

§ 76.25-10

§ 76.25-10 Size and arrangement of sprinkler heads and pipe sizes.

(a) *General.* (1) The system shall be so designed and arranged that the overhead is effectively sprayed and that all portions of the deck are covered.

(2) One-half inch sprinkler heads shall be used. Sprinkler heads shall be so arranged that no portion of the overhead or vertical projection of the deck is more than 7 feet from a sprinkler head.

(b) *Pipe sizes.* (1) The sizes of branch lines, single cross mains, feed mains, and risers shall be in proportion to the number of sprinkler heads served. The minimum pipe sizes shall be as given in table 76.25-10(b)(1).

TABLE 76.25-10(b)(1)

Minimum nominal pipe size, inches	Maximum number of heads served	
	Vessels whose construction is more combustible than that set forth in §§ 72.05-5 through 72.05-60	Vessels constructed in general agreement with §§ 72.05-5 through 72.05-60
1	2	2
1¼	3	3
1½	5	5
2	10	10
2½	20	40
3	40	250
3½	65
4	100
5	160
6	250

(2) If a complete loop cross main is employed, the size of such cross main shall be in proportion to the number of sprinkler heads served. The minimum pipe sizes shall be as given in table 76.25-10(b)(2). The entire loop shall be of the same size pipe.

TABLE 76.25-10(b)(2)

Minimum nominal pipe size, inches	Maximum number of heads served	
	Vessels whose construction is more combustible than that set forth in §§ 72.05-5 through 72.05-60	Vessels constructed in general agreement with §§ 72.05-5 through 72.05-60
1	5	5

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TABLE 76.25-10(b)(2)—Continued

Minimum nominal pipe size, inches	Maximum number of heads served	
	Vessels whose construction is more combustible than that set forth in §§ 72.05-5 through 72.05-60	Vessels constructed in general agreement with §§ 72.05-5 through 72.05-60
1¼	9	9
1½	13	13
2	22	30
2½	40	80
3	80	250
3½	130
4	250

§ 76.25-15 Pumps and water supply.

(a) An automatically controlled pump shall be provided to supply the sprinkling system and shall be used for no other purpose. The size and capacity of the pump shall be governed by the zone having the greatest capacity need for any one deck, and shall be suitable to operate at least the number of heads noted in table 76.25-15(a) with a Pitot tube pressure of at least 15 p.s.i. at all heads (approximately 20 GPM per head). There shall also be sufficient pumping capacity available, either from the automatic pump, the fire pumps, or other source, so that in conjunction with the automatic pump the total number of heads noted in table 76.25-15(a) may be operated with the same efficiency as noted above, and at the same time to deliver water from the two highest fire hose outlets in a manner similar to that described in § 76.10-5(c). Intermediate values may be obtained by interpolation.

TABLE 76.25-15(a)

Maximum number of heads on one deck in one zone	Number of heads automatic pump to supply	Number of heads additional pumps to supply
5	5
10	10
20	10	10
30	12	16
40	15	18
50	15	25
60	20	25
80	20	30
100	20	40
120	20	50
150	20	60
200	20	75

TABLE 76.25-15(a)—Continued

Maximum number of heads on one deck in one zone	Number of heads automatic pump to supply	Number of heads additional pumps to supply
250	20	100

(b) [Reserved]

§ 76.25-20 Pressure tank.

(a) A pressure tank or other suitable means shall be installed to permit early action of the system pending the starting of the pump. Sufficient fresh water shall be carried in the tank to fill the piping of the largest zone, and in addition, force out at least 200 gallons at the least effective head in the zone at a Pitot tube pressure of at least 15 p.s.i. Suitable check valves shall be installed to prevent salt water from entering the pressure tank, and low water and low pressure alarms shall be fitted.

(b) [Reserved]

§ 76.25-25 Controls.

(a) The controls for the system shall be outside the spaces protected, and shall not be located in such space as might be cut off or made inaccessible in the event of fire in any of the spaces protected. The control space shall be marked as required by § 78.47-17 of this subchapter.

(b) Each supply line to the various zones shall be fitted with a stop valve which shall be marked as required by § 78.47-15 of this subchapter. These valves shall be normally open, and shall indicate by an alarm if they are closed.

§ 76.25-30 Piping.

(a) All piping, valves, and fittings of ferrous materials shall be protected inside and outside against corrosion unless specifically approved by the Commandant.

(b) All piping, valves, fittings, and sprinkler heads shall be securely supported, and, where necessary, protected against injury.

(c) Drains and dirt traps shall be fitted where necessary to prevent the accumulation of dirt or moisture.

(d) Piping shall be used for no other purpose.

§ 76.25-35 Operation and installation.

(a) The system shall be so arranged and installed that a fire in any of the protected spaces will open the affected sprinkler heads. Water from the pressure tank shall be immediately available to the affected sprinkler head and before the supply from the pressure tank is exhausted, the sprinkler pump shall be automatically started and shall supply the system until manually shut off. Suitable test stations shall be installed in each zone to test the operation of the system.

(b) The system shall be so arranged and installed that the presence of a fire in any of the protected spaces will automatically be registered visibly and audibly in the pilothouse or fire control station. The visible notice shall automatically indicate the zone in which the alarm originated. On vessels over 150 feet in length, there shall also be an audible alarm in the engine room.

(c) There shall be not less than two sources of power supply for the sea water pumps, air compressors and automatic alarms. Where the sources of power are electrical, these shall be a main generator and an emergency source of power. One supply shall be taken from the main switchboard, by separate feeders reserved solely for that purpose. Such feeders shall be run to a change-over switch situated near to the sprinkler unit and the switch shall normally be kept closed to the feeder from the emergency switchboard. The change-over switch shall be clearly labeled and no other switch shall be permitted in these feeders.

(d) Where subject to freezing, sprinkler systems shall be of the dry pipe type.

(e) The sprinkler heads, the cabinet, alarms, dry valves and actuating mechanisms shall be of an approved type.

(f) In general, the sprinkler heads shall be rated not lower than 135 degrees F. nor higher than 165 degrees F. However, in spaces where a high ambient temperature may be expected, sprinkler heads rated at 212 degrees F. shall be used.

(g) The automatic sprinkling system and all its components shall be used for no other purpose.