BS ISO 30005:2012

BSI Standards Publication

Ships and marine technology — Ship recycling management systems — Information control for hazardous materials in the manufacturing chain of shipbuilding and ship operations

bsi.

...making excellence a habit.™

National foreword

This British Standard is the UK implementation of ISO 30005:2012. It supersedes DD ISO/PAS 30005:2010 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee SME/32, Ships and marine technology - Steering committee.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Published by BSI Standards Limited 2012

ISBN 978 0 580 70969 2

ICS 47.020.01

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 November 2012.

Amendments issued since publication

Date	Text affected

BS ISO 30005:2012

INTERNATIONAL STANDARD

ISO 30005

First edition
2012-05-15

Ships and marine technology — Ship recycling management systems — Information control for hazardous materials in the manufacturing chain of shipbuilding and ship operations

Navires et technologie maritime — Systèmes de management du recyclage des navires — Contrôle des informations sur les matières dangereuses intervenant dans la chaîne de construction du navire et durant le service du navire

Reference number
ISO 30005:2012(E)

COPYRIGHT PROTECTED DOCUMENT

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 30005 was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*.

This first edition of ISO 30005 cancels and replaces the first edition ISO/PAS 30005:2010.

Introduction

This International Standard has been developed in response to demand from industry for a ship recycling standard.

This International Standard is based on the methodology known as Plan-Do-Check-Act (PDCA). PDCA can be described as follows.

— Plan: establish the objectives and processes necessary to deliver results in accordance with the organization's ship recycling policy.

— Do: implement the processes.

— Check: monitor and measure processes against recycling policy, objectives, targets, legal and other requirements, and report results.

— Act: take actions to continually improve performance of the recycling management system.

INTERNATIONAL STANDARD ISO 30005:2012(E)

Ships and marine technology — Ship recycling management systems — Information control for hazardous materials in the manufacturing chain of shipbuilding and ship operations

1 Scope

This International Standard provides guidance for the management, communication, and maintenance of information in an effective, standardized, and compatible manner in accordance with the requirements of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

MEPC.197(62), *Guidelines for the development of the inventory of hazardous materials*

SR/CONF/45, *Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009*

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in SR/CONF/45, MEPC.197(62), and the following apply.

3.1
upstream supplier
supplier which provides goods to a downstream supplier

3.2
downstream supplier
supplier which manufactures finished components, products or materials of any kind providing them to a customer for its final use or application

3.3
existing ship
not a new ship

3.4
new ship
ship for which

a) the building contract is placed on or after the date on which the Hong Kong Convention enters into force, or

b) in the absence of a building contract, the keel is laid, or which is at a similar stage of construction, six months or more after the date on which the Hong Kong Convention enters into force, or

c) the delivery is 30 months or more after the date on which the Hong Kong Convention enters into force

3.5
new installation
installation of systems, equipment, insulation, or other material on a ship after the date on which the Hong Kong Convention enters into force

3.6
hazardous material
HazMat
material or substance which is liable to create hazards to human health and/or the environment

4 Information management

4.1 General requirements

Information of hazardous material (HazMat) present on board ships is collected and managed in the form of an inventory of hazardous materials (IHM). Although the information gathering process differs between new and existing ships, in order to control the use of hazardous materials the person responsible shall

a) ensure that prohibitions and/or restrictions for the installation or use of hazardous materials listed in Appendix 1 of the Hong Kong Convention, SR/CONF/45, on board ships are considered, and

b) prohibit and/or restrict the installation or use of such materials on ships, whilst in ports, newbuilding shipyards, ship repair yards, or offshore terminals, and

c) take effective measures to ensure that ships comply with those requirements.

The control of hazardous materials information for ships shall be done by continuous maintenance and periodical checks of Inventory of Hazardous Materials (IHM). Each ship shall have on board a verified/certified Inventory of Hazardous Materials (IHM).

4.2 Inventory of hazardous materials (IHM) requirements policy

The Inventory of Hazardous Materials (IHM) shall consist of three different parts, namely Part I, Part II and Part III and be specific to each ship.

a) Part I lists materials contained in ship structure or equipment. Materials which include hazardous materials listed in Tables A.1 and A.2 are listed in Part I. Once prepared and certified, it shall be maintained during the whole life cycle of a ship.

b) Part II lists operationally generated wastes. Items listed in Table B.1 correspond to Parts II and III of the IHM. It shall be developed prior to or at the latest at final voyage, when a ship is destined to be recycled.

c) Part III includes potentially hazardous materials that are listed in Tables B.1 and B.2, in stores and items excluded from IHM Part I falling under the exclusions of Table B.2. It shall be developed prior to or at the latest at final voyage, when a ship is destined to be recycled.

The related hazardous materials that can be found on board, including their location and quantity, are grouped in Tables A.1 and A.2, and Tables B.1 and B.2.

1) Table A.1 materials contained in ship parts, equipment and systems shall be listed in the IHM Part I for new and existing ships (see Annex A).

2) Table A.2 materials contained in ship parts, equipment and systems shall be listed in the IHM Part I for new ships and new installations. For existing ships, listing of these materials is voluntary (see Annex A).

3) Table B.1 (potentially hazardous items) includes items which are potentially hazardous to the environment and/or human health and shall be listed in IHM Parts II and III during preparations for recycling (see Annex B).

4) Table B.2 (regular consumable goods potentially containing hazardous materials) comprises goods which are not specifically designed for shipboard applications and can also be widely found in normal household applications. Those items shall be listed in IHM Part III during preparations for recycling (see Annex B).

Table 1 — The Inventory — Categorization and applicability

Scope of the Inventory of Hazardous Materials (IHM)	Shipbuilding and operating	Preparation prior to recycling	
	Part I[b] Structure and equipment	Part II[ab] Operative wastes	Part III[ab] Stores
Table A.1[c] materials Mandatory for new ships and new installations, and existing ships	X		
Table A.2[c] materials Mandatory for new ships and new installations; voluntary for existing ships	X		
Table B.1[bc] Potentially hazardous items		X	X
Table B.2[c] Regular consumer goods potentially containing hazardous materials	List of exclusions		X

[a] Applicable only directly prior to recycling/last voyage.

