Contents

RULES FOR THE SHIP RECYCLING

Part 1 GENERAL

Chapter 1 General

1.1 General

1.1.1 Application

1 The Rules for the Ship Recycling (hereinafter referred to as "the Rules") apply to the ships classed or to be classed with NIPPON KAIJI KYOKAI (hereinafter referred to as "the Society") under **Chapter 2 of the Regulations for the Classification and Registry of Ships**.

2 Notwithstanding **-1** above, the Rules do not apply to the following ships:

(1) Ships less than 500 *gross tonnage*;

(2) Ships operating throughout their life only in waters subject to the sovereignty or jurisdiction of the State whose flag the ship is entitled to fly; and

(3) Ships owned or operated by a Party and used only on government non-commercial service.

3 In addition to the requirements of the Rules, relevant requirements in **the Rules for the Survey and Construction of Steel Ships** also apply unless otherwise specified.

1.1.2 Equivalents

Ships which do not comply with the Rules may be accepted provided that they are deemed by the Society to be equivalent to those ships that do.

1.1.3 National Requirements

With respect to the recycling of ships, attention is to be paid to ensuring compliance with not only relevant international conventions but also the national regulations of the country in which ships registered, in addition to the Rules. The Society may also apply special requirements as instructed by the flag-state administrations of ships or the governments of sovereign nations in which ships navigate.

1.1.4 Notation

Based on **3.1, Rules for the Classification and Registry of Ships**, the notation "*Inventory of Hazardous Materials*" (abbreviated as *IHM*) is to be affixed to the installations characters of ships provided with an Inventory of Hazardous Materials (hereinafter referred to as "the IHM") Part *I* specified in **Part 2**.

1.2 Terms and Definitions

1.2.1 Terminology*

The terms used throughout the Rules are, as defined in the following **(1)** to **(33)** unless specified otherwise:

(1) "Administration" means the Government of the State whose flag the ship is entitled to fly, or under whose authority it is operating.

(2) "Competent Authority(ies)" means a governmental authority or authorities designated by a Party as responsible, within specified geographical area(s) or area(s) of expertise, for duties related to Ship Recycling Facilities operating within the jurisdiction of that Party as specified in the Ship Recycling Convention.

(3) "Ship" means a vessel of any type whatsoever operating or having operated in the marine environment and includes submersibles, floating craft, floating platforms, self-elevating platforms, Floating Storage Units (*FSU*s), and Floating Production Storage and Offloading Units (*FPSO*s), including a vessel stripped of equipment or being towed.

(4) "Gross tonnage" means the gross tonnage (*GT*) calculated in accordance with the tonnage measurement regulations contained in annex *I* to the International Convention on Tonnage Measurement of Ships, 1969, or any successor convention.

(5) "Hazardous Material" means any material or substance which is liable to create hazards to human health and/or the environment.

(6) "Ship Recycling" means the activity of complete or partial dismantling of a ship at a Ship Recycling Facility in order to recover components and materials for reprocessing and re-use, whilst taking care of hazardous and other materials, and includes associated operations such as storage and treatment of components and materials on site, but not their further processing or disposal in separate facilities.

(7) "Ship Recycling Facility" means a defined area that is a site, yard or facility used for the recycling of ships.

(8) "Recycling Company" means the owner of the Ship Recycling Facility or any other organization or person who has assumed the responsibility for operation of the Ship Recycling activity from the owner of the Ship Recycling Facility and who on assuming such responsibility has agreed to take over all duties and responsibilities imposed by the Ship Recycling Convention.

(9) "Competent person" means a person with suitable qualifications, training, and sufficient knowledge, experience and skill, for the performance of the specific work. Specifically, a competent person may be a trained worker or a managerial employee capable of recognizing and evaluating occupational hazards, risks, and employee exposure to potentially Hazardous Materials or unsafe conditions in a Ship Recycling Facility, and who is capable of specifying the necessary protection and precautions to be taken to eliminate or reduce those hazards, risks, or exposures. The Competent Authority may define appropriate criteria for the designation of such persons and may determine the duties to be assigned to them.

(10) "Employer" means a natural or legal person that employs one or more workers engaged in Ship Recycling.

(11) "New ship" means a ship:

(a) For which the building contract is placed on or after 26 June 2025 (the entry into force of Ship Recycling Convention); or

(b) In the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or 26 December 2025; or

(c) The delivery of which is on or after 26 December 2027.

(12) "Existing ship" means a ship which is not a new ship specified in **(11)**.

(13) "New installation" means the installation of systems, equipment, insulation, or other material on a ship after 26 June 2025.

(14) "Safe-for-entry" means a space that meets the following criteria:

(a) The oxygen content of the atmosphere and the concentration of flammable vapours are within safe limits.

(b) Any toxic materials in the atmosphere are within permissible concentrations.

(c) Any residues or materials associated with the work authorized by the competent person will not produce uncontrolled release of toxic materials or an unsafe concentration of flammable vapours under existing atmospheric conditions while maintained as directed.

(15) "Safe-for-hot-work" means a space that meets the following criteria:

(a) A safe, non-explosive condition, including gas-free status, exists for the use of electric arc or gas welding equipment, cutting or burning equipment or other forms of naked flame, as well as heating, grinding, or spark generating operations.

(b) Safe-for-entry requirements of **(14)** above are met.

(c) Existing atmospheric conditions will not change as a result of the hot work.

(d) All adjacent spaces have been cleaned, or inerted, or treated sufficiently to prevent the start or spread of fire.

(16) "Shipowner" means the person or persons or company registered as the owner of the ship or, in the absence of registration, the person or persons or company owning the ship or any other organization or person such as the manager, or the bareboat charterer, who has assumed the responsibility for operation of the ship from the owner of the ship. This term also includes those who have ownership of the ship for a limited period pending its sale or handing over to a Ship Recycling Facility.

(17) "Site Inspection" means an inspection of the Ship Recycling Facility confirming the condition described by the verified documentation.

(18) "Statement of Completion" means a confirmatory statement issued by the Ship Recycling Facility that the Ship Recycling has been completed in accordance with the Ship Recycle Convention.

(19) "Tanker" means an oil tanker as defined in MARPOL annex *I* or an NLS tanker as defined in MARPOL annex *II*.

(20) "Worker" means any person who performs work, either regularly or temporarily, in the context of an employment relationship including contractor personnel.

(21) The "Inventory of Hazardous Materials" (IHM) is to provide ship-specific information on the actual Hazardous Materials present on board to protect the health and safety of workers and to prevent environmental pollution at Ship Recycling Facilities. The IHM is consist of the following three parts:

Part *I*: Materials contained in ship structure or equipment

Part *II*: Operationally generated wastes

Part *III*: Stores

(22) "Material Declaration" (*MD*) means a declaration indicating the materials a product (such as machinery, equipment, material, paint, etc.) supplied by a supplier contains and also the amount of such materials.

(23) "Supplier's Declaration of Conformity" (*SDoC*) means a declaration by the responsible supplier stating that the product being supplied has been manufactured or sold in accordance with the requirements of the Rules.

(24) "Exemption" means materials that do not need to be listed on the IHM, even if such materials or items exceed the IHM threshold values.

(25) "Fixed" means the conditions that equipment or materials are securely fitted with the ship, such as by welding or with bolts, riveted or cemented, and used at their position, including electrical cables and gaskets.

(26) "Homogeneous material" means a material of uniform composition throughout that cannot be mechanically disjointed into different materials, meaning that the materials cannot, in principle, be separated by mechanical actions such as unscrewing, cutting, crushing, grinding and abrasive processes.

(27) "Loosely fitted equipment" means equipment or materials present on board the ship by the conditions other than "fixed", such as fire extinguishers, distress flares and lifebuoys.

(28) "Product" means machinery, equipment, materials and applied coatings on board a ship.

(29) "Supplier" means a company which provides products; it may be a manufacturer, trader or agency.

(30) "Supply chain" means the series of entities involved in the supply and purchase of materials and goods, from raw materials to final product.

(31) "Threshold value" is defined as the concentration value in homogeneous materials.

(32) "Document of Authorization to conduct Ship Recycling" (*DASR*) means a document certifying that the Ship Recycling Facility has implemented management systems, procedures and techniques in accordance with the requirements to be followed. *DASR* includes restrictions on the capability of Ship Recycling Facilities, such as the size of ship the facility can safely handle and the control of Hazardous Materials.

(33) "Ship Recycling Facility Plan" (*SRFP*) means a plan developed by Ship Recycling Facilities for worker safety and training, protection of human health and the environment, roles and responsibilities of personnel, emergency preparedness and response and systems for monitoring, reporting and record-keeping.

1.2.2 Abbreviations

For the purpose of the Rules, the following abbreviations apply:

(1) *IMO*: International Maritime Organization

(2) *MEPC*: Marine Environment Protection Committee of the *IMO*

Part 2 REQUIREMNTS FOR THE INVENTORY OF HAZARDOUS MATERIALS

Chapter 1 GENERAL

1.1 General (*Paragraph* 1 of *MEPC*.379(80) ANNEX)

1.1.1 Objectives of the Inventory of Hazardous Materials (*Paragraph* 1.3 of *MEPC*.379(80) ANNEX)

The objectives of the IHM are to provide ship-specific information on the actual Hazardous Materials present on board, in order to protect health and safety and to prevent environmental pollution at Ship Recycling Facilities. This information will be used by the Ship Recycling Facilities to decide how to manage the types and amounts of materials identified in the IHM.

1.1.2 Application (*Paragraph* 1.2 of *MEPC*.379(80) ANNEX)

This part applies to IHM prepared by relevant stakeholders (shipyards, equipment suppliers, repairers, shipowners and ship management companies) for the ships specified in **1.1.1-1, Part 1**.

Chapter 2 THE INVENTORY OF HAZARDOUS MATERIALS

2.1 The Inventory of Hazardous Materials (*Paragraph* 3 of *MEPC*.379(80) ANNEX)

2.1.1 Components of the Inventory of Hazardous Materials (*Paragraph* 3.1 of *MEPC*.379(80) ANNEX)

The IHM consists of the following three components.

(1) Part *I*: Materials contained in ship structure or equipment

(2) Part *II*: Operationally generated wastes

(3) Part *III*: Stores

2.1.2 Materials be Listed in the Inventory of Hazardous Materials (*Paragraph* 3.2 of *MEPC*.379(80) ANNEX)

1 The following **(1)** to **(4)** materials are to be listed on the IHM.

(1) Hazardous Materials listed in **Table 2.1.2-1** for which are installation and use are prohibited or restricted.

(2) Hazardous Materials listed in **Table 2.1.2-2** for which listing on the IHM is required when exceeding specified thresholds.

(3) Potentially Hazardous Materials listed in **Table 2.1.2-3**.

(4) Regular consumable goods which potentially contain Hazardous Materials listed in **Table 2.1.2-4**.

2 Materials specified in **-1(1)** and **-1(2)** above are to be listed in Part *I* of the IHM, materials specified in **-1(3)** above are to be listed in Part *II* and Part *III* of the IHM and materials specified in **-1(4)** above are to be listed in Part *III* of the IHM

3 For loosely fitted equipment, there is no need to list this in Part *I* of the IHM. Such equipment which remains on board when the ship is recycled is to be listed in Part *III*.

4 Those batteries containing lead acid or other Hazardous Materials that are fixed in place are to be listed in Part *I* of the IHM. Batteries that are loosely fitted, which include consumer batteries and batteries in stores, are to be listed in Part *III* of the IHM.

5 Similar materials or items that contain Hazardous Materials that potentially exceed the threshold value can be listed together (not individually) on the IHM with their general location and approximate amount specified there (hereinafter referred to as “bulk listing”).

Table 2.1.2-1 Hazardous Materials which Installation and Use is Restricted or Prohibited

Materials		Threshold value
Asbestos		0.1 % (1)
Polychlorinated biphenyls (*PCB*)		50 *mg/kg* (2)
Ozone-depleting substances	Chlorofluorocarbons (*CFC*)	no threshold value (3)
	Halons	
	Other fully halogenated *CFC*	
	Carbon tetrachloride	
	1,1,1-Trichloroethane (Methyl chloroform)	
	Hydrochlorofluorocarbons	
	Hydrobromofluorocarbons	
	Methyl bromide	
	Bromochloromethane	
Anti-fouling systems containing organotin compounds as a biocide		2,500 mg total tin */kg*
Anti-fouling systems containing cybutryne		1,000 *mg/kg* or 200 *mg/kg*(4)

Notes:

(1) For all ships, new installation of materials which contain asbestos are to be prohibited.

(2) For all ships, new installation of materials which contain polychlorinated biphenyls (*PCB*) are to be prohibited.

(3) Unintentional trace contaminants should not be listed in the *MD* and in the IHM.

(4) When samples are directly taken from the hull, average values of cybutryne are not to be above 1,000 *mg* of cybutryne per kilogram of dry paint. When samples are directly taken from the wet paint containers, average values of cybutryne should not be present above 200 *mg* of cybutryne per kilogram of dry paint.

Table 2.1.2-2 Hazardous Materials which are to be Listed in the IHM when Exceeding the Threshold.

Materials	Threshold value
Cadmium and cadmium compounds	100 *mg/kg*
Hexavalent chromium and hexavalent chromium compounds	1,000 *mg/kg*
Lead and lead compounds	1,000 *mg/kg*
Mercury and mercury compounds	1,000 *mg/kg*
Polybrominated biphenyl (*PBB*)	50 *mg/kg*
Polybrominated diphenyl ethers (*PBDE*)	1,000 *mg/kg*
Polychlorinated naphthalenes (more than 3 chlorine atoms)	50 *mg/kg*
Radioactive substances	No threshold value (1)
Certain short-chain chlorinated paraffins (alkanes, C10-C13, chloro)	1 %

Notes:

(1) All radioactive sources should be included in the *MD* and in the IHM. Radioactive source means radioactive material permanently sealed in a capsule or closely bonded and in a solid form that is used as a source of radiation. This includes consumer products and industrial gauges with radioactive materials. Examples are listed in **Annex 2-1**.

Table 2.1.2-3 Potentially Hazardous Materials

Properties		Materials	Inventory		
			Part *I*	Part *II*	Part *III*
Liquid	Oiliness	Kerosene			○
		White spirit			○
		Lubricating oil			○
		Hydraulic oil			○
		Anti-seize compounds			○
		Fuel additive			○
		Engine coolant additives			○
		Antifreeze fluids			○
		Boiler and feed water treatment and test re-agents			○
		De-ionizer regenerating chemicals			○
		Evaporator dosing and descaling acids			○
		Paint stabilizers/rust stabilizers			○
		Solvents/thinners			○
		Paints			○
		Chemical refrigerants			○
		Battery electrolyte			○
		Alcohol, methylated spirits			○
Gas	Explosives / inflammables	Acetylene			○
		Propane			○
		Butane			○
		Oxygen			○
	Green house Gasses	CO_2			○
		Perfluorocarbons (*PFC*)			○
		Methane			○
		Hydrofluorocarbon (*HFC*)			○
		Nitrous oxide (N_2O)			○
		Sulphur hexafluoride (SF_6)			○
Liquid	Oiliness	Bunkers: fuel oil			○
		Grease			○
		Waste oil (sludge)		○	
		Bilge and/or wastewater generated by the after-treatment systems fitted on machineries		○	
		Oily liquid cargo tank residues		○	
		Ballast water		○	

Properties		Materials	Inventory		
			Part *I*	Part *II*	Part *III*
		Raw sewage		○	
		Treated sewage		○	
		Non-oily liquid cargo residues		○	
Gas	Explosives/ inflammables	Fuel gas			○
Solid		Dry cargo residues		○	
		Medical waste/infectious waste		○	
		Incinerator ash *1		○	
		Garbage *2		○	
		Fuel tank residues		○	
		Oily solid cargo tank residues			
		Oily or chemical contaminated rags		○	
		Batteries (incl. lead acid batteries)		○	
		Pesticides/insecticide sprays			○
		Extinguishers			○
		Chemical cleaner (incl. electrical equipment cleaner, carbon remover)			○
		Detergent/bleacher (could be a liquid)			○
		Miscellaneous medicines			○
		Fire-fighting clothing and personal protective equipment			○
		Dry tank residues		○	
		Cargo residues		○	
		Spare parts which contain materials listed in **Table 2.1.2-1** or **Table 2.1.2-2**.			○

Notes:

*1 Incinerator ash is classified separately because it may include hazardous substances or heavy metals.

*2 "Garbage" means all food wastes, domestic wastes, operational wastes, plastics, cargo residues, incinerator ashes, cooking oil, fishing gear, and animal carcasses generated during the normal operation of the ship and liable to be continuously or periodically disposed.

Table 2.1.2-4 Regular Consumable Goods Potentially Containing Hazardous Materials *1

Properties	Inventory		
	Part *I*	Part *II*	Part *III*
Electrical and electronic equipment			○
Lighting equipment			○
Non-ship-specific furniture, interior and similar equipment			○

Note:

*1 This table does not include ship-specific equipment integral to ship operations, which has to be listed in part *I* of the IHM.

2.1.3 Exemptions - Materials not Required to be Listed in the Inventory (*Paragraph* 3.3 of *MEPC*.379(80) ANNEX)

1 Materials listed in **Table 2.1.2-2** that are inherent in solid metals or metal alloys, such as steels, aluminium, brasses, bronzes, plating and solder, provided they are used in general construction, such as hull, superstructure, pipes or housings for equipment and machinery, are not required to be listed in the IHM.

2 Although electrical and electronic equipment is required to be listed in the IHM, the amount of Hazardous Materials potentially contained in printed wiring boards (printed circuit boards) installed in the equipment does not need to be reported in the IHM.

2.1.4 Standard Format of the Inventory of Hazardous Materials

The IHM is to be developed on the basis of the standard format set out in **Annex 2-2**.

2.1.5 Revision of Threshold Values (*Paragraph* 3.5 of *MEPC*.379(80) ANNEX)

Revised threshold values in **Table 2.1.2-1** and **Table 2.1.2-2** are to be used for IHMs developed or updated after the adoption of the

revised values and need not be applied to existing IHMs and IHMs under development. However, when materials are added to the IHM, such as during maintenance, the revised threshold values are to be applied and recorded in the IHM.

Chapter 3 REQUIREMENTS FOR DEVELOPMENT OF THE INVENTORY

3.1 Development of Part *I* of the Inventory of Hazardous Materials for New Ships (*Paragraph* 4.1 of *MEPC*.379(80) ANNEX)

3.1.1 General

1 Part *I* of the IHM for new ships is to be developed at the design and construction stage.

2 During the development of the IHM (Part *I*), the presence of materials listed in **Table 2.1.2-1** are to be checked and confirmed; the quantity and location of materials listed in **Table 2.1.2-1** are to be listed in Part *I* of the IHM. If such materials are used in compliance with the Convention, they are to be listed in Part *I* of the IHM. Any spare parts containing materials listed in **Table 2.1.2-1** are required to be listed in part *III* of the IHM.

3 If materials listed in **Table 2.1.2-2** are present in products above the threshold values provided in **Table 2.1.2-2**, the quantity and location of the products and the contents of the materials present in them are to be listed in Part *I* of the IHM. Any spare parts containing materials listed in **Table 2.1.2-2** are required to be listed in Part *III* of the IHM.

4 The checking of materials as provided in paragraphs **-2** and **-3** above is to be based on the *MD* furnished by the suppliers in the shipbuilding supply chain (e.g. equipment suppliers, parts suppliers, material suppliers).

5 For new ships, Part *I* of the IHM is to be developed based on **Annex 2-3**.

3.2 Development of Part *I* of the Inventory of Hazardous Materials for Existing Ships (*Paragraph* 4.2 of *MEPC*.379(80) ANNEX)

3.2.1 General

1 In order to achieve comparable results for existing ships with respect to Part *I* of the IHM, the following procedure is to be followed:

(1) collection of necessary information;

(2) assessment of collected information;

(3) preparation of visual/sampling check plan;

(4) onboard visual check and sampling check; and

(5) preparation of Part *I* of the IHM and related documentation.

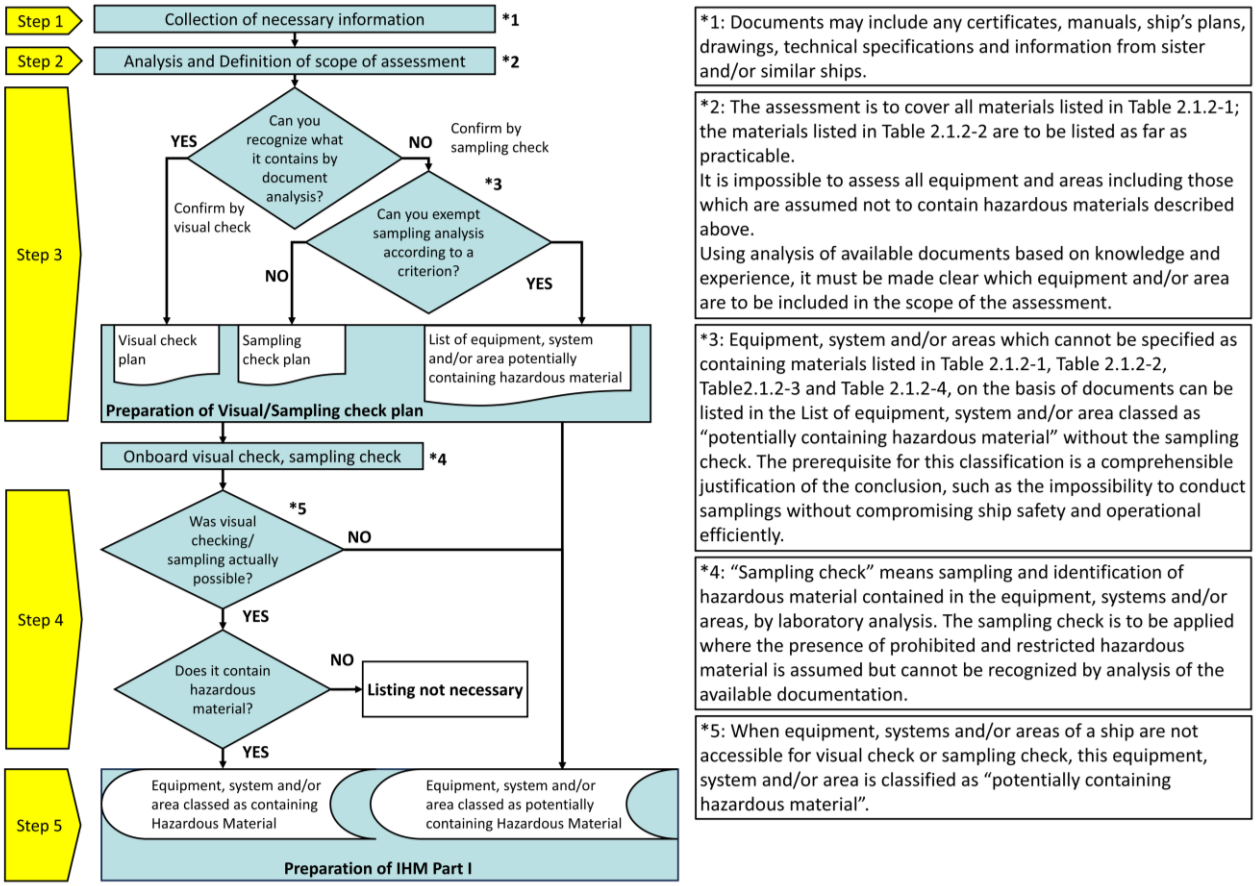
2 The determination of Hazardous Materials present on board existing ships should, as far as practicable, be conducted as prescribed for new ships. In cases where a ship already possessing the IHM is converted or repaired, or new equipment, systems etc. is fitted accompanying the changes in the IHM, the preparation of changed locations in the IHM is to be according to section **3.1**.

