HAZARDOUS MATERIALS ON BOARD
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According to the EU Ship Recycling Regulation, EU-flagged ships are required to have on board an Inventory of Hazardous Materials or IHM. This also applies to ships calling at EU ports and anchorages.

An IHM is intended to comply with regulations as prescribed by the IMO Hong Kong Convention. It is an inventory of materials present in a ship's structure, systems and equipment that may be hazardous to health or the environment.

An IHM on board primarily concerns a limited number of hazardous materials, such as asbestos, ODS, PCBs, PFOS, and anti-fouling, that need to be assessed. If technically feasible, heavy metals, radioactive components and some other substances should also be assessed.

The results of this survey may have quite an impact on the operation of the ships concerned. In the past, the IMO, as well as national and international organisations have already created strict guidelines on the use of various substances. For example, asbestos has been practically banned since 2002. Unfortunately, in practice, this ban has not made asbestos disappear. On the contrary, it is still widely used on both existing vessels and new ships.

Our aim is to raise awareness about these issues in a language everyone understands. We believe this booklet is a helpful tool for everyone working on ships. Our wish is that our sharing of knowledge leads to responsible management and dismantling of the materials concerned so that we are one step closer to a healthier and safer (working) environment.

Marc van de Poel
CEO van de Poel | Group, sustainable consultants
Secretary General International HazMat Association
All about IHMs

In 2009, the International Maritime Organisation (IMO) adopted the so-called Hong Kong Convention for the Safe and Environmentally Sound Recycling of ships. This convention takes a "cradle to grave approach" and will regulate the following:

- Design, construction, operation and preparation of ships so as to facilitate safe and environmentally sound recycling, without compromising safety and operational efficiency.
- Operation of ship recycling facilities in a safe and environmentally sound manner.
- Establishment of an appropriate enforcement mechanism for ship recycling.

Unfortunately, the Hong Kong Convention (HKC) has not yet entered into force. However, parallel to this convention, the European Union has drafted its EU Ship Recycling Regulation (EU SRR), which entered into force in December 2013. These regulations require EU-flagged ships to have on board an IHM on the 31st of December 2020 by the latest. This also applies to ships calling at EU ports and anchorages. The requirements of this IHM mostly align with the HKC, but some aspects differ. It is a mandatory inventory of materials present in a ship’s structure, systems and equipment that may be hazardous to health or the environment.

**What ship owners need to know**
The EU SRR requires that most ships must have an IHM on the 31st of December 2020 by the latest. This means that newly built ships as well as existing ships require an IHM of the Part I table as mentioned in the scheme below. Ships that are ready for recycling will require a complete inventory.

**Contents of an IHM**
A complete IHM consists of the following parts:

- **Part I**: Materials contained in the ship’s structure (table A + B)
- **Part II**: Operationally generated waste (table C)
- **Part III**: Stores (table C+D)

**Table A** Materials listed in Annex 1
**Table B** Materials listed in Annex 2
**Table C** Potentially Hazardous items
**Table D** Regular consumable goods potentially containing hazardous materials
**IHM objectives**

IHMs serve several objectives. The main objectives are:

1. To gain insight into and have at hand specific information about the presence of hazardous materials on board ships.

2. To safeguard the health and safety of workers and crew throughout the ship’s lifecycle and beyond, thus also during dismantling.

3. To prevent environmental pollution in and around shipyards, docks, shipbreaking yards and ship-recycling companies.

**Listed materials**

An IHM requires inspection and assessment of several (hazardous) materials and substances, which are listed in two tables: Annex 1 and Annex 2. A distinction is made between 'newly built ships' and 'existing ships'. The materials listed in Annex 1 have already been banned. This means that newly built ships will solely have to prove that these materials are not applied on board.

