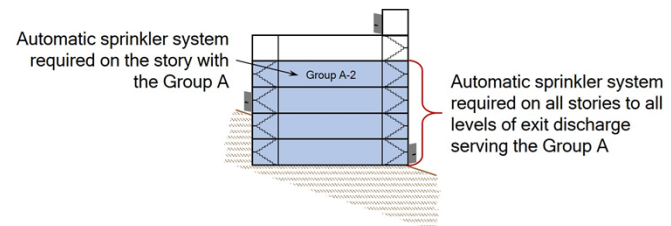
903.3.1.1.2 Sprinklers in Bathrooms in Group R-4 Occupancies

903.3.1.2.1 Sprinkler Protection of Exterior Balconies and Decks
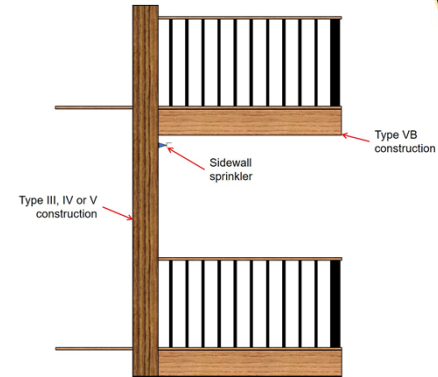
903.3.1.2.3 Sprinkler Protection of Group R Attic Spaces

903.3.3 Sprinkler Obstructions
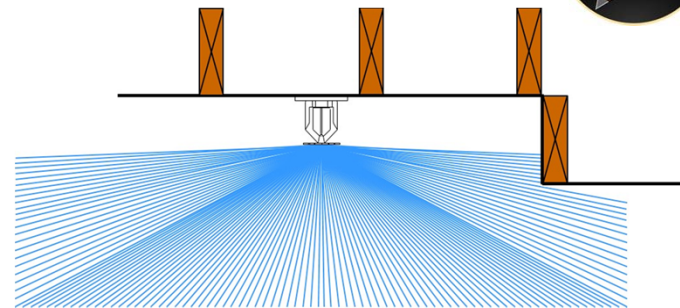
904.12 Commercial Cooking Operations

904.13 Domestic Cooking in Institutional Occupancies

904.14 Aerosol Fire-extinguishing System Maintenance

905.3.1 Standpipe Systems in Group B and E Occupancies

905.3.1 Occupant-Use Standpipe Systems

905.4 Class I Standpipe Hose Connections

Standpipe hose connection

Maximum 75'
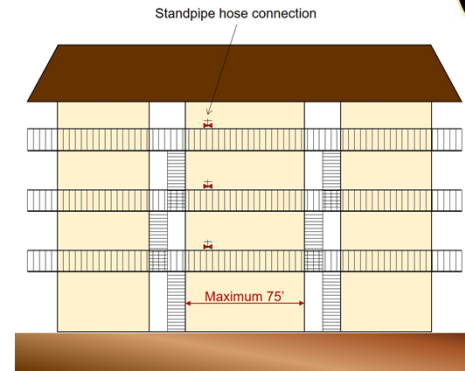
905.11 Locking Caps on Standpipe Outlets

KNOX SecureCap

906.1 Portable Fire Extinguishers

907.1.2 Fire Alarm Construction Documents

Manual fire alarm system is required

OL = 125

OL = 125

Art Gallery Group A-3
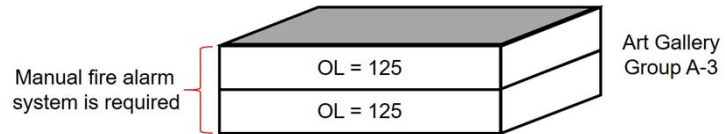
907.2.10 Fire Alarm Systems in Group R-4 Occupancies

