encountered in service and the suction piping shall be designed to minimise suction losses.

(f) The boundaries of the space containing the fire pump shall be insulated to a standard of structural fire protection equivalent to that required for a control station as prescribed in the Codes of Practice issued under the Shipping (Construction) Regulations 1989.

(g) No direct access shall be permitted between the machinery space and the space containing the emergency fire pump and its source of power. When this is impracticable the Chief Surveyor may accept an arrangement where the access is by means of an airlock, each of the two doors being self-closing, or through a watertight door capable of being operated from a space remote from the machinery space and the space containing the emergency fire pump and unlikely to be cut off in the event of fire in those spaces. In such cases a second means of access to the space containing the emergency fire pump and its source of power shall be provided. The pump shall be located aft of the ship's collision bulkhead.

(h) Ventilation arrangements to the space containing the independent source of power for the emergency fire pump shall be such as to preclude, as far as practicable, the possibility of smoke from a machinery space fire entering or being drawn into that space.

(8) Every power driven emergency fire pump required by the Codes of Practice issued under The Shipping (Fire Appliances) Regulations 1989 to be provided in ships other than these specified in subclause (7) of this clause shall comply with the following:

(a) The pump shall be an independently driven self contained pump either with its own diesel engine prime mover and fuel supply fitted in an accessible position outside the compartment which contains the main fire pumps, or be driven by a self contained generator of sufficient capacity and which is in a safe place outside the engine room. The pump shall be capable of operating for a period of at least 3 hours.

(b) The pump, sea suction valves and other necessary valves shall be operable from outside compartments containing main fire pumps in a position not likely to be cut off by a fire in those compartments and shall be located aft of the ship's collision bulkhead.

(c) The pump shall be capable of delivering at least 1 jet of water simultaneously from each of any 2 hydrants, hoses or nozzles provided in the ship while maintaining a pressure of not less than 200 kPa at any other hydrant in the ship:

Provided that in ships of Class II of less than 24m in length, Classes III, and VI of less than 45m in length, Classes IV, V and XI, and Class X of less than 75m in length the pump shall be capable of delivering at least 1 jet of water from any one hydrant in the ship while maintaining a pressure of not less than 200 kPa at any other hydrant in the ship.

(9) Every manually operated emergency fire pump required by the Codes of Practice issued under The Shipping (Fire Appliances) Regulations 1989 to be provided in a ship shall comply with the following:

(a) The pump, sea suction valves and other necessary valves shall be operable from outside compartments containing propulsion machinery in a position not likely be cut off by a fire in those compartments and shall be located aft of the ship's collision bulkhead.

(b) The pump shall be capable of delivering at least 1 jet of water having a throw of at least 6m from any fire hydrant hose and nozzle provided in the ship.

(10) Relief valves shall be provided in conjunction with all fire pumps if the pumps are capable of developing a pressure exceeding the design-pressure of the fire main, water-service pipes, hydrants, and hoses. Such valves shall be so placed and adjusted as to prevent excessive pressure in any part of the fire main system.

(11) Every centrifugal pump which is connected to the fire main shall be fitted with a non-return valve.

17. Fire main, water-service pipes, and hydrants—(1) In every ship which is required by the Codes of Practice issued under The Shipping (Fire Appliances) Regulations 1989 to be provided with power operated fire pumps, the diameter of the fire main and of the water-service pipes connecting the hydrants thereto shall be sufficient for the effective distribution of the maximum discharge required by those Codes of Practice from:

(a) Where only 1 pump is required by a Code of Practice, that pump; or

(b) Where 2 such pumps are so required, both pumps operating simultaneously; or

(c) Where more than 2 such pumps are so required, the largest 2 of those pumps operating simultaneously:

provided that in any ship other than a passenger ship, the diameter of the fire main and of the water-service pipes need be sufficient only for the discharge of 140m³ per hour.

(2) When the fire pumps required by those Codes of Practice are discharging the quantity of water required by subclauses (1), (2) or (3) of this clause as appropriate through adjacent fire hydrants in any part of the ship from nozzles of sizes specified in clause 18 of this code the following minimum pressure shall be capable of being maintained at any hydrant.

Any Passenger Ship	
With a gross tonnage of 4000 and upwards	310 kPa
With a gross tonnage of 1000 and upwards but under 4000	270 kPa
With a gross tonnage below 1000	200 kPa
Any Ship Other Than a Passenger Ship or Fishing Vessel	
With a gross tonnage of 6000 and upwards	270 kPa
With a gross tonnage of 1000 and upwards but under 6000	250 kPa
Fishing Vessels	
Any fishing vessel of 55m in length or over	250 kPa
Any fishing vessel of less than 55m in length	200 kPa

(3) The maximum pressure at any hydrant shall not exceed that at which the effective control of a fire hose can be demonstrated.

(4) Where any ship is required by to provide 2 jets of water under the conditions required by the Codes of Practice issued under The Shipping (Fire Appliances) Regulations 1989 hydrants sufficient in number shall be so positioned as to enable at least 2 jets of water not emanating from the same hydrant, one of which shall be from a single length of hose to reach any part of the ship normally accessible to the passengers or crew while the ship is being navigated, and to any store room and any part of any cargo space when empty. Provided that in a special category space 2 jets of water shall reach any part of such space each from a single length of hose.

(5) Where any ship is required to provide 1 jet of water under the conditions required by the Codes of Practice issued under The Shipping (Fire Appliances) Regulations 1989 hydrants sufficient in number shall be so positioned as to enable 1 jet of water from a single length of hose to reach any part of the ship normally accessible to the passengers or crew while the ship is being navigated, and to any store room and any part of any cargo space when empty.

(6) The fire main shall have no connections other than those necessary for fire fighting and washing down including anchor washing.

(7) Materials readily rendered ineffective by heat shall not be used for fire mains unless adequately protected. The pipes and fire hydrants shall be so placed that the fire hoses may be easily coupled to them and operated without kinking.

(8) In ships which may carry deck cargo, the fire hydrants shall be so placed that they are always readily accessible, and the