### Annex 1

<table>
<thead>
<tr>
<th></th>
<th>Material</th>
<th>Threshold Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Asbestos</td>
<td>0.1 %</td>
</tr>
<tr>
<td>A2</td>
<td>Ozone</td>
<td>No threshold value</td>
</tr>
<tr>
<td></td>
<td>Depleting Substances</td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>PCBs</td>
<td>50 mg/kg</td>
</tr>
<tr>
<td>A4</td>
<td>TBT in anti-fouling</td>
<td>2.500 mg total tin/kg</td>
</tr>
<tr>
<td>A-EU</td>
<td>PFOS</td>
<td>10 mg/kg</td>
</tr>
</tbody>
</table>

### Annex 2

<table>
<thead>
<tr>
<th></th>
<th>Material</th>
<th>Threshold Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>Cadmium and compounds</td>
<td>100 mg/kg</td>
</tr>
<tr>
<td>B2</td>
<td>Hexavalent Chromium and compounds</td>
<td>1.000 mg/kg</td>
</tr>
<tr>
<td>B3</td>
<td>Lead and compounds</td>
<td>1.000 mg/kg</td>
</tr>
<tr>
<td>B4</td>
<td>Mercury and compounds</td>
<td>1.000 mg/kg</td>
</tr>
<tr>
<td>B5</td>
<td>PBB</td>
<td>Non-Flammable</td>
</tr>
<tr>
<td>B6</td>
<td>PBDE</td>
<td>plastics 50 mg/kg</td>
</tr>
<tr>
<td>B7</td>
<td>Polychlorinated naphthalenes (more than 3 chlorine atoms)</td>
<td>Non-Flammable plastics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Paint &amp; lubricating oil 50 mg</td>
</tr>
<tr>
<td>B8</td>
<td>Radio actives components</td>
<td>No threshold value</td>
</tr>
<tr>
<td>B9</td>
<td>Short chain Chlorinated Paraffin (alkanes, C10-C13, chloro)</td>
<td>Non-flammable plastics 1%</td>
</tr>
<tr>
<td>B-EU</td>
<td>HBCDD</td>
<td>Non-flammable plastics 100 mg/kg</td>
</tr>
</tbody>
</table>
Impact on health, safety and environment

Of course, it is important to gain insight into where on board each hazardous material or substance is found. Even more important is to clearly explain why inspection makes sense. In other words: what is the impact of these materials on health, safety and environment on board during operation and recycling.

Asbestos

The most familiar hazard by far and the most common issue on board ships is asbestos. The inventory of asbestos forms a major part of an IHM and is time-consuming. Even though the use of asbestos was practically banned in 2002, it is still widely used and installed on board. Not only on board older ships but also on ships built after the official ban. This is partly because the maritime industry hasn’t always been aware of the fact that asbestos was used in over 3,500 products that seemed perfectly suitable for usage in the harsh environment on board vessels. Asbestos commonly exists in insulation, gaskets, brake linings, pipe lagging and other similar items and can thus be detected anywhere on a ship.

Asbestos will be covered in more detail further on in this booklet.

Ozone-depleting substances (ODS)

Gases, such as CFCs and halons. CFC gasses were very common in refrigerants on ships and halons used to be a popular gas in firefighting systems. In the past CFCs like R11 were also used as propellants in insulation foam.

The environmental effect of these substances is that they deplete the ozone layer. What impact they have on health and safety effect is less well-known. Inhalating large amounts of Freon may cause arrhythmias, and is lethal in some situations. Large quantities may also affect the nervous system, which in some cases results in fainting. When substances such as R11 come into contact with very hot surfaces, or with fire, they might decompose into highly toxic and corrosive gases such as phosgene.

Generally, the inventory of Ozone Depleting Substances on board vessels is not particularly complex. Refrigerants and extinguishing gases are usually well registered and thus easily checked based on the records.
High concentrations of PCBs may affect the brain, nervous systems, and reproductive systems and increase the risk of cancer.

Polychlorinated Biphenyls (PCBs)
PCBs are a family of chemicals that are good electrical insulators, chemically stable and fire resistant. They were therefore seen as excellent components in a variety of materials, such as any electrical system reliant. The production and use of PCBs is now banned in most countries however PCBs may still be found on board ships albeit in smaller quantities.