[b] Operational relevant goods like lubricating oil, anti-seize compounds or grease, which are applied to keep normal performance of gear, equipment, and machinery present in small amounts do not fall under the scope of IHM Part I.

[c] Tables A.1, A.2, B.1 and B.2 correspond to Tables A, B, C and D in MEPC.197(62) and are reproduced here with permission.

The preparation of IHMs for new and existing ships differs.

For existing ships

a) IHM Part I shall be prepared under the responsibility of the shipowner at an early stage and at the latest directly prior to recycling of the respective vessel,

b) Table A.1 materials shall be listed in the IHM Part I for existing ships,

c) listing of Table A.2 materials is voluntary but should be listed as far as practicable, and

d) listing of Table A.2 materials is obligatory for any installation after the initial preparation of the inventory.

For new ships

e) IHM Part I shall be prepared at the design and construction stage by the shipyard and be delivered together with the ship, and

f) Tables A.1 and A.2 materials shall be listed in the IHM for new ships and new installations.

The maintenance of IHM Part I is required throughout the ship operational phase, especially during repair and conversions, when any of the IHM information becomes obsolete or inaccurate. Parts II and III are to be prepared prior to recycling.

4.3 Planning

4.3.1 IHM Part I for new ships

4.3.1.1 General

The shipyard is responsible for preparation of IHM. The shipowner shall include the requirement for IHM preparation for new ships in ship building contract with the shipyard.

Part I of the inventory shall be developed at the design and construction stage by the shipyard. The shipyard shall request information from its suppliers on their products' hazardous materials content by the material declaration (MD) form (see Annex C) and the supplier's declaration of conformity (SDoC) form (see Annex D). In order to provide this information to shipyards, suppliers must obtain information from their upstream suppliers and provide the requested information to downstream suppliers or customers.

Suppliers shall make a statement in the form of the MD and SDoC for all their supplied products and declare whether or not materials listed in Tables A.1 and A.2 are present in these products.

If the concentration of hazardous materials in a homogenous material is above threshold levels provided in Tables A.1 and A.2, as listed in the MD, the quantity of the hazardous material used shall be listed in IHM Part I, including information on where the homogeneous material is used in the equipment, system or machinery.

As far as possible, all forms required for preparation of IHM should be prepared, transmitted and processed electronically. Hardcopies should be avoided as far as possible due to the high number of documents to be handled.

NOTE Table B.2 is an overview of common appliances, which do not have to be considered in the MD, the SDoC, or in the IHM Part I. As the appliances are not specific to maritime equipment and can widely be found elsewhere, it is assumed that anybody involved in, e.g. recycling or waste treatment, is aware of the contained hazardous materials. Also these appliances are often covered and regulated by other international regulations, e.g. Restriction of Hazardous Materials (RoHS). This exclusion is only applicable as long as these appliances contain only typical components. Anything not falling under this exemption (e.g. specially designed electronic items) has to be documented as required for other materials and components. If found to provide more clarity, physical marking of such materials and components allowing easy identification of specifically designed parts not falling under this exemption can be used.

4.3.1.2 Documentation of otherwise required information

Volumes of pipes and machinery containing hazardous materials listed in Annex B, Table B.1, shall be documented separately to enable the shipowner to prepare Part II and/or Part III of the IHM prior to recycling.

4.3.1.3 Requirements for shipyards

The shipyard shall establish, implement and maintain procedure(s) for preparation of IHM Part I, including

a) identification of its suppliers of coating systems, components, equipment and structural elements and materials that are used during the construction of the ship,

b) requesting from these suppliers statements on whether or not the hazardous materials in Tables A.1 and A.2 are contained (MD),

c) ensuring that its suppliers provide complete and up-to-date information and, in case the threshold levels have been reached, providing additional information on the presence of the hazardous material like quantity (weight/volume) and location within the supplied goods (applicable for components) in the required form (MD),

d) ensuring that measures implemented by the suppliers for assuring accurate and up-to-date MDs are described in the SDoC and other required entries are correct,

e) ensuring that references from MDs and SDoCs are correct,

f) ensuring that the related forms are unchangeable and provided in electronic format (e.g. pdf files) from suppliers as shown in Annex C and Annex D; entries are to be made in original electronic form, no scans,

g) ensuring that, in cases where a supplier does not provide an appropriate SDoC electronically, a signed hardcopy of the SDoC, or a scan thereof, is made available and archived by the shipyard,

h) ensuring that the information on hazardous materials of Tables A.1 and A.2 is listed in the IHM when the concentration of them in an homogenous product exceeds the related threshold levels,

i) ensuring that only properly filled in MDs and related SDoCs are accepted,

j) directly utilizing the information from suppliers and considering calculations to determine the amount of materials used on board (e.g. for paints), and

k) ensuring effective and accurate preparation of the IHM, which will have to be certified by the flag state which the ship is registered with, or by a recognized organization (e.g. classification society) which is authorized by the flag state.

NOTE Until entry into force of the Hong Kong Convention, for any missing MD or SDoC, the presence of hazardous materials in the components and materials can also be investigated by applying the methods applicable for existing ships.

The documentation regarding the presence and/or absence of hazardous materials shall be prepared in the form of an MD, which must be accompanied by an SDoC. Responsibility of the provided information lies with the company which carries out the investigation and preparation of the MD and SDoC.

The structure for gaining information via relevant documents by shipyards from the suppliers and from their supply chain (upstream suppliers) is shown in Figure 1. The advantages of a standardized approach throughout supply chains is to ensure the reliability for the HazMat information by traceability. By using uniform forms within supply chains, electronic data processing becomes possible [e.g. by automatic combination of MDs prepared by upstream suppliers (sub-MDs) into Tier I MDs (main-MDs), less re-typing and conversion of information and forms is required, and information is handled more effectively.

