

Asbestos thought to be a problem of the past it is still found in new ships

Version 4.0

INTRODUCTION

Cradle to Tomb, the new regulatory challenges facing ship owners and their responsibility for the hazardous materials control on new and existing ships

In various industries hazardous materials are listed to be controlled, for example Asbestos, which is one of the most harmful materials has been regulated and restricted in most countries for the past 30 years.

The Shipping industry is also playing an active part in the hazardous materials control globally. The newly adopted Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 has restricted 13 hazardous substances. Asbestos is on the top of this regulated hazardous substance list.

In an effort to analyze the economic and legal risk of hazardous materials onboard ships we have compiled data from over 200 new and existing ships, we will also highlight the relevant impacts and responsibilities for shipowners, shipyards and charters.

LEGAL RESEARCH

Shipping is a global industry with many stakeholders and because of the international business the shipping industry is governed by not only the individual flag states and the international convention scheme to regulate and enforce the legal requirement globally.

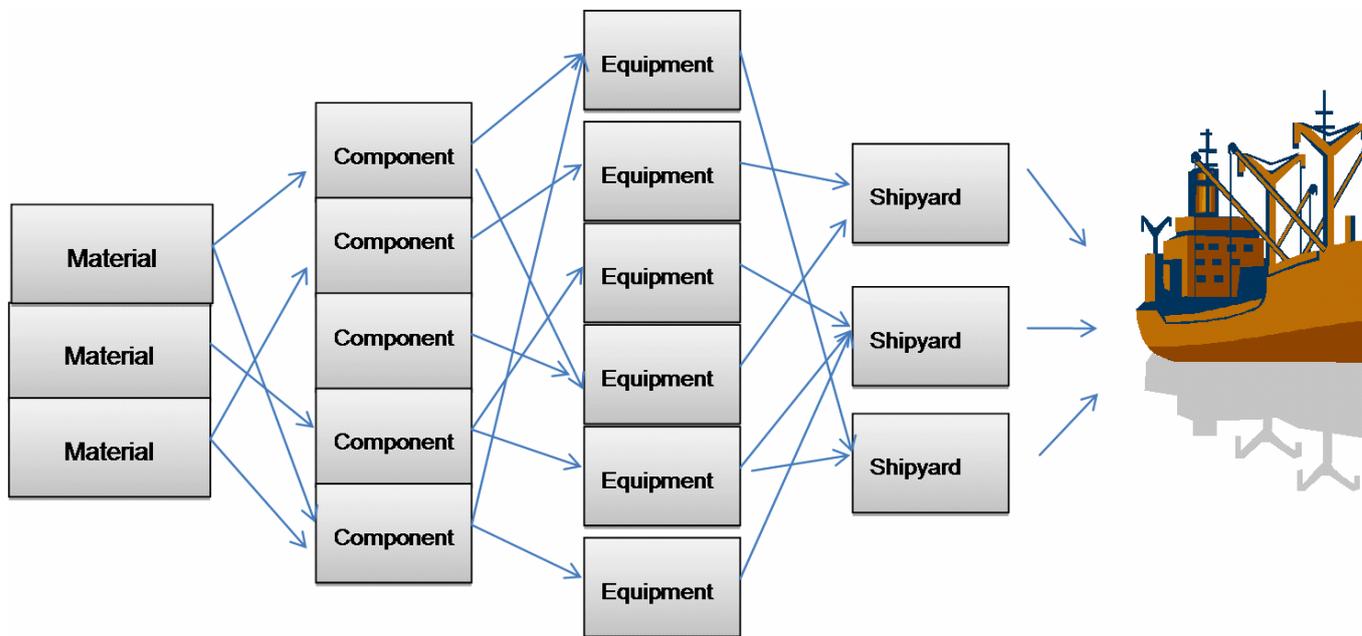
In the last 10 years, Hazardous materials like the Asbestos, Ozone Depletion Substances and Toxic organic tin compounds are regulated by SOLAS, MARPOL and the AFS convention. However until the adoption of Hong Kong convention, there are no clear legal responsibilities for the stakeholders, with regard to how to control the hazardous materials onboard during the lifecycle of ships, which is also described as “From Cradle to Tomb” .

----- “From Cradle to Tomb” -----

Legal framework of Life-cycle Management Responsibilities of Hazardous Materials Described by Hong Kong Convention

Control HazMat during Ship life-cycle	Newbuilding	Delivery	Operation	Recycling
Suppliers of product	X	X (limited Guarantee)	X (limited Guarantee)	
Newbuilding yard	X	X (limited Guarantee)	X (limited Guarantee)	
Shipowner			X	
Ship charterer			X (subject to the descrip of charter)	
Ship repairing yard		X (limited Guarantee)	X (limited Guarantee)	
Ship recycling yard				X

Hazardous Material Risk Amplified during the Newbuilding Process



Risk

The IMO has progressive legislation in place stating that the Inventory of Hazardous Materials (IHM) should be prepared, maintained and certified from the beginning to the end of the life of the ship.

