
The Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Asbestos) Regulations 2010

Notice to all Ship, Yacht and Fishing Vessel Owners, Operators and Managers and other employers of seafarers; Masters, Officers and Seafarers on Merchant Ships, Hovercraft and Yachts; and Skippers and Crew of Fishing Vessels, Small Commercially Operated Vessels and Yachts with paid crew whether operating at sea or on inland waters

This notice should be read in conjunction with Marine Guidance Note MGN 20 (M+F) which provides guidance on the requirements of the Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997 (SI 1997/2962).

Merchant Shipping Notice M.1428 is hereby cancelled

PLEASE NOTE:-

Where this document provides guidance on the law it should not be regarded as definitive. The way the law applies to any particular case can vary according to circumstances - for example, from vessel to vessel and you should consider seeking independent legal advice if you are unsure of your own legal position.

Summary

This Marine Guidance Note provides guidance on the Merchant Shipping and Fishing Vessels (Health and Safety at Work)(Asbestos) Regulations 2010. Asbestos used to be used on ships for fire protection and other purposes where its resistance to heat was beneficial. However it is extremely hazardous to health and for that reason its use has effectively been banned for many years on new ships built for the UK register except in very limited circumstances (e.g. gaskets) where its heat resistant properties required its continued use. The new Regulations however apply to all UK ships whether or not originally built for the UK register and will also apply to non-UK ships in UK waters.

1. INTRODUCTION

- 1.1 The Merchant Shipping and Fishing Vessels (Health and Safety at Work)(Asbestos) Regulations 2010(SI 2010/2984) (the "Asbestos Regulations 2010"), which come into force on 10 January 2011, implement EC Directive 83/477/EEC (as amended by Directives 91/382/EEC, 98/24/EC, 2003/18/EC and 2007/30/EC) (the "Asbestos

Directive”), which introduced measures to protect workers from the risks related to exposure to asbestos at work. The Health and Safety Executive (HSE) and the Health and Safety Executive for Northern Ireland (HSE(NI)) have already implemented the Directive for land based workers by means of the Control of Asbestos Regulations 2006 and the Control of Substances Hazardous to Health Regulations 2002 (as amended) and the Control of Asbestos Regulations (Northern Ireland) 2007 and the Control of Substances Hazardous to Health Regulations (Northern Ireland) 2003 (as amended) respectively. The Asbestos Regulations 2010 complete UK implementation of the Asbestos Directive by extending its requirements to all ships, hovercraft, fishing vessels, large yachts, coded vessels and other vessels with workers on board, whether they operate on rivers, lakes, other inland waters or at sea.

- 1.2. The Asbestos Directive is a "Daughter Directive" of Directive 89/391/EEC (the "Framework Directive"), which introduced general measures to encourage improvements in the safety and health of workers at work. The Framework Directive was implemented for the maritime sector in the UK by the Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997 (SI 1997/2962) (as amended) (the "General Duties Regulations"). Under the General Duties Regulations, employers are required to carry out an assessment of any risks to workers employed by them and, where any risks are identified, put in place appropriate measures to either remove those risks completely or, where that is not possible, reduce them as far as is reasonably practicable. The Asbestos Regulations 2010 build on those requirements by requiring that the risk assessment should include consideration of whether any risks to workers exist or could arise from exposure to asbestos at work. If any actual or potential risks are identified, appropriate measures must be taken to remove or mitigate those risks in order to protect workers.
- 1.3 The provisions of the Asbestos Regulations 2010 do not apply to land based workers temporarily carrying out work aboard any vessel (e.g. land based asbestos removal contractors) within the UK, as they will be subject to the relevant HSE/HSE(NI) Regulations (see paragraph 1.5 regarding the position of such workers outside the UK). However where the actions of such workers affect ship-based workers, and vice versa, there may be an overlap of responsibilities between MCA and HSE/HSE(NI) and their respective Regulations. Such overlap is covered by the provisions of the Memorandum of Understanding between the Health and Safety Executive, Maritime and Coastguard Agency and the Marine Accident Investigation Branch.
- 1.4 In line with other HSE/HSE (NI) Health & Safety legislation, the HSE/HSE(NI) Regulations referred to in paragraph 1.1 do not apply to “..... the master or crew of a ship or to the employer of such persons in respect of the normal shipboard activities of a ship’s crew which are carried out solely by the crew under the direction of the master.....”. “Ship” in this context includes every description of vessel used in navigation other than a Royal Navy ship. Within the United Kingdom, work on a ship involving asbestos will not usually be carried out “solely by the crew under the direction of the master” and in these circumstances the HSE/HSE(NI) regulations will therefore apply.
- 1.5 Once outside the United Kingdom however the HSE/HSE(NI) Regulations no longer apply and the Asbestos Regulations 2010 will apply to all persons on board a UK ship, unless more stringent local regulations apply when in a port outside the UK. It should be noted that the requirements of the Asbestos Regulations 2010 are the minimum required by the Asbestos Directive and given the sensitivity surrounding asbestos, and the potential for compensation claims resulting from exposure to asbestos, employers, ship owners etc may wish to consider applying higher standards should asbestos be known, or suspected, to be present.

2. ASBESTOS AND ITS RELEVANCE TO SHIPPING

- 2.1 The use of asbestos on new ships built for the UK flag has effectively been banned for many years except for specialised uses such as gaskets for high temperature joints. The Asbestos Regulations 2010 do not therefore automatically apply to every vessel except insofar as regulation 4 of those Regulations extends the General Duties Regulations requirement for a risk assessment to be undertaken to include determining whether there is a risk of exposure, or potential exposure, to asbestos at work. Should the risk assessment positively identify that there is no actual or potential risk of exposure, e.g. because it is known conclusively that asbestos has never been present on the vessel in any form or, if previously present has been completely removed, no further action is likely to be required other than to record this in the risk assessment. If demolition or maintenance work is to be undertaken regard should be had to paragraph 11 below. Where however the risk assessment does identify actual or potential risks of exposure then the provisions of the Asbestos Regulations 2010 will apply in full. Regard should be had to the derogations referred to in paragraphs 5.2 to 5.4 below.

3. INTERPRETATION (Regulation 2)

- 3.1 In the Asbestos Regulations 2010, and this MGN, the following definitions apply:-

“asbestos” - means the following fibrous silicates and materials or products consisting of or containing any of these fibrous silicates–

Asbestos actinolite	-	CAS No 77536–66–4)
Asbestos gruenerite (amosite) (commonly known as “brown asbestos”)	-	CAS No 12172–73–5
Asbestos anthophyllite	-	CAS No 77536–67–5
Chrysotile (commonly known as “white asbestos”)	-	CAS No 12001–29–5
Crocidolite (commonly known as “blue asbestos”)	-	CAS No 12001–28–4
Asbestos tremolite	-	CAS No 77536–68–6

“CAS No” means the number in the Registry of the Chemical Abstract Service (CAS).

“ISO 17020” and “ISO 17025” mean, respectively, European Standard EN ISO/IEC 17020, “General criteria for the operation of various types of bodies performing inspection” and European Standard EN ISO/IEC 17025, “General requirements for the competence of testing and calibration laboratories” issued by the Comité Européen de Normalisation Electrotechnique (CENELEC), or any version of those documents which the Secretary of State considers relevant from time to time and is specified in a Merchant Shipping Notice which contains a statement to that effect;

“limit value” - means an airborne concentration of asbestos of 0.1 fibres per cm³ as a four hour time-weighted average, averaged over a continuous period of 4 hours.