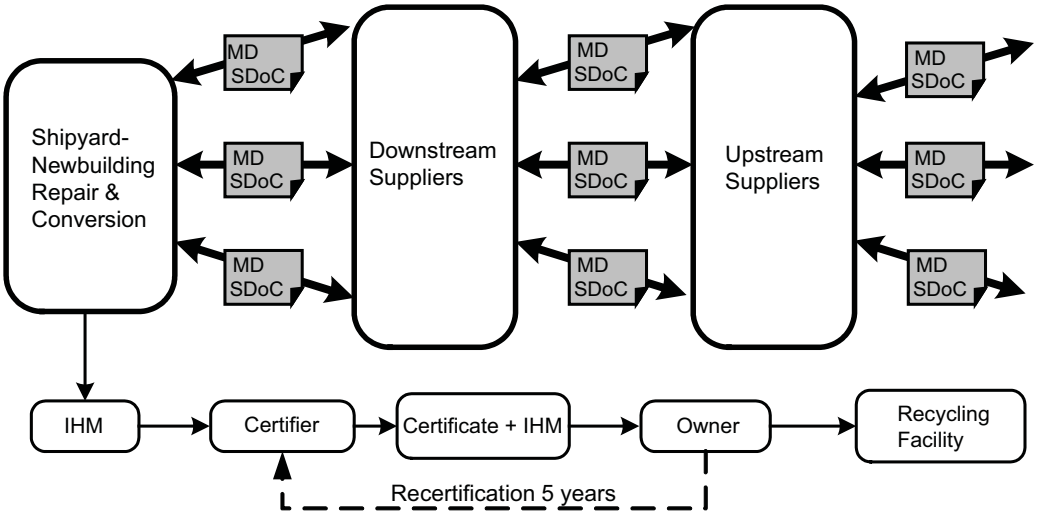

Figure 1 — Overview of information chains

4.3.1.4 Requirements for suppliers

4.3.1.4.1 Material declaration

Suppliers shall establish, implement and maintain procedure(s) to

a) ensure that for all their products supplied to the shipping industry, a statement on presence/absence of materials listed in Tables A.1 and A.2 is provided in the form of an MD,

b) constantly evaluate their products in a detailed way for providing accurate and up-to-date information on the presence of hazardous materials in the form of the MD,

c) identify their supply chain and require sub-MDs as a basis for preparation of own MDs,

d) ensure that up-to-date information is supplied by their supply chain,

e) identify missing information and establish a follow-up process for gaining missing information,

f) make sure that each homogenous material is evaluated and/or analysed,

g) support a modular data management for allowing an individual combination of information required due to product modifications,

h) clearly identify material in stock and related information from supply chains,

NOTE 1 In case of mass articles from different suppliers, evaluation of provided information and further utilization is appropriate when the highest content of hazardous materials of Tables A.1 and A.2 is further utilized.

i) provide a unique ID-number for identification of MD,

j) ensure that the related SDoC is identified in the MD,

k) ensure that all information (see Table 2) and forms required are available, maintained and provided electronically, and

l) ensure that the content of MD forms may not be changed or amended. Any changes or amendments by anyone other than the author of this form constitute a breach of copyright law.

NOTE 2 As an exemption, when a shipbuilder purchases more material or products than what is installed on one ship, the shipbuilder can fill in an “amount” column by themselves to specify what has been used for the particular ship, as the suppliers usually don't know if the delivered material/product is used for one or more ships.

Table 2 — Information required in MD

Entry	Description
Date of declaration	The preparation date of the report is written here
MD ID Number	Provision of a unique ID number for identification of MDs is necessary; see 4.3.1.4.3.1
Other information	Remarks are noted here
Supplier (respondent) information	Name, address, contact person, telephone numbers and SDoC ID No. is written in this part
Product information	Product name, product number (if available), product information, amount and unit of the product shall be provided
Material information	
Unit	It has to be stated which unit (whether 1 piece or 1 kg/m/m^2/m^3) of the mentioned product contains the amount of hazardous materials listed in Tables A.1 and A.2

Table 2 (*continued*)

Entry	Description
Tables A.1 and A.2	
Yes/No	Statement on whether the hazardous material present is above or below the threshold level; “Yes” or “No” has to be filled in If the entry is “Yes”, the following additional information is required Mass: Mass of hazardous material contained Unit: Dimension of the given mass (e.g. gram, kilogram, milligram) Information on where it is used: where exactly the hazardous material is used and/or additional information found to be helpful In case the hazardous materials of concern are not contained above the related threshold levels in Tables A.1 or A.2 a “No” entry is required

MDs shall be prepared by the suppliers even when no hazardous materials are contained above the related threshold levels.

NOTE 3 Unintentional presence of hazardous materials in the form of trace contaminants does not fall under the scope of MDs.

NOTE 4 Any spare parts containing materials listed in Tables A.1 and A.2 that are above the threshold levels are required to be listed in Part III of the inventory at a later stage by the shipowner, therefore they do not need to be accompanied by an MD or SDoC.

Volumes of pipes and machinery containing hazardous materials listed in Table B.1 shall be documented separately to enable the shipowner to prepare Part II and/or Part III of the IHM prior to recycling.

NOTE 5 For assuring a unified and effective product data management system, any relevant information within supply chains should be based on the same SDoC and MD forms as far as practicable. The forms are legal statements from suppliers and in case investigations are carried out, the source of information can easily be identified. This can be legally relevant.

NOTE 6 For downstream suppliers of complex machinery and equipment, it can be beneficial to provide separate MDs for major functional units. This can be achieved by definition of system boundaries and preparation of separate MDs accordingly. Customer specific MD preparation and also later maintenance of IHM during operational phase of a ship can be eased.

NOTE 7 In case of homogeneous material containing hazardous materials above the threshold levels listed in Table A.1 and/or Table A.2 received from the supply chain, the total amount of this material used for manufacturing / production is to be documented in the MD. The related concentration of the hazardous material can be provided as additional information under “Remarks”.