907.5.2.2.4 Emergency Voice/Alarm Communication System Captions

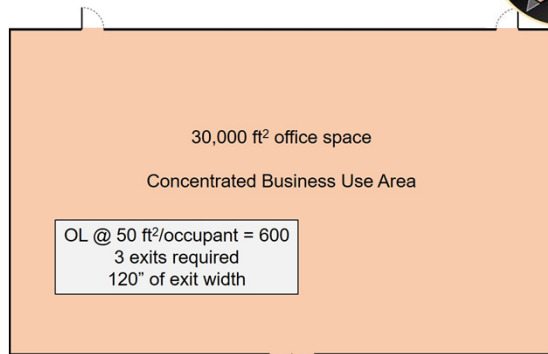## 910.5 Maintenance of Smoke and Heat Removal Equipment

916 Gas Detection Systems

2018 IFC Significant Changes

Chapter 10

Means of Egress

1004.8 Occupant Load Calculation in Concentrated Business Use Area

30,000 ft² office space

Concentrated Business Use Area

OL @ 50 ft²/occupant = 600
3 exits required
120" of exit width

2018 IFC Significant Changes

1006.2.1, Table 1006.2.1 Spaces with One Exit or Exit Access Doorway

Lobby

Occupant Load = 3,000
4 exits required
450" egress width
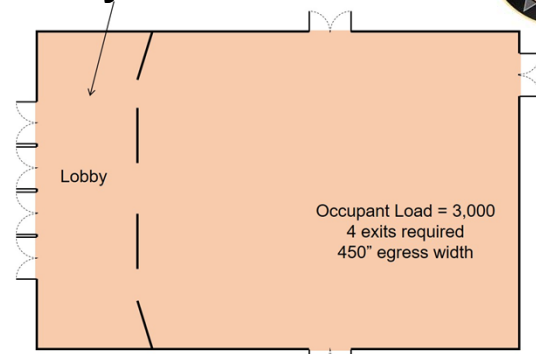
2018 IFC Significant Changes

1006.2.2.6, Table 1006.2.1, Table 1017.2 Groups R-3 and R-4 Protected with NFPA 13D Sprinkler System

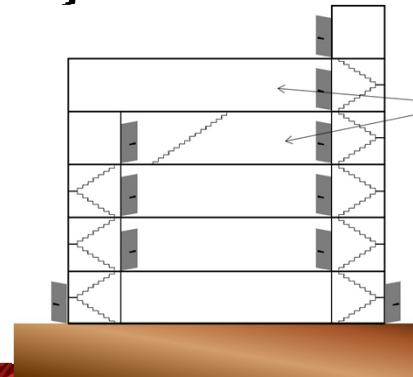Sleeping Rm | Sleeping Rm | Bath | Sleeping Rm | Family Rm

Bath

Sleeping Rm | Sleeping Rm | Dining Rm | Kitchen
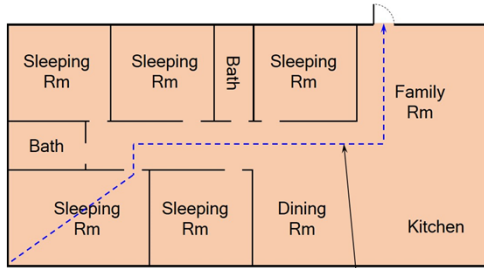
Exit access travel distance ≤75'

1006.3 Exits on Adjacent Stories

Number of exits from each story based on occupant load of that story

1008.2.3 Exit Discharge

Illumination of exit discharge path and safe dispersal area

Illumination of entire exit discharge path

Safe Dispersal Area

Street
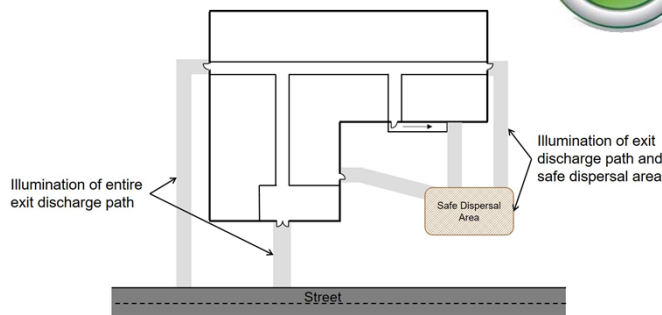
1008.3.5, 1008.2.2 Emergency Illumination in Group I-2

