SCHULTE & ASSOCIATES
Building Code Consultants
880D Forest Avenue
Evanston, IL 60202
fpeschulte@aol.com
847/866-7479

SPRINKLER PROTECTION BASICS

- **SPRINKLERS ARE HEAT ACTIVATED.**
  - Sprinklers typically activate when ceiling temperatures are between 250°F and 800°F. (Temperature varies depending upon whether the sprinkler is standard response or quick response type, the ceiling height and the heat release rate of fire).
  - In storage occupancies (where standard response sprinklers are typically provided), ceiling temperatures may reach as high as 1,400°F prior to sprinkler operation.
- **EACH SPRINKLER OPERATES INDEPENDENTLY.**
  - Sprinklers operate when the activating mechanism reaches the operating temperature of the sprinkler.
  - The activating mechanism of a sprinkler is typically a liquid-filled glass bulb or a metal link with a low temperature melting point.
- **EACH SPRINKLER (TYPICALLY) DISCHARGES BETWEEN 15 GPM AND 50 GPM OF WATER.**
  - The discharge rate varies with the sprinkler orifice size, system pressure and the number of sprinklers operating.
- **THE NUMBER OF SPRINKLERS WHICH OPERATE IN A FIRE IS DEPENDENT UPON WHAT IS BURNING AND THE CEILING HEIGHT (ALONG WITH A NUMBER OF OTHER VARIABLES.)**
  - Studies indicate that 100 percent of fires which occur in sprinklered office buildings are controlled by 4 or fewer operating sprinklers.

SPRINKLER PROTECTION BASICS
(CONTINUED)

- **AFTER SPRINKLER OPERATION OCCURS, THE TEMPERATURES OF FIRE GASES MEASURED AT THE CEILING IS RAPIDLY REDUCED.**

  - Within 2 minutes sprinkler after operation, ceiling temperatures will typically be less than 200°F (for fires in office/mercantile/residential occupancies) and will continue to drop.

- **FIRE DAMAGE IN SPRINKLERED BUILDINGS WITH RELATIVELY LOW CEILINGS (15 FEET OR LESS) WILL BE CONFINED TO 100 SF OR LESS IN OFFICE, RESIDENTIAL, MERCANTILE AND SIMILAR OCCUPANCIES.**

- **THE VOLUME OF SMOKE PRODUCED FROM A FIRE IS PROPORTIONAL TO THE SIZE AND TEMPERATURE OF THE FIRE; SINCE SPRINKLERS LIMIT THE SIZE OF THE FIRE AND REDUCE THE TEMPERATURE OF THE COMBUSTION PRODUCTS, SPRINKLERS CONTROL THE VOLUME OF SMOKE GENERATED FROM A FIRE.**

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