PCBs can be detected in certain oils, but also in plastics, paint and adhesives. If your ship was built after 1992, it is unlikely that PCBs are present. The investigation therefore primarily focuses on proving the absence of PCB contamination, by means of random sampling with so-called wipe samples. Only in case of positive test results, a source-based identification is performed.

TBT in antifouling
Tributyltin (TBT) is an umbrella term for a class of Organotin compounds that were used in antifouling paint on vessels. The IMO has banned the use of antifouling with Tributyltin in 2003. It is not likely that TBT is detected during the recycling of the current generation of ships, since these have undergone regular maintenance following the ban in 2003 - most bottom paints will thus have been replaced by now.

The investigation into the use of TBT-based antifouling is primarily based on available paint certificates and, if applicable, on dock reports. These certificates are of great value; they serve as proof of the removal of paint that possibly contained TBT, and of the application of a new TBT-free paint layer. Only in case of serious doubt about the accuracy and completeness of the reports, additional samples are taken.
PFOS

PFOS, short for perfluorooctane sulfonate, was used because of its dirt-repellent and fire resistant characteristics in various materials such as textiles and paper. It was also often used in extinguishing foam on many ships in the form of AFFF.

The best research approach for PFOS is still a point of discussion. The European Maritime Safety Agency (EMSA) has initiated further investigation in order to determine the best research approach for and inspection of PFOS.

16 17

The risks of Organotin compounds in antifouling are mainly environment related. The material is highly toxic to algae, fungi, and shellfish. When inhaled, it can cause dizziness, headaches, flu-like symptoms and chemical burns.

PFOS has certain toxic properties. Excessive exposure to PFOS increases the risk of cancer.
Assessment of Annex 2 substances
An IHM requires inspection and assessment of all materials mentioned in Annex 1. As far as Annex 2 is concerned: these materials only need assessing if technically feasible. This criterion is open to multiple interpretations. It is certainly practically feasible to proof the existence of substances such as Chromium, Lead and Cadmium in painting systems and batteries for example. It also does not require a major research effort to assess the presence of Mercury. The same goes for radioactive preparations in smoke detectors, flow indicators and so on. What it comes down to is this: inspecting and assessing the substances mentioned in Annex 2 is either relatively easy, or complex to an extend where inspecting and assessing is not practically feasible aboard an operational ship.

The list of to be assessed substances may look frighteningly long and complex, but is quite simple, if looked at this way:

It is important to know which applications generally contain substances the listed on the previous page.

Substances in paint
A number of hazardous materials can be found in a ship’s paint systems. The use of heavy metals such as Lead, Chromium VI, and Cadmium was common practice in the 20th century. These materials are therefore often found in paint used on ships. They can be released as fumes during paint removal or flame-cutting and possibly cause damage to both health and environment. Theoretically, materials such as PCB, CP and PCN can also be found in paint, but it is highly unlikely that either substance is found in paint layers applied after the 1990’s. For this reason, surveys are normally limited to proving the presence or absence of these heavy metals, and to proving the absence of PCB by using wipe-samples. Specific types of paint will be tested for asbestos.

Radioactive substances and contamination
Radioactive components installed on board are generally well-documented and easy to report in an IHM. It is therefore advised to include these hazardous materials in an IHM survey.

Inspecting radioactive contamination resulting from cargo or other processes is a whole different matter. We recommend that any investigation into radioactive contamination is executed by properly qualified agencies and therefore not to include this as part of a regular IHM.

Plastics
Plastics may be found in the ship's construction; as fibreglass and laminated structures, siding, piping, insulation, flooring, carpets, fabrics, paints and finishes, adhesives, electrical and electronic components and so on. Plastics are an important waste stream, and all plasticizers and flame-retardants, including PFOS, can be found in these plastics.

