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CAR-SOIL™

Control of Asbestos Regulations 2012

Interpretation for Managing and Working with Asbestos in Soil and Construction and Demolition Materials

Industry guidance

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CAR-SOIL™

Control of Asbestos Regulations 2012

Interpretation for Managing and Working with Asbestos in Soil and Construction and Demolition Materials:

Industry guidance

ISBN 978-1-905046-30-0. © CL:AIRE 2016

Published by Contaminated Land: Applications in Real Environments (CL:AIRE), 32 Bloomsbury Street, London, WC1B 3QJ.Tel: +44 (0)207 299 4250 Email: enquiries@claire.co.uk

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Report Citation

It is recommended citation to this industry guidance is made as follows:

CL:AIRE, 2016. Control of Asbestos Regulations 2012 - Interpretation for Managing and Working with Asbestos in Soil and Construction and Demolition Materials: Industry guidance. CL:AIRE, London. ISBN 978-1-905046-30-0. Download at www.claire.co.uk/asbestos

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Foreword by CL:AIRE

Since 2011, CL:AIRE has been working tirelessly to raise the profile of asbestos in soil, working together with the wider construction and asbestos industry to meet the challenges it poses. By bringing the wider industry together (both practitioners and regulators) to talk about such an important subject, this has enabled CL:AIRE to map out what are the important areas where guidance is needed and to provide this clarification.

CL:AIRE is delighted to publish the first of its guidance documents on asbestos in soil and construction and demolition (C&D) materials. This authoritative document presents the definitive explanation of how the legal requirements of the Control of Asbestos Regulations 2012 have been interpreted to apply to work with asbestos-contaminated soil and C & D materials.

The publication of this guidance document would not have been possible without the help of a number of key individuals and organisations. Particular thanks have to go to those companies that provided financial support for this work, which has enabled that this document is made free of charge to everyone. These companies are listed on the acknowledgements page. The support of the Health and Safety Executive is also acknowledged; their contribution has been invaluable. In addition, thanks are also extended to those members of the Joint Industry Working Group who provided their thoughts and comments on the draft version of this guidance. Finally, immense gratitude and thanks needs to go to Stephen Forster who has authored this document. His determination and attention to detail has enabled this document to be such an invaluable resource.

Should you have any enquiries regarding this document or are interested in sponsoring subsequent documents that CL:AIRE is currently preparing, please do email us at enquiries@claire.co.uk or call us on 0207 299 4250.

CL:AIRE

Richard Froggatt
Chairman, CL:AIRE

Foreword by CL:AIRE Technology and Research Group (TRG) Chairman

Both as current Chair of the TRG and a contaminated land remediation practitioner I was delighted when I learnt that CL:AIRE was to take a primary role in the preparation of this document and I cannot think of a better placed individual than Steve Forster to author it.

My journey with this document started back in 2011 when alongside CL:AIRE and Steve we challenged the industry on Asbestos in Soils which has led to the formation of the JIWG and ultimately the publication of this excellent and comprehensive interpretation of the Control of Asbestos Regulations 2012 (CAR 2012) in relation to soil and construction and demolition materials.

It has been a long time in the making but this document now provides clear interpretation and guidance to all involved in the management of asbestos in both soils and construction and demolition arisings. It should become a constant source of information for practitioners involved in site assessment and remediation and a reference guide for clients to ensure that their problems are being managed in accordance with CAR 2012. There is also good information for construction professionals around managing materials containing asbestos. Unlike historical documents on this subject the CAR 2012 regulations are dealt with systematically and in detail with additional interpretation and guidance as appropriate. The entire document has been reviewed by the JIWG, a technical review panel and ultimately the Health and Safety Executive which provided considerable support in producing this guidance which makes this the authoritative guide.

In addition, watch points provide useful tips and key observations as well as advice where other information can be found. Photos in the appendices provide examples of asbestos types we might encounter in our field and there is a comprehensive source of references.

For those involved in site investigations there is clear guidance around the training and competencies required. For those of us involved in remediation key decisions around Notifiable Non-Licensed Work, training, competencies, plans of work, supervision and management are all addressed.

I would congratulate CL:AIRE, the JIWG and most of all the Author on this most comprehensive document which provides clear interpretation of the CAR 2012 regulations in relation to soil and construction and demolition materials.

As the front page states this is the “Industry Guidance” on the subject.

Steve Edgar
Director, VertaseFLI
Chair, CL:AIRE TRG

Foreword by the author

It is highly improbable that Warren Buffett, the famous American business magnate, investor and philanthropist, was thinking about asbestos risks when he quipped that "*risk comes from not knowing what you are doing*". It is, nevertheless a maxim that should serve to guide us well when dealing with the uncertainties of asbestos in the ground, both from a health and safety management perspective, as well as in managing attendant commercial risks.

This guidance represents a milestone in the contaminated land and brownfield sector's understanding of the key regulatory compliance drivers when working in, on or with soil and construction & demolition (C&D) materials affected by asbestos. Its principal objective was to achieve a level playing field in our comprehension of the Control of Asbestos Regulations 2012 (the regulations) and the accompanying Approved Code of Practice and guidance, when applied to working with asbestos-contaminated land. Until now, interpretation of the regulations has been highly variable. Working in close cooperation with and with the support of the Health and Safety Executive, to whom the author is extremely grateful, this authoritative document now presents the definitive explanation of how the legal requirements of the Control of Asbestos Regulations 2012 have been interpreted to apply to work with asbestos-contaminated soil and C&D materials.

It is hoped, therefore, that this guidance will prove to be an invaluable resource to practitioners in the geoenvironmental and asbestos sectors alike, in planning and executing works to identify and manage asbestos contamination in the ground, as well as construction sector planners and designers when considering the implications for development activities and risk that residual asbestos in the ground may pose to groundworkers.