3 The procedures described in this section are to be carried out by the shipowner, who may draw upon expert assistance. Such an expert or expert party should not be the same as the person or organization authorized by the Administration to approve the IHM.

4 The IHM is to be developed based on **Fig. 3.2.1**.

5 For existing ships, Part *I* of the IHM is to be developed based on **Annex 2-4**.

Fig. 3.2.1 Flow Diagram for Developing Part I of the IHM for Existing Ships



3.2.2 Collection of Necessary Information

1 The shipowner is to identify, research, request and procure all reasonably available documentation regarding the ship.

2 Information that will be useful includes maintenance, conversion and repair documents; certificates, manuals, ship's plans, drawings and technical specifications; product information data sheets (such as *MD*); and Hazardous Material inventories or recycling information from sister ships.

3 Potential sources of information could include previous shipowners, the shipbuilder, historical societies, classification society records and Ship Recycling Facilities with experience working with similar ships.

3.2.3 Assessment of Collected Information

The information collected in **3.2.2** is to be assessed. The assessment is to cover all materials listed in **Table 2.1.2-1**; materials listed in **Table 2.1.2-2** are to be assessed as far as practicable. The results of the assessment are to be reflected in the visual/sampling check plan.

3.2.4 Preparation of Visual/Sampling Check Plan

1 To specify the materials listed in **Table 2.1.2-1**, a visual/sampling check plan is to be prepared taking into account the collated information and any appropriate expertise.

2 The visual/sampling check plan is to be based on the following three lists.

(1) List of equipment, system and/or area for visual check (any equipment, system and/or area specified regarding the presence of the materials listed in **Table 2.1.2-1** by document analysis are to be entered in the List of equipment, system and/or area for visual check)

(2) List of equipment, system and/or area for sampling check (any equipment, system and/or area which cannot be specified regarding the presence of the materials listed in **Table 2.1.2-1** by document or visual analysis are to be entered in the List of equipment, system and/or area as requiring sampling check. A sampling check is the taking of samples to identify the presence or absence of Hazardous Material contained in the equipment, systems and/or areas, by suitable and generally accepted methods such as laboratory analysis)

(3) List of equipment, system and/or area classed as "*potentially containing hazardous material*: *PCHM*" (any equipment, system

and/or area which cannot be specified regarding the presence of the materials listed in **Table 2.1.2-1** by document analysis may be entered in the List of equipment, system and/or area classed as "*PCHM*" without the sampling check. The prerequisite for this classification is a comprehensible justification such as the impossibility of conducting sampling without compromising the safety of the ship and its operational efficiency).

3 Visual/sampling checkpoints are to be all points where:

(1) the presence of materials to be considered for the IHM Part *I* as listed in **Table 2.1.2-1** is likely;

(2) the documentation is not specific; or

(3) materials of uncertain composition were used.

3.2.5 Onboard Visual and Sampling Check

1 The onboard visual and sampling check is to be carried out in accordance with the visual and sampling check plan. When a sampling check is carried out, samples are to be taken and the sample points are to be clearly marked on the ship plan and the sample results are to be referenced. Materials of the same kind may be sampled in a representative manner. Such materials are to be checked to ensure that they are of the same kind. The sampling check is to be carried out drawing upon expert assistance.

2 Any uncertainty regarding the presence of Hazardous Materials is to be clarified by a visual and sampling check. Checkpoints are to be documented in the ship's plan and may be supported by photographs.

3 If the equipment, system and/or area of the ship are not accessible for a visual check or sampling check, they are to be classified as "*PCHM*". The prerequisite for such classification is to be the same prerequisite as in section **3.2.4**. Any equipment, system and/or area classed as "*PCHM*" may be investigated or subjected to a sampling check at the request of the shipowner during a later survey (e.g. during repair, refit or conversion).

3.2.6 Preparation of Part *I* of the Inventory of Hazardous Material and Related Documentation

If any equipment, system or area is classed as either "*containing hazardous material*" or "*PCHM*", their approximate quantity and location are to be listed in Part *I* of the IHM. These two categories are to be indicated separately in the "Remarks" column of the IHM.

3.2.7 Testing Methods

1 Samples may be tested by a variety of methods. "Indicative" or "field tests" may be used in the following case:

(1) the likelihood of a hazard is high;

(2) the test is expected to indicate that the hazard exists; and

(3) the sample is being tested by "specific testing" to show that the hazard is present.

2 Indicative or field tests are quick, inexpensive and useful on board the ship or on-site, but they cannot be accurately reproduced or repeated, and cannot identify the hazard specifically, and therefore cannot be relied upon except as "indicators".

3 In all other cases, and in order to avoid dispute, "specific testing" is to be used. Specific tests are repeatable, reliable and can demonstrate definitively whether a hazard exists or not. They will also provide a known type of the hazard. The methods indicated are found to be qualitatively and quantitatively appropriate and only testing methods to the same effect can be used. Specific tests are to be carried out by a suitably accredited laboratory, working to international standards (e.g. *ISO* 17025) or equivalent, which will provide a written report that can be relied upon by all parties.

4 Specific test methods are provided in **Annex 2-5**.

3.2.8 Diagram of the Location of Hazardous Materials On Board a Ship

Preparation of a diagram showing the location of the materials listed in **Table 2.1.2-1** is recommended in order to help Ship Recycling Facilities gain a visual understanding of the IHM.

3.3 Maintaining and Updating Part *I* of the Inventory of Hazardous Material during Operations (*Paragraph* 4.3 of *MEPC*.379(80) ANNEX)

3.3.1 General

Part *I* of the IHM is to be appropriately maintained and updated, especially after any repair or conversion or sale of a ship. Maintenance procedures taking into account **4.2** are to be established and information regarding them is to be made available for reference on board.

3.3.2 Updating of Part *I* of the Inventory of Hazardous Materials in the Event of New Installation

If any machinery or equipment is added to, removed or replaced or the hull coating is renewed, Part *I* of the IHM is to be updated

according to the requirements for new ships as stipulated in 3.1.1 (except for 3.1.1-1). Updating is not required if identical parts or coatings are installed or applied.

3.3.3 Continuity of Part *I* of the Inventory of Hazardous Material

Part *I* of the IHM is to belong to the ship and the continuity and conformity of the information it contains should be confirmed, especially if the flag, owner or operator of the ship changes.

3.4 Development of Part *II* of the Inventory of Hazardous Material (Operationally Generated Waste) (*Paragraph* 4.4 of *MEPC*.379(80) ANNEX)

3.4.1 General

Once the decision to recycle a ship has been taken, Part *II* of the IHM is to be developed before the final survey, taking into account that a ship destined to be recycled shall conduct operations in the period prior to entering the Ship Recycling Facility in a manner that minimizes the amount of cargo residues, fuel oil and wastes remaining on board.

3.4.2 Operationally Generated Wastes to be Listed in the Inventory of Hazardous Material

If the wastes listed in Part *II* of the IHM provided in Table 2.1.2-3 (Potentially hazardous items) are intended for delivery with the ship to a Ship Recycling Facility, the quantity of the operationally generated wastes are to be estimated and their approximate quantities and locations are to be listed in Part *II* of the IHM.

3.5 Development of Part *III* of the Inventory of Hazardous Materials (Stores) (*Paragraph* 4.5 of *MEPC*.379(80) ANNEX)

3.5.1 General

Once the decision to recycle has been taken, Part *III* of the IHM is to be developed before the final survey, taking into account the fact that a ship destined to be recycled shall minimize the wastes remaining on board. Each item listed in Part *III* are to correspond to the ship's operations during its last voyage.

3.5.2 Stores to be Listed in the Inventory of Hazardous Materials

If the stores to be listed in Part *III* of the IHM provided in Table 2.1.2-3 are to be delivered with the ship to a Ship Recycling Facility, the unit (e.g. capacity of cans and cylinders), quantity and location of the stores are to be listed in Part *III* of the IHM.

3.5.3 Liquids and Gases Sealed in Ship's Machinery and Equipment to be Listed in the Inventory of Hazardous Material

If any liquids and gases listed in Table 2.1.2-3 are integral in machinery and equipment on board a ship, their approximate quantity and location are to be listed in Part *III* of the IHM. However, small amounts of lubricating oil, anti-seize compounds and grease which are applied to or injected into machinery and equipment to maintain normal performance do not fall within the scope of this provision. For subsequent completion of Part *III* of the IHM during the recycling preparation processes, the quantity of liquids and gases listed in Table 2.1.2-3 required for normal operation, including the related pipe system volumes, are to be prepared and documented at the design and construction stage. This information belongs to the ship, and continuity of this information are to be maintained if the flag, owner or operator of the ship changes.

3.5.4 Regular Consumable Goods to be Listed in the Inventory of Hazardous Materials

Regular consumable goods, as provided in Table 2.1.2-4 are not to be listed in Part *I* or Part *II* but are to be listed in Part *III* of the IHM if they are to be delivered with the ship to a Ship Recycling Facility. A general description including the name of item (e.g. TV set), manufacturer, quantity and location are to be entered in Part *III* of the IHM. The check on materials provided for in 3.1.1-2 and -3 of these guidelines does not apply to regular consumable goods.

3.6 Description of Location of Hazardous Materials On Board (*Paragraph* 4.6 of *MEPC*.379(80) ANNEX)

3.6.1 General

The locations of Hazardous Materials on board are to be described and identified using the name of location (e.g. second floor of engine-room, bridge DK, APT, No.1 cargo tank, frame number) given in the plans (e.g. general arrangement, fire and safety plan, machinery arrangement or tank arrangement).

3.7 Description of Approximate Quantity of Hazardous Materials (*Paragraph* 4.7 of *MEPC*.379(80) ANNEX)

3.7.1 General

In order to identify the approximate quantity of Hazardous Materials, the standard unit used for Hazardous Materials are to be kg, unless other units (e.g. m^3 for materials of liquid or gases, m^2 for materials used in floors or walls) are considered more appropriate. An approximate quantity should be rounded up to at least two significant figures.

Chapter 4 REQUIREMENTS FOR ASCERTAINING THE CONFORMITY OF THE INVENTORY

4.1 Design and Construction Stage (*Paragraph* 5.1 of *MEPC*.379(80) ANNEX)

The conformity of Part *I* of the IHM at the design and construction stage is to be ascertained by reference to the collected *SDoC* and the related *MD* collected from suppliers.

4.2 Operational Stage (*Paragraph* 5.2 of *MEPC*.379(80) ANNEX)

Shipowners are to implement the following measures in order to ensure the conformity of part *I* of the IHM:

(1) to designate a person as responsible for maintaining and updating the IHM (the designated person may be employed ashore or on board);

(2) the designated person, in order to implement **3.3.2**, is to establish and supervise a system to ensure the necessary updating of the IHM in the event of new installation;

(3) to maintain the IHM including dates of changes or new deleted entries and the signature of the designated person; and

(4) to provide related documents as required for the survey or sale of the ship.

Chapter 5 MATERIAL DECLARATION

5.1 General (*Paragraph* 6.1 of *MEPC*.379(80) ANNEX)

Suppliers to the shipbuilding industry are to identify and declare whether or not the materials listed in **Table 2.1.2-1** or **Table 2.1.2-2** are present above the threshold value specified in those tables. However, this provision does not apply to chemicals which do not constitute a part of the finished product.

5.2 Information Required in the Declaration (*Paragraph* 6.2 of *MEPC*.379(80) ANNEX)

1 At the following information is required in the *MD*:

(1) date of declaration;

(2) *MD* identification number;

(3) supplier's name;

(4) product name (common product name or name used by manufacturer);

(5) product number (for identification by manufacturer);

(6) declaration of whether or not the materials listed in **Table 2.1.2-1** and **Table 2.1.2-2** are present in the product above the threshold value stipulated the tables; and

(7) mass of each constituent material listed in **Table 2.1.2-1** and/or **Table 2.1.2-2** if present above threshold value.

2 An example of the *MD* is shown in **Annex 2-6**.

Chapter 6 SUPPLIER'S DECLARATION OF CONFORMITY

6.1 Purpose and Scope (*Paragraph* 7.1 of *MEPC*.379(80) ANNEX)

1 The purpose of the *SDoC* is to provide assurance that the related *MD* conforms to **5.2**, and to identify the responsible entity.

2 The *SDoC* remains valid as long as the products are present on board.

3 The supplier compiling the *SDoC* is to establish a company policy. The company policy on the management of the chemical substances in products which the supplier manufactures or sells is to cover:

(1) Compliance with law

The regulations and requirements governing the management of chemical substances in products are to be clearly described in documents which are to be kept and maintained.

(2) Obtaining of information on chemical substance content

In procuring raw materials for components and products, suppliers are to be selected following an evaluation, and the information on the chemical substances they supply are to be obtained.

6.2 Contents and Format (*Paragraph* 7.2 of *MEPC*.379(80) ANNEX)

1 The *SDoC* is to contain the following:

(1) unique identification number;

(2) name and contact address of the issuer;

(3) identification of the subject of the Declaration of Conformity (e.g. name, type, model number, and/or other relevant supplementary information);

(4) statement of conformity;

(5) date and place of issue; and

(6) signature (or equivalent sign of validation), name and function of the authorized persons acting on behalf of the issuer.

2 An example of the *SDoC* is shown in **Annex 2-7**.

Part 3 REQUIREMENTS FOR SHIPS

Chapter 1 GENERAL

1.1 General

1.1.1 Application

This part applies to the ships specified in **1.1.1-1, Part 1**.

1.1.2 Others (*Regulation* 4 of *Annex*)

1 Ships are to be provided with measures to meet following **(1)** and **(2)**:

(1) measures which prohibit or restrict the installation or use of Hazardous Materials listed in **Table 1.1.2-1**; and

(2) measures which prohibit or restrict the installation use of such materials on ships, while in ports, shipyards, ship repair yards, or offshore terminals.

2 The minimum list of items for the IHM is shown in **Table 1.1.2-2**.

3 Details of **Table 1.1.2-1** and **Table 1.1.2-2** and examples of CAS numbers are shown in **Annex 3-1**.

Table 1.1.2-1 Prohibited or Restricted Material

Hazardous Material	Definitions	Control measures
Asbestos	Materials containing asbestos	For all ships, new installation of materials which contain asbestos shall be prohibited.
Ozone-depleting substances	Ozone-depleting substances means controlled substances defined in paragraph 4 of article 1 of the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987, listed in annexes A,B,C or E to the said Protocol in force at the time of application or interpretation of this annex. Halon 1211 Bromochlorodifluoromethane Halon 1301 Bromotrifluoromethane Halon 2402 1,2-Dibromo-1,1,2,2-tetrafluoroethane (also known as Halon 114B2) CFC-11 Trichlorofluoromethane CFC-12 Dichlorodifluoromethane CFC-113 1,1,2-Trichloro-1,2,2-trifluoroethane CFC-114 1,2-Dichloro-1,1,2,2-tetrafluoroethane CFC-115 Chloropentafluoroethane	New installations which contain ozone-depleting substances shall be prohibited on all ships, except that new installations containing hydrochlorofluorocarbons (*HCFC*) are permitted until 1 January 2020.
Polychlorinated biphenyls (*PCB*)	"Polychlorinated biphenyls" means aromatic compounds formed in such a manner that the hydrogen atoms on the biphenyl molecule (two benzene rings bonded together by a single carbon-carbon bond) may be replaced by up to ten chlorine atoms	For all ships, new installation of materials which contain Polychlorinated biphenyls shall be prohibited.
Anti-fouling compounds and systems	Anti-fouling compounds and systems regulated under annex I to the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001 (*AFS* Convention) in force at the time of application or interpretation of the Rules.	1. No ship may apply anti-fouling systems containing organotin compounds as a biocide or any other anti-fouling system whose application or use is prohibited by the *AFS* Convention. 2. No new ships or new installations on ships shall apply or employ anti-fouling compounds or systems in a manner inconsistent with the *AFS* Convention.

Table 1.1.2-2 Minimum List of Items for the IHM

Hazardous Materials
Any Hazardous Materials listed in **Table 1.1.2-1**.
Cadmium and Cadmium Compounds
Hexavalent Chromium and Hexavalent Chromium Compounds
Lead and Lead Compounds
Mercury and Mercury Compounds
Polybrominated Biphenyl (*PBB*)
Polybrominated Diphenyl Ethers (*PBDE*)
Polychlorinated Naphthalenes (more than 3 chlorine atoms)
Radioactive Substances
Certain Short-chain Chlorinated Paraffins (Alkanes, C10-C13, chloro)

Chapter 2 SURVEY

2.1 General

2.1.1 Kind of Surveys (*Regulation* 10 of *Annex*)

Surveys are to be of the following kinds:

(1) Initial Surveys

(a) Initial Surveys for new ships

(b) Initial Surveys for existing ships

(2) Renewal Surveys

(3) Additional Surveys

(4) Final Surveys

(5) Unscheduled Surveys

2.1.2 Intervals of Surveys (*Regulation* 10 of *Annex*)

Surveys are to be carried out in accordance with the following in **(1)** to **(5)**.

(1) Initial Surveys

(a) In the case of a new ship specified in **1.2.1(11), Part 1**, an Initial Survey is to be carried out before the ship is put in service.

(b) In the case of an existing ship specified in **1.2.1(12), Part 1**, an Initial Survey is to be conducted before the International Certificate on Inventory of Hazardous Materials is issued and not later than 25 June 2030.

(2) Renewal Surveys

Renewal Surveys are to be carried out at the intervals specified in **1.1.3-1(3)(a), Part B of the Rules for the Survey and Construction of Steel Ships**.

(3) Additional Surveys

Additional Surveys are to be carried out on the following occasions at times other than Initial Surveys or Renewal Surveys. To implement such surveys, in lieu of the traditional ordinary surveys where a surveyor is in attendance, the Society may approve those survey methods which it considers to be appropriate.

(a) When replacement or significant repair of the structure, equipment, systems, fittings, arrangements or materials are carried out,

(b) Whenever the survey is considered necessary by the Society.

(4) Final Surveys

Final Surveys are to be conducted before a ship is taken out of service and before the recycling of the ship has started.

(5) Classed ships may be subject to Unscheduled Surveys when the confirmation of the status of the ship by survey is deemed necessary in cases where the Society considers the ship to be subject to **1.4-3, Conditions of Service for Classification of Ships and Registration of Installations**.

2.1.3 Renewal Surveys Carried Out in Advance and Postponement (*Regulation* 11 of *Annex*)

1 Renewal Surveys carried out in advance

(1) Renewal Surveys may be carried out in advance if requested by the shipowner, even if the time of the survey does not fall within its scheduled interval.

(2) When Renewal Surveys are carried out early and include items applicable to Additional Surveys, Additional Surveys are not carried out.

2 When Renewal Surveys are completed more than 3 *months* in advance, the completion date of said Renewal Survey is deemed to be the new implementation date of the Renewal Surveys specified in **2.1.2(2)**.

3 Postponement of Renewal Surveys

Renewal Surveys may be postponed as specified in the following **(1)** or **(2)** subject to the approval by the Society in advance.

(1) Maximum 3 *months* for the purpose of allowing the ship to complete its voyage to the port in which it is to be surveyed.

(2) Maximum 1 *month* for the ship engaged on short voyages.

2.1.4 Laid-up Ships

1 Laid-up ships are not subject to Renewal Surveys. However, Additional Surveys may be carried out at the request of shipowners.

2 When laid-up ships are about to be put into service, the following surveys and other surveys for specific matters which have been postponed due to being laid-up, if any, are to be carried out.

(1) When the due date for any Renewal Survey designated before lay-up has not yet passed, surveys which equivalent to the Renewal Survey are to be carried out.

(2) When the due date for any Renewal Survey designated before lay-up has already passed, surveys which are equivalent to the Renewal Survey are to be carried out.

2.1.5 Preparation for Surveys and Other Matters

1 When a ship is to be surveyed in accordance with the Rules, it is the responsibility of shipowners to notify the surveyor of the place where they wish to undergo the survey. Moreover, the surveyor is to be advised of the survey a reasonable amount time in advance so that the survey can be carried out at the proper time.

