3.10. Water Mist Systems

3.10.1. The requirements for Water Mist System material, design, installation shall be as per Table 9.12., and the Applicable General Requirements of Table 9.3.

Table 9.12: Water Mist System Requirements

ITEMS	REQUIREMENTS
1. DEFINITION	i. A distribution system connected to a water supply or water and atomizing media supplies that is equipped with one or more nozzles capable of delivering water mist intended to control, suppress, or extinguish fires ii. Water mist shall be as per the manufacturer's specifications with requirements of its listing based on its demonstration to meet the performance requirements for specific applications such as Road Tunnels, Service Tunnels, Cable spread areas, Machinery rooms, Marine service rooms, Combustion turbines, wet benches and such processing equipment, Local application to equipment, Industrial oil cookers, computer room raised floors, Chemical fume hoods and continuous wood board presses. iii. A Water Mist System without detailed design, equipment selection, installation and maintenance manual, listed and recognized by international testing and certification bodies shall not be acceptable. iv. Water mist can be discharged through various arrangement of Systems such as Water Mist deluge Systems, Pre-action Systems, Dry Pipe Systems etc. See Section 1.10. for definitions.
2. APPLICATION	i. The characteristics of the specific application (compartment variables and hazard classification) shall be consistent with the listing of the system. ii. Pre-engineered water mist systems for compartment enclosures shall not be extrapolated beyond the volume, ceiling height, ventilation rate, and number of nozzles tested, unless the dimensions of the enclosure are such that additional nozzles are required to maintain nozzle spacing. iii. The system design and installation manual evaluated by the listing tests shall identify the working limits and parameters of the system, the fire hazards, and the range of compartment variables for which the listing is applicable. iv. The parameters of ventilation, either natural or forced shall be addressed in the design and installation manual.
3. COMPONENTS	i. Fire Pumps, Control System, Additives, Fire Water Tank, Gas and water containers/cylinders, Pipes, Tubes, Fittings, Spray Nozzles, pressure gauges, Isolation valves, Solenoid Valves, Strainers/Filters, Fire Detection and Alarm Systems and Signs. ii. All the components of the water mist systems shall be listed and approved by Civil Defence. iii. The system components shall be rated for the maximum working pressure to which they are exposed, but not less than 12.1 bar (175 psi).
4. FIRE PUMPS	i. Fire Pump set shall consist of 1 Electric driven pump, 1 diesel driven pump and 1 electric Jockey pump, complete with controllers. ii. Electrical or diesel-driven pumps supplying water mist systems shall be of sufficient capacity to exceed both the system flow rate and pressure demands as determined by hydraulic calculations, by a minimum of 10 percent for both flow and pressure. iii. The discharge piping for water mist pumps and pump assemblies for high pressure or intermediate pressure water mist systems shall be equipped with a valved test connection for the purpose of connecting a flow metering device to permit accurate measurement of the pump performance during the acceptance test and during annual testing.
5. WET RISERS AND HOSE SYSTEMS	i. Where wet risers and hose systems are required by this code, a separate systems complete with Pumps, pipes and fittings shall be provided as per other sections of this chapter.