

# 2020 NYS Code Changes: Mechanical, Plumbing/ FP and Energy

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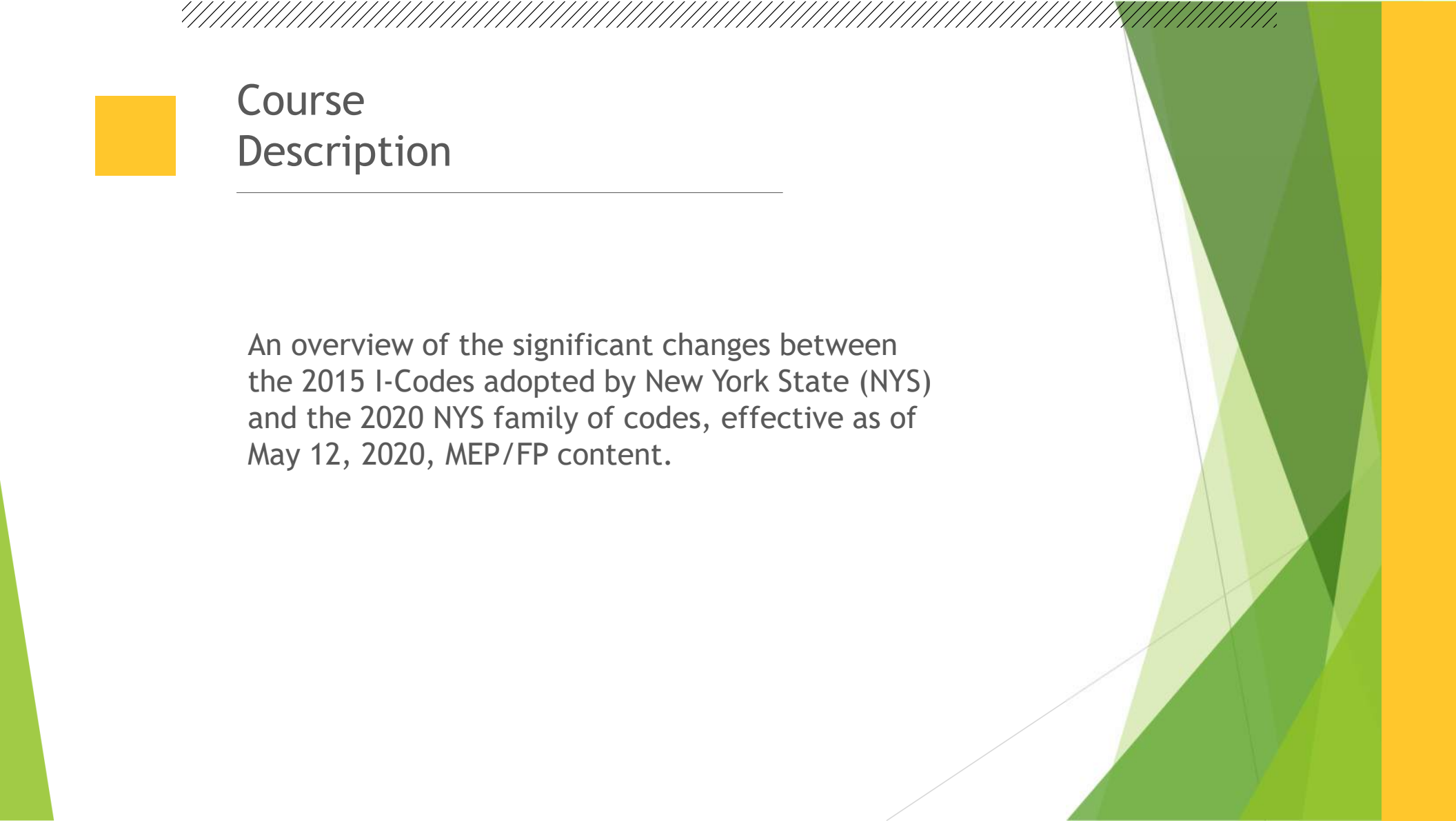
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## Course Description

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An overview of the significant changes between the 2015 I-Codes adopted by New York State (NYS) and the 2020 NYS family of codes, effective as of May 12, 2020, MEP/FP content.






# Learning Objectives

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At the end of this course, participants will be able to:

1. Review of NYS Uniform and Energy Codes of NYS status
  2. Learn the significant changes in the 2020 Fire Code of NYS
  3. Learn the significant changes in the 2020 Mechanical and Plumbing Codes of NYS
  4. Learn the significant changes in the 2020 Fuel Gas Codes of NYS
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# NYS DOS Website References

- ▶ DOS Website - Notice for Adoption
  - ▶ <https://www.dos.ny.gov/DCEA/noticadopt.html>
  - ▶ <http://www.dos.ny.gov/info/register/2020.html>
- ▶ Location for free version of codes thru ICC
- ▶ [https://codes.iccsafe.org/category/New%20York?year\[\]=2020&page=1](https://codes.iccsafe.org/category/New%20York?year[]=2020&page=1)

**Effective Date:** The effective date of the 2020 NYS Code Books, and the amendments to the 2020 NYS Code Books made by this amended rule, will be May 12, 2020. **There was no transition period.** Beginning on May 12, 2020, regulated parties submitting building permit applications must comply with the 2020 NYS Code Books and the amendments to the 2020 NYS Code Books made by this amended rule.

- ▶ **NYS Energy Code Update**
- ▶ The rule adopted by the Code Council on December 6, 2019 repeals the current version of the Energy Code and adopts an amended and updated version of the Energy Code. The amended and updated version of the Energy Code incorporates by reference the following publications:
- ▶ **2020 Energy Conservation Construction Code of New York State**  
(publication date: November 2019)
- ▶ 2016 edition of the Energy Standard for Buildings Except Low-Rise Residential Buildings ("ASHRAE 90.1-2016")
- ▶ Certain provisions of ASHRAE 90.1-2016 are amended as set forth in the rule adopted amending 19 NYCRR Part 1240.