4.3.1.4.2 Supplier's declaration of conformity (SDoC)

Suppliers shall establish, implement and maintain procedure(s) to

a) prepare an SDoC for products supplied by them,

b) provide an SDoC efficiently to requesting customers,

c) ensure that required information is provided in the SDoC (see Table 3),

d) create a unique ID number for identification of SDoC and allow referencing to it by the MD,

e) ensure that the SDoC is signed by a representative; in case of lack of legally sound signature system, the electronic SDoC shall be "signed" by typing in the name of the representative and additionally a signed hardcopy of the SDoC shall be made available to the customer, and

f) ensure that all information and forms required are available, maintained and provided electronically.

Table 3 — Information required in SDoC

Entry	Description
SDoC ID number	A unique number produced by the downstream supplier/supplier for identification; see 4.3.1.4.3.2
Issuer's name	Name of the downstream supplier/supplier
Issuer's address	Complete address of downstream supplier/supplier
Objects of declaration	Specifying which products are covered by the SDoC
Statement of conformity	Standard text, no additional entry is required
Applicable regulations	Legal and organizational documents on which the information provided in the attached MD has been prepared and which assure correctness and control of information internally (at the downstream supplier)
Additional information	Special information, e.g. when the SDoC is covering only a certain range of serial numbers of the components listed under 3 in the SDoC, quality or environmental management system certificates and their validity, etc.
Signed for and on behalf of	Name of downstream supplier (or alternatively a contractor)
Place and date of issue	Place and date where this SDoC has been issued and signed
Name, function	Representative of downstream supplier/supplier in charge of preparation of the SDoC and MD
Signature	Signature of the before mentioned person
SDoCs shall be prepared by the suppliers also when no hazardous materials are reported above the related threshold levels in the related MDs.	
NOTE Any supplier is liable for the information provided. It is their obligation to decide if and to what extent the supply chain in the information gathering process is involved. In addition to the information on the presence/absence of hazardous materials, it is also beneficial to require an SDoC as a legal statement from suppliers.	

4.3.1.4.3 MD and SDoC numbering systems

For allowing easy identification of files and effective IHM preparation and maintenance processes in light of the number of files to be processed, a numbering system for MDs and SDoCs should be implemented.

4.3.1.4.3.1 MD ID numbering system

The name of an MD file should start with "MD" as indicator for the type of file and include information such as the name of the manufacturer, name of the product, type (serial number) of the product and preparation date:

file type_manufacturer_product name_product type_date

EXAMPLE MD_ISOMANU_CENTRIFUGALPUMP_CFP635_20090520

MD: Abbreviation for Material Declaration
ISOMANU: Abbreviated name of manufacturer
CENTRIFUGALPUMP: Product name
CFP635: Product serial number/type
20090520: Date

4.3.1.4.3.2 SDoC ID numbering system

The name of an SDoC should start with “SD” as indicator for the type of file and include information such as the name of the manufacturer and preparation date. The general information provided should be:

SD_manufacturer_*middle section*_date

It should be distinguished between an SDoC for a specific product, system, customer or manufacturer and the middle section of the SDoC ID depends on the scope, as explained in a) to d) below.

a) SDoC numbering for a specific product

In case an SDoC is prepared for a specific product, the middle section of the SDoC ID number should contain the name of the product and the type (serial number) of the product:

SD_manufacturer_product name_product type_date

EXAMPLE SD_ISOMANU_CENTRIFUGALPUMP_CFP635_20090501

SD: Abbreviated symbol of SDoC
ISOMANU: Abbreviated symbol of manufacturer
CENTRIFUGALPUMP: Product name
CFP635: Product serial number/type
20090501: Date

b) SDoC numbering for a specific system

When an SDoC ID number is provided for a specific system, the middle section of the SDoC ID number should contain only the system name, as the product type is not relevant:

SD_manufacturer_System_date

EXAMPLE SD_ISOMANU_LO-Purifier_20090323

SD: Abbreviated symbol of SDoC
ISOMANU: Abbreviated symbol of manufacturer
LO-Purifier: System name
20090323: Date

c) SDoC numbering for a specific customer

When an SDoC ID-Number is provided for all deliveries to a customer, the middle section of SDoC ID-Number should only contain the name of the manufacturer without any abbreviations for products or systems:

SD_manufacturer_customer_date

EXAMPLE SD_ISOMANU_CUSTOMER_20090110

SD: Abbreviated symbol of SDoC
ISOMANU: Abbreviated symbol of manufacturer
20090110: Date

d) SDoC numbering for a specific manufacturer

When an SDoC ID-Number is provided for all deliveries to a manufacturer, the middle section of SDoC ID-Number should only contain the name of the manufacturer without any abbreviations for products or systems.

SD_manufacturer_date

EXAMPLE SD_ ISOMANU_20090906

SD: Abbreviated symbol of SDoC
ISOMANU: Abbreviated symbol of manufacturer
20090906: Date

4.3.2 Management of IHM Part I during operation

4.3.2.1 Responsibilities of shipowners

In case of existing ships, the shipowner is responsible for the preparation of the IHM.

The shipowner is also responsible for maintenance of the IHM during the ship's lifetime. This requirement is independent of whether the IHM has been prepared for new ships or existing ships.

The shipowner shall establish, implement, and maintain procedures that ensure

a) the IHM are prepared for their fleet in service,

b) approved HazMat expert personnel are involved in the IHM preparation processes with sufficient knowledge and expertise in the field of HazMat identification, shipboard technology, and preparation of the IHM,

c) available and useful information is provided to the HazMat expert,

d) a designated person is responsible for

   1) organization of preparation of the IHM,

   2) initiation of the initial and periodical certification of the IHM by a recognized organization,

   3) informing the recognized organization in order to have an additional survey in case of a major conversion, repair or other occurrences,

   4) maintenance of the IHM,

   5) ensuring that new installations on board existing ships are accompanied by MDs,

   6) ensure conformity with the national/international legislation,

   7) preparation of Part II and Part III of the IHM prior to recycling, and

   8) making relevant information available to recycling company when recycling is envisaged.