1009.7.2 Protection of Exterior Areas of Assisted Rescue
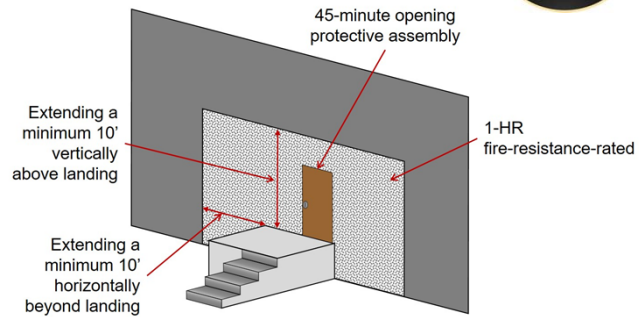
1010.1.1 Size of Doors
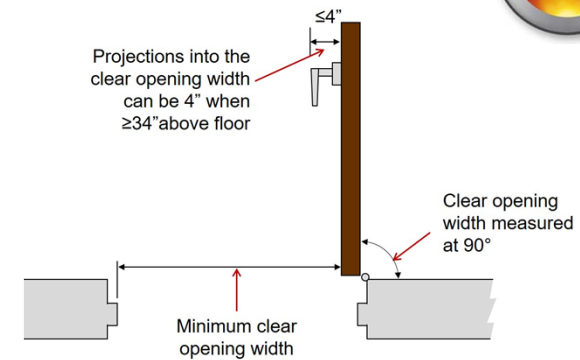
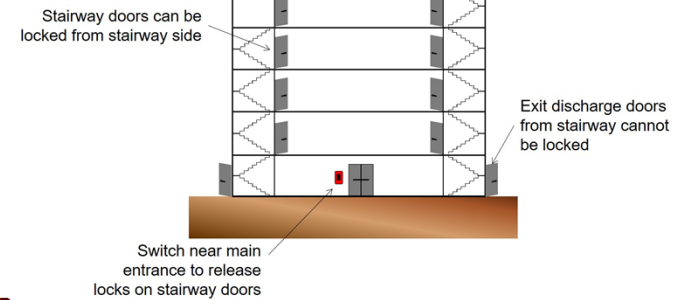## 1010.1.4.4 Locking arrangements in educational occupancies

1010.1.9.8, 1010.1.9.8.1 Delayed Egress
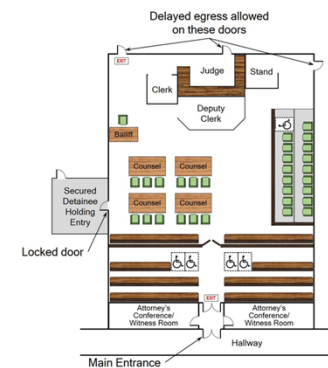
1010.1.9.9 Electrically Locked Egress Doors

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1010.1.9.12 Locks on Stairway Doors

Stairway doors can be locked from stairway side

Exit discharge doors from stairway cannot be locked

Switch near main entrance to release locks on stairway doors

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1010.1.10 Panic Hardware and Fire Exit Hardware
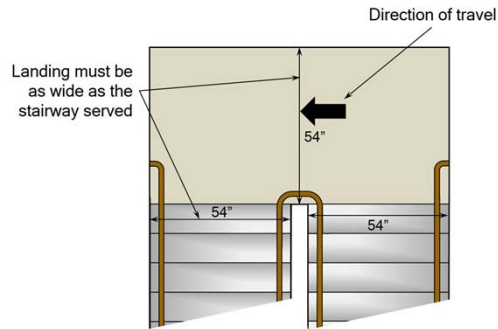

2018 IFC Significant Changes

1010.3.2 Security Access Turnstiles

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1011.6 Stairway Landings

Direction of travel

Landing must be as wide as the stairway served

54"

54"   54"

