

3. Details of Fire Protection Systems

3.1. General Requirements

- 3.1.1.** The general requirements for fire pumps, pipes, fittings, fire water tanks that are components of water based fire protection system shall be as per **Table 9.3.**

Table 9.3: General Requirements of Water Based Fire Protection Systems

ITEMS	REQUIREMENTS
1. FIRE PUMPS	<ul style="list-style-type: none"> i. Fire Pumps shall be restricted to a centrifugal or Horizontal Displacement, single stage and multistage pumps of Horizontal or Vertical Turbine shaft type only. ii. Fire pumps shall be dedicated to and listed for fire protection service. iii. All fire pumps, complete with driver, control panel and fuel supply shall be tested as an assembly as per Section 6 of this chapter and registered and listed by Civil Defence. iv. The fire pump assembly, consisting of Pump, Driver, Controller, Automatic Transfer Switch and Accessories shall perform in accordance with the requirements of this Code and the manufacturer's specifications, as an entire unit when installed or when components are replaced or when repairs are performed on installed system. This "Fire Pump Unit Performance" shall be declared by a single entity as having the "Unit Responsibility". Civil Defence designates the Fire Pump manufacturer as such "Unit Responsibility Holder" and the Fire pump manufacturer shall declare such unit responsibility in an undertaking and shall be submitted to Civil Defence as part of documentation during system commissioning and acceptance. v. The complete fire pump unit shall be field acceptance tested for proper and intended performance. vi. The net pump shutoff (churn) pressure plus the maximum static suction pressure, adjusted for elevation, shall not exceed the pressure for which the system components are rated. vii. A centrifugal fire pump shall be selected to operate at less than or equal to 150 % of the rated capacity. viii. The selection of fire pump shall be such that the pressure in the system it is serving shall not exceed 24 bar at any point, at any time with fire pump set to cut-off at 140% of rated operational pressure. ix. Fire Pumps shall have a permanent steel nameplate clearly showing the name , brand, pressure ratings, flow ratings, working temperatures etc. x. All fire pumps shall have a flooded water supply from the dedicated fire water tank. Where the flooded positive supply of water to fire pumps is not possible, the vertical turbine type fire pumps shall be provided for the negative suction of fire water. xi. Please see Chapter 1., Table 1.9.2., for the location and sizes of fire pump rooms. xii. The Fire Pump provided for fire protection shall be a "Set" consisting of 1 Electric driven fire pump, 1 diesel driven fire pump and 1 Jockey pump to maintain the system pressure, complete with controllers. xiii. The Fire Pump provided at higher levels, other than lowest level, for fire protection in Superhighrise buildings shall be permitted to be a "Set" consisting of 2 Electric driven fire pumps, a main and a standby along with 1 Jockey pump to maintain the system pressure, complete with controllers. The power supply for the permitted 2 electric pumps shall be from different sources.