Designated persons shall establish, implement and maintain procedures

e) to measure on a regular basis the characteristics of the IHM,

f) to ensure the maintenance and update of the IHM,

g) to establish and supervise a system to ensure updating of Part I of the inventory and document dates of changes, new or deleted entries.

NOTE In case of conversion, repair, or other modifications and maintenance, all changes relevant for the IHM have to be reflected in the existing IHM as well. It is the responsibility of the shipowner and related tasks could be assigned via contractual arrangements to the yards carrying out the work.

4.3.2.2 Responsibilities of HazMat experts

The HazMat expert is acting on behalf of the shipowner. The HazMat expert should establish, implement and maintain procedures

a) to ensure all available information on board is reviewed and evaluated in order to gain knowledge on the presence of the HazMats in Tables A.1 and A.2 (as far as practicable),

b) to prepare a visual/sampling check plan (VSCP) which will be the basis for on board checks (see Table 4),

c) to ensure the approval of VSCP by certifier of IHM prior to conducting any work on board the ship,

d) to perform on board checks according to VSCP and amend it if necessary,

e) to take physical samples, preferably from non-eye-catching points,

f) to inspect parts of the ship visually, where

   1) presence/absence of a hazardous material of concern is clear,

   2) assumptions are to be verified,

   3) taking of samples is not necessary,

g) to calculate the approximate quantity of HazMats in case they are present,

h) to document related activities and check results in the VSCP,

i) to prepare IHM by utilization of a completed VSCP.

The standard format for the IHM is provided in Annex E.

In case visual inspection does not prove that equal materials have been used, additional visual checks and/or physical samples shall be taken. The approved VSCP is to be amended by the HazMat expert accordingly.

Workers involved in sampling of asbestos shall be protected by appropriate personal protective equipment (e.g. dust-proof glasses, mask, clothes and gloves). Passengers, crewmembers and other persons shall be protected from exposure to hazardous materials when sampling takes place. Before taking of samples, the sampling point should be prepared to avoid contamination, e.g. by moisturizing for avoiding scattering of asbestos fibres, and suction and filtering equipment. Warning signs should be placed around the sampling point to prevent crewmembers or passengers from getting too close to the sampling work. Sharp tools should be used for taking of samples. Samples taken should be kept in air-tight cases. Sample points should be sealed after sampling has taken place.

In case hazardous materials are identified on board, which may directly threaten human health or the environment, e.g. versatile asbestos fibres, the body involved in certification of the IHM has to be informed as well as the onshore technical fleet management in written form by the HazMat expert. The appropriate form is provided in Annex F. The HazMat expert should only provide advice for related safety measures and, if applicable, how to reduce the possible adverse effects on human health and/or the environment. The HazMat expert may not prescribe remedial measures.

NOTE 1 Any item categorized as “unknown” in the VSCP during preparation of the VSCP can be classed as “Potentially containing hazardous material” when justification is provided (e.g. inaccessibility of location and no option for visual inspection or taking of samples) or when little or no effect on disassembly as a unit during later ship recycling and disposal operations can be assumed.

NOTE 2 For asbestos and organotin compounds, wide variation of estimated quantity is likely. In order to minimize variations and uniform application for estimation of approximate quantity, each HazMat expert should consider their calculation methods carefully.

NOTE 3 In case of homogeneous material containing hazardous materials above the threshold levels listed in Table A.1 and/or Table A.2, the total amount of this material present is relevant. The related concentration of the hazardous material can be provided as additional information under “Remarks”. It is not appropriate to multiply the concentration of the identified hazardous material with the total amount of material onboard, as this leads to the amount of the pure hazardous material, which is not relevant.

Table 4 — Example of VSCP

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11
Location: Zone, Compartment, System	Equipment	Object to Check (Component, Material), Parts of use	Material	Document Analysis Result	Check procedure	Sample No.	Pic. No.	Check Result	Approx. Quantity	Remarks
Bridge	Ceiling	Ceiling panel	Asbestos	Contained	Visual check		1	Contained	3 000 kg	—
Accom-modation area		Paint	Lead	Contained	Sampling check	P44-01	2	Contained	30 kg	—
Accom-modation area and E/R	Fire door in accom-modation area	Sealing	Asbestos	Unknown	Sampling check	P44-02	3	Contained	1 kg*15	—
Accom-modation area and E/R	Gyro compass	Gyro compass	Mercury	Contained	Visual check	—	4	Contained	0,5 kg	—
Engine room	Exhaust gas system	Lagging for exhaust gas pipe	Asbestos	Unknown	Sampling check	P44-03	5	Contained	5 ton	—
Engine room	Auxiliary boiler	Insulation	Asbestos	Contained	Visual check	—	6	Contained	500 kg	—
Engine room	Refrigeration plant	Refrigerant	CFCs	Not contained	Visual check	—	7	Not contained	—	—
Stern tube	Propeller shafting	Packing with hydraulic piping	Asbestos	Unknown	Assumption	—	8	PCHM	—	No access, relevant for ship operation
Poop deck	Mooring winch	Brake lining	Asbestos	Not contained	Sampling check	P44-04	9	Contained	10 kg	Assumption asbestos containing (experience)
Ballast water tanks	Ballast water tank	Paint	Lead	Unknown	Assumption	—	10	PCHM	300 kg	No sample taking, functionality affected

4.3.2.2.1 Analysing standards

Assurance of correct and comparable IHMs depends on the laboratory analysis methods used by or on behalf of the HazMat experts. Therefore the HazMat expert shall ensure that

a) samples are sent to laboratories that comply with ISO/IEC 17025,

b) analyses methods in relation to the relevant HazMats are based on International Standards as listed in Annex G, and

c) in case external laboratories are used, that prior to the analysing process the methods for analysis, including pre-analysis, are clarified.

4.3.3 Utilization of IHMs for planning of ship recycling activities

Prior to delivering a ship to a ship recycling facility, the shipowner should check that the IHM Part I is maintained and reflecting the current HazMat situation on board the particular ship.

