SWEDISH TRANSPORT AGENCY

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Comments and interpretations by the Swedish Transport Agency regarding IMO Conventions

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Version	Date	Amends	Editor
03.00	2017-04-11	The general instructions to RO is stated in an introductory section, instead of stated in each appendix. New paragraphs have been added. Appendix 7: new reference for regulation 10. New Appendix 8 – Ballast Water Management Convention.	Maria Sakari

General instructions to the RO

- Whenever this document refers to a recognised organisation or classification society, it means a recognised organisation authorised by the Swedish Transport Agency.
- The RO shall inform the STA if any communication with IMO, or any agreement with other Governments, is needed.
- Unless expressly provided otherwise; exemptions, equivalents and exceptions are to be handled by the STA.
- In the absence of guidance from the STA, guidance contained in IMO Resolutions and Circulars shall be considered.
- In the absence of both STA and IMO guidance, the RO may apply IMO-supported IACS Unified Interpretations (UI). If there are IACS UI not supported by the IMO, the RO may not apply these unless the STA has given its explicit approval. If there are no IACS UI, the RO must consult the STA.
- Footnotes are to be complied with.
- SR = Swedish requirement.
- I = Interpretation.
- GA = General advice.

Appendix 1 - SOLAS 1974 and its Protocol of 1988, as amended

International Convention for Safety of Life at Sea (SOLAS 1974)

as amended

Chapter II-1. **Construction – Structure, subdivision and stability, machinery and electrical installations**

	Part A **General**
	Part A-1 **Structure of ships**
Reg. 3-2	**Protective coatings of dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers** STA accepts corrosion prevention systems approved by a recognized classification society.
Reg. 3-3	**Safe access to tanker bows**
2	In accordance with guidelines for safe access to tanker bows, adopted by the Maritime Safety Committee by resolution MSC.62 (67).
Reg. 3-4	**Emergency towing arrangements on tankers** STA accepts emergency towing arrangements approved by a recognized classification society and in accordance with guidelines developed by IMO.
Reg. 3-5	**New installation of materials containing asbestos** STA has specific rules regarding asbestos see The Swedish Maritime Administration's regulations and general advice on the working environment on board ships. New installation is not accepted.
Reg. 3-6	**Access to and within spaces in, and forward of, the cargo area of oil tankers and bulk carriers**
2.3	**Means of access to cargo and other spaces** STA accepts construction and materials of all means of access approved by a recognized classification society.
4.1	**Ship Structure Access Manual** STA accepts Ship Structure Access Manual approved by a recognized classification society.
Reg. 3-8	**Towing and mooring equipment**
3	STA accepts towing and mooring equipment approved by a recognized classification society.
	Part B **Subdivision and stability**
Reg. 5	**Intact stability information**
2	STA may allow the inclining test of an individual cargo ship to be dispensed with, provided basic stability data are available from the inclining test starting from the third ship in a series based on at least two inclined ships. On condition that reliable stability information for the exempted ship can be obtained from such basic data, as required by regulation 5-1.
Reg. 15	**Openings in the shell plating below the bulkhead deck of passenger ships and the freeboard deck of cargo ships**
8.5	STA accepts pipes of steel or other equivalent material approved by a recognized classification society.
Reg. 16	**Construction and initial tests of watertight doors, sidescuttles, etc.**
1.1	STA accepts design, materials and construction of all watertight doors, sidescuttles, gangway and cargo ports, valves, pipes, ash-chutes and rubbish-chutes approved by a recognized classification society.
Reg.16-1	**Construction and initial tests of watertight decks, trunks, etc.**

1	STA accepts construction and initial tests of watertight decks, trunks, etc. approved by a recognized classification society.
Reg. 22	**Prevention and control of water ingress, etc.**
4	Through individual decision, STA may accept a watertight door to remain open during navigation. For STA to permit a door to remain open during navigation on a cargo ship, the ships survivability after damage with the door open must be demonstrated through a floatability assessment. No specific damage stability criteria need to be complied with, but the ship must be floating in the final plane equilibrium. Further no electrical equipment or electrical components necessarily for the operation of the watertight door is allowed to be submerged, unless the enclosure of such electrical components full fills the requirements in SOLAS, chapter II-1, regulation 13.7.6. Application is to be sent to STA by the RO. Application shall include the floatability assessment referred to above, in addition to the opinion of the RO on the issue.
Part C **Machinery general**	
Important! *STA require that classification society do not verify or certify any unconventional arrangements which is not covered by the regulation or standards; consultation shall be done with the STA.*	
Reg. 26	**General**
2, 3 and 6	STA accepts decision and applicable rules from a recognised classification society.
Reg. 27	**Machinery**
5	STA permits provisions for overriding automatic shutoff devices if the device prevents unintentional use and there is a visual indication.
Reg. 28	**Means of going astern**
2	STA requires every single vessel to demonstrate the manoeuvrability during the sea trial.
Reg. 29	**Steering gear**
1	STA accepts decision and applicable rules from a recognised classification society.
2.1	All steering gear components and rudder stock shall be of sound and reliable construction and Associated bearings shall be permanently lubricated or means for lubrication shall be arranged.
2.2	Fatigue criteria shall be applied for design of piping and components, taking into account pulsating pressures due to dynamic loads.
3	Steering gears should be power operated when necessary, to meet the requirements of paragraph 3.2 and in any case when the rudder stock is over 230 mm diameter in way of tiller, excluding strengthening for navigation in ice. Requirements for ice class can be found in TSFS 2009:111 about Finnish and Swedish ice class.
3.2	The steering gear test should be carried out with the ship loaded to its deepest seagoing draught. In cases where it for practical reasons is deemed impossible, the ship should be loaded to the satisfaction of STA. For guidance, such condition could be in accordance with DNV's alternative a), in letter GCSNNO HSME 24 FlagAutorities-J-613, reading; "the rudder is fully submerged (at zero speed waterline) and the vessel is in an acceptable trim condition ". An application to use such alterative loading condition should be submitted to STA for acceptance well within time of sea trials, accompanied by the recommendation of the classification society.
4.3	Steering gears should be power operated when necessary, to meet the requirements of paragraph 3.2 and in any case when the rudder stock is over 120 mm diameter in way of tiller, excluding strengthening for navigation in ice. Requirements for ice class can be found in TSFS 2009:111 about Finnish and Swedish ice class and in TSFS 2009:23 about Swedish ice class in Lake Vänern.
6.2	STA accepts decision and applicable rules from a recognised classification society
6.3	Steering gears, other than of the hydraulic type can be accepted by STA under condition that the regulations 29.1-29.2.1- 29.3 - 29.4 - 29.5 and 29.6.1 is fulfilled. Any equivalent arrangements must be approved by the STA. An application form shall be sent to the STA for approval.
17.2	For tankers of 10 000 gross tonnage and above but less than 100 000 tonnes deadweight the steering gear shall at least fulfil the requirements in resolution A.467(XII) Any equivalent arrangements must be approved by the STA. An application form shall be sent

	to the STA for approval.
18	STA accepts decision and applicable rules from a recognised classification society
Reg. 30	**Additional requirements for electric and electro hydraulic steering gear**
4	STA may permit reduction from requirements in paragraph 3 if enough protective measure has been done, and the requirements in regulation 29, 5 and 29,7,3 are fulfilled.
Reg. 31	**Machinery controls**
2.7	STA accepts decision and applicable rules from a recognised classification society
Reg. 32	**Steam boilers and boiler feed systems**
1	STA may permit one safety valve fitted only, if it can ensure that the equipment provides a adequate protection against overpressure with regard to steam boilers and gas boilers output or other characteristics
Reg. 35-1	**Bilge pumping arrangements**
2.6	STA may permit means of drainage to be dispensed only in particular cases and only if the size and partition of the compartments does not endanger the safety of the ship.
4	STA may permit if enough protective measure has been done and the safety of the ship is ensured.
Reg. 36	**Protection against noise** In order to comply with the regulation for protection against noise, regulation in TSFS 2009:119 shall to be fulfilled.
Part D **Electrical installation**	
Reg. 40	**General**
2	In addition to the requirements in part D, shall production, manufacturing and maintenance of electrical installations be in accordance with the IEC 60092 and a recognised organisation rules. Appropriate steps shall be taken to ensure uniformity in the implementation and application of the provisions of this part in respect of electrical installations
Reg. 41	**Main source of electrical power and lighting system**
4	Equivalent solution can be accepted by STA if enough protective measures have been done and the safety of the ship and the personnel are ensured. Furthermore any equivalent arrangements must be approved by the STA. An application form shall be sent to the STA for approval.
Reg. 43	**Emergency source of electrical power in cargo ships**
1.2-3	STA recommends that the emergency source of power and the associated equipment shall not be located in the same vertical zone as main source of power or main switchboard. Furthermore the emergency source of power and the associated equipment shall be placed to the ships centreline, if possible within the B/5, easy access to the emergency equipment is essential.
2.6.2	STA may permit deviation from this paragraph, a written application must be sent to the STA for approval.
	STA recommends that the emergency generators fuel tank is big enough to fulfil the requirements on regulation 43.
Reg. 44	**Starting arrangements for emergency generating sets**
1	Vessels operating in cold areas shall be equipped whit the heating equipment to ensure the quick start of the emergency generator.
2	Starting functions within the mentioned time must be demonstrated and documented.
Reg. 45	**Precautions against shock, fire and other hazards of electrical origin**
1.2	For portable electrical equipment used in confined or wet areas with particularly high risk of conductivity, apply the following: 1- The equipment must be connected to a secure power supply. 2- Exposed metal parts of equipment not intended to be live, which may become energized in the event of failure to be grounded or connected to an isolating transformer.
2	Exposed live parts having voltages to earth exceeding 50 V AC/DC is not allowed.
3.3	The system shall be approved by the STA
4.1	Any other arrangements shall be approved by the STA. An application form shall be sent to the STA for approval.
4.2	Vessels without permanent monitoring device for the Insulation level to earth shall

	resistance of electrical installations be tested and documented.
	General advice: Insulation resistance of electrical installations shall be at least 1MΩ.
4.3.2	Any other arrangements shall be approved by the STA. An application form shall be sent to the STA for approval.
5.1	STA accepts decision and applicable rules from a recognised classification society
5.2	STA recommends that all cables are of approved type. According to IEC 60331 and IEC 60332 Any other cable arrangements shall be approved by the STA. An application form shall be sent to the STA for approval.
5.3	All cables and wiring serving essential or emergency power, lighting, internal communications or signals shall so far as practicable be routed clear of galleys, laundries, machinery spaces of category A and their casings and other high fire risk areas. Cargo ships with a length less than 24 meters shall apply the same but as far as possible.
5.4	STA recommend IEC 60331 and IEC 60332
6.1	Any equivalent arrangements must be approved by the STA. An application form shall be sent to the STA for approval.
9.3	STA do not normally accepts batteries in accommodation area, Any other arrangements must be approved by the STA. An application form with all installation data and drawings shall be sent to the STA for approval.
10	Beyond SOLAS requirements , STA requires the installations to fulfil the rules in IEC 60079
11	In case that the installation is not covered by the standard IEC 60092-502, a risk assessment shall be sent to the STA for approval.
PART E **Additional requirements for periodically unattended machinery spaces**	
Reg. 46	**General**
2	**Important!** Number of crew members in engine room can be directly affected by the UMS documents, for that reason the periodically unattended machinery spaces whit associated equipments shall be inspected and related documents must be verified, furthermore a new certificate shall be issued by the class to ensure that the vessel fulfil the SOLAS regulation 46 to 53. Any equivalent arrangements must be approved by the STA. An application form shall be sent to the STA for approval.
3	Every ship with periodically unattended machinery spaces shall be provided with the UMS documents. The mentioned documentation shall ensure that safety of the ship in all condition is equivalent to having the machinery spaced manned; in addition the certificate shall not be issued without physically inspection of those equipments.
Reg. 47	**Fire precautions** On cargo vessels with a length less than 24 meters shall combustion engines with a power of 2500 kW or more have oil mist detectors in the crankcase or monitoring of engine bearing temperature or other equivalent device.
Reg. 49	**Control of propulsion machinery from the navigation bridge**
5	STA accepts decision and applicable rules from a recognised classification society
Reg. 51	**Alarm Systems**
2	Any equivalent arrangements must be approved by the STA. An application form shall be sent to the STA for approval.
Reg. 53	**Special requirements for machinery, boiler and electrical installations**
1	These measures shall provide a satisfactory safety at least equivalent to that achieved in this chapter.
2	STA may waive the requirements for SOLAS ship with a gross tonnage below 1600 if the requirement is impracticable. The requirements shall not apply to cargo ships with a length less than 24 meters. Any equivalent arrangements must be approved by the STA. An application form shall be sent to the STA for approval.
Chapter II-2. **Construction – Fire protection, fire detection and fire extinction**	
Part A **General**	

Reg. 1	Application
6.2.1	**Application of requirements for tankers** Foam concentrates shall be according to MSC/ Circ.1312. General advice: Recommended fire fighting media for chemicals to which neither the IBC nor BCH Codes apply can be found in MSC/ Circ. 553.
	Part B **Prevention of fire and explosion**
Reg. 4	**Probability of ignition**
2.1.4	**Limitations in the use of oils as fuel** STA recommends that an approved installation according to 4.2.1.4 should fulfil the requirements in 4.2.1.3.3.2-4.1.3.3.4. Reference is made to Res. A.565(14)
2.2.1	**Location of oil fuel systems** Regulations regarding illumination in service spaces on ships is regulated in Chapter 2 Section 1 and Chapter 5 Section 10 of the Ship Safety Ordinance (2003:438)
2.2.3.2	**Oil fuel tanks** The location of oil fuel tanks should follow the guidelines in MSC/Circ.1322
2.2.3.4	STA recommends that the controls for remote operation of the valve for the emergency generator fuel tank and controls for remote operation of the valve for fuel tanks placed in machinery spaces do not need to be placed in separate spaces.
2.2.3.5.1	Termination of sounding pipes in machinery spaces is permitted if the requirements stated in 4.2.2.3.5.1.1-3 are met.
2.2.3.5.2	Flat glasses are permitted.
2.2.5.1	**Oil fuel piping** Flexible pipes shall fulfil the requirements in ISO standard 15540:1999 and ISO 15541:1999.
2.2.5.6	STA may permit the conveying of oil and combustible liquids through accommodation and service spaces if it not practical to route the pipes in different ways. The pipes shall be of steel or equivalent material.
2.3.3	STA may permit the conveying of lubricating oil through accommodation and service spaces if it not practical to route the pipes in different ways. The pipes shall be of steel or equivalent material.
2.4	Swedish regulations about thermal-oil units can be found in SJÖFS 1997:15
3	Regulations for pressure vessels are found in *Arbetsmiljöverkets föreskrifter (AFS 2005:2) om gasflaskor samt allmänna råd om tillämpningen av föreskrifterna* (Provisions of the Swedish Work Environment Authority on pressures vessels). General advice from STA: Positioning of pressure vessels on open deck should follow guidelines in MSC/Circ.1276
5.1.1	**Separation of cargo oil tanks** Recess is permitted.
5.1.3	STA may permit main cargo control stations, control stations, accommodation and service spaces forward of the cargo tanks, slop tanks and spaces which isolate cargo and slop tanks from machinery spaces, but not necessarily forward of oil fuel bunker tanks or ballast tanks.
5.1.4.4	Cargo oil lines placed in special ducts are permitted only if these can be cleaned and ventilated in a sufficient way. STA recommends that special duct spaces should be cleaned and ventilated as specified in section 5.3.
5.1.6	Guidelines for stern loading and unloading arrangements can be found in IBC code Chapter 3.
5.2.2	STA may permit access doors in boundary bulkheads facing the cargo area or within the 5 m limits specified in paragraph 5.2.1, to main cargo control stations and to such service spaces used as provision rooms, store-rooms and lockers, provided they do not give access directly or indirectly to any other space containing or providing for accommodation, control stations or service spaces such as galleys, pantries or workshops, or similar spaces containing sources of vapour ignition.
5.3.3	**Safety devices in venting systems** The design, testing and locating of these devices shall comply with the requirements in MSC.Circ.677, MSC/Circ.731, MSC/Circ.1009 and MSC/Circ.1324.
5.4.1	**Ventilation systems in cargo pump-rooms** STA recommends that the design of non sparking fans should follow IACS Requirement F29.
5.5.2.1	**Inert gas systems of chemical tankers and gas carriers** Can be arranged according to the FSS code or Res. A.567 (14).

