

## 1.5. Foam Systems

### 1.5.1. Foam

Foam is a stable aggregation of small gas filled bubbles of lower density than oil or water, formed from aqueous solutions of specially formulated concentrated liquid foaming agents that exhibits a tenacity for covering horizontal surfaces, producing an air excluding, cooling continuous layer of vapour-sealing, water-bearing material that prevents combustion.

### 1.5.2. Foam Concentrate

Foam concentrate is a concentrated liquid foaming agent as received from the manufacturer.

### 1.5.3. Foam Solution

A homogeneous mixture of water and foam concentrate in the proper proportions. For the purpose of this document, “foam solution” and “solution” are used interchangeably.

### 1.5.4. Foam Proportioning

Proportioning is the continuous introduction of foam concentrate at the recommended ratio into the water stream to form foam solution

### 1.5.5. Foam-Water Sprinkler System

A special system that is pipe-connected to a source of foam concentrate and to a water supply. The system is equipped with appropriate discharge devices for extinguishing agent discharge and for distribution over the area to be protected. The piping system is connected to the water supply through a control valve that usually is actuated by the operation of automatic detection equipment that is installed in the same areas as the sprinklers. When this valve opens, water flows into the piping system, foam concentrate is injected into the water, and the resulting foam solution discharging through the discharge devices generates and distributes foam. Upon exhaustion of the foam concentrate supply, water discharge follows and continues until shut off manually. Systems can be used for discharge of water first, followed by a discharge of foam for a specified period, and then followed by water until they manually shut off. Existing deluge sprinkler systems that have been converted to the use of aqueous film-forming foam or film-forming fluoroprotein foam are classified as foam-water sprinkler systems.

### 1.5.6. Foam-Water Deluge System

A foam-water sprinkler system employing open discharge devices, which are attached to a piping system that is connected to a water supply through a valve that is opened by the operation of a detection system, which is installed in the same areas as the discharge devices. When this valve opens, water flows into the piping system and discharges from all discharge devices attached thereto.

### 1.5.7. Foam Discharge Duration

Systems shall deliver foam to the hazards they protect for a specified period at given densities, either prior to water discharge or following water discharge, depending upon system design purpose.