"**site clearance certificate for reoccupation**" means a certificate issued to confirm that a ship or part of a ship where work with asbestos has been carried out has been thoroughly cleaned upon completion of that work.

4. MEANING OF "WORKER" (Regulation 3)

- 4.1 The Asbestos Regulations 2010, like the General Duties Regulations and other Health and Safety Regulations currently in force, apply to all persons employed on board any vessel, including employed trainees or apprentices, irrespective of whether or not the vessel goes to sea or only operates on inland waters; they are disapplied to persons who are receiving training onboard sailing vessels, operating under an MCA Code of Practice and who are not employed by the operator of the vessel. The reasoning behind this is that the Asbestos Regulations 2010 are intended to cover the activities of workers on board ships and persons undergoing training on sail training vessels are clearly not workers as they are not employed, will only spend a short time on the vessel and do not receive a wage for being on it. There nevertheless remains a general obligation on employers, under regulation 5(1) of the General Duties Regulations, to ensure the health and safety of all persons on board, so far as is reasonably practicable, irrespective of whether or not they are workers.

5. APPLICATION (Regulation 4)

- 5.1 The Asbestos Regulations 2010 apply to all activities of workers on all UK registered sea-going ships including Government ships wherever they are in the world and certain provisions also apply to non-UK ships in UK waters. The only exceptions to this are Royal Navy ships which come under HSE legislation. The Asbestos Regulations 2010 also apply to all types of private or commercially operated vessels, including hovercraft, yachts, fishing vessels, work boats etc on which workers are employed whether operating at sea or only on lakes, rivers and other inland waters.
- 5.2 A limited derogation from the requirements of the Asbestos Regulations 2010 is provided in respect of ships/vessels undertaking public service or civil protection activities where because of characteristics peculiar to the activity being undertaken, full compliance with the requirement of the Asbestos Regulations 2010 is not possible. This derogation is aimed at activities such as rescue or enforcement but only applies in this context to the specific provision(s) of the Asbestos Regulations 2010 with which compliance is not possible because of the activity then being undertaken. The derogation only applies for the length of time compliance is not possible and even then the health and safety of all those on board must be safeguarded as far as is reasonably practicable. All remaining provisions of the Asbestos Regulations 2010, with which compliance remains possible, will continue to apply in full and compliance with all the requirements of the Regulations must be re-established as soon as the activity concerned is no longer being undertaken. In this context "activity" is considered to refer to specific occasions on which an activity is undertaken and not to an ongoing period during which such activities might periodically occur.
- 5.3 For the purposes of the derogation referred to in paragraph 5.2 above, "Public service activities" covers the activities of the armed forces, HM Coastguard, HM Revenue and Customs, immigration officers, police, prison officers, the security and intelligence services and similar organisations where the specific activities undertaken by them may on occasion render them unable to comply fully with the requirements of the Asbestos Regulations 2010. **NOTE - The "Public Service Activities" derogation does not apply to ferries, irrespective of whether or not they are operated by a public body.** "Civil protection services" covers the fire and rescue; ambulance; and

search and rescue services such as those provided by the RNLI, independent lifeboats etc. This derogation also applies to any ship/vessel engaged in search and rescue activities when answering a distress call or when requested to do so by HM Coastguard or the appropriate authority of another state.

- 5.4 Regulation 4(8) provides that regulation 6 (see paragraph 7), regulation 17 (see paragraph 18) and paragraphs (1) to (3) of regulation 18 (see paragraph 19) shall not apply where:-
- (a) worker exposure to asbestos is sporadic and of low intensity;
 - (b) it is clear from the results of the risk assessment required in accordance with paragraph (1) that the limit value will not be exceeded in the air of the area of activity, and
 - (c) the work involves—
 - (i) short, non-continuous maintenance activities, or
 - (ii) removal of materials in which the asbestos fibres are firmly linked in a matrix, or
 - (iii) encapsulation or sealing of asbestos-containing materials which are in good condition, or
 - (iv) air monitoring and control, and the collection of samples to ascertain whether a specific material contains asbestos. Any sampling should however only be undertaken by a competent person who has been trained to do so safely.

It should however be noted that, under regulation 4(9), no exposure to asbestos will be considered to be sporadic and of low intensity if the concentration of asbestos in the air when measured in accordance with the 1997 WHO recommended method exceeds or is liable to exceed 0.6 fibres per cubic centimetre (f/cm³) measured over a ten-minute period or 0.1 f/cm³ as a four hour time-weighted average, averaged over a continuous period of 4 hours which is the limit value in the Regulations. Work which is likely to result in exposures at or above this level cannot be considered to produce sporadic and low intensity exposure and the derogation in regulation 4(8) will not apply. MCA would however recommend that exposure be prevented entirely wherever possible.

6. ASSESSMENT OF RISKS (Regulation 5)

- 6.1 All types of asbestos potentially pose a risk to health. When fibres from materials containing asbestos are inhaled, they may penetrate to the deepest part of the lung where they may cause diseases. Blue and brown asbestos are considered to be especially harmful and their importation into the UK was prohibited before white asbestos. However all are now prohibited. It is rarely possible to identify by colour the type of asbestos present in a manufactured product, and high temperatures (for example around the exhausts and hot water pipes of engines), ageing, discolouration by oil or other contaminants etc, may change the colour of certain types of asbestos. For safety reasons therefore any asbestos or suspected asbestos should be treated as though it is the most dangerous form.
- 6.2 Regulation 5 of the Asbestos Regulations 2010 requires employers to assess any risk of exposure to asbestos dust, or dust from materials containing asbestos, on board

- determine the nature, degree and duration of a worker's exposure in order to make it possible to assess any risk to the workers' health or safety and to lay down the measures to be taken,
- in assessing the risk of such exposure take account of all routes of exposure including absorption into or through the skin, and
- give particular attention to any effects concerning the health and safety of workers at particular risk and take account of the desirability of not deploying such workers in areas where they may come into contact with asbestos,
- renew the assessment regularly and in any event when any change occurs in the conditions which may affect workers' exposure,

6.3 As part of the assessment the employer should, if the presence of asbestos is known or suspected, indicate on a plan of the vessel or in a separately maintained record those places where there is, or it is believed there may be, asbestos, or materials containing asbestos, to which any person might be exposed. It should be remembered when making the assessment that fibres are more likely to be released in quantity when asbestos is disturbed. Sound surfaces should not therefore be probed or otherwise disturbed simply to ascertain whether they cover materials containing asbestos.

7. NOTIFICATION OF WORK RELATING TO ASBESTOS (Regulation 6)

- 7.1 Regulation 6 requires any employer whose workers are to undertake activities in which they are, or are likely to be, exposed to asbestos to notify the Secretary of State of –
- (a) the location of the work site, (*i.e. name of vessel and exact location on that vessel*)
 - (b) the type and quantities of asbestos used or handled,
 - (c) the activities and processes involved, (*e.g. removal or encapsulation of asbestos on a vessel*)
 - (d) the number of workers involved,
 - (e) the starting date and duration of the work,
 - (f) measures taken to limit the exposure of workers to asbestos (including training of workers and contractors) and
 - (g) if the work is ship breaking or the removal of asbestos from a ship, evidence of the employer's ability in that field of work.

