

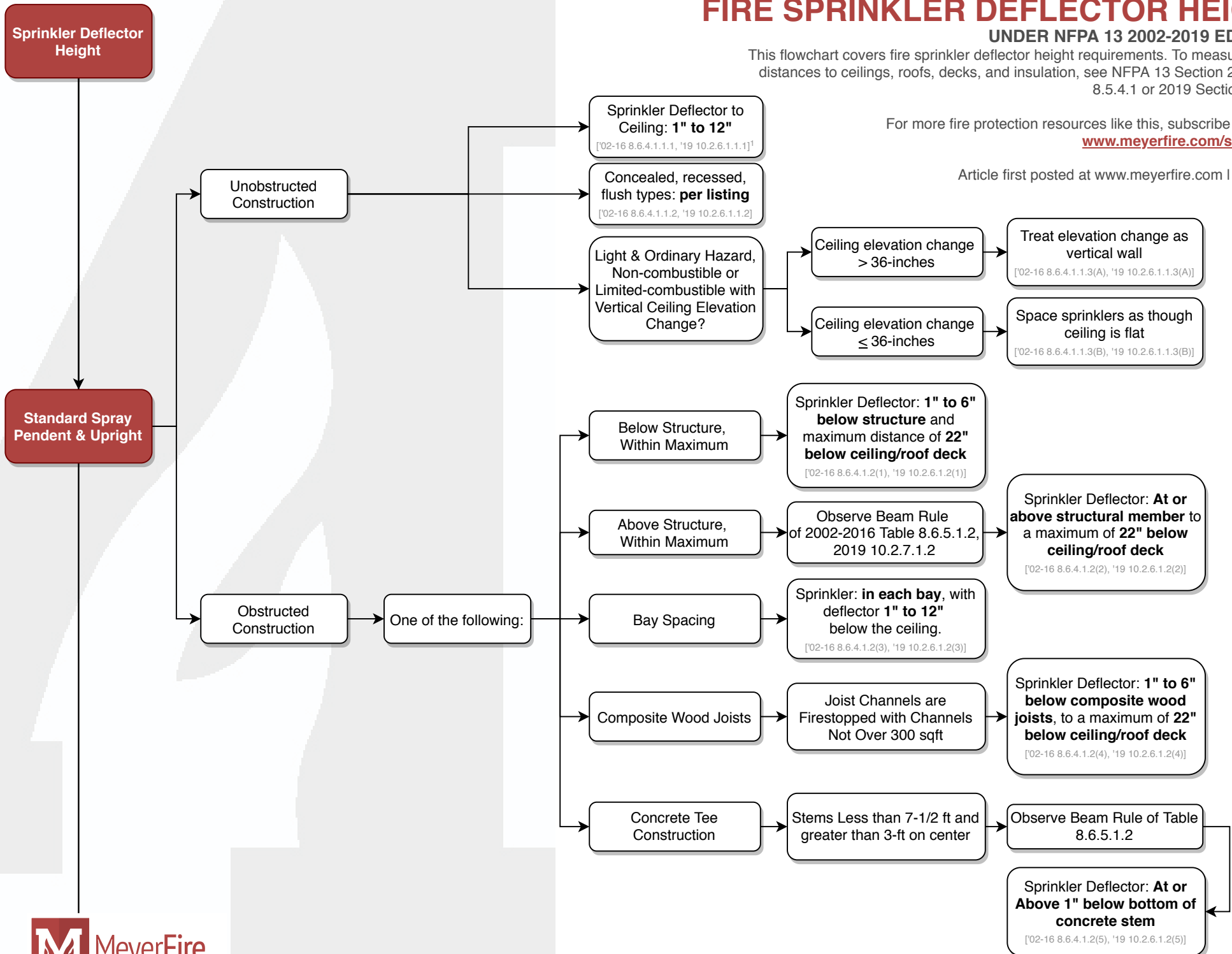
# FIRE SPRINKLER DEFLECTOR HEIGHT

UNDER NFPA 13 2002-2019 EDITIONS

This flowchart covers fire sprinkler deflector height requirements. To measurement of distances to ceilings, roofs, decks, and insulation, see NFPA 13 Section 2002-2016 8.5.4.1 or 2019 Section 9.5.4.1.