2 All such preparations as required for the Initial, Renewal and other surveys specified in this part as well as those which may be required by the surveyor in accordance with the provisions in this part are the responsibility of the shipowners or their representatives.

3 Applicants for surveys are to arrange supervisors who are well conversant with all of the survey items required for the preparation of such surveys and who are able to provide all necessary assistance to the surveyor according to their requests during such surveys.

4 Surveys may be suspended in cases where necessary preparations have not been made, any appropriate supervisor is not present, or the surveyor considers that the safe execution of the survey is not ensured.

2.1.6 Documents to be Maintained On Board (*Regulation* 5 of *Annex*)

At the completion of the surveys specified in 2.1.2, the surveyor is to confirm that the latest versions of the IHM is on board.

Chapter 3 INITIAL SURVEYS

3.1 General (*Paragraph* 3.1 of *MEPC*.222(64) ANNEX)

In Initial Surveys, Part *I* of the IHM is to be examined in detail in order to ascertain that it meets relevant requirements in **Chapter 2**.

3.2 Initial Surveys for New Ships (*Paragraph* 3.1.1 of *MEPC*.222(64) ANNEX)

3.2.1 Submission of Plans and Documents for Reference

1 For new ships intending to undergo Initial Surveys, the plans and documents specified in the following **(1)** to **(3)** are to be submitted to the Society for reference:

(1) Part *I* of the IHM

(2) *MD* and *SDoC* or documents that confirm the same

(3) Other documents deemed necessary by the Society

2 The documents specified in **-1** above are to be submitted to the Society in accordance with the following **(1)** to **(3)** requirements.

(1) If paper drawings are submitted, two copies are to be submitted for use by the Society, plus the number of copies desired to be returned.

(2) If electronic drawings are submitted, they are to be submitted through the system designated by the Society.

(3) In cases other than those specified in **(1)** and **(2)** above, documents are to be submitted in a manner deemed appropriate by the Society.

3.2.2 Inspections of Part *I* of the Inventory of Hazardous Materials

At Initial Surveys for new ships, the following inspections are to be carried out through the checking the plans and documents specified in **3.2.1** and onboard visual inspections:

(1) Confirmation that Part *I* of the IHM identifies the Hazardous Materials contained in the ship structure and equipment, their location and approximate quantities.

(2) Confirmation that the IHM identifies the location of Hazardous Materials, is consistent with the arrangements, structure and equipment of the ship

(3) Other inspections deemed necessary by the Society.

3.3 Initial Survey for Existing Ships (*Paragraph* 3.1.2 of *MEPC*.222(64) ANNEX)

3.3.1 Submission of Plans and Documents for Reference

1 For existing ships intending to undergo Initial Surveys, the plans and documents specified in the follows **(1)** and **(2)** are to be submitted to the Society for reference, in addition to the plans and documents specified in **3.2.1**:

(1) Visual/sampling check plan

(2) Report of the visual/sampling check

2 The visual/sampling check plan and Part *I* of the IHM of are to be prepared in accordance with **3.2, Part 2** by personnel with the requisite knowledge and experience to conduct the assigned task.

3.3.2 Inspections of Part *I* of the Inventory of Hazardous Materials

At Initial Surveys for existing ships, the following inspections are to be carried out by checking plans and documents specified in **3.3.1** and onboard visual inspection:

(1) Confirmation that Part *I* of the IHM identifies the Hazardous Materials contained or potentially contained in the ship structure and equipment, their location and approximate quantities

(2) Confirmation that classification as "*potentially containing hazardous materials*" is noted in the remarks column of the IHM

(3) Confirmation that the IHM identifies the location of Hazardous Materials, is consistent with the arrangements, structure and

equipment of the ship

(4) Other inspections deemed necessary by the Society

Chapter 4 RENEWAL SURVEYS

4.1 General (*Paragraph* 3.2 of *MEPC*.222(64) ANNEX)

In Renewal Surveys, Part *I* of the IHM is to be examined in order to ascertain that it is being appropriately maintained and updated, and it meets the relevant requirements in each part of the Rules.

4.2 Submission of Plans and Documents for Reference (*Paragraph* 3.2 of *MEPC*.222(64) ANNEX)

For ships intending to undergo Renewal Surveys, the plans and documents specified in the following **(1)** to **(3)** are to be submitted to the Society for reference:

(1) The latest version of Part *I* of the IHM

(2) *MD* and *SDoC* or documents that confirm the same, regarding any change, replacement or significant repair of structure, equipment, systems, fittings, arrangements and material since the last survey

(3) Other documents deemed necessary by the Society

4.3 Inspections of Part *I* of the Inventory of Hazardous Materials (*Paragraph* 3.2 of *MEPC*.222(64) ANNEX)

At Renewal Surveys, the following inspections are to be carried out by checking plans and documents specified in 4.2 and onboard visual inspection:

(1) Confirmation that Part *I* of the IHM is being appropriately maintained and updated.

(2) Confirmation that the IHM identifies the location of Hazardous Materials, is consistent with the arrangements, structure and equipment of the ship.

(3) When equipment, systems or areas previously classed as "*potentially containing hazardous materials*" are deleted form Part *I* of the IHM, confirmation that the decision to delete is clearly based on the belief that the equipment, system or area in question contains no Hazardous Materials.

(4) Other inspections deemed necessary by the Society.

Chapter 5 ADDITIONAL SURVEYS

5.1 General (*Paragraph* 3.3 of *MEPC*.222(64) ANNEX)

In Additional Surveys, Part *I* of the IHM is to be examined in order to ascertain that it is being appropriately maintained and updated after change, replacement or significant repair of the structure, equipment, systems, fittings, arrangements and material which has an impact on the IHM.

5.2 Submission of Plans and Documents for Reference (*Paragraph* 3.3 of *MEPC*.222(64) ANNEX)

For ships intending to undergo Additional Surveys, the plans and documents specified in the following **(1)** to **(3)** are to be submitted to the Society for reference:

(1) The latest version of Part *I* of the IHM

(2) *MD* and *SDoC* or documents that confirm the same, regarding any change, replacement or significant repair of structure, equipment, systems, fittings, arrangements and material since the last survey

(3) Other documents deemed necessary by the Society

5.3 Inspections of Part I of the Inventory of Hazardous Materials (*Paragraph* 3.3 of *MEPC*.222(64) ANNEX)

At Additional Surveys, the following inspections are to be carried out by checking plans and documents specified in 5.2 and onboard visual inspection:

(1) Confirmation that Part *I* of the IHM is being appropriately maintained and updated.

(2) Confirmation that the IHM identifies the location of Hazardous Materials, is consistent with the arrangements, structure and equipment of the ship.

(3) When equipment, systems or areas previously classed as "*potentially containing hazardous materials*" are deleted form Part *I* of the IHM, confirmation that the decision to delete is clearly based on belief that the equipment, system or area in question contain no Hazardous Materials.

(4) Other inspections deemed necessary by the Society.

Chapter 6 FINAL SURVEYS

6.1 General (*Paragraph* 3.4 of *MEPC*.222(64) ANNEX)

The Final Surveys are to be conducted prior to recycling a ship. In Final Surveys, the IHM is to be examined in order to ascertain whether Parts *I* to *III* of the IHM are being appropriately developed, maintained and they meet relevant requirements in each part of the Rules.

6.2 Submission of Plans and Documents for Reference (*Paragraph* 3.4 of *MEPC*.222(64) ANNEX)

For ships intending to undergo Final Surveys, the plans and documents specified in the following **(1)** and **(6)** are to be submitted to the Society for reference:

(1) The latest version of Part *I* of the IHM
(2) *MD* and *SDoC* or documents that confirm the same, regarding any change, replacement or significant repair of structure, equipment, systems, fittings, arrangements and material since the last survey
(3) Part *II* of the IHM
(4) Part *III* of the IHM
(5) The Ship Recycling Plan (*SRP*) approved by Competent Authority(ies)
(6) A copy of the *DASR*

6.3 Survey Items (*Paragraph* 3.4 of *MEPC*.222(64) ANNEX)

At Additional Surveys, the following inspections are to be carried out:

(1) Confirmation that the Part *I* of the IHM is being appropriately maintained and updated to reflect changes in ship structure and equipment.
(2) Confirmation that the Parts *II* and *III* of the IHM identifies the Hazardous Materials contained in the ship structure and equipment, their location and approximate quantities.
(3) Confirmation that the Ship Recycling Plan properly reflects the information contained in the IHM and contains information concerning the establishment, maintenance and monitoring of safe-for-entry and safe-for-hot-work conditions.
(4) Confirmation that the Ship Recycling Facility where the ship is to be recycled holds a valid *DASR*.
(5) When equipment, systems or areas previously classed as "*PHCM*" are deleted form Part *I* of the IHM, confirmation that the decision to deletion is clearly based on the belief that the equipment, system and/or area in question contain no Hazardous Materials.
(6) Other inspections deemed necessary by the Society.

Chapter 7 UNSCHEDULED SURVEYS

7.1 General

At Unscheduled Surveys, investigations, examinations or tests are to be carried out to the satisfaction of the Society's surveyor with respect to the matters concerned.

Chapter 8 PREPARATION FOR SHIP RECYCLING

8.1 General (*Regulation* 8 of *Annex*)

Ships destined to be recycled are to comply with the following **(1)** to **(6)**.

(1) Ships are to be recycled at Ship Recycling Facilities that are as follows:
   (a) to they have has a *DASR*; and
   (b) to fully authorized to undertake all the Ship Recycling which the Ship Recycling Plan (*SRP*) specifies to be conducted by the identified Ship Recycling Facility(ies).

(2) Ships are to conduct operations in the period prior to entering the Ship Recycling Facility in order to minimize the amount of cargo residues, remaining fuel oil, and wastes remaining on board.

(3) In the case of a tanker, ships are to arrive at the Ship Recycling Facility with cargo tanks and pump room(s) in a condition that is ready for certification as Safe-for-entry, or Safe-for-hot-work, or both, according to national laws, regulations and policies of the Party under whose jurisdiction the Ship Recycling Facility operates.

(4) Ships are to provide to the Ship Recycling Facility all available information relating to the ship for the development of the Ship Recycling Plan (*SRP*).

(5) Ships are to complete the IHM.

(6) Ships are to be certified as ready for recycling by the Administration or organization recognized by it, prior to any recycling activity taking place.

Part 4 REPORTING REQUIREMENTS

Chapter 1 GENERAL

1.1 Information and Reporting Requirements (*Regulation* 24 of *Annex*)

1 A shipowner is to notify the Administration in due time and in writing of the intention to recycle a ship in order to enable the Administration to prepare for the survey and certification required by the Rules.

2 When the ship destined to be recycled has acquired the International Ready for Recycling Certificate, the Ship Recycling Facility are to report to its the Competent Authority(ies) the planned start of the Ship Recycling. The report is to be in accordance with the reporting format in the Rules and shall at least include a copy of the International Ready for Recycling Certificate. Recycling of the ship shall not start prior to the submission of the report.

1.2 Reporting upon Completion (*Regulation* 25 of *Annex*)

When the partial or complete recycling of a ship is completed in accordance with the Rules, a Statement of Completion is to be issued by the Ship Recycling Facility and reported to its Competent Authority(ies). The Statement is to be issued within 14 *days* of the date of partial or completed Ship Recycling in accordance with the Ship Recycling Plan (*SRP*) and shall include a report on incidents and accidents damaging human health and/or the environment, if any.

Annex 2-1 EXAMPLES OF RADIOACTIVE SOURCES (*Appendix* 10 of *MEPC*.379(80))

The following list contains examples of radioactive sources that should be included in the IHM, regardless of the number, the amount of radioactivity or the type of radionuclide.

Examples of consumer products with radioactive materials

- Ionization chamber smoke detectors (typical radionuclides ^{241}Am; ^{226}Ra)
- Instruments/signs containing gaseous tritium light sources (^{3}H)
- Instruments/signs containing radioactive painting (typical radionuclide ^{226}Ra)
- High intensity discharge lamps (typical radionuclides ^{85}Kr; ^{232}Th)
- Radioactive lighting rods (typical radionuclides ^{241}Am; ^{226}Ra)

Examples of industrial gauges with radioactive materials

- Radioactive level gauges
- Radioactive dredger gauges*
- Radioactive conveyor gauges*
- Radioactive spinning pipe gauges*

*: Typical radionuclides: ^{241}Am; $^{241}Am/Be$; ^{252}Cf; ^{244}Cm; ^{60}Co; ^{137}Cs; ^{153}Gd; ^{192}Ir; ^{147}Pm; ^{238}Pu; $^{239}Pu/Be$; ^{226}Ra; ^{75}S; ^{90}Sr (^{90}Y); ^{170}Tm; ^{169}Yb.

Annex 2-2 STANDARD FORMAT OF THE INVENTORY OF HAZARDOUS MATERIALS (*Appendix* 2 of *MEPC*.379(80))

Part *I* Hazardous materials contained in the ship's structure and equipment

Hazardous materials contained in the ship's structure and equipment are listed in **I-1** to **I-3**.

I-1 - Paints and Coating Systems Containing Materials Listed in Table 2.1.2-1 and Table 2.1.2-2 of Part 2 of the Rules

No.	Application of paint	Name of paint	Location	Materials	Approx. quantity		Remarks
1	Anti-drumming compound	Primer, XX Co., xx primer #300	Hull Part	Lead	35.00	*kg*	
2	Antifouling	xx Co. xx coat #100	Underwater parts	TBT	120.00	*kg*	

I-2 - Equipment and Machinery Containing Materials Listed in Table 2.1.2-1 and Table 2.1.2-2 of Part 2 of the Rules

No.	Name of equipment and machinery	Location	Materials	Parts where used	Approx. quantity		Remarks
1	Switch board	Engine control room	Cadmium	Housing coating	0.02	*kg*	
			Mercury	Heat gauge	<0.01	*kg*	Less than 0.01*kg*
2	~~Diesel Engine, xx Co., xx #150~~	~~Engine room~~	~~Lead~~	~~Starter for blower~~	~~0.02~~	~~*kg*~~	
3	Diesel Engine, xx Co., xx #200	Engine room	Lead	Starter for blower	0.01	*kg*	Revised by XXX on Oct., xx 2008 (revoking No.2)
4	Diesel Generator (x3)	Engine room	Lead	Ingredient of copper compounds	0.01	*kg*	
5	Radioactive level gauge	No.1 Cargo tank	Radioactive substances	Gauge	5 (1.8E+11)	*Ci* (*Bq*)	Radionuclides: ^{60}Co

I-3 - Structure and Hull Containing Materials Listed in Table 2.1.2-1 and Table 2.1.2-2 of Part 2 of the Rules

No.	Name of structural element	Location	Materials	Parts where used	Approx. quantity		Remarks
1	Wall panel	Accommodation	Asbestos	Insulation	2500.00	*kg*	
2	Wall insulation	Engine control room	Lead	Perforated plate	0.01	*kg*	Cover of insulation material
			Asbestos	Fire protection	25.00	*kg*	Under perforated plates

Part *II* Operationally generated waste

Operationally generated wastes are listed below.

II - Operationally Generated Waste

No.	Location *	Name of Item and detail of the item	Approx. quantity		Remarks
1	Garbage locker	Garbage (food waste)	35.00	*kg*	
2	Bilge tank	Bilgewater	15.00	m^3	
3	No.1 cargo hold	Dry cargo residues (iron ore)	110.00	*kg*	
4	No.2 cargo hold	Waste oil (sludge) (crude)	120.00	*kg*	
5	No.1 ballast tank	Ballast water	2,500.00	m^3	
		Sediments	250.00	*kg*	

Note:

* The location of a part *II* or part *III* item is to be entered in order based on its location, from a lower level to an upper level and from a fore part to an aft part. The location of part *I* items is recommended to be described similarly, as far as practicable.

Part *III* Stores

Stores are listed in **III-1** to **III-4**.

III-1 - Stores

No.	Location *1	Name of Item	Unit quantity		Figure		Approx. quantity		Remarks *2
1	No.1 fuel oil tank	Fuel oil (heavy fuel oil)	-		-		100.00	m^3	
2	CO2 room	CO2	100.00	*kg*	50	bottles	5,000.00	*kg*	
3	Workshop	Propane	20.00	*kg*	10	pcs	200.00	*kg*	
4	Medicine locker	Miscellaneous medicines	-		-		-		Details are shown in the attached list.
5	Paint stores	Paint, xx Co., #600	20.00	*kg*	5	pcs	100.00	*kg*	

Note:

*1 The location of a part *II* or part *III* item is to be entered in order based on its location, from a lower level to an upper level and from a fore part to an aft part. The location of part *I* items is recommended to be described similarly, as far as practicable.

*2 In column "Remarks" for part *III* items, if Hazardous Materials are integrated in products, the approximate amount of the contents is to be shown as far as possible.

III-2 – Liquids Sealed in Ship's Machinery and Equipment

No.	Type of liquids	Name of machinery or equipment	Location	Approx. quantity		Remarks
1	Hydraulic oil	Deck crane hydraulic oil system	Upper deck	15.00	m^3	
		Deck machinery hydraulic oil system	Upper deck and bosun store	200.00	m^3	
		Steering gear hydraulic oil system	Steering gear room	0.55	m^3	
2	Lubricating oil	Main engine system	Engine room	0.45	m^3	
3	Boiler water treatment	Boiler	Engine room	0.20	m^3	

III-3 – Gases Sealed in Ship's Machinery and Equipment

No.	Type of gases	Name of machinery or equipment	Location	Approx. quantity		Remarks
1	*HFC*	AC System	AC room	100.00	*kg*	
2	*HFC*	Refrigerated provision chamber machine	AC room	50.00	*kg*	

III-4 – Regular Consumable Goods Potentially Containing Hazardous Materials

No.	Location *1	Name of Item	Quantity	Remarks
1	Accommodation	Refrigerators	1	
2	Accommodation	Personal computers	2	

Note:

*1 The location of a part *II* or part *III* item should be entered in order based on its location, from a lower level to an upper level and from a fore part to an aft part. The location of part I items is recommended to be described similarly, as far as practicable.

Annex 2-3 EXAMPLE OF THE DEVELOPMENT PROCESS FOR PART *I* OF THE INVENTORY OF HAZARDOUS MATERIALS FOR NEW SHIPS (*Appendix* 3 of *MEPC*.379(80))

An1 General

An1.1 General

This annex has been developed to facilitate understanding of the development process for Part *I* of the IHM for new ships.

An2 Development Flow for Part *I* of the Inventory of Hazardous Materials

Part *I* of the IHM is to be developed using the following three steps. However, the order of these steps is flexible and can be changed depending on the schedule of shipbuilding.

(1) collection of Hazardous Materials information

(2) utilization of Hazardous Materials information

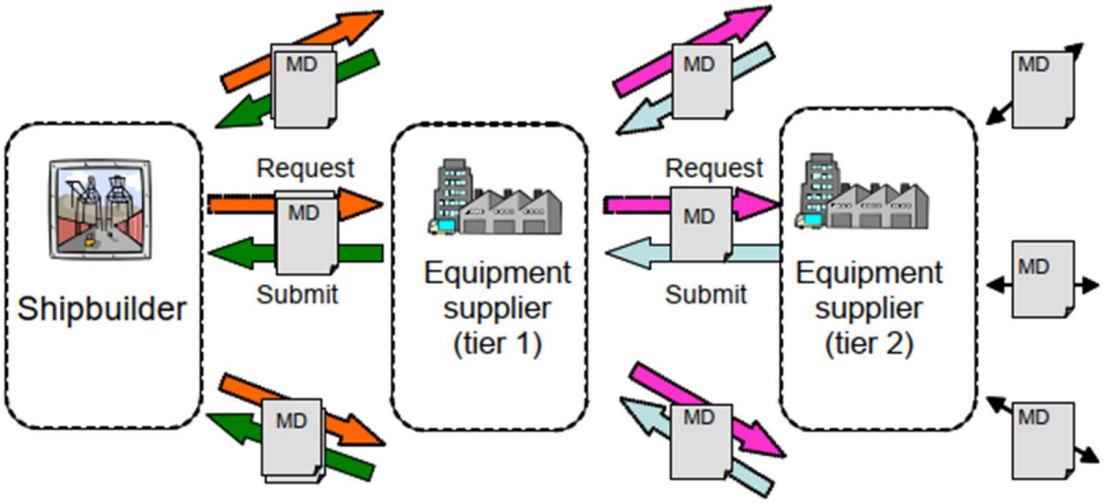
(3) preparation of the IHM (by filling out standard format)

An3 Collection of Hazardous Materials Information

An3.1 Data-collection Process for Hazardous Materials

MD and *SDoC* for products from suppliers (tier 1 suppliers) are to be requested and collected by the shipbuilding yard. Tier 1 suppliers may request from their suppliers (tier 2 suppliers) the relevant information if they cannot develop the *MD* based on the information available. Thus the collection of data on Hazardous Materials may involve the entire shipbuilding supply chain (**Fig. An3.1**).

Fig. An3.1 Process of *MD* (and *SDoC*) Collection Showing Involvement of Supply Chain



An3.2 Declaration of Hazardous Materials

An3.2.1 General

Suppliers should declare whether the Hazardous Materials listed in **Table 2.1.2-1** and **Table 2.1.2-2, Part 2 of the Rules** in the *MD* are present in concentrations above the threshold values specified for each homogeneous material in a product.

An3.2.2 Hazardous Materials for which the Installation or use is Prohibited or Restricted

If one or more materials listed in **Table 2.1.2-1, Part 2 of the Rules** are found to be present in concentrations above the specified threshold value according to the *MD*, the products which contain these materials shall not be installed on a ship. However, if the materials are used in a product in accordance with an exemption specified by the Convention (e.g. new installations containing hydrochlorofluorocarbons (*HCFC*) before 1 January 2020), the product is to be listed in the IHM.

