Table 9.3: General Requirements of Water Based Fire Protection Systems

ITEMS	REQUIREMENTS
4. FIRE WATER TANK	i. The fire water shall be stored in a permanent "Fire Water Tank" having two compartments or in two interconnected tanks with total effective fire water reserve to cater the pumping demand of not less than the duration required by individual systems and occupancies as required by other sections of this chapter. ii. Interconnection between water tank compartments shall be with isolation valves, such that each compartment is able to be isolated. Such isolation vales shall be locked in normally open position. iii. Water tank cleaning or maintenance process shall be allowed one compartment at a time such that the fire water supply from one compartment shall always be available for the fire protection systems. iv. The domestic water reserve shall be permitted and preferred to be combined with a fire water reserve, to prevent stagnation, provided the fire reserve level is maintained at all times. v. Fire water tanks shall be provided with a filling connection directly from the power utility company with a float operated valve for an automatic refilling. vi. Fire water, where not supplied directly from power utility company, shall be potable type or TSE. Where TSE (Tested Sewage Effluent) water is used, it shall be tested and certified to be used for fire protection purposes. vii. Fire water tanks shall be located and constructed such that the fire pump set gets flooded water supply in case of fire pumps are of horizontal centrifugal type. viii. The discharge pipe size shall not be less than 6 in. (150 mm) for tanks up to and including a 25,000 gal (94.63 m^3) capacity and shall not be less than 8 in. (200 mm) for capacities of 30,000 gal to 100,000 gal (113.55 m3 to 378.50 m^3), or 10 in. (250 mm) for greater capacities. ix. The fire water tanks shall be provided with drain arrangement, overflow connection, access manhole, ladders, level indicators, low level switch, etc. x. An approved water level gauge and indicator shall be installed and interfaced with BMS and 24x7 Civil Defence monitoring system. xi. See **Chapter 1, Table 1.9.3A. and Table 1.9.3B** for Water Tank construction.

Points to Ponder

During fire emergencies, Civil Defence Personnel refill the Fire water tank from the fire tanker as one of their first strategy to ensure adequate water is available to the fire systems. Without an adequate and efficient drainage arrangement around the fire water tank, floor corridors, the basement area, could be flooded with an excess of water that could compromise the safety of evacuees, pump room and of the controllers and hamper the fire fighting operations.