- ▶ [2020 Residential Code of New York State](#) (publication date: November 2019)
- ▶ [2020 Building Code of New York State](#) (publication date: November 2019)
- ▶ [2020 Plumbing Code of New York State](#) (publication date: November 2019)
- ▶ [2020 Mechanical Code of New York State](#) (publication date: November 2019)
- ▶ [2020 Fuel Gas Code of New York State](#) (publication date: November 2019)
- ▶ [2020 Fire Code of New York State](#) (publication date: November 2019)
- ▶ [2020 Property Maintenance Code of New York State](#) (publication date: November 2019)
- ▶ [2020 Existing Building Code of New York State](#) (publication date: November 2019)
- ▶ Collectively, the NYS Code Books

This is different since the last adoption where we used 2015 ICC unedited and NYS included a separate 2017 supplement document.

This adoption is based on 2018 ICC and NYS adjustment have been incorporated into the books.

# View and Purchase NYS Codes

- ▶ The ICC codes adopted by New York State can be viewed at no cost at;
- ▶ [https://codes.iccsafe.org/category/New%20York?year\[\]=2020&page=1](https://codes.iccsafe.org/category/New%20York?year[]=2020&page=1)
- ▶ Network Premium Access is Available for a few.
- ▶ Hard copies can be purchased from this site.



		
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<b>2020 Mechanical Code of New York State</b> (First Printing: Nov 2019)	<b>2020 Plumbing Code of New York State</b> (First Printing: Nov 2019)	<b>2020 Fuel Gas Code of New York State</b> (First Printing: Nov 2019)

# What are other States doing?

- ▶ Pennsylvania Uniform Construction code (UCC) adopted 2015 ICC
- ▶ 2018 North Carolina Code adopted 2018 ICC with NC amendments
- ▶ 2018 South Carolina Code adopted 2018 ICC with SC modifications
  - ▶ Energy Code is still 2009
- ▶ Georgia adopted 2018 ICC
- ▶ 2014 New York city Code based on format and provisions from 2008 ICC, but with substantial NYC modifications (based on original 1968 NYC Building Codes)



# Color coding - for this presentation

Black - existing - same as previous

Blue - new or change in new code

Red - My comments or notes for reference.

Example:

- ▶ Appliances used in commercial food service establishment for heating or cooking food. For purpose of this definition, a commercial food service establishment is where food is prepared for sale or is prepared on a scale that is by volume and frequency not representative of domestic household cooking

For example: Day cares, charity kitchens, some church/religious kitchens

In printed books there is a black bar to the side of sections that have changed.

In the on-line fee version on ICC, sections that changed are in Blue and NY specific sections have (NY) near title.

# 2020 Mechanical Code Reference Standards

- ▶ ASHRAE Fundamentals handbook updated from 2013 to 2017 version
- ▶ ASHRAE 15 (refrigeration) updated from 2013 to 2016 version
- ▶ ASHRAE 62.1 Ventilation for acceptable Indoor Air Quality use 2013 version
- ▶ ASHRAE 170 Ventilation for Health Care use 2008 version
- ▶ ASHRAE 180 Inspection added, use 2012 version
- ▶ NFPA 30A Motor Fuel Dispensing updated from 2015 to 2018 version
- ▶ NFPA 91 Exhaust Systems still use 2015 version
- ▶ NFPA 96 Ventilation of Cooking equipment from 2014 to 2017

There are lots more....refer to reference standard section in back of code

# 2020 Mechanical Code Changes

- ▶ Chapter 2 Definitions
- ▶ COMMERCIAL COOKING APPLIANCES
  - ▶ Appliances used in commercial food service establishment for heating or cooking food. For purpose of this definition, a commercial food service establishment is where food is prepared for sale or is prepared on a scale that is by volume and frequency not representative of domestic household cooking
    - ▶ For example: Day cares, charity kitchens, some church/religious kitchens, barrack kitchens, etc.
- ▶ POLLUTION-CONTROL UNIT (PCU) - new definition
  - ▶ Manufactured equipment that is installed in a grease exhaust duct system for the purpose of extracting smoke, grease particles and odors from the exhaust flow by means of a series of filters.

# 2020 Mechanical Code Changes

TABLE 403.3.1.1  
MINIMUM VENTILATION RATES

OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY #/1000 FT <sup>2</sup> <sup>a</sup>	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R <sub>p</sub> CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R <sub>a</sub> CFM/FT <sup>2</sup> <sup>a</sup>	EXHAUST AIRFLOW RATE CFM/FT <sup>2</sup> <sup>a</sup>
<b>Sports and amusement</b>				
Bowling alleys (seating areas)	40	10	0.12	—
Disco/dance floors	100	20	0.06	—
Game arcades	20	7.5	0.18	—
Gym, stadium, arena (play area)	7	20	0.18	—
Health club/aerobics room	40	20	0.06	—
Health club/weight room	10	20	0.06	—
Ice arenas without combustion engines	—	—	0.30	0.5
Spectator areas	150	7.5	0.06	—
Swimming pools (pool and deck area)	—	—	0.48	—
<b>Storage</b>				
Repair garages, enclosed parking garages <sup>b,d</sup>	—	—	—	0.75
Refrigerated warehouses/freezers	—	10	—	—
Warehouses	—	10	0.06	—
<b>Theaters</b>				

# 2020 Mechanical Code Changes

- ▶ Chapter 4 Ventilation - Section 404.1 Enclosed Parking Garages
  - ▶ Mechanical Ventilation systems for enclosed parking garages shall operate continuously or shall be automatically operated by means of carbon monoxide detectors ....in accordance with UL 2075...
- ▶ Chapter 5 Exhaust - Section 502.16 Repair Garages for Vehicles fueled by lighter than air fuels
  - ▶ Changed from wording “natural gas and hydrogen fueled”, in addition to bunch of other minor updates and references. Read this section if you have a project that requires this.
- ▶ Chapter 5 Exhaust - Section 504.4 Cloths Dryer Exhaust
  - ▶ Added: Cloths dryer exhaust ducts shall be sealed in accordance with Section 603.9. ....Shall be undiminished in size....open area not less then 12.5 sq in
  - ▶ In 504.8.2 Added: Where dryer exhaust ducts are enclosed in wall...such cavities shall allow the installation....without deformation.

