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Inventory of Hazardous Materials Part I

Fjordvik – IMO 7423249



Version: 1.0
Date: 03-10-2018
Client: SMT Shipping
Project number: M2018.0415
Survey location: Gdynia, Poland

Process Certificate
Asbestos Survey
Certified Company
SCA code:
07-D070156
Normec

HazMat Expert
Company
Certificate No:
AOSS0000BGC

HazMat Expert
Company Certificate
No: RTD0/
EZA/20170613223134

HazMat Expert
Company
Certificate No: ROT
1712632

List of parties

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Surveyor:	Mr. I. Opstal MScBA
HazMat Reg. No. (DNV-GL)	3049062_W
Survey period:	17-08-2018 and 18-08-2018
Author:	Mrs. P. Rakhan
Project number:	M2018.0415

Table 1. Information contractor

Information client:

Company name:	SMT Shipping
Address:	Ul B. Chrobrego 48
Postal code and city:	Sopot, Poland
Telephone number:	+48 58 520 7200
Contact person:	Mr. A. Bodal

Table 2. Information client

Sample analysis:

Laboratory:	Centre Testing International Pinbiao Co., Ltd.
Address:	Building 43, No. 1888, Xinjinqiao Road, Pudong New District
Postal code and city:	Shanghai, China, 201206

Table 3. Sample analysis

Sample analysis asbestos:

Laboratory:	Eurofins Omegam B.V.
Address:	H.J.E. Wenckebachweg 120
Postal code and city:	1114 AD Amsterdam-Duivendrecht, The Netherlands

Table 4. Sample analysis asbestos

Vessel specifications

Name vessel:	Fjordvik
Distinctive number of letters:	C6CV8
Type of vessel:	Cement Carrier
Flag state:	Bahamas
Port of registry:	Nassau
IMO number:	7423249
Year of building:	1976
Gross tonnage:	3091
L x B x D:	94,65 m x 14,00 m x 7,00 m
Name of ship-owner:	Aalborg Pearl Shipping Ltd.
Name of shipbuilder:	J.J. Sietas KG Schiffswerft GmbH & Co.
Date of delivery:	29-01-1976

Table 5. Vessel specifications

Foreword

This document is an Inventory of Hazardous Materials (IHM) Part I report. All work was carried out in accordance with the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (2009) (IHM guideline Resolution MEPC.269(68)) and the EU Ship Recycling Regulation, No 1257/2013 (EMSA's Best Practice Guidance on the Inventory of Hazardous Materials).

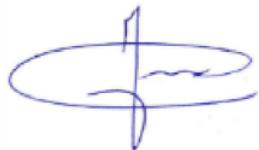
All our HazMat experts are fully approved to carry out the IHM surveys and are certified and audited by DNV-GL in Hamburg.

The IHM survey must be performed professionally to secure the safety of the surveyor and anyone within the direct vicinity. The surveyors of Maritime Asbestos Solutions B.V. will always carry out a risk analyses prior to the survey. Our surveys are carried out only by professional, experienced individuals holding a valid certificate. This report has been generated with the utmost care. Should it not meet your expectations or should you have any queries or comments, please do not hesitate in contacting us.

On behalf of Maritime Asbestos Solutions BV

HazMat Expert on this project:

Mr. I. Opstal MScBA



Date:
03-10-2018

Authorized by Technical Manager:

Mr. M. van Leeuwen B PM



Date:
03-10-2018

Summary

Date of the IHM survey:	17-08-2018 and 18-08-2018
Vessel surveyed:	Fjordvik
Survey location:	Gdynia, Poland
Survey type:	Part I, Table A and Table B (as far as practicable)

The IHM survey conducted is based on desk research (VSCP), interviews with the representative on board, visual inspection, sampling and analysis. The results are subsequently displayed in this report. This IHM survey was carried out in accordance with the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (2009) (IHM guideline Resolution MEPC.269(68)) and the EU Ship Recycling Regulation, No 1257/2013 (EMSA's Best Practice Guidance on the Inventory of Hazardous Materials).

In part I of the inventory all substances of Table A (HKC) and Annex I (EU SRR) will be listed, the substances in Table B (HKC) and Annex II (EU SRR) will be listed in the inventory as far as practicable. This concerns materials contained in ship structure and equipment.

According the EU Ship Recycling Regulation, No 1257/2013 samples are taken for the substance PFOS.

The purpose of the survey is to prepare the Inventory of Hazardous Materials (IHM) in harmony with the IMO Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (2009) (IHM guideline Resolution MEPC.269(68)) and the EU Ship Recycling Regulation, No 1257/2013 (EMSA's Best Practice Guidance on the Inventory of Hazardous Materials).

During the IHM survey the following hazardous materials have been identified:

Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (2009)

Hazardous Material	Quantity*	Material type	Table
Asbestos	± 100 gr. per gasket ± 10 kg per pc ± 3 kg ± 10 kg per door ± 5 kg per m ¹ ± 10 kg per pc ± 5 kg per m ² Unknown	Flange gaskets Brake linings on winches Cord in boiler Fire doors insulation board Insulation material air ducts Cable penetration Deckhead panels Propeller shaft brake linings (PCHM)	A
PCB's	0 kg	-	A
ODS	0 kg	-	A
Anti-Fouling	0 kg	-	A
Cadmium (compounds)	0 kg	-	B
Chromium (compounds)	0 kg	-	B
Lead (compounds)	± 780 kg Unknown ± 910 kg ± 1600 kg ± 1820 kg ± 750 kg Unknown	Batteries Batteries for UPS units (PCHM) Accommodation paint Bulkhead paint technical; areas Deck paint outside Deck paint technical areas Gyrocompass (PCHM)	B
Mercury (compounds)	Unknown	Gyrocompass (PCHM)	B
Polybrominated biphenyl (PBBs)	0 kg	-	B

Polybrominated diphenyl ethers (PBDEs)	0 kg	-	B
Polychlorinated naphthalenes (PCN)	0 kg	-	B
Radioactive substances	0 kg	-	B
Certain shortchain chlorinated paraffins (CSCP)	0 kg	-	B

Table 6. Quantity of hazardous materials on board according HKC.

EU Ship Recycling Regulation, No 1257/2013

Hazardous Material	Quantity*	Material type	Annex
PFOS	-	-	I
HBCDD	0 kg	-	II

Table 7. Quantity of hazardous materials on board according EU SRR.

*The amounts per source are approximately estimated on locations and may deviate from the actual amounts.

Remarks

- Threshold limits are mentioned in the guidelines and can be changed in between reporting date and start of recycling the vessel. Check for actual threshold limits prior to recycling.

Revision table	
Version	Remarks
1.0	Inventory of Hazardous Materials Part I – Fjordvik

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1 Introduction

1.1 Inventory of hazardous materials

An Inventory of Hazardous Materials is one of the requirements of the Hong Kong convention for the 'safe and environmentally sound recycling of ships' (Hong Kong Convention) which was adopted in May 2009. The conference that created the convention was attended in 2009 by members of 63 countries, and overseen by the International Maritime Organisation (IMO).

The Hong Kong Convention recognised that ship recycling is the most environmentally sound way to dispose of a ship at the end of its life, as most of the ship's materials can be reused. However, it sees current methods as unacceptable. The work sees many injuries and fatalities to workers, as they lack the correct safety equipment to handle the large ship correctly as it is dismantled and most vessels contain a large amount of hazardous materials such as asbestos, PCBs, TBT, and Ozone Depleting Substances, which can also lead to highly life-threatening diseases such as mesothelioma and lung cancer.

The Inventory of Hazardous Materials has been designed to try to minimise the dangers of these hazards. The Convention defines a hazard as: "any material or substance which is liable to create hazards to human health and/or the environment".

All vessels over 500 gross tonnes (GT) will have to comply with the convention once it comes into force. Each party that does wish to comply must restrict the use of hazardous materials on all ships that fly the flag of that party.

The EU Ship Recycling Regulation entered into force on 30 December 2013. Although this regulation closely follows the Hong Kong convention, there are important differences. The Regulation sets out a number of requirements for European ships, European ship owners, ship recycling facilities willing to recycle European ships, and the relevant competent authorities or administrations. It also requires the Commission to adopt a number of acts implementing the Regulation (in particular the European List of ship recycling facilities). For the Inventory of Hazardous Materials required by the EU regulation, there are additional substances listed as prohibited.

The inventory consists of three different parts:

- Part I – Materials contained in ship structure or equipment;
- Part II – Operationally generated wastes (prior to recycling);
- Part III – Stores (prior to recycling).

1.2 Types of hazardous materials

Asbestos

Asbestos is a fibrous mineral material that was widely used in the past. The main, positive characteristics of asbestos are its non-flammability, excellent damage-resistance, moisture-resistance and low costing. Some countries in the world are still using asbestos containing materials. This is the reason why there is still asbestos found on new building vessels.

Asbestos-containing materials are always composites (i.e., composed of different materials). Because asbestos fibres are not naturally bound, a binding agent is necessary, e.g. cement. Asbestos is almost always used as an additive. The lifespan of the composite material created in most cases is determined by the degree of binding agent, because asbestos itself is indestructible. A reduction in binding capacity is also identified as a reduction in the adhesive bonding of asbestos fibres. Fibre emission can increase when the adhesive bonding of the material decreases. This may be a health hazard.

Polychlorinated biphenyls (PCBs)

A polychlorinated biphenyl (PCB) is a synthetic organic compound of chlorine attached to biphenyl, which is a molecule composed of two benzene rings. The chemical formula for a PCB is C₁₂H₁₀-xCl_x. Of the many PCB arrangements and orientations, about 130 are used commercially.

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

Ozone Depleting Substances (ODS)

Ozone depleting substances (ODS) are those substances which deplete the ozone layer and are widely used in refrigerators, air conditioners, fire extinguishers, in dry cleaning, as solvents for cleaning, electronic equipment and as agricultural fumigants.

Ozone depleting substances:

- Chlorofluorocarbons (CFCs)
- Halon
- Carbon tetrachloride (CCl₄), Methyl chloroform (CH₃CCl₃)
- Hydrobromofluorocarbons (HBFCs)
- Hydrochlorofluorocarbons (HCFCs)
- Methyl bromide (CH₃Br)
- Bromochloromethane (CH₂BrCl)

TBT

Tributyltin (TBT) is an umbrella term for a class of organotin compounds which contain the (C₄H₉)₃Sn group, with a prominent example being tributyltin oxide. [1] For 40 years TBT was used as a biocide in anti-fouling paint, commonly known as bottom paint, which was applied to the hulls of ocean going vessels. Bottom paint improves ship performance and durability as it reduces the rate of biofouling, which is the growth of organisms on the ship's hull. Although such paints are effective, the TBT slowly leaches out into the marine environment where it is highly toxic to a wide range of organisms. TBT pollution is of serious concern as it has led to collapse of whole populations of organisms.

PFOS (EU SRR only)

PFOS (Perfluorooctane sulfonic acid) is chronically toxic, injurious to reproduction, carcinogenic, toxic to aquatic organisms and widely distributed in the global environment.

In the marine industry, it can be found in fire-fighting foams of the type AFFF on vessels carrying inflammable fluids and those with helicopter decks, rubber and plastic materials (ie, cable sheaths, PVC flooring, gaskets and seals) and coatings (ie, paint).

HBCDD (EU SRR only)

HBCDD (Brominated Flame Retardant) is very persistent, bioaccumulative and toxic to aquatic organisms; it causes long-term adverse effects on the aquatic environment. It is classified and labelled as dangerous for the environment.

In the marine industry, this can be found in expanded polystyrene (EPS) used for cryogenic insulation, such as for liquefied gas tanks (LGT), refrigerated areas, thermal insulation boards (ie, foam materials), rubber and plastic materials (ie, cable sheaths, PVC flooring, gaskets, seals) and coatings (ie, paint).

Table B (listed in the inventory as far as practicable)

Table B

No.	Materials
B-1	Cadmium and cadmium compounds
B-2	Hexavalent chromium and hexavalent chromium compounds
B-3	Lead and lead compounds
B-4	Mercury and mercury compounds
B-5	Polybrominated biphenyl (PBBs)
B-6	Polybrominated diphenyl ethers (PBDEs)
B-7	Polychlorinated naphthalenes (more than 3 chlorine atoms)
B-8	Radioactive substances
B-9	Certain shortchain chlorinated paraffins (Alkanes, C10-C13, chloro)

2 Research Methods

The research methods for preparing the Inventory of Hazardous Materials Part I are followed according IHM guideline Resolution MEPC.269(68). Underneath a description is given how the following steps are followed during preparing the IHM.

- Step 1: Collection of necessary information;
- Step 2: Assessment of collected information;
- Step 3: Preparation of visual/sampling check plan;
- Step 4: On board visual/sampling check;
- Step 5: Preparation of IHM Part I and related documentation.

2.1 Desk research and Visual/Sampling Check Plan (VSCP)

Before the survey will take place on location, desk research and historical research have to be conducted. The client needs to take care of the following data to prepare a Visual/Sampling Check Plan.

- Vessel's specification;
- General arrangement;
- Machinery arrangement, Equipment Lists;
- Piping arrangement;
- Fire & Safety protection plan;
- Insulation plan;
- Antifouling certificate;
- Painting schedule;
- Lubrication Oil chart;
- Related IMO certificates such as ODS control;
- Related manuals;
- Docking reports;
- Information from sister ship, machinery, equipment, materials and paints.

2.2 Visual inspection

The surveyor will conduct a visual inspection on site which will be the basis of the IHM survey. Therefore, all spaces within a vessel are explored in a systematic way. All materials suspicious of containing any hazardous material are reported during the visual inspection. There will be samples collected of these materials and analysed by specialized laboratories (see section 2.3).

2.3 Sampling and analysis

On site there is a sampling plan present in the inventory plan. If there are any suspected containing materials, the surveyor will take samples as written in the plan. Sampling is always performed under controlled circumstances and with the use of personal protective equipment if applicable.

During the sampling adequate measures are taken to prevent fibre emission to humans and the environment. Each sample is uniquely numbered and will be packed double and airtight. An independent laboratory provides laboratory certificates to Maritime Asbestos Solutions BV and are included in the IHM survey report.

2.4 Survey report

The collected research and analysis of the samples taken on site are included in the survey report. The results of the taken samples are included in section 3.3. of this report. It presents information about the type of material, location, etc. There are also pictures added of the sampled materials to give a clear idea of the materials present on project location. Supporting documentation is added in the appendices.

3 Survey results

3.1 Results desk research documentation

In the following table all documents are listed which are received by the owner of the vessel. Relevant information regarding the use and/or possible presence of hazardous materials on board of the vessel are described per document. The vessel will be divided into zones in order to carry out the inspection in accordance with these different zones.

Documentation results

Document name	Results documentation regarding HazMats
General Arrangement DWG No: 74.02-001-01 Date: 23-08-1985	<ul style="list-style-type: none"> No relevant information regarding the use of hazardous materials on board of the vessel.
International Anti-fouling System Certificate Lloyds Register GDK 1601074 19-12-2016	<ul style="list-style-type: none"> An international anti-fouling system certificate with No. GDK 1601074 is issued by Lloyds register on the 16th of December 2016. Therefore no sample will be taken from the anti-fouling.
Fire control and Safety Plan DWG No: 74.02-290.01	<ul style="list-style-type: none"> Batteries are located on navigational deck. These batteries will be listed in the inventory. Smoke detectors are used throughout the vessel on several decks. These smoke detectors will be checked for radioactive substances and listed in the inventory. 2 rescue boats are present on board of the vessel. The rescue boats will be checked for batteries and asbestos containing materials and listed in the inventory.
Lubrication Chart Chevron Fjordvik 09-02-2018	<ul style="list-style-type: none"> Various types of oil are used in systems on board of the vessel. During the inventory samples will be taken from different types of oil. No relevant information is listed regarding the use of hazardous materials.
Vessel Particulars Fjordvik 2018	<ul style="list-style-type: none"> The vessel is a cement carrier built at Sietas Hamburg in 1976. No relevant information is mentioned regarding the use of any hazardous materials on board of the vessel.
List of Machinery Fjordvik	<ul style="list-style-type: none"> No relevant information regarding the use of hazardous materials on board of the vessel.
Record of ozone depleting substances	<ul style="list-style-type: none"> Refrigerants R22 and R422D are used on board of the vessel in various equipment. Refrigerant R22 have ozone depleting potential. The locations will be visual checked and listed in the inventory.
On board maintenance program paints International 17-02-2017	<ul style="list-style-type: none"> No relevant information regarding the use of hazardous materials on board of the vessel. Samples will be taken for heavy metals, HBCDD, PCN, PBB, PBDE, CSCP and listed in the inventory

Table 8. Results desk research documentation

Zone divisions

Deck zones
01. Wheelhouse Top
02. Navigational deck
03. Officers / Bridge deck
04. Boat deck
05. Poop deck
06. Main deck
07. Platform deck
08. Stowage
09. Loading deck
10. Forecastle deck
11. Hull

Table 9. Zone divisions during the inspection

3.2 VSCP

The information collected was assessed covering all equipment, systems and/or areas on board assumed to contain hazardous materials included in Table A and B of the Appendix 1 of IHM guideline Resolution MEPC.269(68), taking indicative list into account. Also, the additional substances PFOS is included in this survey according the EU Ship Recycling Regulation, No 1257/2013. The outcome of this assessment is reflected in the visual/sampling check plan. The VSCP is prepared in such a way, so that every item will be checked visually or through sampling in relation to its prior classification made in the assessment.

Name of ship	Fjordvik
IMO Number	7423249
Gross Tonnage	3091
L x B x D	94,65 m x 14,00 m x 7,00 m
Date of delivery	29-01-1976
Ship-owner	Aalborg Pearl Shipping Ltd.
Contact point	Mr. P. Nowakowski
Date of the survey	18-08-2018 and 19-08-2018
Site of the inspection	Czechoslowacka 3 str, Gdynia, Poland
In charge of inspection	Mr. I. Opstal MScBA
Check engineer	Mr. I. Opstal MScBA
Sampling engineer	Mr. I. Opstal MScBA
Sampling method and anti-scattering measure for asbestos	Wet the sampling location prior to cutting and allow it to harden after cutting to prevent scatter. Workers performing sampling activities shall wear PPE.
Sampling of fragments of paint	Paints suspected to contain TBT should be collected and analysed from load line, directly under bilge keel and flat bottom near amidships.
Laboratory	Eurofins Omegam B.V. and Centre Testing International Pinbiao Co., Ltd.
Location of visual/sampling check	See list for visual and sampling checks
Remarks	-

I-1 – Paints and coating systems containing materials listed in Table A and Table B

No.	Zone / Deck level	Area	Description	Hazardous Material	Visual/ sampling	Sample ID	Sample result	Approx. quantity	Result of doc. Checking / remarks
1	02. Navigation deck	Corridor	Bituminous paint on steel	Asbestos	Sampling	BS15	Not contained	-	-
2	02. Navigation deck	Corridor	Bituminous paint on steel	PCB	Sampling	PCB04	Not contained	-	-
3	02. Navigation deck	Corridor	Bituminous paint on steel	Lead	Sampling	PCB04	Not contained	-	Sample contains 225 mg/kg (below threshold value).
4	04. Boat deck	Outside	Grey deck paint	PCN	Sampling	CSCP01	Not contained	-	-
5	04. Boat deck	Outside	Grey deck paint	CSCP	Sampling	CSCP01	Not contained	-	-
6	04. Boat deck	Outside	Grey deck paint	PCB	Sampling	CSCP01	Not contained	-	-
7	04. Boat deck	Outside	Grey deck paint	Lead	Sampling	CSCP01	Contained	± 1820 kg	Sample contains 4514 mg/kg.
8	04. Boat deck	Outside	Grey deck paint	Chromium	Sampling	CSCP01	Not contained	-	-
9	04. Boat deck	Outside	Grey deck paint	Cadmium	Sampling	CSCP01	Not contained	-	-
10	04. Boat deck	Outside	Funnel paint	PBB	Visual	-	Not contained	-	Based on sample PBB01.
11	04. Boat deck	Outside	Funnel paint	PCB	Visual	-	Not contained	-	Based on sample PBB01.
12	04. Boat deck	Outside	Funnel paint	Lead	Visual	-	Contained	± 910 kg	Based on sample PBB01.
13	04. Boat deck	Outside	Funnel paint	Chromium	Visual	-	Not contained	-	Based on sample PBB01.
14	04. Boat deck	Outside	Funnel paint	Cadmium	Visual	-	Not contained	-	Based on sample PBB01.

15	04. Boat deck	Outside	Accommodation paint	PCB	Sampling	PBB01	Not contained	-	-
16	06. Main deck	Engine store	Deck paint	PCB	Sampling	PCB06	Not contained	-	Sample contains 10,3 mg/kg (below threshold value)
17	06. Main deck	Engine store	Deck paint	PBB	Sampling	PCB06	Not contained	-	-
18	06. Main deck	Engine store	Deck paint	Lead	Sampling	PCB06	Contained	± 750 kg	Sample contains 52625 mg/kg.
19	06. Main deck	Engine store	Deck paint	Chromium	Sampling	PCB06	Not contained	-	Sample contains 58 mg/kg (below threshold value).
20	06. Main deck	Engine store	Deck paint	Cadmium	Sampling	PCB06	Not contained	-	-
21	06. Main deck	Engine room	Paint bulkheads	PCN	Sampling	PCN01	Not contained	-	-
22	06. Main deck	Engine room	Paint bulkheads	Lead	Sampling	PCN01	Contained	± 1600 kg	Sample contains 32570 mg/kg.
23	06. Main deck	Engine room	Paint bulkheads	Chromium	Sampling	PCN01	Not contained	-	-
24	05. Poop deck	Outside	Accommodation paint	Lead	Sampling	PBB01	Contained	± 910 kg	Sample contains 24540 mg/kg.
25	05. Poop deck	Outside	Accommodation paint	Chromium	Sampling	PBB01	Not contained	-	-
26	05. Poop deck	Outside	Accommodation paint	PBB	Sampling	PBB01	Not contained	-	-
27	05. Poop deck	Outside	Accommodation paint	Cadmium	Sampling	PBB01	Not contained	-	-
28	06. Main deck	Outside	Equipment paint	PCB	Visual	-	Not contained	-	Based on sample PCB08.
29	06. Main deck	Outside	Equipment paint	Lead	Visual	-	Not contained	-	Based on sample PCB08.

30	06. Main deck	Outside	Equipment paint	Chromium	Visual	-	Not contained	-	Based on sample PCB08.
31	06. Main deck	Outside	Equipment paint	Cadmium	Visual	-	Not contained	-	Based on sample PCB08.
32	08. Stowage	Ballast tank	Coating	PCB	Sampling	PCB07	Not contained	-	-
33	08. Stowage	Ballast tank	Coating	Lead	Sampling	PCB07	Not contained	-	Sample contains 98 mg/kg (below threshold value).
34	08. Stowage	Ballast tank	Coating	Chromium	Sampling	PCB07	Not contained	-	-
35	11. Hull	Outside	Grey hull paint	PCB	Sampling	PCB08	Not contained	-	-
36	11. Hull	Outside	Grey hull paint	Lead	Sampling	PCB08	Not contained	-	Sample contains 396 mg/kg (below threshold value).
37	11. Hull	Outside	Grey hull paint	Cadmium	Sampling	PCB08	Not contained	-	-
38	11. Hull	Outside	Grey hull paint	Chromium	Sampling	PCB08	Not contained	-	-
39	11. Hull	Underwater parts	Anti-fouling coating	TBT	Visual	-	Not contained	-	Anti-fouling certificate is issued by Lloyds Register on 16 th of December 2018.