Such notification should wherever reasonably practicable be made in writing not less than 14 days before the work commences, and then every time a change in working conditions is likely to result in a significant increase in exposure to dust from asbestos. Where it is not possible to give notice prior to work commencing (e.g. in emergency situations) such notice should be given as soon as reasonably practicable after work has commenced. However, where a vessel is in a UK port and the work is to be

carried out by persons, other than “the crew under the direction of the master”, HSE or HSE(NI) regulations will apply and notification will need to be given to either HSE or HSE (NI) as appropriate and as required by their Regulations. In such circumstances a copy of the notification should also be forwarded to the nearest MCA Marine Office for information. Where a vessel is in a port outside the UK there may additionally be local Regulations governing asbestos work which will need to be complied with.

- 7.2 Work with asbestos is a very specialised occupation and the employer with responsibility for the operation of the vessel may not necessarily be the employer of the persons actually undertaking any work involving asbestos. This is especially true where a specialist contractor is employed to undertake the work. In such circumstances the employer with responsibility for the operation of the vessel should provide evidence of his own, his workers, **or** the contractor’s ability (as appropriate) in asbestos removal and handling. So far as providing evidence of the contractor’s ability is concerned, the employer is only required to forward the evidence provided to him by the contractor (with an appropriate translation if not in English). In the UK such evidence would take the form of a licence issued by HSE or HSE(NI). Outside the UK it is accepted that it may not be possible to require contractors to apply similar standards to those set by HSE/HSE(NI) nevertheless it is recommended that wherever possible only contractors capable of working to similar standards to those set by HSE/HSE(NI) should be engaged to undertake work involving asbestos on ships.

8. PROHIBITION OF CERTAIN ACTIVITIES RELATING TO ASBESTOS (Regulation 7)

- 8.1. Regulation 7 requires employers to prevent workers from undertaking the following activities –

- (a) the application of asbestos by means of the spraying process, and working procedures that involve low density (less than 1g/cm³) insulating or soundproofing materials which contain asbestos, and
- (b) activities which expose workers to asbestos fibres during–
 - (i) the extraction of asbestos,
 - (ii) the manufacture or processing of asbestos products, or
 - (iii) the manufacture and processing of products containing intentionally added asbestos,

other than the treatment or disposal of products resulting from demolition and asbestos removal.

- 8.2 It is not considered that these prohibitions will, in the main, apply to normal shipboard activities but it is necessary to include the provision in the Regulations in order to give full effect to the Directive

9. PREVENTION AND REDUCTION OF EXPOSURE (Regulation 8)

- 9.1. Regulation 8 requires employers to reduce to a minimum the exposure of their workers to asbestos. In this context it should be noted that, depending on the age and origins of a vessel, asbestos may for example be present in the cladding on fire retardant bulkheads; in the glands and gaskets of valves and associated pipe work; in friction materials in machinery (eg brake linings), and in materials used for thermal insulation such as the lagging on boilers and steam pipes. Additionally, it may be a minor

component of other compound materials where it might be a hazard if abraded. Great care should therefore be taken, especially on older vessels in connection with the following work:-

- (a) work on old insulation, including that protecting electrical cables and pipes; and
- (b) work on any panelling, including the removal of panelling behind which dust may have accumulated.

9.2. Asbestos fibres may be released when a material containing asbestos is disturbed, or whenever such materials crack, flake or crumble, etc. This can even occur, for example, when a nail or screw is driven into a panel to hang up some light article. The ideal form of control is therefore the complete removal of all asbestos from the ship. However such an operation should never be undertaken except by qualified specialist contractors operating a strictly controlled safety regime. In any other circumstances, regulation 8 requires an employer to reduce the exposure of workers to asbestos dust to a minimum and in no case is any worker to be exposed to an airborne concentration of asbestos in excess of the limit value set out in paragraph 3.1 above. To achieve this, the employer must, in particular:-

- (a) limit the number of workers exposed or likely to be exposed to dust arising from asbestos or materials containing asbestos to the lowest possible figure consistent with safe working;
- (b) design work processes so as not to produce asbestos dust or, if that proves impossible, to avoid or minimise the release of asbestos dust into the air;
- (c) ensure that all locations and equipment involved in the treatment of asbestos are capable of being regularly and effectively cleaned and maintained and are regularly cleaned and maintained;
- (d) store and transport asbestos or dust-generating asbestos-containing material in suitable sealed packing;
- (e) collect and remove waste from the place of work as soon as possible in suitable sealed packing with labels indicating that it contains asbestos. Any such waste must then be dealt with in accordance with Council Directive 91/689/EEC of 12 December 1991 on hazardous waste when within the EC. In the UK this is covered by the relevant Hazardous Waste Regulations applicable to England and Wales, Scotland and Northern Ireland as appropriate or the relevant national legislation in other EC countries. Outside the EC waste must be dealt with in accordance with the national legislation of the country concerned.

This list is not exhaustive and it is for employers to decide whether other additional measures are required as a result of the findings of their risk assessment. Additional guidance is given in Annex 1.

9.3. Where a UK registered vessel is being overhauled or repaired the opportunity should be taken to remove asbestos or asbestos based materials where they present a risk to health—for example, friable or flaking asbestos insulation. Any replacement materials or structures or totally new materials or structures should not include asbestos or asbestos-based materials. In this context “friable” should be construed as meaning in respect of a substance such as asbestos, or any material containing asbestos, that it can be readily crumbled and reduced to dust by the application of little pressure, or brushing against the surface, such that asbestos fibres could be released into the air.

- 9.4 Regard should also be had to the requirements of EC Regulation No 1907/2006 of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) which effectively prohibits the use of asbestos fibres and articles containing asbestos in any form. The derogation, contained in Merchant Shipping Notice M.1428, which permitted the use of asbestos for certain very specialised purposes accordingly no longer applies and that M Notice is cancelled. Notwithstanding the restrictions set out in M.1428, asbestos may nevertheless still be present in older ships, or in ships which have joined the UK register having originally been built for other registers. It should also be noted that EC Regulation No 1907/2006 also only permits the continued use of articles containing asbestos brought into use pre-2005 until they are either disposed of or reach the end of their service life. Employers should ensure therefore that any new ships, or parts, are free of asbestos.