# 2020 Mechanical Code Changes

- ▶ Chapter 5 Exhaust - Section 505 Domestic Cooking Exhaust Equipment
  - ▶ 505.2 Domestic Cooking Exhaust
    - ▶ Changed from wording to include compliance with various UL listings including UL 507, UL 858 and UL 923.
  - ▶ 505.3 Exhaust Ducts
    - ▶ References Fire Code 904.13 for I-1 and I-2 installations.
    - ▶ It would be a good idea to read this section if you have a project that includes “Domestic” exhaust.
- ▶ Chapter 5 Exhaust - Section 506.5.2 Pollution-Control Units
  - ▶ This entire section is new, covering this type of exhaust system that reduces amount of grease and odor exhausted out of a building.
- ▶ Chapter 5 Exhaust - Section 507.6.1 Capture and containment test
  - ▶ ....Smoke bombs shall not be used.

# 2020 Mechanical Code Changes

- ▶ Chapter 5 Exhaust - Section 510.8 Suppression required.
- ▶ Section 510.8.1 Duct Cleanout
  - ▶ **New section** Ducts conveying combustible dust as part of a dust collection system shall be equipped with cleanouts that are provided with approved access, predesigned to be disassembled for cleaning, or engineered for automatic cleanouts. Where provided, cleanouts shall be located at the base of each vertical; duct riser and at intervals not exceeding 20 feet in horizontal sections of duct.
- ▶ Chapter 6 Duct Systems - Section 601.5 Return air openings.
- ▶ **New section 8.** Return air shall not be taken from indoor swimming pool enclosures and associated deck areas.
  - ▶ Exceptions: Where the air...is dehumidified...OR Dedicated HVAC system serving only such spaces.

# 2020 Mechanical Code Changes

- ▶ Chapter 6 Duct Systems - Section 602 Plenums
- ▶ **Significantly modified sections. Many of the UL and ASTM listings appear to be the same, but a lot of the wording was changed. Read these if they are applicable to your project.**
  - ▶ Section 602.2.1.6 **Foam plastic in plenums as interior finish or interior trim**
  - ▶ Section 602.2.1.7 **Plastic plumbing piping and tubing**
  - ▶ **Section 602.2.1.8 Pipe and duct installation within plenums**
- ▶ Chapter 6 Duct Systems - Section 603.5 nonmetallic ducts.
  - ▶ **New section 603.5.2 Phenolic ducts ...in accordance with SMACNA Phenolic Duct Standard**
- ▶ Chapter 6 Duct Systems - Section 603.8 Underground ducts
  - ▶ **New leak detection 603.8.2 Sealing ...Ducts shall be leak tested as required by section C403 of the Energy Conservation Code.**



# 2020 Mechanical Code Changes

- ▶ Chapter 6 Duct Systems - Section 604.11 Vapor retarders
  - ▶ **New Exception:** A vapor retarder is not required for spray polyurethane foam insulation having a water vapor permeance of not greater than 3 perms per inch at the installed thickness.
- ▶ Chapter 6 Duct Systems -
- ▶ Section 607.3 Damper Testing
  - ▶ **Wording adjustments**

## **[BF] 607.3.1 Damper testing.**

*Dampers* shall be listed and labeled in accordance with the standards in this section. *Fire dampers* shall comply with the requirements of UL 555. *Only fire dampers labeled for use in dynamic systems* shall be installed in heating, ventilating and air-conditioning systems designed to operate with fans on during a fire. *Smoke dampers* shall comply with the requirements of UL 555S. *Combination fire/smoke dampers* shall comply with the requirements of both UL 555 and UL 555S. *Ceiling radiation dampers* shall comply with the requirements of UL 555C or shall be tested as part of a fire-resistance-rated floor/ceiling or roof/ceiling assembly in accordance with ASTM E119 or UL 263. *Only ceiling radiation dampers labeled for use in dynamic systems* shall be installed in heating, ventilation and air-conditioning systems designed to operate with fans on during a fire. Corridor dampers shall comply with requirements of both UL 555 and UL 555S. Corridor dampers shall demonstrate acceptable closure performance when subjected to 150 feet per minute (0.76 mps) velocity across the face of the damper using the UL 555 fire exposure test.

# 2020 Mechanical Code Changes

## ▶ Chapter 6 Duct Systems - Section 607.6.2 Membrane penetrations.

### ▶ **New Exception:** [BF] 607.6.2 Membrane penetrations.

Ducts and air transfer openings constructed of *approved* materials, in accordance with Section 603, that penetrate the ceiling membrane of a fire-resistance-rated floor/ceiling or roof/ceiling assembly shall be protected with one of the following:

1. A shaft enclosure in accordance with Section 713 of the *Building Code of New York State*.
2. A *listed* ceiling radiation damper installed at the ceiling line where a duct penetrates the ceiling of a fire-resistance-rated floor/ceiling or roof/ceiling assembly.

#### **Exceptions:**

1. A fire-resistance-rated assembly tested in accordance with ASTM E119 or UL 263 showing that ceiling radiation dampers are not required in order to maintain the fire-resistance rating of the assembly.
2. Where exhaust duct or outdoor air duct penetrations are protected in accordance with Section 714.5.1.2 of the *Building Code of New York State*, are located within the cavity of a wall and do not pass through another dwelling unit or tenant space.
3. Where duct and air transfer openings are protected with a duct outlet penetration system tested as part of a fire-resistance-rated assembly in accordance with ASTM E119 or UL 263.