I-2 – Equipment and machinery containing materials listed in Table A and Table B

No.	Zone / Deck level	Area	Description	Hazardous Material	Visual/ sampling	Sample ID	Sample result	Approx. quantity	Result of doc. Checking / remarks
1	02. Navigation deck	Wheelhouse	Refrigerant in AC-unit for wheelhouse	ODS	Visual	ODS01	Not contained	-	Refrigerant R32 is used in this AC-unit and has no ozone depleting potential.
2	02. Navigation deck	Battery room	Batteries for GMDSS	Lead	Visual	Pb10	Contained	± 120 kg	4 pcs of 30 kg.
3	02. Navigation deck	Battery room	Batteries for GMDSS	Cadmium	Visual	-	Not contained	-	-

4	02. Navigation deck	Battery room	Batteries for GMDSS	Mercury	Visual	-	Not contained	-	-
5	02. Navigation deck	Chart room	Batteries for VDR	Lead	Visual	Pb07	Contained	± 5 kg	1 pc of 5 kg.
6	02. Navigation deck	Battery room	Batteries for emergency light	Lead	Visual	Pb09	Contained	± 120 kg	4 pcs of 30 kg.
7	02. Navigation deck	Wheelhouse	Gyrocompass	Mercury	Visual	Pb01	PCHM	Unknown	Brand: Sperry Marine. Type: Navigat X MK 11.
8	02. Navigation deck	Wheelhouse	Gyrocompass	Lead	Visual	Pb01	PCHM	Unknown	Brand: Sperry Marine. Type: Navigat X MK 11.
9	02. Navigation deck	Wheelhouse	UPS for radar auto pilot	Lead	Visual	Pb05	PCHM	Unknown	UPS unit of brand Blue walker GmbH, Model VFI 1000 TG.
10	02. Navigation deck	Wheelhouse	Electrical cable sheath	PCB	Visual	-	Not contained	-	Based on sample HB02.
11	02. Navigation deck	Wheelhouse	Electrical cable sheath	PCN	Visual	-	Not contained	-	Based on sample HB02.
12	02. Navigation deck	Wheelhouse	Electrical cable sheath	CSCCP	Visual	-	Not contained	-	Based on sample HB02.
13	02. Navigation deck	Wheelhouse	Electrical cable sheath	HBCDD	Visual	-	Not contained	-	Based on sample HB02.
14	02. Navigation deck	Wheelhouse	Electrical cable conductor	Lead	Visual	-	Not contained	-	Based on sample HB02.
15	02. Navigation deck	Corridor	Optical smoke detector	Radioactive substances	Visual	RA01	Not contained	-	Brand: EURA. Type: GS-503.
16	02. Navigation deck	Wheelhouse	Batteries for fire alarm system	Lead	Visual	Pb02	Contained	± 15 kg	2 pcs of 7,5 kg.
17	02. Navigation deck	Wheelhouse	Batteries for UPS for ECDIS	Lead	Visual	Pb06	PCHM	Unknown	UPS unit of brand APC 1000.
18	02. Navigation deck	Outside	Sealant on cable connections	Asbestos	Visual	-	Not contained	-	Cable connections consist of plastic covers and therefore not suspicious for containing asbestos.

19	02. Navigation deck	Outside	Sealant on cable connections	PCB	Visual	-	Not contained	-	Cable connections consist of plastic covers and therefore not suspicious for containing asbestos.
20	02. Navigation deck	AC-room	Refrigerant in AC-unit	ODS	Visual	ODS04	Not contained	-	Refrigerant R422D is used in this AC unit. This type of refrigerant has no ozone depleting potential.
21	02. Navigation deck	AC-room	Air duct insulation	Asbestos	Sampling	BS08	Contained	± 5 kg per m ³	Sample contains Chrysotile 60-100%.
22	02. Navigation deck	Wheelhouse	Batteries for UPS	Lead	Visual	Pb03	PCHM	Unknown	UPS Unit of brand APC Smart 750 system.
23	02. Navigation deck	Wheelhouse	Batteries for discharge	Lead	Visual	Pb04	Contained	± 10 kg	2 pcs of 5 kg.
24	02. Navigation deck	Chart room	Batteries UPS for VDR	Lead	Visual	Pb08	PCHM	Unknown	UPS unit of brand APC 1000.
25	02. Navigation deck	AC room	Air duct flanges	Asbestos	Visual	-	Not contained	-	Consist of foam and therefore not suspicious for containing asbestos.
2	02. Navigation deck	Captain cabin	Batteries for UPS	Lead	Visual	Pb12	PCHM	Unknown	UPS unit of brand APC 750.
27	02. Navigation deck	Radio room	Batteries for UPS for FBB	Lead	Visual	Pb14	PCHM	Unknown	1 UPS unit.
28	03. Officers deck	Chief engineer cabin	Batteries for UPS	Lead	Visual	Pb12	PCHM	Unknown	UPS unit of brand APC 750.
29	03. Officers deck	Chief officer cabin	Batteries for UPS	Lead	Visual	Pb12	PCHM	Unknown	UPS unit of brand APC 750.
30	03. Officers deck	Ships office	Batteries for UPS	Lead	Visual	Pb13	PCHM	Unknown	3 UPS units of brand APC 750.
31	03. Officers deck	Corridors	Optical smoke detector	Radioactive substances	Visual	-	Not contained	-	Based on visual check RA01.
32	03. Officers deck	Corridors	Heat detector	Mercury	Visual	-	Not contained	-	Heat detector is not installed.

33	03. Officers deck	Corridors	Fire detector	Mercury	Visual	-	Not contained	-	Fire detector is not installed.
34	04. Boat deck	Outside	Gasket in FiFi line	Asbestos	Visual	-	Not contained	-	Gasket consist of rubber and therefore not suspicious for containing asbestos.
35	04. Boat deck	PS rescue boat	Insulation on exhaust line	Asbestos	Visual	-	Not contained	-	No insulation material is applied.
36	04. Boat deck	PS rescue boat	Insulation in engine casing	Asbestos	Visual	-	Not contained	-	No insulation material is applied.
37	04. Boat deck	PS rescue boat	Battery for lifeboat	Lead	Visual	Pb11	Contained	± 20 kg.	1 pc of 20 kg.
38	04. Boat deck	PS rescue boat	Foam used for seats and head restraints	ODS	Visual	-	Not contained	-	No foam is applied.
39	04. Boat deck	PS rescue boat	Battery for searchlight	Lead	Visual	-	Not contained	-	No battery installed also no engine.
40	04. Boat deck	Funnel	Exhaust line insulation main engine	Asbestos	Visual	-	Not contained	-	Based on sample BS29.
41	04. Boat deck	Funnel	Pipeline insulation	Asbestos	Visual	-	Contained	± 5 kg per m ¹	Based on sample BS08.
42	04. Boat deck	Funnel	Exhaust line insulation generator	Asbestos	Visual	-	Not contained	-	Based on sample BS29.
43	04. Boat deck	SB lifeboat	Battery for Aldis	Lead	Visual	-	Contained	± 10 kg	Spare battery and spare aldis in wheelhouse.
44	05. Poop deck	Outside	Brake linings on mooring winch	Asbestos	Sampling	BS33	Not contained	-	-
45	05. Poop deck	Outside	Rubber gasket in air vent	PCB	Visual	-	Not contained	-	Based on sample PCB05.
46	05. Poop deck	Galley	Fire damper	Asbestos	Visual	-	Not contained	-	Steel and rockwool are used and therefore not suspicious for containing asbestos.
47	05. Poop deck	Galley	Refrigerant refrigerators	ODS	Visual	ODS02	Not contained	-	Refrigerant R600a is used in two refrigerators. This type of refrigerant has no ozone depleting potential.

48	05. Poop deck	Outside	Gasket in FiFi line	PCB	Visual	-	Not contained	-	Based on sample PCB05.
49	06. Main deck	Emergency generator room	Gasket in pipeline to diesel tank	Asbestos	Sampling	BS36	Contained	± 100 gr per gasket	Sample contains Chrysotile 30-60%.
50	06. Main deck	Emergency generator room	Exhaust line insulation	Asbestos	Visual	-	Not contained	-	Based on sample BS29.
51	06. Main deck	Emergency generator room	Insulation material ventilation flap	Asbestos	Visual	-	Contained	± 5 kg per m ¹	Based on sample BS08.
52	06. Main deck	Emergency generator room	Batteries	Lead	Visual	Pb17	Contained	± 240 kg	8 pcs of 30 kg.
53	06. Main deck	Emergency generator room	Gasket diesel tank Hatch	Asbestos	Visual	-	Not contained	-	Gasket consists of rubber and therefore not suspicious for containing asbestos.
54	06. Main deck	Emergency generator room	Gasket diesel tank Hatch	PCB	Visual	-	Not contained	-	Based on sample PCB05.
55	06. Main deck	Emergency generator room	Transformers	PCB	Visual	-	Not contained	-	Transformer consists of dry type and are air cooled and therefore not suspicious for containing PCB.
56	06. Main deck	Emergency generator room	Transformers	PCN	Visual	-	Not contained	-	Transformer consists of dry type and are air cooled and therefore not suspicious for containing PCN.
57	06. Main deck	Cool provision stores	Panel insulation	Asbestos	Sampling	BS16	Not contained	-	-
58	06. Main deck	Cool provision stores	Insulation foam in panelling	ODS	Visual	-	Not contained	-	Insulation consist of rockwool and wood and therefore not suspicious for containing ODS.
59	06. Main deck	Cool provision stores	Insulation foam in panelling	HBCDD	Visual	-	Not contained	-	Insulation consist of rockwool and wood and therefore not suspicious for containing HBCDD.
60	06. Main deck	Cool provision stores	Sealant	Asbestos	Visual	-	Not contained	-	Sealant consist of silicone and therefore not suspicious for containing asbestos.
61	06. Main deck	Cool provision stores	Insulation foam on cooling pipes	ODS	Sampling	ODS03	Not contained	-	-

62	06. Main deck	Steering gear room	Hydraulic oil for steering gear unit	PCB	Sampling	OS03	Not contained	-	-
63	06. Main deck	Steering gear room	Gasket in hydraulic oil line	Asbestos	Visual	-	Not contained	-	No gaskets are used in these pipelines.
64	06. Main deck	Boatswain store	Gasket for anchor chain washing line	Asbestos	Visual	-	Not contained	-	Gasket consist of rubber and therefore not suspicious for containing asbestos.
65	06. Main deck	Engine room	Boiler hatch cord seal	Asbestos	Sampling	BS18	Not contained	-	-
66	06. Main deck	Engine room	Boiler insulation	Asbestos	Sampling	BS17	Not contained	-	-
67	06. Main deck	Engine room	Boiler burner cord seal	Asbestos	Sampling	BS19	Contained	± 3 kg	Sample contains Chrysotile 60-100%.
68	06. Main deck	Engine room	Boiler burner gasket	Asbestos	Sampling	BS20	Contained	± 100 gr. per gasket	Sample contains Chrysotile 30-60%.
69	06. Main deck	Engine store	Spare sheet gasket	Asbestos	Sampling	BS21	Not contained	-	Brand: "Flexitalic".
70	06. Main deck	Engine store	Spare sheet gasket	Asbestos	Sampling	BS22	Not contained	-	Brand: "Ferolite NAM 45CF".
71	06. Main deck	Engine store	Spare sheet gasket	Asbestos	Sampling	BS23	Not contained	-	Brand: "Marpack Jointing PA277".
72	06. Main deck	Engine store	Rubber gasket	PCB	Sampling	PCB05	Not contained	-	-
73	06. Main deck	Engine room	Rubber gasket AC plants	PCB	Visual	-	Not contained	-	Based on sample PCB05.
74	06. Main deck	Engine room	Rubber gasket AC plants	Asbestos	Visual	-	Not contained	-	Gasket consist of rubber and therefore not suspicious for containing asbestos.
75	06. Main deck	Engine room	Insulation hot water boiler	Asbestos	Visual	-	Not contained	-	Based on sample BS17.
76	06. Main deck	Funnel	Gasket hatch gear oil tank	PCB	Visual	-	Not contained	-	Based on sample PCB05.

77	06. Main deck	Funnel	Gasket header tanks	PCB	Visual	-	Not contained	-	Based on sample PCB05.
78	06. Main deck	Funnel	Level gauge head tanks	Asbestos	Visual	-	Not contained	-	Consist of liquid level gauge indicators and therefore not suspicious for containing asbestos.
79	06. Main deck	Funnel	CPP oil tank level gauge	Asbestos	Visual	-	Not contained	-	Consist of liquid level gauge indicators and therefore not suspicious for containing asbestos.
80	06. Main deck	Cargo generator rooms	Batteries for cargo generator	Lead	Visual	Pb16	Contained	± 240 kg	4 pcs of 60 kg.
81	06. Main deck	Cargo generator rooms	Lagging material	Asbestos	Sampling	BS34	Not contained	-	-
82	06. Main deck	Cargo generator rooms	Exhaust line insulation	Asbestos	Visual	-	Not contained	-	Based on sample BS29.
83	06. Main deck	Compressor room	Refrigerant for dryer compressor	Asbestos	Visual	ODS06	Not contained	-	Refrigerant R134a is used in this dryer compressor. This type of refrigerant has no ozone depleting potential.
84	06. Main deck	Compressor room	Gasket in pipeline for air blower compressor	Asbestos	Visual	-	Not contained	-	Gasket consist of rubber and therefore not suspicious for containing asbestos.
85	06. Main deck	Compressor room	Gasket in pipeline for air blower compressor	PCB	Visual	-	Not contained	-	Based on sample PCB05.
86	06. Main deck	Switchboard room	Fluorescent lamp	Mercury	Visual	-	Not contained	-	-
87	06. Main deck	Switchboard room	Electrical cables	PCB	Visual	-	Not contained	-	Based on sample HB02.
88	07 Platform deck	Engine control room	Spark barrier	Asbestos	Sampling	BS26	Not contained	-	-
89	07. Platform deck	Engine control room	Electrical cable sheath	PCB	Sampling	HB02	Not contained	-	-
90	07. Platform deck	Engine control room	Electrical cable sheath	CSCCP	Sampling	HB02	Not contained	-	-

91	07. Platform deck	Engine control room	Electrical cable sheath	HBCDD	Sampling	HB02	Not contained	-	-
92	07. Platform deck	Engine control room	Electrical cable conductor	Lead	Sampling	HB02	Not contained	-	-
93	07. Platform deck	Engine room	Refrigerant for cool provision stores	ODS	Visual	ODS04	Not contained	-	Refrigerant R422D is used in this unit. This type of refrigerant has no ozone depleting potential.
94	07. Platform deck	Engine control room	Refrigerant in AC-unit for engine control room	ODS	Visual	ODS05	Not contained	-	Refrigerant R410a is used in this AC unit. This type of refrigerant has no ozone depleting potential.
95	07. Platform deck	Engine room	Gasket flushing water lines sewage plant	Asbestos	Visual	-	Not contained	-	Gasket consist of rubber and therefore not suspicious for containing asbestos.
96	07. Platform deck	Engine control room	Transformers	PCB	Visual	-	Not contained	-	Dry type/air cooled and therefore not suspicious for containing PCB.
97	07. Platform deck	Engine control room	Transformers	PCN	Visual	-	Not contained	-	Dry type/air cooled and therefore not suspicious for containing PCN.
98	07. Platform deck	Engine room	Gasket fresh water system	Asbestos	Visual	-	Not contained	-	Gasket consist of rubber and therefore not suspicious for containing asbestos.
99	07. Platform deck	Engine room	Gasket fresh water system	PCB	Visual	-	Not contained	-	Based on sample PCB05.
100	07. Platform deck	Engine room	Gasket compressed air system	Asbestos	Sampling	BS24	Contained	± 100 gr. per gasket	Sample contains Chrysotile 30-60%.
101	07. Platform deck	Engine room	Spacer in support bracket	Asbestos	Visual	-	Not contained	-	Consist of Steel and rubber and therefore not suspicious for containing asbestos.
102	07. Platform deck	Engine room	Gasket in level gauge	Asbestos	Visual	-	Not contained	-	Liquid level gauge indicators and therefore not suspicious for containing asbestos.
103	07. Platform deck	Store	Spare gasket	Asbestos	Sampling	BS27	Contained	± 100 gr. per gasket	Brand: "Tesnit". Sample contains Chrysotile 60-100%.
104	07. Platform deck	Store	Spare gasket	Asbestos	Sampling	BS28	Not contained	-	Brand: "Klingersil C4430".
105	07. Platform deck	Engine room	Rubber hatch gasket	PCB	Visual	-	Not contained	-	Based on sample PCB05.

106	07. Platform deck	Engine room	Rubber hatch gasket	Asbestos	Visual	-	Not contained	-	Gasket consist of rubber and therefore not suspicious for containing asbestos.
107	07. Platform deck	Engine room	Gasket black water lines	Asbestos	Visual	-	Not contained	-	Gasket consist of rubber and therefore not suspicious for containing asbestos.
108	07. Platform deck	Engine room	Gasket black water lines	PCB	Visual	-	Not contained	-	Based on sample PCB05.
109	07. Platform deck	Engine room	Gasket sewage line	Asbestos	Visual	-	Not contained	-	Gasket consist of rubber and therefore not suspicious for containing asbestos.
110	07. Platform deck	Engine room	Gasket sewage line	PCB	Visual	-	Not contained	-	Based on sample PCB05.
111	07. Platform deck	Engine control room	Smoke detector	Radioactive substances	Visual	RA02	Not contained	-	Brand: Cerberus AG.
112	08. Stowage	Engine room	Exhaust insulation generator	Asbestos	Visual	-	Not contained	-	Based on sample BS29.
113	08. Stowage	Engine room	Exhaust insulation main engine	Asbestos	Sampling	BS29	Not contained	-	-
114	08. Stowage	Engine room	Insulation mattresses	Asbestos	Sampling	BS30	Not contained	-	-
115	08. Stowage	Engine room	Gasket lub oil system	Asbestos	Sampling	BS32	Contained	± 100 gr. per gasket	Sample contains Chrysotile 30-60%.
116	08. Stowage	Engine room	Gasket main engine	Asbestos	Sampling	BS31	Not contained	-	-
117	08. Stowage	Engine room	Temperature gauge	Mercury	Visual	Hg01	Not contained	-	Brand: Sika/Econosto.
118	08. Stowage	Engine room	Gasket FiFi system	Asbestos	Visual	-	Not contained	-	Gasket consist of rubber and therefore not suspicious for containing asbestos.
119	08. Stowage	Engine room	Gasket FiFi system	PCB	Visual	-	Not contained	-	Based on sample PCB05.
120	08. Stowage	Engine room	Gasket sea water system	Asbestos	Visual	-	Not contained	-	Gasket consist of rubber and therefore not suspicious for containing asbestos.

121	08. Stowage	Engine room	Gasket sea water system	PCB	Visual	-	Not contained	-	Based on sample PCB05.
122	08. Stowage	Engine room	Lub oil for main engine	PCB	Sampling	OS01	Not contained	-	-
123	08. Stowage	Engine room	Propeller shaft Gaskets	Asbestos	Visual	-	Not contained	-	Based on sample BS38 with brand 'Klingsil C4430.'
124	08. Stowage	Engine room	Propeller shaft brake lining	Asbestos	Visual	-	PCHM	Unknown	No access to propeller shaft brake lining.
125	08. Stowage	Engine room	Propeller shaft clutch lining	Asbestos	Visual	-	Not contained	-	Hydraulic clutch. No brake linings used and therefore not suspicious for containing asbestos.
126	08. Stowage	Engine room	Hydraulic oil for main system	PCB	Sampling	OS02	Not contained	-	-
127	08. Stowage	Engine room	Gasket for bilge pump	Asbestos	Visual	-	Not contained	-	Gasket consist of rubber and therefore not suspicious for containing asbestos.
128	08. Stowage	Engine room	Gasket for bilge pump	PCB	Visual	-	Not contained	-	Based on sample PCB05.
129	08. Stowage	Engine room	Gasket for emergency fire pump	Asbestos	Visual	-	Not contained	-	Gasket consist of rubber and therefore not suspicious for containing asbestos.
130	08. Stowage	Engine room	Gasket for emergency fire pump	PCB	Visual	-	Not contained	-	Based on sample PCB05.
131	08. Stowage	Engine room	Gasket cool water line	Asbestos	Visual	-	Not contained	-	Gasket consist of rubber and therefore not suspicious for containing asbestos.
132	08. Stowage	Engine room	Gasket cool water line	PCB	Visual	-	Not contained	-	Based on sample PCB05.
133	08. Stowage	Engine room	Temperature gauge	Mercury	Visual	Hg01	Not contained	-	Brand: Sika/ Econosto. Based on manufacturer declaration.
134	10 forecastle deck	Outside	Brake lining on anchor winch	Asbestos	Sampling	BS35	Contained	± 10 kg per pc	Sample contains Chrysotile 30-60%.
135	10 forecastle deck	Outside	Bearings winches	Lead	Visual	-	Not contained	-	Consist of bronze and therefore not suspicious for containing lead.

I-3 – Structure and hull containing materials listed in Table A and Table B

No.	Zone / Deck level	Area	Description	Hazardous Material	Visual/ sampling	Sample ID	Sample result	Approx. quantity	Result of doc. Checking / remarks
1	02. Navigation deck	Wheelhouse	Bulkhead insulation	Asbestos	Visual	-	Not contained	-	Based on sample BS01.
2	02. Navigation deck	Wheelhouse	Bulkhead insulation (polymer)	HBCDD	Visual	-	Not contained	-	No polymer insulation is applied, consist of rockwool and therefore not suspicious for containing HBCDD.
3	02. Navigation deck	Wheelhouse	Bulkhead insulation (polystyrene)	PBB	Visual	-	Not contained	-	No polystyrene insulation is applied, consist of rockwool and therefore not suspicious for containing PBB.
4	02. Navigation deck	Wheelhouse	Bulkhead insulation (polystyrene)	PBDE	Visual	-	Not contained	-	No polystyrene insulation is applied, consist of rockwool and therefore not suspicious for containing PBDE.
5	02. Navigation deck	Wheelhouse	Deckhead insulation	Asbestos	Sampling	BS01	Not contained	-	-
6	02. Navigation deck	Wheelhouse	Deckhead insulation (polymer)	HCDD	Visual	-	Not contained	-	No polymer insulation is applied, consist of rockwool and therefore not suspicious for containing HBCDD.
7	02. Navigation deck	Wheelhouse	Deckhead insulation (polystyrene)	PBB	Visual	-	Not contained	-	No polystyrene insulation is applied, consist of rockwool and therefore not suspicious for containing PBB.
8	02. Navigation deck	Wheelhouse	Deckhead insulation (polystyrene)	PBDE	Visual	-	Not contained	-	No polystyrene insulation is applied, consist of rockwool and therefore not suspicious for containing PBDE.
9	02. Navigation deck	Wheelhouse	Rubber door seal in door frame	PCB	Visual	-	Not contained	-	Door consist of wood and no door seal is applied.
10	02. Navigation deck	Wheelhouse	Cable penetration	Asbestos	Sampling	BS04	Contained	± 10 kg per pc	Sample contains Chrysotile 15-30%.
11	02. Navigation deck	Wheelhouse	Cable penetration	PCB	Visual	-	Not contained	-	Cement is used and therefore not suspicious for containing PCB.
12	02. Navigation deck	Wheelhouse	Screed flooring	Asbestos	Sampling	BS06	Not contained	-	-

13	02. Navigation deck	Radio room	Floorcovering	Asbestos	Sampling	BS07	Not contained	-	-
14	02. Navigation deck	Radio room	Floorcovering	PCB	Sampling	PCB01	Not contained	-	-
15	02. Navigation deck	Radio room	Floorcovering	HBCDD	Sampling	HB01	Not contained	-	-
16	02. Navigation deck	Wheelhouse	Cord seal in door frame	Asbestos	Visual	-	Not contained	-	Door frames consist of steel and no cord seal is applied therefore not suspicious for containing asbestos.
17	02. Navigation deck	Wheelhouse	Sealant in window frames	Asbestos	Sampling	BS05	Not contained	-	-
18	02. Navigation deck	Wheelhouse	Bulkhead panels	Asbestos	Sampling	BS03	Not contained	-	-
19	02. Navigation deck	Wheelhouse	Deckhead panels	Asbestos	Sampling	BS02	Contained	$\pm 5 \text{ kg per m}^2$	Sample contains Chrysotile, 2-5% and Amosite 30-60%.
20	02. Navigation deck	Radio room	Deckhead panels	Asbestos	Visual	-	Contained	$\pm 5 \text{ kg per m}^2$	Based on sample BS02.
21	02. Navigation deck	Radio room	Bulkhead panels	Asbestos	Visual	-	Not contained	-	Based on sample BS03.
22	02. Navigation deck	Outside	Rubber door seal in door frame	PCB	Sampling	PCB02	Not contained	-	-
23	03. Officers deck	Corridor	Floorcovering	PCB	Sampling	PCB03	Not contained	-	-
24	03. Officers deck	Corridor	Floorcovering	Asbestos	Sampling	BS12	Not contained	-	-
25	03. Officers deck	Cabin	Bulkhead panel insulation	Asbestos	Sampling	BS09	Not contained	-	-
26	03. Officers deck	Shower unit	Floor tiles and screed flooring	Asbestos	Sampling	BS11	Not contained	-	-
27	03. Officers deck	Cabin	Fire door insulation board	Asbestos	Sampling	BS10	Contained	$\pm 10 \text{ kg per door}$	Sample contains Amosite 30-60%.