CHALLENGES BEING FACED BY THE INDUSTRY

It would always be easier to say there should be no hazardous materials built into a ship than to prove the legal compliance with due diligence. There are actually huge amounts of work to be done for the whole industry to prove the compliance condition of hazardous materials that are present on ships.

Some serious cases have happened during last 3 years between the supplier, newbuilding yards, the ship owners and the charterer.



Caroline Essberger12

This 8,400 dwt tonne chemical Tanker *Caroline Essberger* was built in the Eregli shipyard in Istanbul, Turkey in 2009 for German Shipowner John T. Essberger. She was found to be 'riddled with asbestos in thousands of gaskets and other seals'. The asbestos was only found several months after the ship was built and all the items had to be replaced. It was estimated that the cost of replacement of the asbestos parts was in the order of 10% of the original cost of the ship, although the work was carried out at Essberger's own facilities. (source: Lloyd's List)

There are more serious cases than the above "Caroline Essberger 12" that have been detected

onboard new construction ships just 2-3 months before the delivery. In 2012, a ship in a Far East yard was found containing asbestos within over 40,000 M² of A-60 insulation and sound-proofing insulation. In 2013, another ship was identified to have most of the cable penetrations containing asbestos. In both the above cases, the shipyard and the shipowner all suffered the big loss of removing the wrongly installed asbestos and delay of delivering the ship.



Picture: Insulation material detected containing asbestos from newbuilding ship



Picture: Cable penetration detected containing asbestos from newbuilding ship

According to ship asbestos survey results released by CTI marine, who are the only UKAS accredited organization authorized to perform marine asbestos surveys, 97% of Cargo ships and almost 86% of offshore ships were found to contain asbestos. Most of them were delivered after year 2002, when SOLAS first mandatorily restricted the use of asbestos.

Ship type	Total inspection	Vessel found ACM	ACM vessel rate	Sample checkpoints/inspected ship	Asbestos sample/inspected ship
Cargo ship	70	68	97.1%	122	8.7
Offshore ship and facility	30	26	86.7%	122	12.1

(Source: CTI Marine Service, www.cti-ship.com)

The Netherland flag state recently inspected 11 foreign ships visiting their ports and found 10 ships containing asbestos. The results showed that, despite the fact asbestos was prohibited from 1 January 2011 pursuant to the SOLAS regulations, this clear and unambiguous prohibition of ACMs, still has not stopped asbestos still regularly encountered in various locations on board new ships. During inspections asbestos has been found in such places as fire blankets, insulation materials, types of sealants, friction material for brakes, wall and ceiling coverings, cables, cords, electric fuses etc. Moreover, ships that were originally free of asbestos appear to have ACMs on board as a result of repairs at shipyards and/or the purchase of spare parts at a later stage.

(Source: http://www.ilent.nl/english/merchant_shipping/port_state_control/asbest/)

Other hazardous materials are continuously detected onboard the newbuilding vessels with the implementation of Hong Kong Convention. Recently over eight times more concentration of heavy metals were identified onboard one newbuilding offshore pipelaying vessel which has claimed to be Green and Environmentally compliant.



Picture: Cooling chambers material found containing over concentration of ODS as required



Picture: Painting found containing eight times more concentration of Lead as required



Picture: Cable caulk material found containing over concentration of Hexavalent chromium as required