# 2020 Mechanical Code Changes

- ▶ Chapter 8 Chimneys and Vent - Section 805.8 Insulation Shield.

- ▶ **New section:**

- 805.8 Insulation shield.**

- Where factory-built chimneys pass through insulated assemblies, an insulation shield constructed of steel having a thickness of not less than 0.0187 inch (0.4712 mm) (No. 26 gage) shall be installed to provide clearance between the chimney and the insulation material. The clearance shall be not less than the clearance to combustibles specified by the chimney manufacturer's installation instructions. Where chimneys pass through attic space, the shield shall terminate not less than 2 inches (51 mm) above the insulation materials and shall be secured in place to prevent displacement. Insulation shields provided as part of a listed chimney system shall be installed in accordance with the manufacturer's instructions.

- ▶ Chapter 9 Specific Appliances, Fireplaces.

- ▶ **New section (I-2 Hospitals and Nursing Homes):**

- 901.4 Solid fuel-burning fireplaces and appliances in Group I-2, Condition 2.**

- In Group I-2, Condition 2 occupancies, solid fuel-burning fireplaces and appliances are prohibited.

# 2020 Mechanical Code Changes

## ▶ Chapter 11 Refrigeration- Section 1104.2.2 Refrigerated rooms

### ▶ Substantially modified section:

Chapter 14 Solar is also  
Substantially modified.

#### **1104.2.2 Industrial occupancies and refrigerated rooms.**

This section applies only to rooms and spaces that: are within industrial occupancies; contain a refrigerant evaporator; are maintained at temperatures below 68°F (20°C); and are used for manufacturing, food and beverage preparation, meat cutting, other processes and storage. Where a machinery room would otherwise be required by Section 1104.2, a machinery room shall not be required where all of the following conditions are met:

1. The space containing the machinery is separated from other occupancies by tight construction with tight-fitting doors.
2. Access is restricted to authorized personnel.
3. Refrigerant detectors are installed as required for machinery rooms in accordance with Section 1105.3.

#### **Exceptions:**

1. Refrigerant detectors are not required in unoccupied areas that contain only continuous piping that does not include valves, valve assemblies, equipment, or equipment connections.
2. Where approved alternatives are provided, refrigerant detectors for ammonia refrigeration are not required for rooms or areas that are always occupied, and for rooms or areas that have high humidity or other harsh environmental conditions that are incompatible with detection devices.

# 2020 Energy Code Reference Standards

- ▶ ASHRAE HVAC Systems handbook updated from 2013 to 2016 version
- ▶ ASHRAE 90.1 updated from (not previously referenced) to 2016 version
- ▶ NFPA 70 - NEC updated from 2014 to 2017 version

There are lots more....refer to reference standard section in back of code



# 2020 Energy Code - Related to HVAC

- ▶ Section 4 Commercial Energy Efficiency- C403 Building Mechanical Systems
  - ▶ Updated CEER factors [Table C403.3.2\(3\) Minimum Efficiency](#)

	≤ 100,000 Btu/h and < 240,000 Btu/h	47°F db/ 75°F wb outdoor air	2.9 COP
Room air conditioners, with louvered sides	< 6,000 Btu/h	—	11.0 CEER
	≥ 6,000 Btu/h and < 8,000 Btu/h	—	11.0 CEER
	≥ 8,000 Btu/h and < 14,000 Btu/h	—	10.9 CEER
	≥ 14,000 Btu/h and < 20,000 Btu/h	—	10.7 CEER
	≥ 20,000 Btu/h and ≤ 25,000 Btu/h	—	9.4 CEER
	> 25,000 Btu/h	—	9.0 CEER
	< 6,000 Btu/h	—	10.0 CEER



# 2020 Energy Code - Related to HVAC

- ▶ Section 4 Commercial Energy Efficiency-
  - ▶ There are quite a few things in this section that have changed language or location, especially related to controls. It would be worth reading this section for HVAC engineers.

# 2020 Energy Code - Related to Lighting

- ▶ Section 4 Commercial Energy Efficiency- C402 Building Envelope
  - ▶ **Changed terminology from “Skylight”.** C402.4.2.1 Lighting Controls in toplit daylight zones
    - ▶ Daylight responsive controls complying with section C405.2.3.1 shall be provided to control all electric lights within toplit zones.
  - ▶ **New Section C402.4.4 Daylight zones**
    - ▶ Daylight zones referenced in Sections C402.4.1.1 through C402.4.3.2 shall comply with sections C405.2.3.2 and C405.2.3.3, as applicable. Daylight zones shall include toplit zones and sidelit zones.



# 2020 Plumbing Code Reference Standards

- ▶ NFPA 99 Health Care Facilities updated from 2015 to 2018 version
  - ▶ Note CMS, FGI and DOH have different versions being reference from 1999 to 2012
- ▶ ANSI/ISEA Z358.1 Emergency Eyewash/shower updated from 2009 to 2014 version

# 2020 Existing Building Code - related to plumbing

- ▶ Section 7 Alterations Level 1 - Section 705 reroofing
  - ▶ **New exception** Section 705.1 General.