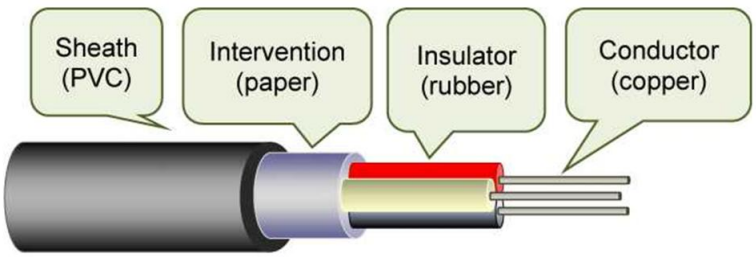
An3.2.3 Materials to be Listed if the Threshold is Exceeded

If one or more materials listed in **Table 2.1.2-2, Part 2 of the Rules** are found to be present in concentrations above the specified threshold value according to the *MD*, the products are to be listed in the IHM.

An3.3 Example of Homogeneous Materials

Fig. An3.3 shows an example of four homogeneous materials which constitute a cable. In this case, the sheath, intervention, insulator and conductor are all individual homogeneous materials.

Fig. An3.3 Example of Homogeneous Materials (Cable)



An4 UTILIZATION OF HAZARDOUS MATERIALS INFORMATION

Products which contain Hazardous Materials in concentrations above the specified threshold values are to be clearly identified in the *MD*. The approximate quantity of the Hazardous Materials is to be calculated if the mass data for Hazardous Materials are declared in the *MD* using a unit which cannot be directly utilized in the IHM.

An5 PREPARATION OF INVENTORY OF HAZARDOUS MATERIALS (BY FILLING OUT STANDARD FORMAT)

An5.1 General

The information received for the IHM, as contained in **Table 2.1.2-1** and **Table 2.1.2-2, Part 2 of the Rules**, ought to be structured and utilized according to the following categorization for Part *I* of the IHM:

(1) Part I-1: Paints and coating systems

(2) Part I-2: Equipment and machinery

(3) Part I-3: Structure and hull

An5.2 "Name of equipment and machinery" Column

An5.2.1 Equipment and Machinery

1 The name of each item of equipment or machinery are to be entered in this column. If more than one Hazardous Material is present in the equipment or machinery, the row relating to that equipment or machinery is to be appropriately divided such that all of the Hazardous Materials contained in the piece of equipment or machinery are entered. If more than one item of equipment or machinery is situated in one location, both name and quantity of the equipment or machinery are to be entered in the column. Examples are shown in rows No.1 and No.2 of **Table An5.2**.

2 For identical or common items, such as but not limited to bolts, nuts and valves, there is no need to list each item individually (see Bulk Listing in **2.1.2-5, Part 2 of the Rules**). An example is shown in row No.3 of **Table An5.2**.

An5.2.2 Pipes and Cables

The names of pipes and of systems, including electric cables, which are often situated in more than one compartment of a ship, are to be described using the name of the system concerned. A reference to the compartments where these systems are located is not necessary as long as the system is clearly identified and properly named.

Table An5.2 Example Showing More than One Item of Equipment or Machinery Situated in One Location

No.	Name of equipment and machinery	Location	Materials	Parts where used	Approx. quantity		Remarks
1	Main Engine	Engine Room	Lead	Piston Pin Bush	0.75	*kg*	
			Mercury	Thermometer charge air temperature	0.01	*kg*	
2	Diesel Generator (x 3)	Engine room	Mercury	Thermometer	0.03	*kg*	
3	FC valve (x100)	Throughout the ship	Lead and lead compounds		20.5	*kg*	

An5.3 "Approximate quantity" Column

The standard unit for approximate quantity of solid Hazardous Materials is to be *kg*. If the Hazardous Materials are liquids or gases, the standard unit is to be either m^3 or *kg*. An approximate quantity is to be rounded up to at least two significant figures. If the Hazardous Material is less than 10 *g*, the description of the quantity is to read "<0.01 *kg*". An example is shown in **Table An5.3**.

Table An5.3 Example of a Switchboard

No.	Name of equipment and machinery	Location	Materials	Parts where used	Approx. quantity		Remarks
1	Switch Board	Engine Control Room	Cadmium	Housing coating	0.02	*kg*	—
			Mercury	Heat gauge	<0.01	*kg*	less than 0.01 *kg*

An5.4 "Location" Column

An5.4.1 Example of a Location List

It is recommended to prepare a location list which covers all compartments of a ship based on the ship's plans (e.g. general arrangement, engine-room arrangement, accommodation and tank plan) and on other documentation on board, including certificates or spare parts lists. The description of the location is to be based on a location such as a deck or room to enable easy identification. The name of the location is to correspond to the ship's plans so as to ensure consistency between the IHM and the ship's plans. Examples of names of locations are shown in **Table An5.4-1**. For bulk listings, the locations of the items or materials may be generalized. For example, the location may only include the primary classification such as "Throughout the ship" as shown in the **Table An5.4-1**.

An5.4.2 Description of Location of Pipes and Electrical Systems

1 Locations of pipes and systems, including electrical systems and cables situated in more than one compartment of a ship, is to be described for each system concerned. If they are situated in a number of compartments, the most practical of the following two options is to be used:

(1) listing of all components in the column; or

(2) description of the location of the system using an expression such as those shown under "primary classification" and "secondary classification" in **Table An5.4-1**.

2 A typical description of a pipe system is shown in **Table An5.4-2**.

Table An5.4-1 Examples of Location Names

(A) Primary classification	(B) Secondary classification	(C) Name of location
All over the ship		
Hull Part	Fore Part	Bos'n Store
		…
	Cargo Part	No.1 Cargo Hold/Tank
		No.1 Garage Deck
		…
	Tank Part	Fore Peak Tank
		No.1 WBT
		No.1 FOT
		…
		Aft Peak Tank
	Aft Part	Steering Gear Room
		Emergency Fire Pump Space
		…
	Superstructure	Accommodation
		Compass Deck
		Nav. Bridge Deck
		…
		Wheel House
		Engine Control Room
		Cargo Control Room
		…
	Deck House	Deck House
		…

(A) Primary classification	(B) Secondary classification	(C) Name of location
Machinery Part	Engine Room	Engine Room
		Main Floor
		2nd Floor
		…
		Generator Space/Room
		Purifier Space/Room
		Shaft Space/Room
		Engine Casing
		Funnel
		Engine Control Room
		…
	Pump Room	Pump Room
		…
Exterior Part	Superstructure	Superstructure
	Upper Deck	Upper Deck
	Hull Shell	Hull Shell
		Bottom
		Under Waterline
		…
…	…	…

Table An5.4-2 Example of Description of a Pipe System

No.	Name of equipment and machinery	Location	Materials	Parts where used	Approx. quantity		Remarks
	Water Ballast Pipe	Engine room, Hold parts					

Annex 2-4 EXAMPLE OF THE DEVELOPMENT PROCESS FOR PART *I* OF THE INVENTORY OF HAZARDOUS MATERIALS FOR EXISTING SHIPS (*Appendix* 5 of *MEPC*.379(80))

An1 GENERAL

An1.1 General

In order to develop Part *I* of the IHM for existing ships, documents of the individual ship as well as the knowledge and experience of specialist personnel (experts) is required. This annex has been developed to facilitate understanding of the development process for Part *I* of the IHM for existing ships. However, attention is to be paid to variations in different types of ships.

An1.2 Development Flow for Part *I* of the Inventory of Hazardous Materials

Compilation of Part *I* of the IHM for existing ships involves the following five steps:

(1) Collection of necessary information

(2) Assessment of collected information

(3) Preparation of visual/sampling check plan

(4) Onboard visual/sampling check

(5) Preparation of Part *I* of the IHM and related documentation

An2 COLLECTION OF NECESSARY INFORMATION

An2.1 Sighting of Available Documents

1 A practical first step is to collect detailed documents for the ship. The shipowner is to try to collate documents normally retained on board the ship or by the shipping company as well as relevant documents that the shipyard, manufacturers or classification society may have. The following documents are to be used when available:

(1) Ship's specification
(2) General Arrangement
(3) Machinery Arrangement
(4) Spare Parts and Tools List
(5) Piping Arrangement
(6) Accommodation Plan
(7) Fire-Control Plan
(8) Fire Protection Plan
(9) Insulation Plan (Hull and Machinery)
(10) International Anti-Fouling System Certificate
(11) Related manuals and drawings
(12) Information from other inventories and/or sister or similar ships, machinery, equipment, materials and coatings
(13) Results of previous visual/sampling checks and other analysis

2 If the ship has undergone conversions or major repair work, it is necessary to identify as far as possible the modifications from the initial design and specification of the ship.

An2.2 Indicative List

An2.2.1 General

It is impossible to check all equipment, systems and/or areas on board the ship to determine the presence or absence of Hazardous Materials. The total number of parts on board may exceed several thousand. In order to take a practical approach, an indicative list is to be prepared that identifies the equipment, system and/or area on board that is presumed to contain Hazardous Materials. Field interviews with the shipyard and suppliers may be necessary to prepare such lists. Typical examples of such lists are shown in **Table An2.2.3-1**, **Table An2.2.3-2**, **Table An2.2.3-3**.

An2.2.2 Materials to be Checked and Documented

Hazardous Materials, as identified in **Table 2.1.2-1** and **Table 2.1.2-2, Part 2 of the Rules**, are to be listed in Part *I* of the IHM for existing ships. **Table 2.1.2-1** and **Table 2.1.2-2** contains all the materials concerned. **Table 2.1.2-1** shows those which are required to be listed and **Table 2.1.2-2** shows those which are to be listed as far as practicable.

An2.2.3 Materials Required to be Listed on the Inventory of Hazardous Materials

1 General

The following materials are to be listed on the IHM:

(1) Asbestos
(2) Polychlorinated biphenyls (*PCB*)
(3) Ozone-depleting substances
(4) Anti-fouling systems containing organotin compounds as a biocide or cybutryne

2 Asbestos

The list for asbestos is shown in **Table An2.2.3-1**.

3 Polychlorinated biphenyl (*PCB*)

Worldwide restriction of *PCB* began on 17 May 2004 as a result of the implementation of the Stockholm Convention, which aims to eliminate or restrict the production and use of persistent organic pollutants. The indicative list for *PCB* is shown in **Table An2.2.3-2**.

4 Ozone-depleting substances

The indicative list for ozone-depleting substances is shown in **Table An2.2.3-3**. Ozone-depleting substances have been controlled according to the Montreal Protocol and MARPOL Convention. Although almost all substances have been banned since 1996, *HCFC*

can still be used until 2020.

5 Organotin compounds

Organotin compounds include tributyl tins (*TBT*), triphenyl tins (*TPT*) and tributyl tin oxide (*TBTO*). Organotin compounds have been used as anti-fouling paint on ship's bottoms, and the International Convention on the Control of Harmful Anti-fouling Systems on Ships (*AFS* Convention, as amended) stipulates that all ships shall not apply or reapply organotin compounds after 1 January 2003, and that, after 1 January 2008, all ships shall either not bear such compounds on their hulls or shall bear a coating that forms a barrier preventing such compounds from leaching into the sea. The above-mentioned dates may have been extended by permission of the Administration bearing in mind that the *AFS* Convention entered into force on 17 September 2008.

6 Cybutryne

Cybutryne has been used as biocide in anti-fouling systems, and the International Convention on the Control of Harmful Anti-fouling Systems on Ships (*AFS* Convention, as amended) stipulates that all ships shall not apply or reapply cybutryne after 1 January 2023, and that ships bearing an anti-fouling system that contains this substance in the external coating layer of their hulls or external parts or surfaces on 1 January 2023 shall either remove the anti-fouling system or apply a coating that forms a barrier to this substance leaching from the underlying non-compliant anti-fouling system at the next scheduled renewal of the anti-fouling system after 1 January 2023, but no later than 60 *months* following the last application to the ship of an anti-fouling system containing cybutryne.

Table An2.2.3-1 The Indicative List for Asbestos

Structure and/or equipment	Component
Propeller shafting	Packing with low presser hydraulic piping flange
	Packing with casing
	Clutch
	Brake lining
	Synthetic stern tubes
Diesel engine	Packing with piping flange
	Lagging material for fuel pipe
	Lagging material for exhaust pipe
	Lagging material turbocharger
Turbine engine	Lagging material for casing
	Packing with flange of piping and valve for steam line, exhaust line and drain line
	Lagging material for piping and valve of steam line, exhaust line and drain line
Boiler	Insulation in combustion chamber
	Packing for casing door
	Lagging material for exhaust pipe
	Gasket for manhole
	Gasket for hand hole
	Gas shield packing for soot blower and other hole
	Packing with flange of piping and valve for steam line, exhaust line, fuel line and drain line
	Lagging material for piping and valve of steam line, exhaust line, fuel line and drain line
Exhaust gas economizer	Packing for casing door
	Packing with manhole
	Packing with hand hole
	Gas shield packing for soot blower
	Packing with flange of piping and valve for steam line, exhaust line, fuel line and drain line
	Lagging material for piping and valve of steam line, exhaust line, fuel line and drain line
Incinerator	Packing for casing door
	Packing with manhole
	Packing with hand hole
	Lagging material for exhaust pipe
Auxiliary machinery (pump, compressor, oil purifier, crane)	Packing for casing door and valve
	Gland packing
	Brake lining
Heat exchanger	Packing with casing
	Gland packing for valve
	Lagging material and insulation
Valve	Gland packing with valve, sheet packing with piping flange
	Gasket with flange of high presser and/or high temperature
Pipe, duct	Lagging material and insulation
Tank (fuel tank, hot water, tank, condenser), other equipment (fuel strainer, lubricant oil strainer)	Lagging material and insulation
Electric equipment	Insulation material
Air-borne asbestos	Wall, ceiling
Ceiling, floor and wall in accommodation area	Ceiling, floor, wall

Structure and/or equipment	Component
Fire door	Packing, construction and insulation of the fire door
Inert gas system	Packing for casing, etc.
Air conditioning system	Sheet packing, lagging material for piping and flexible joint
Miscellaneous	Ropes
	Thermal insulation materials
	Fire shields/fire proofing
	Space/duct insulation
	Electrical cable materials
	Brake linings
	Floor tiles/deck underlay
	Stern/water/vent flange gaskets
	Adhesives/mastics/fillers
	Sound damping
	Moulded plastic products
	Sealing putty
	Shaft/valve packing
	Electrical bulkhead penetration packing
	Circuit breaker arc chutes
	Pipe hanger inserts
	Weld shop protectors/burn covers
	Fire fighting blankets/clothing/equipment
	Concrete ballast

Table An2.2.3-2 The Indicative List for *PCB*

Equipment	Component of equipment
Transformer	Insulating oil
Condenser	Insulating oil
Fuel heater	Heating medium
Electric cable	Covering, insulating tape
Lubricating oil	
Heat oil	Thermometers, sensors, indicators
Rubber/felt gaskets	
Rubber hose	
Plastic foam insulation	
Thermal insulating materials	
Voltage regulators	
Switches/reclosers/bushings	
Electromagnets	
Adhesives/tapes	
Surface contamination of machinery	
Oil-based paint	
Caulking	
Rubber isolation mounts	
Pipe hangers	
Light ballasts (component within fluorescent light fixtures)	
Plasticizers	
Felt under septum plates on top of hull bottom	

Table An2.2.3-3 The Indicative List for Ozone-depleting Substances

Materials	Component of equipment	Period for use of *ODS* in Japan
CFC (R11, R12)	Refrigerant for refrigerators	～1996
CFC	Urethane formed material	～1996
	Blowing agent for insulation of LNG carriers	～1996
Halons	Extinguishing agent	～1994
Other fully halogenated *CFC*	The possibility of usage in ships is low	～1996
Carbon tetrachloride	The possibility of usage in ships is low	～1996
1,1,1-Trichloroethane (Methyl chloroform)	The possibility of usage in ships is low	～1996
HCFC (R22, R141b)	Refrigerant for refrigerating machine	It is possible to use it until 2020
HBFC	The possibility of usage in ships is low	～1996
Methyl bromide	The possibility of usage in ships is low	～2005

An2.2.4 Materials are to be Listed in the Inventory of Hazardous Materials as far as Practicable

For existing ships, it is not obligatory for materials listed in **Table 2.1.2-2, Part 2 of the Rules** to be listed in Part *I* of the IHM. However, if they can be identified in a practical way, they are to be listed in the IHM, because the information will be used to support Ship Recycling processes. The indicative list of materials listed in **Table 2.1.2-2** is shown in **Table An2.2.4**.

Table An2.2.4 The Indicative List for Materials Listed in Table 2.1.2-2

Materials	Component of equipment
Cadmium and Cadmium Compounds	Plating film, bearing
Hexavalent Chromium Compounds	Plating film
Mercury and Mercury Compounds	Fluorescent light, mercury lamp, mercury cell, liquid-level switch, gyro compass, thermometer, measuring tool, manganese cell, pressure sensors, light fittings, electrical switches, fire detectors
Lead and Lead Compounds	Corrosion resistant primer, solder (almost all electric appliances contain solder), paints, preservative coatings, cable insulation, lead ballast, generators
Polybrominated Biphenyl (*PBB*)	Non-flammable plastics
Polybrominated Diphenyl Ethers (*PBDE*)	Non-flammable plastics
Polychlorinated naphthalenes	Paint, lubricating oil
Radioactive Substances	Refer to **Annex 2-5**
Certain Short-chain Chlorinated Paraffins	Non-flammable plastics

An3 ASSESSMENT OF COLLECTED INFORMATION

An3.1 General

1 Preparation of a checklist is an efficient method for developing the IHM for existing ships in order to clarify the results of each step. Based on collected information including the indicative list mentioned in **An2**, all equipment, systems and/or areas on board assumed to contain Hazardous Materials listed in **Table 2.1.2-1** and **Table 2.1.2-2, Part 2 of the Rules** are to be included in the checklist. Each listed equipment, system and/or area on board are to be analysed and assessed for its Hazardous Materials content.

2 The existence and volume of Hazardous Materials may be judged and calculated from the Spare parts and tools list and the maker's drawings. The existence of asbestos contained in floors, ceilings and walls may be identified from Fire Protection Plans, while the existence of *TBT* in coatings can be identified from the International Anti-Fouling System Certificate, Coating scheme and the History of Paint. A weight calculation example is shown in **Table An3.1-1**.

3 When a component or coating is determined to contain Hazardous Materials, a "*Y*" is to be entered in the column for "*Result of document analysis*" in the checklist, to denote "*Contained*". Likewise, when an item is determined not to contain Hazardous Materials, the entry "*N*" is to be made in the column to denote "*Not contained*". When a determination cannot be made as to the Hazardous Materials content, the column should be completed with the entry "*Unknown*". Example of the checklist is shown in **Table An3.1-2**.

Table An3.1-1 The Example of Weight Calculation

No.	Hazardous Materials	Location/equipment/ component	Reference	Calculation
1.1-2	*TBT*	Flat Bottom/Paint	History of coatings	
1.2-1	Asbestos	Main engine/Exh. pipe packing	Spare parts and tools list	250g×14 sheet = 3.50 *kg*
1.2-3	*HCFC*	Ref. provision plant	Maker's drawings	20kg×1 cylinder = 20 *kg*
1.2-4	Lead	Batteries	Maker's drawings	6 kg×16 unit = 96 *kg*
1.3-1	Asbestos	Engine room ceiling	Accommodation plan	

Table An3.1-2 The Example of the Checklist

No.	Hazardous materials *1	Location	Name of equipment	Component	Quantity			Manufacturer/ Brand name	Result of documents analysis *2	Procedure of check *3	Result of check *4	Reference/ DWG No.
					Unit (*kg*)	No.	Total (*kg*)					
Inventory part I-1.1												
1	TBT	Top Side	Painting & coating	A/F Paints			Nil	Paints Co. /Marine P1000	N			On 1 August 200X, sealer coat applied to all over submerged area before tin free coating
2	TBT	Flat Bottom				3000m^2		Unknown AF	Unknown			
Inventory part I-1.2												
1	Asbestos	Lower Deck	Main engine	Exh.pipe packing	0.25	14		Diesel Co.	Y			M-100
2	Asbestos	3rd Deck	Aux. boiler	Lagging		12		Unknown lagging	Unknown			M-300
3	Asbestos	Engine room	Piping/flange	Packing					PCHM			
4	*HCFC*	2nd Deck	Ref. plant	Refrigerant (R22)	20.00	1		Reito Co.	Y			Maker's DWG
5	Lead	Nav. Bri. Deck	Batteries		6	16		Denchi Co.	Y			E-300
Inventory part I-1.3												
1	Asbestos	Upper Deck	Back deck ceilings	E/R ceilings		20m^2		Unknown Ceiling	Unknown			O-25

Notes:

*1 Hazardous Materials: material classification

*2 Result of documents analysis: Y=Contained, N=Not contained, Unknown, PCHM=Potentially containing hazardous materials

*3 Procedure of Check: V=Visual check, S=Sampling check

*4 Result of Check: Y=Contained, N=Not contained, PCHM=Potentially containing hazardous materials

An4 PREPARATION OF VISUAL/SAMPLING CHECK PLAN

An4.1 General

1 Each item classified as "*Contained*" or "*Not contained*" in **An2** are to be subjected to a visual check on board, and the entry "*V*" are to be made in the "Check procedure" column to denote "*Visual check*".

2 For each item categorized as "*unknown*", a decision should be made as to whether to apply a sampling check. However, any item categorized as "*unknown*" may be classed as "*potentially containing hazardous material* (*PCHM*)" provided comprehensive justification is given, or if it can be assumed that there will be little or no effect on disassembly as a unit and later Ship Recycling and disposal operations. For example, in the following checklist shown in **Table An4.1-2**, in order to carry out a sampling check for "Packing with aux. boiler" the shipowner needs to disassemble the auxiliary boiler in a repair yard. The costs of this check are significantly higher than the later disposal costs at a Ship Recycling facility. In this case, therefore, the classification as "*potentially containing hazardous material*" is justifiable.

3 Before any visual/sampling check on board is conducted, a "visual/sampling check plan" is to be prepared. An example of such a plan is shown in **Table An4.1-1**.

