



Water-Based (formerly Automatic Sprinkler) Systems Layout

Level III – Hydraulics and Water Supply Planning Content Outline Standard Model/CBT

The skills and knowledge listed under each task are suggestive of those involved in that task, but are not intended to constitute an exhaustive listing.

3.6 System Layout

3.6.2 Apply hazards and occupancies to unusual system layouts.

Knowledge:

NFPA 13

Roles and responsibilities of design professionals

Skills:

Apply hazard classifications and confirm occupancy types.

Consult with design professionals, such as PEs, architects, and AHJs.

3.6.5 Evaluate the water supply for a system.

Knowledge:

NFPA 13, 14, 20, 22, 24

AWWA M-14

Skills:

Evaluate and determine the adequacy of different types of water supplies for various system requirements.

Recognize and respond to unusual conditions, such as a poor water supply, unexpected results, etc.

Properly size pressure and atmospheric tanks.

Perform low/high gradient adjustments to water supply data.

3.6.6 Evaluate standpipe systems.

Knowledge:

NFPA 13, 14

Skills:

Evaluate and determine the adequacy of standpipe systems and system requirements.

3.6.7 Evaluate fire pump systems.

Knowledge:

NFPA 13, 20

Skills:

Evaluate and determine the adequacy of fire pump systems and system requirements.

3.6.9 Perform hydraulic calculations.

Knowledge:

Elements of basic hydraulics

NFPA 13, 14

Hydraulic formulas (e.g. basics of Hardy Cross method, velocity pressure)

Skills:

Perform advanced hydraulic calculations, including system features such as loops.

Evaluate system performance.

Review hydraulic calculations.

Explain the results of hydraulic calculations to appropriate authorities.

Balance various parts and types of systems.

Add inside/outside hose demand to hydraulic calculation.

Recognize impact of velocity pressure on system analysis.

Identify uses for Darcy-Weisbach formula.