1. This information provides guidelines for fire suppression systems. Fire alarm systems and temporary facilities and controls are covered in other parts of these standards or are available from the Facilities Management (FM) project representative.

2. FM project representative, FM, Technical Maintenance, Public Safety Office, and Environmental Health and Safety Office shall approve selection of materials, means, and methods. Unless otherwise approved, the design intent requires means and methods that provide minimal disruption to adjacent building activities and operations.

3. When working in or adjacent to occupied buildings, require means and methods that protect occupants from exposure to noise, dust, traffic, and other hazards.

4. FM project representative shall inform FM and other campus departments or groups affected by the work.


6. FM-200 is the preferred alternative gaseous suppression system in all telecommunication and mainframe computer machine rooms.

7. Do not use or install:
   a. Halon (bromotrifluoromethane) extinguishers;
   b. Halon gaseous fire protection systems or other ozone depleting systems;
   c. Deluge systems for atriums.

8. For all buildings, prior to schematic design:
   a. Require recent NICET stamped hydrant fire flow tests in accordance with NFPA 291 and in conjunction with the City of Bellingham (COB) and University Plumbing Shop. The majority of hydrants on campus are privately owned by Western.
   b. Determine need for fire pumps, or jockey pressure pumps, based on hydraulic calculations and hydrant flow tests.

9. Fire pumps shall meet NFPA 20 and be designed and stamped by a licensed fire protection engineer and coordinated with the mechanical, electrical and civil design engineers.
   a. A UL/FM listed and approved flow measuring device in a closed loop shall be installed along with hose flowing manifolds and hydrants in all fire pump installations.
   b. Prohibit diesel driven fire pumps.
   c. Require an electric motor-driven fire pump utilizing an approved power source to comply with NFPA 20.
   d. Require adequate storm drainage for flow tests within 100ft of fire pump or fire pump connections.

10. Sprinkler heads:
    a. Avoid fast response sprinkler heads unless required by code.
    b. Require concealed heads in all student accessible areas where low ceilings make tampering possible.

11. Sprinkler piping requirements:
    a. Require ASTM A53 Schedule 40 black steel pipe for wet pipe automatic sprinkler systems.
    b. Require ASTM A795 Schedule 40 galvanized steel pipe for dry pipe sprinkler applications.
c. Require ASTM A53 Schedule 40 black steel pipe for dry pipe nitrogen purged sprinkler systems.

d. Require pipe fittings as follows:
   i. 2" (50mm) diameter and smaller with ASME B16.3 malleable iron screwed fittings;
   ii. 2.5"" (63mm) diameter and larger with ASTM A-536, GRADE 65-45-12"cut" grooved mechanical fittings.

12. For dry pipe sprinkler systems, utilize a UL/FM listed standpipe compressor connected to an emergency electrical circuit. Compressor shall be sized to meet Bellingham Fire Department confidence test and NFPA recycle charging time criteria for the entire dry system. Basically the system shall recharge in 30 minutes. For backup, require connection to central plant filtered, pressure reduced compressed air.

13. Backflow prevention devices: Require a double detector check (DDC) backflow with bypass meter for all fire mains. Acceptable manufacturer is Febco.


15. Fire Department connections:
   a. Require FDC automatic drain (ball drip) valve to be Croker 6780 or similar with horizontal installation.
   b. Require FDC check valve to be accessible for maintenance/testing. Provide a concrete access vault for underground installations. Require Tyco CV-1F maintenance check valve or approved equal for testing and maintenance purposes.

16. System configuration:
   a. Provide means to isolate by floor or other subzone so repairs and return to service are more efficient.
   b. Provide piped drainage mechanism such as large funnel indirect receptors adequate to handle anticipated water volumes during required periodic confidence testing.
   c. Avoid wet sprinkler head locations in any location at risk of freezing. In particular, avoid close proximity to exterior openings that may subject heads to freezing temperatures if opening is held open or frequently used during cold weather.
   d. Route wet sprinkler piping only in insulated, heat conditioned spaces. Any exceptions need specific approval by University project manager.

End