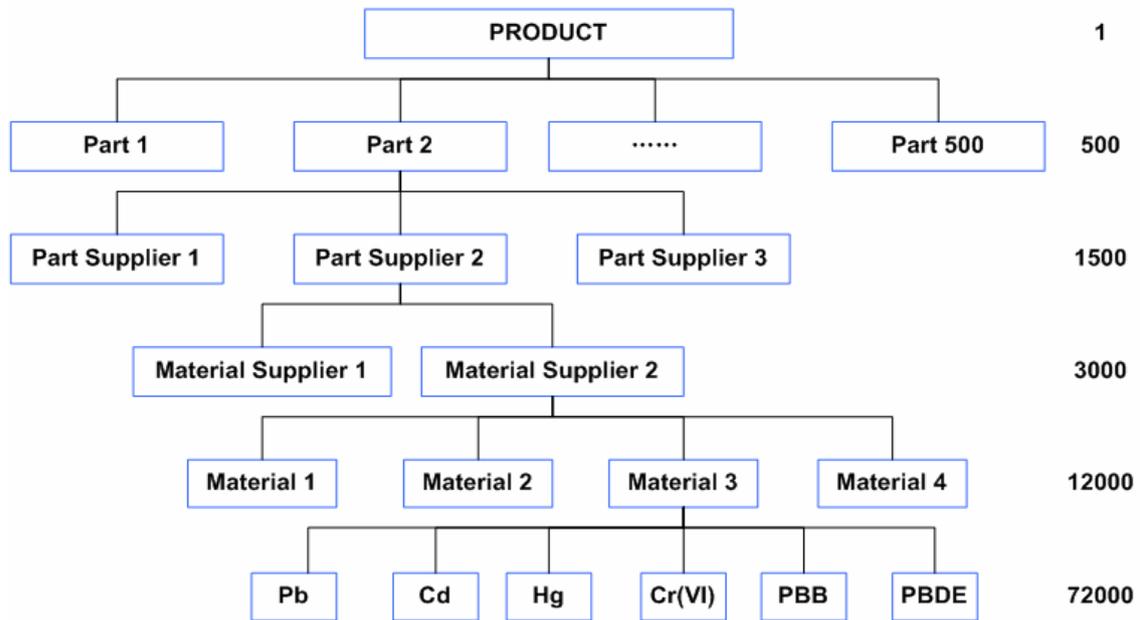
The credibility of the hazardous material compliance declaration, submitted by the newbuilding shipyard need to be verified with more detail. As a consequence the shipowners are facing the legal risk of their ships containing hazardous materials onboard, which is potentially harmful to people' s health and the environment.

ACTIVE CONTROL APPROACH AND RISK MANAGEMENT OF HAZARDOUS MATERIALS

The failure of the above cases is due to the loose and lack of quality control procedures within the supply chain during the newbuilding process. To date there is no requirement for material suppliers to have their products certified asbestos free, only a statement stating the materials are asbestos free!

How to control the subcontractors and subcontracted supply? The shipyard will need to know about all the materials that are being provided externally that are to be placed on the ship. The only way to control this process is through the supply contract, which in almost all cases will be with the shipyard. Therefore, contracts will need to recognise that all relevant materials, locations and quantities have to be identified and the information controlled and verified. (Guide to the IHM, 2014, LR)

Supply chain model of a 500-parts product onboard the ship



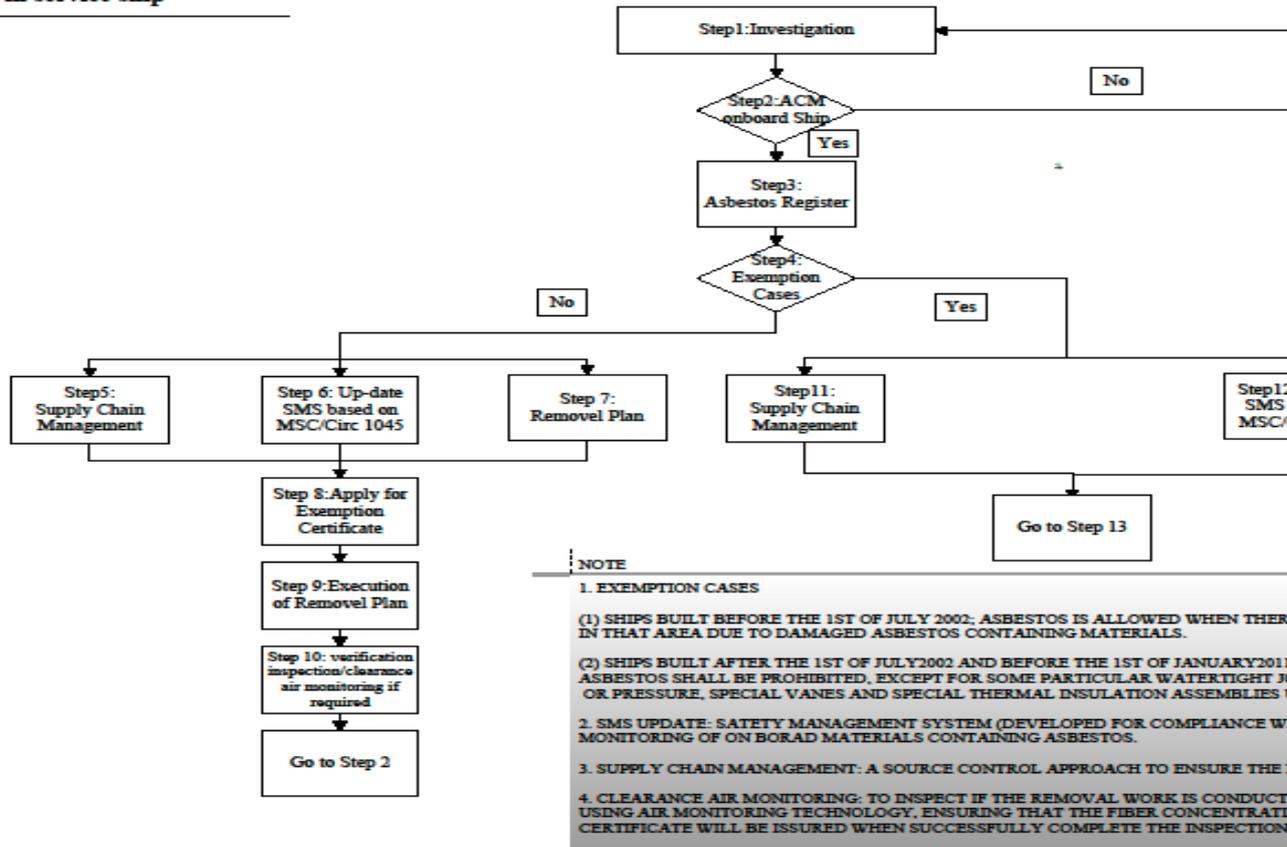
The above model tells us the whole story of the supply chain for example a 500 parts product. In the end there are almost 3000 materials manufacturers and 1500 part suppliers being involved in the control process of hazardous materials.