**[BS] 705.1 General.**

*Materials and methods of application used for recovering or replacing an existing roof covering shall comply with the requirements of Chapter 15 of the Building Code of New York State.*

**Exceptions:**

- 1. Roof replacement or roof recover of existing low-slope roof coverings shall not be required to meet the minimum design slope requirement of one-quarter unit vertical in 12 units horizontal (2-percent slope) in Section 1507 of the Building Code of New York State for roofs that provide positive roof drainage.*
- 2. Recovering or replacing an existing roof covering shall not be required to meet the requirement for secondary (emergency overflow) drains or scuppers in Section 1502 of the Building Code of New York State for roofs that provide for positive roof drainage. For the purposes of this exception, existing secondary drainage or scupper systems required in accordance with this code shall not be removed unless they are replaced by secondary drains or scuppers designed and installed in accordance with Section 1502 of the Building Code of New York State.*

# 2020 Plumbing Code Changes

- ▶ Section 3 General Regulations - 303 Materials
  - ▶ **New section 303.5** Cast iron soil pipe, fittings and components.
    - ▶ Cast-iron soil pipes and fittings and the couplings used to join these products together, shall be third-party listed and labeled....ASTM and CISPI product standards indicated in the code for such products.
- ▶ Section 3 General Regulations - 305 Protection of Pipes
  - ▶ **Modified Section 305.1** Protection against contact.
    - ▶ Metallic piping, except for cast iron, ductile iron and galvanized steel, shall not be placed in direct contact with steel framing members, concrete or cinder walls and floors and other masonry.....Where sheathing is used to prevent direct contact...the sheathing shall be made of plastic.
- ▶ Section 4 Fixtures - 403 Minimum Plumbing Facilities
  - ▶ **NY specific language 403.4** Signage.
    - ▶ Required public facilities shall be provided with signs that designate the sex, as required by section 403.2.....Exceptions: 1. Single-user facilities shall be designated as gender neutral. 2. Multi-user facilities designed to serve all genders shall not be designated by sex.

# 2020 Plumbing Code Changes

- ▶ Section 3 General Regulations - 308 Pipe Support
  - ▶ **New section 308.10 Thermal expansion tanks.**
    - ▶ A thermal expansion tank shall be supported in accordance with the manufacturer's instructions. Thermal expansion tanks shall not be supported by the piping that connects to such tanks.
- ▶ Section 4 Fixtures, Faucets and Fixture Fittings - 405 Installation
  - ▶ **New section 405.5 Plumbing fixtures with a pumped waste.**
    - ▶ Plumbing fixtures with a pumped waste shall comply with ASME A112.3.4/CSA B45.9. The plumbing fixture with a pumped waste shall be installed in accordance with the manufacturer's instructions.
- ▶ Section 4 Fixtures, Faucets and Fixture Fittings - 410 Drinking Fountains
  - ▶ **New reference 410.1 ...water coolers shall conform to ASHRAE 18**
- ▶ Section 4 Fixtures, Faucets and Fixture Fittings - 411 Emergency Fixtures
  - ▶ **New requirement 411.3** Where hot and cold water is supplied to an emergency shower or eyewash station, the temperature of the water supply shall only be controlled by a temperature actuated mixing valve complying with ASSE 1071



# 2020 Plumbing Code Changes

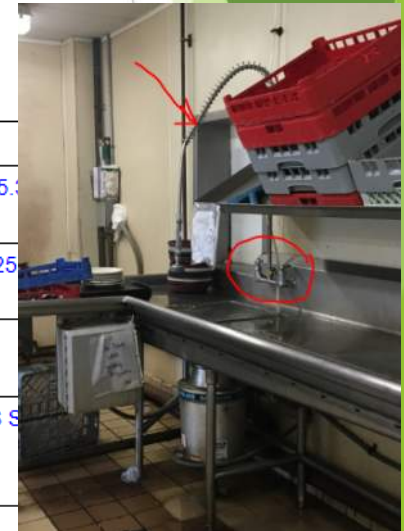
- ▶ Section 4 Fixtures, Faucets and Fixture Fittings - 412 Faucets
  - ▶ **New section 412.10 Head Shampoo sink faucets.**
    - ▶ Head shampoo sink faucets shall be supplied with hot water that is limited to not more than 120F by a water tempering limiting device that conforms to ASSE 1070. Each faucet shall have integral check valves to prevent crossover flow between the hot and cold water connections.
  
- ▶ Section 6 Design of Building Water Distribution



- ▶ **New Table**

TABLE 605.7  
VALVES

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC) plastic	ASME A112.4.14; ASME A112.18.1/CSA B125.1; ASTM F1970; CSA B125.3; IAPMO Z1157; MSS SP-122
Copper or copper alloy	ASME A112.4.14; ASME A112.18.1/CSA B125.1; ASME B16.34; CSA B125.3; MSS SP-67; MSS SP-80; MSS SP-110; IAPMO Z1157; MSS SP-139
Cross-linked polyethylene (PEX) plastic	ASME A112.4.14; ASME A112.18.1/CSA B125.1; CSA B125.3; NSF 359; IAPMO Z1157
Gray iron and ductile iron	AWWA C500; AWWA C504; AWWA C507; MSS SP-67; MSS SP-70; MSS SP-71; MSS SP-72; MSS SP-78; IAPMO Z1157
Polypropylene (PP) plastic	ASME A112.4.14; ASTM F2389; IAPMO Z1157
Polyvinyl chloride (PVC) plastic	ASME A112.4.14; ASTM F1970; IAPMO Z1157; MSS SP-122



# 2020 Plumbing Code Changes

## ▶ Section 6 Water Distribution

- ▶ **New joint allowed** 605.13 Copper tubing, 605.14 CPVC plastic and 605.16 PEX
  - ▶ 605.13.7, 605.14.4 and 605.16.3 Push-fit joints - Push-fit joints shall conform to ASSE 1061 and shall be installed in accordance with the manufacturer's instructions

## ▶ Section 7 Sanitary Drainage

- ▶ **Updated Wording** 703.4 Existing building sewers and building drains
  - ▶ Where the entire sanitary drainage system of an existing building is replaced, existing building drains under concrete slabs and existing building sewers that will serve the new system shall be internally examined to verify that the piping is sloping in the correct direction, is not broken, is not obstructed and is sized for the drainage load of the new plumbing drainage system to be installed.

