

## ANNEX

### GUIDELINES FOR MAINTENANCE AND MONITORING OF ON-BOARD MATERIALS CONTAINING ASBESTOS

#### 1 Introduction

1.1 These Guidelines aim at providing guidance to Administrations, companies as defined in SOLAS regulation IX/1, seafarers and others closely involved with the operation of ships on how to deal with asbestos on board ships in service.

1.2 They do not intend to address other aspects of asbestos that are already covered by the work of other international organizations (contact details of the International Labour Office (ILO) and the World Health Organization (WHO) are indicated in annex 2).

#### 2 Scope of application

2.1 These Guidelines do not apply to ships which have asbestos aboard as allowed by SOLAS regulations II-1/3-5.2.1, 3-5.2.2 and 3-5.2.3.

2.2 The purpose of the Guidelines is to set up a maintenance and monitoring programme with the principal objective of minimising exposure to asbestos fibres of anyone on board (passengers, crew, riding crews, maintenance personnel in port) while the ship is “in service” (i.e., as opposed to when the ship is in a repair or dry-dock status with minimal crew members or only shore-side personnel on board).

2.3 The present Guidelines address the following three situations:

- .1 general exposure of crew/passengers to asbestos which may be present on the ship;
- .2 more direct exposure of crew members working in areas where there is reasonable likelihood that asbestos is – or asbestos fibres are – present; and
- .3 specific exposure of crewmembers and other workers when they are maintaining or repairing equipment or systems known to contain asbestos-based insulated materials.

2.4 Planned repairs or removal of such materials should be carried out by specialist personnel and not normally by crew. In cases where the crew is involved in urgent repair work at sea, special measures should be observed as listed in annex 1. Procedures should be developed for the safe retention of any waste asbestos on board the ship before it can be transferred and disposed of ashore.

2.5 The provisions of these Guidelines do not apply to any warship, naval auxiliary or other ships owned or operated by a State and used, for the time being, only on government non-commercial service. However, each State should ensure, through the adoption of appropriate measures not impairing operations or operational capabilities of such ships owned or operated by it, that such ships act in a manner consistent, so far as is reasonable and practicable, with these Guidelines.

### **3 General provision**

The Company should make provisions, including the nomination of a responsible person to control the maintenance and monitoring program for asbestos, in their Safety Management System (developed for compliance with the ISM Code) for the maintenance and monitoring of on board materials containing asbestos in line with the provisions of the present Guidelines.

### **4 Inventory and condition assessment of asbestos-containing materials**

4.1 The Company should have an initial ship inspection performed by a qualified professional to investigate the possible presence of asbestos-containing materials on board the ship and, if any are identified, to locate them and assess their condition. The inspection should serve as the basis for establishing an effective maintenance and monitoring programme for dealing with the asbestos in the ship.

4.2 In the case of flake coatings, lagging or false ceilings containing asbestos, their condition should be assessed by completing the evaluation checklist shown in appendix 1 to annex 1, which takes into account, in particular, the accessibility of the materials and products, their degree of degradation, their exposure to shocks and vibration and the presence of air currents in the area. Air sampling of dust measurement may be used as one tool to help provide a more complete assessment of the ambient conditions on board. The evaluation form contained in appendix 2 to annex 1 should be used to make the diagnosis on the state of conservation of these materials.

### **5 Maintenance and monitoring programme**

5.1 If asbestos-containing material is located, a maintenance and monitoring programme should be developed for that ship, based on the inspection and assessment data. The programme should be implemented and managed conscientiously and include the elements contained in annex 1.

5.2 In the case of flake coatings, lagging or false ceilings containing asbestos, depending on the diagnosis as described in paragraph 4.2, the company should establish appropriate thresholds and timescales for undertaking any necessary repairs or abatement, taking into account any national regulations.