5.7.3.3	**Arrangements for fixed hydrocarbon gas detection systems in double-hull and double-bottom spaces of oil tankers** STA recommends that fixed gas detection system fulfills the guidelines in MSC/Circ.1370
Reg. 5	**Fire growth potential**
2.3.1	**Additional requirements for means of control in periodically unattended machinery spaces.** For periodically unattended machinery spaces, special consideration shall be given, approved by STA, to maintaining the fire integrity equal to the fire integrity in manned machinery spaces and that it can be activated equally fast: - the fire integrity of the machinery space - the location and centralization of the fire extinguishing system controls - the required shutdown arrangements e.g. ventilation, fuel pumps, etc. - the fire extinguishing appliances and other firefighting equipment - the number of breathing apparatus.
Part C **Suppression of fire**	
Reg.7	**Detection and alarm**
3	**Initial and periodical tests**
3.2	STA recommends that the periodical tests for these systems follows the guidelines in MSC/Circ. 850
Reg. 8	**Control of smoke spread**
2	**Protection of control station outside machinery spaces** Separate means of air supply need not apply to control stations on, and opening onto, an open deck.
Reg. 9	**Containment of fire**
2.1	**Thermal and structural subdivision** The fire insulation shall be arranged on that side where the insulation is tested in accordance with Transportstyrelsens föreskrifter och allmänna råd (TSFS 2009:52) om marin utrustning (Swedish Maritime Administration´s regulations on marine equipment). STA recommends that an area which is divided by a bulkhead or deck which have different insulation standard, the most efficient insulation shall continue on that bulkhead or deck with the less effective insulation to a distance of at least 450 mm.
2.3.1.1.3	**Methods of protection in accommodation area on cargo ships** In public spaces this area may be extended to maximum 75m^2.
2.3.2.4	In public spaces this area may be extended to maximum 75m^2.
2.3.3.2.2 (8)	**Fire integrity of bulkheads and decks on cargo ships** The following area is added to category (8) cargo spaces: Weather deck used for cargo other than cargo with low fire risk.
2.3.3.2.2 (10)	The following area is added to category (10) open decks: Weather deck used for cargo with low fire risk.
2.3.3.2.2 (11)	The following area is added to category (11) special category spaces and ro-ro spaces: Weather deck used for cargo other than low fire risk.
2.3.3.4	STA advises that an example of material with acceptable safety standard in doors in accordance with 9.2.3.3.4 is solid wood.
2.4.2.4	**Fire integrity of bulkheads and decks on tankers** STA advises that an example of material with acceptable safety standard in doors in accordance with 9.2.3.3.4 is solid wood.
4.2.1	**Doors in fire-resisting divisions in cargo ships** STA do not accept combustible materials in doors separating cabins from the individual interior sanitary spaces such as showers.
5.1.1	**Protection of openings in machinery spaces boundaries** The requirements in 9.5.1.1 are applicable on all types of machinery spaces.
7.3.2	**Details of duct penetrations** STA recommends that the steel sheet sleeves should cover 450 mm on each side of the bulkhead unless the duct is of steel.
7.5.1.1.3	A fixed fire extinguishing system for fires within the duct shall fulfill the requirements in *Sjöfartsverkets föreskrifter och allmänna råd (2001:6) om installation av CO2-anläggning i*

	köksventilation eller annat likvärdigt brandsläckningssystem (Swedish Maritime Administration´s regulations on Co2-systems or equivalent fire extinguishing system).
7.5.2.1.4	See comment for 9.7.5.1.1.3 above.
Reg. 10	**Fire fighting**
2.1.2.1.3	Paragraph 1.1 and 1.2 shall be fulfilled
2.1.2.2.1	**Ready availability of water supply** Devices for remote start of the fire pumps shall be arranged on the navigation bridge, at one fire control station and in the engine control room.
2.1.3	**Diameter of fire mains** General advice: Fire main should have a diameter in accordance with the following table: Ships length (m) Diameter (mm) Less than 50m: 75mm Up to 50m but not 100m: 100mm Up to 100m but not 200m: 125mm Up to 200m but not 300m: 150mm Up to 300m or more: >150mm Branch pipes should have a diameter of at least 60 mm. Short branch pipes for only one fire hydrant should have a diameter of at least 50 mm.
2.2.1	**Pumps accepted as fire pumps** General advice: Pumps which occasionally are used for transfer or pumping of oil fuel or other oil should not be used as fire pump.
2.2.3.2.2	**Access to the emergency fire pump** General advice: An example on a reasonable gastight door is a steel door whit gasket which can be closed tight.
2.3.1.2	**Fire hoses and nozzles** General advice: All fire hose connections should be so designed that they can be connected to all hydrants, nozzles or other hoses.
2.3.2.3	**Number and diameter of fire hoses** In cargo ship there shall be one fire hose to each fire hydrant.
2.3.3.4	**Size and types of nozzles** The nozzles on new ships shall be wheel marked. The nozzles on ships constructed before 1 July 2002 shall be in accordance with the national Swedish Standard SS 3500.
3.2.1	**Arrangement of fire extinguishers** Accommodation spaces, service spaces and control stations shall be provided with portable fire extinguishers for every 250 m² of the area concerned. Portable fire extinguishers in accommodation spaces shall be AB extinguishers of at least class 21A 183B. In galleys, radio stations and steering gear room, the fire extinguishers shall be a carbon dioxide extinguisher of class 55B. General advice: The number and type of fire extinguishers should follow the guidelines in MSC/Circ.1275
4.1.1.3	**Types of fixed fire-extinguishing systems** For ships constructed before 1 July 2002 STA did not allow fixed water-spraying fire-extinguishing system in machinery spaces. Fixed water-spraying fire-extinguishing system is only allowed as fixed local application fire-extinguishing system. General advice: For ships constructed between 1 July 2002 and 1 September 2008, the fixed fire extinguishing system in 4.1.1.3 should be tested according to the requirements for equivalent sprinkler systems in the FSS code. For ships constructed after 1 September 2008 Fixed pressure water-spraying fire-extinguishing systems and water-mist fire-extinguishing system should fulfill MSC/Circ.1165, 1237 and 1269.
4.1.3	Requirements regarding Halon 1211, 1301 and 2402 can be found in ordinance 2002:187
5.1.2.2	There shall be at least two portable foam extinguishers, or of type 233 BC, in each firing space in each boiler room and in each space in which a part of the oil fuel installation is situated. General advice: Equivalent fire extinguishers in accordance with 5.1.2.2 are powder extinguisher with not less than 50 kilo powder.
5.1.2.3	In each firing space there shall be - a receptacle containing at least 0.1m3 sand, impregnated with soda or - a portable fire extinguisher of type 233 B/BC.
5.2.2.2	General advice: Equivalent fire extinguishers in accordance with 5.2.2.2 could be 5 portable fire extinguishers of type 233 B/BC.

5.3.2.1	General advice: Equivalent fire extinguishers in accordance with 5.3.2.1 could be portable fire extinguishers of type 233 B/BC.
5.3.2.2	General advice: Equivalent fire extinguishers in accordance with 5.3.2.2 could be portable fire extinguishers of type 233 B/BC.
5.4	The Swedish Transport Agency(STA) requires, according to SOLAS II-2/10.5.4, that all SOLAS ships constructed 1 September 2008 or later shall be fitted with a fixed fire extinguishing system in other machinery spaces, except spaces according to category (10) in chapter 9.2.2.3.2.2. Exemption can be made for spaces where the risk of fire spread to adjacent spaces is low, e.g. bow thruster room. In main and emergency switchboard rooms there shall be provided in, or adjacent to, that space such a number of approved portable fire extinguishers of type 55 B as the Administration may deem sufficient. In other engine spaces that are not mentioned in SOLAS II-2/10.5.1-5.3, there shall be such a number of fire extinguishers as required in the guidelines of MSC/circular 1275.
5.5	As in SOLAS included footnote
5.6.2	The system shall be designed according to MSC/Circ. 913. Ships constructed after 1 January 2010 shall fulfill the guidelines in MSC/Circ.1276. Ships constructed after 1 January 2012 shall fulfill the guidelines in MSC/Circ.1387. STA recommends that in continuously manned machinery spaces, an automatic release of the extinguishing system should be arranged.
6.3.2	Flammable liquid lockers shall be protected by an appropriate fire extinguisher arrangement in accordance with 6.3.1
6.4	Fire extinguishing system shall be designed according to ISO 15371:2000
6.5	Portable fire extinguishers: The amount of portable fire extinguishers can be found in 3.2.1
7.1.4	Reference is made to MSC/Circ.671, superseded by MSC/Circ.1146
7.2	Regulations for transporting dangerous goods see Reg.19. Interpretation can be found in MSC/Circ 1120
10.2.4	Cargo ships shall have the following number of fire fighters outfit and personal equipment: Cargo ship: <4 000 BRT total number of fire fighters outfit- 2pcs, additional number of personal equipment 1pcs. >4 000 total -number of fire fighters outfit 4pcs, additional number of personal equipment 2pcs Tanker ship: <30 000 BRT total number of fire fighters outfit- 4pcs, additional number of personal equipment 2pcs >30 000 total number of fire fighters outfit- 6pcs, additional number of personal equipment 3pcs
10.3.1	General advice: A fire station should have direct access from open deck or from a control station. The boundaries between the fire station and spaces where a fire could occur should be insulated to "A-60" class standard. It should be fitted with a heater. The fire station should also be large enough to enable for the crew to fit on their personal equipment and breathing apparatus in the room.
Reg. 11	**Structural integrity**
3.1	**Structure of aluminium alloy** Load bearing structures follows the interpretation in MSC/Circ 1120.
4.1	**Crowns and casings** Crowns and casings of machinery spaces of category A shall be of steel construction and shall be insulated as required by tables 9.5, 9.6, 9.7 and 9.8.
4.2	**Floor plating** Normal passageways meaning; main passageways and escape routes.
	Part D **Escape**
Reg.12	**Notification of crew and passenger**
1 GA	**Purpose** Guidance for general design of alarms and indicators can be found in Resolution A.1021(26)
Reg. 13	**Means of escape**
3.1.3	**Means of escape from control stations, accommodation spaces and service spaces** STA could approve other equivalent frame constructions on condition that material equivalent to steel is used.

3.1.4	STA recommends that if one of the escape ways is a porthole or a window this should have a free opening of at least 400X600 mm.
3.3.6	**Dispensation from two means of escape** STA may dispense for crew spaces that are entered only occasionally, if the required escape route is independent of watertight doors.
3.4.1	**Emergency escape breathing devices** STA recommends that the amount and positioning of the emergency escape breathing devices should follow the guidelines in MSC/Circ.1081
4.2.2	**Dispensation from two means of escape** STA may dispense.
4.3.1	**Emergency escape breathing devices** General advice: Guidance and interpretation for location and amount of emergency escape breathing device can be found in MSC/ Circ. 1081
Part E **Operational requirements**	
Reg.14	**Operational readiness and maintenance**
2.2.1	**Maintenance, testing and inspection** Maintenance, testing and inspection shall be carried out based on the guidelines in appendix 4(TSFS 2009:98).
2.2.3	Service and maintenance of portable fire extinguishers shall be performed according to SS 3656 or equivalent standard.
Reg.15	**Instructions, on-board training and drills**
2.3.4	General advice: The training manual should be designed as a separate manual. The manual can also be a part of the ISM manual on condition that the requirements for availability are fulfilled.
2.4.1	The text in plans and booklets shall be written in the working language of the ship. New plans shall be approved and stamped. Even changes to the plans shall be examined and approved. General advice: Fire control plans should be according to ISO 17631:2002 or Resolution A. 952(23)
2.4.2	General advice: The fire control plans shall be stored as defined in MSC/ Circ. 451
Part G **Special requirements**	
Reg.19	**Carriage of dangerous goods**
2	**General requirements** General requirements about carriage of dangerous goods is found in TSFS 2009:91
2.1	General advice: For "open top" container ships special regulations about fire fighting and dangerous goods can be found in MSC/Circ. 608/ Rev 1.
3.1.2	**Water supplies** STA may allow an equivalent means to be used under the condition that the amount of water is the same.
3.1.3	Hoses may be used for this purpose in small cargo spaces and in small areas of larger cargo spaces. This area should not be greater than it is possible to cool down the whole area with one fire hose. General advice: Fixed fire extinguishing systems for special category spaces that fulfill the requirements in 3.1.3 should be designed according to Resolution A.123 (V).
3.2	**Sources of ignition** Electrical equipment fitted in such spaces shall be designed according to IEC 60092-506 or if it's possible to completely isolate the electrical system, e.g. by removal of links in the system or by a lockable protective switch located outside the space where the dangerous goods are kept. General advice: There should be a sign with the text: "The switch shall be in off position when the ship is carrying dangerous goods of an explosive or flammable character" located outside the space where the dangerous goods are kept.
3.3	**Detection system** General advice: The fire detection system should use smoke detectors or a combination of smoke– and flame detectors or, for open ro-ro cargo spaces where it is not suitable to install smoke detectors, other types of detection can be installed. The detection sections in these

	spaces may be fitted with a device e.g. a time relay for disconnecting the detector sections during loading/unloading on condition that the manually operated call points are not disconnected with the same device. It shall be indicated on the control panel when detector sections are disconnected and the disconnection time shall be suitable to the loading/unloading.
3.4.1	**Ventilation** General advice: To comply with the requirements in 3.4.1 and the requirements for hygienic limit values in ro-ro cargo spaces regulated in AFS 2005:17 the ventilation system should be designed according to MSC/Circ.729
3.4.2	General advice: Wire mesh guards in 3.4.2 should be maximum 13 x 13 mm. The fans should be designed according to IACS UR F29, Non-sparking fans.
3.9	**Water-spray system** General advice: Fixed fire extinguishing systems that fulfills the requirements in 3.9 should be designed according to Resolution A.123 (V).
Reg. 20	**Protection of vehicle, special category and ro-ro spaces**
3.1.1	**Capacity of ventilation systems** STA advises that the design guidelines and operational recommendations for ventilation systems in ro-ro cargo spaces can be found in MSC/ Circ. 729. The number of air changes shall increase when vehicles are being loaded and unloaded.
3.1.3	**Indication of ventilation system** STA advises that this arrangement can be replaced by an alarm which activates in the event of a cut out or fault of the starting relay for the fan motor.
3.2.1	**Electrical equipment and wiring** STA recommends that the electrical equipment and cables in enclosed ro-ro cargo spaces, vehicle spaces and special category spaces should fulfil the requirements in SS-IEC 60079. Electrical equipment and cables should be approved for use in zone 1 and be of at least explosion group IIA and temperature class T3.
3.2.2	In case of other than special category spaces below the bulkhead deck, notwithstanding the provisions in section 20.3.2.1, above a height of 450 mm 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 should be of a type approved for use in zone 2 (at least IP 55 and temperature class T3) 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.
3.3	**Electrical equipment and wiring in exhaust ventilation ducts** STA recommends that the electrical equipment in section 20.3.3 should be type approved according to SS-IEC 60079 in the zone where the intake is placed. When positioned at ventilations ducts inlet, guidance can be found in IEC 60092-506.
4.1	**Fixed fire detection and fire alarm systems** The system shall be capable of rapidly detecting the onset of fire by smoke detectors or a combination of smoke and flame detectors. GA: In the system required in 4.1 the smoke detector sections in vehicle, special category, and ro-ro spaces may be provided with an arrangement, (e.g. a timer) for disconnecting detector sections during loading and unloading of vehicles to avoid "false" alarms. The time of disconnection should be adapted to the time of loading/unloading. The central unit should indicate whether the detector sections are disconnected or not. However, manual call points should not be capable of being disconnected by the arrangements referred to above.
6.1.2	**Fixed fire-extinguishing systems** General advice: Fixed pressure water spraying systems should fulfill the requirements in Resolution A.123(V)
6.1.3	Full scale test in 6.1.3 should be according to guidelines stated in MSC/ Circ. 1272

