



**21 0000 –**  
**Fire Suppression Systems**

Page 1 of 3

Last Update: May 24, 2017

A. General:

1. Design system to meet requirements of FM Global, NFPA, state and local codes. The fire protection system shall be designed to provide a penalty-free insurance rating as determined by FM Global, BSU's current insurance carrier.
2. The consultant, via BSU FPM, shall submit 100% DD and 100% CD drawings and specifications for review and comment by FM Global. Harriette Harra, [hharra@bsu.edu](mailto:hharra@bsu.edu), will make this submission to FM and forward comments to the Consultant. Confer with BSU Engineering for direction on how to incorporate FM's review comments.
3. The fire protection contractor shall obtain the approval of FM Global prior to the installation of any fire protection work. The shop drawing submittals shall be routed through BSU Facilities Planning and Management to FM Global. Include this requirement in the project specifications and require the Contractor to submit to FM through Harriette Harra in our office, [hharra@bsu.edu](mailto:hharra@bsu.edu), (765) 285-2831.
4. Occupied portions of buildings shall be designed for "wet pipe" systems employing automatic sprinklers. Concealed heads with white cover plates should be used in finished ceilings. In residence halls specify Tyco Raven vandal resistant heads as an alternate bid in areas accessible by students.
5. Areas subject to freezing temperatures shall be designed for a "dry pipe" system employing automatic sprinklers attached to a piping system containing air under pressure. If possible, dry heads may be used in lieu of entire dry zones.
6. Protection of computer rooms, spaces with rare manuscripts, music, books etc should be discussed early in the design development of projects to determine the appropriate type of system (Safe Agent, chemical, preaction system etc.) to be used for those types of special areas.
7. Use separate service for fire protection so either potable supply or fire supply may be isolated without interrupting the other. If isolation is underground, use a post indicator valve.
8. Protect potable water supply by providing an IAWC approved DDC backflow preventer.
9. Locate zone control valves where they are clearly visible and readily accessible to emergency personnel.
10. Consultant shall contact Indiana American Water Company early in design on



**21 0000 –  
Fire Suppression Systems**

Page 2 of 3

projects that require a new fire protection service. Often a valve pit with a double detector check valve, PIV and FDC is required by IAWC. BSU's contact at IAWC is Mr. Dan Allen, office phone - 765-741-1273, cell - 765-741-1265, [Daniel.Allen@amwater.com](mailto:Daniel.Allen@amwater.com). Depending upon the nature of the project he may refer you to the Greenfield office. Valve pit details are available from IAWC. Any new pits shall be gravity drained if possible and if not, a sump pump shall be specified.

11. Consultant shall obtain hydrant flow test data from IAWC as needed for preliminary design and shall require the fire protection contractor to perform his own hydrant flow test in order to obtain flow and pressure data from the hydrant nearest the project site.
12. Ensure complete drain down of the entire system is possible, including the fire pump test header where present. So not rely solely on automatic ball drips. We need manual drains at all low points.
13. Provide flow switches on each zone as well as on the main.
14. FDC's shall be 5" Storz type per Muncie Fire Department requirements.
15. Consultant shall specify pressure testing requirements. Don't just refer to some standard. Put your actual test pressure and test duration requirement in the specification.
16. On LEED projects, the fire protection system is usually included in the Commission process as well as the Demonstration and Training process specified in Division 017900.
17. Specify FM approved automatic air vents on wet pipe systems to reduce the amount of oxygen and resulting corrosion.
18. Require the fire protection contractor assist the fire alarm contractor in the Owner witnessed fire alarm testing. More information on demonstration and testing is in BSU standard specification 017900.

**B. Piping Material**

1. Schedule 40 with roll grooved, threaded or welded joints for all pipe sizes 6" and smaller. Schedule 30 for pipe sizes 8" and larger.
2. Cut grooves are not acceptable. Specify roll grooved pipe.
3. Schedule 10 pipe 6" and smaller, Dynaflo and CPVC are not acceptable.



**21 0000 –**  
**Fire Suppression Systems**  
Page 3 of 3

C. Products

1. Sprinkler heads
  - a. Reliable
  - b. Tyco
  - c. Viking
2. Automatic Air Vents
  - a. FM approved.
3. Fire Pumps
  - a. Pentair Pump Group / Aurora
  - b. S.A. Armstrong LTD
  - c. Peerless