E-waste
All the items mentioned in table B and most of the items mentioned in table A may be found in E-waste. According to MARPOL electronic cards, gadgets, equipment, computers, and printer cartridges can be defined as E-waste. We believe that everything that is connected to the ship's electrical installations may be regarded as E-waste.

The health and safety risks resulting from the application of flame retardants and plasticizers in E-waste and plastics under normal operational conditions are negligible.

Since MARPOL already regulates the reduction of environmental damage caused by E-waste and plastics in a sufficient way, and considering the extent in which plastics and E-waste are found on board, we believe that extensive and full reporting of the Annex 1 and 2 substances in plastics and E-waste is practically infeasible.
WHAT WE OBSERVE IS NOT NATURE ITSELF, BUT NATURE EXPOSED TO OUR METHOD OF QUESTIONING.

WERNER HEISENBERG
Asbestos is a group of naturally occurring, fibrous-like silicates. It is gained in open pit mining in countries all over the world.

Types
There are two different types of asbestos: serpentine and amphibole. Both types have a different structure. Serpentine has a curly and fibrous structure, whilst the structure of amphiboles is straight and needle-like. Generally, a higher health risk is granted to amphiboles, than to serpentine.

Varieties
There are five different varieties of amphibole: Amosite (brown asbestos), Crocidolite (blue asbestos), Tremolite, Anthopyllite, and Actinolite.

Chrysotile asbestos (white asbestos) is the only serpentine. Serpentine is the type of asbestos that is most commonly found on board vessels.

Properties
- Asbestos fibres have a giant strength
- They bear high temperatures and acid extracts
- Asbestos is highly non-conductive for temperature, sound and electricity
- Fibres are insoluble in water and most others agents

Asbestos fibres are nearly indestructible!

These special properties make asbestos an ideal product to be used in the maritime and off-shore industry. Asbestos is often used in all kinds of construction materials, installations and equipment.
Asbestos in products
Every day we are exposed to asbestos, somewhere somehow. More than 3500 different products are known to contain asbestos. These products are divided into two main groups:

1 Non-friable asbestos applications
This group consists of materials with firmly bound asbestos fibres. Asbestos fibres are unlikely to be freed, as long as there are no mechanical operations and as long as there is no weather damage. Examples of this group are: asbestos cement, bitumen and vinyl.

2 Friable asbestos applications
This group consists of materials in which structure the fibres are not bound. These fibres are mixed with other substances. Fibre emission can occur spontaneously. For example, a light touch is enough to increase the fibre concentrations in the air. Examples of such materials are asbestos board, asbestos paper, asbestos textiles, asbestos pipe insulation and sprayed asbestos.

This is an example of non-friable materials, asbestos containing vinyl floor tiles and asbestos containing bituminous coating.

This is an example of extremely friable asbestos fibres. Especially in countries with no ban on asbestos, we find this kind of dramatic insulation on hot water pipes.
YOU CAN ONLY SEE IT, WHEN YOU GET IT

JOHAN CRUYFF
Only laboratory research can point out with certainty whether or not a product contains asbestos. However, specific characteristics of the product and the reason why a product is used, indicates whether the product contains asbestos.

**Product characteristics**

Asbestos is known to have a fibrous structure. However, the fibrous structure alone doesn’t give certainty about asbestos. Also non-asbestos products can have a fibrous structure. Therefore, sampling and laboratory analysis is always needed.

**Recognising asbestos**

The fibrous structure of a material is not always visible. Often, the material is hidden in a product or application.

*This photo shows a detail of a damaged asbestos board sandwich panel. The fibrous structure is clearly visible when the material is opened or damaged.*

**Why asbestos containing products are used**

The function of a product is another indication of this product potentially containing asbestos. Asbestos has valuable properties that, in many cases, are the reasons why asbestos is used.

Firstly, asbestos is heat resistant and insulating. Insulation can be used to keep heat inside, but also to protect the surrounding area against heat. This makes asbestos popular for use in all different kinds of materials that are used for fire protection such as: sprayed asbestos used on engine casings, materials in fire compartments, fire proof doors, sheeting of electrical cables, sandwich panels in corridors, gaskets in boiler casings or exhaust pipes, heat protecting mounting panels on electrical heaters, heat protection around
Asbestos insulation appears in different forms like calcium silicate shells, asbestos rope and asbestos fabric.