28	04. Boat deck	Corridors	Deckhead panels	Asbestos	Visual	-	Not contained	-	Based on sample BS14.
29	04. Boat deck	Corridors	Deckhead insulation	Asbestos	Visual	-	Not contained	-	Based on sample BS01.
30	04. Boat deck	Corridors	Bulkhead panel insulation	Asbestos	Visual	-	Not contained	-	Based on sample BS09.
31	04. Boat deck	Corridors	Bulkhead insulation	Asbestos	Visual	-	Not contained	-	Based on sample BS01.
32	04. Boat deck	Corridor	Carpet	Asbestos	Visual	-	Not contained	-	Carpet is used and not suspicious for containing asbestos.
33	04. Boat deck	Laundry	Floor tiles	Asbestos	Visual	-	Not contained	-	Based on sample BS11.
34	05. Main deck	Cabin	Fire door insulation board	Asbestos	Visual	-	Contained	± 10 kg per door	Based on sample BS10.
35	05. Main deck	Cabin	Fire door insulation (polymer)	HBCDD	Visual	-	Not contained	-	Insulation consist of fibre board and therefore not suspicious for containing HBCDD.
36	05. Main deck	Cabin	Fire door insulation (polystyrene)	PBB	Visual	-	Not contained	-	Insulation consist of fibre board and therefore not suspicious for containing PBB.
37	05. Main deck	Cabin	Fire door insulation (polystyrene)	PBDE	Visual	-	Not contained	-	Insulation consist of fibre board and therefore not suspicious for containing PBDE.
38	05. Main deck	Cabin	Deckhead panels	Asbestos	Sampling	BS14	Not contained	-	-
39	05. Main deck	Cabin	Deckhead insulation	Asbestos	Visual	-	Not contained	-	Based on sample BS01.
40	05. Main deck	Cabin	Deckhead insulation (polymer)	HBCDD	Visual	-	Not contained	-	No polymer insulation is applied, consist of rockwool and therefore not suspicious for containing HBCDD.
41	05. Main deck	Cabin	Deckhead insulation (polystyrene)	PBB	Visual	-	Not contained	-	No polystyrene insulation is applied, consist of rockwool and therefore not suspicious for containing PBB.

42	05. Main deck	Cabin	Deckhead insulation (polystyrene)	PBDE	Visual	-	Not contained	-	No polystyrene insulation is applied, consist of rockwool and therefore not suspicious for containing PBDE.
43	05. Main deck	Cabin	Bulkhead panel insulation	Asbestos	Visual	-	Not contained	-	Based on sample BS09.
44	05. Main deck	Cabin	Bulkhead insulation	Asbestos	Visual	-	Not contained	-	Based on sample BS01.
45	05. Main deck	Cabin	Floorcovering	Asbestos	Visual	-	Not contained	-	Based on sample BS12.
46	05. Main deck	Cabin	Floorcovering	PCB	Visual	-	Not contained	-	Based on sample PCB03.
47	05. Main deck	Cabins	Sealant in window frames	Asbestos	Visual	-	Not contained	-	Based on sample BS05.
48	05. Main deck	Cabin	Fire door insulation board	Asbestos	Visual	-	Contained	± 10 kg per door	Based on sample BS10.
49	05. Main deck	Cabin	Shower unit	Asbestos	Visual	-	Not contained	-	Based on samples BS11, BS01 and BS14.
50	05. Poop deck	Mess room	Sealant in window frames	Asbestos	Visual	-	Not contained	-	Based on sample BS05.
51	05. Poop deck	Mess room	Floorcovering	Asbestos	Sampling	BS13	Not contained	-	-
52	05. Poop deck	Staircase	Cord seal in door frame	Asbestos	Visual	-	Not contained	-	Consist of steel and therefore not suspicious for containing asbestos.
53	05. Poop deck	Galley	Galley equipment	Asbestos	Visual	-	Not contained	-	No cord in over, consist of steel and therefore not suspicious for containing asbestos.
54	05. Poop deck	Galley	Deckhead panels	Asbestos	Visual	-	Not contained	-	Based on sample BS14.
55	05. Poop deck	Galley	Bulkhead panels	Asbestos	Visual	-	Not contained	-	Based on sample BS14.
56	05. Poop deck	Galley	Floorcovering	Asbestos	Visual	-	Not contained	-	Based on sample BS11.

57	06. Main deck	Switchboard room	Deckhead insulation	Asbestos	Visual	-	Not contained	-	Based on sample BS01.
58	07. Platform deck	Engine control room	Cable penetration	Asbestos	Visual	-	Contained	± 10 kg per pc	Based on sample BS04.
59	07. Platform deck	Engine control room	Floorcovering	Asbestos	Sampling	BS25	Not contained	-	-
60	07. Platform deck	Engine control deck	Bulkhead/ deckhead insulation	Asbestos	Visual	-	Not contained	-	Based on sample BS01.

3.3 Results interviews client

Prior to the survey an interview is held with the contact person on board of the vessel. In the table below the results are described.

Function	Information
Captain Fjordvik	No knowledge regarding the use of any hazardous materials on board this vessel.

Table 10. Results conducted interviews

3.4 Results visual inspection and sampling

This paragraph shows the source sheets of the materials which are sampled during the survey. Per source a filled source sheet is given with information and results of the sampled material. For each sample two photos are included to give a good view of the source and the location.

Hazardous materials containing sources are marked with a red colour and are appointed with a red arrow on the pictures. The sources not containing any hazardous material are marked with a green colour and are appointed with a green arrow in the photos. If the source is indicated as Potentially Containing Hazardous Materials (PCHM) the source will be marked with orange.

The survey results on the following pages will be given per each sample. There are a number of different types of sampling methods / visual checks that can be used during the survey:

- BS = Asbestos Bulk Samples
- PCB = PCB Bulk Samples
- OS = PCB Oil Samples
- SS = PCB Swipe Samples
- ODS = Ozone Depleting Substances
- TBT = TBT Bulk Samples
- Cd = Cadmium and cadmium compounds
- Cr = Hexavalent chromium and hexavalent chromium compounds
- Pb = Lead and lead compounds
- Hg = Mercury and mercury compounds
- PBB = Polybrominated biphenyl (PBBs)
- PBDE = Polybrominated diphenyl ethers (PBDEs)
- PCN = Polychlorinated naphthalenes (PCN)
- RA = Radioactive substances
- CSCP = Certain shortchain chlorinated paraffins (CSCP)
- PF = PFOS
- HB = HBCDD

3.4.1 Asbestos

Source number:	01						
Sample number:	BS01	Type/% Asbestos:	Not contained				
Application:	Deckhead insulation	Also analysed for:	-				
Location:	Throughout vessel, several decks	Analysing method:	PLM according NEN 5896				
Quantity:	-	Above threshold level:	No				
Documentation / remarks:	-						
Source description							
This source concerns bulkhead and deckhead insulation used throughout the vessel on several decks. Sample is taken from the deckhead insulation in the wheelhouse on navigation deck.							
 BS01	 BS01						

Source number:	02		
Sample number:	BS02	Type/% Asbestos:	Chrysotile, 2-5% Amosite, 30-60%
Application:	Panelling	Also analysed for:	-
Location:	Throughout vessel, several decks	Analysing method:	PLM according NEN 5896
Quantity:	± 5 kg per m ²	Above threshold level:	Yes
Documentation / remarks:	-		

Source description

This source concerns deckhead panels used throughout the vessel on several decks. Sample is taken in the wheelhouse on nav. deck.



BS02



BS02

Source number:	03				
Sample number:	BS03	Type/% Asbestos:	Not contained		
Application:	Panelling	Also analysed for:	-		
Location:	Throughout vessel, several decks	Analysing method:	PLM according NEN 5896		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns bulkhead panels used throughout the vessel on several decks. Sample is taken in the wheelhouse on nav. deck.					
 BS03	 BS03				

Source number:	04				
Sample number:	BS04	Type/% Asbestos:	Chrysotile, 15-30%		
Application:	Cable penetration	Also analysed for:	-		
Location:	Throughout vessel, several decks	Analysing method:	PLM according NEN 5896		
Quantity:	± 10 kg per pc	Above threshold level:	Yes		
Documentation / remarks:	-				
Source description					
This source concerns cement used in cable penetration throughout the vessel on several decks. Sample is taken in the wheelhouse on nav. deck.					
 BS04	 BS04				

Source number:	05				
Sample number:	BS05	Type/% Asbestos:	Not contained		
Application:	Sealant	Also analysed for:	-		
Location:	Throughout vessel, several decks	Analysing method:	PLM according NEN 5896		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns sealant used in window frames throughout the vessel on several decks. Sample is taken in the wheelhouse on nav. deck.					
 BS05	 BS05				

Source number:	06				
Sample number:	BS06	Type/% Asbestos:	Not contained		
Application:	Screed flooring	Also analysed for:	-		
Location:	Throughout vessel, several decks	Analysing method:	PLM according NEN 5896		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns screed flooring used throughout the vessel on several decks. Sample is taken in the wheelhouse on nav. deck.					
 BS06	 BS06				

Source number:	07				
Sample number:	BS07	Type/% Asbestos:	Not contained		
Application:	Floorcovering	Also analysed for:	-		
Location:	Accommodation, several decks	Analysing method:	PLM according NEN 5896		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns floorcovering used throughout the accommodation on several decks. Sample is taken in the radio room on nav. deck.					
 BS07	 BS07				

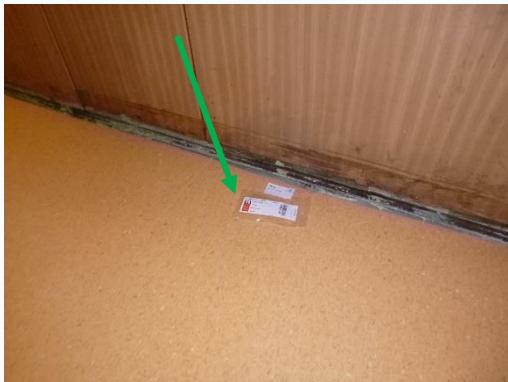
Source number:	08		
Sample number:	BS08	Type/% Asbestos:	Chrysotile, 60-100%
Application:	Insulation material	Also analysed for:	-
Location:	Throughout vessel, several decks	Analysing method:	PLM according NEN 5896
Quantity:	± 5 kg per m ²	Above threshold level:	Yes
Documentation / remarks:	-		
Source description			
This source concerns insulation material used on air ducts and pipelines throughout the vessel on several decks. Sample is taken in the AC room on nav. deck.			
 BS08	 BS08		

Source number:	09				
Sample number:	BS09	Type/% Asbestos:	Not contained		
Application:	Insulation material	Also analysed for:	-		
Location:	Accommodation, several decks	Analysing method:	PLM according NEN 5896		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns insulation material used in bulkhead panels throughout the accommodation on several decks. Sample is taken from the bulkhead panel in the II engineer cabin on officers deck.					
 BS09	 BS09				

Source number:	10				
Sample number:	BS10	Type/% Asbestos:	Amosite, 30-60%		
Application:	Fire door	Also analysed for:	-		
Location:	Accommodation, several decks	Analysing method:	PLM according NEN 5896		
Quantity:	± 10 kg per door	Above threshold level:	Yes		
Documentation / remarks:	-				
Source description					
This source concerns fibre board used in fire retardent doors throughout the accommodation on several decks. Sample is taken from the II engineers cabin door on officers deck.					
 BS10	 BS10				

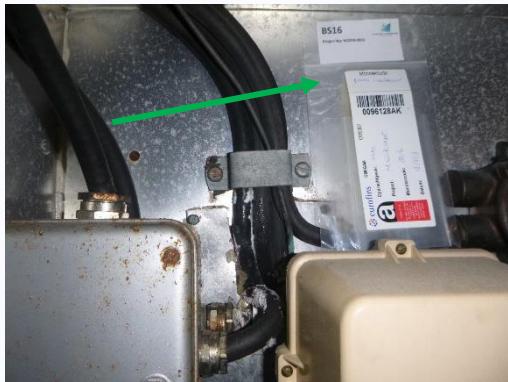
Source number:	11				
Sample number:	BS11	Type/% Asbestos:	Not contained		
Application:	Floor tiles/ screed flooring	Also analysed for:	-		
Location:	Accommodation, several decks	Analysing method:	PLM according NEN 5896		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns floor tiles and glue (screed flooring) used in shower units throughout the accommodation on several decks. Sample is taken from the II engineers shower unit on officers deck.					
 BS11	 BS11				

Source number:	12				
Sample number:	BS12	Type/% Asbestos:	Not contained		
Application:	Floorcovering	Also analysed for:	-		
Location:	Accommodation, several decks	Analysing method:	PLM according NEN 5896		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns floorcovering used underneath carpet throughout the accommodation on several decks. Sample is taken in the corridor on officers deck.					
 BS12	 BS12				

Source number:	13		
Sample number:	BS13	Type/% Asbestos:	Not contained
Application:	Floorcovering	Also analysed for:	-
Location:	Accommodation, several decks	Analysing method:	PLM according NEN 5896
Quantity:	-	Above threshold level:	No
Documentation / remarks:	-		
Source description			
This source concerns floorcovering (new installed) used throughout the accommodation on several decks. Sample is taken in the crews mess room on poop deck.			
 A photograph showing a section of light-colored floor covering material, likely vinyl or similar, applied to a wooden deck. A green arrow points from the text 'BS13' at the bottom to a small white evidence tag attached to the floor covering.	BS13	 A photograph showing a close-up of the floor covering material. A green arrow points from the text 'BS13' at the bottom to a white evidence tag with a red label and barcode attached to the floor covering.	BS13

Source number:	14				
Sample number:	BS14	Type/% Asbestos:	Not contained		
Application:	Insulation material	Also analysed for:	-		
Location:	Throughout vessel, several decks	Analysing method:	PLM according NEN 5896		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns deckhead panel insulation used throughout the vessel on several decks. Sample is taken in the corridor on main deck.					
 BS14	 BS14				

Source number:	15				
Sample number:	BS15	Type/% Asbestos:	Not contained		
Application:	Bituminous paint	Also analysed for:	-		
Location:	Accommodation, several decks	Analysing method:	PLM according NEN 5896		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns black bituminous paint used on steel bulkheads and deckheads throughout the accommodation on several decks. Sample is taken in the corridor on main deck.					
	BS15		BS15		

Source number:	16					
Sample number:	BS16	Type/% Asbestos:	Not contained			
Application:	Insulation	Also analysed for:	-			
Location:	Cold provision stores, main deck	Analysing method:	PLM according NEN 5896			
Quantity:	-	Above threshold level:	No			
Documentation / remarks:	-					
Source description						
This source concerns insulation material used in deckhead and bulkhead panels of the cold provision stores on main deck. Sample is taken in the cold store.						
 BS16	 BS16					

Source number:	17				
Sample number:	BS17	Type/% Asbestos:	Not contained		
Application:	Insulation material	Also analysed for:	-		
Location:	Engine room, main deck	Analysing method:	PLM according NEN 5896		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns insulation material used on the boiler in the engine room on main deck.					
	BS17		BS17		

Source number:	18				
Sample number:	BS18	Type/% Asbestos:	Not contained		
Application:	seal	Also analysed for:	-		
Location:	Engine room, main deck	Analysing method:	PLM according NEN 5896		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns cord seal used in insectection hatch of the boiler in the engine room on main deck.					
	BS18		BS18		

Source number:	19					
Sample number:	BS19	Type/% Asbestos:	Chrysotile, 60-100%			
Application:	Seal	Also analysed for:	-			
Location:	Engine room, main deck	Analysing method:	PLM according NEN 5896			
Quantity:	± 3 kg	Above threshold level:	Yes			
Documentation / remarks:	-					
Source description						
This source concerns cord seal used in hatch of the burner to the boile rin the engine room on main deck.						
	BS19		BS19			

Source number:	20					
Sample number:	BS20	Type/% Asbestos:	Chrysotile, 30-60%			
Application:	Gasket	Also analysed for:	-			
Location:	Engine room, main deck	Analysing method:	PLM according NEN 5896			
Quantity:	± 100 gr. per gasket	Above threshold level:	Yes			
Documentation / remarks:	-					
Source description						
This source concerns a gasket used in the burner connection to the boiler in the engine room on main deck.						
 BS20	 BS20					

Source number:	21		
Sample number:	BS21, BS22, BS23	Type/% Asbestos:	Not contained
Application:	Gasket	Also analysed for:	-
Location:	Engine store, main deck	Analysing method:	PLM according NEN 5896
Quantity:	-	Above threshold level:	No
Documentation / remarks:	-		

Source description

This source concerns spare sheets of gasket material with various brands in the engine store on main deck.

BS21 – 2 sheets of gasket material with brand "Flexitallix 2800".

BS22 – 2 sheets of gasket material with brand "Ferolite NAM 45 CF".

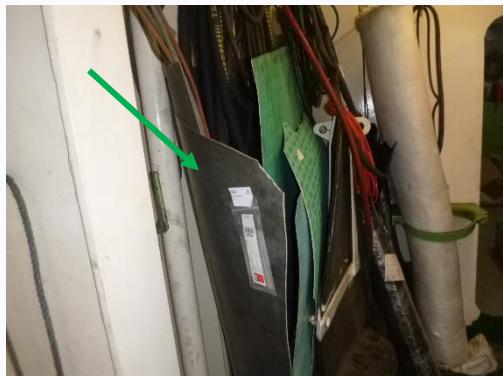
BS23 – 10 sheets of gasket material with brand "Marpack Jointing PA277".



BS21



BS21



BS22



BS22



Source number:	22		
Sample number:	BS24	Type/% Asbestos:	Chrysotile, 30-60%
Application:	Gasket	Also analysed for:	-
Location:	Engine room, platform deck	Analysing method:	PLM according NEN 5896
Quantity:	± 100 gr. per gasket	Above threshold level:	Yes
Documentation / remarks:	-		

Source description

This source concerns a flange gasket used in compressed air line connected to the air compressor in the engine room on platform deck.



BS24



BS24

Source number:	23				
Sample number:	BS25	Type/% Asbestos:	Not contained		
Application:	Floorcovering	Also analysed for:	-		
Location:	Engine control room, platform deck	Analysing method:	PLM according NEN 5896		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns floorcovering used in the engine control room on platform deck.					
	BS25		BS25		

Source number:	24				
Sample number:	BS26	Type/% Asbestos:	Not contained		
Application:	Spark barrier	Also analysed for:	-		
Location:	Engine control room, platform deck	Analysing method:	PLM according NEN 5896		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns spark barriers used in electrical switchboards in the engine control room on platform deck.					
 BS26	 BS26				

Source number:	25		
Sample number:	BS27, BS28	Type/% Asbestos:	Chrysotile, 60-100% (BS27)
Application:	Gasket	Also analysed for:	-
Location:	Engine store, platform deck	Analysing method:	PLM according NEN 5896
Quantity:	± 100 gr. per gasket	Above threshold level:	Yes (BS27)
Documentation / remarks:	-		

Source description

This source concerns spare gaskets with various brands in the engine store on platform deck.

BS27 – Spare red gasket with brand "Tesnit".

BS28 – Spare gasket with brand "Klingersil C4430".



