Standard spray sprinklers operate on the concept of fire control. They are to provide sufficient discharge so that a fire does not spread beyond the system design area. However, Early Suppression Fast Response (ESFR) sprinklers are designed to provide adequate discharge to suppress a fire.

Although the discharge pattern of an ESFR sprinkler is similar in shape to the standard spray sprinklers (Fig.1), the water droplet within the discharge pattern is different. Water droplets from an ESFR sprinkler are larger, allowing them to penetrate the fire plume, reach the fire and achieve fire suppression.

Due to the concept of suppression versus control, the discharge pattern of Early Suppression Fast Response sprinklers is more affected by obstructions. Careful consideration of obstructions is vital to assure sprinkler discharge can reach the seat of a fire.