3.12. Wet Chemical Systems

3.12.1. The requirements for Wet Chemical System material, design, installation shall be as per **Table 9.14.**

Table 9.14: Wet Chemical System Requirements

ITEMS	REQUIREMENTS
1. DEFINITION	i. Generally a wet chemical solution is, including but not limited to, potassium carbonate–based, potassium acetate–based, potassium citrate–based, or a combination thereof, and is mixed with water to form an alkaline solution capable of being discharged through piping or tubing when under expellant gas pressure. ii. The wet Chemical System in this code refers to pre-engineered systems, that discharge wet chemical from fixed nozzles and piping by means of an expellant gas. iii. Wet chemical extinguishing agents shall not be acceptable for use in areas where fires involve an energized electrical equipment. iv. The building owner(s) shall be responsible for the protection of a common exhaust duct(s) used by more than one tenant and the tenant shall be responsible for the protection of common exhaust duct(s) serving hoods located within the tenant's space and up to the point of connection to the building owner's common exhaust duct.
2. APPLICATION	i. The pre-engineered Wet Chemical System can be used to protect hazards such as Commercial Kitchen Hoods, Plenums, Ducts and associated cooking appliances, Grease removal devices and emergency recovery devices installed in exhaust system. ii. Each protected cooking appliance, individual hood, and branch exhaust duct directly connected to the hood shall be protected by a system or systems designed for simultaneous operation.
3. COMPONENTS	i. Wet Chemical container, Detectors, Control System, Expellant Gas cartridge, Pipes, Tubes, Fittings, Hose, Discharge Nozzles, pressure gauges, Manual actuators, Isolation valves, and Solenoid Valves. ii. The wet Chemical system as an entire system with its design, installation and maintenance manual from the manufacturer shall be listed and approved by Civil Defence.
4. NOZZLE	i. Nozzle shall be listed and shall be provided with an internal strainer or a separate listed strainer located immediately upstream. ii. Discharge nozzles shall be of brass, stainless steel, or other corrosion-resistant materials, or be protected inside and out against corrosion. iii. All discharge nozzles shall be provided with caps or other suitable devices to prevent the entrance of grease vapors, moisture, or other foreign materials into the piping and shall blow off or open during discharge.
5. DETECTORS / OPERATING DEVICES	i. Operating devices shall be designed to function properly through a minimum temperature range from 0°C to 49°C or marked to indicate their temperature limitations. ii. Detectors or Operating devices and control system shall be part of the listed system as assembly. iii. The detection of Wet Chemical System shall be interfaced with the main fire detection and alarm system. iv. At least one fusible link or heat detector shall be installed within each exhaust duct opening and cooking appliance in accordance with the manufacturer's listing.
6. FUEL/POWER SHUT-OFF	i. On activation of any cooking equipment of the fire-extinguishing system, all sources of fuel and electric power that produce heat to all equipment protected by the system shall be shut down. ii. Gas appliances not requiring protection but located under the same ventilation equipment shall also be shut off. iii. Shutoff devices shall require manual resetting prior to fuel or power being restored.