# Hydrocarbon Gas Detectors and Bilge High Level Alarms in Cargo Pump-rooms

**Object of Amendment**

Guidance for the Survey and Construction of Steel Ships Part R

**Reason for Amendment**

The Society's requirements for continuous monitoring systems for hydrocarbon concentrations in cargo pump-rooms and for bilge level monitoring devices in Part R of the Rules for the Survey and Construction of Steel Ships are based on Chapter II-2 of SOLAS.

In recent years, there have been some reports of incidents involving ship crew members suffering from gas poisoning while working within the cargo pump-rooms of crude oil tankers due to the fixed hydrocarbon gas detectors installed in such rooms not functioning effectively. In response to these incidents, IACS discussed the need for clarifying the requirement for the installation locations of hydrocarbon gas detectors in cargo pump-rooms. In addition to the above, IACS also discussed a proposal to clarify the requirement for the alarm activation points of bilge level monitoring devices in cargo pump-rooms.
As a result of these discussions, IACS Unified Interpretation SC307 was adopted in November 2024.

Accordingly, relevant requirements are amended based on the UI SC307.

**Outline of the Amendment**

Clarifies the requirement for the installation locations of hydrocarbon gas detectors or sampling heads, and bilge high level alarm activation points in the cargo pump-rooms.

**Effective Date and application**

This draft amendment applies to ships for which the date of contract for construction is on or after 1 January 2026.

An asterisk (*) after the title of a requirement indicates that there is also relevant information in the corresponding Guidance.

ID:DD25-05

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Amended-Original Requirements Comparison Table
(Hydrocarbon Gas Detectors and Bilge High Level Alarms in Cargo Pump-rooms)

| Amended | Original | Remarks |
|---|---|---|
| **GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS**<br><br>**Part R FIRE PROTECTION, DETECTION AND EXTINCTION**<br><br>**R4 PROBABILITY OF IGNITION**<br><br>**R4.5 Cargo Areas of Tankers**<br><br>**R4.5.10 Protection of Cargo Pump-rooms**<br>**1** (Omitted)<br>**2** The type and arrangement of the continuous monitoring system for the concentration of hydrocarbon gases required in **4.5.10(3), Part R of the Rules** is to be in accordance with the following:<br>(1) The system may be of a sampling type provided that the system is dedicated for cargo pump-rooms. In this case, a sampling period is to be as short as possible. Where a gas analysing unit with non-explosion proof measuring equipment is provided for the system, the unit may be located in areas outside cargo areas, e.g. in the cargo control room, navigation bridge or engine room when mounted on the forward bulkhead provided that the following requirements are observed:<br>((a) to (h) are omitted.)<br>(2) Characteristics of the cargoes and their vapours | **GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS**<br><br>**Part R FIRE PROTECTION, DETECTION AND EXTINCTION**<br><br>**R4 PROBABILITY OF IGNITION**<br><br>**R4.5 Cargo Areas of Tankers**<br><br>**R4.5.10 Protection of Cargo Pump-rooms**<br>**1** (Omitted)<br>**2** The continuous monitoring system for the concentration of hydrocarbon gases required in **4.5.10(3), Part R of the Rules** is to be in accordance with the followings:<br>(1) The system may be of a sampling type provided that the system is dedicated for cargo pump rooms. In this case, a sampling period is to be as short as possible. Where a gas analysing unit with non-explosion proof measuring equipment is provided for the system, the unit may be located in areas outside cargo areas, e.g. in the cargo control room, navigation bridge or engine room when mounted on the forward bulkhead provided that the following requirements are observed:<br>((a) to (h) are omitted.)<br>(2) For the system, a flammable gas detecting system | UI SC307 / Interpretation |

