

(7) At the connection box a notice shall be provided giving full information on the system of supply and normal voltage (and frequency if A.C.) of the ship's system, and the procedure for carrying out the connection.

46. Testing of a Completed Installation—(1) Before a new installation, or alteration of, or additions to, an existing installation are put into service, the tests specified in subclause (4) of this clause shall be made.

(2) The voltage used for insulation resistance tests shall be a unidirectional voltage, not less than twice that which will normally be applied to the installation, except that it need not exceed 500 volts for medium-voltage circuits.

(3) The inspection and testing of the installation are to be carried out by, or under the direction of, the electrician in charge of the work. The inspection and testing shall be to the satisfaction of a surveyor and shall be carried out in an orderly sequence as follows:

- (a) Visual inspection;
- (b) Continuity of all conductors;
- (c) Insulation resistance tests;
- (d) Verification of polarity;
- (e) Earthing.

(4) An insulation resistance test shall be made between earth and all conductors of the insulation, alteration, or addition as appropriate, connected together. Apparatus may, if desired, be disconnected from circuits during the test and be tested separately.

(5) The insulation resistance test required in subclause (4) of this clause shall be deemed to be satisfied if the insulation resistance is not less than the minimum set out below for the respective parts of the installation:

<i>Wiring or Apparatus Under Test</i>	<i>Minimum Insulation Resistance to Earth</i>
Complete installation	1 megohm
Alteration to an installation and/or Addition to an installation	$\frac{50}{\text{number of points}}$ megohms, but not less than one megohm
Apparatus disconnected from circuits	0.5 megohm

(6) A written report tabulating results of all inspections and tests as listed in subclauses (3)(a) to (e) of this clause is to be prepared and signed by the electrician responsible for the installation and two copies are to be forwarded to a Surveyor of Ships.

PART VII

FIRE PROTECTION

47. General—(1) The number of openings in the bulkheads and decks shall be as few as reasonably practicable and fitted with closing devices which provide protection in resisting fire at least equivalent to the surrounding structure.

(2) Windows and skylights to machinery spaces shall be as follows:

(a) Where skylights are provided, they are to be operable from outside the space. Fitting of windows to these skylights should be discouraged, but where fitted they should be of a non-opening type, with wire-reinforced glass and provided with suitable externally applied steel shutters.

(b) Glass or similar materials shall not be fitted in machinery space boundaries. This does not preclude the use of wire-reinforced glass for skylights and glass in control rooms within the machinery spaces.

(3) Insulating materials in accommodation spaces, service spaces except domestic refrigerating compartments, control stations and machinery spaces shall be non-combustible. The surface of insulation fitted on the internal boundaries of

machinery spaces of Category A shall be impervious to oil or oil vapours.

(4) Paints, varnishes and other finishes used on exposed interior surfaces shall not be capable of producing quantities of smoke or toxic gases or vapours and shall not be of a nature to offer an undue fire hazard.

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

(6) Pipes conveying oil, other combustible liquids, gases or compressed air should be of steel or be of construction and material acceptable to the Chief Surveyor having regard to the risk of fire. Pipes conveying flammable liquids under pressure in excess of 3000 kPa are to be screened where liquid from a burst or leak may impinge upon a hot surface or its insulation.

(7) In accommodation and service spaces and control stations, pipes penetrating 'A' or 'B' Class divisions shall be of approved materials having regard to the temperature such divisions are required to withstand.

(8) Materials readily rendered ineffective by heat shall not be used for overboard scuppers, sanitary discharges, and other outlets which are close to the waterline and where the failure of the material in the event of fire would give rise to danger of flooding.

(9) In vessels of 24m in length or more machinery driving fuel oil transfer pumps, fuel oil unit pumps and other similar fuel pumps shall be fitted with remote controls situated outside the space concerned so that they can be stopped in the event of a fire arising in the space in which they are located.

(10) All main and auxiliary machinery exhaust pipes are to be kept clear of or well insulated in way of any woodwork or other combustible materials.

(11) Drip trays shall be fitted where necessary to prevent oil leaking into bilges.

(12) All waste receptacles shall be constructed of non-combustible materials with no openings in the sides and bottom.

(13) Cellulose-nitrate-based film shall not be used in cinematograph installations.

48. Structural Requirements for Ships of Less than 24m Length—(1) In every ship of Class II, III, VII, VIIA and VIII constructed of non-combustible materials, bulkheads separating machinery spaces from accommodation and other spaces are to be constructed of non-combustible materials or insulated to the satisfaction of the Chief Surveyor.

(2) In ships constructed of fibre reinforced plastic, fuel tanks moulded integral with the hull and located in the machinery spaces are to have their external surfaces within the machinery spaces laminated with an approved resin of reduced fire hazard or the laminate reinforcement is to be a closely woven glass fabric. Alternatively the surfaces may be coated with an approved fire retardant paint or protected by non-combustible materials.

49. Structural Requirements for Ships 24m Length and Over and of Class II, III, VII, VIIA and VIII.

(1) The requirements of subclauses (2) to (15) of this clause apply to ships of Class II, III, VII, VIIA and VIII.

(2) The hull, superstructure, structural bulkheads, decks and deckhouses shall be constructed of non-combustible materials unless the requirements of sub-clause (3) of this clause and any additional fire extinguishing requirements of the Shipping (Fire Appliances) Regulations 1989 are complied with.

(3) In vessels, the hull of which is constructed of non-combustible materials, the decks and bulkheads separating machinery spaces of Category A from accommodation spaces, service spaces or control stations shall be constructed to 'A-60' Class standard where the machinery space of Category A is