10. MEASUREMENT OF AIR QUALITY (Regulation 9)

- 10.1. Where the risk assessment undertaken by the employer identifies a risk, or potential risk, of exposure of any worker to asbestos the employer must regularly measure the airborne concentration of asbestos fibres in the air to ensure that the limit value set out in paragraph 3.1 above is not exceeded. The method for air sampling is set out in Annex 2 to this MGN.
- 10.2 Where sampling is required, the employer must ensure that it is carried out in accordance with paragraph 10.1 by a competent person who meets criteria equivalent to those set out in the provisions of ISO 17025 (see paragraph 3.1) covering organisation, quality systems, control of records, personnel, accommodation and environmental conditions, test and calibration methods, method validation, equipment, handling of test and calibration items, and reporting results. Such sampling should:-
- (a) be representative of the personal exposure of the worker to dust arising from asbestos,
 - (b) be carried out after consultation with the worker(s) or their representative(s), or both,
 - (c) have a duration such that representative exposure can be established for a four-hour reference period by means of measurements or time-weighted calculations, and
 - (d) take into consideration only fibres with a length of more than 5 micrometres, a breadth of less than 3 micrometres and a length/breadth ratio greater than 3:1.
- 10.3 Any samples taken must be analysed in laboratories equipped for fibre counting, and must be carried out wherever possible by phase-contrast microscope in accordance with the 1997 World Health Organization recommended method ("Determination of airborne fibre concentrations. A recommended method, by phase-contrast optical microscopy (membrane filter method), WHO, Geneva, 1997 (ISBN 92 4 154496 1)"), or any other method giving equivalent results.

11. EXPOSURE TO ASBESTOS (Regulation 10)

- 11.1 In most ships it is considered unlikely that the limit value set out in paragraph 2.2 above will be reached let alone exceeded. If however the limit value is for some reason reached, e.g. as a result of asbestos removal work, the employer must identify the reasons for it being exceeded and take appropriate measures to remedy the situation as soon as possible. Work in the affected area must in addition be prohibited until those measures are in place. Guidance on the measures to be taken is given in Annex 3 of this MGN.

12. MAINTENANCE AND DEMOLITION OF SHIPS (Regulation 11)

- 12.1. Prior to beginning any maintenance work or work involving structural alterations to the ship an employer must take all necessary steps to identify any asbestos presumed to be present including obtaining any relevant information from the owner of the vessel. If, when proposing to carry out maintenance, or repairs, there is any doubt about whether or not asbestos is present, the employer should proceed on the basis that it is present and take the necessary measures required by the regulations and set out in this MGN, which may include the taking of samples. Guidance on the taking of samples, which should normally only be undertaken by specialist contractors, is contained in Annex 4 to this MGN
- 12.2 It is accepted that it is unlikely that seafarers will become involved in ship breaking/demolition but they could potentially be involved with emergency maintenance work including removal of asbestos. In order to implement fully the Asbestos Directives it is however necessary to cover both types of work in the Regulations

13. PLANS OF WORK (Regulation 12)

- 13.1. Before work is started on ship breaking or removal of asbestos from ships the employer must draw up a plan of work which prescribes the measures necessary to ensure the safety and health of workers at the place of work, and in particular specifies that–
- asbestos is to be removed before ship breaking techniques are applied, except where this would cause a greater risk to workers than if the asbestos had been left in place,
 - the personal protective equipment referred to in regulation 10(4)(a) is to be provided where necessary, and
 - when the ship breaking or asbestos removal has been completed, the absence of asbestos exposure risks in the workplace shall be verified by the issue of a site clearance certificate for reoccupation confirming that the site where work with asbestos has been carried out has been thoroughly cleaned upon completion of that work and are suitable for reoccupation. Such site clearance certificate for reoccupation is to be issued by a person accredited by an appropriate body as competent to perform work in compliance with the paragraphs of ISO 17020 and ISO 17025 (see paragraph 3.1 above) which cover organisation, quality systems, control of records, personnel, accommodation and environmental conditions, test and calibration methods, method validation, equipment, handling of test and calibration items, and reporting results.
- 13.2. Here again whilst ship's crews are unlikely to be involved with ship breaking they could be involved with maintenance which disturbs asbestos or they could be affected by asbestos removal. Any plan required to be produced in accordance with regulation 12 should therefore not only cover workers directly involved in such work but also any other persons, including passengers, workers employed by other employers, etc who may be affected as a result of the work being carried out.

14. TRAINING AND INFORMATION (Regulations 13 and 16)

- 14.1. Employers are required to provide workers with sufficient training (Regulation 13) and information (Regulation 16) to ensure that they are aware of potential risks to health

from exposure to asbestos that have been identified by the employer's risk assessment. Such training and information should include:-

- the properties of asbestos and its effects on health, including the synergistic effect of smoking,
- the types of products or materials likely to contain asbestos,
- the operations which could result in asbestos exposure and the importance of preventive controls to minimise exposure,
- safe work practices, controls and protective equipment,
- the appropriate role, choice, selection, limitations and proper use of respiratory equipment,
- emergency procedures,
- decontamination procedures,
- waste disposal,
- medical examination requirements.

14.2 The employer must also take steps to ensure all workers and their representatives receive adequate information concerning:-

- the potential risks to health from exposure to dust arising from asbestos,
- the existence of statutory limit values and the need for the atmosphere to be monitored,
- hygiene requirements, including the need to refrain from smoking,
- the precautions to be taken as regards the wearing and use of protective equipment and clothing,
- special precautions designed to minimise exposure to asbestos.

14.3. In addition to the provisions referred to in the preceding paragraphs, Regulation 16 requires that workers and/or their representatives:-

- have access to the results of any asbestos-in-air concentration measurements and are given explanations of the significance of those results,
- are informed as quickly as possible if the results exceed the limit value and the reasons for it and are consulted on the measures to be taken or, in an emergency, are informed of the measures which have been taken to remedy the situation.

15. ACCESS TO RISK AREAS (Regulation 14)

15.1. Regulation 14 requires the employer to take appropriate measures to ensure that any place in which a risk from asbestos exists, or is thought to exist:-

- is clearly demarcated and indicated by warning signs complying with the MS & FV (Safety Signs and Signals) Regulations 2001 and Merchant Shipping Notice MSN 1763 (M+F),
- is not accessible to workers other than those who by reason of their work or duties are required to enter them, and
- constitutes an area where smoking, eating and drinking is not permitted.

16. HYGIENE AND INDIVIDUAL PROTECTION (Regulation 15)

16.1. In order to protect workers potentially at risk, when work involving asbestos is being undertaken, employers are required to take appropriate hygiene and protection measures including:—

- setting aside areas where workers can eat and drink without risking contamination by asbestos dust,
- providing workers with appropriate working or protective clothing which should remain within the ship; however where the cleaning of such working or protective cannot be undertaken on the ship, the employer may transport the clothing for laundering in closed containers to an establishment outside the ship which is equipped to undertake this type of work,
- providing separate storage places for working or protective clothing and for workers everyday street clothes,
- providing workers with appropriate and adequate washing and toilet facilities, including showers in the case of dusty operations,
- ensuring protective equipment is placed within a well-defined place and is checked and cleaned after each use,
- taking appropriate measures to repair or replace defective equipment before further use.

Further information is contained in Annex 5 to this MGN.

17. INFORMATION FOR WORKERS (Regulation 16)

17.1 Where the employer's risk assessment has identified a risk of exposure to asbestos, the employer must take appropriate measures to ensure that workers and their representatives receive adequate information concerning—

- the potential risks to health from exposure to asbestos,
- the existence of the limit value and the need for the atmosphere to be monitored,
- hygiene requirements, including the need to refrain from smoking,
- the precautions to be taken as regards the wearing and use of personal protective equipment, and
- special precautions designed to minimise exposure to asbestos.