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1013.2 Floor Level Exit Signs in Group R-1
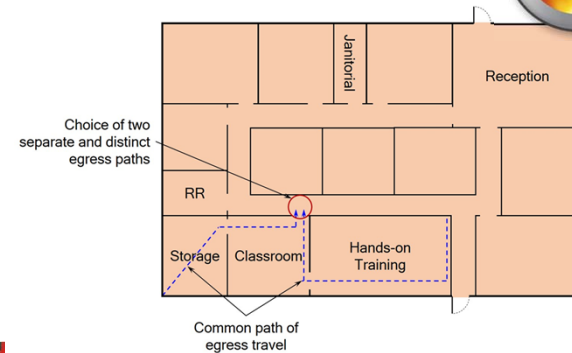
EXIT

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2018 IFC Significant Changes

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1015.6, 1015.7 Fall Arrest for Rooftop Equipment

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2018 IFC Significant Changes

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1017.3 Common Path of Egress Travel

Janitorial

Reception

Choice of two separate and distinct egress paths

RR

Storage | Classroom
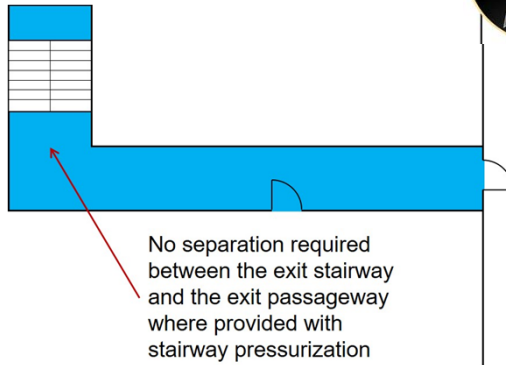
Hands-on Training

Common path of egress travel

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1023.3.1 Stairway Extension

No separation required between the exit stairway and the exit passageway where provided with stairway pressurization

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1023.5, 1024.6 Exit Stairway and Exit Passageway Penetrations
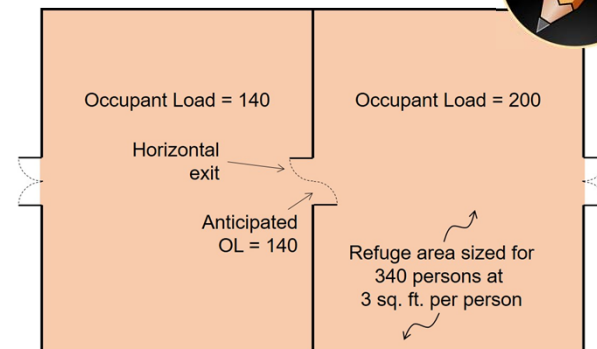

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1025.1 Luminous Egress Path Marking in Group I Occupancies

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1026.4 Areas for Horizontal Exits

Occupant Load = 140

Occupant Load = 200

Horizontal exit

Anticipated OL = 140

Refuge area sized for 340 persons at 3 sq. ft. per person

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2018 IFC Significant Changes
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1029.6 Open-air Assembly Seating

1029.9.1 Minimum Aisle Width
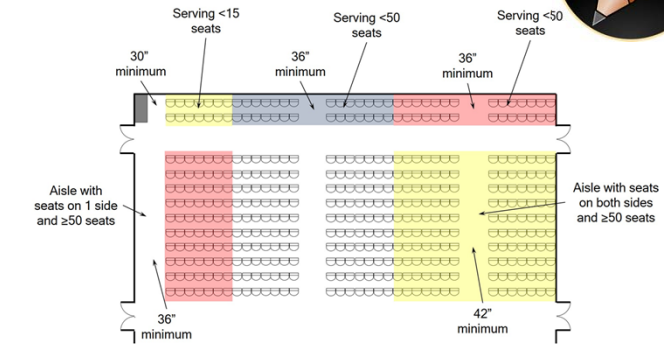
1030.1 Emergency Escape and Rescue Openings
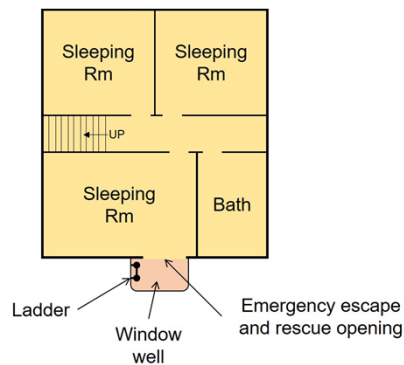
1030.1.1 Operation of Emergency Escape and Rescue Openings
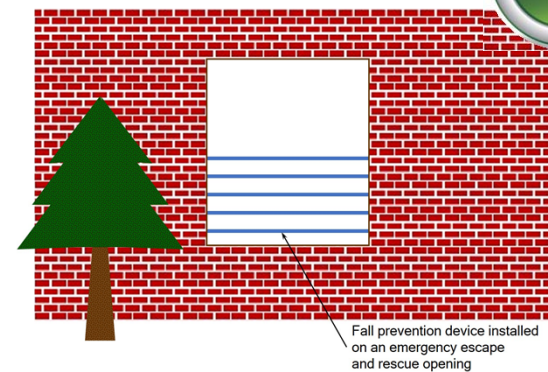
1031.2.2 Locking Arrangements in Existing Educational Occupancies