Chapter III. **Life-saving appliances and arrangements**

Part B

Requirements for ships and life-saving appliances

Section I

Passenger ships and cargo ships

Reg. 6	**Communication**
2.1.1	**Two-way VHF radiotelephone apparatus** Equipment should be marked with ships name and callsign See chapter IV reg. 6-2.5 COMSAR/Circ.32-4.12 Should have provisions for its attachment to the clothing of the user and also be provided with a wrist or neck strap. For safety reasons, the strap should include a suitable weak link to prevent the bearer from being ensnared; MSC/149(77)
2.2	**Search and rescue locating devices** Equipment should be marked with ships name and callsign See chapter IV reg. 6-2.5 COMSAR/Circ.32-4.11
2.2	**Search and rescue locating devices** The function of a SART/AIS-SART is dependent on antenna height of at least 1 meter above sea-level in a survival craft which requires some form extension such as pole or mast. A.802 COMSAR/Circ.32-4.11
2.2	**Search and rescue locating devices** The SART/AIS-SART stowed in the free-fall lifeboat should have a permanent fitted bracket on the exterior of the lifeboat >1m above the sea level, for easy attachment of the SART/AIS-SART, after the lifeboat is deployed. A.802 COMSAR/Circ.32-4.11
5.2	**Override function for Public address systems on passenger ships** Override function shall be available from the navigation bridge and from other strategic points which can be safety centre and fire control station. PA system override shall be available where general emergency alarm can be operated in accordance to resolution A.1021 (26).
5.3	**Approval of public address system** The public address system shall be installed according to MSC/Circ.808
Reg. 7	**Personal life-saving appliances**
2.1.4	**Lifejackets** A sufficient number of lifejackets are at least two on each relevant location.
2.1.5	**Lifejackets** Sufficient number or at least one lifejacket shall be available onboard to persons weighing up to 140 kg and with a chest girth up to 1750 mm. I.e. every person onboard shall have a lifejacket that fit their weight and size.
3	**Immersion suits and anti-exposure suits** STA can give exemptions on this requirement based on MSC/Circ.1046
Reg. 11	**Survival craft muster and embarkation arrangements**
7	STA only accept embarkation ladder complying with requirements in 6.1.6 of the LSA Code.
Reg. 19	**Emergency training and drills**
3.2	**Drills** STA may accept equivalent or other arrangements after a decision has been taken.
3.3.5	**Abandon ship drill** STA may accept exemptions according to the regulation.
5	**Records** Date and details of drills shall be recorded in the ships logbook. The layout of the logbook can be found in TSFS 2010:18.
Reg. 20	**Operational readiness, maintenance and inspections**
3.3	**Maintenance** STA accepts a shipboard planned maintenance programme as long as the requirements in regulation 36 are included.
6.2	**Weekly inspection** STA do not accept any exemptions.

7	STA strongly recommended the procedure to be followed according to MSC / Circ 1047
8.1.1	**Servicing of inflatable liferafts, inflatable lifejackets, marine evacuation systems and maintenance and repair of inflated rescue boats** In any case the 12 months service is impracticable STA may permit extended service interval.
8.3	STA may permit extended service intervals for new and novel inflatable liferafts arrangements. The arrangements shall be inspected onboard every12 months by certified personnel, specially packed with a hermetic seal and marked to indicate that it has been approved and certified for extended service.
9.1	**Periodic servicing of hydrostatic release units** In any case the 12 months service is impracticable STA may permit extended service interval.
	Section III **Cargo ships**
Reg 31.1.4	**Survival craft** Available at the location of such liferaft, there should be at least two lifejackets, two immersion suits, embarkation ladder according to regulation 11.7 and sufficient illumination according regulation 16.7.
Reg. 32	**Personal life-saving appliances**
2.3	**Lifejackets lights** STA only accept lifejacket lights complying with LSA code.
3.2	**Immersion suits** STA can give exemptions on this requirement based on MSC/Circ.1046
3.3	**Immersion suits** When any watch station (bridge, ECR), work station or remotely located survival craft are located more than 100 meters from the place or places where immersion suits are normally stowed, additional immersion suits (at least two) shall be provided at these locations for the number of persons normally on watch or working at these locations at any time.
Chapter IV. **Radio communications**	
	Part A **General**
Reg. 3	**Exemptions**
	STA makes decisions after the application for exemption in case by case basis.
	Part C **Ship requirements**
Reg. 7	**Radio equipment: General**
2	STA accepts CE marked two-way aeronautical VHF radio equipment, complying with the performance standards COMSAR/Circ.32-4.14
Reg. 13	**Sources of energy**
2	STA interprets SOLAS IV, reg. 13.2 that • switching between mains, emergency and reserve source of energy shall be automatic. Manual switching is not permitted. COMSAR/Circ.32-7.3 • every radio installation shall be supplied from at least two independent sources of power, where one of these power sources is the reserve source of energy. For guidance, the guidelines given in COMSAR/Circ.32-7.4 & 7.5 should be used for determining the capacity and installation of the reserve source of energy. STA strongly recommends indoor installation of the reserve source of energy. However STA accepts a reserve source installed in a battery box outdoor, if the capacity in addition to the guidelines given in COMSAR/Circ.32 comply with: Ice class: <1A The battery box shall normally be isolated and the capacity for the reserve source should be increased by 50% ≥1A The battery box shall normally be provided both with insulation and automatic heating and the capacity for the reserve source should be increased by 50% An outdoor battery box provided with insulation, automatic heating and a low temperature alarm is considered as an indoor installation.
5	The electrical light shall be connected to the reserve source of energy

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6	*Battery charger* STA interprets SOLAS IV reg. 13-6 that the battery charger or chargers is not permitted to supply the radio installations from mains and emergency source of power, during normal conditions. COMSAR/Circ.32-7.1. *Reserve source tests* Capacity for the reserve source of energy shall be tested and documented annually, by either a discharge test, or a recognized test method. A simplified discharge test using the radio installation is permitted, if batteries are replaced within 80% of the estimated lifetime for the batteries as by the documentation of the batteries. As a rule of thumb, vented lead acid batteries may be used up to 4 years and valve regulated batteries up to 5-7 years depending on manufacturer's specification. NiCd batteries should be tested by a competent battery service station at least every 5 years and a test report should be available onboard
8	STA interprets SOLAS IV reg. 13-8 and reg. 18 that the GNSS used to supply the radio installations with uninterrupted position information, should be supplied from mains, emergency (if applicable) and reserve source of energy COMSAR/Circ.32-4.15
Reg. 15	**Maintenance requirements** The guidelines given in COMSAR/Circ.32 shall normally be used when installing and maintaining radio installations after Sept 2004, according to Swedish ordinance TSFS 2009:95 2 kap. 35§
3 I	Includes documentation and drawings of the radio installation, according to COMSAR/Circ.32-1.3.1/1.4 and appendix 1 of Swedish ordinance TSFS 2011:49
4	STA does not permit At-sea electronic maintenance
Reg. 16	**Radio personnel** Master and all navigating officers shall be holders of at least: Sea Area Certificate A1 ROC A1+A2 GOC A1+A2+A3 GOC A1+A2+A3+A4 GOC
Reg. 17 **I**	**Radio records** Ships stations shall be provided with a log in which the following are recorded as they occur, together with the time of the occurrence: a) a summary of communications relating to distress, urgency and safety traffic; b) a reference to important service incidents STA permits the radio records to be kept in the ships log-book, which normally shall be clearly stated in the log-book.
Reg. 18	**Position-update** STA interprets SOLAS IV reg. 13-8 and reg. 18 that the GNSS used to supply the radio installations with uninterrupted position information, should be supplied from mains, emergency (if applicable) and reserve source of energy. COMSAR/Circ.32-4.15

Chapter V. **Safety of navigation**

Reg. 1	**Application**
4	Unless otherwise specified in STA regulations TSFS 2011:2, regulations 15 - 28 shall apply to ships in Swedish territorial waters and on Swedish vessels in other areas except for - warships and naval auxiliaries - ships owned or operated by the Swedish Government and used only in non-commercial service - ships solely navigating the Great Lakes of North America and their connecting waters as far east as lower exit of the St. Lambert Lock at Montreal, Canada.
Reg. 3	**Exemptions and equivalents** STA may grant exemptions from these regulations if it does not conflict with international agreement or European Union law.
Reg. 15	Following documents should also be considered: ISO 8468 Ship's bridge layout and associated equipment – Requirements and guidelines.

	SN.1/Circ.265 Guidelines on the application of SOLAS regulation V/15 to INS, IBS and bridge design.
Reg. 17	**Electromagnetic compatibility**
1	All electrical and electronic equipment on the bridge or in the vicinity of the bridge shall be tested for EMC. Electrical and electronic equipment that not are wheel marked according to EU directive 96/98/EC shall fulfill requirements in Swedish ordinance SFS 1993:1067 and the National Electric Safety Board regulation ELSÄK-FS 2007:1. Electrical and electronic equipment should meet the recommendations in resolution A.813 (19) and IEC 60945-4.
Reg. 18	**Approval, surveys and performance standards of navigational systems and equipment and voyage data recorder**
1	All equipment installed on Swedish ships shall be type approved and wheel marked according to EU directive 96/98/EC.
4	Equipment installed prior to the adoption of performance standards is exempted from full compliance with such standards. When the systems and equipment are replaced it shall fulfill the latest standards.
5	Survey and inspection of equipment shall be conducted in accordance with article 12.2 in EU directive 96/98/EC. If any deficiency is found it shall be reported to STA and an inspection of the manufacturer will be conducted by a competent authority.
6	Systems or equipment embodying new features not covered by this chapter shall be submitted to STA for approval.
Reg. 19	**Carriage requirements for shipborne navigational systems and equipment**
2.1.8.	A sound reception system shall be installed on ships with totally enclosed bridge. If the bridge has forward or side windows that easily can be opened, then a sound reception system is not required.
2.2.4.	BNWAS installed on or after 1 July 2003 shall comply to the performance standards adopted in resolution MSC.128(75) performance standards for a Bridge Navigational Watch Alarm System (BNWAS).BNWAS installed before that date may be exempted from full compliance to MSC.128(75) after a decision by STA in case to case basis. RO shall submit documentation and proposal to STA for decision.
2.4.4.	Exemptions of AIS is N/A
2.4.5	STA accept that the radio installation electrical power sources may be used when installing AIS equipment. The power supply to the AIS shall then meet the same requirements as for radio installations.
2.7.1.	STA require a second radar which can be of a type 3 or 9 GHz.
3	“Other means” shall be type approved according to EU directive 96/98/EC.
Reg. 19-1	**Long-range identification and tracking of ships**
6	STA certifies that the LRIT equipment complies with the requirements after a conformance test done by test-ASP according to MSC.1/1307 together with either: SOLAS V/19-1 and MSC.263(84), SOLAS IV/14, SS-EN 60945-4 ed.4 SOLAS XI-2/6 and MSC 136(76) or MSC.147(77)
Reg. 20	**Voyage data recorders**
2.3.	STA may exempt cargo ships from the requirements when such ship will be taken permanently out of service within two years after implementation date.
3	STA may exempt cargo ships constructed before 1 July 2002 from VDR requirements if STA decide it is impracticable.
Reg. 22	**Navigation bridge visibility**
1.8.	STA require that the window shall allow a forward view of the horizon for a person with height of eye of 1800 millimeter above the bridge deck at the conning position.
3	STA makes decisions after the application for exemption in case by case basis.
Reg. 23	**Pilot transfer arrangements**
3.3.1.3.	If any constructional features such as rubbing bands, fenders etc. cause that each step of the pilot ladder cannot rest firmly against the ship’s side, additional measures shall be available to ensure a safe embarkation and disembarkation for pilots. These additional measures shall be identified, tested and verified to ensure safe transfer arrangements.
6.1.	Mechanical pilot hoists shall not be used.

Reg. 26	**Steering gear: testing and drills**
5	STA can give exemption for steering gear test for ships with regularly voyages with short port stay and when the steering gear is not switched off. Test shall be carried out at least once every week.
Reg. 27	**Nautical charts and nautical publications** Nautical publications in electronic form meet the requirement of nautical publications provided that the following are met: - The publications shall be installed on a computer that is only used for ship navigation. The computer shall always be available on the bridge for the duty officers and shall be connected to the main power supply and a backup power source. - As backup, the publications shall also be installed on one additional computer on board. This computer should only be used by the ship management. This equipment on the bridge shall not interfere with safe navigation during either day or night. The guidelines in MSC/Circ.891 should also be considered.
Reg. 28	**Records of navigational activities and daily reporting**
1	Records in the ship's log-book can be replaced by electronic records provided that the records are done manually together with personal password and the electronic records cannot be amended afterwards. Printout of the electronic records shall be done periodically with not more than one week apart. If the voyage is shorter than one week, a printout shall be done at every port stay. Printouts shall be signed by Captain.
Reg. 30	**Operational limitations**
2	Guidance to the form for list of operational limitations can be found in the THB (Tillsynshandboken) 1.70 "Dokument om driftbegränsningar för passagerar fartyg" under *Bilagan*. This document shall be provided by the ship, up to date and readily available onboard to the master.
Appendix	All ships of 500 gross tonnage and upwards shall be fitted with duplicated navigation lights and a navigation light controller.