In addition the employer must in addition take appropriate measures to ensure that—

- workers and their representatives have access to the results of the measurements of the airborne concentration of asbestos fibres and can be given explanations of the significance of those results, and
- if the results exceed the limit value, the workers concerned and their representatives are informed as quickly as possible of the fact and the reasons for it and are consulted on the measures to be taken or, in an emergency, are informed of the measures which have been taken.

18. HEALTH SURVEILLANCE (Regulation 17)

- 18.1. Where the employer's risk assessment has identified that workers have been exposed to asbestos, the employer is required to provide appropriate health surveillance and to keep the records of such surveillance for 40 years following the end of exposure. In this context "health surveillance" means assessment of the state of health of a worker as related to exposure to dust arising from asbestos, which is intended to prevent, and to provide early diagnosis of, any disorder linked with exposure to asbestos. More information on health surveillance is provided in Annex 6 to this MGN.
- 18.2 The Asbestos Directive, and accordingly the Asbestos Regulations 2010, do not require the provisions of paragraph 18.1 above to be complied with in the circumstances set out in paragraph 5.4. Nevertheless MCA would recommend that the provisions of paragraph 18.1 are followed in all cases where it is known or suspected that asbestos is present.

19. REGISTER OF WORKERS (Regulation 18)

- 19.1 Where any worker, undertakes any activity where there is a risk that they will, or could be, exposed to asbestos the employer must enter their name in a register indicating the nature and duration of that activity as well as the exposure to which they have been subjected.
- 19.2 Access to the register referred to in paragraph 19.1, must be given to:-
- (a) every doctor or other authority responsible for medical surveillance of workers entered in the register,
 - (b) each worker as respects the results in the register which relate to that worker personally, and
 - (c) the workers and their representatives as respects anonymous, collective information in the register.
- 19.3 The employer must keep the register referred to in paragraph 19.1 for at least 40 years from the date of the last entry made in it, and if the employer ceases trading they must notify Seafarer Safety and Health Branch of the Maritime and Coastguard Agency, on behalf of the Secretary of State, immediately in writing and make the register available to them.
- 19.4 If the employer becomes aware of any case of—
- (a) asbestosis,
 - (b) mesothelioma,
 - (c) bronchial carcinoma, or
 - (d) gastro-intestinal carcinoma
- diagnosed in any worker whose details are listed in the register referred to in paragraph 19.1, the employer must immediately notify Seafarer Safety and Health Branch of the Maritime and Coastguard Agency, in order that they, on behalf of the Secretary of State, can keep any information so notified in a register of recognised cases of such asbestos related diseases.

20. CONSULTATION WITH AND PARTICIPATION OF WORKERS (Regulation 19)

20.1 Employers are required by Regulation 20 of the General Duties Regulations to consult workers or their representatives on all matters relating to their health and safety. This requirement extends to matters relating to asbestos and, to this end, employers must consult on:-

- (a) the findings of the risk assessment carried out under regulation 5,
- (b) measures taken to prevent or reduce risks arising from exposure to dust arising from asbestos in accordance with regulation 8,
- (c) measures determined to be necessary to ensure protection of workers in accordance with regulation 10(4),
- (d) the provision of training and information in accordance with regulations 13 and 16, and
- (e) the arrangements for health surveillance in accordance with regulation 17.

21. PERSONS UPON WHOM DUTIES ARE IMPOSED (Regulation 20)

21.1. In line with other health and safety Regulations, the Asbestos Regulations 2010 contain a provision whereby any duty placed on the employer is extended to “any person who does have control of the matter to which the Regulation in question relates” in any circumstances where the employer concerned does not have responsibility for the operation of the vessel. This is in recognition of the situation on many ships that more than one employer can be responsible for the workers on board and effectively means that, whilst every employer is responsible for their own workers, an overall duty in respect of all workers on board, irrespective of who employs them, will be placed on the person(s) responsible for the actual operation of the vessel including the designated person under the ISM Code.

21.2. It should be noted that, in addition to the responsibilities placed on employers, Regulation 20 also places a general responsibility on every worker to make full and proper use of all protective equipment provided by the employer, and to give effect to all instruction and training with which he/she has been provided.

22. OFFENCES, PENALTIES, DETENTION, INSPECTION AND POWERS OF INSPECTORS (Regulations 21 - 28)

22.1. Regulations 21 to 28 are the enforcement provisions; any contravention of the Asbestos Regulations 2010 is an offence and detention powers are available if conditions on board ship are clearly hazardous to health. In addition the Regulations specify maximum penalties, in line with other health and safety regulations, which may be imposed on individuals, companies etc for non compliance with the requirements of the Regulations.

23 PROHIBITION ON CHARGING OF WORKERS (Regulation 29)

23.1 In complying with the requirements of the Asbestos Regulations 2010, employers are not permitted to levy any charge, or permit any charge to be levied, on any worker.

24. CARRIAGE OF ASBESTOS AS CARGOES

- 24.1. Requirements governing the carriage of asbestos as cargo on a ship are covered by the International Maritime Dangerous Goods (IMDG) Code and are not relevant to this MGN. However should there be actual, or possible, exposure of a worker to asbestos carried as cargo, the provisions of the Asbestos Regulations 2010 will apply and should be complied with.

More Information

Seafarer Safety and Health Branch
Maritime and Coastguard Agency
Bay 1/29
Spring Place
105 Commercial Road
Southampton
SO15 1EG

Tel : +44 (0) 23 8032 9246
Fax : +44 (0) 23 8032 9251
e-mail: seafarer.s&h@mcga.gov.uk

General Inquiries: infoline@mcga.gov.uk

MCA Website Address: www.mcga.gov.uk

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Department for
Transport*

FURTHER PRECAUTIONS TO BE TAKEN WHEN MAINTENANCE WORK OR EMERGENCY REPAIRS ARE BEING UNDERTAKEN WHICH MIGHT CREATE ASBESTOS DUST

1. Wherever possible, work on materials containing asbestos, and any operation which could give rise to asbestos dust, should be left until the ship is in a port or dry dock where the proper facilities, trained contractors and equipment are available. Where it is essential for such work to be carried out at sea, maximum precautions must be taken as indicated in this MGN. In particular it should be noted that material associated with structural fire protection should not be disturbed except in circumstances where it may be necessary to sacrifice some measure of structural fire protection in order to ensure the safety of the ship itself, e.g. to preserve watertight integrity or adequate stability. In such cases, proper precautions must be observed and the materials and structure concerned restored to their original condition as soon as possible.

2. When working with materials containing asbestos (eg when stripping thermal insulation, etc.) dust levels should be reduced by careful handling, by using hand tools rather than power tools, and by thorough pre-wetting of the item to be worked. Thoroughly wet or oil-soaked items, such as gaskets and seals, might be capable of being replaced without special precautions (*NOTE: a thick layer of asbestos such as lagging, may not however be thoroughly wet all the way through, even if it has been deliberately wetted: so treat it as if it were dry*); the replaced item should be carefully disposed of. Care should be taken if asbestos is on or close to electrical wires or parts. Movement of dust should also be controlled by effectively enclosing the relevant areas and by using portable filtering dust extraction equipment. Air vented from such areas should, as far as possible, be vented and filtered so that no one on deck or elsewhere can inhale it.

