

**Significant Changes to NFPA 13-2022**






This seminar and its content is not a formal interpretation issued pursuant to NFPA regulations. Any opinion expressed is the personal opinion of the author and presenter and does not necessarily present the official position of the NFPA and its Technical Committees.

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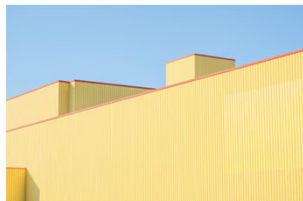

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**Building Height**

**3.3.21 Building Height.** For the purposes of seismic protection, the vertical distance from the grade plane to the average elevation of the highest roof surface. (AUT-HBS)

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**Site Class**

**3.3.201 Site Class.** A classification assigned to a site based on the types of soils present and their engineering properties as defined in Chapter 20 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*. [ASCE/SEI 7:11.2] (AUT-HBS)




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### Un-sprinklered Combustible Concealed Spaces

Addition to the list not requiring minimum area of sprinkler operation of 3,000 ft<sup>2</sup>:

#12. Exterior soffits, eaves, overhangs, and decorative frame elements complying with 9.2.1.19.



19.2.3.1.5.2



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### Room Design Method Using Light Hazard Criteria



19.3.1.1.1

■ Light hazard criteria for residential sprinklers applicable



Photo Provided by Rehau.com



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### Commodity Classification Ranking:



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Captain Obvious says, "Protection criteria for greater commodities permitted to protect lower class of commodities in the same arrangement"

20.3.1.3, 20.3.1.4



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## Working Plans List

- Reorganized
- Added information
- Provides comprehensive plans for:
  - AHJ
  - Installation Crew



28.1.3



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## Friction Loss for Systems Using Nitrogen

Pipe or Tube	C Value*
Galvanized steel or ductile iron	100
Black steel (dry systems including preaction)	100
Black steel (wet systems including drypipe)	120
Black steel (dry systems including preaction/ultra-compact)	120
Galvanized steel (dry systems including preaction)	100
Galvanized steel (wet systems including drypipe)	120
Galvanized steel (dry systems including preaction/ultra-compact)	120
Plastic of listed type	150
Chemical resistant pipe or ductile iron	150
Copper tube, brass or stainless steel	150
Aluminum conduit	140
Concrete	140



Photo Credit: General Air

- **Nitrogen Generator shall be listed**
- **Capable of maintaining nitrogen at 98% concentration**
- **Signage required to ensure nitrogen will always be provided in the future**
- **Still require system restoration within 30 minutes w/compressed air**

\*The authority having jurisdiction is permitted to allow other C values.  
†Minimum velocity shall be installed in accordance with 9.2.2.3.



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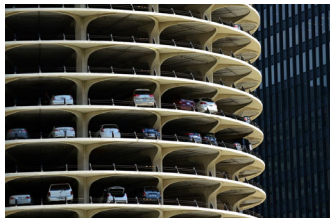
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## Parking Garages

- Automobile material have changed
- No longer an example of OH 1
  - Moved to OH2
- Need more data (FPRF)



4.3.3.1



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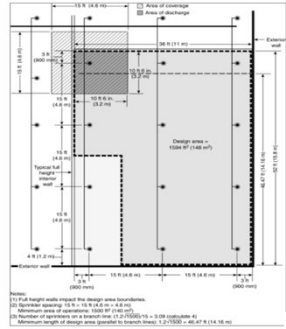
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### Area of Discharge

- Where defined by full-height wall assembly
- Other side of the wall is not counted towards total design area



28.2.4.2.6



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### Definitions – Added/Revised

- 3.3.28.4 Smooth Ceiling
- 3.3.73 Exterior Projection
- 3.3.215.4.6 Electrically Operated Sprinkler
- 3.3.195 Shadow Area (residential sprinklers)



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### Ordinary or Intermediate Temperature

Reworded to clarify that intermediate temperature sprinklers can be used throughout a building that does not have ambient temperatures greater than 100 degrees



Table 7.2.4.1 Temperature Ratings, Classifications, and Color Codings

Maximum Ceiling Temperature		Temperature Rating		Temperature Classification	Color Code	Glass Bulb Colors
F	C	F	C			
100	38	135-170	57-77	Ordinary	Uncolored or black	Orange or red
150	66	175-225	79-107	Intermediate	White	Yellow or green
225	107	250-300	121-149	High	Blue	Blue
300	149	325-375	163-191	Extra high	Red	Purple
375	191	400-475	204-236	Very extra high	Green	Black
475	246	500-575	266-302	Ultra high	Orange	Black
625	329	650	343	Ultra high	Orange	Black

9.4.2.1



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### Porte-cocheres

- Sprinklers are required when located directly below floors intended for occupancy



9.2.3.2.1



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### Bathrooms Under Stairs

- Do not require sprinklers when separated from the stairs by fire-resistive construction



9.2.4.1.1.1



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### Balconies and Decks Serving Dwelling Units

