

## Standpipe Systems



## Standpipe Systems

**What is a standpipe system?**

**Pipes within buildings or yards that supply water for fire suppression hose lines.**

**Pipes may be vertical or horizontal within a building or usually under ground if in a yard.**

## **Standpipe Systems**

**What is the purpose of a standpipe system?**

**Shorten the length of supply and fire attack lines.**

## **Standpipe Systems**

**Standpipes are divided into Types and Classes**

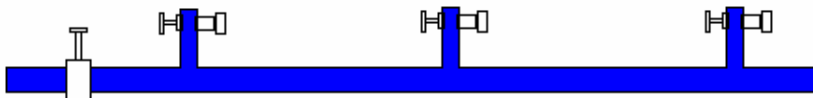
## Standpipe Systems

**4 Types: 1 wet and 3 dry**

## Standpipe Systems

**Wet:**

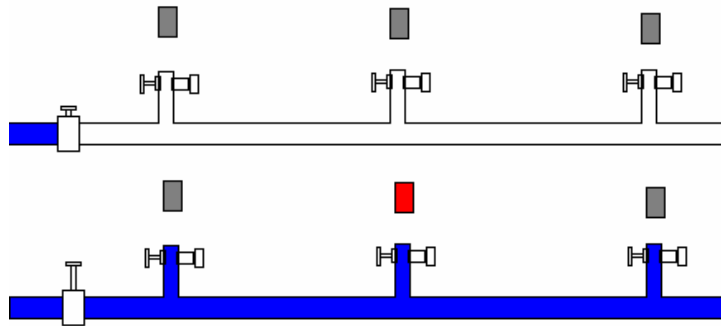
**Standpipe system having a supply valve open and water pressure maintained at all times to the outlet valves.**



## Standpipe Systems

### Dry: (1)

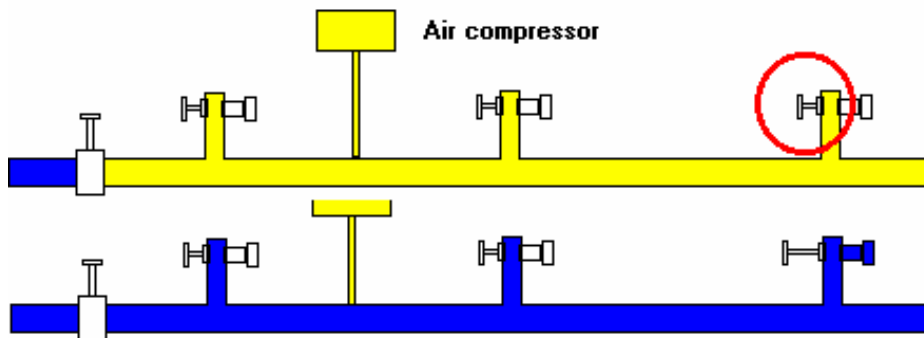
Normally empty – system is charged automatically when an electrical switch or other device located at each out let is activated.



## Standpipe Systems

### Dry: (2)

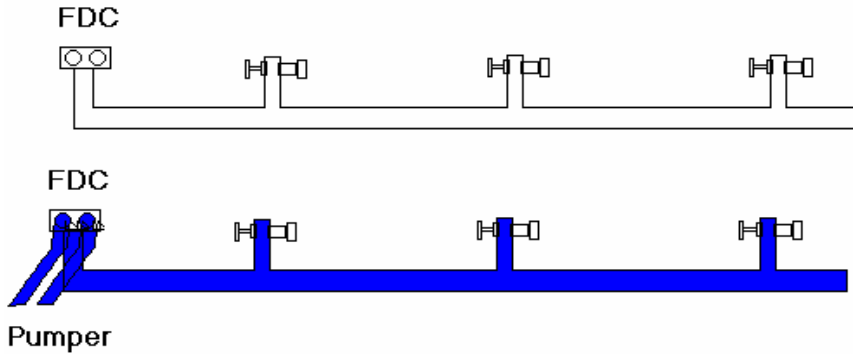
Normally empty – system is charged with air pressure. Water enters the system when an outlet valve is opened and the drop in air pressure opens the supply valve.