Appendix 2 - SOLAS 1960, as amended until 1974 regarding fire protection

>> Applies for ships built between 1 sep. 1970 to 1 sep. 1984 <<

International Convention for Safety of Life at Sea (SOLAS 1960)	
Chapter II. **Construction**	
Part D **Fire Protection**	
Reg. 34	**General**
(a) SR	All passenger ships and cargo ships shall fulfill regulation 34 (a).
Reg. 35	**Definitions applicable to all cargo ships**
(c)(iv) I	A-60 insulation, the insulation of bulkheads and decks which comply with Class A division, which then either side of the isolated material was subjected to standard fire test for 60 minutes is so effective that temperatures on the non-exposed area and the bar is within the values indicated in the rule 35 (c) (iv). A-30 insulation, the insulation and construction according to the requirements for an A-60 division, but so that the average temperature remains within the specified values for 30 minutes. A-15 insulation, the insulation and construction according to the requirements for an A-60 division, but so that the average temperature remains within the specified values for 15 minutes. With the Class A division of type A-0 means that the bulkhead or deck is non-insulated.
(d) SR	For the purposes of this Annex, - Class B-division type Bi: division by class B bulkheads of non-combustible material, and - Class B-division type Bb: division by combustible Class B bulkheads.
(f) SR	In regards to definition of control station, beyond what is stated in Rule 35 (f), the following areas are included: rooms containing emergency power sources, wheelhouse, chartroom, radio room and other room with equipment for the radio operator, rooms with centralized system for the detection of fire and fire alarms, control room for propulsion machinery located outside the machinery space, rooms with central equipment for fixed fire extinguishing system, room for the emergency fire pump located outside the machinery space and rooms with a central communications equipment.
(m) SR	**Addition to Rule 35 (m) for all cargo ships** Surface which has low flame spread characteristics means; flameproof class 1.
Reg. 36	**Construction (Methods I, II and III)**
SR	Insulation and ceilings shall be of non-combustible material. Ceilings shall be of “B” class non-combustible material, type Bi with a thickness of at least 10 mm or shall have equivalent properties. Wooden bolts or similar arrangements must not be used. The bulkheads and the deck above the boiler and machine rooms shall be A-60 insulated against spaces other than sanitary spaces. Where spaces are separated using bulkheads or decks with differing kinds of insulation, the most effective insulation shall continue on bulkheads or decks with less effective insulation for a distance of 450 mm. Bulkheads in corridors within accommodation spaces shall be of B class type Bi unless they are A class. Surface covering on bulkheads, ceilings and similar construction details in accommodation spaces, public spaces, service spaces and control stations shall be flameproof outer surface

	covering (Class I) unless specified otherwise under regulation *48* and regulation 54.
Reg. 37	**Main vertical zones (methods I, II and III)**
(d) SR	On ships intended for the transport of motor vehicles containing fuel in their tanks the equivalent means referred to in *regulation 37(d)* the following mitigation measures set out below shall be fulfilled; Decks and bulkheads separating stairways, corridors, control stations and rooms where fires may conceivably start from enclosed parking areas for motor vehicles shall fulfill the requirements I regulation 37.1.2.1 in annex 1 (TSFS 2009:97). Ducts and electrical cables connected to emergency power sources and cables that are essential for the maneuvering of the ship shall be A-60 insulated where they pass such areas. Doors to areas for motor vehicles shall be self-closing and provided with hold-backs that can be triggered from the central control station. Cars to be carried must be capable of being parked such that the doors to the vehicles are not blocked. Ships for the transport of vehicles powered by ignition engines shall have the following equipment when parking takes place in parking areas other than on open deck. - *Ventilation equipment for cargo rooms* that ensures at least the number of air changes per hour required in order to prevent occurrence of a gas concentration that poses a fire risk. The ventilation shall be effected by means of reversible fans where necessary. The ventilation ducts shall be arranged in such a way that at least two thirds of the air quantity is drawn in from the lowest parts of the cargo rooms in both the lower hold and 'twin deck hold. It must be possible to draw in the remaining air through a duct that opens directly beneath the deck above. On ships where the opening between the lower hold and the 'twin deck hold is connected by means of a steel shutter and the quantity of carbon dioxide for fire extinction is calculated on the basis of the largest space that can be connected, the holds shall have separate ventilation ducts. The ventilators shall be provided with wire mesh guards with at least one mesh per cm^2. - An (approved) *fixed fire extinguishing system*. On passenger ships, however, fixed fire extinguishing systems must not consist of carbon dioxide systems. - A *fire detection system*. The system must exhibit both audio and visual alarms. The audio alarm system shall be set up in at least two separate parts of the ship and must be approved. - Portable fire extinguishers of at least class 233BC must be in such a number that is determined in each case. Whereas, however, a hand fire extinguisher must always be posted at each exit from both the main deck and from each twin-deck (vehicle deck). The fire extinguisher must be located at an easily accessible and protected location. The location shall be marked with a sign. Fixed fire-extinguishing systems using carbon dioxide on ships for the transport of motor vehicles shall meet the following requirements in addition to what is prescribed under regulation 58. The quantity of gas shall be sufficient for a volume of free gas equal to at least 45% of the gross volume of the largest sealed cargo space on the ship. Carbon dioxide bottles shall be fitted with quick-release valves. The pipes shall be of such a size that the quantity of gas that corresponds to 30% of each space shall be supplied within ten minutes. The piping system within the space shall be designed such that the gas is distributed amongst the various decks. The bottles for the remaining quantity of carbon dioxide, intended for refilling, may be fitted with quick-release valves for emptying section-by-section or with screw-down valves. Drenchers on car ferries shall meet the following requirements. The drencher shall extend from one side of the ship to the other or, on ships where the car deck is divided longitudinally with A-60 insulated space, between each side of the ship and that space, and shall be subdivided into sections, each of which shall be at least 20 meters in length. The distance between adjacent nozzles shall not exceed four meters. A row of nozzles shall be positioned not more than two meters from the bulkhead. Water shall be supplied at a rate of at least 3.5 liters' per minute and square meter at the pressure required for adequate distribution and spray pattern. The nozzles shall be located in such a way that that every part of the car deck and of any platforms is covered by water jets. The water drencher pump shall have a capacity corresponding to the quantity of water that the nozzles produce in two sections at the same time at the quantity of water per square meter and the pressure laid down in the previous paragraph. All sections shall be capable of being maneuvered from the valves located in the central valve

	station above the bulkhead deck. Water drencher pump and associated bottom valve shall be operable from the central valve station. Water drencher pump must be powered by diesel engine or electric motor. Water drencher pump, valve manifold and pipes shall be protected from frost. Pipes leading from the central valve station to the nozzles to be externally and internally protected against corrosion. Valves, safety valves and drain valves shall be provided to the Swedish Transport Agency´s approval. Test certificate shall be the published in the central valve station.
Reg. 38	**Openings in bulkheads and decks of "A" class subdivisions (methods I, II and III)**
(d) SR	**Applicable to all cargo ships** Doors should be of the same fire rating as the bulkheads in which they are positioned. Doors to the machine and boiler rooms and control stations shall be self-closing. The door to the room for the storage of carbon dioxide bottles or with facilities for carbon dioxide extinguishing must be sufficiently gas tight. Ventilation openings in Bi-doors in cabins shall be of steel or other material approved by the Swedish Transport Agency. Ventilation openings are not allowed in an A-class door, nor in Bi-door in staircases. Ventilation openings in Bi-door in corridors shall be of steel or other approved material.
Reg. 39	**Bulkheads within a main vertical zone (methods I and III)**
SR	The prescribed "B" class, type Bi bulkheads shall extend from deck to deck. If, however, the contiguous ceiling is of a non-combustible material on both sides within the subdivision bulkhead of class B type Bb the bulkhead may stop at the ceiling.
Reg. 42	**Protection for stairways in accommodation spaces and service spaces (methods I, II and III)**
SR	Stairways (stairs) within accommodation and service spaces shall be enclosed by steel or another suitable material and provided with a secure means of closing.
Reg. 43	**Protection for lifts (passenger and service lifts), vertical light and air trunks, etc., in accommodation and service spaces (methods I, II and III)**
(a) SR	Ventilation spaces intended for machine compartments with fixed fire-extinguishing systems, galleys or spaces for car decks shall be A-60 insulated where they pass accommodation spaces, service spaces or control stations. What is stated above also applies to ventilation ducts for accommodation spaces, service spaces or control stations that pass through machine compartments, galleys or car deck spaces.
(c) SR	Ventilation ducts or other ducts and insulation of such ducts shall be of non-combustible material. Passages through ventilation ducts or other ducts in "A" class bulkheads or decks shall be made of sheet metal. For a duct with a clear cross-sectional area greater than 200 ^{cm2}, the passage shall be at least 3 mm thick and enclose a length of 900 mm. In the case of passages in bulkheads, their length shall be split with 450 mm on each side of the bulkhead. Passages for ducts with a clear cross-sectional area of 200 cm^2 or above shall be insulated against fire. The insulation shall be as effective as the insulation on the bulkhead or deck through which the duct passes. Ducts with a cross section of 750 cm^2 shall be fitted with fire dampers. Fire dampers shall function automatically but shall also be capable of manual closing from both sides of the bulkhead or deck. The damper shall be equipped with an indicator that shows whether it is open or closed. If the duct is A-60 insulated in the part that leads through the space where there is a fire risk and then on to the space which the duct is designed to serve dampers need not be fitted. Where a duct passes through a class B type Bi bulkhead, the duct shall be insulated against fire, if it's clear cross section exceeds 200 cm^2, in parts located within a length of 450 mm of each side of the bulkhead.
Reg. 46	**Windows and sidescuttles (methods I, II and III)**
	All cargo ships to apply regulation 46
Reg. 47	**Ventilation systems (methods I, II and III)**
(d)	Openings with a clear cross-sectional area greater than 200 cm^2 that are intended for the supply and evacuation of air in ventilation systems that lead to spaces where there is a risk of fire shall be capable of being closed from outside the room in question and shall be provided with protection with at least one mesh per square centimeter. Mechanically-operated

	ventilation systems shall be capable of being stopped from two locations on-board located at suitable places and sufficiently distant from one another. At least one of these locations shall be a joint location for all such systems on-board (central operating point).
Reg. 54	**Cargo ships of gross tonnage 4000 and upwards**
SR	Cargo ships with a gross tonnage below 4000 shall fulfill regulation 54. The following points shall be observed when applying *regulation 54 (a)-(e).* Accommodation spaces shall be divided by A class or B class, type Bi bulkheads into areas of a maximum of 50 square meters. Public spaces may be up to 75 square meters. If these areas are further divided using bulkheads, these bulkheads shall be at least B class, type Bb. In public spaces on cargo ships a surface covering of flammable material with a maximum thickness of 2.5 millimeters may be used on B class, type Bi bulkheads.
Reg. 56	**Fire pumps, fire mains, hydrants and hoses**
GA	Fire main should have a diameter in accordance with the following table: Ships length (m) Diameter (mm) Less than 50m: 75mm Up to 50m but not 100m: 100mm Up to 100m but not 200m: 125mm Up to 200m but not 300m: 150mm Up to 300m or more: determined in each case by the Swedish Transport Agency Branch pipes should have a diameter of at least 60 mm. Short branch pipes for only one fire hydrant should have a diameter of at least 50 mm. If fire mains with a different diameter are used, it is for the applicant by calculations and tests to show that the applicable requirement of the Conventions is still met. Provisions for fire mains as part of the foam extinguishing system on a tanker can be found in section 12 in addition to Rule 35-69 (TSFS 2009:97 annex 2) for all tanker ships.
C, (ii) SR	Fire main pressure may not be lower than that required in according to regulation 56 (c) required amount of water to two simultaneously open 12 mm nozzles. These nozzles shall be connected to its own hose, one of which must have a single length. One hose should be connected to the highest hydrant, the second to the hydrant placed furthest away. The nozzles should also be able to provide an effective water spray.
(f) SR	Fire hose diameters should be adapted to the spaces they are servicing. The diameter may not exceed 42 mm.
(a) I	**Fire extinguishers** Fire extinguishers are classified with respect to the application: Extinguisher Class A: smoldering fires Extinguisher Class B: liquid fires Suffix C: gas fires That a portable fire extinguisher has an extinguishing agent with such a high electric resistance to it without danger to the user may be used in fires in electrical installations shall be clearly stated on the sticker. A and B extinguishers are classified according to European standard EN 3 for portable fire extinguishers into different classes depending on the size of the test bowl. The class of the extinguishers is indicated by a digit followed by the letter A or B or a combination of A and B, for example 21A 183B. Portable fire extinguishers shall meet the requirements of the Swedish Transport Agency (TSFS 2009:52) on marine equipment. The lowest classes that may be used in a ship is: - 233B C: minimum 12 kg powder - 21A 183B: minimum 6 kg powder or 9 liter foam - 55B: minimum 5 kg carbon dioxide.
(b) I	**Spare charges** Spare charges shall be available for fire extinguishers. The spare charges can consist of complete fire extinguishers which exceed the specified number.
(c)	Fire extinguishers which contain a fire extinguishing medium consisting of or emits gases harmful to people, are not allowed.
(d) I	Fire extinguishers shall be subjected to annual inspection. It may be carried out on board under the supervision of a qualified person, provided he has access to an instruction on how the service should be performed and how to recharge the extinguisher. When the fire extinguishers have been checked it should be indicated on the extinguisher, who carried out the inspection and the date.

	The following annual inspections shall be performed: All portable fire extinguishers checked for the location, charging pressure and general condition. Service and maintenance are carried out according to SS 3656.
Reg. 58	**Extinguishing fires using gas or steam in machinery spaces and cargo holds**
	Fixed carbon dioxide fire-extinguishing systems *Storage Space* The space where carbon dioxide bottles are stored must not be lower than the deck below the open deck. If space is below the open deck it shall have a direct connection to the open deck by a stairway or a ladder. If storage space is below deck or if access is not made from the open deck, the storage area has to be equipped with a mechanical ventilation system. The ventilation system shall take air from the from floor level and shall have a capacity of 6 air changes / hour. *Maintenance and inspection* Upon delivery of a carbon dioxide system, an instruction for facility including a checklist for maintenance shall be kept onboard. This has to be written in Swedish and English. The installation must be inspected and tested at the first sea trial inspection and then at least every two years. Certificate of inspection shall be produced and kept onboard. Carbon dioxide quantity shall be checked at least once a year. The maintenance done shall be documented. *Bottle Size* Carbon dioxide amount in each bottle shall not exceed 45 kg and should have a maximum specific fill weight of 0.67 kg per liter bottle volume. *Piping* Means shall be provided that allows keeping the pipes and exhaust clean of dirt and water. Pipes passing through refrigerated spaces should be isolated and drained. Particle filter and water separator should be easily accessible. All parts in the piping for carbon dioxide extinguishing system including manifolds, main valves and, where applicable, flexible hoses must meet the requirements of the National Board of Occupational Safety and Health regulations (AFS 1999:4) on Pressure devices. *Measures before the release of carbon dioxide plant* Before the release of carbon dioxide occurs in engine room of Category A, the following steps are taken in the order listed: 1. Officer in charge of the bridge to be informed. 2. Propulsion machinery shall be stopped. Fuel oil supply to the injection pumps and oil burner to be stopped and valves for fuel oil tanks closed. 3. All dampers in the ventilation system and other openings are closed as soon as the speed of the propulsion machinery has been reduced sufficiently. 4. Before the carbon dioxide system is triggered, check that no person is left in the room. At the release box for carbon dioxide system, there should be an instruction and actuators for those systems as indicated in paragraph 2 and 3.
Reg. 61	**Fire detection system**
(c) SR	All systems for fire detection shall be equipped with optical and acoustic alarm. The acoustic signal is to be sound at the location for the fire detector, the bridge and on the spot where the signal can be perceived by the officer. Alarm signal in space intended for passengers must not be provided for automatic release.
Reg. 63	**Fireman's outfit**
(b)(ii) SR	Breathing apparatus as part of fire equipment should be of the compressed air type with an endurance of at least 30 minutes. The respiratory system, there shall be two containers in spare, on ships in the ocean voyages; there should be four containers in spare. At least two charged spare containers shall be provided for each breathing apparatus. Passenger ships carrying not more than 36 passengers and cargo needs to have only one spare charge for each breathing apparatus if it's possible to refill the containers onboard without any risk of contamination.
Reg. 64	**Requirements for passenger ships(and cargo ships)**
(a)(ii)	Cargo ships shall fulfill Rule 64 (a) (ii).