Secondly, asbestos is strong and durable. Therefore, it is frequently used in friction materials, such as brake pads in lift engines or purifiers. It can also be found in brake linings. For example in mooring, crane or other deck winches or windlasses.

Examples

Asbestos is often used in so called marine board. The asbestos shown on this picture was found in a fire proof compartment.

Asbestos used inside a fire proof door.

Asbestos is used in many different forms in the electrical equipment on board. In this photo, asbestos cement is used as a heat resistant panel. It is used to protect the wall against the release of heat produced by the electrical heater. In this case the material is easy to access. However, it is not always possible to discover asbestos applied in electrical equipment. For example, heat resistant insulation materials used between the copper windings on stators or rotors inside electric motors will not be found when the ship is in operation.

Another example of asbestos used in the electrical equipment. Here asbestos putty is used as a watertight seal on a junction box.

Asbestos is used in the concrete mixture that was used as sealing. Generally, asbestos can be expected in cable penetrations like this. It protects the cable against fire.

Asbestos rope is used as stuffing in the deck penetrations of the exhaust pipes.
Many people do not know that asbestos is applied in caulking, adhesives and paints. On board ships these kinds of materials are often used. Asbestos sealant is often found as a flexible sealing material or as putty on switches and junction boxes. Asbestos is also frequently used in the glue of floor tiles. In this photo asbestos is used in bituminous coating. Because of its strong fibres, asbestos improves the quality of the bituminous coating.

In this picture asbestos cloth is used on the exposed parts of the exhaust pipe of a life boat. The cloth protects people against contact burn.

Insulating mattresses are often found on board vessels, for example in the accommodation area and the engine room. Sometimes asbestos is used in the yarn only.

This photo shows a copper gasket with friable millboard inlay. Asbestos is used because the millboard inlay has to be flexible (compressible) and heat resistant.

Asbestos friction material is used in brake linings in deck winches because of its strong and durable character.
Is asbestos always used for a reason?
No, it is not always clear why asbestos is used. Asbestos is used in all kind of materials, but sometimes there is no special reason. Many of these materials are still purchased worldwide. Thus you can find remarkable applications of asbestos.

Asbestos is also often applied in locations where there is no need for it. That’s why asbestos can be found on locations where you would never expect it.

Sometimes the amount of asbestos is too low to be functional. In that case it is difficult to understand why the manufacturer added asbestos to their product.
The world is not dangerous because of those who do harm but because of those who look at it without doing anything.

Albert Einstein
Health

Asbestos is a natural product. However, this does not mean that dealing with asbestos comes without risks. Meanwhile, when someone is exposed to asbestos, this does not automatically put him in danger.

Asbestos fibres are found everywhere in the atmosphere. It is true that inhaling asbestos fibres can be a health hazard. But that is not a reason to panic. The facts below point this out:

• Only respirable asbestos fibres can be a health hazard.
• Only fibres of a certain length and diameter can be a health hazard.
• Whether or not there is a health hazard depends on the concentration of fibres in the air and the duration of the exposure.
• Concentrations in the air are often too low to be a health hazard.
Harmful fibres

Which fibres are a health hazard? In a nutshell, the thin, long fibres can cause cancer. Durable and fissionable fibres constitute the highest risk.

Fibres that have the following characteristics are potentially dangerous:
- length minimum 5 microns
- diameter up to 3 microns
- length - diameter ratio minimum 3:1

It is important to know that fibres with these characteristics are not visible to the naked eye. To illustrate: these fibres are five times smaller than most human body cells and are about the size of a bacteria.

Amphiboles and chrysotile

A greater health hazard is granted to amphiboles (needle shaped) than to chrysotile (serpentine, curly shaped). However, inhaling curly shaped serpentine is not without risks either. Serpentines can also cause cancer and possibly other health problems.

