

21 10 00 Water Based Fire Suppression System

Revision 01/04/19

Purpose:

The Architect and/or Engineer shall incorporate the Rice specific requirements indicated in this standard's section into their design. The Architect and/or Engineer shall further produce project specifications in line with industry standards that are updated to reflect these Rice specific requirements.

1. General Requirements

- a. All Rice University Buildings must be provided with an automatic sprinkler system, unless directed otherwise. Remodels should be upgraded with sprinkler systems.
- b. A hydraulic analysis needs to be done on each site to determine if a fire pump is required. Typically one and two story buildings do not require a fire pump. Typically four stories and higher do require a fire pump.
- c. If a fire pump is required, it will also need:
 - i. A break tank with a minimum of 2,500 gallons
 - ii. Bypass line in case of pump or power failure.
 - iii. Two sources for electrical power
 1. Two independent and isolated electrical feeds
 2. One feed and a backup life-safety generator

2. Design Standards

- a. Each sprinkler system must be monitored by floor and provided with separate valve and water flow switch.
- b. All sprinkler valves/sprinkler control stations must be accessible and located no higher than 7'-0" above finished floor. Do not locate above ceilings.
- c. Provide sprinkler system drain piping to building drains, or sumps, or, as approved by the University's project manager, provide direct discharge to the building exterior.
- d. Locate inspector test valves in mechanical and storage areas with a drain sized to accommodate the water discharged.
- e. Rice University prefers Fire Department Siamese connections to be wall mounted.
- f. Rice University prefers wall indicator OS&Y gate valves for the sprinkler system. If not possible, locate post indicator OS&Y gate valve as close to the building as possible.
- g. Sprinkler piping shall be unpainted, black, or red.
- h. All dry pipe and pre-action system piping shall be hot dipped galvanized piping.
- i. No flexible head piping shall be utilized.
- j. Pre-action systems shall have a separate isolation and drain valve above the pre-action valve for testing purposes.
- k. Fire sprinkler piping shall be schedule 40 to the heads in buildings equipped with fire pumps.
- l. Installation should comply with current adopted NFPA and City of Houston standards.