4 To prevent any incidents during the visual/sampling check, a schedule is to be established to eliminate interference with other ongoing work on board. To prevent potential exposure to Hazardous Materials during the visual/sampling check, safety precautions are to be in place on board. For example, sampling of potential asbestos containing materials could release fibres into the atmosphere. Therefore, appropriate personnel safety and containment procedures are to be implemented prior to sampling.

5 Items listed in the visual/sampling check are to be arranged in sequence so that the onboard check is conducted in a structured manner (e.g. from a lower level to an upper level and from a fore part to an aft part).

Table An4.1-1 The Example of Visual/Sampling Check Plan

Name of ship	XXXXXXXXXX
IMO number	XXXXXXXXXX
Gross tonnage	xxxx *GT*
L×B×D	xxx.xx × xx.xx × xx.xx *m*
Date of delivery	DD MM YYYY
Ship owner	XXXXXXXXXX
Contact point (Address, Telephone, Fax, Email)	XXXXXXXXX TEL: XXXXXXXX FAX: XXXXXXXX E-mail: abcdefg@hijk.co.net
Check schedule	Visual check: DD MM YYYY Sampling check: DD MM YYYY
Site of check	XX shipyard, No. DOCK
In charge of check	XXXXXXX
Check engineer	XXXXXX, YYYYYYYYY, ZZZZZZZ
Sampling engineer	Person with specialized knowledge of sampling
Sampling method and anti-scattering measure for asbestos	Wet the sampling location prior to cutting and allow it to harden after cutting to prevent scatter. Notes: Workers performing sampling activities shall wear protective equipment.
Sampling of fragments of paints	Paints suspected to contain *TBT* should be collected and analyzed from load line, directly under bilge keel and flat bottom near amidships.
Laboratory	QQQQQQ
Chemical analysis method	ISO/DIS 22262-1 Bulk materials—Part 1: Sampling and qualitative determination of asbestos in commercial bulk materials and ISO/DIS 22262-1 Bulk materials— Part 2: Quantitative determination of asbestos by gravimetric and microscopic methods. ICP Luminous analysis (*TBT*)
Location of visual/sampling check	Refer to lists for visual/sampling check

Listing for equipment, system and/or area for visual check
See attached “Analysis and definition of scope of investigation for sample ship”

List of equipment, system and/or area for sampling check				
Location	Equipment, machinery and/or zone	Name of parts	Materials	Result of doc. checking
Upper Deck	Back deck ceilings	Engine room ceiling	Asbestos	Unknown
Engine room	Exhaust gas pipe	Insulation	Asbestos	Unknown
Engine room	Pipe/flange	Gasket	Asbestos	Unknown
Refer to attached “Analysis and definition of scope of investigation for sample ship” and “Location plan of Hazardous Materials for sample ship”				

List of equipment, system and/or area classed as PCHM				
Location	Equipment, machinery and/or zone	Name of part	Material	Result of doc. checking
Floor	Propeller cap	Gasket	Asbestos	PCHM
Engine room	Air operated shut-off valve	Gland packing	Asbestos	PCHM
Refer to attached “Analysis and definition of scope of investigation for sample ship” and “Location plan of Hazardous Materials for sample ship”				

This plan is established in accordance with the *IMO* guidelines for the development of the Inventory of Hazardous Materials (*)

Prepared by	:	XXXX XXXX
T E L	:	YYYY-YYYY
E-Mail	:	XXXX@ZZZZ.co.net

・Document check・date/place：
DD MM YYYY at XX Lines Co.Ltd

・Preparation date of plan：DD MM YYYY

Table An4.1-2 The Example of the Updated Checklist

No.	Hazardous materials *1	Location	Name of equipment	Component	Quantity			Manufacturer/ Brand name	Result of documents analysis *2	Procedure of check *3	Result of check *4	Reference/ DWG No.
					Unit (kg)	No.	Total (kg)					
Inventory part I-1.1												
1	TBT	Top Side	Painting & coating	A/F Paints			Nil	Paints Co. /Marine P1000	N	V		On 1 August 200X, sealer coat applied to all over submerged area before tin free coating
2	TBT	Flat Bottom				$3000m^2$		Unknown AF	Unknown	S		
Inventory part I-1.2												
1	Asbestos	Lower Deck	Main engine	Exh.pipe packing	0.25	14		Diesel Co.	Y	V		M-100
2	Asbestos	3rd Deck	Aux. boiler	Lagging		12		Unknown lagging	Unknown	S		M-300
3	Asbestos	Engine room	Piping/flange	Packing					PCHM	V		
4	*HCFC*	2nd Deck	Ref. plant	Refrigerant (R22)	20.00	1		Reito Co.	Y	V		Maker's DWG
5	Lead	Nav. Bri. Deck	Batteries		6	16		Denchi Co.	Y	V		E-300
Inventory part I-1.3												
1	Asbestos	Upper Deck	Back deck ceilings	E/R ceilings		$20m^2$		Unknown Ceiling	Unknown	S		O-25

Notes:

*1 Hazardous Materials: material classification

*2 Result of documents analysis: Y=Contained, N=Not contained, Unknown, PCHM=Potentially containing hazardous materials

*3 Procedure of Check: V=Visual check, S=Sampling check

*4 Result of Check: Y=Contained, N=Not contained, PCHM=Potentially containing hazardous materials

An5 ONBOARD VISUAL/SAMPLING CHECK

1 The visual/sampling check is to be conducted according to the plan. Checkpoints are to be marked in the ship's plan or recorded with photographs.

2 A person taking samples is to be protected by the appropriate safety equipment relevant to the suspected type of Hazardous Materials encountered. Appropriate safety precautions are to also be in place for passengers, crew members and other persons on board, to minimize the potential exposure to Hazardous Materials. Safety precautions could include the posting of signs or other verbal or written notification for personnel to avoid such areas during sampling. The personnel taking samples is to ensure compliance with relevant national regulations.

3 The results of visual/sampling checks are to be recorded in the checklist. Any equipment, systems and/or areas of the ship that cannot be accessed for checks are to be classified as "*potentially containing hazardous material*". In this case, the entry in the "*Result of check*" column is to be "*PCHM*".

An6 PREPARATION OF PART *I* OF THE INVENTORY AND RELATED DOCUMENTATION

An6.1 Development of Part *I* of the Inventory of Hazardous Materials

The results of the check and the estimated quantity of Hazardous Materials are to be recorded on the checklist. Part *I* of the IHM is to be developed with reference to the checklist. Example of the checklist and IHM are shown in **Table An6.1-1** and **Table An6.1-2**.

An6.2 Development of Location Diagram of Hazardous Materials

With respect to Part *I* of the IHM, the development of a location diagram of hazardous materials is recommended in order to help the Ship Recycling Facility gain a visual understanding of the IHM. An example of the location diagram of hazardous materials is shown in **Fig. An6.1**.

Table An6.1-1 Example of the Checklist

No.	Hazardous materials *1	Location	Name of equipment	Component	Quantity			Manufacturer/ Brand name	Result of documents analysis *2	Procedure of check *3	Result of check *4	Reference/ DWG No.
					Unit (kg)	No.	Total (kg)					
Inventory part I-1.1												
1	TBT	Top Side	Painting & coating	A/F Paints			Nil	Paints Co. /Marine P1000	N	V	N	On 1 August 200X, sealer coat applied to all over submerged area before tin free coating
2	TBT	Flat Bottom			0.02	$3000m^2$	60.00	Unknown AF	Unknown	S	Y	
Inventory part I-1.2												
1	Asbestos	Lower Deck	Main engine	Exh.pipe packing	0.25	14	3.50	Diesel Co.	Y	V	Y	M-100
2	Asbestos	3rd Deck	Aux. boiler	Lagging		12		Unknown lagging	Unknown	S	N	M-300
3	Asbestos	Engine room	Piping/flange	Packing					PCHM	V	PCHM	
4	*HCFC*	2nd Deck	Ref. plant	Refrigerant (R22)	20.00	1	20.00	Reito Co.	Y	V	Y	Maker's DWG
5	Lead	Nav. Bri. Deck	Batteries		6	16	96.00	Denchi Co.	Y	V	Y	E-300
Inventory part I-1.3												
1	Asbestos	Upper Deck	Back deck ceilings	E/R ceilings	0.19	$20m^2$	3.80	Unknown Ceiling	Unknown	S	Y	O-25

Notes:

*1 Hazardous Materials: material classification

*2 Result of documents analysis: Y=Contained, N=Not contained, Unknown, PCHM=Potentially containing hazardous materials

*3 Procedure of Check: V=Visual check, S=Sampling check

*4 Result of Check: Y=Contained, N=Not contained, PCHM=Potentially containing hazardous materials

Table An6.1-2 Example of the IHM for Existing Ships

Inventory of Hazardous Materials For “Sample Ship”

Particular of the “Sample Ship”

Distinctive number or letters	: ・・・・・・・・
Port of registry	: Port of World
Type of vessel	: Bulk carrier
Gross Tonnage	: 28,000GT
IMO number Name of shipbuilder	: ・・・・・・・・・ : ○○ Shipbuilding Co. Ltd
Name of shipowner	: □□ Maritime S.A.
Date of delivery	: MM/DD/YYYY

This inventory was developed in accordance with the IMO guideline for the development of the Inventory of Hazardous Materials*1

Attachment:
1: Inventory of Hazardous Materials
2: Assessment of collected information
3: Location diagram of Hazardous Materials

* Prepared by ○○○○ (Name & address) (DD MM YYYY)

*1 If the other regulation such as Article 5 of EU-SRR is applied in addition to IMO Guidelines, it should be indicated clearly.

Inventory of Hazardous Materials: "Sample Ship"

I-1 Paints and coating systems containing materials listed in Table A and Table B of the *IMO* guidelines*2

No.	Application of paint	Name of paint	Location *1	Materials (classification in appendix 1)	Approx. quantity		Remarks
1	AF paint	Unknown paints	Flat bottom	*TBT*	60.00	*kg*	Confirmed by sampling
2							
3							

I-2 Equipment and machinery containing materials listed in Table A and Table B of the *IMO* guidelines*2

No.	Name of equipment and machinery	Location *1	Materials (classification in appendix 1)	Parts where used	Approx. quantity		Remarks
1	Main engine	Lower floor	Asbestos	Exh. pipe packing	3.50	*kg*	
2	Aux. boiler	3rd deck	Asbestos	Unknown packing	10.00	*kg*	PCHM (potentially containing Hazardous Material)
3	Piping/flange	Engine room	Asbestos	Packing	50.00	*kg*	PCHM
4	Ref. provision plant	2nd deck	*HCFC*	Refrigerant (R22)	20.00	*kg*	
5	Batteries	Navig. Bridge deck	Lead		96.00	*kg*	

I-3 Structure and hull containing materials listed in Table A and Table B of the guidelines*2

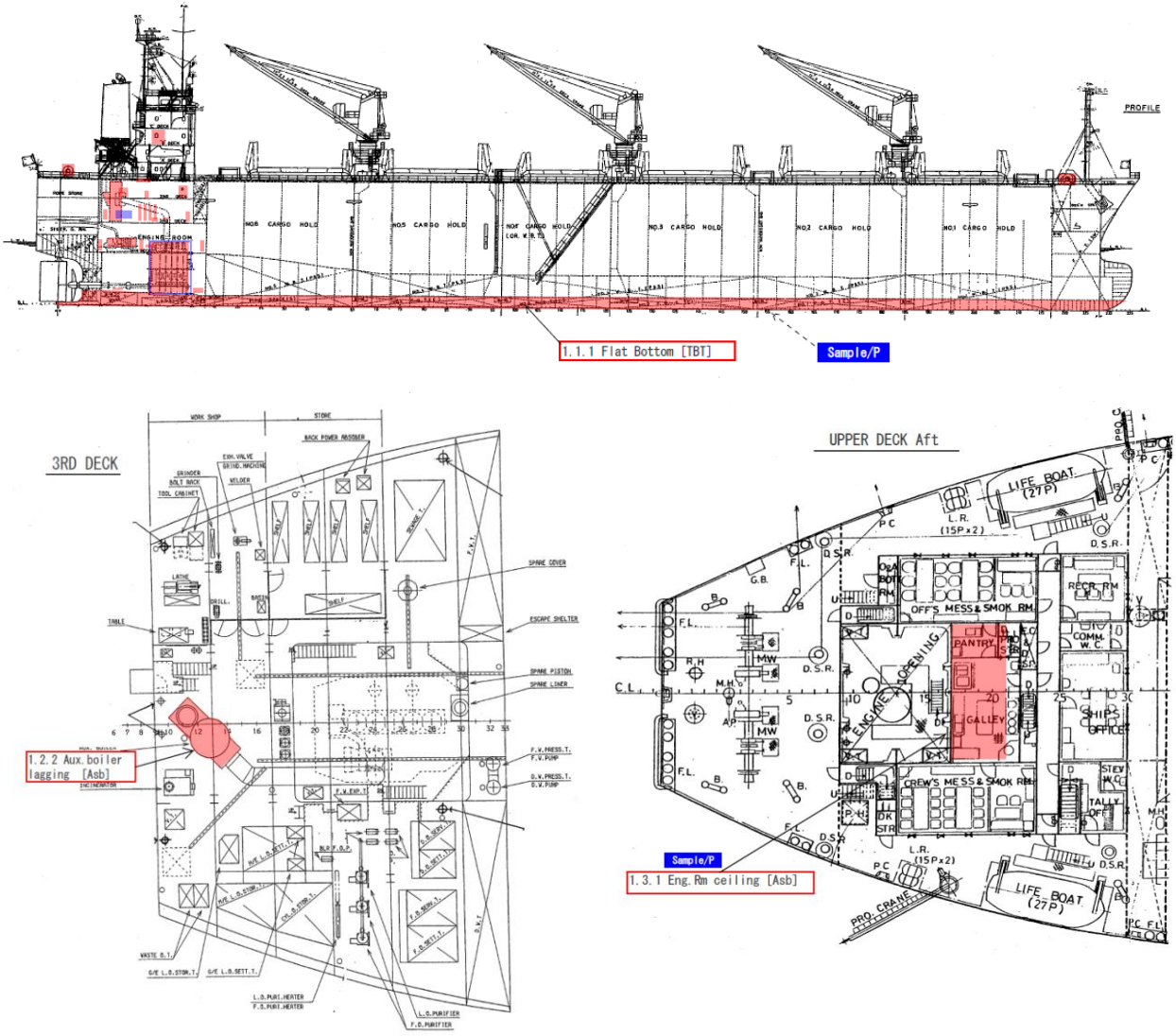
No.	Name of structural element	Location *1	Materials (classification in appendix 1)	Parts where used	Approx. quantity		Remarks
1	Back deck ceiling	Upper deck	Asbestos	Engine room ceiling (A class)	3.80	*kg*	Confirmed by sampling
2							
3							

Notes:

*1 Each item should be entered in order based on its location, from a lower level to an upper level and from a fore part to an aft part.

*2 If the other regulation such as EU SRR is applied in addition to *IMO* Guidelines, these tiles should be amended reflecting it.

Fig. An6.1 Example of the Location Diagram of Hazardous Materials



Annex 2-5 SPECIFIC TEST METHODS (*Appendix* 9 of *MEPC*.379(80))

An1 Asbestos

An1.1 Types of Asbestos

The following **(1)** to **(6)** asbestos types are to be tested.

(1) Actinolite CAS 77536-66-4

(2) Amosite (Grunerite) CAS 12172-73-5

(3) Anthophyllite CAS 77536-67-5

(4) Chrysotile CAS 12001-29-5

(5) Crocidolite CAS 12001-28-4

(6) Asbestos Tremolite CAS 77536-68-6

An1.2 Specific Testing Techniques

1 Asbestos is to be tested using the following **(1)** to **(3)** methods as applicable.

(1) Polarized Light Microscopy (*PLM*)

(2) Electron microscope techniques

(3) X-Ray Diffraction (*XRD*)

2 The suggested three kinds of testing techniques specified in **-1** are most commonly used methods when analysing asbestos and each of them has its limitation. Laboratories are to choose the most suitable methods to determine, and in most cases, two or more techniques are to be utilized together.

3 The quantification of asbestos is difficult at this stage, although the *XRD* technique specified in **-1(3)** is applicable. Only a few laboratories conduct the quantification rather than the qualification, especially when a precise number is required. Considering the demand from the operators and ship recycling parties, the precise concentration is not strictly required. Thereby, the concentration range is recommended to report, and the recommended range division according to standard VDI 3866 is as follows. Results that specified more precisely must be provided with a reasoned statement on the uncertainty.

(1) Asbestos not detected

(2) Traces of asbestos detected

(3) Asbestos content approx. 1% to 15% by mass

(4) Asbestos content approx. 15% to 40% by mass

(5) Asbestos content greater than 40% by mass

An1.3 Specific Reporting Information

1 The presence/no presence of asbestos, indicate the concentration range, and state the type when necessary.

2 As to the asbestos types, to distinguish all six different types is time- consuming and in some cases not feasible by current techniques; while on the practical side, the treatment of different types of asbestos is the same. Therefore, it is suggested to report the type when necessary.

An2 Polychlorinated Biphenyls (*PCB*)

An2.1 Types of Polychlorinated Biphenyls (*PCB*)

1 There are 209 different congeners (forms) of *PCB* of it is impracticable to test for all. Various organizations have developed lists of *PCB* to test for as indicators. In this instance two alternative approaches are recommended. Method 1 identifies the seven congeners used by the International Council for the Exploration of the Sea (*ICES*). Method 2 identifies 19 congeners and seven types of aroclor (*PCB* mixtures commonly found in solid shipboard materials containing *PCB*).

2 The *PCB* specified in **(1)** or **(2)** are to be tested.

(1) Method 1: *ICES*7 congeners (28, 52, 101, 118, 138, 153, 180)

(2) Method 2: 19 congeners and seven types of aroclor, using the US EPA 8082a test

3 Laboratories are to be familiar with the requirements and consequences for each of these lists.

An2.2 Specific Testing Techniques

1 Applicable mixtures (such as aroclors) are to be tested using the following **(1)** to **(3)** methods.

(1) GC-MS (congener specific)

(2) GC-ECD

(3) GC-ELCD

2 standard samples must be used for each type.

3 Certain field or indicator tests are suitable for detecting *PCB* in liquids or surfaces. However, there are currently no such tests that can accurately identify *PCB* in solid shipboard materials. It is also noted that many of these tests rely on the identification of free chlorine ions and are thus highly susceptible to chlorine contamination and false readings in a marine environment where all surfaces are highly contaminated with chlorine ions from the seawater and atmosphere.

4 Several congeners are tested for as “indicator” congeners. They are used because their presence often indicates the likelihood of other congeners in greater quantities (many *PCB* are mixes, many mixes use a limited number of *PCB* in small quantities, therefore the presence of these small quantities indicates the potential for a mix containing far higher quantities of other *PCB*).

An2.3 Sample Preparation

It is important to properly prepare *PCB* samples prior to testing. For solid materials (cables, rubber, paint, etc.), it is especially critical to select the proper extraction procedure in order to release *PCB* since they are chemically bound within the product.

An2.4 Specific Reporting Information

1 *PCB* congener, *ppm* per congener in sample, and for Method 2, *ppm* per aroclor in sample are to also be reported.

2 Many reports refer to “total *PCB*”, which is often a scaled figure to represent likely total *PCB* based on the sample and the common ratios of *PCB* mixes. Where this is done the exact scaling technique must be stated and is for information only and does not form part of the specific technique.

An3 Ozone-depleting Substances

An3.1 Types of Ozone-depleting Substances

Verification tests are to be carried out to determine the presence of the following **(1)** to **(4)** ozone-depleting substances prohibited by Montreal Protocol. The CAS numbers for these substances are specified in **Annex 3-1 of the Rules**.

(1) *CFC*

(2) Halons

(3) *HCFC*

(4) Other listed substance as required by Montreal Protocol

An3.2 Specific Testing Technique

Ozone-depleting substances are to be tested using the following **(1)** to **(3)** methods.

(1) Gas Chromatography-Mass Spectrometry (GC-MS)

(2) Coupled Electron Capture Detectors (GC-ECD)

(3) Electrolytic Conductivity Detectors (GC-ELCD)

An3.3 Specific Reporting Information

Ozone-depleting substances type and concentration are to be reported.

An4 Anti-fouling Systems Containing Organotin Compounds as a Biocide and/or Cybutryne

An4.1 Anti-fouling Systems Containing Organotin Compounds as a Biocide

An4.1.1 Types of Anti-fouling Systems Containing Organotin Compounds as a Biocide

Anti-fouling compounds and systems regulated under annex I to the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001 (*AFS* Convention, as amended) are to be tested. This includes the following **(1)** to **(3)**.

(1) Tributyl tins (*TBT*)

(2) Triphenyl tins (*TPT*)

(3) Tributyl tin oxide (*TBTO*)

An4.1.2 Specific Testing Technique

1 According to *MEPC*.356(78) (2022 *Guidelines for brief sampling of anti-fouling systems on ships*), adopted on 10 June 2022, anti-fouling compounds and systems are to be tested using the following **(1)** to **(5)** methods as applicable.

(1) ICPOES

(2) ICP

(3) AAS

(4) XRF

(5) GC-MS

2 For “field” or ”indicative” testing it may be acceptable to simply identify presence of tin, owing to the expected good documentation on anti-fouling systems.

An4.1.3 Specific Reporting Information

Organotin compound type and concentration are to be reported.

An4.2 Anti-fouling Systems Containing Cybutryne

An4.2.1 Types of Anti-fouling Systems Containing Cybutryne

Anti-fouling systems containing cybutryne regulated under annex I to the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001 (*AFS* Convention, as amended) are to be tested.

An4.2.2 Specific Testing Technique

According to *MEPC*.356(78) (2022 *Guidelines for brief sampling of anti-fouling systems on ships*), adopted on 10 June 2022, anti-fouling compounds and systems are to be tested by GC-MS.