## Standpipe Systems

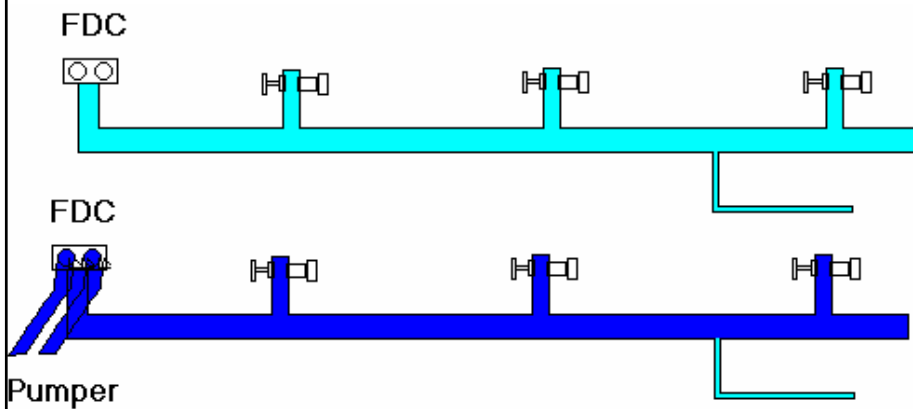
**Dry: (3)**

**Normally empty – system has no permanent water supply. Water is supplied by fire department pumper.**



## Standpipe Systems

**Primed system – dry type (no permanent water supply), but is kept full of water to reduce filling time by a pumper.**



## Standpipe Systems

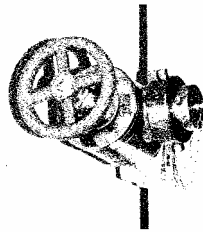
**3 Classes of standpipe systems.**

## Standpipe Systems

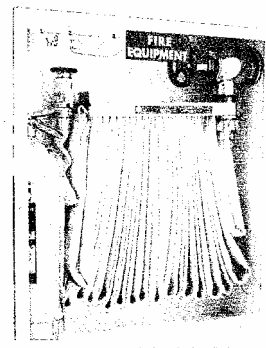
### **Classes I**

**Used by firefighters and those trained in heavy streams.**

**Must be capable in supplying fire streams for advanced stages of fire.**



## Standpipe Systems



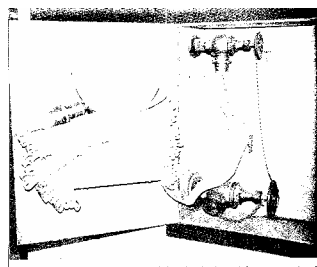
### **Classes II**

**Used by building occupants (with no special firefighting training) until arrival of fire department.**

## Standpipe Systems

### **Classes III**

**For use by firefighter and those trained in handling heavy streams or by building occupants**



## **Standpipe Systems**

**Distribution criteria:**

**Determined by:**

**occupancy**  
**construction type**  
**exterior exposures**  
**building accessibility**

## **Standpipe Systems**

**Class I and III**

**When required, one in each building or section of a building divided by fire walls.**

**All portions of each floor are to be within 30' of a nozzle attached to no more than 100' of fire hose.**

## **Standpipe Systems**

### **Class II**

**When required, all portions of each floor are to be within 20' of a nozzle attached to no more than 75' of fire hose.**