3. Access to areas where asbestos is being worked should be limited to those persons essential to the operation. Where practicable, the working area should be enclosed (for example, by plastic sheeting and adhesive tape), and suitable warning signs should be posted. Persons not wearing protective clothing and respiratory equipment should be excluded from this area.

4. If possible a large plastic sheet, etc should be used to collect all waste material as it is generated during the work. The sheet should be used to wrap up asbestos dust and small fragments of asbestos.

5. When work in the enclosed area is completed, dust sheets should be carefully folded and placed, along with large pieces of asbestos, in air tight containers (eg strong plastic bags, sealed with adhesive tape). Then the walls, ceiling and items in the area should be cleaned with damp cloths, and dust on the deck should be dampened and then cleaned carefully. Where possible the enclosure sheets should be sprayed with PVA and allowed to dry in order to fix any residual asbestos dust on the sheets. The sheets should then be carefully taken down, and put into air tight containers. Then the area should be cleaned again as above. See paragraph 6.5(c) as to the use of special vacuum cleaners and the disposal of contaminated clothing.

6. All cloths, filters, brushes, clothing, etc should be placed in the air tight containers: they should NOT be cleaned on board ship. The sealed containers should be clearly labelled "*Warning: Contains asbestos. Breathing asbestos dust is dangerous. Follow safety instructions*" or "*Asbestos contaminated clothing—do not inhale the dust*". (The port authority can give a translation of the asbestos warning.) The containers should be stowed safely until

they can be disposed of ashore in accordance with the advice of the port authority, or sent by the ship to a place where the clothing can be specially laundered.

7. Whilst crew members should as far as possible avoid removing any asbestos-containing materials which are in a sound condition, any replacement of a defective asbestos item should be with an equivalent item made from a safer substance.

8. Before return to port any friable materials, eg sprayed asbestos insulation, panels, cladding, etc. which have become, or could become, damaged should be protected by a suitable coating or covering applied by a suitably protected person. Likewise any bare asbestos should be sealed with paint, etc. and properly covered. If there is a danger of unsealed edges of asbestos panels rubbing together with the movement of the ship, they should be plugged with a suitable sealing compound. Compounds used for sealing edges of panels used for structural fire protection should be of a material considered in conjunction with the testing and approval of the fire bulkhead materials.

ANNEX 2

(Regulation 9)

MEASUREMENT OF ASBESTOS FIBRES IN THE AIR

1. Depending on the results of the initial risk assessment, and in order to ensure compliance with the limit value laid down in regulation 2, measurement of asbestos fibres in the air at the workplace shall be carried out regularly by a competent person.
2. Sampling must be representative of the personal exposure of the worker to dust arising from asbestos or materials containing asbestos.
3. Sampling shall be carried out after consultation of the workers and/or their representatives in undertakings.
4. Sampling shall be carried out by suitably qualified personnel. The samples taken shall be subsequently analysed, in accordance with paragraph 6, in laboratories equipped for fibre counting.
5. The duration of sampling must be such that representative exposure can be established for an four-hour reference period by means of measurements or time-weighted calculations.
6. Fibre counting shall be carried out wherever possible by PCM (phase-contrast microscope) in accordance with the 1997 WHO (World Health Organization) recommended method # or any other method giving equivalent results.

For the purpose of measuring asbestos in the air, as referred to in the first subparagraph, only fibres with a length of more than five micrometres, a breadth of less than three micrometres and a length/breadth ratio greater than 3:1 shall be taken into consideration.

Determination of airborne fibre concentrations. A recommended method, by phase-contrast optical microscopy (membrane filter method), WHO, Geneva 1997 (ISBN 92 4 154496 1).”;

MEASURES TO BE TAKEN TO PREVENT EXPOSURE TO ASBESTOS

- (1) Where the limit value, set out in paragraph 2.2(b) of the main body of this MGN, is exceeded, the employer must identify the reasons for the limit value being exceeded and take appropriate measures to remedy the situation as soon as possible.
- (2) The employer must prevent work from continuing in the affected area until adequate measures have been taken for the protection of the workers concerned.
- (3) In order to check the effectiveness of the measures mentioned in paragraph (1), the employer must immediately carry out a further determination of the asbestos-in-air concentration.
- (4) Where exposure cannot be prevented by other means and where achieving compliance with regulation 8 or the limit value makes necessary the wearing of individual protective breathing equipment. This must not be permanent and the employer must keep work requiring the wearing of such equipment to the strict minimum necessary for each worker.
- (5) Where in the case of activities such as ship breaking, removal of asbestos, repair and maintenance it is foreseeable that the limit value will be exceeded despite the use of technical preventive measures for limiting asbestos in air concentrations, the employer shall determine the measures intended to ensure protection of the workers while they are engaged in those activities, and in particular—
 - (a) the employer must issue suitable respiratory and other personal protective equipment to workers and ensure that it is worn,
 - (b) the employer must put up warning signs indicating that it is foreseeable that the limit value will be exceeded, and
 - (c) the employer must prevent the spread of dust arising from asbestos outside the ship or site of activity.
- (6) During periods of work which require the use of individual protective breathing equipment, the employer must make provision for breaks appropriate to the physical and climatological conditions and, where relevant, in consultation with the workers and/or their representatives.
- (7) Guidance on respiratory and personal protective equipment is contained in Merchant Shipping Notice MSN 1731 (M+F) and Annex 5 of this MGN.

TAKING OF SAMPLES TO DETERMINE WHETHER ASBESTOS IS PRESENT

1. **Wherever possible, only a specialist company should take samples;** but the following advice is given so that ships' officers can monitor such work, or, if absolutely necessary (for example when loose asbestos is discovered) do it themselves, subject to the taking of the necessary precautions required by the Asbestos Regulations 2010.
2. **Samples should be taken only if there is a real need to do so**—eg where a damaged item is believed to contain asbestos, or a machine is believed to put asbestos dust into the air, or projected refurbishment of part of a vessel or its machinery may put suspect material into the air.
3. **Sampling will generate airborne fibres;** so persons sampling should be equipped with suitable protective clothing, including masks e.g. FFP3 disposable. All personnel not involved should be excluded from the area whilst sampling is being carried out. Where a sample is taken from lagging or an insulation board, etc. the damaged material should be thoroughly sealed, and, in all cases, any debris or dust remaining should be properly removed in accordance with national regulations applicable to the place where the vessel is at the time.
4. **Samples of material;**
 - (a) Asbestos material may be encountered in two forms: first, where the mix of materials will be the same throughout—such as tiles or insulation board; and, second, where the mix of materials may vary through the items to be sampled—for example, sprayed coatings or pipe and boiler lagging.
 - (b) Where the material is the same throughout, one or two representative samples each about 5 cm square are normally sufficient for analysis.
 - (c) With material such as lagging, there can be variations in the mix used in the same area—both along the length of each piece of insulation, and through the depth of insulation at each point. Blue asbestos can be present as an impurity, and may not be evenly distributed. Samples should therefore be taken as follows. Take a core, of about 5 cm square in section, through the insulation so as to include everything from the outer surface to the surface of the underlying unit. It is advisable that at least two samples should be taken from each boiler, calorifier or pipe run. Preferably one sample should be taken for each 3 metres of pipe insulation, etc. Extra samples should also be taken.
5. **Samples of Dust;** Where the dust in question has been generated at one particular place, and has collected at one particular spot, a “handful” sample should be obtained, if possible. Where the dust may have been generated from more than one place, or has been spread over an area of deck, etc. a number of “handful” samples should be taken, if possible.
6. Where more than one sample has been obtained, it is important that the samples are clearly and unambiguously identified as to the place from which they came, and that there is no possibility of cross-contamination between the samples. Each sample should be put into its own clear plastic bag. This should be sealed with adhesive tape to avoid the possibility of any dust escaping during transit. The sealed bag should be clearly marked with the sample number or other identifying details. The sample should then be sealed into a further plastic bag using adhesive tape.