An4.2.3 Specific Reporting Information

Cybutryne concentration is to be reported.

An4.3 Simplified Approach to Detect Organotin Compounds or Cybutryne

An4.3.1 Types

Anti-fouling compounds and systems regulated under annex I to the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001 (*AFS* Convention, as amended) are to be tested. This includes the following **(1)** and **(2)**.

(1) Organotin compounds as a biocide

(2) Cybutryne

An4.3.2 Specific Testing Technique

According to *MEPC*.356(78) (2022 *Guidelines for brief sampling of anti-fouling systems on ships*), adopted on 10 June 2022, anti-fouling compounds and systems are to be tested by GC-MS.

An4.3.3 Specific Reporting Information

Organotin compound and cybutryne concentrations are to be reported.

Annex 2-6 FORM OF MATERIAL DECLARATION (*Appendix* 6 of *MEPC*.379(80))

The following form give the example of *MD*.

Form of Material Declaration

Date of Declaration

Date	

< MD ID No.>

MD-ID No.	

<Other information>

Remarks 1	
Remarks 2	
Remarks 3	

< Supplier (Respondent) Information>

Company Name	
Division Name	
Address	
Contact Person	
Tel No.	
FAX No.	
E-mail address	
SDoC ID No.	

< Product Information >

Product Name	Product No.	Delivered unit		Product Information
		Amount	Unit	

< Materials Information >

This materials information shows the amount of Hazardous Materials contained in

	Unit
1	

(Unit: No., *kg*, *m*, m^2, m^3, etc.) of the product.

Table	Material name		Threshold value	Present above threshold value	If YES, material mass		If YES, information on where it is used
				YES/NO	Mass	Unit	
A	Asbestos	Asbestos	0.1%*1				
	Polychlorinated biphenyls (*PCB*)	Polychlorinated biphenyls (*PCB*)	50 *mg/kg*				
	Ozone-depleting substances	Chlorofluorocarbons (*CFC*)	No threshold value				
		Halon					
		Other fully halogenated *CFC*					
		Carbon tetrachloride					
		1,1,1-Trichloroethane (Methyl chloroform)					
		Hydrochloro-fluorocarbons					
		Hydrobromo-fluorocarbons					
		Methyl bromide					
		Bromochloromethane					
	Anti-fouling systems containing organotin compounds as a biocide		2500 mg total tin/*kg*				
	Anti-fouling systems containing cybtryne		200 *mg/kg**2				

Table	Material name	Threshold value	Present above threshold value	If YES, material mass		If YES, information on where it is used
			YES/NO	Mass	Unit	
Table B (materials listed in appendix 2 of the Convention)	Cadmium and cadmium compounds	100 *mg/kg*				
	Hexavalent chromium and hexavalent chromium compounds	1,000 *mg/kg*				
	Lead and lead compounds	1,000 *mg/kg*				
	Mercury and mercury compounds	1,000 *mg/kg*				
	Polybrominated biphenyls (*PBB*)	50 *mg/kg*				
	Polybrominated diphenyl ethers (*PBDE*)	1,000 *mg/kg*				
	Polychlorinated naphthalenes (Cl >= 3)	50 *mg/kg*				
	Radioactive substances	No threshold value				
	Certain short-chain chlorinated paraffins (Alkanes, C10-C13, chloro)	1%				

*1 In accordance with regulation 4 of the Convention, for all ships, new installation of materials which contain asbestos shall be prohibited. According to the United Nations recommendation "Globally Harmonized System of Classification and Labelling of Chemicals (*GHS*)" adopted by the United Nations Economic and Social Council's Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals (UNSCEGHS), the UN's Sub-Committee of Experts, in 2002 (published in 2003), carcinogenic mixtures classified as category 1A (including asbestos mixtures) under the *GHS* are required to be labelled as carcinogenic if the ratio is more than 0.1%.

*2 When samples are directly taken from the wet paint containers, average values of cybutryne should not be present above 200 *mg* of cybutryne per kilogram of dry paint.

Annex 2-7 FORM OF SUPPLIER'S DECLARATION OF CONFORMITY (*Appendix* 7 of *MEPC*.379(80))

The following form give the example of *SDoC*.

Form of Supplier's Declaration of Conformity

Supplier's Declaration of Conformity for Material Declaration Management

1) SDoC ID No.: _____

2) Issuer's Name: _____

Issuer's Address: _____

3) Object(s) of the Declaration: _____

_____

_____

4) The object(s) of the declaration described above is in conformity with the following

Document No.:	Title:	Edition/Date of Issue

5) Additional Information: _____

_____

6) Signed for and on behalf of:

_____
Name, designation

_____ _____
Name, designation of authorized person Signature of authorized person

_____ _____
Place of issue Date of issue

Annex 3-1 EXAMPLES OF TABLE 1.1.2-1 AND TABLE 1.1.2-2 MATERIALS OF THE RULES WITH CAS NUMBERS (*Appendix* 8 of *MEPC*.379(80))

* This list was developed with reference to Joint Industry Guide No.101.

* This list is not exhaustive; it represents examples of chemicals with known CAS numbers and may require periodical updating.

Materials listed in Table 1.1.2-1, Part 3 of the Rules

A. Asbestos

Substances	CAS Numbers
Asbestos	1332-21-4
Actinolite	77536-66-4
Amosite (Grunerite)	12172-73-5
Anthophyllite	77536-67-5
Chrysotile	12001-29-5
Crocidolite	12001-28-4
Tremolite	77536-68-6

B. Polychlorinated biphenyls (PCB)

Substances	CAS Numbers
Polychlorinated biphenyls	1336-36-3
Aroclor	12767-79-2
Chlorodiphenyl (Aroclor 1260)	11096-82-5
Kanechlor 500	27323-18-8
Aroclor 1254	11097-69-1

C. Ozone-depleting substances/isomers (they may contain isomers that are not listed here)

Substances	CAS Numbers
Trichlorofluoromethane (CFC11)	75-69-4
Dichlorodifluoromethane (CFC12)	75-71-8
Chlorotrifluoromethane (CFC 13)	75-72-9
Pentachlorofluoroethane (CFC 111)	354-56-3
Tetrachlorodifluoroethane (CFC 112)	76-12-0
Trichlorotrifluoroethane (CFC 113) 1,1,2 Trichloro-1,2,2 trifluoroethane	354-58-5 76-13-1
Dichlorotetrafluoroethane (CFC 114)	76-14-2
Monochloropentafluoroethane (CFC 115)	76-15-3
Heptachlorofluoropropane (CFC 211)	422-78-6, 135401-87-5
Hexachlorodifluoropropane (CFC 212)	3182-26-1
Pentachlorotrifluoropropane (CFC 213)	2354-06-5, 134237-31-3
Tetrachlorotetrafluoropropane (CFC 214) 1,1,1,3-Tetrachlorotetrafluoropropane	29255-31-0 2268-46-4
Trichloropentafluoropropane (CFC 215) 1,1,1-Trichloropentafluoropropane 1,2,3-Trichloropentafluoropropane	1599-41-3 4259-43-2 76-17-5
Dichlorohexafluoropropane (CFC 216)	661-97-2
Monochloroheptafluoropropane (CFC 217)	422-86-6
Bromochlorodifluoromethane (Halon 1211)	353-59-3
Bromotrifluoromethane (Halon 1301)	75-63-8
Dibromotetrafluoroethane (Halon 2402)	124-73-2
Carbon tetrachloride (Tetrachloromethane)	56-23-5
1,1,1, - Trichloroethane (methyl chloroform) and its isomers except 1,1,2-trichloroethane	71-55-6
Bromomethane (Methyl bromide)	74-83-9
Bromodifluoromethane and isomers (HBFC's)	1511-62-2
Dichlorofluoromethane (HCFC 21)	75-43-4

Chlorodifluoromethane (HCFC 22)	75-45-6
Chlorofluoromethane (HCFC 31)	593-70-4
Tetrachlorofluoroethane (HCFC 121)	134237-32-4
1,1,1,2-tetrachloro-2-fluoroethane (HCFC 121a)	354-11-0
1,1,2,2-tetracloro-1-fluoroethane	354-14-3
Trichlorodifluoroethane (HCFC 122)	41834-16-6
1,2,2-trichloro-1,1-difluoroethane	354-21-2
Dichlorotrifluoroethane(HCFC 123)	34077-87-7
Dichloro-1,1,2-trifluoroethane	90454-18-5
2,2-dichloro-1,1,1-trifluroethane	306-83-2
1,2-dichloro-1,1,2-trifluroethane (HCFC-123a)	354-23-4
1,1-dichloro-1,2,2-trifluroethane (HCFC-123b)	812-04-4
2,2-dichloro-1,1,2-trifluroethane (HCFC-123b)	812-04-4
Chlorotetrafluoroethane (HCFC 124)	63938-10-3
2-chloro-1,1,1,2-tetrafluoroethane	2837-89-0
1-chloro-1,1,2,2-tetrafluoroethane (HCFC 124a)	354-25-6
Trichlorofluoroethane (HCFC 131)	27154-33-2;(134237-34-6)
1-Fluoro-1,2,2-trichloroethane	359-28-4
1,1,1-trichloro-2-fluoroethane (HCFC131b)	811-95-0
Dichlorodifluoroethane (HCFC 132)	25915-78-0
1,2-dichloro-1,1-difluoroethane (HCFC 132b)	1649-08-7
1,1-dichloro-1,2-difluoroethane (HFCF 132c)	1842-05-3
1,1-dichloro-2,2-difluoroethane	471-43-2
1,2-dichloro-1,2-difluoroethane	431-06-1
Chlorotrifluoroethane (HCFC 133)	1330-45-6
1-chloro-1,2,2-trifluoroethane	1330-45-6
2-chloro-1,1,1-trifluoroethane (HCFC-133a)	75-88-7
Dichlorofluoroethane(HCFC 141)	1717-00-6; (25167-88-8)
1,1-dichloro-1-fluoroethane (HCFC-141b)	1717-00-6
1,2-dichloro-1-fluoroethane	430-57-9
Chlorodifluoroethane (HCFC 142)	25497-29-4
1-chloro-1,1-difluoroethane (HCFC142b)	75-68-3
1-chloro-1,2-difluoroethane (HCFC142a)	25497-29-4
Hexachlorofluoropropane (HCFC 221)	134237-35-7
Pentachlorodifluoropropane (HCFC 222)	134237-36-8
Tetrachlorotrifluropropane (HCFC 223)	134237-37-9
Trichlorotetrafluoropropane (HCFC 224)	134237-38-0
Dichloropentafluoropropane, (Ethyne, fluoro-) (HCFC 225)	127564-92-5; (2713-09-9)
2,2-Dichloro-1,1,1,3,3-pentafluoropropane(HCFC 225aa)	128903-21-9
2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC 225ba)	422-48-0
1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC 225bb)	422-44-6
3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC 225ca)	422-56-0
1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC 225cb)	507-55-1
1,1-Dichloro-1,2,2,3,3-pentafluoropropane(HCFC 225cc)	13474-88-9
1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC 225da)	431-86-7
1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC 225ea)	136013-79-1
1,1-Dichloro-1,2,3,3,3-pentafluoropropane(HCFC 225eb)	111512-56-2
Chlorohexafluoropropane (HCFC 226)	134308-72-8
Pentachlorofluoropropane (HCFC 231)	134190-48-0
Tetrachlorodifluoropropane (HCFC 232)	134237-39-1
Trichlorotrifluoropropane (HCFC 233)	134237-40-4
1,1,1-Trichloro-3,3,3-trifluoropropane	7125-83-9
Dichlorotetrafluoropropane (HCFC 234)	127564-83-4
Chloropentafluoropropane (HCFC 235)	134237-41-5
1-Chloro-1,1,3,3,3-pentafluoropropane	460-92-4
Tetrachlorofluoropropane (HCFC 241)	134190-49-1
Trichlorodifluoropropane (HCFC 242)	134237-42-6
Dichlorotrifluoropropane (HCFC 243)	134237-43-7

1,1-dichloro-1,2,2-trifluoropropane	7125-99-7
2,3-dichloro-1,1,1-trifluoropropane	338-75-0
3,3-Dichloro-1,1,1-trifluoropropane	460-69-5
Chlorotetrafluoropropane (HCFC 244)	134190-50-4
3-chloro-1,1,2,2-tetrafluoropropane	679-85-6
Trichlorofluoropropane (HCFC 251)	134190-51-5
1,1,3-trichloro-1-fluoropropane	818-99-5
Dichlorodifluoropropane (HCFC 252)	134190-52-6
Chlorotrifluoropropane (HCFC 253)	134237-44-8
3-chloro-1,1,1-trifluoropropane (HCFC 253fb)	460-35-5
Dichlorofluoropropane (HCFC 261)	134237-45-9
1,1-dichloro-1-fluoropropane	7799-56-6
Chlorodifluoropropane (HCFC 262)	134190-53-7
2-chloro-1,3-difluoropropane	102738-79-4
Chlorofluoropropane (HCFC 271)	134190-54-8
2-chloro-2-fluoropropane	420-44-0

D-1. Organotin compounds (tributyl tin, triphenyl tin, tributyl tin oxide)

Substances	CAS Numbers
Bis(tri-n-butyltin) oxide	56-35-9
Triphenyltin N,N'-dimethyldithiocarbamate	1803-12-9
Triphenyltin fluoride	379-52-2
Triphenyltin acetate	900-95-8
Triphenyltin chloride	639-58-7
Triphenyltin hydroxide	76-87-9
Triphenyltin fatty acid salts (C=9-11)	47672-31-1
Triphenyltin chloroacetate	7094-94-2
Tributyltin methacrylate	2155-70-6
Bis(tributyltin) fumarate	6454-35-9
Tributyltin fluoride	1983-10-4
Bis(tributyltin) 2,3-dibromosuccinate	31732-71-5
Tributyltin acetate	56-36-0
Tributyltin laurate	3090-36-6
Bis(tributyltin) phthalate	4782-29-0
Copolymer of alkyl acrylate, methyl methacrylate and tributyltin methacrylate (alkyl; C=8)	-
Tributyltin sulfamate	6517-25-5
Bis(tributyltin) maleate	14275-57-1
Tributyltin chloride	1461-22-9
Mixture of tributyltin cyclopentanecarboxylate and its analogs (Tributyltin naphthenate)	-
Mixture of tributyltin 1, 2, 3, 4, 4a, 4b, 5, 6, 10, 10adecahydro-7-isopropyl-1, 4a-dimethyl-1-phenanthlenecarboxylate and its analogs (Tributyltin rosin salt)	-
Other tributyl tins & triphenyl tins	-

D-2. Anti-fouling systems containing cybutryne

Substances	CAS Numbers
Cybtorin	28159-98-0

Materials listed in Table 1.1.2-2, Part 3 of the Rules

A. Cadmium/cadmium compounds

Substances	CAS Numbers
Cadmium	7440-43-9
Cadmium oxide	1306-19-0
Cadmium sulfide	1306-23-6
Cadmium chloride	10108-64-2
Cadmium sulfate	10124-36-4
Other cadmium compounds	-

B. Chromium VI compounds

Substances	CAS Numbers
Chromium (VI) oxide	1333-82-0
Barium chromate	10294-40-3
Calcium chromate	13765-19-0
Chromium trioxide	1333-82-0
Lead (II) chromate	7758-97-6
Sodium chromate	7775-11-3
Sodium dichromate	10588-01-9
Strontium chromate	7789-06-2
Potassium dichromate	7778-50-9
Potassium chromate	7789-00-6
Zinc chromate	13530-65-9
Other hexavalent chromium compounds	-

C. Lead/lead compounds

Substances	CAS Numbers
Lead	7439-92-1
Lead (II) sulfate	7446-14-2
Lead (II) carbonate	598-63-0
Lead hydrocarbonate	1319-46-6
Lead acetate	301-04-2
Lead (II) acetate, trihydrate	6080-56-4
Lead phosphate	7446-27-7
Lead selenide	12069-00-0
Lead (IV) oxide	1309-60-0
Lead (II,IV) oxide	1314-41-6
Lead (II) sulfide	1314-87-0
Lead (II) oxide	1317-36-8
Lead (II) carbonate basic	1319-46-6
Lead hydroxidcarbonate	1344-36-1
Lead (II) phosphate	7446-27-7
Lead (II) chromate	7758-97-6
Lead (II) titanate	12060-00-3
Lead sulfate, sulphuric acid, lead salt	15739-80-7
Lead sulphate, tribasic	12202-17-4
Lead stearate	1072-35-1
Other lead compounds	-

D. Mercury/ mercury compounds

Substances	CAS Numbers
Mercury	7439-97-6
Mercuric chloride	33631-63-9
Mercury (II) chloride	7487-94-7
Mercuric sulfate	7783-35-9
Mercuric nitrate	10045-94-0
Mercuric (II) oxide	21908-53-2
Mercuric sulfide	1344-48-5
Other mercury compounds	-

E. Polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE)

Substances	CAS Numbers
Bromobiphenyl and its ethers	2052-07-5 (2-Bromobiphenyl)
	2113-57-7 (3-Bromobiphenyl
	92-66-0 (4-Bromobiphenyl)
	101-55-3 (ether)
Decabromobiphenyl and its ethers	13654-09-6
	1163-19-5 (ether)

Dibromobiphenyl and its ethers	92-86-4
	2050-47-7 (ether)
Heptabromobiphenylether	68928-80-3
Hexabromobiphenyl and its ethers	59080-40-9
	36355-01-8 (hexabromo-1,1'-biphenyl)
	67774-32-7 (Firemaster FF-1)
	36483-60-0 (ether)
Nonabromobiphenylether	63936-56-1
Octabromobiphenyl and its ethers	61288-13-9
	32536-52-0 (ether)
Pentabromobidphenyl ether (note: commercially available PeBDPO is a complex reaction mixture containing a variety of brominated diphenyloxides.	32534-81-9 (CAS number used for commercial grades of PeBDPO)
Polybrominated biphenyls	59536-65-1
Tetrabromobiphenyl and its ethers	40088-45-7
	40088-47-9 (ether)
Tribromobiphenyl ether	49690-94-0

F. Polychlorinated naphthalenes

Substances	CAS Numbers
Polychlorinated naphthalenes	70776-03-3
Other polychlorinated naphthalenes	-

G. Radioactive substances

Substances	CAS Numbers
Uranium	-
Plutonium	-
Radon	-
Americium	-
Thorium	-
Cesium	7440-46-2
Strontium	7440-24-6
Other radioactive substances	-

H. Certain short-chain chlorinated paraffins (with carbon length of 10-13 atoms)

Substances	CAS Numbers
Chlorinated paraffins (C10-13)	85535-84-8
Other short-chain chlorinated paraffins	-

Contents

GUIDANCE FOR THE SHIP RECYCLING

Part 1 GENERAL

Chapter 1 GENERAL

1.2 Terms and Definitions

1.2.1 Termiology

1 If the Society authorizes the Ship Recycling Facilities specified in **1.2.1(7), Part 1 of the Rules**, the requirements specified in **Annex 1 of the Guidance** are to be the standard.

2 If authorization is granted to the Society by the Competent Authority(ies), the "Statement of Compliance" (hereinafter referred to as "*SOC*") used in **Annex 1 of the Guidance** is to be replaced by the "Document of Authorization to conduct Ship Recycling" (*DASR*).

Annex 1 REQUIREMENTS FOR SHIP RECYCLING FACILITIES

An1 ASSESSMENT

An1.1 General

An1.1.1 Application

This annex applies to areas that are sites, yards or facilities used for the recycling of ships that are assessed or to be assessed in accordance with this annex.

An1.1.2 Kind of Assessments

Assessments are to be of the following kinds:

(1) Initial Assessments

(2) Annual Assessments

(3) Renewal Assessments

(4) Occasional Assessments

An1.1.3 Intervals of Assessments

Assessments are to be carried out in accordance with the following **(1)** through **(4)**.

(1) Initial Assessments are to be carried out when an assessment application is submitted for a Ship Recycling Facility.

(2) Annual Assessments are to be carried out within 3 *months* before or after each anniversary date. The anniversary date is the day corresponding to the expiry date of the an existing *SOC* each year of its them of validity, excluding its expiry date.

(3) Renewal Assessments are to be completed prior to the expiry date of the existing *SOC*.

(4) Occasional Assessments are to be carried out on the following occasions at times other than Initial Assessments or Renewal Assessments.

(a) The Ship Recycling Facility applies for the *SOC* amendment in order to widen the scope of authorization; for example, after having invested in the facility and added new capabilities which should be reflected in the *SOC*;

(b) The *SOC* amendment is triggered by compelling needs on the part of Competent Authority(ies); for example, when new domestic regulations are put into effect;

(c) The *SOC* amendment is triggered by a deviation of practice at the Ship Recycling Facility from the *SRFP*, which thereby affect the contents of the *SOC*;

(d) The *SOC* amendment is triggered by a change in the Hazardous Materials which the Ship Recycling Facility can remove, store and process; and

(e) Whenever the assessment is considered necessary by the Society.

An1.1.4 Preparation for Assessments and Other related Matters

1 All such preparations as required for initial, renewal and occasional assessments specified in this annex as well as those which may be required by the Society in accordance with this annex are the responsibility of the Ship Recycling Facilities or its representatives.

2 Applicants for assessments are to arrange supervisors who are well conversant with all of the assessment items required for the preparation of such assessments, and who are able to provide all necessary assistance to the assessor according to their requests during such assessments.

3 Assessments may be suspended in cases where necessary preparations have not been made, any appropriate supervisor is not present, or the assessor considers that the safety for execution of the assessment is not ensured.

An1.2 Initial Assessments

An1.2.1 Submission of Plans and Documents for Application (*Paragraph* 4 of *MEPC*.211(63) ANNEX)

1 For Ship Recycling Facilities intending to undergo Initial Assessments, the plans and documents specified in the following **(1)** to **(3)** are to be submitted to the Society.