## ▶ Section 7 Sanitary Drainage

- ▶ **Updated Wording** 704.1 Slope of horizontal drainage piping.
  - ▶ ....shall be not less than indicated in Table 704.1 **except that where the piping is upstream of a grease interceptor, the slope of the piping shall be not less than ¼ inch per foot (2-percent slope)**





# 2020 Plumbing Code Changes

- ▶ Section 7 Sanitary Drainage
  - ▶ **Section removed** Old section ~~713 Health Care Plumbing~~
- ▶ Section 8 Indirect / Special Waste
  - ▶ **New section** 802.4.3 Standpipes.
    - ▶ 802.4.3.1 Connection of laundry tray to standpipe. As an alternative for a laundry tray fixture connecting directly to a drainage system, a laundry tray waste line without a fixture trap shall connect to a standpipe for an automatic clothes washer drain.....
- ▶ Section 9 Vents
  - ▶ **New prohibited use** 918.8 Prohibited installations.
    - ▶ Air admittance valves.....shall not be installed on outdoor vent terminals for the sole purpose of reducing clearance to gravity air intakes or mechanical air intakes.

# 2020 Plumbing Code Changes

- ▶ Chapter 10 Traps, Interceptors and Separators
  - ▶ **New prohibited use** 1003.3.2 Food waste disposers restriction
    - ▶ A food waste disposer shall not discharge to a grease interceptor. **WHAT?!**
  - ▶ **New section** 1003.3.3 Additives

## **1003.3.3 Additives to grease interceptors.**

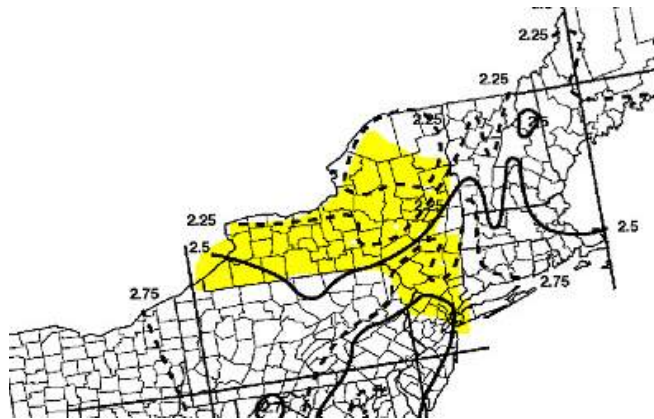
Dispensing systems that dispense interceptor performance additives to grease interceptors shall not be installed except where such systems dispense microbes for the enhancement of aerobic bioremediation of grease and other organic material, or for inhibiting growth of pathogenic organisms by anaerobic methods. Such microbial dispensing systems shall be installed only where the grease interceptor manufacturer's instructions allow such systems and the systems conform to ASME A112.14.6. Systems that discharge emulsifiers, chemicals or enzymes to grease interceptors shall be prohibited.





# 2020 Building Code Changes

- ▶ Section 16 Structural Design
  - ▶ New data required
  - ▶ 1603.1 Construction Documents



## 1603.1.9 Roof rain load data.

Rain intensity,  $i$  (in/hr) (cm/hr), shall be shown regardless of whether rain loads govern the design.



2020 Building Code of New York State 

CHAPTER 16 STRUCTURAL DESIGN

First Printing: Nov 2019

## 1603.1 General.

*Construction documents shall show the size, section and relative locations of structural members with floor levels, column centers and offsets dimensioned. The design loads and other information pertinent to the structural design required by Sections 1603.1.1 through 1603.1.9 shall be indicated on the construction documents.*

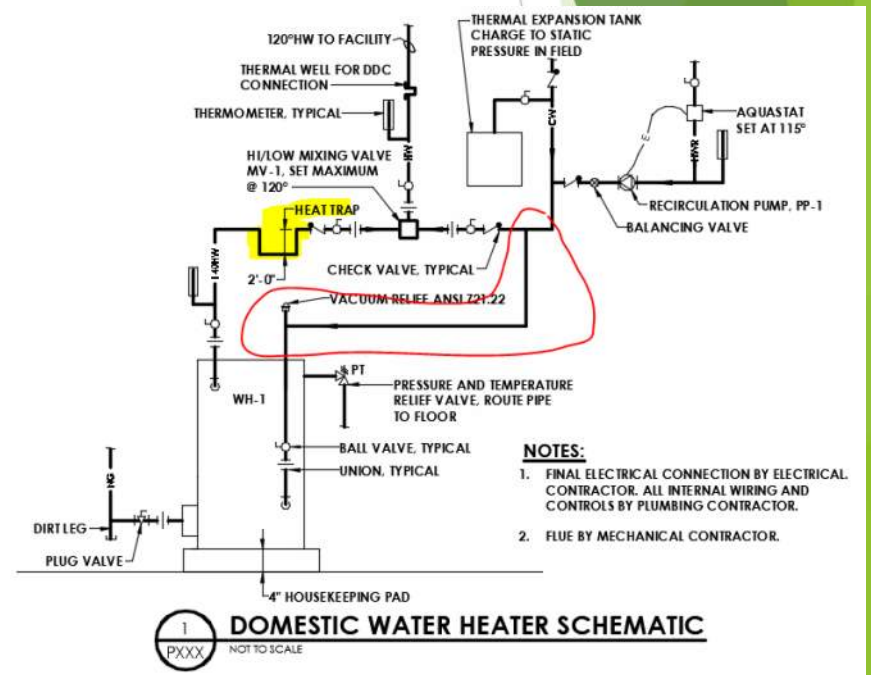
**Exception:** *Construction documents for buildings constructed in accordance with the conventional light-frame construction provisions of Section 2308 shall indicate the following structural design information:*

1. Floor and roof dead and live loads.
2. Ground snow load,  $p_g$ .
3. Basic design wind speed,  $V$ , miles per hour (mph) (km/hr) and allowable stress design wind speed,  $V_{ASD}$  as determined in accordance with Section 1609.3.1 and wind exposure.
4. Seismic design category and site class.
5. Flood design data, if located in flood hazard areas established in Section 1612.3.
6. Design load-bearing values of soils.
7. Rain load data.