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Amended-Original Requirements Comparison Table
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| Amended | Original | Remarks |
|---|---|---|
| (flammability, density, etc.) are to be taken into consideration to determine the type and arrangement of detectors. | suitable for detection of vapours from loaded cargoes may be accepted. | 1 |
| (3) Suitable numbers of detectors or sampling heads are to be provided in the cargo pump-room at upper and lower positions, at least covering the following **(a)** to **(e)**.<br>(a) (perpendicular) upper part of each cargo pump or between two cargo pumps;<br>(b) within 30 *cm* above the lowest part of the cargo pump-room bottom floor;<br>(c) not more than 1 *m* below the cargo pump room ceiling/head deck;<br>(d) one detector every 10 *m* length or width of the cargo pump-room; and<br>(e) areas where the air circulation is reduced (e.g. recessed corners). | (Newly added)<br><br>(Moved) | UI SC307 / Interpretation 2<br><br>Moved from R4.5.10-3. MSC.1/Circ.1120 |
| (Moved) | **3** The wording "suitable positions in order that potentially dangerous leakages are readily detected" specified in **4.5.10(3), Part R of the Rules** means the zone where air circulation is reduced (e.g. recessed corners). | Moved to R4.5.10-2(3)(e) above. |
| **3** (Omitted.) | **4** (Omitted.) | Editorial correction. |
| **4** The wording "bilge level monitoring devices together with appropriately located alarms" specified in **4.5.10(4), Part R of the Rules** is to be in accordance with the following. | **5** The wording "appropriately located alarms" specified in **4.5.10(4), Part R of the Rules** means alarms activating at a level of sufficiently lower than the stuffing box. | Summarised the requirement as "bilge level monitoring devices" in R4.5.10-4. |
| (1) "Appropriately located alarms" means alarms activating at a level of sufficiently lower than the stuffing box. | (Moved) | Moved from R4.5.10-5. |
| (2) A bilge high level alarm system being capable of detecting a small bilge in the cargo pump-room and alarming may be regarded as a bilge level | (Moved) | Moved from R4.5.10-6. MSC.1/Circ.1120 |

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| Amended | Original | Remarks |
|---|---|---|
| monitoring system.<br>(3) A high level of liquid in the pump room is to activate a continuous audible and visual alarm signal in the pump-room, cargo control room, engine control room and on the navigation bridge. | (Newly added) | UI SC307 / Interpretation 3 |
| (Moved) | **6** With respect to the requirements of **4.5.10(4), Part R of the Rules**, a bilge high level alarm system being capable of detecting a small bilge in the cargo pump room and alarming to the cargo control room or the cargo pump control station may be regarded as a bilge level monitoring system. | Moved to -4(2) above. |

EFFECTIVE DATE AND APPLICATION

**1.** The effective date of the amendments is 1 January 2026.

**2.** Notwithstanding the amendments, the current requirements apply to ships for which the date of contract for construction* is before the effective date.

* "contract for construction" is defined in the latest version of IACS Procedural Requirement (PR) No.29.

IACS PR No.29 (Rev.0, July 2009)

**1.** The date of "contract for construction" of a vessel is the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. This date and the construction numbers (i.e. hull numbers) of all the vessels included in the contract are to be declared to the classification society by the party applying for the assignment of class to a newbuilding.

**2.** The date of "contract for construction" of a series of vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the shipbuilder.
For the purpose of this Procedural Requirement, vessels built under a single contract for construction are considered a "series of vessels" if they are built to the same approved plans for classification purposes. However, vessels within a series may have design alterations from the original design provided:
(1) such alterations do not affect matters related to classification, or
(2) If the alterations are subject to classification requirements, these alterations are to comply with the classification requirements in effect on the date on which the alterations are contracted between the prospective owner and the shipbuilder or, in the absence of the alteration contract, comply with the classification requirements in effect on the date on which the alterations are submitted to the Society for approval.
The optional vessels will be considered part of the same series of vessels if the option is exercised not later than 1 year after the contract to build the series was signed.

**3.** If a contract for construction is later amended to include additional vessels or additional options, the date of "contract for construction" for such vessels is the date on which the amendment to the contract, is signed between the prospective owner and the shipbuilder. The amendment to the contract is to be considered as a "new contract" to which **1.** and **2.** above apply.

**4.** If a contract for construction is amended to change the ship type, the date of "contract for construction" of this modified vessel, or vessels, is the date on which revised contract or new contract is signed between the Owner, or Owners, and the shipbuilder.

Note:
This Procedural Requirement applies from 1 July 2009.

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