(1) Application for authorization to conduct Ship Recycling

(2) Copy of *SRFP*

(3) Any other documentation or certification required under applicable international or national legislation, including those related to Ship Recycling activity

2 At the time of the acceptance of the application, if deficiencies are found in the submissions specified in **-1**, the Society may add, amend, ask for additional submission or return the plans and documents.

An1.2.2 Submission of Plans and Documents for Reference (*Paragraph* 5 of *MEPC*.211(63) ANNEX)

For Ship Recycling Facilities intending to undergo the Initial Assessments, the original plans and documents specified in **(1)** to **(3)** are to be presented to the Society during Initial Assessments for reference, in addition to the plans and documents specified in **An1.2.1-1**.

(1) General

(a) *SRFP*

(b) Any other documentation and/or certification required under applicable international or national legislation, including those related to Ship Recycling activity

(c) A documented management system aimed at protecting human health and the environment without posing any unacceptable risks (including the appropriate procedures and techniques)

(2) Management of Hazardous Materials

(a) Procedures for environmentally sound management of Hazardous Materials and wastes

(b) Procedures in place to ensure that all Hazardous Materials detailed in the IHM are, to the maximum extent possible prior to cutting, identified, labelled, packaged and removed by properly trained and equipped workers, then stored and transported to waste management facilities by licensed vehicles

(c) Documentation certifying that procedures to send all Hazardous Materials and wastes to authorized waste management and disposal sites have been established and demonstrating these site's compliance with international and national regulations

(d) Procedures for managing all wastes generated by recycling activity, which should be kept separate from recyclable materials and equipment and labelled and stored under conditions that do not pose a risk to workers, human health or the environment

(3) Other

(a) Evidence and procedures that the Ship Recycling Facility undertake all necessary steps to fulfil the requirements of applicable international and national legislation

(b) Evidence and procedures that planned and conducted activities respect the limits set out in applicable national laws and regulations on land use where the Ship Recycling Facility is located and is operating

(c) The Society may require an environmental impact study from Ship Recycling Facilities

An1.2.3 Method of Initial Assessments

In the Initial Assessment, the plans and documents submitted in accordance with **An1.2.1-1** are to be assessed to confirm that the *SRFP* and related systems comply with **An3** (hereinafter, this confirmation is to be referred to as "Verification of Documentation"). If the results of Verification of Documentation are satisfactory, an assessment is to be conducted at the relevant Ship Recycling Facility to confirm that the *SRFP* and related systems are effectively implemented (hereinafter, this confirmation is to be referred to as "Site Inspection").

An1.2.4 Verification of Documentation (*Paragraph* 4, 5 and 6 of *MEPC*.211(63) ANNEX)

1 At Verification of Documentation, the following verifications are to be carried out:

(1) Confirmation that the *SRFP* includes the policies, plans, systems and other items specified in **An3**

(2) Confirmation that the *SRFP* and related systems comply with **An3**

2 The *SRFP* is to be used as the main document in issuing the *SOC*.

3 In order to grasp and understand the actual situation of Ship Recycling Facility subject to the *SRFP*, and in order to planning Site Inspection, the Society may conduct preliminary inspection of the Ship Recycling Facility prior to the Site Inspection.

An1.2.5 Site Inspection (*Paragraph* 7 of *MEPC*.211(63) ANNEX)

1 General

(1) Site Inspections are to be conducted at Shop Recycling Facilities applying for approval.

(2) In advance of, during and following the Site Inspection, any necessary information should be provided by the Ship Recycling Facility.

(3) The Site Inspection is to cover situations in which the Ship Recycling Facility is operating at maximum capacity with a full body of staff, including subcontractors.

(4) If the Ship Recycling Facility is under construction or not fully operational, the Site Inspection should be conducted as far as practicable. In such a case, an additional follow-up site inspection is to be conducted after the Ship Recycling Facility becomes fully operational. According to the results of the follow-up Site Inspection, the Society may suspend, amend or withdraw the *SOC*.

2 Purpose

The main purpose of the Site Inspection is to check the consistency of the *SRFP* and relevant documentation with the actual arrangements and operations at the Ship Recycling Facility.

3 Inspection Plan

(1) In order to conduct efficient and dependable Site Inspection, the Society is to make the site inspection plan (including the inspection method, schedule, etc.) in advance.

(2) The Ship Recycling Facility is to provide the work schedules for any scheduled projects to the Society to use for reference when making the site inspection plan. Since the purpose of the site inspection plan is to allow for more efficient and dependable audits of the complete Ship Recycling process of the Ship Recycling Facility, it is desirable that work schedules of two or more Ship Recycling projects be provided by the Ship Recycling Facility.

(3) If the Ship Recycling Facility submits supplementary documents, such as the certificate, authorization, and report from the Competent Authority(ies), third parties and entities, etc., the Society may use them for reference when making the site inspection plan.

(4) In order to ensure meeting with all necessary parties, the Society is to notify the Ship Recycling Facility of the site inspection plan in advance.

4 Safety

Safety issues are to be considered and sufficient precautions taken throughout the Site Inspection, including with respect to personal protection.

5 Method of Site Inspection

In order to verify that the following **(1)** to **(3)** throughout the actual Ship Recycling process, the Society is to conduct the necessary number of Site Inspections.

(1) Safety, environmental protection and waste handling procedures established by the Ship Recycling Facility are functioning

(2) A *SRFP* exists and it is being fully implemented. In particular, the following factors should be verified:

  (a) availability of the *SRFP* to all personnel at the Ship Recycling Facility;

  (b) knowledge of the *SRFP* among management, competent persons and workers according to their designated tasks, roles and responsibilities, including those with special duties such as first-aid personnel and fire fighters; and

  (c) implementation of the objectives of the *SRFP*, as demonstrated by implementation of operational procedures in:

    i) ship preparation processes;

    ii) monitoring of Safe-for-entry and Safe-for-hot-work conditions;

    iii) deconstruction processes;

    iv) hot work processes;

    v) management of Hazardous Materials and wastes (protective measures and removal, transport, storage and disposal); and

    vi) emergency preparedness

(3) The Site Inspection should identify procedures and routines:

(a) developing and using the Ship Recycling Plan (*SRP*);

(b) accepting ships, taking into account relevant requirements and the required certificates;

(c) reporting and following up incidents; and

(d) conducting operations in a safe and environmentally sound manner, in accordance with the requirements of the Convention

6 Verification of Operational Limitations

The Site Inspection should verify the availability, size, restrictions and general set-up of the Ship Recycling Facility as stated in the application. Any arrangements established for the purpose of facilitating the recycling process should be described in the inspection report, as should any limitations related to the operation of the Ship Recycling Facility.

7 Management of Hazardous Materials and Wastes

In the Site Inspection, the following **(1)** to **(3)** are to be confirmed regarding the management of Hazardous Materials and wastes:

(1) All sites utilizing established procedures, methods, arrangements and facilities for the removal, storage, processing (incineration, reclamation and specific treatment), transport and disposal of Hazardous Materials and wastes are to be inspected.

(2) The inspection is to verify that the Ship Recycling Facility is designed and constructed to manage any Hazardous Materials and wastes that are included in their application.

(3) In cases where the Ship Recycling Facility is engaging one or more contractors by means of subcontracting for any activities related to the requirements of the Convention, the contractors should be subject to the same verification as if the Ship Recycling Facility itself was undertaking the activities. The Ship Recycling Facility is responsible for providing the Competent Authority(ies) with information required to perform a verification on the aforementioned contractors, as part of the overall assessment of the facility.

8 Assessment on Emergency Preparedness and Response

The Site Inspection is to include a practical test for assessing the implementation of measures relating to emergency preparedness and response. This may involve an unannounced complete evacuation of the Ship Recycling Facility or a similar procedure described in the plans for emergency preparedness and response.

9 Notification of Results

The Society is to notify the Ship Recycling Facility of the result of the inspection in writing. When there are non-conformities for which corrective actions are to be taken by the Ship Recycling Facility, the Society is to consult with the Ship Recycling Facility and reach an agreement upon a time frame for which the corrective actions are to be taken.

An1.3 Renewal Assessment

1 At a Renewal Assessment, the Society is to review all aspects of the *SRFP* and relevant systems, and verify that they are effectively implemented in accordance with **An3**.

2 Renewal Assessment is, in principle, to be conducted in accordance with **An1.2** (“Initial Assessment”) with relevant changes made as needed. If there have been changes and corrective action to the *SRFP* and relevant systems since the previous inspection, the Ship Recycling Facility is to submit an appropriately amended *SRFP* and documentation for relevant systems.

An1.4 Annual Assessment

1 At an Annual Assessment, the Society is to review all aspects of the *SRFP* and relevant systems, and verify that they are effectively implemented in accordance with **An3**.

2 Annual Assessment is, in principle, to be conducted in accordance with **An1.3** (“Renewal Assessment”) with relevant changes made as needed. If there have been changes and corrective action to the *SRFP* and relevant systems since the previous inspection, the Ship Recycling Facility is to submit an appropriately amended *SRFP* and documentation for relevant systems.

An1.5 Occasional Assessment (*Paragraph* 8.4 of *MEPC*.211(63) ANNEX)

1 At an Occasional Assessment, the Society is to review items specified in **An1.1.3-1(4)**, and verify that the *SRFP* and relevant

systems are effectively implemented in accordance with **An3**.

2 Occasional Assessment is, in principle, to be conducted in accordance with **An1.2** ("Initial Assessment") with relevant changes made as needed. However, verification is to be carried out with respect to the items related to the reasons for application. If there have been changes and corrective action to the *SRFP* and relevant systems since the previous inspection, the Ship Recycling Facility is to submit an appropriately amended *SRFP* and documentation for relevant systems.

An1.6 Non-conformities (*Regulation* 16.6 of *Annex*)

When the Society finds any non-conformities with **An3** or any deviations from the *SRFP* during the Site Inspection and requests that corrective action need to be taken in response, the Ship Recycling Facility is to make said the corrections without delay and undergo a follow-up assessment to verify the result of the corrective action. Such follow-up assessments, however, may be omitted at the discretion of the Society.

An2 AUTHORIZATION

An2.1 Issuance of the Statement of Compliance (*SOC*) and Official Announcement (*Paragraph* 8.3 of *MEPC*.211(63) ANNEX)

1 The Society is to issue a *SOC* to the Ship Recycling Facility if the results of Initial Assessment and Renewal Assessment prove satisfactory.

2 The *SOC* is not to be issued until all required documentation has been received and the Site Inspection has been successfully completed.

3 The supplement to the *SOC* is to be permanently attached to the *SOC*.

4 The *SOC* is to be maintained at the Ship Recycling Facility at all times.

5 The Society will officially announce a list of authorized Ship Recycling Facilities.

An2.2 Valid Term of the Statement of Compliance (*SOC*) (*Regulation* 16.5 of *Annex*)

1 The *SOC* is to be issued for a period determined by the Society not exceeding 5 *years*.

2 If a Ship Recycling Facility changes ownership, the new owner is to—within a reasonable time frame, if possible, not exceeding 30 *days*—notify the Society so that it can amend the *SOC* accordingly. The new owner is to confirm in writing that it will fully comply with all requirements, including the *SRFP*, and this annex. The new owner is to also provide any supporting documentation requested by the Society. If operations at the Ship Recycling Facility are changed in such a way as to affect the conditions on which authorization was granted, the Society may amend, suspend or withdraw the *SOC* and inform the new owner accordingly.

An2.3 Withdrawal (*Paragraph* 8.5 and 8.6 of *MEPC*.211(63) ANNEX)

In case an authorized Ship Recycling Facility falls under one of the following **(1)** though **(7)**, the Society may withdraw the authorization. Upon such a withdrawal, the Society will notify the Ship Recycling Facility accordingly.

(1) In cases where the compliance of the Ship Recycling Facility to relevant requirements is in doubt.

(2) In cases where appropriate corrective actions requested by the Society have not been taken by the date designated by the Society.

(3) In cases where the approved condition has not complied with the technical requirements concerned due to alteration of the requirements.

(4) In cases where either the Renewal Assessment or the Occasional Assessment specified respectively in **An1.3** and **An1.4** is not carried out.

(5) In cases where willful acts or omissions are ascertained.

(6) In cases where the Ship Recycling Facility has deliberately falsified reports.

(7) In cases where the Ship Recycling Facility notifies the Society of its intent to no longer comply with this annex.

An3 SHIP RECYCLING FACILITIES

An3.1 General (Regulation 17 of Annex)

An3.1.1 Application

This chapter applies to areas that are sites, yards or facilities used for the recycling of ships that are assessed or to be assessed in accordance with this annex.

An3.1.2 General Requirements

1 Ship Recycling Facilities are to establish management systems, procedures and techniques which do not pose health risks to the workers concerned or to the population in the vicinity of the Ship Recycling Facility and which will prevent, reduce, minimize and to the extent practicable eliminate adverse effects on the environment caused by Ship Recycling, taking into account *IMO* Resolution *MEPC*.210(63) "2012 *Guidelines for Safe and Environmentally Sound Ship Recycling*".

2 Ship Recycling Facilities are to comply with the following **(1)** to **(3)** when recycling a ship.

(1) Ship Recycling Facilities are to only accept ships that comply with the Rules.

(2) Ship Recycling Facilities are to only accept ships which they are authorized to recycle.

(3) Ship Recycling Facilities are to have the documentation of its authorization available if such documentation is requested by a shipowner that is considering recycling a ship at the Ship Recycling Facility.

3 When preparing to receive a ship for recycling, a Ship Recycling Facility is to notify in due time and in writing the Society of its intent. The notification is to include at least the following ship details:

(1) name of the state whose flag the ship is entitled to fly

(2) date on which the ship was registered with that state

(3) ship's identification number (*IMO* number)

(4) hull number on new-building delivery

(5) name and type of the ship

(6) port at which the ship is registered

(7) name and address of the shipowner as well as the *IMO* registered owner identification number

(8) name and address of the company as well as the *IMO* company identification number

(9) name of all classification societies with which the ship is classed

(10) ship's main particulars (length overall (*LOA*), breadth (moulded), depth (moulded), lightweight, gross and net tonnage, and engine type and rating)

(11) IHM

(12) a draft Ship Recycling Plan (*SRP*) for approval pursuant to the Rules.

4 An example of the Ship Recycling process from preparation to completion is shown in **Annex 2**.

An3.2 Ship Recycling Facility Plan (*SRFP*) (*Regulation* 18 of *Annex*)

1 Ship Recycling Facilities are to prepare a *SRFP*. The plan is to be adopted by the board or the appropriate governing body of the Recycling Company.

2 The *SRFP* is to be developed taking into account *IMO* Resolution *MEPC*.210(63) "2012 *Guidelines for Safe and Environmentally Sound Ship Recycling*".

3 *SRFP* is to include following **(1)** to **(9)**.

(1) A policy ensuring workers' safety and the protection of human health and the environment, including the establishment of objectives that lead to the minimization and elimination to the extent practicable of the adverse effects of Ship Recycling on human health and the environment.

(2) A system for ensuring implementation of the requirements set out in this Convention, the achievement of the goals set out in the policy of the Recycling Company, and the continuous improvement of the procedures and standards used in the Ship

Recycling operations.

(3) Identification of roles and responsibilities for employers and workers when conducting Ship Recycling operations.

(4) A programme for providing appropriate information and training of workers for the safe and environmentally sound operation of the Ship Recycling Facility.

(5) An emergency preparedness and response plan.

(6) A system for monitoring the performance of Ship Recycling.

(7) A record-keeping system showing how Ship Recycling is carried out.

(8) A system for reporting discharges, emissions, incidents and accidents causing damage, or with the potential of causing damage, to worker's safety, human health and the environment.

(9) A system for reporting occupational diseases, accidents, injuries and other adverse effects on worker safety and human health.

4 A recommended format of the *SRFP* is shown in **Annex 3**.

5 An example format of the facility information to be included in the *SRFP* is shown in **Annex 4**.

An3.3 Ship Recycling Plan (*SRP*) (*Regulation* 9 of *Annex*)

A ship-specific Ship Recycling Plan (*SRP*) is to be developed by the Ship Recycling Facility(ies) prior to any recycling of a ship, taking into account the *IMO* Resolution *MEPC*.196(62) "2011 *Guidelines for the Development of the Ship Recycling Plan*". The Ship Recycling Plan (*SRP*) is to be as follows:

(1) be developed taking into account information provided by the shipowner;

(2) be developed in the language accepted by the Party authorizing the Ship Recycling Facility, and if the language used is not English, French or Spanish, the Ship Recycling Plan (*SRP*) is to be translated into one of these languages, except where the Administration is satisfied that this is not necessary;

(3) include information concerning inter alia, the establishment, maintenance, and monitoring of Safe-for-entry and Safe-for-hot-work conditions and how the type and amount of materials including those identified in the Inventory of Hazardous Materials will be managed;

(4) be either explicitly or tacitly approved by the Competent Authority authorizing the Ship Recycling Facility. The Competent Authority is to send written acknowledgement of receipt of the Ship Recycling Plan (*SRP*) to the Ship Recycling Facility, shipowner and Administration within 3 working days of its receipt. Thereafter:

(a) where a party requires explicit approval of the Ship Recycling Plan (*SRP*), the Competent Authority is to send written notification of its decision to approve or deny the Ship Recycling Plan (*SRP*) to the Ship Recycling Facility, shipowner and Administration; and

(b) where a party requires tacit approval of the Ship Recycling Plan (*SRP*), the acknowledgment of receipt shall specify the end date of a 14-day review period. The Competent Authority is to notify any written objection to the Ship Recycling Plan (*SRP*) to the Ship Recycling Facility, Shipowner and Administration within this 14-day review period. Where no such written objection has been notified, the Ship Recycling Plan (*SRP*) is to be deemed to be approved.

(5) once approved in accordance with **(4)**, be made available for inspection by the Administration, or any nominated surveyors or organization recognized by it; and

(6) where more than one Ship Recycling Facility is used, identify the Ship Recycling Facilities to be used and specify the recycling activities and the order in which they occur at each authorized Ship Recycling Facility.

An3.4 Prevention of Adverse Effects to Human Health and the Environment (*Regulation* 19 of *Annex*)

Ship Recycling Facilities are to establish and utilize procedures taking into account *IMO* Resolution *MEPC*.210(63) "2012 *Guidelines for Safe and Environmentally Sound Ship Recycling*" are to prevent the following:

(1) explosions, fires, and other unsafe conditions by ensuring that Safe-for-hot-work conditions and procedures are established, maintained and monitored throughout Ship Recycling;

(2) harm from dangerous atmospheres and other unsafe conditions by ensuring that Safe-for-entry conditions and procedures are established, maintained, and monitored in ship spaces, including confined spaces and enclosed spaces, throughout Ship

Recycling;

(3) other accidents, occupational diseases and injuries or other adverse effects on human health or the environment; and

(4) spills or emissions throughout Ship Recycling which may cause harm to human health or the environment.

An3.5 Safe and Environmentally Sound Management of Hazardous Materials (*Regulation* 20 of *Annex*)

1 Ship Recycling Facilities are to ensure safe and environmentally sound removal of any Hazardous Material contained in a ship certified. The persons in charge of the recycling operations and the workers are to be familiar with the requirements of this Convention relevant to their tasks and, in particular, actively use the IHM and the Ship Recycling Plan (*SRP*), prior to and during the removal of Hazardous Materials.

2 Ship Recycling Facilities are to ensure that all Hazardous Materials detailed in the IHM are identified, labelled, packaged and removed to the maximum extent possible prior to cutting by properly trained and equipped workers, taking into account *IMO* Resolution *MEPC*.210(63) "2012 *Guidelines for Safe and Environmentally Sound Ship Recycling*", in particular:

(1) hazardous liquids, residues and sediments;

(2) substances or objects containing heavy metals such as lead, mercury, cadmium and hexavalent chromium;

(3) paints and coatings that are highly flammable and/or lead to toxic releases;

(4) asbestos and materials containing asbestos;

(5) *PCB* and materials containing *PCB*, ensuring that heat inducing equipment is avoided during such operations;

(6) *CFC* and halons; and

(7) other Hazardous Materials not listed above and that are not a part of the ship structure.

3 Ship Recycling Facilities are to provide for and ensure safe and environmentally sound management of all Hazardous Materials and wastes removed from the ship recycled at that Ship Recycling Facility. Waste management and disposal sites are to be identified to provide for the further safe and environmentally sound management of materials.

4 All wastes generated from the recycling activity are to be kept separate from recyclable materials and equipment, labelled, stored in appropriate conditions that do not pose a risk to the workers, human health or the environment and only transferred to a waste management facility authorized to deal with their treatment and disposal in a safe and environmentally sound manner.

An3.6 Emergency Preparedness and Response (*Regulation* 21 of *Annex*)

Ship Recycling Facilities are to establish and maintain an emergency preparedness and response plan. The plan is to be made having regard to the location and environment of the Ship Recycling Facility and is to take into account the size and nature of activities associated with each Ship Recycling operation. The plan is to furthermore:

(1) ensure that the necessary equipment and procedures to be followed in the case of an emergency are in place, and that drills are conducted on a regular basis;

(2) ensure that the necessary information, internal communication and coordination are provided to protect all people and the environment in the event of an emergency at the Ship Recycling Facility;

(3) provide for communication with, and information to, the relevant Competent Authority(ies), the neighborhood and emergency response services;

(4) provide for first aid and medical assistance, firefighting and evacuation of all people at the Ship Recycling Facility, pollution prevention; and

(5) provide for relevant information and training to all workers of the Ship Recycling Facility, at all levels and according to their competence, including regular exercises in emergency prevention, preparedness and response procedures.

An3.7 Worker Safety and Training (*Regulation* 22 of *Annex*)

1 Ship Recycling Facilities are to implement measures for worker safety that ensure the following:

(1) the availability, maintenance and use of personal protective equipment and clothing needed for all Ship Recycling operations;

(2) training programmes are provided to enable workers to safely undertake all Ship Recycling operations they are tasked to do;

and

(3) all workers at the Ship Recycling Facility have been provided with appropriate training and familiarization prior to performing any Ship Recycling operation.