Concentration and exposure

The health hazard depends on the concentration of asbestos fibres and the period of time that someone has been exposed to asbestos. According to EU directive (2009/148/EC) it is acceptable when someone is exposed to less than 0,1 respirable fibres per cm$^3$ on average (100,000vz/m$^3$), in a period of eight hours, every working day during a working lifetime. Not all European countries follow this directive. In some Western European countries requirements are stricter, whilst some other countries have no criteria at all.

Diseases

It is commonly known that asbestos exposure can lead to various diseases. These include:
- Asbestosis: limited lung capacity due to pulmonary fibrosis
- Mesothelioma: stomach, lung, or pleural cancer.
- Asbestos related lung cancer
- Pleural plaques: reduction of the lung function due to the thickening of the pleura.
KNOWLEDGE IS POWER.
INFORMATION IS LIBERATING.
EDUCATION IS THE PREMISE OF PROGRESS,
IN EVERY SOCIETY,
IN EVERY FAMILY.

KOFI ANNAN
Ten questions about asbestos

Is there a list of asbestos containing materials?
There are lists of asbestos containing materials, however no such list is complete. The problem is that these lists differ substantially among one another, they are incomplete, and the uninitiated have difficulty using them. Furthermore a list can never include with certainty all asbestos containing materials. From time to time new asbestos containing materials, that had not been discovered before, are found. At the same time, listing a material does not automatically mean that all materials of that kind contain asbestos. Even when inspected by an expert, laboratory research is usually required to determine with certainty whether a material contains asbestos.

Why is asbestos used on ships?
Asbestos is used on board for more than one reason. The main reason is the special qualities of asbestos, for example heat, sound and electrical insulating, and fire proof. These qualities are especially useful on board ships. In many countries asbestos is not an issue and it is not prohibited. Instead, asbestos containing materials are widely available. The materials are relatively cheap, another reason for their popularity. Asbestos is therefore still purchased and installed on board, despite of its harmfulness and although it is officially banned by SOLAS.

What is a good alternative for asbestos?
There is not a single answer for this question. An alternative is available for almost every application. For example, in modern fire doors, mineral wool is used frequently to protect against fire. Which alternative is best, mainly depends on the application. To be sure about your choice, you can ask the product supplier for advice.
Why can asbestos be a health threat?
Asbestos has a fibrous structure. Bundles of fibres split easily in length into thin, needle-like fibres. These microscopic fibres can pierce the lungs whilst inhaling. The danger of asbestos lies in the inhalation of fibres. The fibres are invisible, they can end up in the lungs without noticing. Some of these fibres will stay inside your body forever. These fibres may cause health problems, such as fatal lung diseases.

Can all types of asbestos cause diseases?
Generally different health risks are granted to different types of asbestos. There is no unambiguous standpoint yet about the precise difference in danger between the types of asbestos. However, it is generally acknowledged that all types of asbestos may cause diseases.
Can the asbestos situation for sister ships be considered as identical?
No. Sister ships can use different materials on board. Differences between two sister ships can be caused during any stage of the life of a ship. For example during repairs, reconstruction or maintenance.

Can one see the difference between brown, blue or white asbestos?
Asbestos is rarely used as a pure product. Most of the time, it is used as an additive. This can be in products such as cement, paper, textiles and adhesive sealants. Once asbestos is processed in a product, you can’t identify the colors. The only way to be sure which type of asbestos a material contains is by laboratory examination of a sample using an optical ‘polarizing’ light microscope.

Does an asbestos free certificate mean that there is no asbestos on board?
As long as asbestos is produced it can be found everywhere. During the past ten years of our experience on board we found asbestos in almost every ship we investigated, including cases where the yard issued an asbestos free certificate. Even if the ship is built under strict regulations, asbestos containing materials can be added to the ship. Asbestos is not only added during the building of the ship, but can also be added during maintenance, modifications and when installation components are replaced. Consequently, we found asbestos on both old ships and newly built ships, with or without an asbestos free certificate and on many different continents.
What should be done if one is not sure whether there are asbestos containing materials on board?

