

SC194 Installation of electrical and electronic appliances on the bridge and vicinity of the bridge

(Sept. 2005)

Regulation SOLAS V/17, Electromagnetic compatibility

1. Administrations shall ensure that all electrical and electronic equipment on the bridge or in the vicinity of the bridge, on ships constructed on or after 1 July 2002, is tested for electromagnetic compatibility, taking into account the recommendations developed by the Organization.*
2. Electrical and electronic equipment shall be so tested that electromagnetic interference does not affect the proper function of navigational systems and equipment.
3. Portable electrical and electronic equipment shall not be operated on the bridge if it may affect the proper function of navigational systems and equipment.

* Refer to the General requirements for electromagnetic compatibility for all electrical and electronic ship's equipment adopted by the Organization by resolution A.813(19).

Interpretation

1. Background

SOLAS V/17, IMO A.694 and A.813

2. Scope

All electrical and electronic appliances installed on the bridge and vicinity of the bridge other than mandatory navigation and communication equipment having been type tested according to IEC 60945, as well as loose equipment placed on board by the builders or owners shall have been EMC tested for Conducted and Radiated Emission.

Bridge and vicinity of the bridge covers deck and bridge zone, i.e.

- the wheelhouse including bridge wings
- control rooms, characterized by equipment for inter-communication, signal processing, radio communication and navigation, auxiliary equipment
- area in close proximity to receiving and/or transmitting antennas and large openings in the metallic structure (equipment beyond 5 meters need not be considered for this purposes).

3. Test standards

The following are acceptable test standards:

- IEC 60945 Maritime navigation and radio communication equipment and systems – General requirements – Methods of testing and required test results
- IEC 60533 Electrical and electronic installations in ships – Electromagnetic compatibility

For the purpose of this UI, equipment need be tested for Conducted and Radiated

Emission only.

Note:

Equipment having been type tested for EMC in accordance with other appropriate standards will have to be considered.

In particular the level of radiated emission in the frequency band from 156 to 165 MHz and the location of the equipment shall be evaluated.

IEC standard 60533 gives guidance to type of equipment and applicable tests.

Passive-EM equipment, defined below, which is excluded from the scope of the EMC since it is considered not liable to cause or be susceptible to disturbances need not to be tested but shall be provided with an exemption statement.

Definition:

Equipment is considered a passive-EM equipment if, when used as intended (without internal protection measures such as filtering or shielding) and without any user intervention, it does not create or produce any switching or oscillation of current or voltage and is not affected by electromagnetic disturbances.

Example of equipment which include no active electronic part:

- cables and cabling systems, cables accessories.
- equipment containing only resistive loads without any automatic switching device; e.g. simple domestic heaters with no controls, thermostat, or fan.
- batteries and accumulators.

4. Evidence to be provided

All electrical and electronic appliances installed on the bridge and vicinity of the bridge other than mandatory navigation and communication equipment having been type tested according to IEC 60945, as well as loose equipment placed on board by the builders or owners shall be listed and be provided with at least the following information. The list and the evidence of equipment are to be kept onboard.

- equipment description
- manufacturer
- type / model
- evidence of EMC compatibility which may be:
 - type approval certificate covering EMC requirements for bridge installations;
 - test certificate or report / conformity statement; or
 - exemption statement.

Note: This UI SC 194 is to be uniformly implemented by IACS Members and Associates from 1 January 2007.

END