2 Ship Recycling Facilities are to provide and ensure the use of personal protective equipment for operations requiring such use; such equipment is to include the following:

(1) head protection;
(2) face and eye protection;
(3) hand and foot protection;
(4) respiratory protective equipment;
(5) hearing protection;
(6) protectors against radioactive contamination;
(7) protection from falls; and
(8) appropriate clothing.

3 Ship Recycling Facilities may co-operate in providing for training of workers. Taking into account *IMO* Resolution *MEPC*.210(63) "2012 *Guidelines for Safe and Environmentally Sound Ship Recycling*", the training programmes set forth in **-1** above are to be as follows:

(1) cover all workers including contractor personnel and employees in the Ship Recycling Facility;
(2) be conducted by competent persons;
(3) provide for initial and refresher training at appropriate intervals;
(4) include participants' evaluations of their comprehension and retention of the training;
(5) be reviewed periodically and modified as necessary; and
(6) be documented.

An3.8 Reporting on Incidents, Accidents, Occupational Diseases and Chronic Effects (*Regulation* 23 of *Annex*)

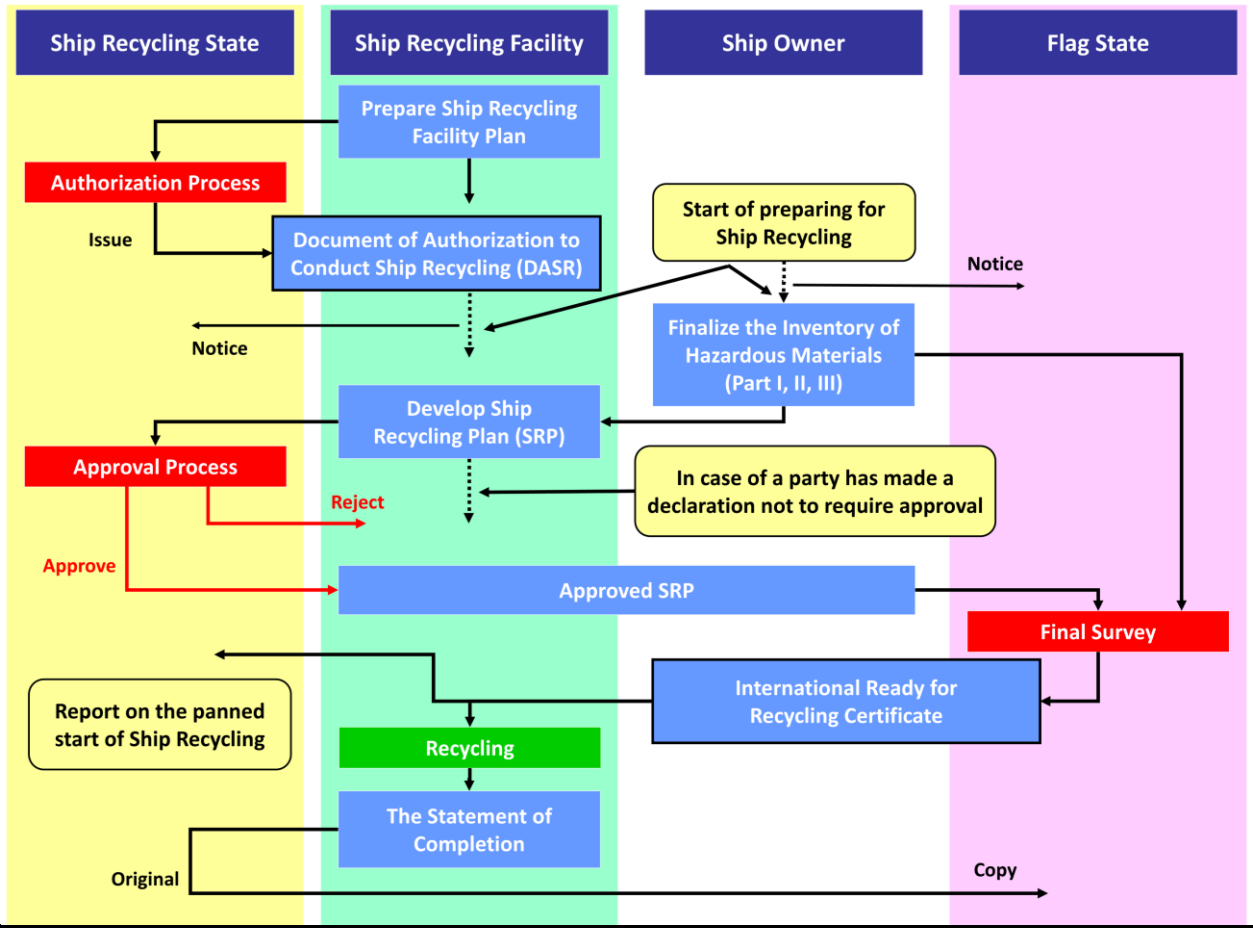
1 Ship Recycling Facilities are to report to the Competent Authority(ies) and the Society any incident, accident, occupational diseases, or chronic effects causing, or with the potential of causing, risks to workers safety, human health and the environment.

2 Reports are to contain a description of the incident, accident, occupational disease, or chronic effect, its cause, the response action taken and the consequences and corrective actions to be taken.

Annex 2 SHIP RECYCLING PROCESS FROM PREPARATION TO COMPLETION (*APPENDIX* 3 of *MEPC*.210(63))

The figure below gives the ship recycling process from preparation to completion.

Ship Recycling Process from Preparation to Completion



Responsibility of Stakeholders			
Regulation 16 -Authorize the Ship Recycling Facilities Regulation 9 -Approve SRP Regulation 25 -Send a copy of the Statement to the flag state	Regulation 18 -Prepare an SRFP Regulation 9 -Develop a ship-specific SRP Regulation 24 -Notify its Competent Authority of the intent -Report to its Competent Authority the planned start of Ship Recycling Regulation 25 - Issue a Statement of Completion and report to its Competent Authority	Regulation 5 -Have on board an Inventory of Hazardous Materials -Finalize Inventory of Hazardous Materials including Parts II & III Regulation 8 -Provide the information with the SRF	Regulation 10 -Verify Inventory of Hazardous Materials, SRP and DASR

Annex 3 RECOMMENDED FORMAT OF THE SHIP RECYCLING FACILITY PLAN (*APPENDIX* 1 of *MEPC*.210(63))

The form below gives the recommended format of *SRFP*.

SHIP RECYCLING FACILITY PLAN

1	Facility management
1.1	Company information
1.2	Training programme
1.3	Worker management
1.4	Records management
2	Facility operation
2.1	Facility information
2.2	Permits, licences and certification
2.3	Acceptability of ships
2.4	Ship Recycling Plan (*SRP*) development
2.5	Vessel arrival management
2.6	Ship recycling methodology
2.7	Reporting upon completion
3	Worker safety and health compliance approach
3.1	Worker health and safety
3.2	Key safety and health personnel
3.3	Job hazard assessment
3.4	Prevention of adverse effects to human health
3.4.1	Safe-for-entry procedures
3.4.1.1	Safe-for-entry criteria
3.4.1.2	Competent person for Safe-for-entry determination
3.4.1.3	Safe-for-entry inspection and testing procedures
3.4.1.4	Oxygen
3.4.1.5	Flammable atmospheres
3.4.1.6	Toxic, corrosive, irritant or fumigated atmospheres and residues
3.4.1.7	Safe-for-entry determination by a Competent person
3.4.1.8	Safe-for-entry certificate, warning signs and labels
3.4.1.9	Safe-for-entry operational measures
3.4.2	Safe-for-hot-work procedures
3.4.2.1	Safe-for-hot-work criteria
3.4.2.2	Competent person for Safe-for-hot-work determination
3.4.2.3	Safe-for-hot-work inspection, testing and determination
3.4.2.4	Safe-for-hot-work certificate, warning signs and labels
3.4.2.5	Safe-for-hot-work operational measures
3.4.3	Welding, cutting, grinding and heating
3.4.4	Drums, containers and pressure vessels
3.4.5	Prevention of falling from heights and accidents caused by falling objects
3.4.6	Gear and equipment for rigging and materials handling
3.4.7	Houskeeping and illumination
3.4.8	Maintenance and decontamination of tools and equipment
3.4.9	Health and sanitation
3.4.10	Personal protective equipment
3.4.11	Worker exposure and medical monitoring
3.5	Emergency preparedness and response plan
3.6	Fire and explosion prevention, detection and response
4	Environmental compliance approach
4.1	Environmental monitoring
4.2	Management of Hazardous Materials

4.2.1 Potentially containing Hazardous Materials
4.2.2 Additional sampling and analysis
4.2.3 Identification, marking and labelling and potential on-board locations
4.2.4 Removal, handling and remediation
4.2.5 Storage and labelling after removal
4.2.6 Treatment, transportation and disposal
4.3 Environmentally sound management of Hazardous Materials
4.3.1 Asbestos and materials containing asbestors
4.3.2 *PCB* and materials containing *PCB*
4.3.3 Ozone-depleting substances (*ODS*)
4.3.4 Paints and coatings
4.3.4.1 Anti-fouling compounds and systems (organotin compounds including tributyltin (*TBT*))
4.3.4.2 Toxic and highly flammable paints
4.3.5 Hazardous liquids, residues and sediments (such as oils, bilge, and ballast water)
4.3.6 Heavy metals (lead, mercury, cadmium and hexavalent chromium)
4.3.7 Other Hazardous Materials
4.4 Prevention of adverse effects to the environment
4.4.1 Spill prevention, control and countermeasures
4.4.2 Storm-water pollution prevention
4.4.3 Debris prevention and control
4.4.4 Incident and spills reporting procedures

Plan Attachments

Facility Map
Organizational Flow Chart
Permits, Licences and Certification
Resumes

Annex 4 EXAMPLE FORMAT OF FACILITY INFORMATION IN SHIP RECYCLING FACILITY PLAN (*SRFP*) (*APPENDIX* 2 of *MEPC*.210(63))

The format below gives the example format of facility information in *SRFP*.

Example Format of Facility Information in SRFP

Facility name and contact information			
Facility name			
Registered address			
Facility address			
Representative and communication address			
Number of employees			
Tel. No.		Fax No.	
E-mail address		URL	
Working language			

Capacity of Facility	
Maximum capacity of ship to be recycled	DWT GT LDT Length Breadth Width Depth
Types of ship to be accepted Annual recycling capacity (in LDT)	

Waste management capacity	
Asbestos	removal storage process
Ozone-depleting substances	removal storage process
Polychlorinated biphenyls (PCB)	removal storage process
Anti-fouling compounds and system	removal storage process
Cadmium and Cadmium Compounds	removal storage process
Hexavalent Chromium and Hexavalent Chromium Compounds	removal storage process
Lead and Lead Compounds	removal storage process
Mercury and Mercury Compounds	removal storage treatment process

Polybrominated Biphenyl (PBB)	removal storage treatment process
Polybrominated Diphenyl Ethers (PBDE)	removal storage treatment process
Polychlorinated Naphthalenes (more than 3chlorine atoms)	removal storage treatment process
Radioactive substances removal	removal storage treatment process
Certain Shortchain Chlorinated Paraffins (Alkanes, C10-C13, chloro)	removal storage treatment process
Hazardous liquids, residues and sediments	removal storage treatment process
Paints and coatings that are highly flammable and/or lead to toxic release	removal storage treatment process
Other Hazardous Materials not listed above and that are not a part of the ship structure (specify)	removal storage treatment process

Facility equipment and other information			
Area of Facility (m2)		Area of pavement (m2)	
Description of ship recycling facility (layout, waterdepth, accessibility, etc.)			
Heavy lifting machines	e.g. Jib crane: 60 tons		
	Mobile crane: 35 tons×1, 27 tons×1		
	Hydraulic backhoe: SH400, ZX330, SK220, ZX200 With Shear, Magnet		
	Hydraulic shear: 600 tons×1		
	Weight bridge: 50 tons		
Boat	e.g. Gross tonnage: 5 tons, Power: 240 PS		
Shear	e.g. Capacity: 600 tons		
O2 supply	e.g. Liquid O2 supply system: 10 m3		
Gas supply	e.g. LPG bottles		
Compressed air			
Fire extinguisher	e.g. Portable fire extinguisher		
Waste oil treatment	e.g. Oil water separation tank Tank capacity: abt. 20 tons		
Wastes storage	e.g. Container for asbestos: 2		
Incinerator	e.g. none		
Electric power supply	e.g. Substation		

Location	
Division and classification of the location	e.g. urbanization control area

Peripheral environment	e.g. factories: former quarry, two marinas in the vicinity
	Housing: private houses at the entrance and 200 m from entrance

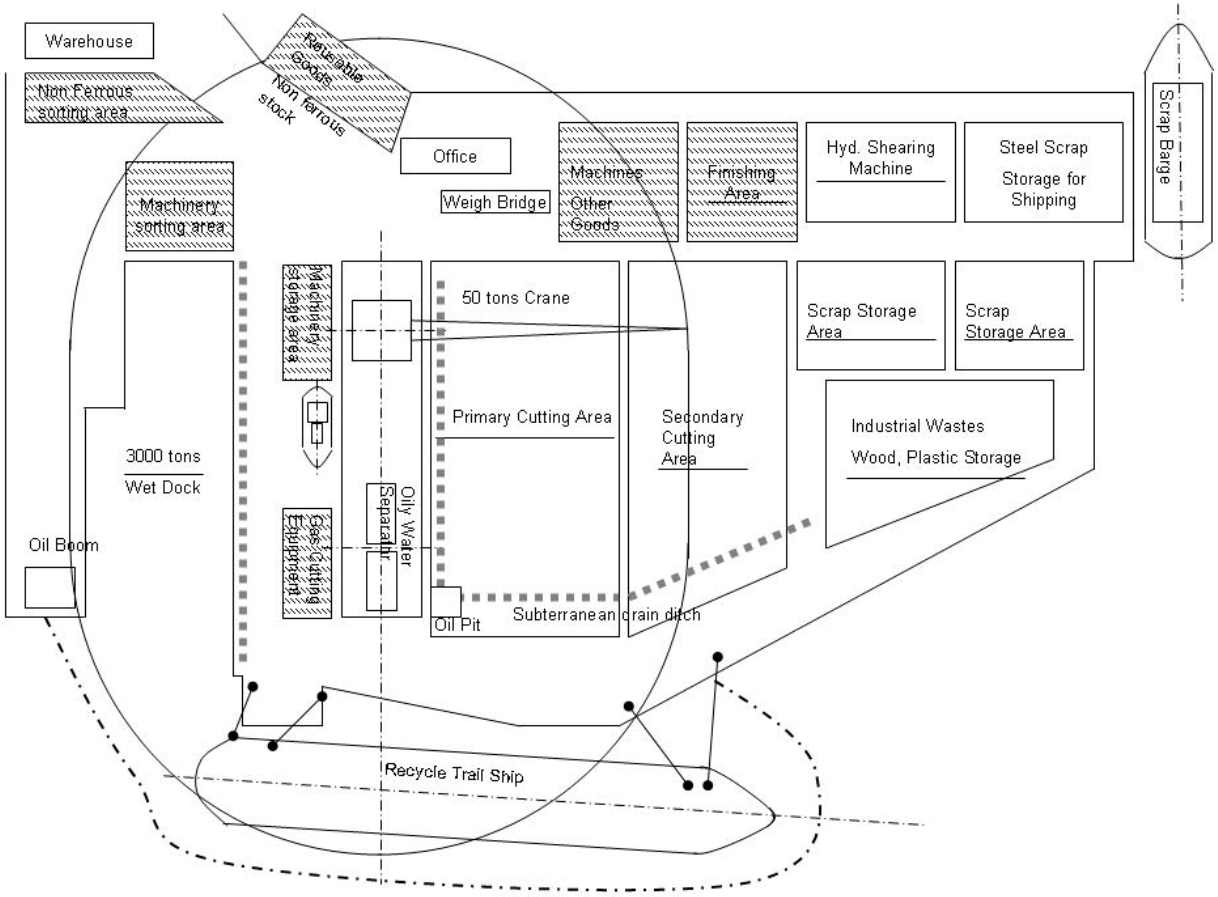
Facility certificate and license (if applicable specify: certifying authority; date of expiry; number of certificate; etc.)	

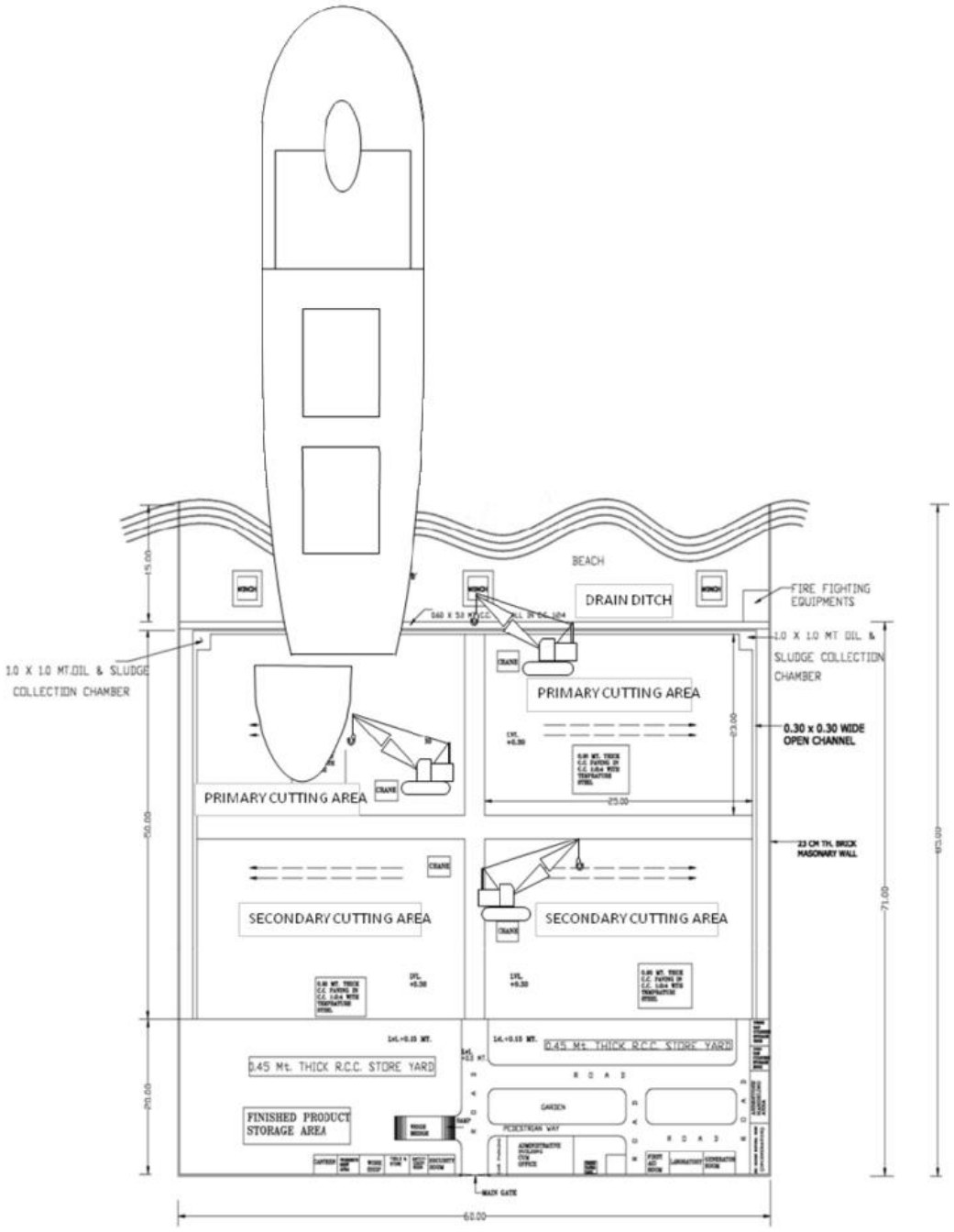
Workers' certificates/licenses	
Certificate/license	Name
1) Manager of asbestos handling	e.g. ***** ***** (name of applicable worker)
2) Manager of PCB handling	e.g. ***** *****
3) Designated chemicals handling	e.g. N/A
4) Asbestos handling class	e.g. ***** *****
	e.g. ***** *****
	e.g. ***** *****
5) Gas cutting	e.g. ***** *****
	e.g. ***** *****
	e.g. ***** *****
6) Welding	e.g. ***** *****
7) Zinc handling	e.g. ***** *****
8) Lifting	e.g. ***** *****
	e.g. ***** *****
	e.g. ***** *****
9) Heavy lift machines	e.g. ***** *****
	e.g. ***** *****
10) Seafarer	e.g. ***** *****
11) Diver	e.g. N/A
12) Removal of Hazardous Materials (Material A)	e.g. ***** *****
(Material B)	e.g. ***** *****

Subcontractor information			
Subcontractor name			
Registered address			
Representative and communication address			
Field of services			
Licenses for services			
Number of employees			
Tel. No.		Fax No.	
E-mail address		URL	

Location Map and Yard plan (examples)

Yard plan should be included in the facility information.




BEACH
DRAIN DITCH
FIRE FIGHTING EQUIPMENTS
1.0 X 1.0 MT.OIL & SLUDGE COLLECTION CHAMBER
1.0 X 1.0 MT OIL & SLUDGE COLLECTION CHAMBER
PRIMARY CUTTING AREA
PRIMARY CUTTING AREA
0.30 x 0.30 WIDE OPEN CHANNEL
23 CM TH. BRICK MASONARY WALL
SECONDARY CUTTING AREA
SECONDARY CUTTING AREA
0.45 Mt. THICK R.C.C. STORE YARD
0.45 Mt. THICK R.C.C. STORE YARD
FINISHED PRODUCT STORAGE AREA
ROAD
GARDEN
PEDESTRIAN WAY
ROAD
MAIN GATE
60.00
71.00