

Ceiling Clearance

Keeping Storage away from ceilings and sprinkler heads

Fire inspectors often encounter businesses that have racking or shelving running in an otherwise open area to create aisle ways. While the face of the racking is handy for items frequently used or for sale items for customers, many have discovered the top side of the racking is perfect for storage. Inspectors typically encounter boxes of goods or files. There usually isn't a problem with storage of this sort so long as it adheres to some safety standards.

You may be wondering what sort of fire violations could possibly come from some simple storage. The fire violation exists because storage of this sort may cause a problem for firefighters attempting to attack a fire *indirectly*. *Indirect fire attack* is a fire attack method where a firefighter operating a fire hose nozzle banks a stream of water off of an object to "shower" the fire in water. In storage rooms or stores with rack dividers, firefighters may opt to bank a stream of water off the ceiling into an aisle on the other side. The decision to attack a fire in the manner is dependent upon fire conditions.

Storage too close to the ceiling may cause problems for firefighters as it affects how they attack the fire. A delay in attack means more opportunity for a fire to grow and for damage to increase. Storage on isle racking should maintain an 18 inch clearance from the ceiling to allow for an *indirect attack*. At this point, you may have a question about exterior walls as you may have considered that you don't need to bank water over a rack against an outside wall.



Racks against outside walls are treated a little differently than racks used to create aisle ways. You are allowed to stack storage to the ceiling on exterior walls in the absence of sprinkler heads. Sprinkler systems are intended to extinguish fire below a sprinkler head. Sprinkler heads are manufactured with what is called a *deflector*. A stream of water shot out of a sprinkler pipe hits a *deflector* that causes the stream to break up and create (in most cases) a cone of water that "rains"

down over a fire. If storage is above the level the cone of water is able to extinguish, it must be removed to ensure the sprinkler system can extinguish a fire as intended.



It's also important to keep in mind that emergency lighting typically exists on exterior walls. Inspectors will be keeping an eye on storage against an outside wall, sprinkled or non-sprinkled, to ensure that it does not interfere with emergency lighting or exit lighting. Inspectors have found emergency lighting units completely hidden behind stacked boxes rendering them useless at times of emergencies. Determination on whether storage is affecting emergency lights lies with the fire inspector.

The fire department understands that storage comes at a premium for businesses and usually do not have an issue with well-organized and properly stored items. If you have questions about storage or are concerned your storage may be interfering with emergency operations, please feel free to contact the fire department to inquire further.