Additionally, IHM Part II and Part III are to be prepared for providing a complete overview of materials to be delivered to the ship recycling facility. These parts can be prepared by shipboard crew. As Part II and Part III of the IHM contain materials to be listed, whose amounts and volumes are changing frequently, proper estimates of the volumes and amounts for the rate of delivery are appropriate as well.

The three Parts of the IHM shall be used for identification of an appropriate ship recycling facility. This can be done upon presentation of the certificates and authorizations held by the ship recycling facility. In case it is not authorized to handle all hazardous materials on board the ship, alternative solutions like prior removal can be investigated, if found to be useful.

The ship recycling facility should use all three parts of the IHM as provided by the shipowner for planning of recycling processes. The detailed planning shall be reflected in the ship recycling plan, taking into consideration that the information provided focuses on hazardous materials, specific measures, methods and, e.g. removal operations prior to other recycling work, which is to be planned and documented in the ship recycling plan accordingly. The recycling works are to be conducted and supervised to ensure that the planning according to the ship recycling plan is followed.

Besides removal, further details like storage, transportation, treatment, and disposal of all materials of the ship should be reflected, taking into consideration the management plans falling under the scope of ISO 30000.

4.4 Implementation and operation

4.4.1 Structure, resources, roles, responsibility and authority

The shipyard and shipowner shall ensure the availability of resources essential to establish, implement, and maintain IHM preparation and maintenance processes. Resources including human resources, specialized skills, organizational infrastructure, occupational health, safety and the environment, equipment technology, software, training, and financial resources shall be detailed within the company's management system.

4.4.2 Communication and control of documents

Shipyards, suppliers, shipowners, HazMat experts, and recycling companies should use software tools for collection, compiling, evaluation, exchange, and maintenance of information.

The forms required for exchange and compilation of information shall be used in an electronic format allowing electronic processing and tracking of changes once saved or signed. The information to be provided by upstream/downstream suppliers or gained through HazMat Experts activities shall be stored in a manner so that they are directly utilizable for the preparation of IHM and ship recycling plan preparation. The format shall be widely available, allowing filling in the forms shown in Annex C and Annex D as .xml files generated from PDF files.

4.4.3 Monitoring and measurement

Persons or companies using hazardous material shall check their abilities to avoid, substitute with non- or less harmful, and generally minimize the amounts and volumes of, hazardous materials used in products and materials.

4.4.4 Evaluation of compliance

Downstream suppliers, shipyards, shipowners and recycling companies shall establish, implement and maintain procedures for evaluating compliance of documents with applicable legal requirements, legislation, and regulations.

4.5 Management review and continual improvement

Shipyards, suppliers, and shipowners shall regularly evaluate and set targets for continuous improvements such as avoidance, substitution, or minimization of hazardous materials.

Annex A
(normative)

Items to be listed in the IHM Part I

In accordance with MEPC.197(62), the items in Tables A.1 and A.2 shall be listed in the IHM Part I. Tables A.1 and A.2 correspond to Tables A and B in MEPC 197(62) and are reproduced here with permission.

Table A.1

No.	Materials		Inventory			Threshold level
			Part I	Part II	Part III	
A-1	Asbestos		X			no threshold level
A-2	Polychlorinated Biphenyls (PCBs)		X			no threshold level
A-3	Ozone Depleting Substances	CFCs	X			no threshold level
		Halons	X			
		Other fully halogenated CFCs	X			
		Carbon Tetrachloride	X			
		1,1,1-Trichloroethane (Methyl chloroform)	X			
		Hydrochlorofluorocarbons	X			
		Hydrobromofluorocarbons	X			
		Methyl bromide	X			
		Bromochloromethane	X			
A-4	Anti-fouling systems containing organotin compounds as a biocide		X			2 500 mg total tin/kg

Table A.2

No.	Materials	Inventory			Threshold level
		Part I	Part II	Part III	
B-1	Cadmium and Cadmium Compounds	X			100 mg/kg
B-2	Hexavalent Chromium and Hexavalent Chromium Compounds	X			1 g/kg
B-3	Lead and Lead Compounds	X			1 g/kg
B-4	Mercury and Mercury Compounds	X			1 g/kg
B-5	Polybrominated Biphenyl (PBBs)	X			1 g/kg
B-6	Polybrominated Diphenyl Ethers (PBDEs)	X			1 g/kg
B-7	Polychlorinated Naphthalenes (more than 3 chlorine atoms)	X			no threshold level
B-8	Radioactive Substances	X			no threshold level
B-9	Certain Shortchain Chlorinated Paraffins (Alkanes, C10-C13, chloro)	X			10 g/kg
For materials in this table with no threshold level, quantities occurring as unintentional trace contaminants should not be listed in material declarations and in the inventory.					

Annex B
(normative)

Items to be listed in the IHM Part II and Part III

Table B.1 — Potentially hazardous items

No.	Properties		Goods	Inventory	
				Part II	Part III
C-1	Liquid	Oiliness	Kerosene		X
C-2			White Spirit		X
C-3			Lubricating Oil		X
C-4			Hydraulic Oil		X
C-5			Anti-seize Compounds		X
C-6			Fuel Additive		X
C-7			Engine Coolant Additives		X
C-8			Antifreeze Fluids		X
C-9			Boiler and Feed Water Treatment and Test Re-agents		X
C-10			De-ioniser Regenerating Chemicals		X
C-11			Evaporator Dosing and Descaling Acids		X
C-12			Paint Stabilisers/Rust Stabilisers		X
C-13			Solvents/Thinners		X
C-14			Paints		X
C-15			Chemical Refrigerants		X
C-16			Battery Electrolyte		X
C-17			Alcohol, Methylated Spirits		X
C-18	Gas	Explosives/ Inflammables	Acetylene		X
C-19			Propane		X
C-20			Butane		X
C-21			Oxygen		X
C-22		Green House Gases	CO2		X
C-23			Perfluorocarbons(PFCs)		X
C-24			Methane		X
C-25			Hydrofluorocarbon(HFCs)		X
C-27			Nitrous Oxide(N2O)		X
C-28			Sulfur Hexafluoride(SF6)		X