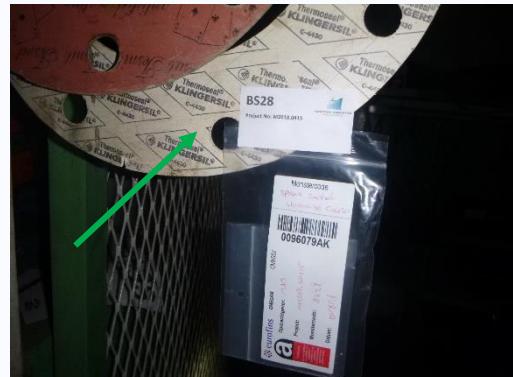
BS27



BS27



BS28



BS28

Source number:	26				
Sample number:	BS29	Type/% Asbestos:	Not contained		
Application:	Insulation material	Also analysed for:	-		
Location:	Throughout vessel, several decks	Analysing method:	PLM according NEN 5896		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns insulation material used on exhaust lines throughout the vessel on several decks. Sample is taken in the engine room from PS main engine exhaust line on storage deck.					
 BS29	 BS29				

Source number:	27				
Sample number:	BS30	Type/% Asbestos:	Not contained		
Application:	Insulation mattress	Also analysed for:	-		
Location:	Throughout vessel, several decks	Analysing method:	PLM according NEN 5896		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns insulation mattresses used throughout the vessel on several decks. Sample is taken from PS main engine on storage deck.					
 BS30	 BS30				

Source number:	28				
Sample number:	BS31	Type/% Asbestos:	Not contained		
Application:	Gasket	Also analysed for:	-		
Location:	Engine room, storage deck	Analysing method:	PLM according NEN 5896		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns a flange gasket used in the exhaust line connection to the PS main engine in the engine room on storage deck.					
 BS31	 BS31				

Source number:	29					
Sample number:	BS32	Type/% Asbestos:	Chrysotile, 30-60%			
Application:	Gasket	Also analysed for:	-			
Location:	Engine room, storage deck	Analysing method:	PLM according NEN 5896			
Quantity:	± 100 gr. per gasket	Above threshold level:	Yes			
Documentation / remarks:	-					
Source description						
This source concerns a gasket used in handpump connected to the main engine lub oil line to the stern tube in the engine room on storage deck.						
 BS32	 BS32					

Source number:	30				
Sample number:	BS33, BS35	Type/% Asbestos:	Chrysotile, 30-60% (BS35)		
Application:	Brake lining	Also analysed for:	-		
Location:	Throughout vessel, several decks	Analysing method:	PLM according NEN 5896		
Quantity:	± 10 kg per pc	Above threshold level:	Yes		
Documentation / remarks:	-				
Source description					
This source concerns brake linings used in various winches throughout the vessel on several decks. BS33 – Brake lining AFT PS mooring winch outside on poop deck. BS35 – Brake linings anchor winch outside on forecastle deck.					
	BS33		BS33		
	BS35		BS35		

Source number:	31					
Sample number:	BS34	Type/% Asbestos:	Not contained			
Application:	Lagging	Also analysed for:	-			
Location:	Cargo generator room, main deck	Analysing method:	PLM according NEN 5896			
Quantity:	-	Above threshold level:	No			
Documentation / remarks:	-					
Source description						
This source concerns lagging material used on exhaust lines of the cargo generators in the cargo generator room on main deck. Sample is taken in the PS cargo generator room on main deck.						
 BS34	 BS34					

Source number:	32					
Sample number:	BS36	Type/% Asbestos:	Chrysotile, 30-60%			
Application:	Gasket	Also analysed for:	-			
Location:	Emergency generator room, main deck	Analysing method:	PLM according NEN 5896			
Quantity:	± 100 gr. per gasket	Above threshold level:	Yes			
Documentation / remarks:	-					
Source description						
This source concerns gaskets used in pipeline connected to the diesel tank in the emergency generator room on main deck.						
 BS36	 BS36					

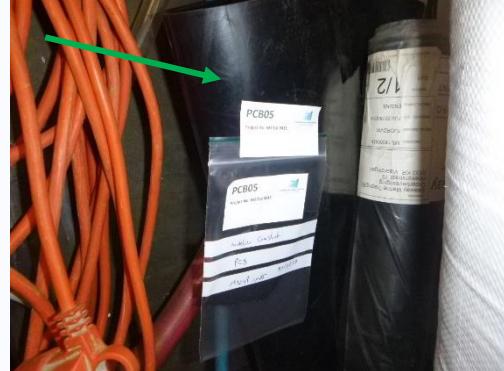
3.4.2 PCBs

Source number:	33						
Sample number:	PCB01	PCB results:	Not contained				
Application:	Floorcovering	Also analysed for:	-				
Location:	Accommodation, several decks	Analysing method:	See Appendix D				
Quantity:	-	Above threshold level:	No				
Documentation / remarks:	-						
Source description							
This source concerns pvc floorcovering used throughout the vessel on several decks. Sample is taken in the radio room on nav. deck.							
	PCB01		PCB01				

Source number:	34				
Sample number:	PCB02	PCB results:	Not contained		
Application:	Door seal	Also analysed for:	-		
Location:	Throughout vessel, several decks	Analysing method:	See Appendix D		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns rubber door seal used in door frames of water tight doors throughout the vessel on several decks. Sample is taken from the battery room door outside on nav. deck.					
	PCB02		PCB02		

Source number:	35				
Sample number:	PCB03	PCB results:	Not contained		
Application:	Floorcovering	Also analysed for:	-		
Location:	Accommodation, several decks	Analysing method:	See Appendix D		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns floorcovering used underneath carpet throughout the accommodation on several decks. Sample is taken in the corridor on officers deck.					
	PCB03		PCB03		

Source number:	36				
Sample number:	PCB04	PCB results:	Not contained		
Application:	Bituminous paint	Also analysed for: - Lead:	225 mg/kg		
Location:	Accommodation, several decks	Analysing method:	See Appendix D		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns black bituminous paint used on steel bulkheads and deckheads throughout the accommodation on several decks. Sample is taken in the corridor on main deck.					
 PCB04	 PCB04				

Source number:	37				
Sample number:	PCB05	PCB results:	Not contained		
Application:	Gasket (rubber)	Also analysed for:	-		
Location:	Throughout vessel, several decks	Analysing method:	See Appendix D		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns rubber gaskets used throughout the vessel on several decks. Sample is taken from a spare sheet of rubber gasket material in the engine store on main deck.					
	PCB05		PCB05		

Source number:	38		
Sample number:	PCB06	PCB results:	10,3 mg/kg
Application:	Deck paint	Also analysed for: - Lead: - Cadmium: - Chromium: - PBB:	52825 mg/kg Not contained 58 mg/kg Not contained
Location:	Throughout vessel, several decks	Analysing method:	See Appendix D
Quantity:	± 750 kg	Above threshold level:	Yes (lead)
Documentation / remarks:	-		

Source description

This source concerns grey/green deck paint used in technical areas throughout the vessel on several decks. Sample is taken in the engine store on main deck.



PCB06



PCB06



Overview



Overview

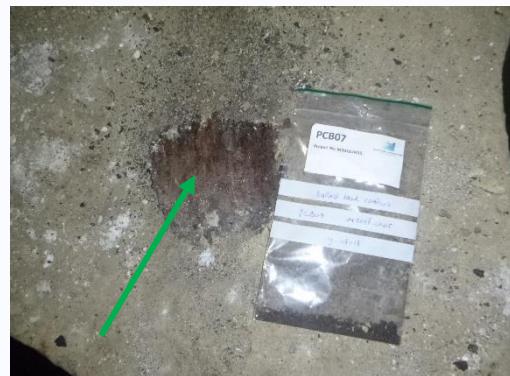
Source number:	39		
Sample number:	PCB07	PCB results:	Not contained
Application:	Coating	Also analysed for: - Lead: - Chromium:	98 mg/kg Not contained
Location:	Throughout vessel, several decks	Analysing method:	See Appendix D
Quantity:	-	Above threshold level:	No
Documentation / remarks:	-		

Source description

This source concerns coating used in the ballast tanks throughout the vessel on several decks. Sample is taken in the SB AFT peak on storage deck.



PCB07



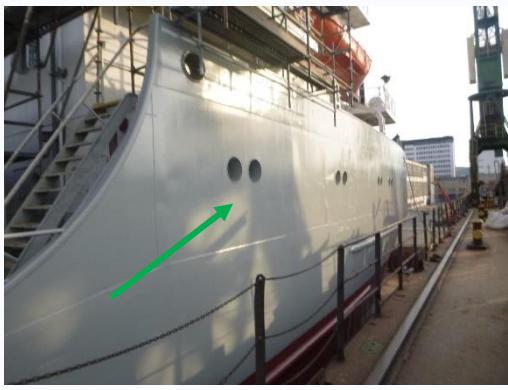
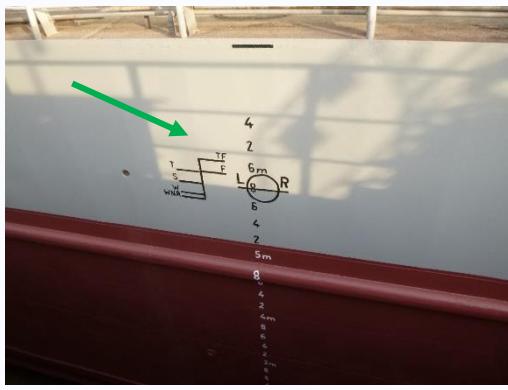
PCB07



Overview

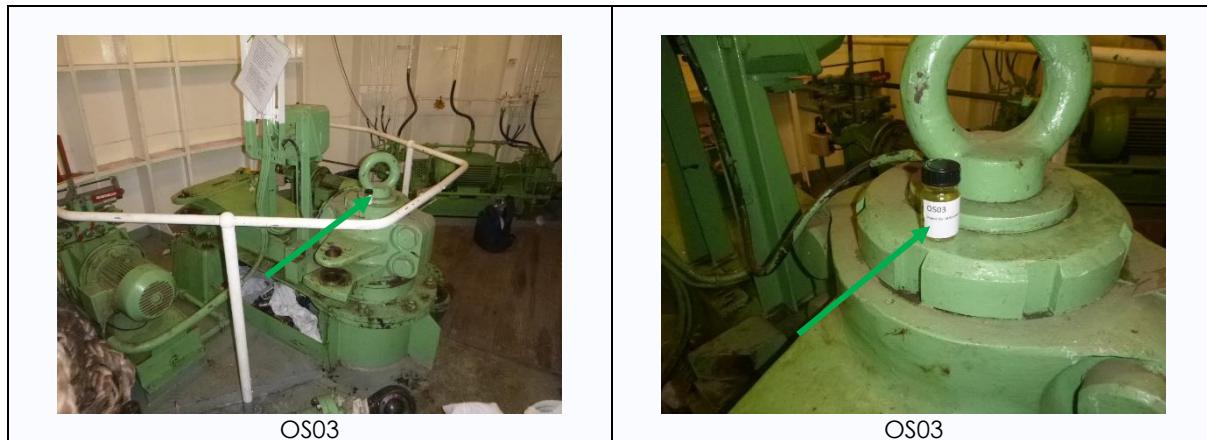


Overview

Source number:	40				
Sample number:	PCB08	PCB results:	Not contained		
Application:	Hull paint	Also analysed for: - Lead: - Cadmium: - Chromium:	396 mg/kg Not contained Not contained		
Location:	Hull, outside	Analysing method:	See Appendix D		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns grey paint used on the hull above the water line. Sample is taken outside on forecastle deck.					
		PCB08	PCB08		
		Overview	Overview		

Source number:	41				
Sample number:	SS01	PCB results:	Not contained		
Application:	Electrical cables	Also analysed for:	-		
Location:	Throughout vessel, several decks	Analysing method:	See Appendix D		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns electrical cables used throughout the vessel on several decks. Swipe sample is taken in the engine control room on platform deck.					
 SS01	 SS01				

Source number:	42				
Sample number:	OS01, OS02, OS03	PCB results:	Not contained		
Application:	Oils	Also analysed for:	-		
Location:	Throughout vessel, several decks	Analysing method:	See Appendix D		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns oils used in various systems and equipment throughout the vessel on several decks.					
OS01 – Lub oil for main engine in the engine room on storage deck. OS02 – Hydraulic oil for main system in the engine room on storage deck. OS03 – Hydraulic oil for steering gear in the steering gear room on main deck.					
	OS01		OS01		
	OS02		OS02		

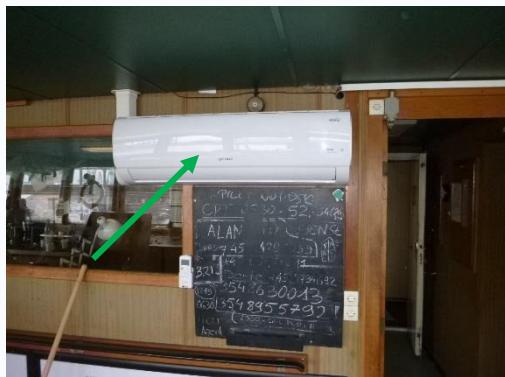


3.4.3 Ozone Depleting Substances (ODS)

Source number:	43	Type of ODS:	R32
Sample number:	ODS01	Also analysed for:	-
Application:	Refrigerant	Analysing method:	Visual check
Location:	Wheelhouse, nav. deck	Above threshold level:	No
Quantity:	-		
Documentation / remarks:	<p>Brand: Rotenso Inverter. Indoor model: U50WI. Outdoor model: U50Wa.</p> <p>No ozone depleting potential.</p>		

Source description

This source concerns refrigerant R32 used in AC split unit for the wheelhouse on nav. deck.



ODS01



ODS01



ODS01



ODS01

Source number:	44					
Sample number:	ODS02	Type of ODS:	R600a			
Application:	Refrigerant	Also analysed for:	-			
Location:	Galley/duty mess, poop deck	Analysing method:	Visual check			
Quantity:	-	Above threshold level:	No			
Documentation / remarks:	No ozone depleting potential.					
Source description						
This source concerns refrigerant R600a used in refrigerators in the galley and duty mess on poop deck.						
 ODS02	 ODS02					

Source number:	45				
Sample number:	ODS03	Type of ODS:	Not contained		
Application:	Insulation foam	Also analysed for:	-		
Location:	Throughout vessel, several decks	Analysing method:	See Appendix D		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns black insulation foam used on cooling pipes throughout the vessel on several decks. Sample is taken in the cold store on main deck.					
 ODS03	 ODS03				

Source number:	46		
Sample number:	ODS04	Type of ODS:	R422D
Application:	Refrigerant	Also analysed for:	-
Location:	Engine room, main deck	Analysing method:	Visual check
Quantity:	-	Above threshold level:	No
Documentation / remarks:	No ozone depleting potential.		

Source description

This source concerns refrigerant R422D used in AC compressors for the accommodation and cold provision stores in the engine room on main deck.

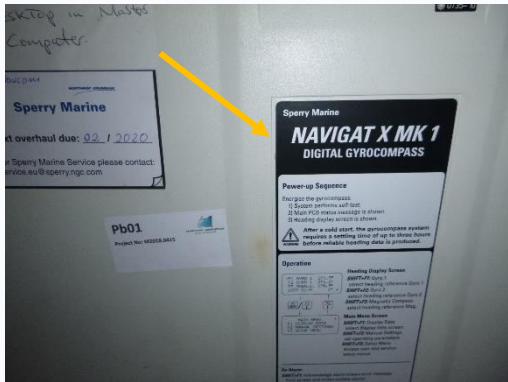
	
ODS04	ODS04

	
ODS04	ODS04

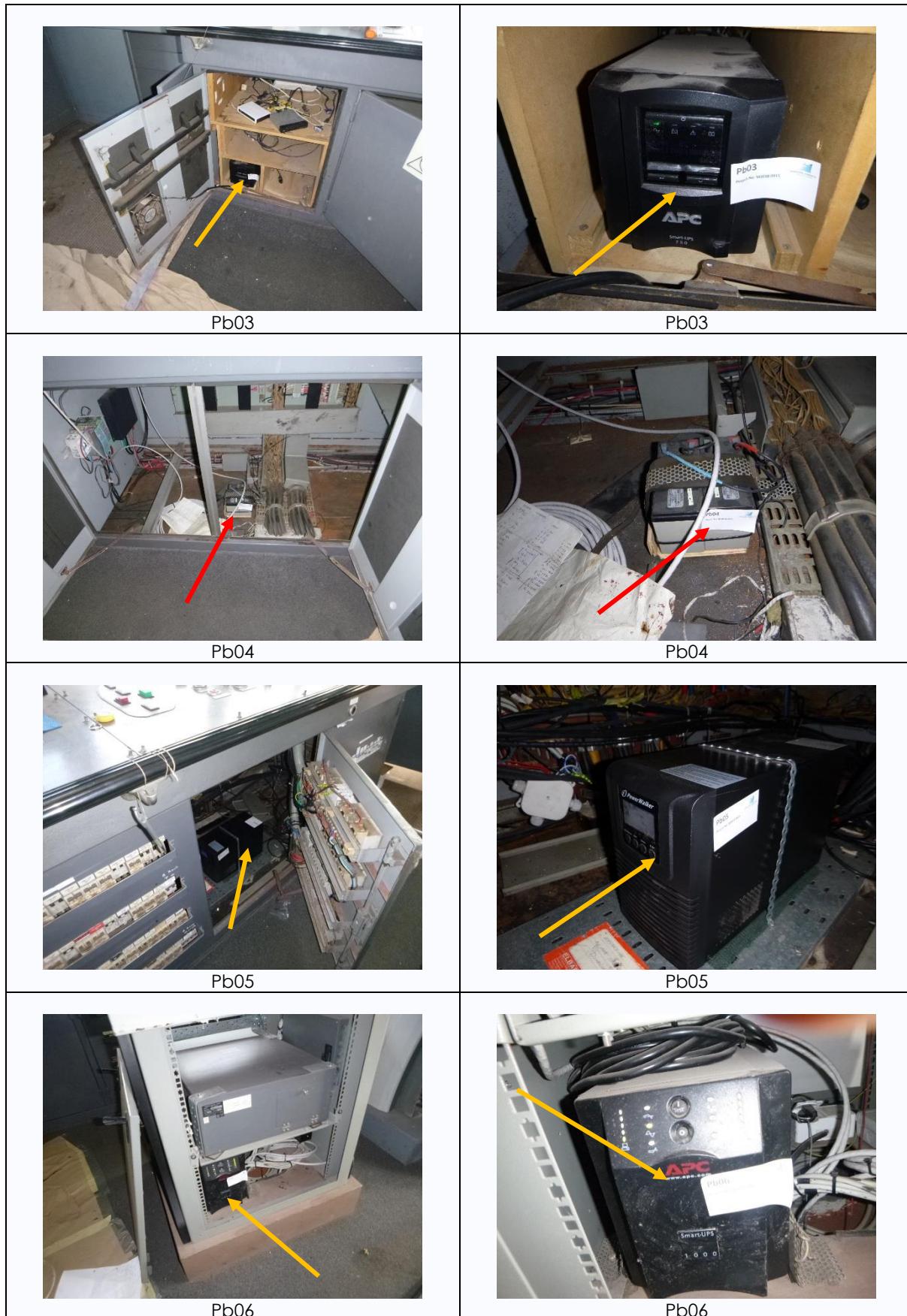
Source number:	47					
Sample number:	ODS05	Type of ODS:	R410a			
Application:	Refrigerant	Also analysed for:	-			
Location:	Engine control room, platform deck	Analysing method:	Visual check			
Quantity:	-	Above threshold level:	No			
Documentation / remarks:	No ozone depleting potential.					
Source description						
This source concerns refrigerant R410a used in AC split unit in the engine control room on platform deck.						
 ODS05	 ODS05					

Source number:	48					
Sample number:	ODS06	Type of ODS:	R134a			
Application:	Refrigerant	Also analysed for:	-			
Location:	Compressor room, main deck	Analysing method:	Visual check			
Quantity:	-	Above threshold level:	No			
Documentation / remarks:	No ozone depleting potential.					
Source description						
This source concerns refrigerant R134a used in compressor for dryer in the compressor room on main deck.						
 ODS06	 ODS06					

3.4.4 Lead and lead compounds

Source number:	49			
Sample number:	Pb01	Lead results:	PCHM	
Application:	Digital gyrocompass	Also analysed for: - Mercury:	PCHM	
Location:	Wheelhouse, nav. deck	Analysing method:	Visual check	
Quantity:	Unknown	Above threshold level:	Unknown	
Documentation / remarks:	Brand: Sperry Marine. Type: Navigat X MK 1.			
Source description				
This source concerns a digital gyrocompass located in the wheelhouse on nav. deck. No information is available regarding the use of lead and/or mercury within this gyrocompass and therefore it needs to be considered as PCHM.				
	Pb01		Pb01	

Source number:	50				
Sample number:	Pb02 till Pb17	Lead results:	Contained		
Application:	Batteries	Also analysed for:	-		
Location:	Throughout vessel, several decks	Analysing method:	Visual check		
Quantity:	± 780 kg	Above threshold level:	Yes		
Documentation / remarks:	-				
Source description					
This source concerns batteries used in various systems and equipment throughout the vessel on several decks.					
Pb02 – Batteries for fire alarm in the wheelhouse on nav. deck. Pb03 – Batteries for back-up UPS in the wheelhouse on nav. deck (PCHM). Pb04 – Batteries for discharge system in the wheelhouse on nav. deck. Pb05 – Batteries for UPS radar autopilot in the wheelhouse on nav. deck (PCHM). Pb06 – Batteries for UPS ecdis in the wheelhouse on nav. deck (PCHM). Pb07 – Batteries for VDR in the chart room on nav. deck. Pb08 – Batteries for UPS VDS in the chart room on nav. deck (PCHM). Pb09 – Batteries for emergency in the battery room on nav. deck. Pb10 – Batteries for emergency in the battery room on nav. deck. Pb11 – Batteries for PS rescue boat outside on boat deck. Pb11 – Batteries for SB rescue boat in the wheelhouse on nav. deck. Pb12 – Batteries for UPS in the captains cabin, chief engineer cabin and chief officers cabin on officiers deck (PCHM). Pb13 – Batteries for UPS in ships office on officers deck (PCHM). Pb14 – Batteries for fbb in radio room on nav. deck (PCHM). Pb15 – Batteries for UPS in the engine control room on platform deck (PCHM). Pb16 – Batteries for cargo generator on main deck. Pb17 – Batteries for emergency generator in the emergency generator room on main deck.					
 Pb02		 Pb02			









3.4.5 Mercury and mercury compounds

Source number:	51							
Sample number:	Hg01	Mercury results:	Not contained					
Application:	Temperature gauge	Also analysed for:	-					
Location:	Throughout vessel, several decks	Analysing method:	Visual check					
Quantity:	-	Above threshold level:	No					
Documentation / remarks:	Based on manufactured declaration of SIKA.							
Source description								
This source concerns temperature gauges of brand SIKA/Econosto used throughout the vessel on several decks.								
	Hg01		Hg01					

3.4.6 Polybrominated biphenyl (PBBs)

Source number:	52				
Sample number:	PBB01	PBB results:	Not contained		
Application:	Accommodation paint	Also analysed for: - PCB: - Lead: - Cadmium: - Chromium:	Not contained 24540 mg/kg Not contained Not contained		
Location:	Throughout vessel, several decks	Analysing method:	See Appendix D		
Quantity:	± 910 kg	Above threshold level:	Yes		
Documentation / remarks:	-				
Source description					
This source concerns white paint used on the outside of the accommodation and funnel on several decks. Sample is taken outside on boat deck.					
	PBB01		PBB01		
	Overview		Overview		

3.4.7 Polychlorinated naphthalenes (PCN)

Source number:	53		
Sample number:	PCN01	PCN results:	Not contained
Application:	Bulkhead paint	Also analysed for: - Lead: - Chromium:	32570 mg/kg Not contained
Location:	Throughout vessel, several decks	Analysing method:	See Appendix D
Quantity:	± 1600 kg	Above threshold level:	Yes
Documentation / remarks:	-		

Source description

This source concerns white bulkhead paint used in technical areas throughout the vessel on several decks. Sample is taken in the engine room on main deck.



PCN01



PCN01



Overview



Overview

3.4.8 Radioactive substances

Source number:	54			
Sample number:	RA01, RA02	Radioactive results:	Not contained	
Application:	Smoke detectors	Also analysed for:	-	
Location:	Throughout vessel, several decks	Analysing method:	Visual check	
Quantity:	-	Above threshold level:	No	
Documentation / remarks:	-			
Source description				
This source concerns smoke detectors used throughout the vessel on several decks.				
RA01 – Smoke detector with brand “EURA, GS-503”. RA02 – Smoke detector with brand “Cerberus AG”.				
		RA01	RA01	
		RA02	RA02	

3.4.9 Certain shortchain chlorinated paraffins (CSCP)

Source number:	55						
Sample number:	CSCP01	CSCP results:	Not contained				
Application:	Deck paint	Also analysed for: - PCB: - PCN: - Lead: - Cadmium: - Chromium:	Not contained Not contained 4514 mg/kg Not contained Not contained				
Location:	Throughout vessel, several decks	Analysing method:	See Appendix D				
Quantity:	± 1820 kg	Above threshold level:	Yes				
Documentation / remarks:	-						
Source description							
This source concerns grey deck paint used throughout the vessel on several decks. Sample is taken outside on boat deck.							
		CSCP01	CSCP01				
		Overview	Overview				

3.4.10 HBCDD

Source number:	56						
Sample number:	HB01	HBCDD results:	Not contained				
Application:	Floorcovering	Also analysed for:	-				
Location:	Accommodation, several decks	Analysing method:	See Appendix D				
Quantity:	-	Above threshold level:	No				
Documentation / remarks:	-						
Source description							
This source concerns floorcovering used throughout the vessel on several decks. Sample is taken in the radio room on nav. deck.							
	HB01		HB01				

Source number:	57				
Sample number:	HB02	HBCDD results:	Not contained		
Application:	Electrical cables	Also analysed for: - PCB: - Lead: - PCN: - CSCP:	Not contained Not contained Not contained Not contained		
Location:	Throughout vessel, several decks	Analysing method:	See Appendix D		
Quantity:	-	Above threshold level:	No		
Documentation / remarks:	-				
Source description					
This source concerns electrical cables used throughout the vessel on several decks. Sample is taken in the engine control room on platform deck.					
					
HB02		HB02			

4 Conclusions and recommendations

4.1 Hazardous materials found

The table below is showing the total quantity of hazardous materials which were found during the IHM survey on site.

Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (2009)

Hazardous Material	Quantity*	Material type	Table
Asbestos	± 100 gr. per gasket ± 10 kg per pc ± 3 kg ± 10 kg per door ± 5 kg per m ¹ ± 10 kg per pc ± 5 kg per m ² Unknown	Flange gaskets Brake linings on winches Cord in boiler Fire doors insulation board Insulation material air ducts Cable penetration Deckhead panels Propeller shaft brake linings (PCHM)	A
PCB's	0 kg	-	A
ODS	0 kg	-	A
Anti-Fouling	0 kg	-	A
Cadmium (compounds)	0 kg	-	B
Chromium (compounds)	0 kg	-	B
Lead (compounds)	± 780 kg Unknown ± 910 kg ± 1600 kg ± 1820 kg ± 750 kg Unknown	Batteries Batteries for UPS units (PCHM) Accommodation paint Bulkhead paint technical; areas Deck paint outside Deck paint technical areas Gyrocompass (PCHM)	B
Mercury (compounds)	Unknown	Gyrocompass (PCHM)	B
Polybrominated biphenyl (PBBs)	0 kg	-	B
Polybrominated diphenyl ethers (PBDEs)	0 kg	-	B
Polychlorinated naphthalenes (PCN)	0 kg	-	B
Radioactive substances	0 kg	-	B
Certain shortchain chlorinated paraffins (CSCP)	0 kg	-	B

Table 11. Quantity of hazardous materials on board according HKC.

EU Ship Recycling Regulation, No 1257/2013

Hazardous Material	Quantity*	Material type	Annex
PFOS	-	-	I
HBCDD	0 kg	-	II

Table 12. Quantity of hazardous materials on board according EU SRR.

*The amounts per source are approximately estimated on locations and may deviate from the actual amounts.

Asbestos

Asbestos is proved as cardboard gaskets installed in various systems. On board apart from cardboard gaskets several other gasket materials like rubber etc. were applied. Based on this information all cardboard gaskets are considered PCHM until proved otherwise. All other gaskets are considered asbestos free. An average weight of 100 gr. per cardboard gasket is calculated.

Asbestos containing brake linings were detected during the survey. One brake lining is proved asbestos free. All other brake linings on board needs to be considered PCHM until proved otherwise. The weight of the brake linings is estimated on 10 kg per pc.

In the boiler hatch asbestos containing cord is detected. The boiler is located in the engine room on main deck. The amount of cord used in the hatch is estimated on 3 kg of cord.

In the fire-retardant doors asbestos containing fibre board is proved. These types of doors are located throughout the accommodation of the vessel. Approximately 10 kg of asbestos containing fibre board is used per door.

Asbestos containing insulation material is used on air ducts and pipelines throughout the vessel. White paint is used on top of this insulation fabric. The weight of this material is estimated on 5 kg per m¹.

Asbestos is proved in the cement used in cable penetrations throughout the entire vessel. The amount of this application is approximately 10 kg per cable penetration.

Fibre board deckhead panels are used in various areas on board of the vessel. Asbestos is proved in this type of panelling. The weight of the deckhead panels is estimated on 5 kg per m².

Based on the overall laboratory results the brake lining for the propeller shaft is suspicious for containing asbestos and needs to be considered as PCHM.

PCB's

According the sample analysis there are no PCB containing materials detected on board of the vessel.

Ozone Depleting Substances

According the sample analysis and/or visual checks there are no ozone depleting substances detected on board of the vessel.

Anti-Fouling

Based on the TBT Free certificate, the anti-fouling is considered as TBT free.

Heavy metals in paint systems

There are several heavy metals mentioned in table B. It is expected that main paint systems may contain some of these heavy metals. According the IMO guideline these materials should be listed as far as practicably possible, an exact definition for practicably possible is not given in this direction. For this reason the approach of the survey is based on the main objectives of the IMO guideline which can be summarised as: "providing ship-specific information on the actual hazardous materials present on board, in order to protect health and safety and to prevent environmental pollution at ship recycling facility".

Therefore, from the perspective of the main objective of the IMO guidelines, it is important to know what information is needed for the health and safety of the workers and the expected environmental pollution during the recycling process.

For health and safety it is important to estimate the expected heavy metal emission during "hot-work" and the emission of heavy metals contained in ashes and fumes to soil, air and water. For this reason it is important to know if heavy metals are contained in the main paint systems on board. Therefore the

inspection is restricted for the table B items cadmium, chromium and lead in paint to a qualitative assessment based on a restricted number of random picked samples.

A raised concentration of lead (above threshold limit) is detected in the following paints: grey deck paint in technical areas, white paint on the accommodation and funnel, white paint on the bulkheads and deckheads in technical areas and grey deck paint outside.

The amounts of these paints are listed in the table above. The calculation is made based on the total of square meters and the weight of the sample taken (10 cm²).

Lead

On various locations on the vessel lead containing batteries are located. The locations of these batteries are the wheelhouse on nav. deck, the chart room on nav. deck, battery room on nav. deck, rescue boat on boats deck, cabins on officers deck, ships office on officers deck, radio room on nav. deck, engine control room on platform deck, cargo generator room on main deck and the emergency generator room on main deck. A total amount of 780 kg is calculated. All various types of batteries are weighted with a portable weighing scale.

In the wheelhouse on nav. deck a gyrocompass is present. There is no documentation available about the use of lead in this equipment. Therefore the gyrocompass is considered as Potentially Containing Hazardous Material (PCHM).

Mercury

In the wheelhouse on nav. deck a gyrocompass is present. There is no documentation available about the use of mercury in this equipment. Therefore the gyrocompass is considered as Potentially Containing Hazardous Material (PCHM).

Polybrominated biphenyl (PBBs)

According the sample analysis and/or visual checks there are no PBB containing materials detected on board of the vessel.

Polybrominated diphenyl ethers (PBDEs)

According the sample analysis and/or visual checks there are no PBDE containing materials detected on board of the vessel.

Polychlorinated naphthalenes (PCN)

According the sample analysis and/or visual checks there are no PCN containing materials detected on board of the vessel.

Radioactive substances

According the sample analysis and/or visual checks there are no radioactive substances detected on board of the vessel.

Certain shortchain chlorinated paraffins (CSCP)

According the sample analysis and/or visual checks there are no CSCP containing materials detected on board of the vessel.

HBCDD

According the sample analysis and/or visual checks there are no HBCDD containing materials detected on board of the vessel.

On the following page, all hazardous materials found are specified in the following tables:

I-1 – Paints and coating systems containing materials listed in Table A and Table B

No.	Zone / Deck level	Area	Description	Hazardous Material	Visual/ sampling	Sample ID	Sample result	Approx. quantity	Result of doc. Checking / remarks
1	04. Boat deck	Outside	Grey deck paint	Lead	Sampling	CSCP01	Contained	± 1820 kg	Sample contains 4514 mg/kg.
2	04. Boat deck	Outside	Funnel paint	Lead	Visual	-	Contained	± 910 kg	Based on sample PBB01.
3	06. Main deck	Engine store	Deck paint	Lead	Sampling	PCB06	Contained	± 750 kg	Sample contains 52625 mg/kg.
4	06. Main deck	Engine room	Paint bulkheads	Lead	Sampling	PCN01	Contained	± 1600 kg	Sample contains 32570 mg/kg.
5	05. Poop deck	Outside	Accommodation paint	Lead	Sampling	PBB01	Contained	± 910 kg	Sample contains 24540 mg/kg.

I-2 – Equipment and machinery containing materials listed in Table A and Table B

No.	Zone / Deck level	Area	Description	Hazardous Material	Visual/ sampling	Sample ID	Sample result	Approx. quantity	Result of doc. Checking / remarks
1	02. Navigation deck	Battery room	Batteries for GMDSS	Lead	Visual	Pb10	Contained	± 120 kg	4 pcs of 30 kg.
2	02. Navigation deck	Chart room	Batteries for VDR	Lead	Visual	Pb07	Contained	± 5 kg	1 pc of 5 kg.
3	02. Navigation deck	Battery room	Batteries for emergency light	Lead	Visual	Pb09	Contained	± 120 kg	4 pcs of 30 kg.
4	02. Navigation deck	Wheelhouse	Gyrocompass	Mercury	Visual	Pb01	PCHM	Unknown	Brand: Sperry Marine. Type: Navigat X MK 11.
5	02. Navigation deck	Wheelhouse	Gyrocompass	Lead	Visual	Pb01	PCHM	Unknown	Brand: Sperry Marine. Type: Navigat X MK 11.
6	02. Navigation deck	Wheelhouse	UPS for radar auto pilot	Lead	Visual	Pb05	PCHM	Unknown	UPS unit of brand Blue walker GmbH, Model VFI 1000 TG.
7	02. Navigation deck	Wheelhouse	Batteries for fire alarm system	Lead	Visual	Pb02	Contained	± 15 kg	2 pcs of 7,5 kg.

8	02. Navigation deck	Wheelhouse	Batteries for UPS for ECDIS	Lead	Visual	Pb06	PCHM	Unknown	UPS unit of brand APC 1000.
9	02. Navigation deck	AC-room	Air duct insulation	Asbestos	Sampling	BS08	Contained	$\pm 5 \text{ kg per m}^3$	Sample contains Chrysotile 60-100%.
10	02. Navigation deck	Wheelhouse	Batteries for UPS	Lead	Visual	Pb03	PCHM	Unknown	UPS Unit of brand APC Smart 750 system.
11	02. Navigation deck	Wheelhouse	Batteries for discharge	Lead	Visual	Pb04	Contained	$\pm 10 \text{ kg}$	2 pcs of 5 kg.
12	02. Navigation deck	Chart room	Batteries UPS for VDR	Lead	Visual	Pb08	PCHM	Unknown	UPS unit of brand APC 1000.
13	02. Navigation deck	Captain cabin	Batteries for UPS	Lead	Visual	Pb12	PCHM	Unknown	UPS unit of brand APC 750.
14	02. Navigation deck	Radio room	Batteries for UPS for FBB	Lead	Visual	Pb14	PCHM	Unknown	1 UPS unit.
15	03. Officers deck	Chief engineer cabin	Batteries for UPS	Lead	Visual	Pb12	PCHM	Unknown	UPS unit of brand APC 750.
16	03. Officers deck	Chief officer cabin	Batteries for UPS	Lead	Visual	Pb12	PCHM	Unknown	UPS unit of brand APC 750.
17	03. Officers deck	Ships office	Batteries for UPS	Lead	Visual	Pb13	PCHM	Unknown	3 UPS units of brand APC 750.
18	04. Boat deck	PS rescue boat	Battery for lifeboat	Lead	Visual	Pb11	Contained	$\pm 20 \text{ kg.}$	1 pc of 20 kg.
19	04. Boat deck	Funnel	Pipeline insulation	Asbestos	Visual	-	Contained	$\pm 5 \text{ kg per m}^3$	Based on sample BS08.
20	04. Boat deck	SB lifeboat	Battery for Aldis	Lead	Visual	-	Contained	$\pm 10 \text{ kg}$	Spare battery and spare aldis in wheelhouse.
21	06. Main deck	Emergency generator room	Gasket in pipeline to diesel tank	Asbestos	Sampling	BS36	Contained	$\pm 100 \text{ gr per gasket}$	Sample contains Chrysotile 30-60%.
22	06. Main deck	Emergency generator room	Insulation material ventilation flap	Asbestos	Visual	-	Contained	$\pm 5 \text{ kg per m}^3$	Based on sample BS08.

23	06. Main deck	Emergency generator room	Batteries	Lead	Visual	Pb17	Contained	± 240 kg	8 pcs of 30 kg.
24	06. Main deck	Engine room	Boiler burner cord seal	Asbestos	Sampling	BS19	Contained	± 3 kg	Sample contains Chrysotile 60-100%.
25	06. Main deck	Engine room	Boiler burner gasket	Asbestos	Sampling	BS20	Contained	± 100 gr. per gasket	Sample contains Chrysotile 30-60%.
26	06. Main deck	Cargo generator rooms	Batteries for cargo generator	Lead	Visual	Pb16	Contained	± 240 kg	4 pcs of 60 kg.
27	07. Platform deck	Engine room	Gasket compressed air system	Asbestos	Sampling	BS24	Contained	± 100 gr. per gasket	Sample contains Chrysotile 30-60%.
28	07. Platform deck	Store	Spare gasket	Asbestos	Sampling	BS27	Contained	± 100 gr. per gasket	Brand: "Tesnit". Sample contains Chrysotile 60-100%.
29	08. Stowage	Engine room	Gasket lub oil system	Asbestos	Sampling	BS32	Contained	± 100 gr. per gasket	Sample contains Chrysotile 30-60%.
30	08. Stowage	Engine room	Propeller shaft brake lining	Asbestos	Visual	-	PCHM	Unknown	No access to propeller shaft brake lining.
32	10 forecastle deck	Outside	Brake lining on anchor winch	Asbestos	Sampling	BS35	Contained	± 10 kg per pc	Sample contains Chrysotile 30-60%.

I-3 – Structure and hull containing materials listed in Table A and Table B

No.	Zone / Deck level	Area	Description	Hazardous Material	Visual/ sampling	Sample ID	Sample result	Approx. quantity	Result of doc. Checking / remarks
1	02. Navigation deck	Wheelhouse	Cable penetration	Asbestos	Sampling	BS04	Contained	± 10 kg per pc	Sample contains Chrysotile 15-30%.
2	02. Navigation deck	Wheelhouse	Deckhead panels	Asbestos	Sampling	BS02	Contained	± 5 kg per m ²	Sample contains Chrysotile, 2-5% and Amosite 30-60%.
3	02. Navigation deck	Radio room	Deckhead panels	Asbestos	Visual	-	Contained	± 5 kg per m ²	Based on sample BS02.
4	03. Officers deck	Cabin	Fire door insulation board	Asbestos	Sampling	BS10	Contained	± 10 kg per door	Sample contains Amosite 30-60%.

5	05. Main deck	Cabin	Fire door insulation board	Asbestos	Visual	-	Contained	± 10 kg per door	Based on sample BS10.
6	05. Main deck	Cabin	Fire door insulation board	Asbestos	Visual	-	Contained	± 10 kg per door	Based on sample BS10.
7	07. Platform deck	Engine control room	Cable penetration	Asbestos	Visual	-	Contained	± 10 kg per pc	Based on sample BS04.

4.2 Limitations of the survey

Because of the fact that the vessel was in use during the survey not all of the areas on board were surveyed. In the table below the limitations will be given.

The client has to take into account that an IHM knows limitations that are mentioned below. Maritime Asbestos Solutions B.V. cannot be held liable for any loss or damage as a result of not mentioned or non-expected hazard containing materials resulting from these limitations.

Maritime Asbestos Solutions B.V. cannot be held liable for any damage as a result of hazardous materials that are not mentioned in this inventory. These can be materials that were unreachable and consequently excluded from the inspection, materials that are not recognized as hazardous, materials that were missed with the random test and/or materials that were otherwise not mentioned as hazardous materials in the report and which are found on board at a later state.

The IHM is a snapshot of the situation. The client must therefore take into account that the situation may be subject to change as a result of e.g. maintenance, modifications or conversions. During the recycling process substances from the Table A list that are not mentioned in the report may be discovered unexpectedly. Maritime Asbestos Solutions B.V. is not responsible and cannot be held liable for any damage in the broadest sense, nothing excluded, as a direct or indirect result of such unexpectedly discovered substances. Neither is Maritime Asbestos Solutions B.V. responsible or liable for damage as a result of the spread of fibres, not for contamination by spreading (cross contamination), caused by these unreported substances.

Limitation
Inside fuel tanks
Inside live equipment

Table 13. Limitations of the survey

Appendix A IHM Part I

Name vessel:	Fjordvik
Distinctive number of letters:	C6CV8
Type of vessel:	Cement Carrier
Flag state:	Bahamas
Port of registry:	Nassau
IMO number:	7423249
Year of building:	1976
Gross tonnage:	3091
L x B x D:	94,65 m x 14,00 m x 7,00 m
Name of ship-owner:	Aalborg Pearl Shipping Ltd.
Name of shipbuilder:	J.J. Sietas KG Schiffswerft GmbH & Co.
Date of delivery:	29-01-1976

This inventory was developed in accordance with the guideline for the development of the inventory of Hazardous Materials.

Attachment:

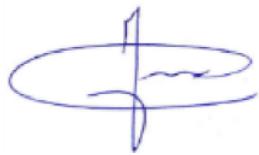
- Inventory of Hazardous Materials;
- Assessment of collected information;
- Location diagram of Hazardous Materials.

Prepared by:

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The Netherlands

General Director (HazMat Expert):

Mr. I. Opstal MScBA



Date:
03-10-2018

Technical manager

Mr. M. van Leeuwen B PM



Date:
03-10-2018

I-1 – Paints and coating systems containing materials listed in Table A and Table B

No.	Zone / Deck level	Area	Description	Hazardous Material	Visual/ sampling	Sample ID	Sample result	Approx. quantity	Result of doc. Checking / remarks
1	04. Boat deck	Outside	Grey deck paint	Lead	Sampling	CSCP01	Contained	± 1820 kg	Sample contains 4514 mg/kg.
2	04. Boat deck	Outside	Funnel paint	Lead	Visual	-	Contained	± 910 kg	Based on sample PBB01.
3	06. Main deck	Engine store	Deck paint	Lead	Sampling	PCB06	Contained	± 750 kg	Sample contains 52625 mg/kg.
4	06. Main deck	Engine room	Paint bulkheads	Lead	Sampling	PCN01	Contained	± 1600 kg	Sample contains 32570 mg/kg.
5	05. Poop deck	Outside	Accommodation paint	Lead	Sampling	PBB01	Contained	± 910 kg	Sample contains 24540 mg/kg.

I-2 – Equipment and machinery containing materials listed in Table A and Table B

No.	Zone / Deck level	Area	Description	Hazardous Material	Visual/ sampling	Sample ID	Sample result	Approx. quantity	Result of doc. Checking / remarks
1	02. Navigation deck	Battery room	Batteries for GMDSS	Lead	Visual	Pb10	Contained	± 120 kg	4 pcs of 30 kg.
2	02. Navigation deck	Chart room	Batteries for VDR	Lead	Visual	Pb07	Contained	± 5 kg	1 pc of 5 kg.
3	02. Navigation deck	Battery room	Batteries for emergency light	Lead	Visual	Pb09	Contained	± 120 kg	4 pcs of 30 kg.
4	02. Navigation deck	Wheelhouse	Gyrocompass	Mercury	Visual	Pb01	PCHM	Unknown	Brand: Sperry Marine. Type: Navigat X MK 11.
5	02. Navigation deck	Wheelhouse	Gyrocompass	Lead	Visual	Pb01	PCHM	Unknown	Brand: Sperry Marine. Type: Navigat X MK 11.
6	02. Navigation deck	Wheelhouse	UPS for radar auto pilot	Lead	Visual	Pb05	PCHM	Unknown	UPS unit of brand Blue walker GmbH, Model VFI 1000 TG.
7	02. Navigation deck	Wheelhouse	Batteries for fire alarm system	Lead	Visual	Pb02	Contained	± 15 kg	2 pcs of 7,5 kg.

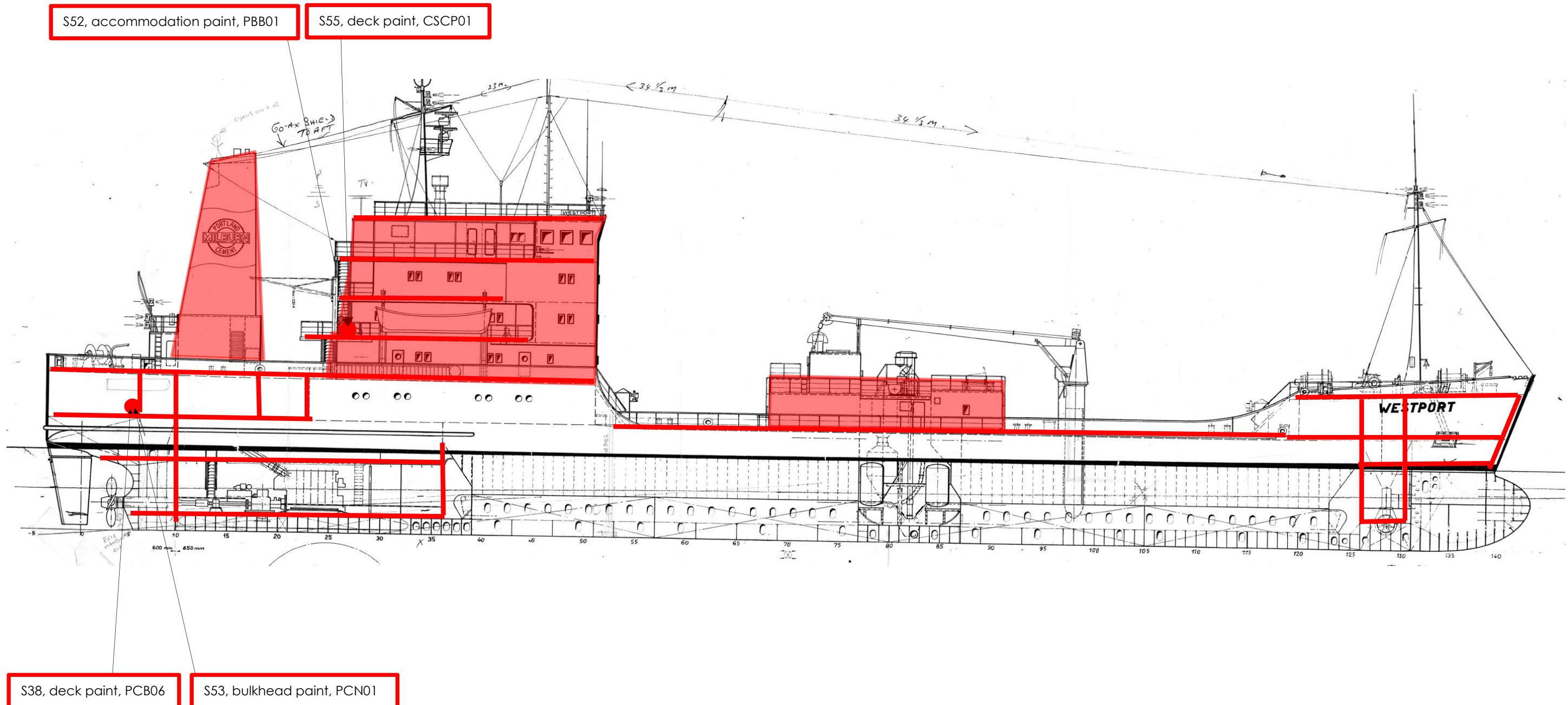
8	02. Navigation deck	Wheelhouse	Batteries for UPS for ECDIS	Lead	Visual	Pb06	PCHM	Unknown	UPS unit of brand APC 1000.
9	02. Navigation deck	AC-room	Air duct insulation	Asbestos	Sampling	BS08	Contained	$\pm 5 \text{ kg per m}^3$	Sample contains Chrysotile 60-100%.
10	02. Navigation deck	Wheelhouse	Batteries for UPS	Lead	Visual	Pb03	PCHM	Unknown	UPS Unit of brand APC Smart 750 system.
11	02. Navigation deck	Wheelhouse	Batteries for discharge	Lead	Visual	Pb04	Contained	$\pm 10 \text{ kg}$	2 pcs of 5 kg.
12	02. Navigation deck	Chart room	Batteries UPS for VDR	Lead	Visual	Pb08	PCHM	Unknown	UPS unit of brand APC 1000.
13	02. Navigation deck	Captain cabin	Batteries for UPS	Lead	Visual	Pb12	PCHM	Unknown	UPS unit of brand APC 750.
14	02. Navigation deck	Radio room	Batteries for UPS for FBB	Lead	Visual	Pb14	PCHM	Unknown	1 UPS unit.
15	03. Officers deck	Chief engineer cabin	Batteries for UPS	Lead	Visual	Pb12	PCHM	Unknown	UPS unit of brand APC 750.
16	03. Officers deck	Chief officer cabin	Batteries for UPS	Lead	Visual	Pb12	PCHM	Unknown	UPS unit of brand APC 750.
17	03. Officers deck	Ships office	Batteries for UPS	Lead	Visual	Pb13	PCHM	Unknown	3 UPS units of brand APC 750.
18	04. Boat deck	PS rescue boat	Battery for lifeboat	Lead	Visual	Pb11	Contained	$\pm 20 \text{ kg.}$	1 pc of 20 kg.
19	04. Boat deck	Funnel	Pipeline insulation	Asbestos	Visual	-	Contained	$\pm 5 \text{ kg per m}^3$	Based on sample BS08.
20	04. Boat deck	SB lifeboat	Battery for Aldis	Lead	Visual	-	Contained	$\pm 10 \text{ kg}$	Spare battery and spare aldis in wheelhouse.
21	06. Main deck	Emergency generator room	Gasket in pipeline to diesel tank	Asbestos	Sampling	BS36	Contained	$\pm 100 \text{ gr per gasket}$	Sample contains Chrysotile 30-60%.
22	06. Main deck	Emergency generator room	Insulation material ventilation flap	Asbestos	Visual	-	Contained	$\pm 5 \text{ kg per m}^3$	Based on sample BS08.