### **6 Abatement actions, planned repair and removal of asbestos-containing materials**

6.1 Abatement actions should be selected and implemented when necessary. In some instances, due to the condition of asbestos-containing materials or upcoming ship repairs or modifications, a Company may decide to take other abatement actions to deal with asbestos-containing materials in the ship. These response actions could include: encapsulation (covering the asbestos-containing materials with a sealant to prevent fibre release), enclosure (placing an air-tight barrier around the asbestos-containing materials), encasement (covering the asbestos-containing materials with a hard-setting sealing material) or repair or removal of the asbestos-containing materials. Qualified, trained and experienced contractors should be used for any of these actions. The Company should be aware of any national and local regulations that pertain to abatement actions to deal with asbestos-containing materials.

6.2 In the event of works requiring the removal of asbestos-containing materials, they should be unloaded from the ship. On completion of the work, and before any restoration of the spaces, the Company should carry out dust measurement after dismantling the enclosing mechanism. If the work does not result in the total removal of the materials and products listed in this order, the Company should carry out regular surveillance of the asbestos-containing materials at intervals identified by the Company as being appropriate, but not exceeding 3 years.

## ANNEX 1

### MAINTENANCE AND MONITORING PROGRAMME

A successful maintenance and monitoring programme should include the following elements.

#### **1 Notification**

A programme through which all those affected will be informed where asbestos-containing material is located, and how and why to avoid disturbing the asbestos-containing material.

#### **2 Surveillance**

Regular surveillance of asbestos-containing material to note, assess and document any changes in the condition of the asbestos-containing material.

#### **3 Controls**

The maintenance and monitoring programme should include a system to control all work that could disturb asbestos-containing material.

#### **4 Work practices**

A maintenance and monitoring programme should focus on a special set of work practices. The nature and extent of any special work practices should be tailored to the likelihood that the asbestos-containing material will be disturbed and that fibres will be released. In general, four broad categories of work practices are recognised:

- .1 protection programmes to ensure crew members are adequately protected from asbestos exposure during normal maintenance;
- .2 basic operations and maintenance procedures to minimise and/or contain asbestos fibres;
- .3 special operations and maintenance cleaning techniques to clean up asbestos fibres on a routine basis; and
- .4 procedures for use during incidents of asbestos fibre release episodes to minimise the spread throughout the ship.

In the latter case, the procedures to be followed will vary according to the site of the major release episode, the amount of asbestos-containing material affected, the extent of fibre release from the asbestos-containing material, the relationship of the asbestos-containing material to the air handling systems, and whether the release site is accessible to passengers and crew.

## **5 Record keeping**

All ship asbestos management documents should be stored in permanent files. In addition, for crew members engaged in asbestos-related work there may be national regulations that require employers to retain medical records, health records and personal air sampling records for each crew member, and provision should be made to comply with such regulations.

## **6 Training**

Training of maintenance personnel is one of the keys to a successful maintenance and monitoring programme. Inadequate training of personnel may result in asbestos operations and maintenance tasks not being performed properly, possibly leading to higher than necessary levels of asbestos fibres in the air and an increased risk being faced by crew members and passengers. The level of training may vary from:

- .1 awareness training for personnel involved in activities where asbestos-containing materials may be accidentally disturbed;
- .2 special operations and maintenance training for personnel involved in general maintenance and incidental repair tasks involving asbestos-containing material; and
- .3 abatement worker training for workers who may conduct asbestos abatement. This level of work should not normally be expected of ship's crew members.

