

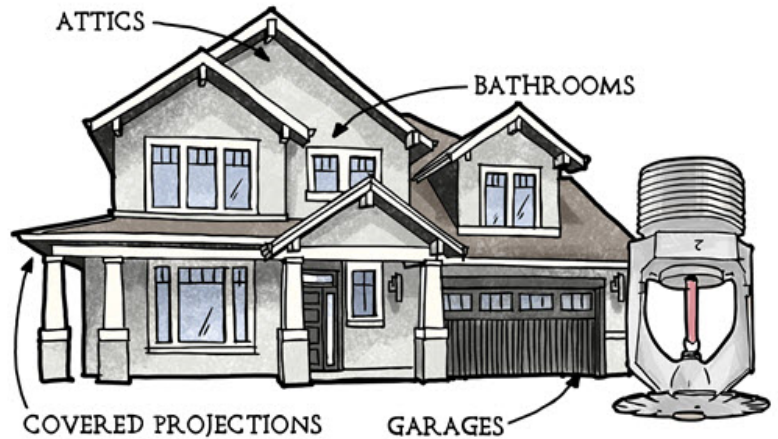
SUMMARY OF DIFFERENCES

NFPA 13, NFPA 13R, & NFPA 13D

November 2020: Unlike NFPA 13, NFPA 13R works to make the installation of the sprinkler system more affordable and accessible for residential occupancies by targeting the areas of highest fire risk to life safety with sprinkler systems. Swapping NFPA 13 and NFPA 13R is not simply a one-for-one exchange, as their goals are overall quite different. NFPA 13D, by extension, is the least restrictive standard and intended for one or two family residential properties.

References to the building code are to the International Building Code, as it's typically the most prevalent used in the US. As always, there's far more detail to many of these requirements than can be summarized in two pages - so be sure to use the supplied section references to gather more information on specifics for your project.

Find more articles like this at www.MeyerFire.com.



CODE PLANNING

	NFPA 13	NFPA 13R	NFPA 13D
Objective	Life Safety + Property Protection [NFPA 13 2002-2019 Section 1.2.1]	Life Safety + Some Property Protection [NFPA 13R 2002-2019 Section 1.2]	Life Safety Only [NFPA 13D 2002-2019 Section 1.2.1]
Building Height Increases Permitted?	Yes [IBC Table 504]	Only for R-Occupancy [IBC Table 504]	No
Building Area Increases Permitted?	Yes [IBC Table 506.2]	No [IBC Table 506.2]	No [IBC Table 506.2]
Permitted in One & Two-Family, or Group R-3 & R-4 Condition 1 and townhouse R-Occupancies?	Yes [IBC 903.1.1]	Yes [IBC 903.1.2]	Yes [IBC 903.3.1.3]
Permitted in R-Occupancies up to 4 stories?	Yes [IBC 903.1.1]	Yes [IBC 903.1.2]	No [IBC 903.1.2]
Permitted in Mixed Use / Non-Residential Occupancies?	Yes [IBC Table 508.4, 508.3.1]	No [IBC 903.1.2]	No [IBC 903.1.2]

OMITTED AREAS

	NFPA 13	NFPA 13R	NFPA 13D
Omit sprinklers in Attics?	If non-comb., filled with non-comb. insulation, or meets other exceptions. [NFPA 13 2002 8.14.1.2, 2007-2016 8.15.1.2, 2019 9.2.1]	Yes [NFPA 13R 2002 6.8.5, 2007 6.9.6, 2010-19 6.6.6]	Yes [NFPA 13D 2007-10 8.6.5, 2019 8.3.5]
Omit sprinklers in Unit Bathrooms less than 55 sqft?	Yes, if bathroom has 15-min. non-combustible lining. [NFPA 13 2002 8.14.8.1, 2007-16 8.15.8.1.1, 2019 9.2.4.1.1]	Yes [NFPA 13R 2002 6.8.2, 2007 6.9.2, 2010-19 6.6.2]	Yes [NFPA 13D 2007-10 8.6.2, 2013-19 8.3.2]