23	06. Main deck	Emergency generator room	Batteries	Lead	Visual	Pb17	Contained	± 240 kg	8 pcs of 30 kg.
24	06. Main deck	Engine room	Boiler burner cord seal	Asbestos	Sampling	BS19	Contained	± 3 kg	Sample contains Chrysotile 60-100%.
25	06. Main deck	Engine room	Boiler burner gasket	Asbestos	Sampling	BS20	Contained	± 100 gr. per gasket	Sample contains Chrysotile 30-60%.
26	06. Main deck	Cargo generator rooms	Batteries for cargo generator	Lead	Visual	Pb16	Contained	± 240 kg	4 pcs of 60 kg.
27	07. Platform deck	Engine room	Gasket compressed air system	Asbestos	Sampling	BS24	Contained	± 100 gr. per gasket	Sample contains Chrysotile 30-60%.
28	07. Platform deck	Store	Spare gasket	Asbestos	Sampling	BS27	Contained	± 100 gr. per gasket	Brand: "Tesnit". Sample contains Chrysotile 60-100%.
29	08. Stowage	Engine room	Gasket lub oil system	Asbestos	Sampling	BS32	Contained	± 100 gr. per gasket	Sample contains Chrysotile 30-60%.
30	08. Stowage	Engine room	Propeller shaft brake lining	Asbestos	Visual	-	PCHM	Unknown	No access to propeller shaft brake lining.
32	10 forecastle deck	Outside	Brake lining on anchor winch	Asbestos	Sampling	BS35	Contained	± 10 kg per pc	Sample contains Chrysotile 30-60%.

I-3 – Structure and hull containing materials listed in Table A and Table B

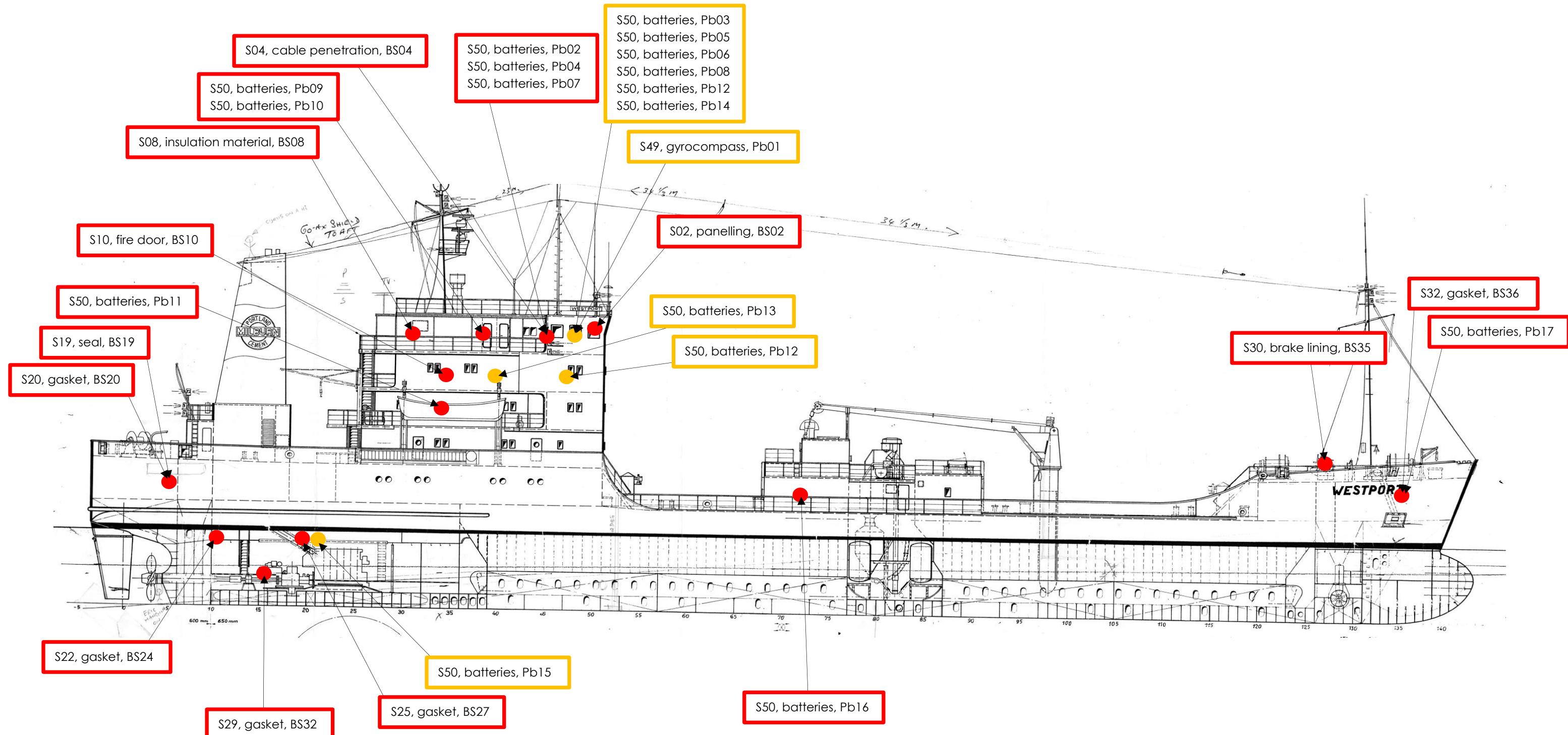
No.	Zone / Deck level	Area	Description	Hazardous Material	Visual/ sampling	Sample ID	Sample result	Approx. quantity	Result of doc. Checking / remarks
1	02. Navigation deck	Wheelhouse	Cable penetration	Asbestos	Sampling	BS04	Contained	± 10 kg per pc	Sample contains Chrysotile 15-30%.
2	02. Navigation deck	Wheelhouse	Deckhead panels	Asbestos	Sampling	BS02	Contained	± 5 kg per m ²	Sample contains Chrysotile, 2-5% and Amosite 30-60%.
3	02. Navigation deck	Radio room	Deckhead panels	Asbestos	Visual	-	Contained	± 5 kg per m ²	Based on sample BS02.
4	03. Officers deck	Cabin	Fire door insulation board	Asbestos	Sampling	BS10	Contained	± 10 kg per door	Sample contains Amosite 30-60%.

5	05. Main deck	Cabin	Fire door insulation board	Asbestos	Visual	-	Contained	± 10 kg per door	Based on sample BS10.
6	05. Main deck	Cabin	Fire door insulation board	Asbestos	Visual	-	Contained	± 10 kg per door	Based on sample BS10.
7	07. Platform deck	Engine control room	Cable penetration	Asbestos	Visual	-	Contained	± 10 kg per pc	Based on sample BS04.



Side view

- Hazardous material
- Non hazardous material
- PCHM



Side view

-  Hazardous material
 -  Non hazardous material
 -  PCHM

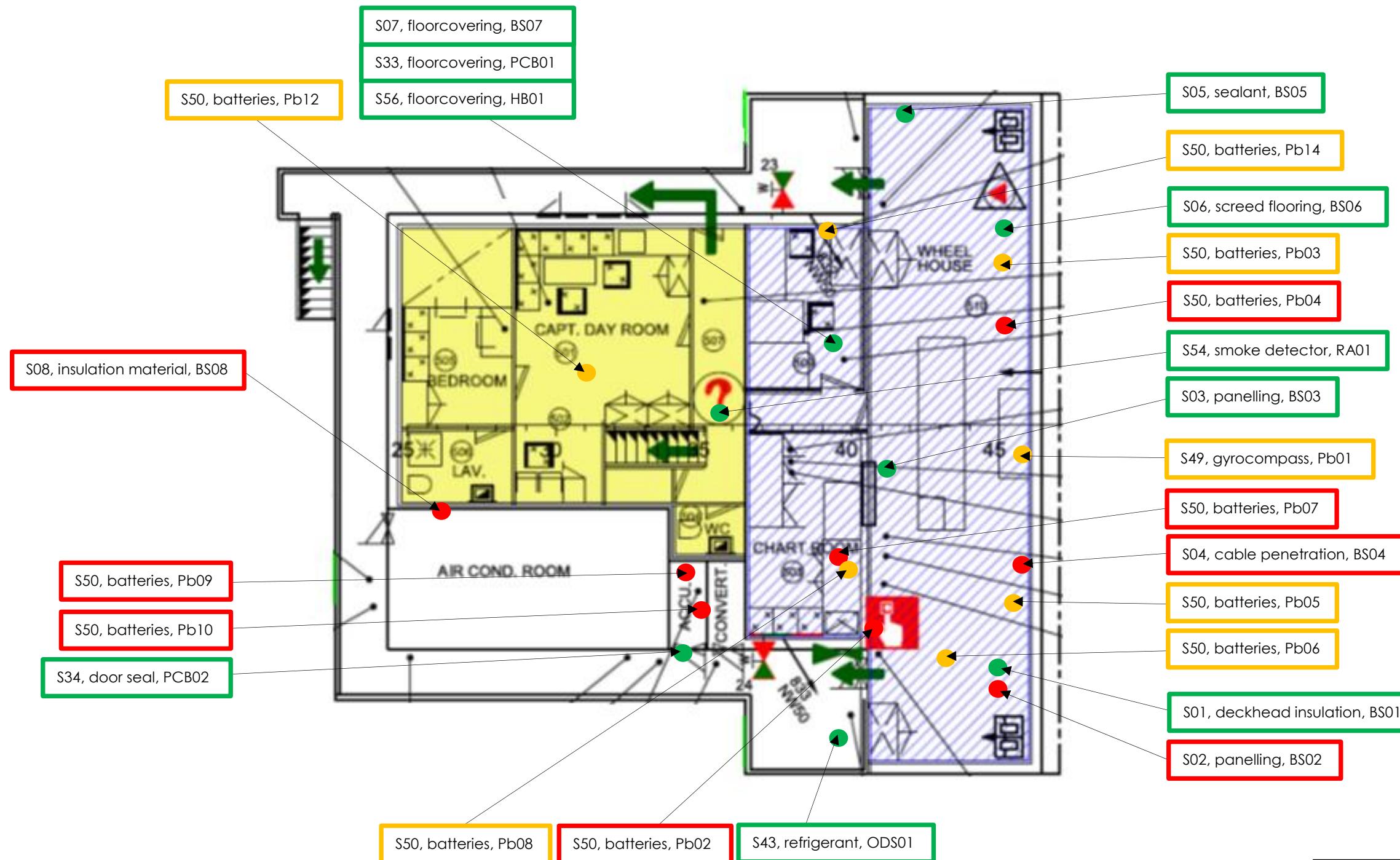
Appendix B Additional pictures visual checks

Appendix C General Arrangements and sample locations

This appendix shows the general arrangements with the sampling locations of the hazardous material containing- and non-hazardous material containing sample locations on site. Not surveyed parts of the vessel will be marked on the general arrangement if applicable. If no original plans are available the situation will be drawn to show the above mentioned points.

NAVIGATION DECK

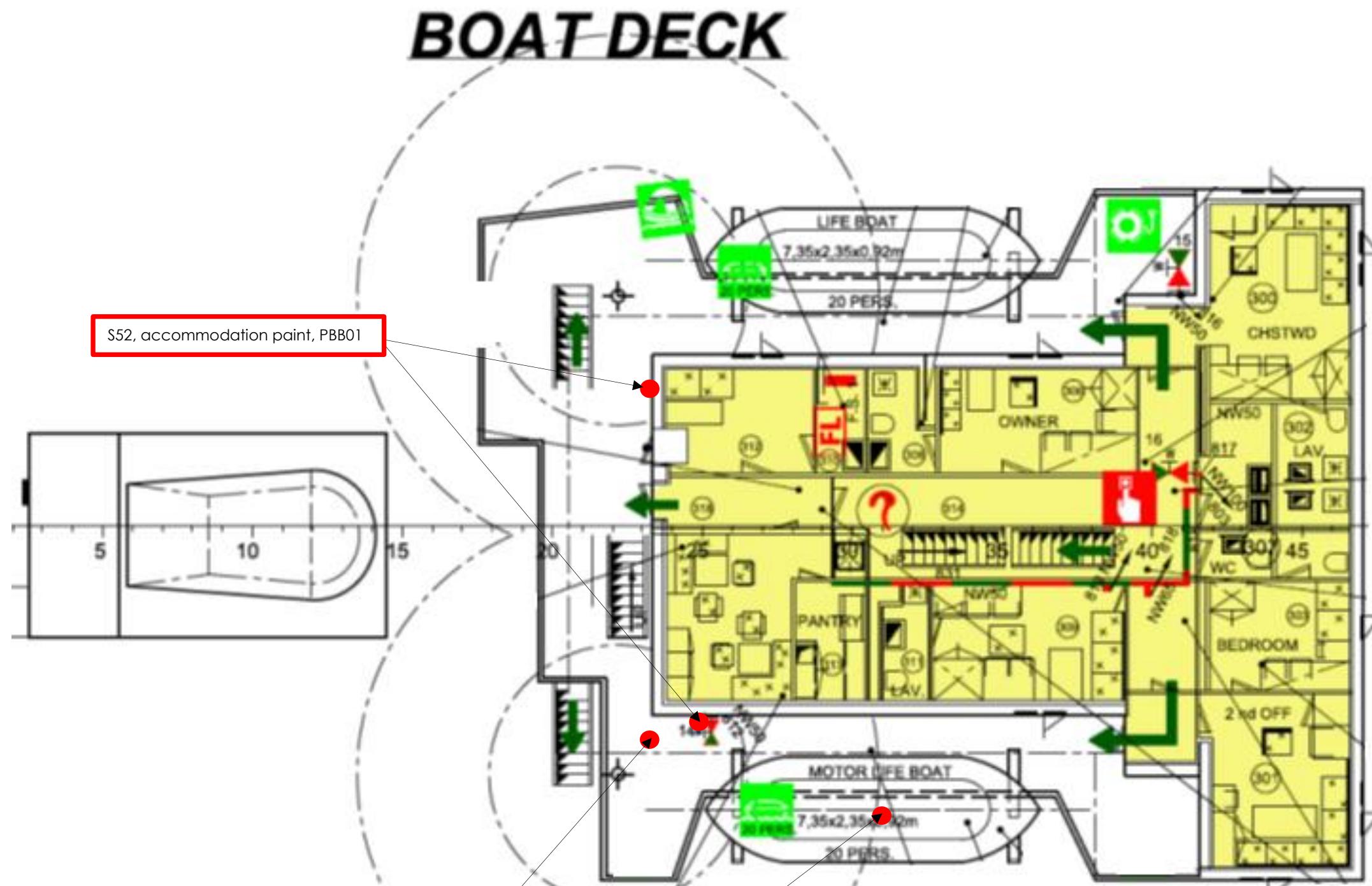


Deck level: navigation deck

●	Hazardous material
●	Non hazardous material
●	PCHM

OFFICERS DECK

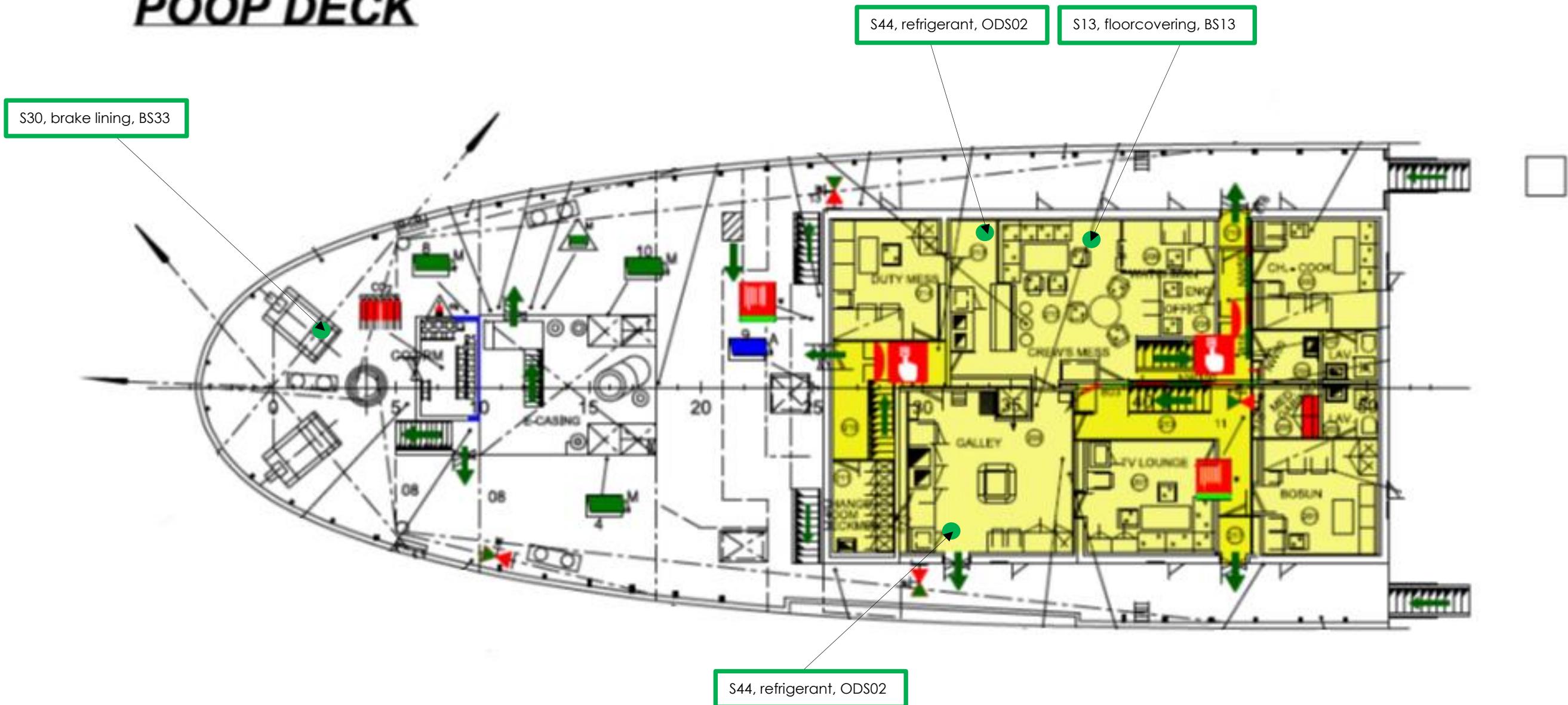




Deck level: boat deck

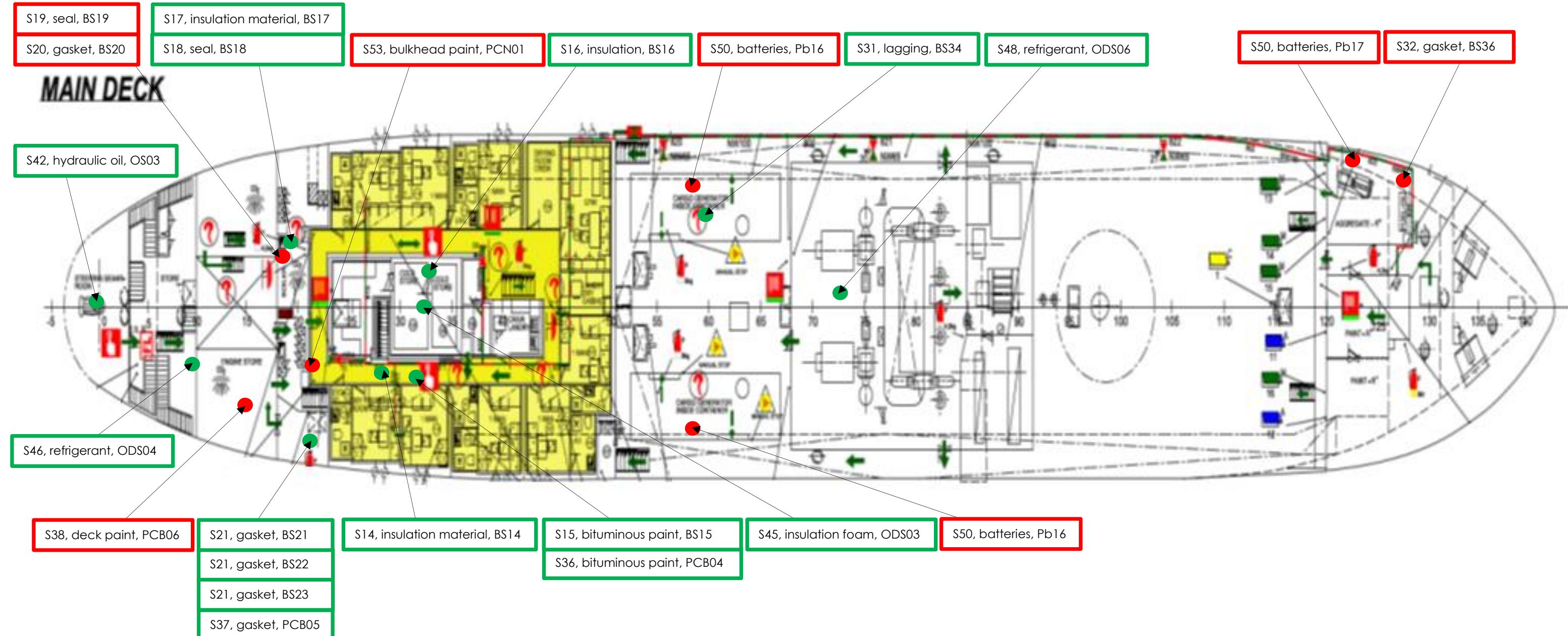
- Red circle: Hazardous material
- Green square: Non hazardous material
- Yellow circle: PCHM

