FIRE DESIGN
ASSOCIATES LLC

Fire Sprinkler System Design

Fire Design Associates (FDA) specializes in engineering and design of fire sprinkler systems.

We have expertise in residential and commercial fire sprinkler systems of all types, from new buildings to retrofits, single family homes, large industrial warehouses, high rise buildings, and Apartments/Hotels.

Our customers include architects/engineers, developers, property owners, general contractors and fire protection contractors. Our clients trust us to provide code-compliant fire sprinkler systems.

Types of Fire Suppression Systems We Design

At Fire Design Associates, we provide expert design services for a variety of fire suppression systems. Each type of system serves specific needs and environments, providing protection and effectiveness in fire situations.

Water-Based System - This is the most common type of fire suppression system. Sprinklers automatically release water when heat from fire is detected. These types of systems are used in residential, commercial and industrial buildings. These types of systems are usually the most cost effective and reliable to a wide range of buildings. They are also the fastest water delivery system and are relatively easy to maintain.

Antifreeze System - This type of system is similar to the water-based system above but uses a pre-mixed anti-freeze solution to prevent water in the pipes from freezing in colder areas. It requires a little more maintenance in that the antifreeze needs to be replaced if the system is worked on or drained in any way.

Dry System - This type of system uses pressurized air or nitrogen in the pipes. The air/nitrogen is released when a sprinkler head is activated. Once the air is released, water flows through the pipes and is discharged. These types of systems are used in unheated spaces or areas that are susceptible to freezing temperatures. These types of systems are ideal for cold environments where water can be expected to freeze causing pipes to break

Preaction System - This type of system requires two activation events to take place before water will be delivered to a fire. These are usually heat and smoke detection. The system utilizes both dry and water based features and is designed minimize accidental discharges of

water. These types of systems are best for spaces with sensitive equipment or materials and are often used in data centers, museums, libraries or computer rooms.

Deluge System - This type of system utilizes open sprinkler heads, and when activated, they release a large amount of water over an entire area. These types of systems can be manually or automatically activated by fire detection systems. They are best used in high-hazard areas like aircraft hangers, chemical plants, industrial facilities and areas that have flammable liquids. These are designed to suppress fast spreading, high intensity fires by delivering large amounts of water to an area immediately.

Foam System - This type of system uses a mixture of water and foam concentrate to extinguish fires. They are most often used in flammable liquid situations where the foam blankets the fire depriving it of oxygen and cooling the surface. They are best used at Chemical plants, fuel storage facilities, oil storage/refineries and Airplane hangers where the planes keep fuel in them.

Fire Pumps - Fire pumps boost the water pressure in a fire sprinkler system, ensuring the system has sufficient amount of water and pressure. They can also be used in conjunction with water tanks and act as the sole pressure provider. Best for any situation where additional pressure is needed. Fire pumps come in all sizes and can be used in residential occupancies also.

What type of system do you need?

Choosing the appropriate system depends on various factors, including the type of property / building, environmental conditions, what the building will be used for, storage arrangements and type of construction. At Fire Design Associates, our team will assess your needs and design a system that complies with local codes and regulations.