Omit sprinklers in Closets in Hotel or Motel w/ Non-Combustible Surface less than 24 sqft, or Hospital Less than 6 sqft? ¹	Yes [NFPA 13 2002 8.14.8.2, 2007-16 8.15.8.2, 2019 9.2.4.2]	Yes [NFPA 13R 2002 6.8.3, 2007 6.9.3, 2010-19 6.6.3]	N/A
Omit sprinklers in Closets w/ Non-Combustible Surface less than 24 sqft? ¹	No, Required	Yes [NFPA 13R 2002 6.8.3, 2007 6.9.3, 2010-19 6.6.3]	Yes [NFPA 13D 2007-10 8.6.3, 2013-19 8.3.3]
Omit sprinklers in Closets on Exterior Balconies or Breezeways & Exterior Access? ¹	No, Required	Yes [NFPA 13R 2002 6.8.6, 2007 6.9.7, 2010-19 6.6.7]	Yes [NFPA 13D 2013-19 8.3.8]
Omit sprinklers in Concealed Spaces?	Yes, if non-comb., filled with non-comb. insulation, or meets other exceptions ¹ [NFPA 13 2002 8.14.1.2, 2007-2016 8.15.1.2, 2019 9.2.1]	Yes [NFPA 13R 2002 6.8.5, 2007 6.9.6, 2010-19 6.6.6]	Yes [NFPA 13D 2007-10 8.6.5, 2013-19 8.3.5]
Omit sprinklers in Concealed Spaces with only Ventilation Equipment? ¹	Required unless meets concealed space exceptions. [See NFPA 13 2002 8.14.1.2, 2007-2016 8.15.1.2]	Yes [NFPA 13R 2002 6.8.5, 2007 6.9.6, 2010-19 6.6.6]	Yes [NFPA 13D 2007-10 8.6.5, 2013-19 8.3.5]
Omit sprinklers in Elevator Machine Rooms?	No, required unless exceptions are met. [See 13 2013-2016 8.15.5.3, 2019 9.3.6.3]	Yes [NFPA 13R 2002 6.8.5, 2007 6.9.6, 2010-19 6.6.6]	Yes [NFPA 13D 2007-10 8.6.5, 2013-19 8.3.5]
Omit sprinklers in Garages or Carports?	No, Required	No, Required	Yes [NFPA 13D 2007-10 8.6.3, 2013-19 8.3.4]
Omit sprinklers in Penthouse Equipment Rooms?	No, Required	Yes [NFPA 13R 2002 6.8.5, 2007 6.9.6, 2010-19 6.6.6]	Yes [NFPA 13D 2007-10 8.6.5, 2013-19 8.3.5]
Omit sprinklers in Porches?	No, required depending on construction type.	Yes [NFPA 13R 2002 6.8.5, 2007 6.9.6, 2010-19 6.6.6]	Yes [NFPA 13D 2007-10 8.6.3, 2013-19 8.3.4]

HYDRAULIC CALCULATIONS

	NFPA 13	NFPA 13R	NFPA 13D
Max Number of Adjacent Calculated Residential Sprinklers	Four ¹ [NFPA 13 2002 11.2.3.5.1, 2007-16 11.3.1.1]	Four ¹ [NFPA 13R 2007 6.7.1.2, 2007 6.8.1.2, 2010-19 7.1.1.3]	Two ¹ [NFPA 13D 2002-10 8.1.2, 2013-19 10.2]
Hose Allowance Required?	Yes [NFPA 13 2002 11.2.3.5.5, 2007 11.3.1.5, 2010-16 11.3.1.6]	No [NFPA 13R 2007 A.6.8.2, 2010-19 A.7.2]	No
Include Domestic Demand for Combined Service Without Automatic Domestic Shutoff?	Yes, for Service Under 4-inch [NFPA 13 2013-16 24.1.3.3, 2019 5.1.3.3]	Yes [NFPA 13R 2002 6.5.5, 2007 6.6.5, 2010 9.5, 2013-16 9.6, 2019 9.3.1]	Yes, when serving more than one dwelling unit [NFPA 13D 2007 6.3, 2010-19 6.5.2]
Minimum Residential Density	New: 0.10 gpm/sqft Existing: Listing of Sprinkler [NFPA 13 2002 11.2.3.5.2, 2007 11.3.1.2, 2010-16 11.3.1.3]	0.05 gpm/sqft or listing of sprinkler [NFPA 13 2002 6.7.1.1.2.2, 2007 6.8.1.1.1.2, 2010-19 7.1.1]	0.05 gpm/sqft or listing of sprinkler [NFPA 13D 2002-10 8.1.1, 2013-19 10.1.1]
Calculation Method	NFPA 13 Hydraulic Calculations	NFPA 13 Hydraulic Calculation	NFPA 13D Worksheet Calculations

¹ Refer to the applicable code section(s) for specifics on requirements