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# 2020 Energy Code - Related to Plumbing

- ▶ Chapter 4 Commercial Energy Efficiency
  - ▶ Section C404 Service Water Heating
  - ▶ Updated section C404.3 Heat traps for hot water storage tanks
    - ▶ Storage tank-type water heaters and hot water storage tanks that have vertical water pipes connecting to the inlet and outlet of the tank shall be provided with integral heat traps at those inlets and outlets or shall have pipe configured heat traps in the piping connected to those inlets and outlets. Tank inlets and outlets associated with solar water heating system circulation loops shall not be required to have heat traps.



# 2020 Energy Code - Related to Plumbing

Not new...but worth repeating

- ▶ C404.5.1 Maximum allowable pipe length method.
  - ▶ The maximum allowable piping length from the nearest source of heated water to the termination of the fixture supply pipe shall be in accordance with the following. Where the piping contains more than one size of pipe, the largest size of pipe within the piping shall be used for determining the maximum allowable length of the piping in Table C404.5.1.



TABLE C404.5.1  
PIPING VOLUME AND MAXIMUM PIPING LENGTHS

NOMINAL PIPE SIZE (inches)	VOLUME (liquid ounces per foot length)	MAXIMUM PIPING LENGTH (feet)	
		Public lavatory faucets	Other fixtures and appliances
$\frac{1}{4}$	0.33	6	50
$\frac{5}{16}$	0.5	4	50
$\frac{3}{8}$	0.75	3	50
$\frac{1}{2}$	1.5	2	43
$\frac{5}{8}$	2	1	32
$\frac{3}{4}$	3	0.5	21
$\frac{7}{8}$	4	0.5	16
1	5	0.5	13
$1\frac{1}{4}$	8	0.5	8
$1\frac{1}{2}$	11	0.5	6
2 or larger	18	0.5	4

# 2020 Fuel Gas Code Reference Standards

- ▶ NFPA - Note that NFPA 54 - Fuel Gas Code is NOT a reference standard
- ▶ NFPA 30A Motor Fuel Dispensing updated from 2015 to 2018 version
- ▶ NFPA 37 Stationary Combustion Engines updated from 2015 to 2018 version
- ▶ NFPA 58 Liquefied Petroleum Gas Code updated from 2014 to 2018 version

# 2020 Fuel Gas Code Changes

- ▶ Chapter 4 Gas piping installations

- ▶ Section 401 General Service Water Heating

- ▶ **Updated Exceptions** 401.9 Identification

Each length of pipe and tubing and each pipe fitting, utilized in a fuel gas system, shall bear the identification of the manufacturer.

- ▶ Exceptions:

- ▶ 1. Steel pipe sections that are 2 feet and less in length and are cut from longer sections of pipe
      - ▶ Steel pipe fittings 2" and less
      - ▶ Where identification is provided on the product packaging or crating.
      - ▶ Where other approved documentation is provided.

# 2015 Fuel Gas Code Changes

- ▶ Chapter 4 Gas piping installations
  - ▶ Section 402.5 Noncorrugated stainless steel tubing.
  - ▶ **New section** Noncorrugated stainless steel tubing shall be sized in accordance with equations 4-1 and 4-2 of section 402.4 in conjunction with section 402.4.1, 402.4.2 or 402.4.3.
- ▶ Chapter 4 Gas piping installations
  - ▶ Section 403.5 Metallic tubing.
  - ▶ **New section** 403.5.2 Stainless steel tubing shall comply with ASTM A268 or ASTM A269.
- ▶ Chapter 4 Gas piping installations
  - ▶ Section 403.10.1 Pipe Joints
  - ▶ **“Pipe” separated from stainless steel tubing** Schedule 40 and heavier pipe joints shall be threaded, flanged, brazed, welded or assembled with press-connect fittings listed in accordance with ANSi LC4/CSA 6.32. Pipe lighter than Sch 40 shall be connected using press-connect fittings, flanges, brazing or welding.

# 2015 Fuel Gas Code Changes

- ▶ Chapter 4 Gas piping installations
  - ▶ Section 404.11 Protection against corrosion
    - ▶ Quite a bit of adjustment here.....please read this section.
      - ▶ Galvanized Zinc coating not deemed adequate
      - ▶ Allowable include: listed corrosion-resistant material, factory applied coating, cathodic protection (monitored and maintained).
      - ▶ 404.11.4 Protection of risers. Steel risers connected to plastic piping shall be cathodically protected by means of a welded anode, except where such risers are anodeless risers.
  - ▶ Section 411.4 Injection Bunsen-type burners
    - ▶ New exception.
      - ▶ Injection bunsentype burners used in laboratories and educational facilities shall be connected to the gas supply system by either a listed or unlisted hose.





# 2015 Fuel Gas Code Changes

- ▶ Chapter 4 Gas piping installations
  - ▶ Section 409.5 Appliance shutoff valve
  - ▶ **New allowance for location**

**409.5.1 Located within same room.**

*The shutoff valve shall be located in the same room as the appliance. The shutoff valve shall be within 6 feet (1829 mm) of the appliance, and shall be installed upstream of the union, connector or quick disconnect device it serves. Such shutoff valves shall be provided with access. Shutoff valves serving movable appliances, such as cooking appliances and clothes dryers, shall be considered to be provided with access where installed behind such appliances. Appliance shutoff valves located in the firebox of a fireplace shall be installed in accordance with the appliance manufacturer's instructions.*





# 2020 Fire Code Reference Standards

- ▶ NFPA 13 Installation of Sprinkler Systems updated from 2013 to 2016 version
- ▶ NFPA 14 Installation of Standpipes updated from 2013 to 2016 version
- ▶ NFPA 20 Installation of Fire Pumps updated from 2013 to 2016 version
- ▶ NFPA 55 Compressed and Cryogenic gases updated from 2013 to 2016 version
- ▶ NFPA 70 National Electric Code (NEC) is now 2017
- ▶ NFPA 72 Fire Alarm updated from 2013 to 2016 version
- ▶ NFPA 92 Smoke Control Systems is now 2015
- ▶ NFPA 96 Ventilation for Commercial cooking is referenced 2017
- ▶ NFPA 101 Life Safety Code updated from 2015 to 2018 version - Also check with CMS, DOH, Joint Commission, FGI, etc.