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¹ For areas where ceiling elevation changes See NFPA 13 Section 2002-2016 8.6.4.1.1.3 or 2019 10.2.6.1.1.3 for spacing allowances.

**Standard Spray,  
Extended Coverage  
Sidewall**

Noncombustible or  
limited-combustible  
ceiling?

No

**Sprinkler Deflector:  
4" to 6" from ceilings**  
[02-16 8.7.4.1.1.1, 8.9.4.1.1.1,  
'19 10.3.5.1.1.1, 11.3.5.1.1.1]

Yes

**Sprinkler Deflector: 4" up  
to 18" from ceilings  
where listed for use**  
[02-16 8.7.4.1.1.2, 8.9.4.1.1.2,  
'19 10.3.5.1.1.2, 11.3.5.1.1.2]

**Extended Coverage  
Upright & Pendent**

Unobstructed  
Construction

**Sprinkler Deflector to  
Ceiling: 1" to 12"**  
[02-16 8.8.4.1.1.1, '19 11.2.4.1.1.1]

Concealed, recessed,  
flush types: **per listing**  
[02-16 8.8.4.1.1.2, '19 11.2.4.1.1.2]

Where listed otherwise:  
**per listing**  
[02-16 8.8.4.1.1.3, '19 11.2.4.1.1.3]

Light & Ordinary Hazard  
Ceiling Elevation  
Changes

See NFPA 13 2002-2016  
8.8.4.1.1.4, 2019 11.2.4.1.1.4

Obstructed  
Construction

One of the following:

Below Structure,  
Within Maximum

**Sprinkler Deflector: 1" to 6"  
below structure** and  
maximum distance of **22"  
below ceiling/roof deck**  
[02-16 8.8.4.1.2(1), '19 11.2.4.1.2(1)]

Above Structure,  
Within Maximum

Observe Beam Rule  
of Table 2002-16 8.8.5.1.2,  
2019 11.2.5.1.2

**Sprinkler Deflector: At or  
above structural member to  
a maximum of 22" below  
ceiling/roof deck**  
[02-16 8.8.4.1.2(2), '19 11.2.4.1.2(2)]

Bay Spacing

**Sprinkler: in each bay,** with  
deflector **1" to 12"**  
below the ceiling.  
[02-16 8.8.4.1.2(3), '19 11.2.4.1.2(3)]

Listed for Use

Where listed otherwise:  
**per listing**  
[02-16 8.8.4.1.2(4), '19 11.2.4.1.2(4)]

**CMSA**

Unobstructed Construction

Sprinkler Deflector to Ceiling: **6" to 8"**  
[02-16 8.11.4.1.1, '19 13.2.7.1.1]

Obstructed Construction

One of the following:

Distance from Ceiling

Sprinkler Deflector: **6" to 12" below ceiling**  
[02-16 8.11.4.1.2(1), '19 13.2.7.1.2(1)]

Composite Wood Joists

Sprinkler Deflector: **1" to 6" below wood joists or composite wood joist, to a maximum of 22" below ceiling/roof deck**  
[02-16 8.11.4.1.2(2), '19 13.2.7.1.2(2)]

Concrete Tee Construction

Stems Less than 7-1/2 ft and greater than 3-ft on center

Sprinkler Deflector: **At or Above 1" below bottom of concrete stem**  
[02-16 8.11.4.1.2(3), '19 13.2.7.1.2(3)]

Observe Beam Rule of Table 2002-2016 8.11.5.1.2, 2019 13.2.8.1.2

**ESFR**

Obstructed Construction

No

Pendent K-14

Sprinkler Deflector: **6" to 14" below ceiling**  
[02-16 8.12.4.1.1, 8.12.4.1.2, '19 14.2.10.1.1, 14.2.10.1.2]

Pendent K-16.8

Yes

Pendent K-22.4

Sprinkler Deflector: **6" to 18" below ceiling**  
[02-16 8.12.4.1.3, '19 14.2.10.1.3]

Pendent K-25.2

Branch Lines permitted across beams, but sprinklers shall be located in bays and not under beams.  
[NFPA 13 8.12.4.1.6]

Upright K14

Sprinkler Deflector: **3" to 12" below ceiling**  
[02-16 8.12.4.1.4, .5, '19 14.2.10.1.4, .5]

Upright K16.8