

able tensile stresses are liable to occur at the cables and cable trays, precautions shall be taken to distribute the expansion movement uniformly over a cable loop provided for such purpose, so that there is no damaging of the cables, cable runs or cable penetration systems.

The diameter of the cable loop shall be at least 12 times the diameter of the thickest cable. In each division should be provided at least one cable loop.

1.5 Cables shall not be laid within room isolations.

Exceptions are permitted for lighting, socket-outlets and control circuits in accommodation and refrigerated rooms, provided that the maximum loading of the cables does not exceed 70 % of their current carrying capacity.

1.6 Where, for safety reasons, a system shall have duplicated supply- and/or control cables, the cable routes are to be placed as far apart as possible.

1.7 Supply cables for emergency consumers shall not be run through fire zones containing the main source of electrical power and associated facilities. Exceptions are made for cables for supply of emergency consumers located within such areas.

1.8 The electrical cables to the emergency fire pump shall not pass through the machinery spaces containing the main fire pumps and their sources of power and prime movers. If the electrical cables to the emergency fire pump pass through other high fire risk areas, they are to be of a fire resistant type.

1.9 Cables for supply of essential equipment and emergency consumers, e.g. lighting and important communications- and signalling systems shall, wherever possible, bypass galleys, laundries, category A engine rooms and their casings and areas with a high fire risk.

On ships whose construction or small size precludes fulfilment of these requirements, measures shall be taken to ensure the effective protection of these cables where they have to be run through the rooms mentioned above, e.g. by the use of fire-resistant cables or by flame-retardant coating such an installation shall be approved by GL.

1.10 Cables for medium-voltage installations shall be run at a distance of at least 50 mm from low-voltage cables.

2. Fastening of cables and wires

2.1 Cable trays and cableways shall be made preferably of metallic materials which are protected against corrosion.

Cables and wires shall be fastened with corrosion-resistant, flame retardant clips or bindings. Exceptions are made for cables which are laid in pipes or cable ducts.

Cables and wiring shall be installed and supported in such a manner as to avoid chafing or other damage.

This also applies for the installation of cables and wires in connection boxes of electrical equipment and switchboards.

2.2 Suitable materials shall be placed together when fasten cables to aluminium walls.

Clips for mineral-insulated cables with copper sheaths shall be made of copper alloy if they are in electrical contact with the latter.

2.3 Single-core cables are to be fastened in such a manner that they are able to withstand the electrodynamic forces occurring in the event of short circuits.

2.4 The distances between the supports for cable racks and the fastenings used shall be selected with due regard to the cable type, cross-section and number of cables concerned.

2.5 Where cables suspended are fastened by the use of plastic clips or straps, metallic cable fixing devices, spaced not more than 2 m apart shall be used additionally in the following areas:

- generally in escape routes and emergency exits, on the open deck, in refrigeration rooms and in boiler rooms
- cargo holds, machinery rooms, control rooms and service rooms where bunched cables are fastened on riser cable trays or under the cable trays

2.6 Cable trays/protective casings made of plastic materials shall be tightened in such a way that they do not obstruct together with the cables the escape routes in case of fire, see 6.2.

The suitability of cable trays shall be proved, see Section 21, E.5.1.1 d). Installation, see also 2.5.

2.7 It is recommended, that cables and cable bunches shall not be painted.

If they still would be painted the following shall be observed:

- the paint shall be compatible with the material of the cables, and
- the flame-retardant property respectively fire resistance of the cables and cable bunches shall be maintained.

3. Stress relief

Cables shall be so installed that any tensile stresses which may occur remain within the permitted limits. This shall be particularly observed for cables on vertical runs or in vertical conduits.

4. Protection against mechanical damage

4.1 Cables in cargo holds, on open decks and at positions where they are exposed to a particularly high risk of mechanical damage shall be protected by pipes, covers or closed cable ducts.