# 2020 Fire Code Changes (MEP related only)

- ▶ 903.2.1.1 Group A-1 (similar for A-3 and A-4).
  - ▶ An automatic sprinkler system shall be provided shall be provided throughout stories containing Group A-1 occupancies and throughout all stories from the Group A-1 occupancy to and including the levels of exit discharge serving that occupancy where one of the following conditions exists:
    - ▶ 1. The fire area exceeds 12,000 square feet (1115 m<sup>2</sup>).
    - ▶ 2. The fire area has an occupant load of 300 or more.
- ▶ **Updated section** 903.2.1.5 Group A-5

## 903.2.1.5.1 Spaces under grandstands or bleachers.

Enclosed spaces under *grandstands* or *bleachers* shall be equipped with an *automatic sprinkler system* in accordance with Section 903.3.1.1 where either of the following exist:

1. The enclosed area is 1,000 square feet (93 m<sup>2</sup>) or less and is not constructed in accordance with Section 1029.1.1.1.
2. The enclosed area exceeds 1,000 square feet (93 m<sup>2</sup>).

914.10	Drying rooms
914.11.1	Ambulatory care facilities
1029.6.2.3	Smoke-protected assembly seating
1103.5.1	Existing Group A occupancies
1103.5.2	Pyroxylin plastic storage in existing buildings
1103.5.3	Existing Group I-2 occupancies
1103.5.4	Existing Group I-2, Condition 2 occupancies
1103.5.4	Pyroxylin plastics

# 2020 Fire Code Changes (MEP related only)

## ▶ Section 903 Automatic Sprinkler Systems

### ▶ New requirement - i.e. basements

#### **903.2.2 Ambulatory care facilities.**

An *automatic sprinkler system* shall be installed throughout the entire floor containing an ambulatory care facility where either of the following conditions exist at any time:

1. Four or more care recipients are incapable of self-preservation.
2. One or more care recipients that are incapable of self-preservation are located at other than the level of exit discharge serving such a facility.

In buildings where ambulatory care is provided on levels other than the *level of exit discharge*, an *automatic sprinkler system* shall be installed throughout the entire floor as well as all floors below where such care is provided, and all floors between the level of ambulatory care and the nearest *level of exit discharge*, the *level of exit discharge*, and all floors below the *level of exit discharge*.

**Exception:** Floors classified as an open parking garage are not required to be sprinklered.

# 2020 Fire Code Changes (MEP related only)

## ▶ Section 903 Automatic Sprinkler Systems

### ▶ New adjustment to requirements - make sure your Architects catch this!!

#### 903.2.3 Group E.

An *automatic sprinkler system* shall be provided for Group E occupancies as follows:

1. Throughout all Group E *fire areas* greater than 12,000 square feet (1115 m<sup>2</sup>) in area.
2. The Group E fire area is located on a floor other than a level of exit discharge serving such occupancies.

**Exception:** In buildings where every classroom has not fewer than one exterior exit door at ground level, an automatic sprinkler system is not required in any area below the lowest level of exit discharge serving that area.

3. The Group E fire area has an occupant load of 300 or more.

# 2020 Fire Code Changes (MEP related only)

- ▶ Section 907 Fire Alarm and Detection Systems

- ▶ New trigger for fire alarm

**907.2.1 Group A.**

*A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group A occupancies where the occupant load due to the assembly occupancy is 300 or more, or where the Group A occupant load is more than 100 persons above or below the lowest level of exit discharge. Group A occupancies not separated from one another in accordance with Section 707.3.10 of the Building Code of New York State shall be considered as a single occupancy for the purposes of applying this section. Portions of Group E occupancies occupied for assembly purposes shall be provided with a fire alarm system as required for the Group E occupancy.*

# 2020 Fire Code Changes (MEP related only)

- ▶ Section 907 Fire Alarm and Detection Systems

- ▶ Changed verbiage from “delayed egress locks” to:

***907.3.2 Special locking systems.***

*Where special locking systems are installed on means of egress doors in accordance with Section 1010.1.9.7 or 1010.1.9.8, an automatic detection system shall be installed as required by that section.*

- ▶ Section 915 Carbon Monoxide Detection

- ▶ Section added to 2018 ICC specific to NYS law



# 2015 Building Code - (Related to Pools/Spas)

## Chapter 31 Special Construction

### Section 3109 Swimming Pools, Spas and Hot tubs

This a NY adjustment to ICC language - New York only



#### **[NY] 3109.1.1 Compliance with other codes.**

Swimming pools, wading pools, spas and hot tubs shall comply with this section and other applicable sections of this code. The requirements of this section and of the other applicable sections of this code shall be in addition to, and not in replacement of or substitution for, the requirements of other applicable federal, state and local laws and regulations, including, but not necessarily limited to:

1. The requirements of Subpart 6-1 (Swimming pools) of Title 10 of the Official Compilation of Codes, Rules and Regulations of the State of New York (NYCRR), where applicable (DOH 10 NYCRR 6-1).
2. The requirements of Section 8003 (Federal swimming pool and spa drain cover standard) of Title 15 of the United States Code (CPSC 15 USC 8003), where applicable.

# Audience Learning assessment

- ▶ 1) When did the most recent NYS Codes changes go into effect?
- ▶ 2) NYS is now using the ICC code with no state specific edits. True or False?
- ▶ 3) What version of ASHRAE 90.1 is currently being referenced?
- ▶ 4) What version of NFPA 13 Sprinkler Code is currently being referenced?
- ▶ 5) In Assembly Occupancy A-1, how many occupants does it take in a fire area to trigger need for sprinklers?







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# Questions and Answers