Appendix 1

**EVALUATION CHECKLIST**  
*where asbestos is present in flake coatings, lagging or false ceilings*  
(to be completed for each compartment)

Name of ship	
Date of check	
Compartment	
Stated destination of compartment	

<b>Depending on diagnosis</b> (see Appendix 2)	
1	Periodic check of state of conservation of materials
2	Monitoring of dust levels
3	Works

<b>Characteristics of protection</b>	
Watertight	<input type="checkbox"/> 1
Non-watertight	<input type="checkbox"/> As indicated in Appendix 2

TABLE OF CRITERIA USED IN THE DIAGNOSTIC CHECKLIST

<b>FLAKE COATINGS</b>	<b>LAGGING</b>	<b>FALSE CEILINGS</b>
<p><b>Condition of surface and degradation</b></p> <p>Material in poor condition or material unstuck Material coated or uncoated with local degradation Material uncoated non-impregnated in good condition Core impregnation in good condition or surface coating in good condition</p>	<p><b>State of degradation</b></p> <p>Lagging in poor condition Lagging with local degradation Lagging in good condition</p>	<p><b>Condition of surface and degradation</b></p> <p>Product in poor condition Product with local degradation Product in good condition</p>
<p><b>Reported protection of the material</b></p> <p>Physical protection non-watertight</p> <p>No physical protection</p>		
<p><b>Exposure of product to air current</b> (including, depending on the situation plenum, false ceiling, etc.)</p> <p>Low Average High</p>		
<p><b>Exposure of product to shocks and vibrations</b></p> <p>Low Average High</p>		

Appendix 2

EVALUATION OF THE STATE OF CONSERVATION OF FLAKE COATINGS,  
LAGGING OR FALSE CEILINGS

Condition of surface and degradation	Physical protection <sup>1</sup>	Air circulation	Shocks and vibrations	Result
Material in poor condition or Material unstuck <input type="checkbox"/>				3
Material coated or uncoated with local degradation <input type="checkbox"/>	P <input type="checkbox"/>	L <input type="checkbox"/>	L <input type="checkbox"/>	1
			A <input type="checkbox"/>	1
			H <input type="checkbox"/>	2
		A <input type="checkbox"/>	L <input type="checkbox"/>	1
			A <input type="checkbox"/>	1
			H <input type="checkbox"/>	2
	NP <input type="checkbox"/>	L <input type="checkbox"/>	L <input type="checkbox"/>	2
			A <input type="checkbox"/>	2
			H <input type="checkbox"/>	2
		A <input type="checkbox"/>	L <input type="checkbox"/>	2
			A <input type="checkbox"/>	2
			H <input type="checkbox"/>	3
Material uncoated or non-impregnated in good condition <input type="checkbox"/>	P <input type="checkbox"/>	L <input type="checkbox"/>	L <input type="checkbox"/>	1
			A <input type="checkbox"/>	1
			H <input type="checkbox"/>	2
		A <input type="checkbox"/>	L <input type="checkbox"/>	1
			A <input type="checkbox"/>	1
			H <input type="checkbox"/>	2
	NP <input type="checkbox"/>	L <input type="checkbox"/>	L <input type="checkbox"/>	2
			A <input type="checkbox"/>	2
			H <input type="checkbox"/>	2
		A <input type="checkbox"/>	L <input type="checkbox"/>	1
			A <input type="checkbox"/>	2
			H <input type="checkbox"/>	2
Core impregnation in good condition or Surface coating in good condition <input type="checkbox"/>				1

P: Physical protection non-watertight  
NP: No physical protection  
L: Low  
A: Average  
H: High

<sup>1</sup>Column not applicable for false ceilings

ANNEX 2

**CONTACT DETAILS OF INTERNATIONAL ORGANIZATIONS WHICH HAVE  
ADDRESSED ASBESTOS-RELATED ISSUES**

**International Labour Office (ILO)**

Address: 4, route des Morillons  
CH-1211 Geneva 22  
Switzerland  
Tel: + 41 22 799 6111  
Fax: + 41 22 798 8685  
Website: [www.ilo.org](http://www.ilo.org)

**World Health Organization (WHO)**

Address: Avenue Appia 20  
CH – 1211 Geneva 27  
Switzerland  
Tel: + 41 22 791 2111  
Fax: + 41 22 791 3111  
Website: [www.who.org](http://www.who.org)

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