

# FIREHOUSE®

## Weekly Drill

### DRILL #97: SPRINKLER HEADS

#### Introduction

The most important component of the sprinkler system is the sprinkler heads. Sprinkler heads must be appropriate in design for them to function to their maximum capability. Many firefighters may not know that there are two styles of sprinkler heads – those manufactured before 1952, commonly called the old style, and those manufactured after 1952, the new style.

Major changes were made to sprinkler heads in the early 1950s that significantly changed the delivery of water from them. For a time, this new style design was known as the “spray sprinkler,” however, over the years it has become more commonly referred to as the standard sprinkler. Before changes were made, water was allowed to bounce off the ceiling, while at the same time wetting the ceiling. However, the newer style sprinkler heads directed more water downward and in a more horizontal direction. The effects of which are a more proficient extinguishment of a larger coverage area.

#### Sprinkler Head Orientations

Today sprinkler heads can be one of three types, commonly referred to as their orientation. Orientation is just another way of saying whether the sprinkler head is an upright head, a downward head or a sideways head. The upright sprinkler head sits vertically on top of the pipe or branch line and has a deflector above it that is designed to redirect the water discharge downward. A downward head, more commonly called a pendent sprinkler head, is located on the underside of the branch line and has a deflector that breaks up the water being discharged into the correct pattern. The sideways head, or more commonly called a sidewall head, is designed to be placed on a wall and has a deflector that looks slightly bent, however, the design provides for the head to project the water evenly across the room.

Water is discharged through an orifice, which generally will range from ¼ inch to ¾ inch in diameter and is determined by the occupancy. Additionally, sprinkler heads have temperature ratings and can range from ordinary to ultra high.

For ease and convenient, sprinkler heads are color coded as well as being classified. The following is a chart that list these different rating.



Temperature Rating °F	Temperature Classification	Color Coding
135-170	Ordinary	Uncolored or black
175-225	Intermediate	White
250-300	High	Blue
325-375	Extra High	Red
400-475	Very Extra High	Green
500-575	Ultra High	Orange
625	Ultra High	Orange

There are different types of sprinkler systems. There is the wet pipe system, where the piping has water in it under pressure all the time making it the simplest system to design and operate. The dry pipe system has air under pressure in the piping (meaning once activated the air has to first discharge before water can be applied to the fire). The deluge system is basically an open sprinkler head on a pipe with a separate detection system that once activated will open a valve and allow water to flow to the open sprinkler heads, flooding the area of coverage. Pre-action systems have closed piping and fusible heads, but no water will flow until signaled to by a detection system.

—Prepared by Russell Merrick