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1031.4 Exit Signs in Existing Buildings

2018 IFC Significant Changes

1031.10 Inspection and Testing of Emergency Egress Lighting

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Chapter 11

Construction Requirements for Existing Buildings

1103.5.1 Sprinkler Protection of Existing Group A-2 Occupancies

2018 IFC Significant Changes

1103.9 Carbon Monoxide Alarms in Existing Buildings

2018 IFC Significant Changes

1104.16.2 Wall Openings Adjacent to Fire Escapes

2018 IFC Significant Changes

1105.5.4 Fire-protection-rated Doors in Existing Group I-2

2018 IFC Significant Changes

Discussion Activity

Chapter 12

Energy Systems

Chapter 12
Energy Systems
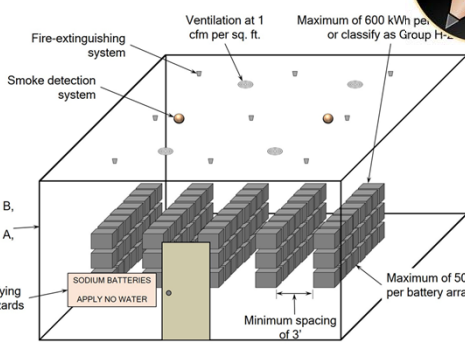
1204.5 Rapid Shutdown for Solar Photovoltaic Power Systems

Roof Surface

Solar Photovoltaic Panels

Boundary of Solar Panel Array

1' beyond edge of panels
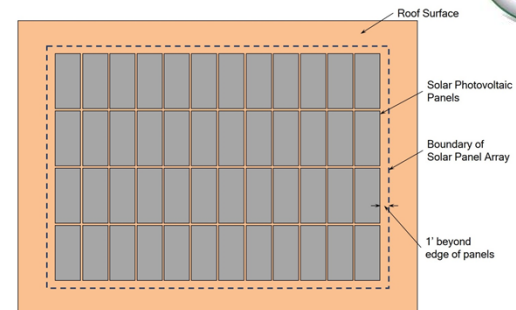
1206.2 Stationary Storage Battery Systems

- Fire-extinguishing system
- Smoke detection system
- Ventilation at 1 cfm per sq. ft.
- Maximum of 600 kWh per or classify as Group H-2
- 1-HR in Groups B, F, M, S and U
- 2-HR in Groups A, E, I and R
- Sign identifying hazards
- SODIUM BATTERIES APPLY NO WATER
- Maximum of 50 kWh per battery array
- Minimum spacing of 3'

2018 IFC Significant Changes

Chapter 22

Combustible Dust Producing Operations

Chapter 22 Combustible Dust

2018 IFC Significant Changes

Chapter 23

Motor Fuel-Dispensing Facilities and Repair Garages

2303.2.1 Height of Emergency Disconnect Switch

2306.7.3.1 Protection from Vehicle Impact

2309.6 Defueling of Hydrogen Fueled Vehicles

Photo courtesy of Shell Hydrogen

2311.6 Repair of Vehicles Fueled by CNG and LNG

2311.8 Repair of Vehicles Fueled by Lighter-than-air Fuels

Chapter 24

Flammable Finishes

2403.2.1.3 Classified Electrical Areas Around Spray Booths

2404.2 Spray Rooms and Spray Booths

Chapter 28

Motor Fuel-Dispensing Facilities and Repair Garages

2810 Outdoor Pallet Storage at Manufacturing and Recycling Sites

Chapter 31

Tents, Temporary Special Event Structures and Other Membrane Structures

Chapter 31 Umbrella Structures

3103.3.1 Tents and Membrane Structures Used as Special Amusement Buildings

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3103., 3103.9 Structural Stability of Tents