POOP DECK



Deck level: poop deck

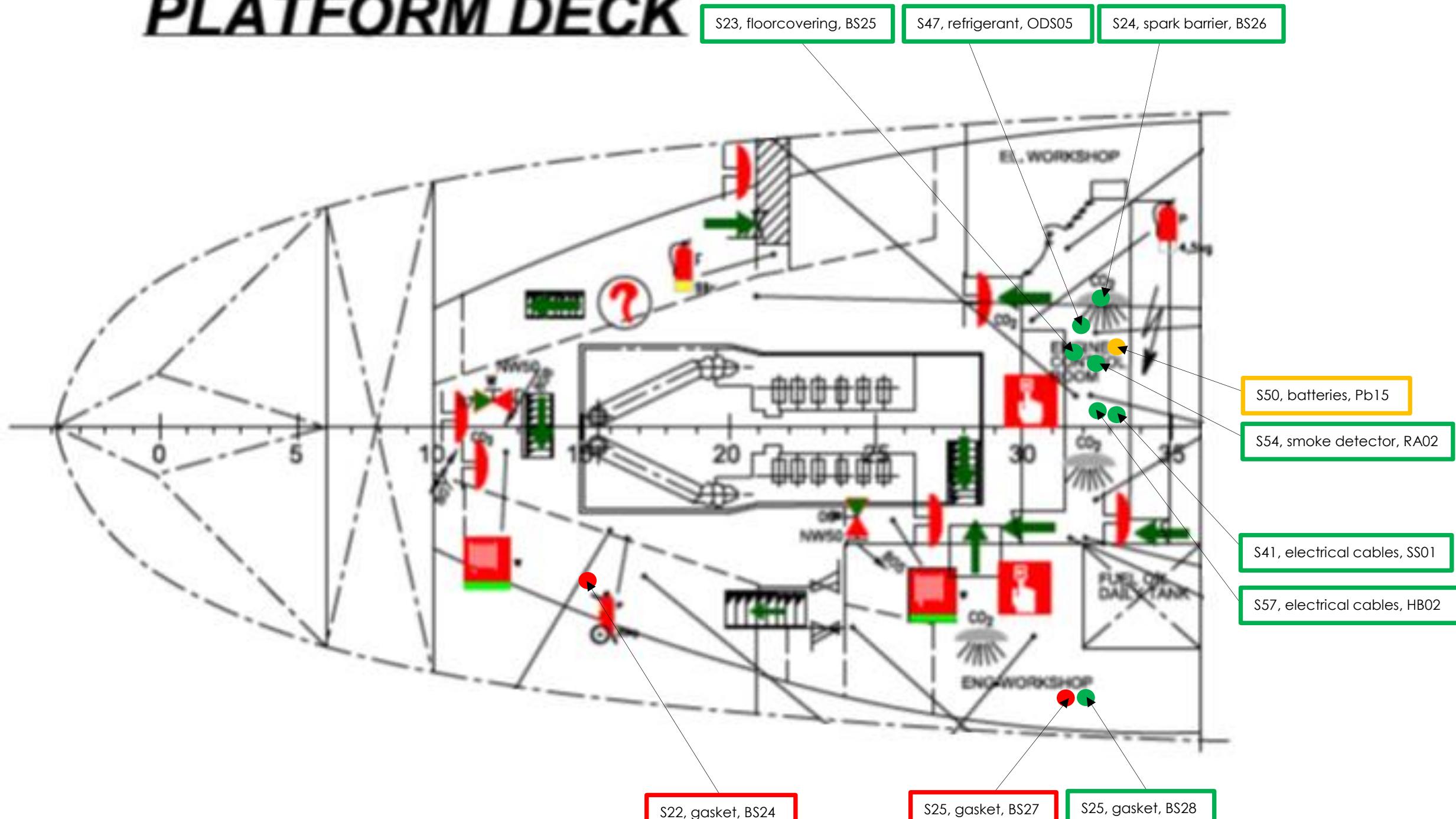
- Hazardous material
- Non hazardous material
- PCHM



Deck level: main deck

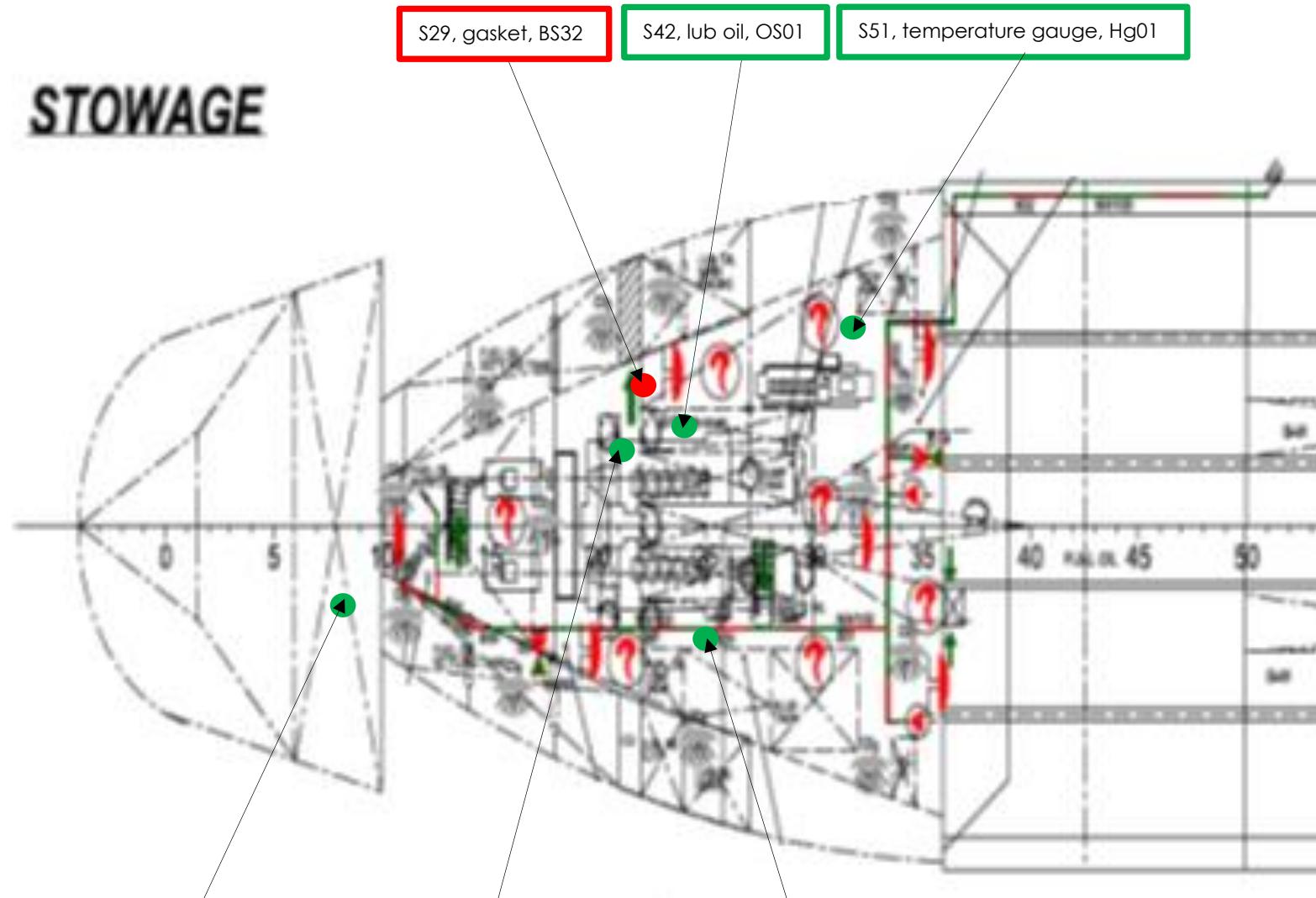
●	Hazardous material
●	Non hazardous material
●	PCHM

PLATFORM DECK



Deck level: platform deck

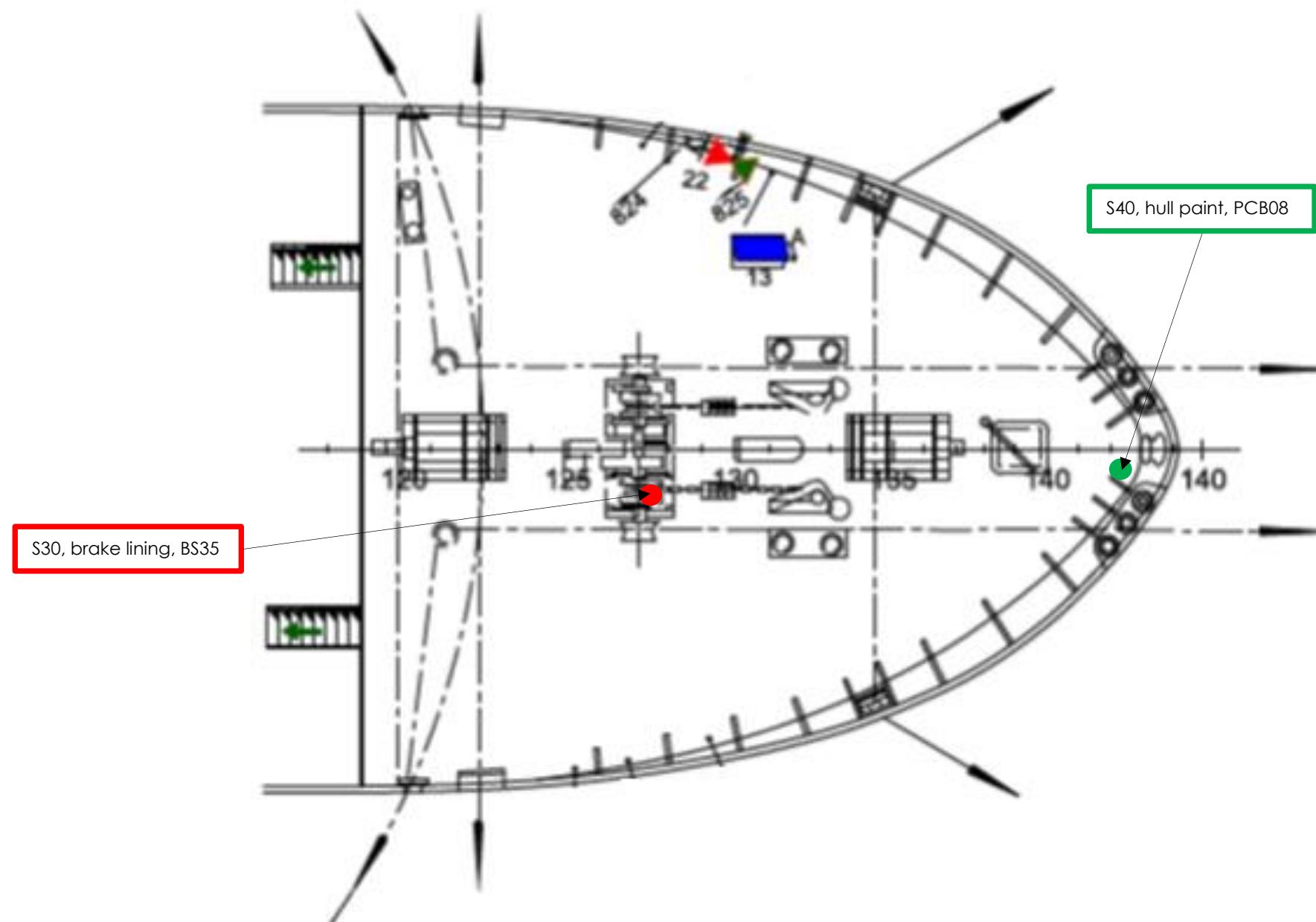
- Hazardous material
- Non hazardous material
- PCHM



Deck level: stowage

- Hazardous material
- Non hazardous material
- PCHM

FORECASTLE



Deck level: forecastle deck

- Hazardous material
- Non hazardous material
- PCHM

Appendix D Certificate of the sample analysis

The certificates of the sample analysis regarding the sampled materials which are suspected of hazardous material content have been added in this appendix.

C E R T I F I C A T E

Client : Maritime Asbestos Solutions B.V.
 Attn : de heer I. Opstal
 Address : Egelzoom 8, 2643KH PIJNACKER

Projectdata

Project code	: 803189	Date of receipt	: 30-08-2018
Project Description	: M2018.0415	Date of report	: 07-09-2018
Validation Ref.	: 803189_certificaat_v1	Number of samples	: 36
Verificationcode	: FCAG-OQRB-FJUX-WEVA	Number of pages	: 2

Analytical method: (semi) quantitative asbestos analysis of materials using stereo- and polarisation microscopy conform NEN 5896 (Q)

sample id	client sample ID	estimation in mass %						estimated friability
		chrysotile	amosite	crocidolite	anthophyllite	tremolite	actinolite	
5755103	BS01- deckhead insulation	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755104	BS02- deckhead panelling	2-5	30-60	< 0,1	< 0,1	< 0,1	< 0,1	friable
5755105	BS03- bulkhead panelling	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755106	BS04- cable penetration	15-30	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	non-friable
5755107	BS05- sealant window frames	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755108	BS06- screed flooring	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755109	BS07- floorcovering	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755110	BS08- pipeline insulation ain air ducts	60-100	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	friable
5755111	BS09- bulkhead panel insulation	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755112	BS10- fibre board in fire doors	< 0,1	30-60	< 0,1	< 0,1	< 0,1	< 0,1	friable
5755113	BS11- floor tiles and screed flooring	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755114	BS12- floorcoveirng	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755115	BS13- floorcoveirng	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755116	BS14- deckhead panel insulation	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755117	BS15- bituminous paint	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755118	BS16- panel insulation	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755119	BS17- boiler insulation	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755120	BS18- cord seal boiler hatch	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755121	BS19- cord seal burner connection	60-100	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	friable
5755122	BS20- gasket burner connection	30-60	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	friable
5755123	BS21- gasket sheet Flecitallix 2800	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755124	BS22- gasket sheet Ferolite NAM 45 CF	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755125	BS23- gasket sheet Marpack Jointing	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755126	BS24- flange gasket compressed air line	30-60	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	friable

Conditions of delivery of Eurofins Omegam have been registered.

This certificate may not be reproduced other than in full, except with the prior written approval of Eurofins Omegam.

Analyses marked with a 'Q' are part of the RvA accreditation certificate L086.

C E R T I F I C A T E

sample id	client sample ID	estimation in mass %						estimated friability
		chrysotile	amosite	crocidolite	anthophyllite	tremolite	actinolite	
5755127	BS25- floorcovering	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755128	BS26- spark barrier switchboard	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755129	BS27- spare gasket Tesnit	60-100	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	friable
5755130	BS28- spare gasket Klingseril C4430	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755131	BS29- exhaust line insulation	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755132	BS30- insulation mattress	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755133	BS31- gasket exhaust line connection	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755134	BS32- gasket in hand pump	30-60	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	friable
5755135	BS33- brake lining AFT mooring winch	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755136	BS34- insulation exhaust lines	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	n.a.
5755137	BS35- brake lining anchor winch	30-60	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	friable
5755138	BS36- gasket diesel tank	30-60	< 0,1	< 0,1	< 0,1	< 0,1	< 0,1	friable

Analytical method

The sample material is analyzed according to the RvA accredited regulation ASB-IDEN conform NEN 5896. The method uses stereo-lightmicroscopy in combination with polarization microscopy while using dispersion staining microscopy.

The quantitative determination of asbestos in material sample(s) is using a determination limit for estimation of the mass percentage. The determination limit for estimation of the mass percentage is 0.1 (mass%). The estimated friability is according the NEN 5896.

On behalf of Eurofins Omegam,

BSc J. Tukker
Production manager

Disclaimer

Eurofins Omegam has the (asbestos) fiber research in this/these sample(s) carried out according to the standard(s) as stated in the certificate. The analysis results reported herein relate only to the material supplied to the laboratory. Eurofins Omegam bears no responsibility on the origin and representativeness as well as safety during sampling.

Conditions of delivery of Eurofins Omegam have been registered.
 This certificate may not be reproduced other than in full, except with the prior written approval of Eurofins Omegam.
 Analyses marked with a 'Q' are part of the RvA accreditation certificate L086.

Test Report

Applicant	<u>MARITIME ASBESTOS SOLUTIONS B.V.</u>
Address	<u>EGELZOOM 8, 2643 KH PIJNACKER, THE NETHERLANDS</u>
Sample(s) received date	<u>Sep. 3, 2018</u>
Test period	<u>Sep. 3, 2018 to Sep. 7, 2018</u>

Centre Testing International Pinbiao(Shanghai) Co., Ltd. Maritime Industry Division

1996, Xinjinqiao Road, Pudong New District, Shanghai, China

Tel: 021-31073298; 021-31073316

Email: marine@cti-cert.com Website: www.cti-ship.com Complain Hotline: [0755-33681700](tel:0755-33681700)

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Ship's Particulars (Provided by the customer)

Project Number M2018.0415

Test Requested

Based on the *Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009* (the Hong Kong Convention) by International Maritime Organization (IMO), and the 2015 *Guidelines for the Development of the Inventory of Hazardous Materials* (MEPC.269(68)) by Marine Environment Protection Committee , EU Regulation 1257/2013 on ship recycling and according to the customer's request, to determine the content of Polychlorinated Biphenyls (PCBs), Ozone Depleting Substances (ODS), Perfluorooctane Sulfonates(PFOS), Cadmium and cadmium compounds, Hexavalent chromium and hexavalent chromium compounds, Lead and lead compounds , Polybrominated Biphenyl (PBBs), Polychlorinated Naphthalenes (PCNs), Certain Shortchain Chlorinated Paraffins (SCCPs, C10-C13), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Information about Sample(s) Please refer to the following pages.

Test Method(s) Please refer to the following pages.

Test Result(s) Please refer to the following pages.



Tested by

Zhou Hongxia

Zhou Hongxia
Analyst

Approved
by

Su Hongwei

Su Hongwei
Senior Laboratory Manager

Date

Sep. 7, 2018

No. N248431932

Test Report

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Information about Sample(s)

Sample No.	Sample Description
PCB01	Grey solid
PCB02	Black foam
PCB03	Beige solid
PCB04	Black solid
PCB05	Black solid
PCB06	Variedness solid
PCB07	Variedness solid
PCB08	Variedness solid
SS01	White fabric
OS01	Yellow liquid
OS02	Light yellow liquid
OS03	Light yellow liquid
ODS03	Black foam
HB01	Grey solid
HB02-a	Cupreous metal wire
HB02-b	Black plastic tube
PBB01	Variedness solid
PCN01	Variedness solid
CSCP01	Variedness solid

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Test Method(s)

Tested Item	Pretreatment method	Standard(s)	Equipment(s)	MDL
Polychlorinated Biphenyls (PCBs)	Ultrasonic extraction	Q/CTI LD-SPHL-0259 (PCBs in ships Test Procedure, Refer to US EPA 3550C:2007& US EPA 8082A:2007)	GC-MS	0.5 mg/kg
Ozone Depleting Substances (ODS)	Static headspace method	Q/CTI LD-SHPCHL-0020 (ODS Test Procedure, Refer to US EPA 8260C:2006)	HS-GC-MS	1 mg/kg
Perfluorooctane Sulfonates(PFOS)	Ultrasonic extraction	Q/CTI LD-SHPCHL-0006 (PFOS&PFOA Test Procedure,Refer to ISO 25101-2009)	LC-MS-MS	1mg/kg
Cadmium and cadmium compounds	Microwave digestion	IEC 62321-5:2013	ICP-OES	2 mg/kg
Hexavalent chromium and hexavalent chromium compounds	Alkali extraction	IEC 62321-7-2:2017	UV-Vis	8 mg/kg
Lead and lead compounds	Microwave digestion	IEC 62321-5:2013	ICP-OES	2 mg/kg
Polybrominated Biphenyl (PBBs)	Soxhlet extraction	IEC 62321-6:2015	GC-MS	5 mg/kg
Polychlorinated Naphthalenes (PCNs)	Ultrasonic extraction	Q/CTI LD-SHPCHL-0260 (Polychlorinated naphthalenes Test Procedure, Refer to US EPA 3550C:2007& US EPA 8270D:2014)	GC-MS	5 mg/kg
Certain Shortchain Chlorinated Paraffins (SCCPs, C10-C13)	Ultrasonic extraction	Q/CTI LD-SHPCHL-0036 (Short -chain chlorinated paraffins (C10-C13) Test Procedure, Refer to US EPA 3550C:2007 &US EPA 8270D:2014)	GC-MS	100 mg/kg
Hexabromocyclododecane (HBCDD)	Ultrasonic extraction	Q/CTI LD-SHPCHL-0060 (Hexabromocyclododecane Test Procedure, Refer to US EPA 3550C:2007& US EPA 8270D:2014)	GC-MS	5 mg/kg

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Test Result(s)

Tested Item		Polychlorinated Biphenyls (PCBs) (unit: mg/kg)						
Serial No.	Material/ CAS No. Test Results Sample No.	2,4,4'- Trichloro -biphenyl 7012-37-5	2,2',5,5'- Tetrachloro -biphenyl 35693-99-3	2,2',4,5,5'- Pentachloro -biphenyl 37680-73-2	2,3',4,4',5- Pentachloro -biphenyl 31508-00-6	2,2',3,4,4',5'- Hexachloro -biphenyl 35065-28-2	2,2',4,4',5,5'- Hexachloro -biphenyl 35065-27-1	2,2',3,4,4',5,5'- Heptachloro -biphenyl 35065-29-3
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1	PCB01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2	PCB02	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3	PCB03	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
4	PCB04	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
5	PCB05	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
6	PCB06	N.D.	N.D.	N.D.	N.D.	1.6	3.5	5.2
7	PCB07	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	PCB08	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	SS01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
10	OS01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
11	OS02	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
12	OS03	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
13	HB02-b	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
14	PBB01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
15	CSCP01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Tested Item		Ozone Depleting Substances (ODS)											
Serial No.	Material/ CAS No. Test Results Sample No.	Chlorofluoro carbons (CFCs)	Halons		Other Fully Halogenated CFCS		Carbon tetrachloride	1,1,1- trichloroethane	Hydrochloro Fluorocarbon (HCFCs)		Hydrobromo Fluorocarbon (HBFCs)	Methyl bromide	Bromo Chlorom -ethane
		CFC11	Halon 1211	Halon 2402	CFC 111	CFC 112	CCl ₄	C ₂ H ₃ Cl ₃	HCFC 122	HCFC 141b	HBFC 22b1	CH ₃ Br	CH ₂ BrCl
		75- 69-4	353- 59-3	124- 73-2	354- 56-3	76- 12-0	56- 23-5	71- 55-6	354- 21-2	1717- 00-6	1511- 62-2	74- 83-9	74- 97-5
1	ODS03	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

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Serial No.	Tested Item	Perfluorooctane Sulfonates(PFOS)
	Test Results	
Sample No.		
1	CSCP01	N.D.

Serial No.	Tested Item	Lead and lead compounds (unit: mg/kg)
	Test Results	
Sample No.		
1	PCB04	225
2	PCB06	52825
3	PCB07	98
4	PCB08	396
5	HB02-a	N.D.
6	PBB01	24540
7	PCN01	32570
8	CSCP01	4514

Serial No.	Tested Item	Cadmium and cadmium compounds
	Test Results	
Sample No.		
1	PCB06	N.D.
2	PCB08	N.D.
3	PBB01	N.D.
4	CSCP01	N.D.

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Serial No.	Tested Item		Hexavalent chromium and hexavalent chromium compounds (unit: mg/kg)	
	Test Results			
	Sample No.			
1	PCB06		58	
2	PCB07		N.D.	
3	PCB08		N.D.	
4	PBB01		N.D.	
5	PCN01		N.D.	
6	CSCP01		N.D.	

Serial No.	Sample No.	Test Results	
		1	2
Tested Item	PCB06	PBB01	
Polybrominated Biphenyls(PBBs)			
Monobromodiphenyl		N.D.	N.D.
Dibromobiphenyl		N.D.	N.D.
Tribromobiphenyl		N.D.	N.D.
Tetrabromobiphenyl		N.D.	N.D.
Pentabromobiphenyl		N.D.	N.D.
Hexabromobiphenyl		N.D.	N.D.
Heptabromobiphenyl		N.D.	N.D.
Octabromobiphenyl		N.D.	N.D.
Nonabromobiphenyl		N.D.	N.D.
Decabromobiphenyl		N.D.	N.D.

Serial No.	Tested Item		Polychlorinated Naphthalenes (PCNs)					
	Material/ CAS No.		1,2,3-Trichloronaphthalene/ 50402-52-3	1,2,3,4-Tetrachloronaphthalene/ 12001-28-4	1,2,3,4,6-Pentachloronaphthalene/ 67922-26-3	1,2,3,4,6,7-Hexachloronaphthalene/ 103426-96-6	1,2,3,4,5,6,7-Heptachloronaphthalene/ 58863-14-2	Octachloronaphthalene/ 2234-13-1
	Sample No.	Test Results						
1	HB02-b	N.D.						
2	PCN01	N.D.						
3	CSCP01	N.D.						

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Serial No.	Tested Item Sample No.	Test Results
1	HB02-b	N.D.

Serial No.	Tested Item Sample No.	Test Results
1	HB01	N.D.
2	HB02-b	N.D.