7. A note should go with the sample(s) giving their details, together with the name, address and telephone number of the person to whom the results are to be reported, the name of his company and ship, and any other relevant information.

8. Asbestos analysis laboratories can do this work and a list of such laboratories can be obtained from the:-

United Kingdom Accreditation Service (UKAS),
21-47 High Street,
Feltham,
TW13 4UN.

Tel: +44 (0) 20 89178400

Fax: +44 (0) 20 8917 8500

E-mail: info@ukas.com

Website: www.UKAS.com

9. Samples should be sent only to a recommended laboratory, who may charge for the analysis. Samples should not be sent to an MCA Marine Office or to any other part of the Department for Transport.

10. For vessels operating outside the UK advice should be sought from the local Maritime Administration or the local Port Health authority.

ADDITIONAL ADVICE ON THE PREVENTION OF EXPOSURE TO ASBESTOS

1. Any crew member who is, or is believed to be, working regularly in the vicinity of known asbestos, or in an area where the presence of asbestos is suspected, to which he might in consequence be exposed should be told of its location and should be instructed by the employer to report immediately to him any defects (such as cracks or flaking) or any deterioration in the condition of the asbestos. On receiving any adverse comment on the condition of asbestos in any location, the employer should inspect the site immediately (or, if this is not practicable, as soon as possible) and make a written report of his findings and of the remedial measures taken in accordance with this Notice.

2. If the condition of any asbestos on board ship is or may be defective the following steps should be taken:
 - (a) All crew members should be informed and access to the site must be restricted to as few crew members as possible.
 - (b) Any work or other activity at the site must be carried out in conformity with the advice given in the paragraphs below. The advice given in this MGN should be explained to all those carrying out the work.
 - (c) If circumstances permit, the defective site must be covered or sealed in order to minimise the risk of dust inhalation.
 - (d) Repair and maintenance work by crew members must only be undertaken if, for safety reasons, this is absolutely necessary. Every consideration should be given to having the work undertaken in port by qualified personnel.
 - (e) Any place where there is, or is thought to be, airborne asbestos should be reported to the owner or managers of the ship as appropriate where these are not the employer.
 - (g) Where repairs etc. involving asbestos are to be done by shore-based personnel in the UK, the repairer should be informed as soon as possible of the nature and extent of any asbestos work anticipated, and, if possible, of the type of asbestos. This will help him plan the work so as to satisfy any legal requirements such as the Control of Asbestos at Work Regulations 2006 which cover land based workers in the UK even when they are working on a ship. In the UK, where the work involves asbestos insulation or coating, a contractor must hold a licence under the same Regulations. It is particularly essential that persons removing asbestos know how to ensure that asbestos fibres are not carried outside the affected area, eg. by getting into the ducting systems. Wherever possible repair work etc involving shore based personnel should be done in the UK or in a country enforcing equivalent health and safety standards.

3. Where, exceptionally and for whatever reason, the amount of asbestos in the air is high it should be continually monitored and the level of asbestos adjacent to the face of anyone breathing that air should not exceed the limit value set out in paragraph 3.1 of the main body of this MGN, when measured as a time weighted average. No one should breathe air containing a level of asbestos above that limit. If the dust level is or could be above that limit

respiratory equipment and full protective clothing must be worn. However it has to be recognised that on a ship, it may not be practicable to identify the type of asbestos encountered or to monitor asbestos in the air. Moreover on a ship the concentration of the dust may change rapidly during repairs. Therefore where asbestos dust is likely to be present protective procedures must be observed as follows:

- (a) (i) Suitable approved protective clothing and equipment should be worn by all persons entering the affected area. Employers must ensure that suitable clothing and equipment is supplied, properly maintained, regularly inspected and repaired, decontaminated or replaced as necessary, and that employees likely to be at risk are given appropriate instructions in the use of protective clothing and equipment (Merchant Shipping and Fishing Vessels (Personal Protective Equipment) Regulations 1999 (SI 1999/2205)) and Merchant Shipping Notice MSN 1731.
 - (ii) Respiratory protective equipment type approved for the purpose by the Health and Safety Executive (HSE) and full protective clothing which gives adequate protection against asbestos dust must be worn by any person when he is likely to be at risk. This is normally marked with the CE marking of the EU. For some limited activities, such as examining the condition of asbestos lagging, halfmask or disposable respirators conforming to BS EN 149 or BS EN 405 may provide adequate protection. However full face high efficiency dust respirators capable of providing protection to at least 1000 times the appropriate control limits for asbestos, conforming to BS EN 136 and filter BS EN 143 or its equivalent, are normally required if there is any risk of a concentration of airborne asbestos and should be worn whenever the level of exposure is in doubt. (See Merchant Shipping Notice No. MSN 1731). The protective clothing should comprise suitable footwear and pocketless overalls, headgear and gloves, all made of materials to which the dust will not readily cling. The overalls should be close-fitting at the neck, ankles and wrists. Disposable overalls may be used provided they exclude asbestos dust and conform to BS EN 340.
 - (iii) The wearer of a respirator should ensure that there is good contact between the mask and the wearer's face. Beards and spectacles, for example, prevent the mask from sealing effectively. Therefore persons who cannot obtain a good seal with a full face mask must either use a powered respirator with blouse or, preferably, keep away from areas containing airborne asbestos fibres.
 - (iv) The breathing apparatus supplied on the ship for fire-fighting should *not* be used in connection with asbestos dust unless the overriding hazard is a fire.
- (b) Once work has started, the protective clothing and equipment should not be worn outside the affected area.
 - (c) When work in the area is finished, and the area is tidied up the clothing and equipment should be freed of as much dust as possible—using, if available, a vacuum cleaner (and filters) conforming to type “H” described in BS EN 60335 and recommended by the HSE for this purpose; **other vacuum cleaners should NOT be used**. The vacuum cleaner should be cleaned before the protective clothing is taken off. Clothing which has or has had dust on it should be carefully removed, and placed in a dust tight container. After the clothing is in the container, shoes/boots and the respirator should be cleaned with a damp cloth. The respirator can only then be removed from the operator's face. The cloth and the respirator filter should be disposed of appropriately.
 - (d) Parts of the body exposed whilst working with asbestos should be immediately and thoroughly rinsed and then washed after removal of contaminated clothing.

