

# Common Fire Sprinkler Deficiencies Found in New Building Construction

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This month's Lessons Learn Bulletin focuses on common fire sprinkler deficiencies found in new building construction.



**Lesson Learned Statement:** Fire sprinklers are widely recognized as the single most effective method for preventing the spread of fire in its early stages, before it can cause serious injury to people and significant loss of property. Sprinkler system design and installation must comply with the requirements of the NFPA 13 Standard, Installation of Sprinkler Systems.

**Discussion:** Fire sprinkler systems have had a dramatic influence in the designing of new buildings when designed and installed per the NFPA 13 standard. In this bulletin we will discuss a few common fire sprinkler deficiencies found in new building construction projects that can have significant impact on a sprinkler system's effectiveness.

The first deficiency has to do with improper coverage under fixed obstructions. NFPA 13, Chapter 8, requires sprinkler protection under fixed obstructions over 4 feet wide, such as duct work and open grate flooring. Environmental Health and Safety continues to find unprotected duct work on new construction projects at the time of building commissioning. In several cases, this is due to additions being made to the original duct design or ducts being insulated.

The second deficiency has to do with common suspended obstructions; they include restroom toilet stall partitions, way-finding signs, privacy curtains and track, just to name a few. A sprinkler head is considered to be obstructed when an object prevents the discharge pattern from fully developing or reduces the sprinkler density. In either case, the reduction in sprinkler density and pattern will allow a fire to grow. In almost every case, these types of deficiencies are created after the installation of the fire sprinkler system. Coordination between the sprinkler drawings and equipment installations must be addressed early in the project to resolve these issues.

The third deficiency has to do with unprotected ceiling pockets that are greater than 36 inches deep. In most cases these conditions are often overlooked by the installing fire sprinkler contractor and usually corrected when pointed out.

NFPA 13, Chapter 8 is a valuable resource to assist you with overcoming these types of deficiencies. Regardless of the types of conditions found, they can be difficult to correct, very costly and affect the building from being occupied. In addition, if these deficiencies are not addressed during construction, they will become regulatory problems that must be addressed by the institution.

If you have questions concerning this bulletin or need assistance, please contact Environmental Health and Safety's Fire and Life Safety group at 713-792-2888 or email us at [askEHS@mdanderson.org](mailto:askEHS@mdanderson.org).