## **Standpipe Systems**

### **Water supply requirements**

## **Standpipe Systems**

### **Minimum supply for Class I:**

**500 gpm for 30 min., (250 gpm for 30 min. for each additional standpipe)**

**Maintain 65 psi at the top most outlet with 500 gpm flowing.**

## **Standpipe Systems**

### **Minimum supply for Class II:**

**100 gpm for 30 min.**

**Maintain 65 psi at the top most outlet with 100 gpm flowing.**

## **Standpipe Systems**

**Minimum supply for Class III:**

**See Class I**

## **Standpipe Systems**

**FDC - Fire Department Connection**

**One or more siamese connections are required  
for Class I and III standpipe systems.**

## **Standpipe Systems**

**Fire department operations in buildings  
with standpipe systems:**

## **Standpipe Systems**

### **Recommended equipment:**

**150' hose with nozzle for fire attack**

**pipe wrench**

**gated wye 2 ½ to 2 ½ with a 2 ½ to 1 ½ flat adapter**

**forcible entry tools**

**spanner wrench**

**rope hose tool**

**SCBAs**

## **Standpipe Systems**

### **Testing and Maintenance:**

**Outside agencies usually test and maintain systems.**

**Frequency requirements may be set by state and local governments.**

**Some fire departments inspect systems twice a year.**

## **Standpipe Systems in Review**

## **Standpipe Systems**

What is the purpose of a standpipe system?

**Shorten the length of supply and fire attack lines.**

**How many types of standpipe systems?**

**4 Types:**

**1 wet and 3 dry**

**Describe the four type of standpipe systems:**

## **Standpipe Systems**

**Wet:**

**Standpipe system having a supply valve open and water pressure maintained at all times to the outlet valves.**

## Standpipe Systems

### **Dry: (1)**

**Normally empty – system is charged automatically when an electrical switch or other device located at each out let is activated.**

## Standpipe Systems

### **Dry: (2)**

**Normally empty – system is charged with air pressure. Water enters the system when an outlet valve is opened and the drop in air pressure opens the supply valve.**

## **Standpipe Systems**

**Dry: (3)**

**Normally empty – system has no permanent water supply. Water is supplied by fire department pumper.**

**What is the purpose of a “primed” system?**

**To reduce filling time of a dry system by a pumper.**

## **Standpipe Systems**

**Describe the 3 Classes of standpipe systems.**

## **Standpipe Systems**

### **Classes I**

**Used by firefighters and those trained in heavy streams.**

**Must be capable in supplying fire streams for advanced stages of fire.**

## **Standpipe Systems**

### **Classes II**

**Used by building occupants (with no special firefighting training) until arrival of fire department.**

## **Standpipe Systems**

### **Classes III**

**For use by firefighter and those trained in handling heavy streams or by building occupants**

## **Standpipe Systems**

**Describe the distribution criteria for the Classes of standpipe systems:**

## **Standpipe Systems**

### **Class I and III**

**When required, one in each building or section of a building divided by fire walls.**

**All portions of each floor are to be within 30' of a nozzle attached to no more than 100' of fire hose.**

## **Standpipe Systems**

### **Class II**

**When required, all portions of each floor are to be within 20' of a nozzle attached to no more than 75' of fire hose.**

## **Standpipe Systems**

**Describe the water supply requirements for standpipe systems:**

## **Standpipe Systems**

### **Minimum supply for Class I:**

**500 gpm for 30 min., (250 gpm for 30 min. for each additional standpipe)**

**Maintain 65 psi at the top most outlet with 500 gpm flowing.**

## **Standpipe Systems**

### **Minimum supply for Class II:**

**100 gpm for 30 min.**

**Maintain 65 psi at the top most outlet with 100 gpm flowing.**

## **Standpipe Systems**

**Minimum supply for Class III:**

**See Class I**

## **Standpipe Systems**

**List the recommended equipment that fire fighters should take with them when operating in a building equipped with a standpipe system:**

**150' hose with nozzle for fire attack**

**pipe wrench**

**gated wye 2 ½ to 2 ½ with a 2 ½ to 1 ½ flat adapter**

**forcible entry tools**

**spanner wrench**

**rope hose tool**

**SCBAs**

## **Standpipe Systems**

**Describe the testing and maintenance requirements for standpipe systems:**

**Outside agencies usually test and maintain systems.**

**Frequency requirements may be set by state and local governments.**

**Some fire departments inspect systems twice a year.**

**The End**