Applicable for cargo ships SR	
(g)(iii) Applicable to cargo ships SR	At each firing space there shall be a spill tray for the collecting of oil. The spill tray should have a height of 300 mm. It shall be equipped with drain pipe leading to the bottom of a storage tank for leak oil. Each firing space shall be provided with a fixed powder fire-extinguishing system. Those firing spaces that are protected by a fixed local protection system need not have a fixed powder fire-extinguishing system. The extinguishing system, which may be made up of portable fire extinguishers of Class 233B C shall be calculated as follows: Spill tray area (m²) Extinguishing (kg) up to 2m² 12 2-4m² 24 more than 4m² 48 The release device for the facility shall be located at a protected place. In the space there must additionally be: - A dry powder extinguishing units of an approved type with at least 50 kg of extinguishing agent, and -at least one hand held fire extinguisher of Class 233B C. If the boiler output is less than 175 kW, the 50-kg unit in a cargo ship, may be replaced by a hand fire extinguisher for Class 233B C.
Reg. 65	**Requirements for cargo ships**
(b)(ii) I	The emergency fire pump shall be capable of deliver according to regulation 4.5.1 of Annex 1(TSFS 2009:97 annex 1) jets of water. The emergency fire pump and its location shall meet the requirements of the FSS Code, chapter 12.
(e) I	In cargo ships there shall be at least five hand held fire extinguishers of class 21A 183B in accommodation areas. There should be a hand held fire extinguisher for every 250 m² of the space area. In the kitchen and radio room there shall be a hand held fire extinguisher of class 55B.
(f)(ii) I	The components of such a system shall comply with the provisions of the additional Swedish requirements to Regulation 35-69 for all tanker ships.
(f)(iv) I	In addition to fulfilling the other requirements in this regulation, every ship, when transporting explosives of a type or in a quantity that may not be carried on passenger ships in accordance with Swedish Transport Agency's regulations (TSFS 2009:91) on the transport by sea of packaged dangerous goods (IMDG Code).
(g)(ii) SR	Portable fire extinguishers at the firing position in the boiler room or at the oil heating installation in accordance with Rule 65 (g) (ii) shall be of class 233B C.
(g)(iii) SR	Instead of such a receptacle as required in regulation 65 (g) (iii) there shall be fire extinguishers of class 233B C.
Applicable to cargo ships below 1000 gross tonnage SR	In regulation 65 (g) prescribed fire extinguishing arrangement are also required on cargo ships below 1000 gross tonnage.
(h)(ii) SR	In regulation 65 (h) (ii) the required hand held fire extinguisher must be B extinguishers for Class 233B C. Instead of the required foam extinguishers with a capacity of 45 liters there shall be a class B extinguishers of Class 233B C.
(h) SR	In regulation 65 (h) prescribed fire extinguishing arrangement shall be provided even in vessels with a gross tonnage below 1000 and with an engine power of less than 1 000 effective horsepower. In machinery spaces on cargo ships there shall be additional to the number of hand held fire extinguishers as the Transport Agency finds it necessary to prescribe.
SR	For the purposes of regulation 65, at the main and auxiliary electrical switchboard on cargo ships there shall be portable fire extinguishers of class 55B. In steering gear rooms on cargo ships there shall be extinguishers of class 55B.
(j) SR	Firefighter´s outfit referred to in regulation 65 (j) shall be provided to the number prescribed in Regulation 17 of Annex 1(TSFS 2009:97 annex 1 regulation 17).
Reg. 68	**Means of escape**
(a)(ii)	**Applicable for cargo ships**

SR	An emergency exit from a machinery compartment shall lead from a place on a level with the machinery space floor to a deck from which there is an exit to open deck. An emergency exit shall be enclosed and insulated to A-60 so that it can be used in the event of a fire in the machinery space. The emergency exit shall be provided with a self-closing door, insulated to A-60, on a level with the machinery space floor. Where the Swedish Transport Agency feels it is justified, it may permit the emergency exit to consist of a watertight door leading to a space from which continued escape is ensured. Such watertight door shall be capable of being operated from both sides of the door and from a place outside the machinery compartment. The emergency exit shall be provided with emergency lighting and have a minimum cross-section of 800 x 800 millimeters, which may include ladders. From the machinery control room there should be at least two escape routes. One of these shall be independent of the machinery space and to provide protection against smoke and flames of fire in the machinery space.
(b) SR	Escape routes in accordance with *regulation 68 (b)* shall be arranged as follows: From a compartment where people are normally present there shall be two escape routes, only one of which may consist of a vertical ladder. Escape routes must not be less than 650 millimeters in width.
SR	Lifts shall not be regarded as escape routes.
Reg. 69	**Means for stopping machinery and for shutting off the oil fuel suction pipes**
(b) SR	An arrangement for shutting off the oil fuel supply to propulsion machinery shall be located as near to the injection pumps as practicable. A remote shut-off device shall be capable of operating in a satisfactory manner if exposed to fire.
Additional requirements for cargo ships	**Arrangements for gaseous fuel for domestic purposes**
SR	Where gaseous fuels are used on-board devices are to be approved by the Swedish Transport Agency. Provisions for pressure equipment can be found in the National Board of Occupational Safety and Health regulations (AFS 2005:3) on the inspection of pressure equipment and general advice on the application of the regulations. Gas bottles should be stored on the open deck or in a well ventilated area that can only be opened to the open deck. If the vessels are used in international voyage, then the care and use of equipment and similar instructions be written in Swedish and English languages.
Requirements for all tanker ships	**Special provisions for tankers**
SR	**Section 1** Accommodation spaces, catering areas, storerooms and machinery spaces shall be separated from decks that wholly or partly form the top of a cargo tank (tank decks) such that out-flowing oil cannot penetrate these areas. For the purposes of paragraph 1 and this chapter in general, a tank deck also includes decks within and outside the cargo tank area that are less than 1.5 meters above the tank deck if they are not separated from the latter by a gas barrier. However, decks outside the cargo tank area that are not lower than the top of the cargo tanks are not classed as tank decks if the distance to the nearest tank hatch, valve, pump room steps, pump or other equipment for the handling of cargo is at least half the breadth of the ship, but not less than six meters. The separation in accordance with paragraph 1 may consist of a breakwater or partial bulkheads extending between the deckhouse sides and the ship's sides. Such a separator shall be at least one meter high. Doors in breakwaters or partial bulkheads shall have a threshold height of at least 300 millimeters. **Section 2** Boundary bulkheads in the superstructure and deckhouse that face a tank deck shall meet the following requirements: Bulkheads bounding accommodation spaces, catering areas or similar spaces facing a tank deck shall be insulated to A-60, unless a fixed water sprinkler system approved by the

Swedish Transport Agency is present.

Light valves may, however, be found in such bulkheads.

Doors to spaces on or below the tank deck are not permitted. However, this shall not apply to doors in gas locks leading to spaces such as cargo control stations, service spaces, provisions rooms and storerooms that do not have a direct connection with accommodation spaces, and hatches for lifting out machinery parts that are sealed with bolts. The Swedish Transport Agency may allow a door to be present if there is satisfactory gas outflow at the door.

Light valves for spaces on or below a tank deck shall be provided with internal and external steel hatches that can be closed without needing to enter the tank deck. Light valves to a space other than the wheelhouse must not be of a type that can be opened.

Section 3

An opening in a tank deck through which gas can flow out shall be arranged so as to prevent the risk of the accumulation of gas at a place where there is a risk of ignition, such as near to deck machinery or in a chain box.

On tankers intended to transport flammable liquids with a flashpoint lower than 65.5 °C the tanker's ventilation outlet shall be drawn to a height above the deck constituting at least a third of the breadth of the ship, although the height need not exceed 4.5 meters or, if the ship is provided with high-velocity valves approved by the Swedish Transport Agency, 1.8 meters.

On other tankers, ventilation outlets shall be drawn to a height above the deck of at least 1.8 meters.

Section 4

Tanks in the cargo tank area which are intended for water ballast only shall have a system of pumps and pipelines that are separate from other pumps and piping systems.

Cargo pumps and their associated piping system shall be separated from other systems and must not be connected to any compartment outside the cargo tank area. Cargo pumps and pumps for water ballast that are situated with the cargo tank area shall be located in a special pump room with watertight bulkheads and decks. It shall be possible to shut off the cargo pumps from a readily accessible position outside the pump room.

If a cargo pump consists of a piston pump there shall be a safety valve on the discharge side of the pump with an outlet leading to the inlet side of the pump.

Cargo pumps with rotating axles shall be designed so as prevent overheating. Packing seals for cargo pumps and in bulkheads or deck penetrations require approval by the Swedish Transport Agency.

Drive shafts for pumps in bulkheads and decks shall have a gas-tight design.

Section 5

Cargo pump rooms and spaces with valves and pipes belonging to the cargo system, except the cargo tank, shall be provided with a fixed gas warning system. The type of system shall be approved by the Swedish Transport Agency.

The space shall also be provided with a mechanical ventilation device sufficient to provide around 20 air changes per hour. The ventilation system shall be arranged so that all parts of the space can be ventilated effectively. In pipe tunnels, however, only two air changes are required if the tunnel has a gas warning system; otherwise at least six air changes are required. Where there are special grounds for this, no separate ventilation device is required in a pipe tunnel.

In spaces containing a gas warning system, an extraction fan shall be provided with an automatic start device which is activated when the gas concentration exceeds the permitted values.

Section 6

Electrical equipment in cargo pump rooms and spaces with valves and pipes belonging to the cargo system shall be of an anti-explosion design. The space shall be provided with emergency lighting.

Section 7

A cargo pump room shall have an emergency exit unless pumps with associated valves can be operated from a position outside the pump room or this is clearly unnecessary due to the size of the space. The main and emergency exit shall lead to separate openings in the casing. Means of escape shall be located as far apart as practicable. The emergency exit shall lead from a place on a level with the lowest floor level to the topmost deck which runs throughout the ship and at the bottom shall be provided with a self-closing door that can be opened from both sides. The door must not be capable of being held back. The emergency exit shall be enclosed and insulated to at least A-15 so that it can be used in the event of a fire in the pump

room, and be provided with emergency lighting.

Section 8

The pump-room shall contain sufficient free space for an unconscious person to be hoisted up using a life line or a lifting appliance from the floor or ladder platform. The lifting appliance shall be non-sparking. The life line or lifting appliance shall always be available at this location.

A guard rail on a platform shall be designed so that an unconscious person cannot fall off the platform. The rail shall be at least 100 centimeters high. On railings with rails the distance between the rails must not exceed 17 centimeters, unless another satisfactory protective device is present.

Section 9

Spaces located within or next to the cargo tank area and containing equipment that could result in ignition in the event of a high gas concentration shall comply with the following requirements:

The space shall be partitioned off by means of gas-tight steel bulkheads. Access shall be via a gas lock. Doors in the gas lock shall have a threshold height of at least 600 millimeters. The ventilation in the space and the lock shall be mechanical.

Ventilation pipes for air-intake to fans shall terminate in a gas-free zone. The ventilation openings shall have anti-spark protection. Ventilation fans shall be arranged as pressure fans. Fan motors, if not located in a gas-free zone, shall be of an anti-explosion design. Doors in spaces and locks shall be self-closing and must not have hold-back hooks.

The space shall be provided with a gas warning system with an alarm device in a suitable position. The system must be approved by the Swedish Transport Agency.

Unless it is of an anti-explosion design, electrical equipment in the space shall have a common primary power switch that is located in a gas-free zone.

The primary power switch shall be provided with an automatic disconnection device which is activated when an alarm is given by the gas warning system. The power supply to the ventilation fans shall be independent of the primary power switch referred to above.

Hot parts of motors and exhaust gas pipes present in the space shall be adequately insulated. Exhaust gas pipes from motors shall have spark catchers that are easily accessible for cleaning.

The space shall at least be provided with a class III B extinguisher.

Section 10

Cargo pump rooms and spaces with valves and pipes belonging to the cargo system, except cargo tanks or pipe tunnels with no open connection with the pump room, shall be equipped with a fixed fire-extinguishing system. Ventilation fans and dampers shall be provided with an automatic device to stop the fans and close the damper when the fire extinguishing device is activated.

There shall be at least two B extinguishers of class III in cargo pump rooms. If the ship's gross tonnage is greater than 20 000 tones, the room shall contain at least three such extinguishers.

Any fire extinguishing system must be approved by the Swedish Transport Agency.

Section 11

Ships shall be provided with a foam extinguishing system within the tank area.

Ships with a length of 75 meters and above shall have a fixed foam extinguishing system and portable foam extinguishing equipment.

Ships of less than 75 meters in length shall have portable foam extinguishing equipment and a system for the production and distribution of foam in accordance with Section 14 and the equipment referred to in Section 15.

If inert gas is used as a fire-prevention tank filler, the foam extinguishing equipment need only cover the tank deck.

Section 12

The foam extinguishing system on ships with a length of 75 meters and above shall comply with the following requirements:

The foam extinguishing system shall be arranged in such a way that a fire in out-flowing oil can be fought on all parts of the tank deck and that foam can be delivered to all tanks.

The foam extinguishing system shall consist of central foam units, a foam distribution system, foam monitors and portable foam extinguishing equipment.

It shall be possible for the foam extinguishing system and fire main to be used at the same time independently of each other.

The size of the fire main shall be tailored to the capacity of fire pumps and the capacity of the

	foam extinguishing system. There shall be a hydrant to which both water hoses and portable foam extinguishing equipment can be connected for every fifteen meters of the length of the tank area. Pipelines for water and foam-forming liquid shall be double pipelines and led on both sides of the ship. However, if the emergency fire pump is situated forward of the tank area, the pipelines for water and foam-forming liquid may be single pipelines and led along the centerline of the ship. Single pipelines along the ship's centerline may also be present and only connected to pumps and central foam units aft of the cargo tank area if there is a foam monitor on each side of the ship at the front of the poop or a deckhouse located aft and these foam monitors are provided with water and foam-forming liquid with dedicated pipelines leading outside the tank area direct from the central foam unit. The pipelines shall have shut-off valves to shut off the supply to a foam monitor that is not to be used. The valves shall be located so as to allow the supply to be shut off from a place close to the foam monitor that is to be used. There shall be a central foam unit aft of the tank area and, if the emergency fire pump is located forward of the tank area, also near to the emergency fire pump. A central foam unit shall be arranged as a control station and be located at a safe distance from any area where there is a risk of gas. A central foam unit located aft of the tank deck shall be capable of being reached without having to enter the tank deck. A central foam unit shall contain a foam-forming liquid tank, two foam-forming liquid pumps and the necessary control and operating equipment for the distribution of foam-forming liquid and water to both the fixed foam extinguishing system and the portable foam extinguishing equipment. Foam-forming liquid tanks shall have filling and degassing pipes leading to the open deck and a reliable arrangement for controlling levels. The tank shall have adequate corrosion protection tailored to the properties of the foam-forming liquid used. The foam-forming liquid pumps shall be capable of being used independently of the main power source. It shall be possible for fire pumps and sea valves that are required for the production of foam to be operated from the central foam unit. There shall be a quantity regulating device to ensure the correct quantity of foam-forming liquid is used, irrespective of the water pressure. **Section 13** There shall be one foam monitor set up forward of the cargo tank area on a level with the forecastle deck, one aft of the cargo tank area on a level with the poop deck and one within the cargo tank area, each of which shall be not more than 30 meters apart. On ships with a footbridge amidships, the monitors shall be placed alternately on the starboard side and the port side. Whether used for foam or water, a foam monitor shall have a capacity of half that prescribed for the fire pumps in Section 17, but not less than 1 250 liters per minute. However, the capacity need not exceed 2 500 liters per minute. A foam monitor shall be capable of swiveling ± 45° in the vertical plane and 360° in the horizontal plane. Within these ranges, the monitor shall be capable of being locked in any position. The height from the deck to the monitor's outlet when positioned horizontally shall be at least two meters. A foam monitor shall have a delivery distance for both water and foam of at least 40 meters at the prescribed minimum pressure in the fire main. A foam monitor shall be designed for foam number 15. **Section 14** Ships with a length not exceeding 150 meters shall have at least two items of portable foam extinguishing equipment and other ship shall have at least three. Portable foam extinguishing equipment shall consist of one intermediate foam pipe and two 60 mm hoses, each 25 meters in length. The intermediate foam pipe shall be designed to deliver 200-500 liters of water per minute, tailored to the deck surface of the largest cargo tank and for a foam number of around 75-100. The intermediate foam pipe shall be provided with a shut-off valve and connector to fit all hose connections on the ship. At least 25% of the prescribed quantity of foam shall be capable of being produced by the portable equipment. The equipment referred to in the above paragraph shall be evenly distributed and stored in fire stations forward and aft of the tank area. **Section 15** Ships of less than 75 meters in length shall, in addition to portable foam extinguishing

equipment in accordance with Section 14, have the equipment prescribed in Section 12 that is required for the distribution of foam-forming liquid and water to this extinguishing equipment.

