

issued under The Shipping (Construction) Regulations 1989 such storage rooms shall be treated as control stations.

(13) Spare parts for the system shall be stored on board and be to the satisfaction of the Chief Surveyor.

**2. Carbon dioxide systems**—(1) When carbon dioxide is used as the extinguishing medium in cargo spaces, the quantity of gas available shall be sufficient to give a minimum volume of free gas equal to 30 percent of the gross volume of the largest cargo compartment in the ship which is capable of being sealed.

(2) When carbon dioxide is used as the extinguishing medium in cargo spaces containing motor vehicles with fuel in their tanks for their own propulsion or in closed ro-ro spaces or closed ro-ro spaces used for bulk stowage or cargo, the quantity of gas available shall be sufficient to give a minimum volume of free gas equal to 45 percent of the gross volume of the largest such cargo space which is capable of being effectively sealed.

(3) When carbon dioxide is used as an extinguishing medium for machinery spaces or pump rooms, the quantity of gas available shall be sufficient to give a minimum of free gas equal to the larger of the following quantities, either

(a) 40 percent of the gross volume of the largest space, such volume being measured up to the level at which the horizontal area of the casing is 40 percent or less of the gross area of such space measured midway between the tank top and the lowest part of the casing; or

(b) 35 percent of the gross volume of the largest space including the casing:

Provided that the aforesaid percentages may be reduced to 35 percent and 30 percent respectively for ships of under 2,000 gross tonnage, not being passenger ships, provided also that if two or more machinery spaces are not entirely separate they shall be considered as forming one space.

(4) The volume of carbon dioxide shall be calculated at 0.56 cubic metre per kilogramme.

(5) (a) When carbon dioxide is used as the extinguishing medium for machinery spaces or pump rooms the arrangements shall be such that 85 percent of the gas required to provide the concentration referred to in clause 2(3) of this Performance Standard when applied to the space concerned can be discharged into that space within two minutes.

(b) When carbon dioxide is used as the extinguishing medium in cargo spaces containing motor vehicles with fuel in their tanks for their own propulsion or in closed ro-ro spaces the arrangements shall be such as to ensure that at least two thirds of the gas required for the space can be introduced within 10 minutes.

(6) Safe means shall be provided for the crew to check the quantity of medium within the containers.

**3. Other gas systems**—(1) Where gas other than carbon dioxide is produced on the ship and is used as an extinguishing medium, it shall be a gaseous product of fuel combustion in which the oxygen content, the carbon monoxide content, the corrosive elements and any solid combustible elements have been reduced to a permissible minimum. Any system using such gas shall afford equivalent protection to that provided by a fixed carbon dioxide system.

(2) When a system producing inert gas is used to provide extinguishing gas in a fixed fire extinguishing system for cargo spaces, except cargo oil tanks, in compliance with the Codes of Practice issued under the The Shipping (Fire Appliances) Regulations 1989 it shall be capable of producing hourly a volume of free gas at least equal to 25 percent of the gross volume of the largest compartment protected in this way for a period of 72 hours.

(3) No part of the control, storage or generating arrangement of any fixed fire extinguishing system shall be situated forward of the collision bulkhead in any passenger ship.

Dated at Wellington this 31st day of October 1989.

W. P. JEFFRIES, Minister of Transport.

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### **The Shipping (Fixed Foam Fire Extinguishing Systems) Notice 1989**

Pursuant to section 235 of the Shipping and Seamen Act 1952, the Minister of Transport hereby gives the following notice.

#### **Notice**

**1. Title and commencement**—(1) This notice may be cited as the Shipping (Fixed Foam Fire Extinguishing Systems) Notice 1989.

(2) This notice shall come into force on the 1st day of November 1989.

**2. Performance Standard prescribed**—The Performance Standard set out in the Schedule to this notice is hereby prescribed for the purposes of the Shipping (Fire Appliances) Regulations 1989.

#### **Schedule**

### **Performance Standard for Fixed Foam Fire Extinguishing Systems**

#### **PART I**

### **Fixed High-Expansion Foam Fire-Extinguishing Systems in Machinery Spaces**

**1.** (1) Any required fixed high-expansion foam system in machinery spaces shall be capable of rapidly discharging through fixed discharge outlets a quantity of foam sufficient to fill the greatest space to be protected at a rate of at least 1m in depth per minute. The quantity of foam-forming liquid available shall be sufficient to produce a volume of foam equal to 5 times the volume of the largest space to be protected. The expansion ratio of the foam shall not exceed 1,000 to 1.

(2) The Chief Surveyor may permit alternative arrangements and discharge rates provided that the Chief Surveyor is satisfied that equivalent protection is achieved.

**2.** Supply ducts for delivering foam, air intakes to the foam generator and the number of foam-producing units shall in the opinion of the Chief Surveyor be such as will provide effective foam production and distribution.

**3.** The arrangement of the foam generator delivery ducting shall be such that a fire in the protected space will not affect the foam generating equipment.

**4.** The foam generator, its sources of power supply, foam-forming liquid and means of controlling the system shall be readily accessible and simple to operate and shall be grouped in as few locations as possible at positions not likely to be cut off by a fire in the protected space.

#### **PART 2**

### **Fixed Low-Expansion Foam Fire-Extinguishing Systems in Machinery Spaces**

**5.** Where in any machinery space a fixed low-expansion foam fire-extinguishing system is fitted in addition to the requirements of the Codes of Practice issued under The Shipping (Fire Appliances) Regulations 1989 such a system shall be capable of discharging through fixed discharge outlets in not more than 5 minutes a quantity of foam sufficient to cover to a depth of 150mm the largest single area over which oil fuel is liable to spread. The system shall be capable of generating foam suitable for extinguishing oil fires. Means shall be provided for effective distribution of the foam through a permanent system of piping and control valves or cocks to suitable discharge outlets, and for the foam to be effectively directed by fixed sprayers on other main fire hazards in the