



Clark County Fire Prevention

Mission Statement: "To provide the highest level of fire protection and related services"

105.8.f.2

TITLE: REQUIREMENTS FOR A NEW TENANT IMPROVEMENT SPRINKLER SYSTEM SERVING A LIGHT OR ORDINARY HAZARD OCCUPANCY IN ACCORDANCE WITH THE 2002 EDITION OF NFPA 13

SCOPE: Fire sprinklers added to existing fire sprinkler systems shall comply with this guideline, NFPA 13 - 2002 Edition and the 2005 Clark County Fire Code.

PURPOSE: To standardize the fire department requirements relating to the addition of fire sprinklers for tenant improvements.

SPECIFICATIONS AND REQUIREMENTS

At the time of permit application, three (3) sets of plans, drawn to an indicated scale and legible, must be submitted for review and approval. Permit fees for this type of submittal vary. The standard permit fee is due upon submittal. Please see the **Clark County Fire Department Permit and Service Fee Schedule** for specific information. Please check our website for plan status. Any additional fees will be indicated on the website. Once the plans have been approved and any outstanding fees have been paid, an inspection can be scheduled.

Our website is <http://www.accessclarkcounty.com/fire/firedept.htm>. To check on plan status, click on the "Plan Status" button and follow the instructions. To schedule an inspection, click on "Services" in the teal strip on the top. On the left side under **Inspection** click on "Fire Inspection" and follow the instructions.

Tenant improvement sprinkler systems are those systems that are required for new work in an existing building that creates new rooms or areas that require additional protection. This guideline deals only with those tenant improvements that create rooms and/or areas having a Light or Ordinary Hazard Occupancy classification.

For a tenant improvement plan, the following information is required:

- The plan must show a top view of the new sprinklered area on a common architectural scale, ie 1/4", 1/8" 3/16", etc.
- Verify that the area under consideration is a Light Hazard or Ordinary Hazard occupancy, in accordance with Section A.5.1 of NFPA 13.
- Verify that the sprinkler legend is accurate, and indicates the model, id number, response type (QR required for Light Hazard), sprinkler orientation, temperature rating, orifice size (minimum 1/2" required), k factor, and quantity of each sprinkler head installed.
- Verify correct spacing of fire sprinkler heads. In Light Hazard, spacing of heads is 15 feet maximum between heads. The distance to walls must be equal to or less than 1/2 of the

allowable distance between sprinklers (except for small room rule, where a distance of 9 feet is allowed to one wall). The maximum total coverage area for a sprinkler in a Light Hazard Occupancy is 225 square feet. In Ordinary Hazard, the spacing of heads and the distances to the walls are the same as for Light Hazard, except that the total coverage area per sprinkler is reduced to a maximum of 130 square feet. See Section 8.6.2 of NFPA 13.

- Concealed combustible spaces are considered Light Hazard Occupancies per Section 8.14.1.3 of NFPA 13, with spacing requirements of heads in concealed spaces to be in accordance with Table 8.6.2.2.1.
- Tenant improvements that utilize standard spray heads (1/2" orifice) and that comply with the spacing criteria above do not require supporting hydraulic calculations.
- Tenant improvements that utilize extended coverage heads exceeding the spacing criteria above require supporting hydraulic calculations in order to prove that the minimum required flow is provided to each sprinkler head.
- Verify that the hanger detail indicates a code compliant hanger assembly. Verify that the attachment to the structure is as specified in Section 9.1 of NFPA 13 or complies with a manufacturer information sheet. Where the method of attachment is specific to a manufacturer product, verify that the manufacturer name and product model number is indicated on the plan. Verify that the rod size is correct in accordance with Table 9.1.2.1 of NFPA 13. Verify that the hanger assembly is capable to support the correct diameter of pipe for which the assembly is intended.
- If there are multiple hanger details, verify that each detail is labeled and that each hanger on the plan is also labeled to identify which hanger assembly is proposed for each hanger location.
- Verify correct spacing of hangers. Hanger spacing is dependent on pipe material and diameter in accordance with Table 9.2.2.1 of NFPA 13. All arm-overs exceeding two feet in horizontal length require a hanger. Where the system pressure exceeds 100 psi, arm-overs exceeding 12 inches in horizontal length require a hanger.
- Verify the system pressure for the shell system. If the system pressure exceeds 100 psi, verify that hangers comply with Section 9.2.4.3 and Section 9.2.3.5.2 of NFPA 13.
- Pipe sizes for sprinkler systems protecting tenant improvements must be in accordance with the pipe schedule method for the occupancy; Section 14.5.2 for Light Hazard, and Section 14.5.3 for Ordinary Hazard.
- If the system design for the tenant improvement will involve the addition of new mains, cross mains, and/or branchlines 2.5 inches or greater in diameter, verify that seismic braces have been provided in accordance with Section 9.3.5.2 of NFPA 13.
- In accordance with the amendments to the Fire Code, an interior horn/strobe device is required for each building and is also required in each tenant space in a multi-tenant building, for the purpose of occupant sprinkler notification. If the space being protected is either the entire floor area of a building or a separate tenant within a multi-tenant building, then the installation of an interior horn/strobe needs to be indicated.
- In accordance with the Fire Code, an exterior horn/strobe is required. Indicate on the plan that the system will be annunciated on the exterior by an exterior horn/strobe. Such horn/strobe shall be located above the Fire Department Connection.
- Indicate on the plans whether the existing system is a wet or dry system.
- Indicate on the plans the requirements for a hydrostatic test, as necessary. See Section 16.2.1 of NFPA 13.