Prudent ship owners are including asbestos survey clauses in their new build contracts, a major Hong Kong ship management company operating 280 ships that is currently building 38 VLCC' s puts this clause in their contract *“Asbestos absence certificate to be issued by IACS member approved lab. In event yard does not agree, owners have the right to employ an IACS member approved Lab whose result will be binding. In case Asbestos is found, yard will bear full Lab costs for incurred for the inspection and testing the whole vessel and removal and decontaminating the area/equipment and renewing the affected component.”*

The other failure is from the ship owner side, the poor risk management of hazardous materials onboard. As stated in the Hong Kong Convention, It is the requirement from SOLAS and corresponding Circulars that ship owners should manage the risk of hazardous materials, such as the health risk from asbestos , with the implementation of ISM system onboard.

Netherlands Flag State Instruction to the Lifecycle Management of Asbestos onboard the Ships

Life Cycle Management of Asbestos Onboard Ships - in service ship



Note: the Netherlands flag state choose to keep CTI logo on the right top to respect the original intellectual right of CTI efforts in developing this chart.

http://www.ilent.nl/english/merchant_shipping/ship_owners_dutch_flag/developments/asbestos/

In the step 3 of above flowchart as suggested by Netherlands flag state, the shipowner can engage a marine specialist asbestos survey body to establish an Asbestos Register and risk management plan.

Legal entities that specialize in asbestos litigation have said “the cost of having an asbestos survey is insignificant compared to the huge potential litigation costs.”

Senior Managers from shipping companies are aware it is a SOLAS requirement that ships built after July 2002 have to be asbestos free and if asbestos is found the flag state will issue a non-renewable exemption certificate, that states the asbestos has to be removed within 3 years. Ship

owners are now also aware that charterers are using the opportunity that if asbestos is found during a port authority inspection it gives them a “get out” to cancel a non-profitable charter agreement! The ship owners therefore realize it is better to have an asbestos survey done to protect their interests and be in control.

This more proactive approach is also provided by Hong Kong Convention and SOLAS Convention circulars for the shipowner to identify and manage the hazardous material compliance condition by engaging an experienced marine hazardous expert that is accredited to perform asbestos ship surveys.

For example Centre Testing International Co. Ltd. (CTI) is an internationally recognized laboratory and Certification of Compliance company. The marine division is managed by former Senior DNV Surveyors, Government Marine Safety Surveyors, Senior Marine Technical Managers and Marine Chief Engineers. CTI is the only UKAS accredited inspection body to carry out asbestos surveys and has performed hundreds of ship surveys and have project managed asbestos removal projects worldwide.

On 31 December of 2013, EU Ship recycling regulation is entered into force. This Regulation should provide protection from the possible adverse effects of hazardous materials on board all ships calling at a port or anchorage of an EU Member State, at the same time ensuring compliance with the provisions applicable to those materials under international law. Currently, port State control inspectors are tasked with the inspection of certification and with active testing for hazardous materials, including asbestos, under the International Convention for the Safety of Life at Sea ("SOLAS"). The Paris Memorandum of Understanding on Port State Control provides a harmonised approach for those activities.

(Source: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32013R1257:EN:NOT>)

Over the next few years the marine industry will improve as shipowners and shipyards take a proactive approach to the control of hazardous materials on ships. Which, in part, will be driven by the planned increase in port authority inspections, within the EU states and Australia.

(Mr. Ren Di : Director of marine division of CTI group, the publicly listed testing and certification company employing over 3000 people in the world. His educational background is MSC in Marine Safety and Environmental Administration, World Maritime University (affiliate agency of IMO in Sweden). He is the consultancy representative for IMO marine hazardous materials issue representing Chinese government and the board member of China National Ship Recycling Association. He is also the designated trainer and lecturer for DNV-GL and CCS.)