Section 16

Foam-forming liquid shall be suitable for all foam-generating equipment. The quantity of foam-forming liquid shall be sufficient for 30 minutes' uninterrupted foam production.

Section 17

Main fire pumps in the machinery space shall have a total capacity sufficient to deliver at least four liters of water per minute for every square meter of the deck surface of the largest tank and for a pressure in the deck piping of at least 7.5 kiloponds per square centimeter. The quantity of water shall, however, be at least 150 cubic meters per hour on ships with a length of 80 meters of more and 100 cubic meters per hour on other ships. On ships with a fixed foam extinguishing system, the capacity must also be sufficient to supply two foam monitors simultaneously.

The capacity of an emergency fire pump shall be at least half the combined capacity of the main fire pumps. However, on ships with a fixed foam extinguishing system, the capacity shall be sufficient to supply one foam monitor.

Section 18

The emergency fire pump shall be corrosion-resistant. Taking into account the pump's suction power, the emergency fire pump's sea valve shall be placed at a sufficient depth below the light load water line and at an appropriate distance from the stem and the stern. It must not be located in the machinery space and shall be capable of being operated from the place from which the pump's drive motor is operated.

On large tankers, the emergency fire pump may be situated aft next to the deckhouse, in the cargo pump room or in a space aft of the machinery space. Appropriate measures shall be taken to ensure adequate suction power.

Section 19

The following numbers of fireman's outfits shall be carried when the ship's gross tonnage is

not more than 10 000	2
above 10 000 but not more than 20 000	3
above 30 000	4

A fireman's outfit consist of the following:

three complete fire retardant suits;

two 15-metre lengths of 38 or 51 millimeter fire hose;

two 38 or 51 millimeter jet/spray branch pipes;

two adapters (normal coupling and claw coupling, only if both 51 millimeter and 38 millimeter hoses are available on board);

three pairs of rubber boots with anti-slip soles;

one 24" crowbar;

three helmets;

one breathing apparatus;

one lifeline of adequate strength, provided with a snaphook attached to the belt or to the harness of each breathing apparatus;

a safety lamp (head lamp);

a fire axe.

There shall also be an additional breathing apparatus with lifeline that shall be stored in a special cupboard near to the pump room.

Safety lamps shall be electric and have a minimum burning period of three hours.

Items of equipment must be approved by the Swedish Transport Agency.

Section 20

The requirements concerning storage etc. of fireman's outfits in regulation 63 (b)(ii) including the Swedish requirements, shall also apply to tankers.

Section 21

Tankers shall be equipped with at least two portable gas indicators. One of these indicators shall be a two range type with which measurements can be taken below, within and above the explosion limits.

Appendix 3 - SOLAS 1974, as amended until 2002 regarding fire protection

>> Applies for ships built between 1 sep. 1984 to 1 jul. 2002 <<

International Convention for Safety of Life at Sea (SOLAS 1974)	
Chapter II-2. **Construction – Fire protection, fire detection and fire extinction**	
Part A General	
Reg. 3	**Definition**
10 I	Accommodation spaces are those spaces used for public spaces, corridors, lavatories, cabins, offices, hospitals, cinemas, games and hobbies rooms, barber shops, pantries containing no cooking appliances and similar spaces. Pantries not including cooking equipment are those pantries containing only electrical equipment with low power, such as coffee machines, toasters, toasters, dishwashers, microwave ovens, electric kettle, induction hobs and similar equipment with a power not exceeding 5 kW per appliance and electric hot plates and hot plates for warming of food with a power not exceeding 2 kW per device and a surface temperature not exceeding 150 ° C.
11 SR	A dining room is a public space, even if it contains electrical equipment with low power, such as coffee machines, toasters, dishwashers, microwave ovens, electric kettle, induction hobs and similar equipment with a power not exceeding 5 kW per unit. A dining room may also contain electric hot plates and hot plates for warming of food with a power not exceeding 2 kW per device and a surface temperature not exceeding 150 ° C.
23.1 SR	**Rooms containing furniture and furnishings of restricted fire risk;** The Swedish Transport Agency can accept finishes with a thickness of 2 mm if the calorific value does not exceeding 45 MJ / m². The heat value is determined according to ISO standard 1716.
Reg. 4	**Fire pumps, fire mains, hydrants and hoses**
2.2 I	Such a pump shall have a capacity of at least 25 m³/h. STA follow interpretation in MSC/Circ. 847
3.1.3 I	Cargo ships of less than 1000 tons gross tonnage shall have at least two fire pumps.
3.2 SR	Sanitary, ballast, bilge or general service pumps may be accepted as fire pumps, provided that they are not normally used for pumping oil. If they are used for and that if they are subject to occasional duty for the transfer or pumping of oil fuel,
3.3.2 SR	Every emergency fire pump shall be capable of supplying the amount of jets that is required in 5.1
3.3.3 SR	In cargo ships of less than 2000 gross tonnage, constructed between 1 September 1984- 1 October 1994, STA accepts an portable emergency fire pump as the alternative means of providing water for fire-fighting purposes (SOLAS 74/88 II-2/4.3.3.3).However it shall fulfill the requirements in 3.3.2.1-3.3.2.8 and fulfill the Swedish requirement in 4.2
3.4.1 I	**Automatic starting of fire pumps** Only one of the required fire pumps needs to be provided with automatic starting
3.4.1 SR	If the fire pump starts automatically or if the sea inlet valve can't be operated from the position where the remote starting is arranged, the inlet sea valve shall always be in open position. There shall be a sign with the text: **WATER TO FIRE PUMP MUST NOT BE CLOSED.**
3.4.2 I	For ships constructed between 1 July 1986 -1 July 2002: The arrangements for the ready availability of water supply shall be for cargo ships: there shall be immediate water delivery from

	the fire main system at a suitable pressure, either by remote starting of one of the main fire pumps with remote starting from the navigating bridge, or automatic start of one of the fire pumps. If the fire pump starts automatically or if the sea inlet valve can't be operated from the position where the remote starting is arranged, the inlet sea valve shall always be in open position.
3.4.2 SR	There shall be a sign with the text: **WATER TO FIRE PUMP MUST NOT BE CLOSED.**
3.4.2 SR	For ships constructed before 1 July 1986, SOLAS 60 part E reg.65(b, ii), the seawater inlet valves shall be located at the same place as the pump start, however this requirement is deleted and STA can accept that a sign is with the text mentioned above, is provided.
3.4.3 SR	There shall be a sign with the text: **WATER TO FIRE PUMP MUST NOT BE CLOSED.**
3.4.4 SR	In passenger ships with a gross tonnage above 1000, paragraph 3.4.1 shall be fulfilled, including the Swedish requirements. In passenger ships with a gross tonnage below 1000, paragraph 3.4.2 shall be fulfilled.
4.1 GA	**Diameter of fire main** Fire main should have a diameter in accordance with the following table: Ships length (m) Diameter (mm) Less than 50m: 75mm Up to 50m but not 100m: 100mm Up to 100m but not 200m: 125mm Up to 200m but not 300m: 150mm Up to 300m or more: >150mm Branch pipes should have a diameter of at least 60 mm. Short branch pipes for only one fire hydrant should have a diameter of at least 50 mm.
4.2 SR	Fire main pressure may not be lower than that required in according to section 4.1 required amount of water to two simultaneously open 12 mm nozzles. These nozzles will be connected to its own hose, one of which must have a single length. One hose should be connected to the highest hydrant, the second to the hydrant placed furthest away. The nozzles should also be able to provide an effective water spray.
7.1 SR	**Fire hoses** Fire hoses should be at least 10 m long but not longer than 15 meters in machinery spaces; 20 m in other spaces and open decks, and 25 m for open decks on ships that are wider than 30 meters Fire hose diameters should be adapted to the spaces they are servicing. The diameter may not exceed 42 mm.
7.4.2	The number of fire hoses shall be at least 3 pcs.
8.4 SR	**Nozzles** Fire Nozzles must meet the Swedish standard SS 3500. The nozzle meets the prescribed standards when it is marked with the SIS-label or displayed in some other way.
Reg. 5	
1.2 I	According to MSC/Circ.847
1.12 **I**	Storage containers for the extinguishing medium and associated pressure components shall meet the National Board of Occupational Safety and Health regulations (AFS 1999:4) on Pressure devices. Consideration should also be taken to their placement and maximum ambient temperature that can be expected during operation.
1.13 I	(MSC/Circ.847)
2 SR	**Carbon dioxide systems** *Maintenance and inspection* Upon delivery of a carbon dioxide system, an instruction for facility including a checklist for maintenance shall be kept onboard. This has to be written in Swedish and English. The installation must be inspected and tested at the first sea trial inspection and then at least every two years. Certificate of inspection shall be produced and kept onboard.

	Carbon dioxide quantity shall be checked at least once a year. The maintenance done shall be documented. Bottle Size Carbon dioxide amount in each bottle shall not exceed 45 kg and should have a maximum specific fill weight of 0.67 kg per liter bottle volume. *Piping* Means shall be provided that allows keeping the pipes and exhaust clean of dirt and water. Pipes passing through refrigerated spaces should be isolated and drained. Particle filter and water separator should be easily accessible. All parts in the piping for carbon dioxide extinguishing system including manifolds, main valves and, where applicable, flexible hoses must meet the requirements of the National Board of Occupational Safety and Health regulations (AFS 1999:4) on Pressure devices. *Measures before the release of carbon dioxide plant* Before the release of carbon dioxide occurs in engine room of Category A, the following steps are taken in the order listed: 1. Officer in charge of the bridge to be informed. 2. Propulsion machinery shall be stopped. Fuel oil supply to the injection pumps and oil burner to be stopped and valves for fuel oil tanks closed. 3. All dampers in the ventilation system and other openings are closed as soon as the speed of the propulsion machinery has been reduced sufficiently. 4. Before the carbon dioxide system is triggered, check that no person is left in the room. At the release box for carbon dioxide system, there should be an instruction and actuators for those systems as indicated in paragraph 2 and 3.
3	**Halogenated hydrocarbon systems** For fixed gas-type fire-extinguishing systems, the Order (2002:187) concerning substances that deplete the ozone layer contains provisions relating to Halon 1211 and 1301. Over and above what is stated in the Order, Halon 2402 and perfluorocarbons shall not be used in fire-extinguishing systems.
4 SR	**Steam systems** Steam may not be used as extinguishing agent.
5.1 SR	**Other gas systems** Application for approval of such an extinguishing agent shall contain details of the composition of the media.
Reg. 6	
1 SR	**Fire extinguishers** Fire extinguishers are classified with respect to the application: Extinguisher Class A: smoldering fires Extinguisher Class B: liquid fires Suffix C: gas fires That a portable fire extinguisher has an extinguishing agent with such a high electric resistance to it without danger to the user may be used in fires in electrical installations shall be clearly stated on the sticker. A and B extinguishers are classified according to European standard EN 3 for portable fire extinguishers into different classes depending on the size of the test bowl. The class of the extinguishers is indicated by a digit followed by the letter A or B or a combination of A and B, for example 21A 183B. Portable fire extinguishers shall meet the requirements of the Swedish Transport Agency (TSFS 2009:52) on marine equipment. The lowest classes that may be used in a ship is: - 233B C: minimum 12 kg powder - 21A 183B: minimum 6 kg powder or 9 liter foam - 55B: minimum 5 kg carbon dioxide.
2 I	**Spare charges** For each type of fire extinguisher the must be available spare charges in a number equal to at least half the number of fire extinguishers of the type in question. The total number of spare charges does not need to exceed 10 for each kind. A standby charge shall consist of a complete extinguisher available beyond the prescribed number.
5 I	Fire extinguishers should be examined periodically in accordance with Annex 4 to Swedish transport Agency regulation (TSFS 2009:98) on fire protection. According to annex 4: All portable fire extinguishers checked for the location, charging pressure

	and general condition. Service and maintenance shall be performed according to Swedish standard SS 3656 or equivalent standard.
7 I	Portable fire extinguishers in accommodation areas shall have fire extinguishers of at least class 21A 183B. There should be a hand fire extinguisher for every 250 m² of the space area. In the kitchen, radio room and steering gear should be a hand fire extinguisher carbon dioxide extinguisher class 55B.
Reg. 7	**Fire extinguishing arrangements in machinery spaces**
1.4 SR	Instead of the equipment prescribed in section 1.2-1.4 the following equipment are to be available: At each firing space there shall be a spill tray for collecting oil. The tray should have a height of 300 mm. It should be equipped with a drain pipe leading to the bottom of a collecting leak oil tank. Each firing space shall be provided with a fixed powder fire-extinguishing system. The firing locations that are protected by a local protection system need not have a fixed powder fire-extinguishing system. The extinguishing system, that may be made up of portable fire extinguishers for Class 233B C, shall be calculated as follows: Spill tray area (m²) Extinguishing (kg) up to 2m² 12 2-4m² 24 more than 4m² 48 The release device for the facility shall be located at a protected place. In the space there must additionally be: - A dry powder extinguishing units of an approved type with at least 50 kg of extinguishing agent, and -at least one hand held fire extinguisher of Class 233B C. If the boiler output is less than 175 kW, the 50-kg unit in a cargo ship, may be replaced by a hand fire extinguisher for Class 233B C.
2.3 SR	Portable fire extinguishers shall be of class 233B C. Foam Extinguisher with a capacity of 45 liters required by this rule may be replaced by portable fire extinguishers of class 233B C.
3.1 SR	An equivalent of portable fire extinguishers according to this rule can be a powder extinguisher of class 233B C.
3.2 SR	An equivalent of portable fire extinguishers according to this rule can be a powder extinguisher of class 233B C.
4 I	The main and emergency switchboard room and other areas not listed in Section 1, 2 and 3, there shall be such a number of portable fire extinguishers of class 55B or other means of extinguishing, as the Swedish Transport Agency deems sufficient.
6 I	A water fog applicator may consist of an L-shaped pipe of the long limb, with a length of about 2 meters, that can be connected to a fire hose and the short limb, with a length of about 250 mm, has a fixed water fog nozzle or can be fitted with a water fog nozzle.
Reg. 7-1	**Local protection in machinery spaces**
1	These rules shall apply to: .1 Swedish passenger ships of 2000 gross tonnage and upwards constructed before 1 July 2001; .2 Swedish passengers ships of 500 gross tonnage and upwards and Swedish cargo ships of 2000 gross tonnage and upwards constructed on or after 1 July 2001; .3 foreign passenger ships in Swedish waters of 2000 gross tonnage and upwards constructed before 1 July 2002; .4 foreign passenger ships in Swedish waters of 500 gross tonnage and upwards and foreign cargo ships of 2000 gross tonnage and upwards constructed on or after 1 July 2002.
1 GA	General advice Manned machinery spaces should also have automatic release of the local protection system
Reg. 9	**Fixed high-expansion foam fire-extinguishing systems in machinery spaces**
SR	Alternative devices shall meet the requirements of the FSS Code Chapter 6, Rule 2.2.
Reg. 10	**Fixed pressure water-spraying fire-extinguishing systems in machinery spaces**
SR	Fire-extinguishing systems with water fog applicators for machinery spaces and cargo pump spaces that meet the requirements of MSC/Circ. 668 and MSC/Circ. 728 shall be deemed equivalent to systems that meet the requirements of paragraphs 1–7.
Reg. 11	**Special arrangements in machinery spaces**