Note The sample had been dissolved totally tested for Lead, Cadmium.

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = one per million

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Photo of the sample(s)



PCB01



PCB02



PCB03



PCB04



PCB05



PCB06

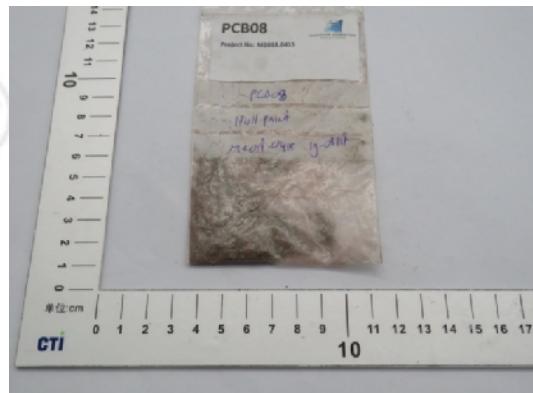
Test Report

Report No. A2180160925101

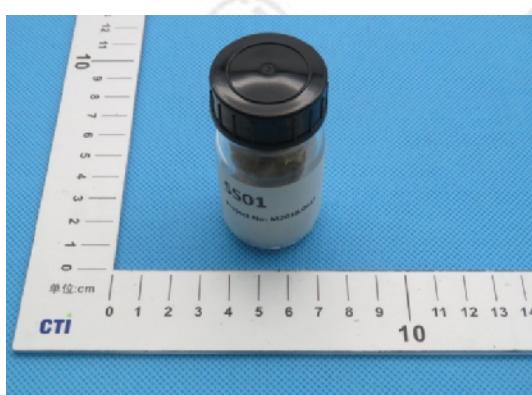
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PCB07



PCB08



SS01



OS01



OS02



OS03

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ODS03



HB01



HB02-a, HB02-b



PBB01



PCN01



CSCP01

*** End of report ***

Test Report

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Statement:

1. This report is considered invalidated without approval signature, special seal and the seal on the perforation;
2. The sample(s) and sample Information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Without written approval of CTI, this report can't be reproduced except in full;
5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

Appendix E

Certificate of surveyor and company



Fully Approved HazMat Expert

Reg. No.: 3049062_W

This is to certify that

Mr. Ivo Opstal

Has successfully completed the seminar "Approved HazMat Expert" and the witnessing audit for the final approval. The participant has demonstrated the competence to prepare an "Inventory of Hazardous Materials" (IHM).

Seminar "Approved HazMat Expert" Place, Date, Signature: Istanbul, 2016-06-14 to 2016-06-17, Gerhard Aulbert
DNV GL Representative

Successful witnessing Place, Date, Signature: Rotterdam, The Netherlands, 2016-12-09, Khalid Mahmood
DNV GL Representative

This certificate is valid until: 2019-12-09

Issued at Hamburg, 2016-12-19

This certificate is subject to a revalidation every three years.

First Revalidation Place, Date, Signature: _____
DNV GL Representative

Second Revalidation Place, Date, Signature: _____
DNV GL Representative

Gerhard Aulbert



BUREAU
VERITAS

Certificate of Approval

Approving a Service Supplier engaged in
Visual and/or Sampling Checks and preparation
of Inventory of Hazardous Materials

No. RTD0/EZA/20170613223134

Issued within the scope of the Bureau Veritas Marine & Offshore Division General Conditions
Délivrée dans le cadre des Conditions Générales de la Division Marine & Offshore du Bureau Veritas

Company: **MARITIME ASBESTOS SOLUTIONS B.V.**

Company address*: BERKELSE POORT 95

2651 JX BERKEL EN RODENRIJS
NETHERLANDS

Scope of the approval:

Visual and/or Sampling Checks on board ships, development of IHM.

This is to certify that:

The undersigned Surveyor of the Society, acting within the Bureau Veritas Marine & Offshore General Conditions, has performed, at the Company's request, an assessment of the facilities, organisational structure and procedures of the said Service Supplier, in compliance with the relevant requirements of the Society Rule Note NR 533.

The facilities, organisational structure and procedures were found satisfactory for the servicing of the equipment described in the attached Schedule of Approval.

The Certificate is valid until**: 12 June 2020

Completion date of the assessment on which this certificate based:

At: ROTTERDAM on 13 June 2017

Bureau Veritas Surveyor's signature :

For BUREAU VERITAS
Evgeny Zavyalov

* Refer to the appendix for the list of subsidiaries covered by this certificate

** Not later than 3 years after the date of evaluation

The latest published Rules of the Bureau Veritas Marine & Offshore and the General Conditions therein are applicable.

La dernière édition des Règlements de Bureau Veritas Marine & Offshore ainsi que les conditions Générales qui y figurent sont applicables

Any person not a party to the contract pursuant to which this certificate is delivered may not assert a claim against Bureau Veritas for any liability arising out of errors or omissions which may be contained in said certificate, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in the establishment or issuance of this certificate, and in connection with any activities for which it may provide.

Toute personne qui n'est pas partie au contrat aux termes duquel ce document est délivré ne pourra engager la responsabilité du Bureau Veritas pour les inexactitudes ou omissions qui pourraient y être relevées ainsi que pour les erreurs de jugement, fautes ou négligences commises par le personnel de la Société ou par ses agents dans l'établissement de ce document et dans l'exécution des interventions qu'il comporte.

Certificate N° RTD0/EZA/20170613223134
Company Name MARITIME ASBESTOS SOLUTIONS B.V.

SCHEDULE OF THE APPROVAL

1- List of equipment and systems

Any

2- List of subsidiaries covered by this certificate

None

3- Condition for the validity of the certificate of approval

The certification is valid insofar as the inspection duties are actually assumed by personnel of the Supplier who has been assessed by the Society.

The Society reserves the right to invalidate this certificate of approval in case:

- Where the service was improperly carried out or the results were improperly reported.
- Where a Surveyor finds deficiencies in the approval service operating system of the supplier and appropriate corrective action is not taken.
- Where alterations have been made to the Company's Quality System relevant to the service supplier certificates, without written notification to the Society.
- Where the intermediate audit, if requested, has not been carried out.
- Where wilful acts or omissions are ascertained.
- Where any deliberate misrepresentation has been made by the Service Supplier

4- Other conditions

-

5- Endorsement where an intermediate audit has been performed

Signed:
(Surveyor to Bureau Veritas)

Place:

Date:

APPROVAL OF SERVICE SUPPLIERS

This is to certify that

Maritime Asbestos Solutions B.V.

Berkel en Rodenrijs, Netherlands

is granted acceptance for

**Preparation of Inventory of Hazardous Materials (IHM) , in accordance with
Class Programme DNVGL-CP-0484.**

This service supplier certificate will be accepted for use with all rule sets published by DNV GL.
See the following page(s) for details regarding application.

This Certificate is valid until **2019-07-27**.

Issued at **Rotterdam, Product Certification /Verification** on **2016-07-28**



for **DNV GL**

This document has been digitally signed and
will therefore not have handwritten signatures

Aulbert, Gerhard
Global Head of Practice Ship Recycling

This Certificate may be withdrawn if:

1. The service provided has been improperly carried out or the results improperly reported.
2. The surveyor has found any deficiencies in the accepted operating systems of the service supplier.
3. The firm has failed to inform of any major changes having effect on the quality of the service rendered.
4. The conditions listed in the certificate are changed and/or are not fulfilled.

Certificate No: **AOSS0000BGC**

Application:

Preparation of Inventory of Hazardous Materials for vessels and rigs, in compliance with
- SR/CONF/45: Hong Kong International Convention for the Safe and
Environmentally Sound Recycling of Ships, 2009
- IMO Guidelines for the Development of the Inventory of Hazardous Materials
- Regulation (EU) No 1257/2013 of the European Parliament and of the
Council of 20 November 2013 on Ship Recycling and Amending Regulation
(EC) No 1013/2006 and Directive 2009/16/EC



Approval of Service Suppliers

Office: **Rotterdam**
Date of issue: **26 May 2017**
This is to certify that: **Maritime Asbestos Solutions B.V.**
Berkelse Poort 95
2651JX Berkel en Rodenrijs
The Netherlands (hereinafter referred to as "Supplier")
Tel: **+31 (0)10 226 93 69** Fax: **M +31 (0)6 82 99 98** Email: **info@ma-solutions.nl**

having been assessed hereby receives approval in accordance with the requirements of *Lloyd's Register Procedures for Approval of Service Suppliers* as Supplier from the address(es) listed above for the provision of

Visual/sampling checks and testing for hazardous materials, such as asbestos, PCBs, TBTs and CFCs onboard ships, including advice on numbers and locations of samples, and preparation of reports on the quantities, locations and estimates of these materials

In accordance with:

- IMO Resolution MEPC.269(68) Guidelines for the development of the Inventory of Hazardous Materials for compliance with Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009
- EMSA's Best Practice Guidance on the Inventory of Hazardous Materials for compliance with Regulation (EU) No 1257/2013 of the European Parliament and of the Council of 20 November 2013 on Ship Recycling and Amending Regulation (EC) No 1013/2006 and Directive 2009/16/EC

This approval is conditional upon the Supplier maintaining the documented scheme as audited by any member of the Lloyd's Register Group and hereby approved; and notifying Lloyd's Register in writing of any change to that scheme including any change in personnel, equipment or procedures.

This certificate is issued to the Supplier and, subject to the Supplier complying with the necessary conditions, is valid to the date referred to below.

This certificate is valid until **25 May 2020**

A.W. Wolters	Rotterdam Office
	 Lloyd's Register EMEA
	Surveyor to Lloyd's Register EMEA
	A subsidiary of Lloyd's Register Group Limited

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.



RINA
Via Corsica, 12 - 16128 Genova
Tel. +39 010 53851
Fax +39 010 5351000

CERTIFICATE OF APPROVAL OF SERVICE SUPPLIER

CERTIFICATE NO. 2018/XN/978-01



This is to certify that

Maritime Asbestos Solutions B.V.

Anjerweg 34
Bleiswijk NETHERLANDS

*Has been approved in compliance with the
RINA "RULES FOR THE CERTIFICATION OF SERVICE SUPPLIERS"
for the supply of the following services to ships and other units classed by RINA;*

Z - Firm engaged in preparation of Inventory of Hazardous Materials (IHM)

*Issued in Rotterdam on
23/08/2018*

*This Certificate is valid from the date of the initial audit until
21/08/2021*

This certificate consists of this sheet plus an attachment

RINA

Sergey Myagkov





RINA
Via Corsica, 12 - 16128 Genova
Tel. +39 010 53851
Fax +39 010 5351000

**ATTACHMENT TO
CERTIFICATE NO. 2018/XN/978-01**
Page 1 of 1



VALIDITY CONDITIONS

- Maintaining validity of the mandatory "Procescertificate Asbestor inventarisation Certificate", issued by Normec, throughout the validity of this service supplier certificate.
- Sample analysis. mandatory to be performed by accredited laboratories.
- HazMat experts, other then assessed at time of audit, to be made know to Rina Rotterdam including copy of HazMat Expert Certificate, prior inspection duties on board a Rina Classed ship.

INITIAL AND UNSCHEDULED AUDITS			
Due date	Carried out on (dd/mm/yyyy)	Surveyor's signature	Surveyor's stamp
	21/08/2018		 Martin Bol
<i>Unscheduled</i>			
<i>Unscheduled</i>			
<i>Unscheduled</i>			

General conditions for the approval

- The initial conditions verified by RINA at the time of the approval are to be maintained
- Any changes to the initial conditions are to be promptly communicated to RINA, which reserves the right to repeat the relevant assessments
- RINA personnel are to be allowed to witness during the performance of activities, upon their request
- The activities are to be carried out in compliance with the RINA Rules and or other applicable rules
- RINA may revoke the approval at any moment in the case of modifications to requirements or conditions for the approval

Sergey Myagkov



Appendix F**Laboratory accreditation****RAAD VOOR ACCREDITATIE**Dutch Accreditation Council RvA
PO Box 2768 NL-3500 GT Utrecht

De Stichting Raad voor Accreditatie,
bij wet aangewezen als de nationale accreditatie-instantie voor Nederland,
verklaart hierbij accreditatie te hebben verleend aan:

Eurofins Omegam B.V.**Amsterdam-Duivendrecht**

De instelling heeft aangetoond in staat te zijn op technisch bekwame wijze valide resultaten te leveren en te werken volgens een managementsysteem.

Deze accreditatie is gebaseerd op een beoordeling tegen de vereisten zoals vastgelegd in EN ISO/IEC 17025:2005.

De accreditatie is van toepassing op de activiteiten zoals gespecificeerd in de gewaarmerkte bijlage die is voorzien van het registratienummer.

De accreditatie is van kracht, onder voorwaarde dat de instelling blijft voldoen aan de vereisten.

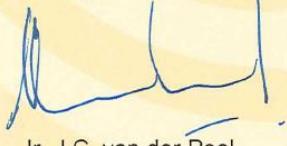
De accreditatie voor registratienummer:

L 086

is verleend op 7 mei 1992

Deze verklaring is geldig tot
1 juni 2021

De Algemeen Directeur


Ir. J.C. van der Poel

De Stichting Raad voor Accreditatie is ondertekenaar van de European co-operation for Accreditation (EA) Multilateral Agreement voor accreditatie in dit werkgebied.

United Kingdom Accreditation Service

ACCREDITATION CERTIFICATE



TESTING LABORATORY
No. 7762

Centre Testing International Pinbiao (Shanghai) Co. Ltd

is accredited in accordance with the recognised International Standard ISO/IEC 17025:2005 - General Requirements for the competence of testing and calibration laboratories.

This accreditation demonstrates technical competence for a defined scope as detailed in and at the locations specified in the schedule to this certificate, and the operation of a laboratory quality management system (refer joint ISO-ILAC-IAF Communiqué dated January 2009).

The schedule to this certificate is an essential accreditation document and from time to time may be revised and reissued by the United Kingdom Accreditation Service. The most recent issue of the schedule of accreditation, which bears the same accreditation number as this certificate, is available from the UKAS website www.ukas.com.

This accreditation is subject to continuing conformity with United Kingdom Accreditation Service requirements. The absence of a schedule on the UKAS website indicates that the accreditation is no longer in force.

Accreditation Manager, United Kingdom Accreditation Service

Initial Accreditation date
03 March 2014

This certificate issued on
28 July 2016

UKAS is appointed as the sole national accreditation body for the UK by The Accreditation Regulations 2009 (SI No 3155/2009) and operates under a Memorandum of Understanding (MoU) with the Department for Business, Innovation and Skills (BIS).

Appendix G Anti-fouling certificate



International Anti-Fouling System Certificate

(This certificate shall be supplemented by a Record of Anti-Fouling Systems)

Issued under the International Convention on the Control of Harmful Anti-Fouling Systems on Ships
under the authority of the Government of the Commonwealth of The Bahamas by Lloyd's Register EMEA.

When a Certificate has been previously issued this Certificate replaces the certificate dated -.

Particulars of ship	
Name of ship	FJORDVIK
Port of registry	Nassau
Distinctive numbers or letters	C6CV8
Gross tonnage	3,091
IMO number	7423249

An anti-fouling system controlled under Annex 1 has not been applied during or after construction of this ship.

An anti-fouling system controlled under Annex 1 has been applied on this ship previously, but has been removed by **Lyttelton, New Zealand** on **23 January 2013**.

An anti-fouling system controlled under Annex 1 has been applied on this ship previously, but has been covered with a sealer coat applied by on

An anti-fouling system controlled under Annex 1 was applied on this ship prior to but will be removed or covered with a sealer coat prior to

This is to certify that

- 1 the ship has been surveyed in accordance with regulation 1 of Annex 4 to the Convention; and
- 2 the survey shows that the anti-fouling system on the ship complies with the applicable requirements of Annex 1 to the Convention

Issued at **Gdansk**

on **19 December 2016**

Date of completion of the survey on which this certificate is issued **15 January 2016**



J. Czarnek
Surveyor to Lloyd's Register EMEA

a member of the Lloyd's Register group.

Record of Anti-Fouling Systems

This record shall be permanently attached to the International Anti-Fouling System Certificate

Particulars of ship	
Name of ship	FJORDVIK
Distinctive numbers or letters	C6CV8
IMO number	7423249
Type(s) of anti-fouling system(s) used	Details of anti-fouling system applied Biocidal
Date(s) of application of anti-fouling system(s)	1-7 December 2016
Name(s) of company(ies) and facility(ies)/location(s) where applied	Nauta Shipyard, Gdynia, Poland
Name(s) of anti-fouling system manufacturer(s)	International Paint Ltd, UK
Name(s) and colour(s) of anti-fouling system(s)	Interspeed 6400, BQA 644, Red
Active ingredient(s) and their Chemical Abstract Service Registry Number(s) (CAS Number(s))	Cuprous Oxide (CAS 1317-39-1) Zinc Ethylene Bisdithiocarbamate (CAS 12122-67-7)
Type(s) of sealer coat, if applicable	Not applicable
Name(s) and colour(s) of sealer coat applied, if applicable	Not applicable
Date of application of sealer coat	Not applicable

This is to certify that this record is correct in all respects.

Issued at **Gdansk**

on **19 December 2016**

J. Czarnek
Surveyor to Lloyd's Register EMEA
a member of the Lloyd's Register group.





This is to certify that
"FJORDVIK"
IMO:7423249

Was coated during d/d on Nauta S/Y Poland in December 2016 on boottop with:

Interspeed® 6400

BQA644 Red

is a

**TBT Free Controlled Depletion Polymer
Antifouling coating**
and

**complies with the IMO Antifouling Systems
Convention of 2001 (AFS/CONF/26)**

**Interspeed® 6400 (BQA642 Blue, BQA644 Red, BQA648 Brown,
BQA649 Black) is manufactured by International Paint Ltd. and
contains the following active ingredients**

Cuprous Oxide (CAS Number 1317-39-1)
Zinc Ethylene bis-dithiocarbamate (CAS Number 12122-67-7)

This antifouling coating complies with the Vessel General Permit Scheme
under the US Clean Water Act.

Chris Birkert
Technical Manager, EMEA Marine

Marine Coatings

All products supplied and technical advice or recommendations given are subject to our standard Conditions of Sale.

Registered in England No. 63604
Registered Office 26th Floor, Portland House, Bressenden Place, London SW1E 5BG





This is to certify that

Intersmooth® 360 SPC

BEA368 Dark Brown, BEA369 Dark Red

is a

**TBT-free Self Polishing Copolymer Antifouling
coating**

and

**complies with the IMO Antifouling Systems
Convention of 2001 (AFS/CONF/26)**

**Intersmooth 360 SPC (BEA368 Dark Brown, BEA369 Dark Red)
is manufactured by International Paint Ltd. and contains the
following active ingredients**

Cuprous Oxide (CAS Number 1317-39-1)
Zinc Pyrithione (CAS Number 13463-41-7)

This antifouling coating complies with the Vessel General Permit Scheme
under the US Clean Water Act.

Chris Birkert
Technical Manager, EMEA Marine

Marine Coatings

All products supplied and technical advice or recommendations given are subject to our standard Conditions of Sale.

Registered in England No. 63604
Registered Office 26th Floor, Portland House, Bressenden Place, London SW1E 5BG



Appendix H Material declarations



Herstellererklärung *Declaration of Manufacturer*

Wir erklären, dass die Produkte
We declare that the products

Maschinen- Glasthermometer
Industrial Thermometer

hergestellt von
manufactured by

SIKA Dr. Siebert & Kühn GmbH & Co. KG

gemäß
related to the

DGRL 97/23/EG

Richtlinie 97/23/EG des Europäischen Parlaments und des Rates
zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über
Druckgeräte

PED 97//23/EC

*Directive 97/23/EC of the European Parliament and of the Council of 29 May 1997 on
the approximation of the laws of the Member States concerning pressure equipment*

bewertet worden sind. Gemäß Diagramm 1 Anhang II der Richtlinie werden die Produkte nach Artikel 3, Absatz 3 eingestuft. Sie sind nach den Regeln der guten Ingenieurpraxis ausgelegt und hergestellt.

*are classified and refer according table 1 Annex II to Article 3, paragraph 3. They are designed and manufactured in
accordance with the sound engineering practice.*

Diese Druckgeräte und/oder Baugruppen dürfen nicht die CE- Kennzeichnung tragen.

Such equipment and/or assemblies must not bear the CE marking.

Kaufungen, den 28. November 2013

i.V.

Dipl.- Ing. K. Ulloth
(CE- Koordinator und Produktsicherheitsbeauftragter)
(*Manager CE- Coordination and Safety Supervisor*)



Herstellererklärung *Declaration of Manufacturer*

Wir erklären, dass die Produkte
We declare that the products

SIKA Maschinenthermometer
SIKA industrial thermometer

der Baureihe
series

271B, 272B, 273B, 291B, 292B, 174B, 175B
271HBZ, 272WBZ, 273WBZ, 291HBZ,
292WBZ, 174HBZ, 175WBZ
271Da, 272Da, 273Da
271Dc, 272Dc, 273Dc

hergestellt von
manufactured by

SIKA Dr. Siebert & Kühn GmbH & Co. KG

folgenden technischen Vorschriften entsprechen
comply with following technical specifications

DIN 16181 / 16182	Maschinen- Glasthermometer mit 110 mm Gehäuse <i>Glass thermometers for industrial purposes, straight, top V-shape nominal size 110; classification</i>
DIN 16185 / 16186	Maschinen- Glasthermometer mit 150 mm Gehäuse <i>Glass thermometers for industrial purposes, straight, top V-shape nominal size 150; classification</i>
DIN 16189 / 16190	Maschinen- Glasthermometer mit 200 mm Gehäuse <i>Glass thermometers for industrial purposes, straight, top V-shape nominal size 200; classification</i>
DIN 16191	Maschinen- Glasthermometer mit 200 mm Gehäuse (135° Winkelausführung) <i>Industrial 135° angle stem liquid-in-glass thermometers with V-shaped case, of nominal size 200</i>
DIN 16195	Maschinen-Glasthermometer mit V-förmigem Gehäuse; Anforderungen und Prüfung <i>Industrial liquid-in-glass thermometers with V-shaped case; requirements and testing</i>

Kaufungen, den 28. April 2016

i.V.

Dipl.- Ing. K. Ulloth
(CE- Koordinator und Produktsicherheitsbeauftragter)
(Manager CE- Coordination and Safety Supervisor)



Herstellererklärung

Declaration of Manufacturer
Déclaration du fabricant

Wir erklären, dass die Produkte
We declare that the products
Nous déclarons que les

der Baureihen
series
de la série

Maschinenthermometer

Industrial Thermometers
Thermomètre Industriel

**271, 272, 273,
291, 292, 293,
174, 175, 176**

hergestellt von
manufactured by
fabriqués par

SIKA Dr. Siebert & Kühn GmbH & Co. KG

einer Zündgefahrenbewertung entsprechend DIN EN 13463-1: 2009 resp. DIN EN ISO 80079-36:2016 unterzogen worden sind und keine eigenen potentiellen Zündquellen besitzen. Sie unterliegen somit nicht der Richtlinie 2014/34/EU.

have been subjected to an ignition hazard assessment in accordance with DIN EN 13463-1: 2009 resp. DIN EN ISO 80079-36:2016 and do not have potential sources of ignition. Therefore they are not subject to directive 2014/34/EU.

ont été soumis à une évaluation du risque d'allumage selon DIN EN 13463-1: 2009 resp. DIN EN ISO 80079-36:2016. Ils ne représentent pas en eux-mêmes une source d'allumage potentielle. Ils ne sont donc pas soumis à la directive 2014/34/EU.

Kaufungen, den 23. Januar 2017

i.V.

Dipl.-Ing. K. Ulloth
(CE-Koordinator und Produktsicherheitsbeauftragter)
(Manager CE- Coordination and Safety Supervisor)
(Coordinateur CE et responsable de la sécurité des produits)