

# A Chain of Survival



Call fire department;  
Announce fire/alert others;  
Make sure everyone is safe.



Defend  
in place



Fire/smoke  
alarm sounds



Suppression  
system  
activates



Sprinkler  
system  
activates



Fire  
department  
responds

The illustrated chain of survival demonstrates in a fire scenario how safety-to-life does not depend on any single safeguard. All emergency systems must work together within a balanced fire protection plan. FEMA, The Life Safety Group is dedicated to promoting this important educational message to save lives and protect property.

NFPA Standards, such as 17, 17a, 33, 34, and 96 specify Special Hazard Situations where Pre-engineered Systems are Mandated:

1. Flammable or combustible liquid or gases
2. Paint spray operations involving flammable or combustible materials
3. Combustible solids including plastics, which melt when involved in fire
4. Electrical hazards such as oil-filled transformers or circuit breakers
5. Textile operations subject to flash surface fires
6. Ordinary combustibles such as wood, paper, or cloth
7. Restaurant and commercial hoods, ducts, and associated cooking appliance hazards such as deep-fat fryers
8. Data Centers and electrical storage rooms
9. Turbines
10. Automobile refueling areas

**FEMA** | the life safety group

*Saving Lives, Protecting Property*

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*Balanced Fire Protection  
to Promote Life Safety*

A Closer Look:

## Fire Suppression Systems



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## Fire Suppression Systems







### Your First Defense against Fire in Special Hazard Situations


A complete and balanced fire protection plan is one that includes all the fire protection equipment necessary to defend against a fire in those first critical minutes. Pre-engineered fire suppression systems are an invaluable link in the life-saving "chain of survival" that ultimately saves lives and protects property from fire. A fire suppression system, the fourth "link," is mandated by NFPA standards in special hazard situations. These hazards can involve restaurants and industrial areas, such as chemical and telecommunication storage rooms (see right panel for a list of hazard situations).


When these hazards exist, a fire suppression system is Your First Defense against fire since it is designed to activate quickly, automatically, and precisely.

### Benefits of Fire Suppression Systems:

-  **Early detection and quick response.**  
Fire suppression systems provide fast, on-site protection at the earliest stage of a fire. Depending upon the detection package installed, the system response could be immediate or controlled delay.
-  **Safe and easy to use.**  
Since fire suppression systems activate automatically, they are safe and easy to use. Fire suppression systems do not require human intervention although systems do provide a manual override option in case of emergency.
-  **Pre-tested to ensure success.**  
Designed to NFPA and Underwriters Laboratory Inc. (UL) standards, fire suppression systems are pre-tested to effectively extinguish specific types of fires in special hazard situations. "Pre-engineered" systems are developed to perform as expected within a certain situation of known parameters.

 **Eliminates fuel source.**  
The fuel or electrical source of a fire contained within cooking equipment, i.e. stoves, often continues to feed a fire after it has ignited. Fire suppression systems are unique in that they immediately eliminate the fuel source automatically.

 **Minimizes water and property damage.**  
Fire suppression systems protect valuable property like cooking, chemical processing, and storage equipment since the discharge is applied directly to the problem area and not to the entire building. Systems are designed to discharge completely allowing adequate agent to suppress the fire without creating unnecessary water damage.

 **Provides 24-hour protection.**  
Even after building occupants have left work for the day, fire suppression systems monitor the hazard area, protecting vital assets around the clock.

### Fire protection and safety hinge on the first few minutes

Fire can be suppressed and eliminated early if the public and industry are educated about the importance of fire suppression systems and how they can prevent fires from consuming property and taking lives.

#### Consider these facts:

When fires are extinguished in the early stages:

**Loss of life is minimal.** 93 percent of all fire-related deaths occur once the fire has progressed beyond the early stages.\*

**Direct property damage is minimal.** 95 percent of all direct property damage occurs once the fire has progressed beyond the early stages.\*



Visit the following educational and training websites:	<a href="http://www.firesystemstraining.org">www.firesystemstraining.org</a>
	<a href="http://www.fireextinguisher.com">www.fireextinguisher.com</a>
	<a href="http://www.rackhosetraining.com">www.rackhosetraining.com</a>

\* Source: 1991-1995 National Fire Incident Reporting System (NFIRS), National Fire Protection Association (NFPA).