HEALTH SURVEILLANCE

1. Current knowledge indicates that exposure to free asbestos fibres can give rise to the following diseases:
 - **Asbestosis** - A progressive scarring of the lungs (pulmonary fibrosis) due to exposure to any type of asbestos dust. It may take some years for the disorder to be noticeable. It produces increasing breathlessness and a dry cough. A thickening of the lung surface can also occur in those exposed to asbestos—this may also result in noticeable disability. The scarring and thickening may get worse after the person concerned has ceased to be in contact with asbestos.
 - **Mesothelioma** - A rare but dangerous tumour for which there is no known medical treatment. Usually it occurs in the lining of the chest (pleura) but it can occur in the abdominal cavity. It is usually associated with exposure to crocidolite (blue asbestos); but it can be caused by other types of asbestos. Some people develop the tumour after relatively little exposure to asbestos. The tumour does not usually occur until at least 15 years after first exposure and it is common for this period (known as the “latent period”) to extend to 40 years. Some experts think that this tumour is not exclusively due to asbestos.
 - **Bronchial Carcinoma** - A cancer of the lung usually associated with people who have had asbestosis. (It is not yet certain whether people who have not had asbestosis can get this cancer.) Smoking increases the likelihood of this cancer.
 - **Gastro-Intestinal Carcinoma** - Gastro-intestinal cancers including those of the colon, rectum (colorectal), stomach (gastric), oesophagus, pancreas, liver and bile duct.
2. An assessment of each worker's state of health must therefore be undertaken prior to the beginning of exposure to dust arising from asbestos or materials containing asbestos at the place of work. This assessment must include a specific examination of the chest. A new assessment must be made at least once every three years for as long as exposure continues. An individual health record is to be established for each worker exposed to dust from asbestos.
3. The doctor and/or authority responsible for the medical surveillance of workers exposed to asbestos must be familiar with the exposure conditions or circumstances of each worker. To this end the employer must enter the workers responsible for carrying out the activities involving exposure to asbestos in a register, indicating the nature and duration of the activity and the exposure to which they have been subjected. The doctor and/or the authority responsible for medical surveillance shall have access to this register. Each worker shall have access to the results in the register which relate to him personally. The workers and/or their representatives shall have access to anonymous, collective information in the register.
4. Health examination of workers should be carried out in accordance with the principles and practices of occupational medicine. It should include at least the following measures:

- keeping records of a worker's medical and occupational history which could include information on any previous work undertaken with asbestos where such information is available,
- a personal interview,
- a general clinical examination, with particular reference to the chest,
- lung function tests (respiratory flow volumes and rates).

5. The doctor and/or authority responsible for the health surveillance should decide on further examinations, such as sputum cytology tests or a chest X-ray or a tomodensitometry, in the light of the latest occupational health knowledge available.”

6. Following the health surveillance referred to above, the doctor or authority responsible for the medical surveillance of the workers should advise on or determine any individual protective or preventive measures to be taken; these may include, where appropriate, the withdrawal of the worker concerned from all exposure to asbestos.

7. Information and advice must be given to workers regarding any assessment of their health which they may undergo following the end of exposure.

8. The doctor or authority responsible for the medical surveillance of workers may indicate that medical surveillance must continue after the end of exposure for as long as they consider it necessary to safeguard the health of the person concerned.

9. The worker concerned or the employer may request a review of the assessments referred to in paragraph 2.

10. The register referred to in paragraph 3 and the medical records referred to in paragraph 4 shall be kept for at least 40 years following the end of exposure.

11. The documents referred to in paragraph 2 shall be made available to the Secretary of State in cases where the undertaking ceases trading;

12. The Secretary of State shall be notified of, and keep a register of, recognised cases of asbestosis

OTHER USEFUL SOURCES OF INFORMATION

MCA PUBLICATIONS

MCA Marine Guidance Note - MGN 20 (M+F) - Implementation of EC Directive 89/391: Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997

A copy can be found on the MCA Website at - <http://www.mcga.gov.uk/c4mca/mgn0020.pdf>

Hard copies of this MGN can be obtained from MCA's distribution agents – EC Group at the following address:-

EC Group
PO Box 362,
Europa Park
Grays
Essex
RM17 9AY

Tel: 01375 484 548
Fax: 01375 484 556
Email: mnotices@ecgroup.co.uk

Code of Safe Working Practices for Merchant Seafarers - copies of this document are required to be carried on board all UK registered ships except fishing vessels. A "read only" copy can be found on the MCA Website at http://www.mcga.gov.uk/c4mca/mcga07-home/workingatsea/mcga-healthandsafety/mcga-dqs-shs-health_and_safety/mcga-coswp-2008.htm

Hard copies of the Code can also be purchased from The Stationery Office at the following address:-

The Stationery Office
PO Box 29
Norwich
NR 3 1GN

Tel: 0870 600 5522

Fax: 0870 600 5533

E-mail: customer.services@tso.co.uk

Web: www.tso.co.uk

HSE PUBLICATIONS

Although relating directly to HSE's regulations covering land-based workers the following HSE publications contain information on how to undertake work with asbestos-containing materials, the type of controls necessary, what training is required and analytical methods which may be of assistance :

- Approved Code of Practice Work with Materials containing Asbestos, L143, ISBN 978 0 7176 6206 7
- Asbestos: the Licensed Contractors Guide, HSG247, ISBN 978 0 7176 2874 2
- Asbestos: The analysts' guide for sampling, analysis and clearance procedures, HSG248, ISBN 978 0 7176 2875 9
- Asbestos Essentials, HSG 210, ISBN 978 0 7176 6263 0 (Asbestos Essentials task sheets are available on the Asbestos Essentials area of HSE's website).

HSE priced and free publications can be viewed online or ordered from www.hse.gov.uk or contact HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA Tel: 01787 881165 Fax: 01787 313995. HSE priced publications are also available from bookshops.

Further information on HSE priced and free publications can be found on HSE Books website at "www.hsebooks.co.uk". Free leaflets can also be found and downloaded from HSE's main website at "www.hse.co.uk".

EC PUBLICATIONS

Copies of EC Directive 83/477/EEC and amending Directives 91/382/EEC, 98/24/EC, 2003/18/EC and 2007/30/EC can be found on the EUR-LEX website at http://eur-lex.europa.eu/RECH_naturel.do by clicking on the box marked "Directives" and then entering the year (in full) and the relevant Directive number in the appropriate boxes.

EUROPEAN COMMITTEE FOR STANDARDISATION (CEN) PUBLICATIONS

European Standards EN ISO/IEC 17020 "General criteria for the operation of various types of bodies performing inspection" accepted by CEN/CENELEC on 15th July 2004 and 17025 "General requirements for the competence of testing and calibration laboratories" accepted by CEN/CENELEC on 15th March 2005, together with other BS EN standards referred to in this MGN, can be obtained from:-

BSI - British Standards Institution
BSI Library and Bookshop
389 Chiswick High Road
London
W4 4AL

Tel: + 44 208 996 90 00

Fax: + 44 208 996 74 00

email: info@bsigroup.com

or through British Standards Online at www.bsonline.bsi-global.com

WORLD HEALTH ORGANIZATION PUBLICATIONS

The publication "Determination of airborne fibre concentrations. A recommended method, by phase-contrast optical microscopy (membrane filter method)", WHO Geneva 1997 (ISBN 92 4 154496 1) can be obtained online at www.who.int/publications/

NOTE - The above list is not exhaustive and further useful information may be obtainable from other sources.