

Fire Protection Worked Example Pack

Tool group: Sprinkler Tank, Fire Water Tank, Fire Pump

This worked example shows the expected input logic, result interpretation, and verification checks for a common MEP planning scenario.

Sample inputs

Input	Value
Sprinkler demand	1850 L/min
Hose allowance	950 L/min
Duration	60 minutes
Usable tank volume	90%
Residual pressure	4.5 bar

Expected result interpretation

Result	Planning interpretation
Fire water volume	Demand x duration adjusted for usable volume and accepted refill.
Pump flow	Sprinkler, hose, and hydrant demands are combined for planning.
Pump head	Elevation, residual pressure, and friction losses define preliminary head.

Verification notes

- Final sprinkler density, design area, duration, and hose allowance must follow approved hazard classification and authority requirements.
- Civil Defense/NFPA requirements can override generic planning values.
- Hydraulic calculation is required for final approval.

Official references to verify: ASHRAE, NFPA, IEC, IET BS 7671, ICC/IPC, CIBSE, local GCC/Saudi/UAE Civil Defense, and project specifications as applicable.