Table B.1 (*continued*)

No.	Properties		Goods	Inventory	
				Part II	Part III
C-29	Liquid	Oiliness	Bunkers: Fuel Oil		X
C-30			Grease		X
C-31			Waste Oil (Sludge)	X	
C-32			Bilge	X	
C-33			Oily Liquid Cargo Tank Residues	X	
C-34			Ballast Water	X	
C-35			Raw Sewage	X	
C-36			Treated Sewage	X	
C-37			Non-Oily Liquid Cargo Residues	X	
C-38	Gas	Explosibility/ Inflammability	Fuel Gas		X
C-39	Solid		Dry Cargo Residues	X	
C-40			Medical Waste/Infectious Waste	X	
C-41			Incinerator Ash[a]	X	
C-42			Garbage[a]	X	
C-43			Fuel Tank Residues	X	
C-45			Oily Solid Cargo Tank Residues	X	
C-45			Oily/Contaminated Rags	X	
C-46			Batteries (incl. Lead Acid Batteries)		X
C-47			Pesticides/Insecticide Sprays		X
C-48			Extinguishant		X
C-49			Chemical Cleaner (inc. Electrical Equipment Cleaner, Carbon Remover)		X
C-50			Detergent/Bleacher (could be a liquid)		X
C-51			Miscellaneous Medicines		X
C-52			Fire fighting closing, equipment		X
C-53			Dry Tank Residues	X	
C-54			Cargo Residues	X	
C-55			Spare Parts which contain materials listed in Table A.1 or Table A.2		X

NOTE This table corresponds to Table C in MEPC.197(62) and is reproduced here with permission.

[a] Definition of garbage is identical to that in MARPOL Annex V. However, incinerator ash is classified separately because it may include hazardous substances or heavy metals.

Table B.2 — Domestic and accommodation appliances

No.	Properties	Example	Inventory		
			Part I	Part II	Part III
D-1	Domestic and accommodation appliances	Computers, refrigerators, printers, scanners, television sets, radio sets, video cameras, video recorders, telephones, consumer batteries, fluorescent lamps, filament bulbs, lamps			X
This table does not include ship specific equipment integral to ship operations, which shall be listed in Part I of the Inventory. These items are excluded from being listed obligatorily in the IHM Part I. These items shall be listed in IHM Part III, which shall be prepared directly prior to recycling.					
NOTE This table corresponds to Table D in MEPC.197(62) and is reproduced here with permission.					

Annex C
(normative)

Material declaration form

Material Declaration

<Date of declaration>

Date	

<MD ID Number>

MD- ID-No.	

<Supplier (Respondent) Information>

Company Name	
Division Name	
Address	
Contact Person	
Telephone Number	
FAX Number	
E-mail Address	
SDOC ID No.	

<Other Information>

Remark 1	—
Remark 2	—
Remark 3	—

<Product Information>

Product Name	Product Number	Delivered Unit		Product Information
		Amount	Unit	

<Material Information>

This material information shows the amount of hazardous materials contained in 1 (unit: piece, m, m^3, litre etc.) of the product.

unit

Table	Material Name		Threshold Level	Present above threshold level	If yes, Material Mass		If yes, Information of Parts/Region of Use
				Yes/No	Mass	Unit	
Table A (Materials Listed in Appendix 1 of the Convention)	Asbestos		no threshold level	Yes			
	Polychlorinated Biphenyls (PCBs)		no threshold level	Yes			
	Ozone Depleting Substance	Chlorofluorocarbons (CFCs)	no threshold level	Yes			
		Halons		Yes			
		Other fully halogenated CFCs		Yes			
		Carbon Tetrachloride		Yes			
		1,1,1-Trichloroethane		Yes			
		Hydrochlorofluorocarbons		Yes			
		Hydrobromofluorocarbons		Yes			
		Methyl bromide		Yes			
		Bromochloromethane		Yes			
	Anti-fouling systems containing organotin compounds as a biocide		2,500 mg/kg	Yes			
				Yes			
				Yes			

Table	Material Name	Threshold Level	Intentionally added above threshold level	If yes, Material Mass		If yes, Information of Parts/Region of Use
			Yes/No	Mass	Unit	
Table B (Materials Listed in Appendix 2 of the Convention)	Cadmium and Cadmium Compounds	100 mg/kg	Yes			
	Hexavalent Chromium and Hexavalent Chromium Compounds	1 g/kg	Yes			
	Lead and Lead Compounds	1 g/kg	Yes			
	Mercury and Mercury Compounds	1 g/kg	Yes			
	Polybrominated Biphenyl (PBBs)	1 g/kg	Yes			
	Polybrominated Dephenyl ethers (PBDEs)	1 g/kg	Yes			
	Polychloronaphthalenes (Cl ≧3)	no threshold level	Yes			
	Radioactive Substances	no threshold level	Yes			
	Certain Shortchain Chlorinated Paraffins	10 g/kg	Yes			

This table is taken from MEPC.197(62) and is reproduced here with permission. The content and specifications of this form may not be changed or amended. Any changes or amendments by anyone other than the author of this form constitute a breach of copyright law.

Annex D
(normative)

Supplier's declaration of conformity form

Supplier's Declaration of Conformity
for Material Declaration Management

1) SDoC No.: _____

2) Issuer's name: _____

Issuer's address: _____

3) Objects of declaration: 1) _____

2) _____

3) _____

4) _____

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

5) Applicable Regulations or other stipulated requirements and documents

Document No.:	**Title:**	**Edition:**	**Date of issue:**

6) Additional Information:

Signed for and on behalf of: _____

_____
Place of issue

_____
Date of issue

7) _____ _____
Name, function **Signature**

Annex E
(informative)

Standard Format of the Inventory of Hazardous Materials (IHM)

INVENTORY OF HAZARDOUS MATERIALS

ISSUED UNDER THE PROVISION OF THE INTERNATIONAL CONVENTION FOR THE SAFE AND ENVIRONMENTALLY SOUND RECYCLING OF SHIPS (SR/CONF/45) AND THE RELEVANT GUIDELINE [RESOLUTION MEPC.197 (62)]

Name of Ship	IMO Number	Building Shipyard	Owner/Operator
XXXXX	9999999	XXXX Co., Ltd.	XXX Ltd.
Type of Vessel			
Gross Tonnage			
Date of delivery			

This Inventory of Hazardous Materials has been developed under the responsibility of “Ship Yard/Shipowner”.