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3104.2 Fabrics for Tents and Membrane Structures

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3105 Temporary Special Event Structures

2018 IFC Significant Changes

3106 Outdoor Assembly Events

3107.3 LP-gas Containers and Tanks Adjacent to Tents and Membrane Structures
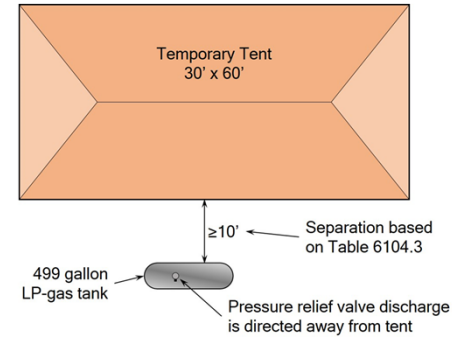
Temporary Tent
30' x 60'

≥10'

Separation based on Table 6104.3

499 gallon LP-gas tank

Pressure relief valve discharge is directed away from tent

Chapter 32

High-Piled Combustible Storage

Chapter 32 High-piled Combustible Storage

Chapter 33

Fire Safety During Construction and Demolition
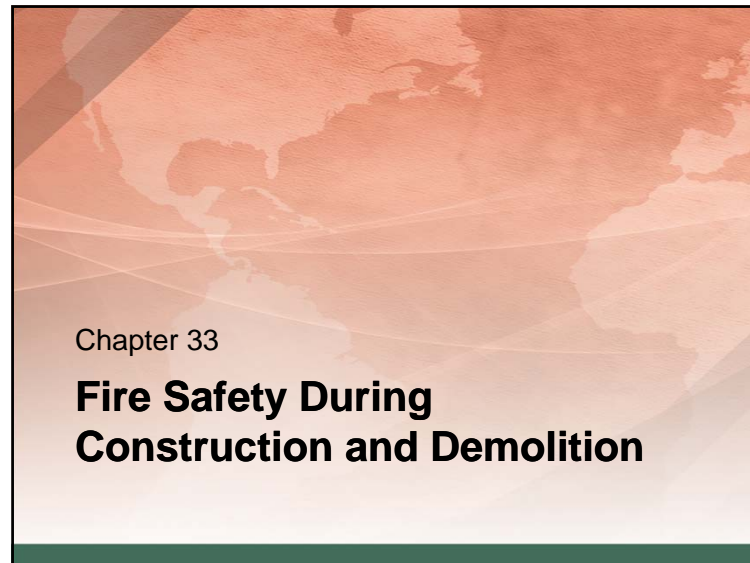
3304.5 Fire Watch During Construction and Demolition

2018 IFC Significant Changes

Chapter 38

Higher Education Laboratories

Chapter 38 Higher Education Laboratories

TABLE 3804.1.1
DESIGN AND NUMBER OF LABORATORY SUITES PER FLOOR

FLOOR LEVEL		PERCENTAGE OF MAQ PER LAB SUITE	NUMBER OF LAB SUITES PER FLOOR	FIRE-RATING FOR FIRE BARRIERS
Above Grade Plane	21+	Not allowed	Not permitted	Not permitted
	16-20	25	1	2
	11-15	50	1	2
	7-10	50	2	2
	4-6	75	4	1
	3	100	4	1
	1-2	100	6	1
Below Grade Plane	1	75	4	1
	2	50	2	1
	Lower than 2	Not Allowed	Not Allowed	Not Allowed