- Added a section to aligns with IBC and 13R
- Type V construction



9.3.20



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### Small Temporarily Occupied Enclosures

- Do not require sprinklers when:
- Do not extend to the ceiling
  - No storage
  - Maximum: 24 ft<sup>2</sup>



9.3.20



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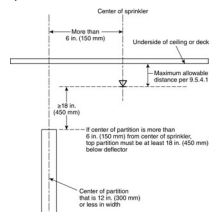
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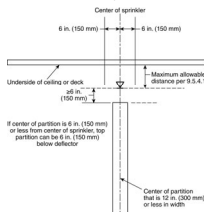
### Partitions in OH Occupancies

Sprinkler located to the side:



10.2.7.3.2.3

Sprinkler located directly above:



10.2.7.3.2.4



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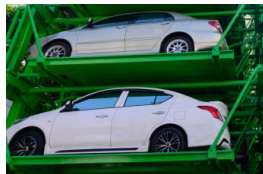
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### Sidewall Spray Sprinklers

- Annex language added for car stackers
- Allowance to install sidewall sprinklers:
- Under cars in car stackers
  - Cars stacked vertically placed under each level of cars



10.3.2



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### Concealed Sprinklers in Beams

- Concealed sprinklers:
  - Increased from 4 in. to 14 in.-deep beam



Photo credit: Globe

12.1.8.1.2



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### Protection of Piping Subject to Mechanical Damage

- Must provide nail plates when pipe other than steel is run through wood or metal studs:
- Steel shield plates:
  - Where the face of piping is less than 1.25 in from nearest edge of member
  - Minimum thickness of .0575 in. (No. 16 gauge)
  - Cover the area of the pipe where the member is notched and bored



16.4.4



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### Pipe Schedule Nameplate

- Installing contractor must provide
- Permanently marked weatherproof or rigid plastic sign
- Corrosion-resistant wire, chain, or other approved means
- Placed at the corresponding system riser


29.5

**Table 27.5.2.2.1 Light Hazard Pipe Schedules**

Steel	
1 in. (25 mm)	2 sprinklers
1½ in. (32 mm)	3 sprinklers
1½ in. (40 mm)	5 sprinklers
2 in. (50 mm)	10 sprinklers
2½ in. (65 mm)	30 sprinklers
3 in. (80 mm)	60 sprinklers
3½ in. (90 mm)	100 sprinklers
4 in. (100 mm)	See Section 4.5

**Table 27.5.3.4 Ordinary Hazard Pipe Schedule**

Steel	
1 in. (25 mm)	2 sprinklers
1½ in. (32 mm)	3 sprinklers
1½ in. (40 mm)	5 sprinklers
2 in. (50 mm)	10 sprinklers
2½ in. (65 mm)	20 sprinklers
3 in. (80 mm)	40 sprinklers
3½ in. (90 mm)	65 sprinklers
4 in. (100 mm)	100 sprinklers
5 in. (125 mm)	160 sprinklers
6 in. (150 mm)	275 sprinklers
8 in. (200 mm)	See Section 4.5



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### Waterflow Alarm Devices

#### Mechanical

■ 5 minutes



7.7

#### Electrical

■ 100 seconds



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### ESFR in Light and Ordinary Hazard

- For retrofits
- Light and Ordinary Hazard
- Utilize Spray Sprinkler Guidance for:
  - Protection Areas and Maximum Spacing for Light Hazard
  - Spacing
  - Obstruction Criteria



14.2.7



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### ESFR Isolated Obstructions

14.2.11.2

Sprinklers not required for isolated noncontiguous obstruction :

- ≤ 1.5 in. in width located horizontally a minimum of 12 in. below deflector
- ≤ 6 in. in width and located a minimum of 6 in. horizontally from the sprinkler
- ≤ 24 in. in width and a minimum of 12 in. horizontally from the sprinkler



High-piled storage is not physically separated from an adjacent light or ordinary hazard area:

- Criteria applies to sprinkler located 6 ft. horizontally of any high-piled storage



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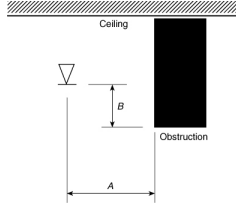
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### ESFR General Continuous Obstructions

- Sprinklers not required for isolated noncontiguous obstruction :
- ≤ 1.5 in. in width located horizontally a minimum of 12 in. below deflector
  - ≤ 6 in. in width and located a minimum of 6 in. horizontally from the sprinkler
  - ≤ 24 in. in width and a minimum of 12 in. horizontally from the sprinkler
- ESFRs shall be arranged with respect to the bottom chord of bar joist or open truss:
- Bottom cord is ≤ 6 in. in width, located a minimum of 6 in. horizontally from nearest edge of bottom cord
  - Bottom cord is ≤ 24 in. in width, located a minimum of 12 in. horizontally from nearest edge of bottom cord



14.2.11.3



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*Thank You!*

[bcaputo@firesprinkler.org](mailto:bcaputo@firesprinkler.org)



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