shall be protected at least at one level by at least "B-0" class divisions and self-closing doors. Lifts which penetrate only a single deck shall be surrounded by "A-0" class divisions with steel doors at both levels. Stairways and lift trunks which penetrate more than a single deck shall be surrounded by at least "A-0" class divisions and be protected by self-closing doors at all levels.

(2) On ships having accommodation for 12 persons or less, where stairways penetrate more than a single deck and where there are at least two escape routes direct to the open deck at every accommodation level, consideration may be given by the Chief Surveyor to reducing the "A-0" requirements of sub-clause (1) of this clause to "B-0".

(3) All stairways shall be of steel frame construction except where the Chief Surveyor sanctions the use of other equivalent material.

89. Doors in Fire Resisting Divisions—(1) The fire resistance of doors shall, as far as practicable, be equivalent to that of the division in which they are fitted. Doors and door frames in "A" class divisions shall be constructed of steel. Doors in "B" class divisions shall be non-combustible. Doors fitted in boundary bulkheads of machinery spaces of category A shall be reasonably gastight and self-closing. In ships constructed according to method IC, the use of combustible materials in doors separating cabins from the individual interior sanitary accommodation such as showers, may be permitted.

(2) Doors required to be self-closing shall not be fitted with hold-back hooks. However, hold-back arrangements fitted with remote release devices of the fail-safe type may be utilised.

(3) In corridor bulkheads ventilation openings may be permitted only in and under the doors of cabins and public spaces. The openings shall be provided only in the lower half of a door. Where such opening is in or under a door the total net area of any such opening or openings shall not exceed 0.05m^2. When such opening is cut in a door it shall be fitted with a grille made of non-combustible material.

(4) Watertight doors need not be insulated.

90. Ventilation Systems—The ventilation systems of cargo ships shall be in compliance with the provisions of clause 79, which includes provisions of clause 78 sub-clauses (4) to (11). Except that the provision of clause 78(10) shall not be a requirement for cargo ships.

91. Restricted Use of Combustible Materials—(1) All exposed surfaces in corridors and stairway enclosures and surfaces including grounds in concealed or inaccessible spaces in accommodation and service spaces and control stations shall have low flame-spread characteristics. Exposed surfaces of ceilings in accommodation and service spaces and control stations shall have low flame-spread characteristics.

(2) Paints, varnishes and other finishes used on exposed interior surfaces shall not offer an undue fire hazard in the judgement of the Chief Surveyor and shall not be capable of producing excessive quantities of smoke.

(3) Primary deck coverings, if applied within accommodation and service spaces and control stations, shall be of approved material which will not readily ignite, or give rise to toxic or explosive hazards at elevated temperatures.

92. Details of Construction—(1) Method IC—In accommodation and service spaces and control stations all linings, draught stops, ceilings and their associated grounds shall be of non-combustible materials.

(2) Methods IIC and IIIC—In corridors and stairway enclosures serving accommodation and service spaces and control stations, ceilings, linings, draught stops and their associated grounds shall be of non-combustible materials.

(3) Methods IC, IIC and IIIC—Except in cargo spaces or refrigerated compartments of service spaces, insulating materials shall be non-combustible. Vapour barriers and adhesives used in conjunction with insulation, as well as the insulation of pipe fittings, for cold service systems, need not be of non-combustible materials, but they shall be kept to the minimum quantity practicable and their exposed surfaces shall have qualities of resistance to the propagation of flame to the satisfaction of the Chief Surveyor.

(4) Where non-combustible bulkheads, linings and ceilings are fitted in accommodation and service spaces they may have a combustible veneer not exceeding 2.0mm in thickness within any such space except corridors, stairway enclosures and control stations, where the veneer shall not exceed 1.5mm in thickness.

(5) Air spaces enclosed behind ceilings, panellings, or linings, shall be divided by close-fitting draught stops spaced not more than 14m apart. In the vertical direction, such air spaces, including those behind linings of stairways, trunks and similar structures, shall be closed at each deck.

93. Ro-ro Cargo Spaces—(1) Where a ro-ro cargo space is fitted with a fixed pressure water-spraying system in accordance with the Shipping (Fire Appliances) Regulations 1989 the drainage and pumping arrangements shall be such as to prevent the build up of free surfaces. If this is not possible the adverse effect upon stability of the added weight and free surface of water shall be taken into account to the extent deemed necessary by the Chief Surveyor in his approval of the stability information. Such information shall be included in the stability information supplied to the master.

(2) Closed ro-ro cargo spaces shall be provided with an effective power ventilation system sufficient to provide at least six air changes per hour based on an empty hold. The system shall be entirely separate from other ventilating systems. Ventilation ducts serving ro-ro cargo spaces capable of being effectively sealed shall be separated for each cargo space. The Chief Surveyor may require an increased number of air changes when vehicles are being loaded or unloaded. The system shall be capable of being controlled from a position outside such spaces.

The ventilation shall be so arranged as to prevent air stratification and the formation of air pockets.

Means shall be provided to indicate any loss of the required ventilating capacity on the navigating bridge.

Arrangements shall be provided to permit a rapid shutdown and effective closure of the ventilation system in case of fire, taking into account the weather and sea conditions.

Ventilation ducts, including dampers, shall be made of steel and their arrangement shall be to the satisfaction of the Chief Surveyor.

(3) Closed ro-ro cargo spaces carrying motor vehicles with fuel in their tanks for their own propulsion shall comply with the following additional provisions:

(a) Except as provided in paragraph (b) below, electrical equipment and wiring shall be of a type suitable for use in explosive petrol and air mixtures.

(b) Above a height of 450mm from the deck and from each platform for vehicles, if fitted, except platforms with openings of sufficient size permitting penetration of petrol gases downwards, electrical equipment of a type so enclosed and protected as to prevent the escape of sparks shall be permitted as an alternative on condition that the ventilation system is so designed and operated as to provide continuous ventilation of the cargo spaces at the rate of at least ten air changes per hour whenever vehicles are on board.

(c) Other equipment which may constitute a source of ignition of flammable vapours shall not be permitted.

(d) Electrical equipment and wiring in an exhaust ventilation duct shall be of a type approved for use in explosive petrol and air mixtures and the outlet from any exhaust duct shall be sited in a safe position, having regard to other possible sources of ignition.