2018 IFC Significant Changes

Chapter 39

Processing and Extraction Facilities

Chapter 39 Plant Processing and Extraction Facilities

Chapter 50

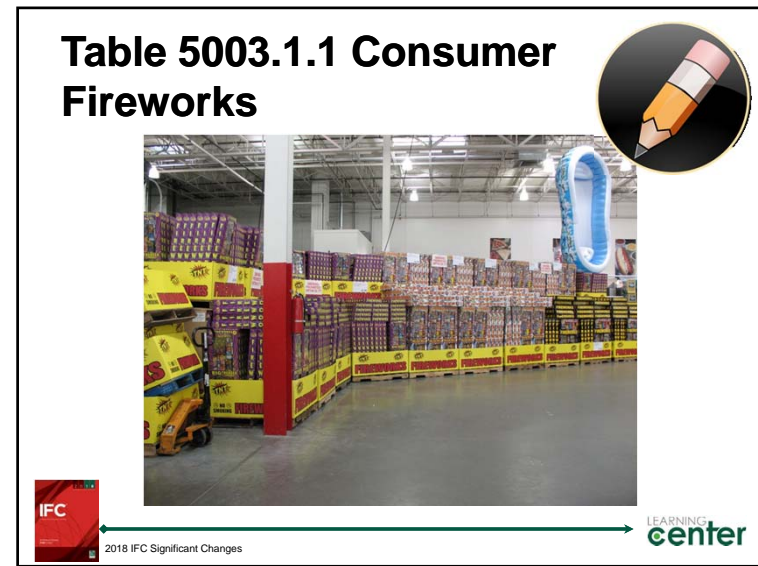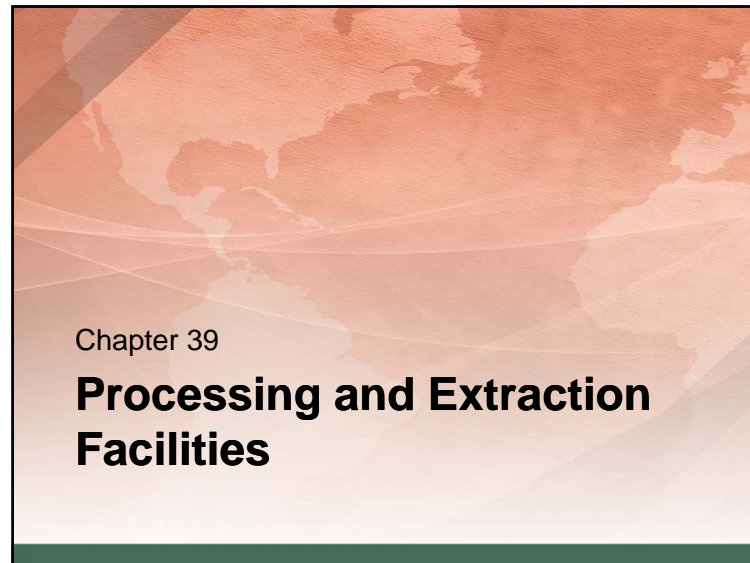**Hazardous Materials— General Provisions**

