

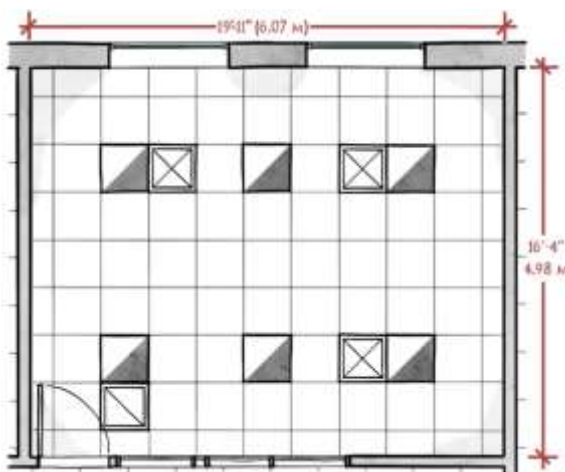
# SPRINKLER LAYOUT FOR CONFERENCE ROOM

UNDERSTANDING SPRINKLER LAYOUT SERIES BY MEYERFIRE UNIVERSITY | NOVEMBER 2022

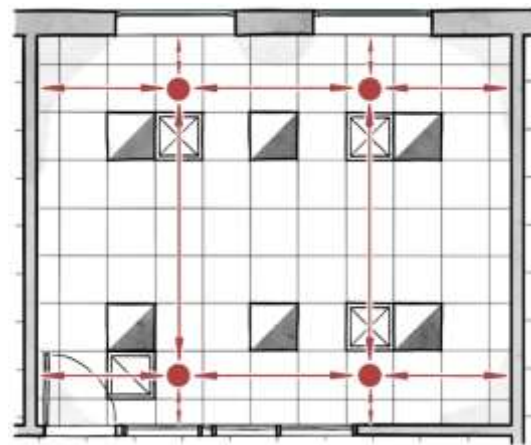
## SUMMARY

In this segment we provide an example sprinkler layout using a conference room. The building is a 3-story office, Tyle II-B, new construction, with suspended acoustical ceiling tiles and open-web steel bar joists above. Sprinkler are required to be center-of-tile. Here is a synopsis of the steps:

- Step #1: **Where is protection required:** Answer is below-ceiling only. Above-ceiling space is allowed to be omitted by NFPA 13-2022 §9.2.1.2.
- Step #2: **Hazard Classification:** This is an office space (conference room), so it would be Light Hazard by NFPA 13-2022 Chapter 4.
- Step #3: **Obstructed or Unobstructed:** This would be an example of Unobstructed due to the continuous flat ceiling.
- Step #4: **Combustible or Noncombustible Construction:** This is non-combustible, since we have steel bar joists and noncombustible ceiling.
- Step #5: **Pipe Schedule or Hydraulically Calculated:** This is new construction, so the system will be hydraulically calculated.
- Step #6: **Sprinkler Type & Orientation:** Sticking with standard spray sprinklers (designer choice), and pendants for protection below the ceiling.
- Step #7: **Find the Limits:** NFPA 13 has guidance for this situation in §10.2.4.2.1 for Protection Area (225 sqft / 20.4 sqm) and 15-ft (4.6m) spacing.
- Step #8: **Position the Sprinklers:** This is best seen in the video. We determine the quantity by taking the area of the room and dividing it by the protection area per sprinkler, which is  $325 \text{ sqft} / 225 \text{ sqft} = 1.4$  sprinklers (or  $30.2 \text{ sqm} / 20.4 \text{ sqm} = 1.4$  sprinklers). This rounds up to need 2 sprinklers for the room. However, the spacing to the north and south walls doesn't work for this space and the project requirements, even with the Small Room Rule. Adding a second row of sprinklers and adjusting for conflicts in the room allows us to find a workable layout.



Empty Room with Dimensions



One Workable Sprinkler Layout for the Room

## CODE/STANDARD REFERENCES



NFPA 13 – 2022: 3.3.206 Definition of Small Room

NFPA 13 – 2022: 4.3.2 Light Hazard

NFPA 13 – 2022: 9.1.1 Sprinklers Required throughout unless allowed by the standard

NFPA 13 – 2022: 9.2.1.2 Sprinklers can be Omitted in Noncombustible Concealed Spaces

NFPA 13 – 2022: 10.2.4 Protection Areas per Sprinkler (Standard Pendant and Upright Spray Sprinklers)

NFPA 13 – 2022: 10.2.5.2.3: Small Room Rule

NFPA 13 – 2022: 30.4 Revamping of Pipe Schedule Systems

## VIDEO LINK

[www.meyerfire.com/university/layout-example-conference-room](http://www.meyerfire.com/university/layout-example-conference-room)

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