2.1	All doors to machinery spaces of category A shall be of self-closing type. Hold-back hooks are not allowed.
Reg. 12	**Automatic sprinkler, fire detection and fire alarm systems**
10 I	Number of spare sprinkler heads shall be at least 5 percent of the total number of nozzles in the plant. The number needs not to exceed 10.
Reg. 13	**Fixed fire detection and fire alarm systems**
SR	Fixed fire detection and fire alarm systems shall comply with Chapter 9, Section 2.5 of Annex 2 to the Transport Agency's regulations and guidelines (TSFS 2009:98) on fire protection, fire detection and fire fighting on SOLAS ships built on or after 1 July 2002 or later.
3.4 I	According to MSC/Circ.847
Reg. 13-1	**Sample extraction smoke detection systems**
1.2 I	Any required system shall be capable of continuous operation at all times except that systems operating on a sequential scanning principle may be accepted, provided that the interval between scanning the same position twice shall not exceed 5 minutes.
1.10 I	The functioning of the system shall be tested in accordance with the provisions of regulation 67 of the present regulations laid down by MCS/Circ 850
3.3 I	The fans shall be of sufficient capacity to operate within the normal conditions of ventilation in the protected area and shall give an overall response time not exceeding 3 minutes.
Reg. 15	**Arrangements for oil fuel, lubricating oil and other flammable oils**
2.5 I	The provision of this paragraph applies to fuel oil tanks having a capacity of 500 *l* or more and placed above the double bottom.
2.6.1 I	Where this is impracticable, it is permissible for sounding pipes to terminate in machinery spaces on condition that the requirements in .6.1.1 to .6.1.3 are met.
2.6.2.2 I	The use of oil-level gauges with flat glasses and self-closing valves between the gauges and fuel tanks may be permitted.
2.6.3 I	Means prescribed in subparagraph .6.2.1 or .6.2.2 shall be maintained in the proper condition to ensure their continued accurate functioning in service.
2.7 I	Air and overflow pipes and relief valves should discharge to a position where there is no risk of fire or explosion from the emergence of oils and vapor and should not lead into crew spaces, passenger spaces nor into special category spaces, closed ro-ro cargo spaces, machinery spaces or similar spaces.
2.8	Flexible pipe shall be tested according to ISO 15 540 and ISO 15 541 or equivalent testing standards.
3	If sight glasses are used, the pipe for this to be provided with valves at both ends. The valve at the lower end to be self-closing.
Reg. 17	**Fireman's outfit**
1.1.4 I	***General advice*** Explosion-protected safety lamps should be at least of explosion group IIA and temperature class T3 pursuant to SS-IEC 60079
1.2.1 SR	A smoke helmet or smoke mask may not be used.
1.2.2 I	Two spare charges suitable for use with the breathing apparatus should be provided for each required apparatus. If passenger ships carrying not more than 36 passengers and cargo ships are equipped with suitably located means for fully recharging the air cylinders free from contamination, only one spare charge is required for each required apparatus.
3.3	The following sets of personal equipment and breathing apparatus should be on board: **Passenger ships** Length in meters---Total number of fireman´s outfit---Additional personal equipment <80---4---2 80-160---6---4 >160---8---6 **Cargo ships** Gross tonnage---Total number of fireman´s outfit---Additional personal equipment <4000---2---1

	4000-10000---3---1 >10000---4---2 **Tankers** Gross tonnage---Total number of fireman´s outfit---Additional personal equipment <4000---4---0 4000-10000---4---1 10000-30000---6---2 >30000---6---4
Reg. 17-1	**Emergency escape breathing devices(EEBD)**
1 I	Spare EEBD shall be provided on board in numbers laid down in MSC/Circ.1081, meaning two in passenger ships and one in cargo ships.
2 I	**Emergency escape breathing devices(EEBD) in machinery spaces** On all ships, EEBD´s shall be provided in machinery spaces in conspicuous locations which can be accessed quickly and readily at all times in the event of fire. When positioning the EEBD, account shall always be taken of the design of the machinery space and the number of people normally present in the space. The requirements below for EEBD´s are based on what is laid down in MSC/Circ.1081. The following shall be provided in machinery spaces containing internal combustion engines for propulsion: .1 an EEBD in the control room (if located in the machinery space), an EEBD in workshops or their vicinity, an EEBD on each deck or platform in the vicinity of the other escape route from the space (the first escape route should be understood to mean a protected escape route or a watertight door in the lower part of the space). .2 additional EEBD´s may be required with reference to the layout and dimensions of the space. Notwithstanding the above, the number of EEBD´s shall be not less than three. .3 for machinery spaces in category A, other than those containing internal combustion engines for propulsion, at least one EEBD shall be provided on each deck or platform in the vicinity of the other escape route (the first escape route should be understood to mean a protected escape route or a watertight door in the lower part of the space). .4 where the space has only one level and evacuation to a safe place can be undertaken simply, no EEBD shall be required.
3 I	The number and location of these escape masks shall be marked on the fire control plan laid down in regulation 20.5.
4 I	Escape masks shall meet the requirements of MSC/Circ.849.
Reg. 18	**Miscellaneous items**
1.1 SR	New installations of penetrations of steel and plastic pipes thru class A divisions shall meet the requirements of the Swedish Transport Agency's regulation (TSFS 2009:52) on marine equipment. New installations of cables in existing penetrations are permitted provided that the penetration is restored according to the manufacturer's installation instructions.
2.1 I	Non-insulated metallic pipes penetrating A-0 or B-0 class divisions should be of suitable material, the melting temperature of which exceeds 950°C for A-0 and 850°C for B-0 class divisions.
2.2 I	The Swedish Transport Agency may permit the conveying of oil and combustible liquids through accommodation and service spaces if it's not possible to route the pipe differently. Such pipe shall be of steel or equivalent material.
7 I	**Applicable to all ships regardless of age** Paint lockers and flammable liquid lockers shall be protected by one of the following systems: .1 A carbon dioxide extinguishing system which provides a quantity of gas equivalent to 40% of the total volume of the space. .2 A powder extinguishing system which provides at least 0.5 kg powder/m^3 of the space. .3 A water sprinkler system which provides 5 l/m^2/min. This system may be connected to the main fire line. .4 A fire-extinguishing system which provides equivalent safety to any of the above. All systems shall be capable of being activated from the outside of the space.
8 I	If the space below the helideck is a high-risk area, the insulation standard shall be of class A-60.
Reg. 20	**Fire control plans and fire drills**

1 I	Description in such plans and booklets shall be in the official language of the flag State.
G	**General advice** These fire control plans should be designed in accordance with resolution A.654 (16) and resolution 756(18).
2 G	**General advice** These fire control plans should be located in accordance with MSC/Circ. 451.
3	Fire drills shall be conducted and documented in accordance with the provisions of sections 19.3 and 19.5 of the Swedish Transport Agency´s regulations and general advice (TSFS 2009:93) Life-saving equipment and life-saving facilities on ships covered by the 1974 International Convention on Safety of Life at Sea.
Part C	**Fire safety measures for cargo ships**
Reg. 45	**Means of escape**
1.5 I	Escapes width and continuity shall be as follows: Stairways and corridors used as escape routes should have at least 700 mm clear width and shall have a handrail on one side. Stairs and corridors with a clear width exceeding 1 800 mm shall have a handrail on each side. Clear width is measured as the distance between the handrail and the opposite bulkhead or between handrails. Ladder angle should generally be 45 ° but not exceeding 50 °. For machinery spaces and small spaces the stair angle must not exceed 60 °. A door opening leading to a staircase shall have the same width as the staircase. Means of escape which is also the access way shall be arranged according to the Swedish Maritime Administration's regulations and guidelines (SJÖFS 2005:25) on protective and security measures on ships.
3.1 I	One of those in Section 3.1 required means of escape should be provided as follows: The escape route shall be enclosed and insulated to A-60. Ladders should be fixed in such a way that heat cannot, in case of a fire in the machinery space, be transferred to the ladder through non-insulated fixing points. The space in the lower part being provided with a self-closing door, which is insulated with A-60. If there are other exits, these should also be provided with self-closing doors and insulated with to class A-60. The enclosure shall be minimum 800 x 800 mm on the inside and be fitted with emergency lighting.
Reg. 46	**Protection of stairways and lift trunks in accommodation spaces, service spaces and control stations**
1 SR	Doors required to be self-closing shall not be fitted with hold-back hooks unless the hold-back arrangement are fitted with remote release devices of fail-safe type.
Reg. 52	**Fixed fire detection and fire alarm systems and automatic sprinkler, fire detection and fire alarm systems**
1 SR	In addition to the required by regulation 52.1, the manual call points are to be installed in accordance with regulation 13.
2 SR	In addition to the required by regulation 52.2, the manual call points are to be installed in accordance with regulation 13.
4 SR	Notwithstanding the above provisions, the administration does not require that detectors required in regulation13.2.2 to be installed on ships constructed before 1 September 1985.
Reg. 52	**Fire protection arrangements in cargo spaces**
1.2	The Administration may exempt from the requirements of paragraph 1.1
2.1 I	In the system laid down in 2.1, the detector sections within special-category spaces may be fitted with a device, e.g. a time relay, for disconnecting the sections while loading/unloading is going on, provided that the fire alarm buttons cannot be disconnected with this device, that it is indicated on the fire alarm centre when the sections are disconnected and that the disconnection time is adapted to the loading/unloading time.
2.1 GA	The fire alarm should only be disconnected when there are people in the space.
Reg. 53	**Fire protection arrangements in cargo spaces**
2.2.1.4 I	Such information shall be included in the stability information to the commander as prescribed in Rule 22 of Annex 1 to the Swedish Maritime Administration's regulations and guidelines (SJÖFS 2006:1) on hull design, stability and freeboard that apply under the transitional provisions of the Swedish Transport Agency´s regulations and guidelines (TSFS 2009:114) on hull structure, stability and freeboard.

2.2.3 I	Portable extinguishers of class 233BC should be provided at each car and platform deck level in each hold or compartment where vehicles are carried, spaced not more than 20 m apart on both sides of the special category space.
2.3.4 GA	**General advice** Fans for the space protected by the fire-extinguishing system shall be arranged so that they shut down automatically before extinguishing agent is released into the space.
2.4 GA	**General advice** Electrical equipment and cabling in closed ro-ro spaces and special-category vehicle spaces should meet the requirements of SS-IEC 60079. Electrical equipment and cabling should be approved for use in zone 1 and be of the lowest explosion group IIA and temperature class T3
Reg. 54	**Special requirements for ships carrying dangerous goods**
1.1	If the ship carries only limited quantities of dangerous goods, in accordance with the Swedish Transport Agency´s regulations (TSFS 2009:91) concerning transport by sea of packed dangerous goods (the IMDG Code), the requirements of this regulation need not be complied with.
2.2 SR	Where electrical equipment is installed in such spaces, the equipment shall meet the requirements of IEC 60092-506 and SS-IEC 60079
2.3 I	The detector sections within these spaces may be fitted with an arrangement, e.g. a time relay, for disconnecting the sections while loading/unloading is going on, provided that the fire alarm buttons cannot be disconnected with this device and that it is indicated on the fire alarm centre when the sections are disconnected.
2.3 GA	***General advice*** The fire detection system should use smoke detectors, a combination of smoke and flame detectors or, for open ro-ro spaces in which the installation of smoke detectors may be inappropriate, other types of detection. The disconnection time should be adapted to the loading/unloading time.
2.4.1 I	Provisions concerning hygiene limit values and measures to combat air pollution on ships are set out in the Swedish Transport Agency's regulations and general advice (TSFS 2009:119) concerning working environments on ships.
2.6.2 SR	With regard to personal protective equipment the requirements in the Swedish Transport Agency's regulations (TSFS 2009:91) on the transport by sea of packaged dangerous goods (IMDG) Code, shall apply.
Reg. 56	**Location and separation of spaces**
1 I	Where it can be demonstrated that for reasons of access and satisfactory piping arrangements this is impracticable, a recess in excess of such height may be permitted, but not exceeding one half of the moulded depth above the keel.
3 I	a) However, where deemed necessary, accommodation spaces, main cargo control stations, control stations, and service spaces may be permitted forward of the cargo tanks, slop tanks and spaces which isolate cargo and slop tanks from machinery spaces, but not necessarily forward of oil fuel bunker tanks or ballast tanks. b) Where deemed necessary for the safety or navigation of the ship, machinery spaces containing internal combustion machinery not being main propulsion machinery and having an output greater than 375 kW may be permitted to be located forward of the cargo area provided the arrangements are in accordance with the provisions of this paragraph.
4.4 I	Cargo oil lines may be permitted to be placed in special ducts if these can be adequately cleaned and ventilated.
6.2 SR	See the guidelines in IEC 60092-502 regarding the location of openings and electrical equipment in the cargo area.
7 I	In the case of the sides of these superstructures and deckhouses, such insulation shall be carried up to the underside of the deck on the navigation bridge.
8.2 I	Doors to a main cargo control station and such service spaces used as store-rooms, lockers and storage may be permitted in bulkheads adjacent to the cargo area or within the boundary of 5 metres specified in paragraph 8.1, provided that these spaces provide no direct or indirect access to accommodation spaces, control stations or service spaces such as galleys, pantries, workshops or similar spaces containing vapour ignition sources.
8.2 SR	The requirements in IEC 60092-502 regarding positioning of openings and electrical equipment in the cargo area, shall be fulfilled.

Reg. 59	**Venting, purging, gas-freeing and ventilation**
1.5 I	The design, testing and placement of these devices on oil tankers, referred to in Rule 55.1, shall meet the requirements in MSC/Circ.677, MSC/Circ.731 and MSC/Circ.1009. Ullage openings should not be used for pressure equalization. They should be provided with self-closing and tightly sealing covers. Flame arresters and flame screens are not permitted in these openings.
1.9.4 I	These openings on oil tankers referred to in Rule 55.1 shall be equipped with high-velocity-valves that meet what is said in MSC/Circ.677, MSC/Circ.731 and MSC/Circ.1009.
Reg. 64	**Operational requirements**
2.2.1 I	**Maintenance, testing and inspection** Maintenance, testing and inspection shall be carried out based on the guidelines in appendix 4(TSFS 2009:98).
2.2.4 I	Service and maintenance of portable fire extinguishers should be carried out according to SS 3656
Reg. 65	**Instructions, on-board training and drills**
2.3.4 GA	General advice: The training manual should be designed as a separate manual. The manual can also be a part of the ISM manual on condition that the requirements for availability are fulfilled.
Reg. 67	**Guidelines for the maintenance and inspection of fire-protection system and appliances**
7.1 I	All fire extinguishers must be checked for the location, charging pressure and general condition. Service and maintenance should be according to SS 3656 or other equivalent standards.