It is always better to be safe than sorry. If you are not sure whether a material contains asbestos, assume that it does. This means: never break, work on, or damage suspected materials in any way, nor disturb dust around damaged materials. Meanwhile ask an expert to take samples for laboratory research.

Is it dangerous for non-experts to remove asbestos?

The risks of removing asbestos depends on the type of material that you will remove, how it is installed and on how you remove it. Keep in mind that not only the remover might be at risk, but also others. Above all, risks are not limited to the period in which the removal is done. After the asbestos is removed there can be a considerable concentration of asbestos in the air. Therefore always let the asbestos be removed by a certified asbestos removal expert.
DIG THE WELL BEFORE YOU ARE THirsty.

Chinese Proverb
The European Maritime Safety Agency recently created the IHM best practice guidelines. These guidelines provide ship owners with practical guidance for the planning and execution of IHMs on their ships. The best practice guidelines recommend hiring HazMat experts for the drafting of the IHM report.

**Which ships require an IHM?**

All ships calling at EU-ports or anchorages, or flying a European Union member state’s flag are obliged to have an IHM. Ships smaller than 500 GT and state owned vessels are excluded from this regulation.

**IHM, when?**

Newly built ships and ships ready for demolition are already obliged to have an IHM. The deadline for existing ships is the 31st of December 2020.

**Validity period of an IHM**

The initial IHM report is valid during the ship’s entire lifecycle. However, IHMs need maintenance now and again, just like a ship itself. These incremental updates should include any new installations on board the ship.

**IHM in relation to other regulations**

New installations of asbestos, ODS, TBT, PCB and PFOs are already prohibited worldwide. Besides this, various national regulations of the flag state - which might impose other quality standards on the ship – should be taken into consideration. Regarding asbestos applications, SOLAS regulations
apply since 2002. If asbestos is found on a ship, these SOLAS regulations require the implementation of an asbestos management plan, which may result in the removal of the asbestos applications.

The IHM process
The three key requirements for a high quality IHM are: information, expertise, and experience. Any of the listed substances can be found in most of the ship’s structure, systems and equipment. It is the HazMat expert’s task to find any of the listed substances, based on the available ship records, visual aspects and sample gathering - a tough job when you realise that there is a 3,500-items long list of applications that can contain asbestos, let alone the fact that many substances are very similar to asbestos.

A small but very important part of the survey comprises of desk research. The ship’s records are studied for any sign of possible application of hazardous materials. This results in a Visual/Sampling Check Plan (VSCP) that is tailored to your ship. Most information however is gathered during the on-board survey. During this on-site inspection, all the information needed to draft the final report, is being documented in the tailored VSCP.

How does the survey affect the ship’s regular operations?
The on-board survey generally takes about 8 to 16 hours, depending on the size and complexity of the ship. The HazMat experts work independently and perform negligible destructive activities. The only assistance they might require is help with opening tanks, closed off spaces, or accessing and ventilating confined spaces.

Why ship owners should start planning the IHM now
The number of experienced and certified HazMat experts is limited as is the time that is left until the deadline on the 31st of December 2020. Rough estimates put the number of ships that need to be inspected by a class certified agency between 2017 and the 2021 at 30,000!
This requires good planning and some flexibility. IHM experts spend quite some time on travelling to and from the ships concerned – and sometimes on waiting for ships to arrive. The sooner you start planning your IHM, the better and more efficient the performance - and your results.
Questions about this book? Contact m.a.r.c bv!

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This pocket book is an initiative of m.a.r.c bv: maritime asbestos and recycling consultant. m.a.r.c bv is a worldwide operating training and consulting agency on hazardous materials on board ships and on safe and environmentally sound ship recycling. The company conducts asbestos and HazMat surveys, advises about asbestos and other hazardous materials on board and provides several related training seminars.