Attachments:

1: Inventory of Hazardous Materials (mandatory)

2: Location Diagram of Hazardous Materials on board (optional)

3: Other

_____

Name and function of authorized person

_____

Place and Date, Signature of authorized person(s)

1.1 Paints and Coating Systems containing materials listed in Table A and Table B of Appendix 1 of the Guidelines

No.	Application of Paint	Name of Paint	Location	Materials (Classification in Appendix 1)	Appx. Quantity		Remarks
1	Anti-drumming compound	Primer, x xCo., xxprimer #300	Hull part	Lead	35,00	kg	
2	Antifouling	xx Co., xx coat #100	Underwater parts	TBT	120,00	kg	

1.2 Equipment and Machinery containing materials listed in Table A and Table B of Appendix 1 of the Guidelines

No.	Name of Equipment and Machinery	Location	Materials (Classification in Appendix 1)	Parts of Use	Appx. 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~~	~~Cadmium~~	~~Bearing~~	~~0,02~~	~~kg~~	
3	Diesel Engine, xx Co., xx #200	Engine room	Cadmium	Bearing	0,01	kg	Revised by XXX on Oct. XX, 2008
4	Diesel Generator (x 3)	Engine room	Lead	Ingredient of Copper compounds	0,01	kg	

1.3 Structure and Hull containing materials listed in Table A and Table B of Appendix 1 of the Guidelines

No.	Name of Structural Element	Location	Materials (Classification in Appendix 1)	Parts of Use	Appx. 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 lead containing plates

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.

Annex F
(informative)

Example of information form on hazardous conditions on board

To: _____

Ship's name: _____

IMO No.: _____

Please be informed that the hazardous material(s) _____

Is/are obviously present in the location or system _____
and pose a high risk to human health and/or the environment.

The following recommendations can be given by the hazardous material expert:

_____

_____

_____

This statement is part of the final report for the inventory of hazardous material certification.

_____

Place, date

_____

Signature

Hazardous material expert

Annex G
(informative)

List of laboratory analysis methods

Analysis methods to be applied for detection and quantification of hazardous materials of Table A.1 materials

Hazardous substances	Example for standardized analysis methods	Specific reporting information
Asbestos	Two methods in combination, Polarized Light Microscopy (PLM), electron microscope techniques and/or X-Ray Diffraction (XRD) as applicable.	The presence/no presence of asbestos, indicate the concentration range, and state the type when necessary.
PCB	Method: GC-MS (congener specific) or GC-ECD or GC-ELCD for applicable mixtures such as aroclors. Option 1: ICES7 (congeners 28, 52, 101, 118, 138, 153, 180). Option 2: US EPA 8082a test (19 congeners and 7 types of aroclor).	PCB congener, ppm per congener in sample. Additionally for Method 2: ppm per aroclor in sample.
Ozone Depleting Substances (ODS)	Gas Chromatography-Mass Spectrometry (GC-MS), coupled Electron Capture Detectors (GC-ECD) or Electrolytic Conductivity Detectors (GC-ELCD).	Type and concentration of ODS.
Organotin Compounds	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), including: Tributyl tins (TBT), Triphenyl tins (TPT) and Tributyl tin oxide (TBTO). As per MEPC.104(49) of IMO.	Type and concentration of organotin compound.

Bibliography

[1] ISO 10301, *Water quality — Determination of highly volatile halogenated hydrocarbons — Gas-chromatographic methods*

[2] ISO/IEC 17050-1, *Conformity assessment — Supplier's declaration of conformity — Part 1: General requirements*

[3] ISO/IEC 17050-2, *Conformity assessment — Supplier's declaration of conformity — Part 2: Supporting documentation*

[4] ISO 17353:2004, *Water quality — Determination of selected organotin compounds — Gas chromatographic method*

[5] ISO 22155, *Soil quality — Gas chromatographic quantitative determination of volatile aromatic and halogenated hydrocarbons and selected ethers — Static headspace method*

[6] ISO 23161, *Soil quality — Determination of selected organotin compounds — Gas-chromatographic method*

[7] ISO 30000, *Ships and marine technology — Ship recycling management systems — Specifications for management systems for safe and environmentally sound ship recycling facilities*

[8] VDI 3492, *Indoor air measurement — Ambient air measurement — Measurement of inorganic fibrous particles — Scanning electron microscopy method*

[9] VDI 3866 (all parts), *Determination of asbestos in technical products*

[10] DIN 38414-S20, *German standard methods for the examination of water, waste water and sludge — Sludge and sediments (group S) — Determination of six selected polychlorinated biphenyls by gas chromatography (S 20)*

ICS 47.020.01
Price based on 25 pages

This page deliberately left blank

British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards -based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at bsigroup.com/standards or contacting our Customer Services team or Knowledge Centre.

Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at bsigroup.com/shop, where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to bsigroup.com/subscriptions.

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

PLUS is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit bsigroup.com/shop.

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email bsmusales@bsigroup.com.

BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK

Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

Copyright

Useful Contacts:

Customer Services
Tel: +44 845 086 9001
Email (orders): orders@bsigroup.com
Email (enquiries): cservices@bsigroup.com

Subscriptions
Tel: +44 845 086 9001
Email: subscriptions@bsigroup.com

Knowledge Centre
Tel: +44 20 8996 7004
Email: knowledgecentre@bsigroup.com

Copyright & Licensing
Tel: +44 20 8996 7070
Email: copyright@bsigroup.com

bsi.

...making excellence a habit.™