Appendix 4 - FSS-code, as amended

Resolution MSC.98(73)

FSS code (International Code for Fire Safety Systems)	
Chapter 3	
2.1.1 GA	**Personal equipment** Explosion proof type safety lamps should at least be of explosion proof type IIA and temperature class T3 according to SS-IEC 60079
Chapter 4	**Fire extinguishers**
3.2	**Portable foam applicators** For ships constructed before 1 September 2008 STA recommends that the foam liquid should follow the requirements in MSC/Circ.1312
Chapter 5	**Fixed gas fire-extinguishing systems**
2.1.1.2 GA	**Fire extinguishing medium** For inert gas systems the outlet from the starting air receiver safety valves should always be led directly to the open air.
2.1.1.4	Containers for the storage of fixed gas extinguishing medium and associated pressure components shall be designed to pressure codes regulated in AFS 2005:2
Chapter 6	**Fixed foam fire- extinguishing systems**
2.2.2.3 GA	**Installation requirements** If the foam generators are supplied with water for appropriate foam production by the ships emergency fire pump, the pump should at the same time be able to provide the fire main with 25 m3/h at the nominal pressure.
2.2.2.4	Equivalent fixed foam fire-extinguishing system that fulfills the requirements in MSC/Circ.1271 and MSC/Circ.1384 are to be considered to fulfill the requirements in 2.2.2.1-2.2.2.3
Chapter 9	**Fixed fire detection and fire alarm system**
2.3 GA	Detectors operated by other factors indicative of incipient fires should fulfill the requirements in MSC/ Circ.1035
Chapter 10	**Sample extraction smoke detection systems**
2.1.2	The interval between scanning the same position twice shall give an overall response time not exceeding 2 minutes.
2.2.2	Response time shall not exceed 15 seconds.
Chapter 12	**Fixed emergency fire pump**
2.2.1.1	**Capacity of the pump** The capacity of the pump shall fulfill the requirements in MSC/Circ.1314
2.2.1.3	**Suction heads** The pump should follow the guidelines in MSC/Circ.1388
Chapter 13	**Arrangement of means of escape**
2.2.2	STA recommends that stairs that are designed for less than 90 people should also be aligned fore and aft.
Chapter 14	**Fixed deck foam systems**
2.2.1	STA recommends that performance and testing criteria of low expansion foam concentrates shall follow the requirements in MSC/ Circ. 582 and MSC/ Circ.582/ Corr. 1 and for medium expansion concentrates MSC/ Circ. 798
Chapter 15	**Inert gas systems**
2.2.1.1	**Supply of inert gas** STA may permit systems using flue gases from one or more separate gas generators or other sources or any combination thereof, provided that an equivalent standard of safety is achieved.
2.2.1.4	STA may permit only one fuel oil pump on condition that sufficient spares for the fuel oil pump and its prime mover are carried on board to enable any failure of the fuel oil pump and its prime mover to be rectified by the ship's crew.

2.2.3.1	**Blowers** STA may permit only one blower if that system is capable of delivering the total volume of gas required by paragraphs 2.2.1.2 and 2.2.1.3 to the protected cargo tanks, provided that sufficient spares for the blower and its prime mover are carried on board to enable any failure of the blower and its prime mover to be rectified by the ship's crew.
2.4	**Operation and control requirements** STA recommends that instruction manuals covering safety, maintenance requirements and occupational health should be according to MSC/ Circ. 353 and MSC/ Circ. 387.

Appendix 5 - LSA-code and MSC circulars related to SOLAS ch. III

Resolution MSC.48(66)

LSA-code (International Life-Saving Appliance Code) And related MSC circulars	
LSA Code	**Ch VI: Launching and embarkation appliances**
6.1.2.10	Maximum lowering speed shall primarily be stated by the manufacturer. In the alternative the STA recommends maximum lowering speed for lifeboat and rescue boat should be 1,5 meter/second. For liferafts is the recommended maximum speed 1 meter/second.
MSC.81(70)	**Part 2: Production and Installation tests**
5.4	Following applies to the rescue boat launch test when a series of ships are built. If the installation test on the first ship of a series of ships is executed without any remarks and the other ships in the same series are constructed identical, which must be verified, the STA accepts that this test is executed on every 5th ship in that series.
MSC.1/Circ. 1206.Rev.1	**Measures to prevent accidents with lifeboats**
	Independent service providers authorized by STA according to the circular can be found on STA website http://www.transportstyrelsen.se/sv/Sjofart/Tillsyn/Delegerad-tillsyn/
MSC/Circ. 1114	**Guidelines for periodic testing of immersion suit and anti-exposure suit seams and closures**
	STA strongly recommend that these guidelines are followed. Unless this is not done, the shipping company shall show how it meets the control requirement and demonstrate that it complies with the intent of the system description of the safety organization in which the requirements are to follow advice and instructions conveyed by the administration.

Appendix 6 - ICLL 1966 and its protocol of 1988, as amended

International Load Line Convention (ICLL 1966)

as amended

Annex B

Annex I

Chapter I. **General**

Reg. 1	**Strength and intact stability of ships**
(3)	Regarding stability criteria the STA applies the IS-code. The stability documentation shall fulfil Annex 9 in TSFS 2009:114 (Swedish Transport Agency´s regulations regarding hull design, stability and free board). Annex 9 is available in an English draft translation.
Reg. 2	**Application**
(3)	STA can require additional freeboard for ships designed to carry sail.
(4)	Ships of wood or of wood on iron frames, or of other materials the use of which STA has approved, or ships whose constructional features are such as to render the application of the provisions of this regulations unreasonable or impracticable shall be assigned freeboards as determined by STA.
Reg. 8	**Details of marking** STA interpretation of permanently marked is that the ring, lines and letters, or at least the contours of those, shall be welded on to the hull or be cut/milled into the hull. For ships constructed of fibre composites, painted ring, lines and letters are accepted.

Chapter II. **Conditions of assignment of freeboard**

Reg. 10	**Information to be supplied to the master** See interpretation of Regulation 1 above.
Reg. 11	**Superstructure end bulkheads** The strength of bulkheads and end of enclosed superstructures shall fulfil the requirements of a recognised organisation.
Reg. 12	**Doors**
(1)	With materials equivalent to steel, STA means all material that can permit equivalent strength as the surrounding structure and that are accepted by the classification society. Consideration also has to be taken to any requirements of fire resistance.
(2)	Through individual decision, STA may accept a door to be opened inwards. Application is to be sent to STA by the RO. Application shall in addition to relevant data and documentation, include the opinion of the RO on the issue.
Reg. 14	**Cargo and other hatchways**
(1)	Through an individual decision, STA can permit cargo and other hatchways to be constructed in accordance with regulation 15. Application is to be sent to STA by the RO. Application shall in addition to relevant data and documentation, include the opinion of the RO on the issue.
(2)	Exposed hatchways on decks above the superstructure deck shall be protected by weather-tight

	closing appliances. Other arrangements may be accepted by the STA through an individual decision. STA do not require any special coaming height for hatchways in this position.
Reg. 14-1	**Hatchway coamings**
(2)	Regarding acceptance of reduced coaming heights, the Swedish Transport Agency can accept these decisions to be made by the classification society under the condition that the following requirements are fulfilled: •The hatch complies with the strength requirements given in ICLL regulation 16(2) to (5), • The hatch also complies with requirements of a recognised organisation with respect to strength and closing appliances. •The hatch is to be kept closed at sea at all times and marked accordingly when the vessel is at sea In addition to these requirements we would like to instruct the classification society to notify the maritime department of the Swedish Transport Agency of any acceptance made regarding reduced coaming heights on hatches onboard Swedish flagged ships.
Reg. 15	**Hatchways closed by portable covers and secured weathertight by tarpaulins and battening devices.**
(7)	Strength and stiffness of covers made of materials other than mild steel shall be equivalent to those of mild steel in regulation 16.2.
(11)	Approved materials are cotton canvas no. 4, with a weight of 830 g/m2, or other material with equivalent characteristics, or other material accepted by the classification society.
Reg. 16	**Hatchways closed by weathertight covers of steel or other equivalent materials**
(1)	With materials equivalent to steel, STA means all material that can permit equivalent strength as the surrounding structure and that are accepted by the classification society. Consideration also has to be taken to any requirements of fire resistance. Devices to secure and maintaining the weathertightness shall be of sufficient strength, i.e. relevant ISO-standards or regulations of a classification society.
(6)	Alternative means for securing and maintaining the weathertightness are to be accepted by STA. Application is to be sent to STA by the RO. Application shall in addition to relevant data and documentation, include the opinion of the RO on the issue.
Reg. 17	**Machinery space openings**
(4)	Arrangements according to this regulation are to be decided by STA. Application is to be sent to STA by the RO. Application shall in addition to relevant data and documentation, include the opinion of the RO on the issue.
(5)	With materials equivalent to steel, STA means all material that can permit equivalent strength as the surrounding structure and that are accepted by the classification society. Consideration also has to be taken to any requirements of fire resistance.
Reg. 19	**Ventilators**
(1)	With materials equivalent to steel, STA means all material that can permit equivalent strength as the surrounding structure and that are accepted by the classification society. Consideration also has to be taken to any requirements of fire resistance.
(2)	With materials equivalent to steel, STA means all material that can permit equivalent strength as the surrounding structure and that are accepted by the classification society. Consideration also has to be taken to any requirements of fire resistance.
(3)	These openings do not need to be fitted with closing devices.
(4)	With materials equivalent to steel, STA means all material that can permit equivalent strength as the surrounding structure and that are accepted by the classification society. Consideration also has to be taken to any requirements of fire resistance.
Reg. 20	**Air pipes**
(2)	Through individual decision by STA a lower height may be accepted.

	Application is to be sent to STA by the RO. Application shall in addition to relevant data and documentation, include the opinion of the RO on the issue.
Reg. 21	**Cargo ports and other similar openings**
(1)	Through individual decision, STA may accept a cargo port to be opened inwards.
(2)	Through individual decision, STA may permit cargo ports and other similar openings with their lower edge below the line specified in this paragraph. Application is to be sent to STA by the RO. Application shall in addition to relevant data and documentation, include the opinion of the RO on the issue.
(5)	Doors in this regulation shall be in compliance with class regulation.
Reg. 22	**Scupper, inlets and discharges**
(6)	All pipes to which this regulation refers shall be of steel or other equivalent material accepted by the classification society. (TSFS 2009:114).
Reg. 23	**Sidescuttles, windows and skylights**
(1)	Approved construction is a construction that fulfils ISO 1751 for construction, ISO 1095 for the glass and ISO 5779 design load, or a construction that fulfils the requirements of a classification society.
Reg.25	**Protection of the crew**
(1)	The strength of deckhouses shall fulfil the requirements in regulation 1.
(2)	The height of bulwark and guard rails may be reduced through individual decision from STA if adequate protection is provided.
Reg. 26	**Special conditions of assignment for type 'A' ships**
(2)	With materials equivalent to steel, STA means all material that can permit equivalent strength as the surrounding structure and that are accepted by the classification society. Consideration also has to be taken to any requirements of fire resistance.
(5)	With materials equivalent to steel, STA means all material that can permit equivalent strength as the surrounding structure and that are accepted by the classification society. Consideration also has to be taken to any requirements of fire resistance.

Chapter III. **Assigning freeboard**

Reg. 27	**Types of ships**
Table 27.1	For ships with a length over 200 meters, STA determines the freeboard in every individual case.
(13e)	Unprotected openings are not allowed to be immersed within the range of residual stability. Watertight openings, openings fitted with weathertight appliances and side scuttles not being able to open, are however allowed to be immersed (TSFS 2009:114)
(13f)	The stability during intermediate stages of flooding shall be sufficient.
Reg. 28	**Freeboard tables**
Table 28.1 & 28.2	For ships with a length over 365 meters, STA determines the freeboard in every individual case.
Reg. 39	**Minimum bow height and reserve buoyancy**
(3)	STA can through individual decision permit alternative solutions for ships that are constructed to meet exceptional operational requirements.Application is to be sent to STA by the RO. Application shall in addition to relevant data and documentation, include the opinion of the RO on the issue.
Reg. 44	**Stowage**
(6)	STA general advice states that the Code for carrying of timber deck cargo shall be followed.
(9)	Alternative arrangements may be used after STA individual decision.

Appendix 7 - MARPOL 1973 and its Protocol of 1978, as amended

International Convention for the Prevention of Pollution from Ships (MARPOL 1973)

as amended

Annex I. **Regulations for the Prevention of Pollution by Oil**

Reg.1	**Major conversion**
9.1.1.3	RO to consult STA to determine if the intended conversion prolongs the vessels life
Reg. 10	For guidelines regarding early renewal of IOPP, see appendix 8 – BWMC.
Reg. 20	**Double hull before 6 July 1996** Sweden has declined continuous operation of this type of vessels
Reg. 21	**Prevention of oil pollution from oil tankers carrying heavy grade oil as cargo** Sweden has declined continuous operation of this type of vessels
Reg. 42	**Notification** STS operations in Swedish waters (territorial and economic zone) to be approved by STA

Annex IV. **Regulations for the Prevention of Pollution by Sewage from ships**

	No need for interpretation found

Annex V. **Regulations for the Prevention of Pollution by Garbage from ships**

	No need for interpretation found

Appendix 8 - Ballast Water Management Convention

Ballast Water Management Convention	
Annex. **Regulations for the Control and management of ships´ ballast water and sediments**	
Reg. B-1	BWMP. Approval of BWMP shall take MEPC.127(53) into account.
Reg. B-3	Resolution A.1088(28) shall be applied. Ships not subject to IOPP Certification shall comply with reg. D-2 at 8th September 2022.
Resolution A.1088(28) - renewal of IOPP	IOPP may be renewed early outside of the HSSC-cycle before the entry into force of the BWMC if a reason for the renewal is specified by the ship owner. A ship owner may rely on any of the following examples when specifying their reasons to renew the IOPP: - If the ship has its ordinary renewal of the IOPP scheduled within two years following the entry into force of the BWMC. - If there are difficulties to find a suitable ballast water treatment system for the ship or the area where the ship operates. - If the shipowner has made a decision to recycle or sell the ship not more than five years after the entry into force of the BWMC and if the requirements to install ballast water system during this period, due to financial and/or technical reasons, would lead to recycling or selling the ship earlier than planned. -If the ship is engaged on short international routes (e.g. ferries) or if the ship operates within limited international sea areas (e.g. bunker vessels) and intend to apply for an exemption and if the risk assessment, port survey and application cannot be finalized before the date for the first renewal of the IOPP after the entry into force of the BWMC. -If the ship operate with several other ships on a route that is subject for exemptions assessment and different dates when the ships have to apply to the D-2 standards affect the ships ability to compete on equal terms. Alignments of the period when the D-2 standard apply to different ships on the route will enable shipowners and operators to cooperate and coordinate their exemptions applications. - If the ships ability to compete on equal terms with other parties is affected by other reasons. The RO should decide to renew the IOPP when ship owners apply for a renewal and specify their reason. If a ship owner gives any other reason than the ones exemplified above, RO should contact STA for consultation.

	The renewed IOPP shall be valid for a maximum of 5 years from the date issued and the new expiry date should keep the anniversary date coupled to the Harmonized System of Survey and Certification (HSSC), i.e. ILLC.
Reg. D-3	STA accept all ballast water management systems tested and type approved by other administrations according to MEPC.174(58) or MEPC.279(70) and MEPC.169(57) (if the system make use of active substances).
Reg. E-1	**Surveys and certification**
Reg E.1.1.2	Renewal survey at prescribed interval or at expiry date (note reg E-5 below)
Reg E-1.2	Ships < 400 gt shall have an approved BWMP on board and are subject to an initial survey according to reg. E-1.1.
Reg E-2	A IBWM certificate shall be issued after successful completion of a survey conducted in accordance with reg E-1, taking the provisions of IMO Circular BWM.2/Circ.40 into account.
Reg. E-5	First IBWMC expiry date shall be harmonized with the date of first renewal of the IOPP after 8th September 2017.