

SCOPE

- This section applies to the design and installation of the building fire sprinkler and standpipe systems.

BACKGROUND

- The University is largely self-insured and believes fire protection significantly reduces its risk and provides significant operation benefits. In some cases as outlined herein new and renovated buildings should be protected, exceeding minimum code requirements.
- The International Building Code requires protection in many occupancies but fire protection is not required in Group B occupancy buildings less than 55 feet in height. Group B occupancies include laboratories, libraries, classrooms, offices and similar spaces. Design consultants often specify fire protection for these projects regardless of code because of the code tradeoffs (i.e., increased building height and area, less fire resistant construction, increased travel distance to exits, and higher limits on hazardous chemicals used in research).

APPROVALS

For purposes of code compliance, the Authority Having Jurisdiction (AHJ) for fire protection will be the Local Authority (typically the Fire Department) Additional approvals may be required for insured properties and licensed facilities. The University Fire protection Engineer from Environmental Health and Safety is the owner's representative.

DESIGN CRITERIA

General

- Fire Protection shall be provided in all new and renovated building when required by code and as follows. Consult with the University's Fire Protection Engineers (Environmental Health and Safety) concerning the sprinkler system design:
- All Group B Laboratory Buildings
- All Group B non laboratory buildings (office, classroom, etc) greater the two stories or 24,000 square feet

Building Fire Service/Utilities

- Obtain water supply information for University owned water mains on the Seattle campus from the University's Fire Protection Engineer
- Obtain water supply information for publically owned water mains from the local water purveyor.
- Provide a 10 psi cushion for all hydraulic designs

Fire Sprinkler Systems/Standpipes

- Avoid provision of a fire pump if system demand can be met without a pump
- Provide floor control valves and drains on each floor within a stair enclosure in multi-story buildings
- The design criteria for the fire sprinkler system shall be in accordance with NFPA 13 or 13R whichever is applicable. Consult with the University of Washington's Fire Protection Engineer for

assistance in establishing design parameters. Area reduction for quick response heads is acceptable.

- Grid systems are discouraged as they provide less long term flexibility
- Provide an electronic bell in lieu of a water motor gong for exterior audible alarm for fire sprinkler systems
- Do not show sprinkler head locations except where the head layout in the ceiling is critical for coordination and/or for architectural reasons
- Where lab benches, library stacks, shelving systems and other permanent furniture, equipment, fixtures or partitions extend within 18 inches of the ceiling, design the sprinkler head layout specifically to coordinate with the layout, lighting, ventilation, and other building features
- Where partial ceilings “clouds” are provided for architectural reasons, designers must pay special attention to the design of the sprinkler system. Sprinklers heads both above and below the ceiling may be required where the ceiling is not continuous. Until this issue is more clearly addressed in the standard, design protection as directed by the AHJ. The Hughes Associates white paper, “Sprinkler Protection for Cloud Ceilings” may be of some guidance. http://www.haifire.com/wp-content/uploads/2014/02/White_Paper_Sprinkler-Protection-CloudCeilings_FPRF_JFloyd-JDinaburg_JUL-2013.pdf.

PRODUCTS, MATERIALS, SUBMITTALS, INSPECTIONS AND TESTS

General

See the EH&S specification for recommended products and materials and for specific information on submittals, inspection and tests.

SHUTDOWN OF EXISTING SYSTEMS

Any shutdowns of existing water distribution systems, fire sprinkler systems, domestic water system or fire alarm systems shall be approved by the University Construction Coordinator. Provide advance written notice at least 14 days prior to the shutdown to the Construction Coordinator.