Table 5003.1.1 Consumer Fireworks
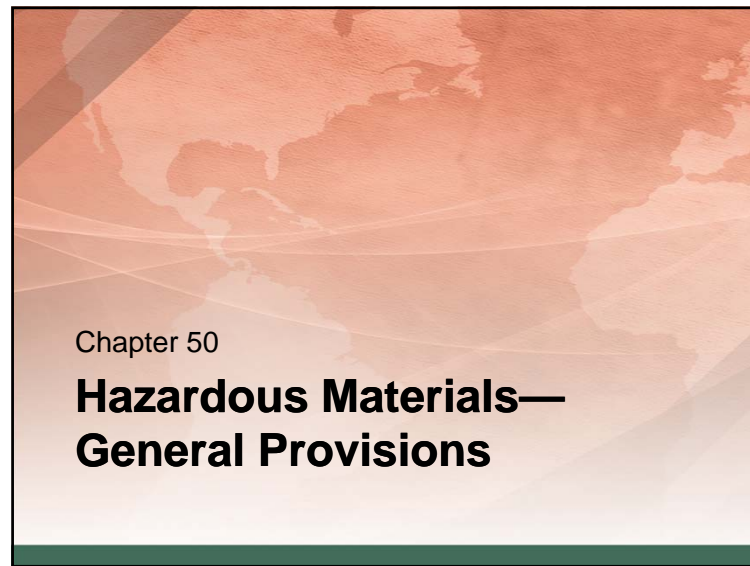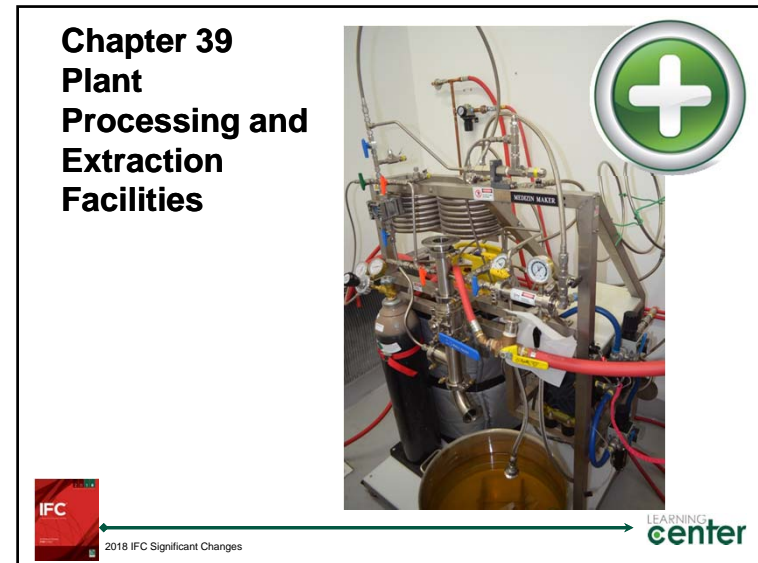
Table 5003.1.1(1) Maximum Allowable Quantity for Class 3 Oxidizers

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5003.8.3.4 Control Area Construction

Type IV construction with NFPA 13 sprinkler system

Control Area 3

1-hour Horizontal Assembly with 1-HR supporting construction

Control Area 1   Control Area 2

1-hour Fire Barrier
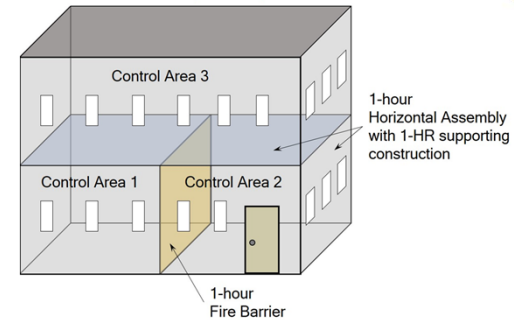
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5005.1.12 Protection of Hazardous Materials Piping Systems

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Chapter 51

Aerosols

5103.2 Aerosol Products in Plastic Containers
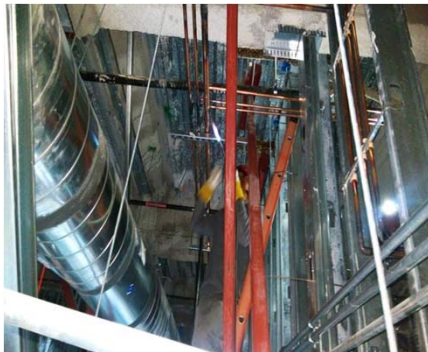
5104.8 Aerosol Cooking Spray Products

Chapter 53

Compressed Gases

5306.1 Medical Gas Storage

5307.1 Liquid Carbon Dioxide Systems for Beverage Dispensing

5307.4 Carbon Dioxide Enrichment Systems

Chapter 57

Mobile Fueling Operations

5707 Mobile Fueling Operations

Chapter 61

Liquefied Petroleum Gases

Table 6104.3 Location of LP-gas Containers

Appendix E

Hazard Categories

E102.7 Hazard Classification of Oxidizers

Appendix N

Trade Shows and Exhibits

Appendix N
Trade Shows and Exhibits

Discussion Activity

Final Reflection

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

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