Of particular note is that, in places, this guidance allows a certain degree of pragmatism and flexibility, for example when determining whether work on certain types of loose asbestos and asbestos board materials is non-licensed, whilst maintaining compliance with the regulations and being protective of health and safety. This takes account of the particular constraints involved in confirming the type of asbestos materials in the ground, which may pose a significantly lower degree of potential risk compared to similar materials in buildings.

It also highlights some key issues for consideration by those persons who are responsible for ensuring that works on asbestos-contaminated land are carried out by competent persons, in order that reports can be relied upon and works completed properly in compliance with the regulations and in a manner that is likely to minimise consequential risks. It is hoped that this will facilitate the transfer of skills and competencies between the contaminated land and asbestos sectors and, in so doing, lead to an improvement in standards across the board.

As someone else once said: "*get it wrong, it costs a lot*." In more ways than one may imagine.

Stephen Forster
Director, Remedia Group Limited
Chair, Joint Industry Working Group on Asbestos in Soil and Construction & Demolition Materials

Acknowledgements

This guidance has been prepared by CL:AIRE in consultation with and with contributions from representatives of the Health and Safety Executive. Helpful comments on initial drafts were provided by the Environment Agency, Defra and Public Health England, Centre for Radiation, Chemical and Environmental Hazards.

Financial support for the preparation of this guidance has been kindly provided by:

- Erith Group
- Harrow Estates
- Lucion Services Ltd
- Soilfix Ltd
- VertaseFLI

Thanks are extended to Hydrock Group Ltd, Soilfix Ltd and VertaseFLI for kindly providing some excellent photographs for use in the text and appendices.

Particular thanks are extended to the members of the JIWG and their respective organisations that received this document for review:

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Garry Burdett	Health and Safety Laboratories (HSL)	
Matthew Llewhellin	Natural Resources Wales	
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Theresa Kearney	DAERA, Northern Ireland Environment Agency	
Richard Boyle	Homes and Communities Agency (HCA)	
Rachael Adams	Ministry of Defence (MoD)	
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Seamus Lefroy-Brooks	LBH Wembley Ltd	Association of Geotechnical and Geoenvironmental Specialists (AGS)
David Wood	SAL Ltd	The Environmental Industries Commission (EIC)
Rob Blackburn	Knight Research Ltd	The Asbestos Testing and Consultancy Association (ATAC) & The Asbestos Removal Contractors Association (ARCA)
Colette Willoughby	Asbestos Compliance Limited	The British Occupational Hygiene Society (BOHS)
John Ferguson	Balfour Beatty Major Projects	
Peter Johnson	Kier Group	
Barry Menzies	Erith Contractors Ltd	National Federation of Demolition Contractors (NFDC) and Civil Engineering Contractors Association (CECA)
Tim Elliott	Elliott Environmental Surveyors Ltd	Royal Institution of Chartered Surveyors(RICS)

Asbestos Cement Shuttering Under Concrete Floor Slab

Photo Courtesy of Soilfix Ltd

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1. Introduction

1.1 About this guidance

1. This guidance has been prepared by the Joint Industry Working Group (JIWG) on Asbestos in Soil and Construction & Demolition (C&D) Materials. The Health and Safety Executive (HSE) provided support to the JIWG in producing this guidance, which is aimed at improvements within the brownfield and contaminated land industry. This guidance may go further than the minimum you need to do to comply with the law with regard to health and safety. Helpful comments on initial drafts were provided by the Environment Agency, Defra and Public Health England and Wales, Centre for Radiation, Chemical and Environmental Hazards.

2. It contains industry-produced practitioners' guidance to help employers comply with the Control of Asbestos Regulations 2012[1] (*the Regulations*, or CAR 2012) when undertaking work on soil and C&D materials that may be or are contaminated with asbestos. The primary aim of this guidance is to provide clarity about working with asbestos-contaminated soil and C&D materials. It outlines the steps that should be taken by clients, employers and others in the geoenvironmental management and construction sectors that have a duty to ensure that workers and others are not exposed to asbestos as a result of work in, on or with such materials. In the context of this guidance, 'soil' may be natural materials and/or made ground.

3. Note that, for convenience, this document also contains commentary and guidance on matters relating to environment, planning, etc. regulations and requirements which are outside the scope and requirements of CAR 2012 and the supporting Approved Code of Practice and guidance produced by HSE.

4. The Regulations set minimum standards for the protection of employees from risks related to exposure to asbestos. They consolidate legal requirements from earlier health and safety legislation on this subject, as well as implementing the requirements of the European Directive (*the Directive*) on the protection of workers from the risks related to exposure to asbestos at work[2].

5. The Regulations and the accompanying Approved Code of Practice (ACoP) and guidance, The Control of Asbestos Regulations 2012: Managing and working with asbestos[3] (L143) apply to **all** work with asbestos, including managing risks related to exposure to asbestos from work with asbestos-contaminated soil or C&D materials.

6. Existing ACoP and guidance material, however, primarily focuses on the means by which employers shall protect employees from risks related to exposure to asbestos when working with asbestos-containing materials (ACMs) **in buildings**. In order to comply with the requirements set out in CAR 2012, in respect of asbestos-contaminated soil and C&D materials, it is essential that employers understand how the Regulations affect them and what they should do in order to comply with the law.

7. Employers may include developers, construction firms and others involved in working on and investigating, assessing, managing and remediating land that may be contaminated with asbestos. This may include geoenvironmental consultants, asbestos analysts and laboratory technicians. It may also include those organisations carrying on operations to process C&D materials from buildings and structures that previously may have been impacted by asbestos, to produce recycled products, or those who may be concerned that such products may have been contaminated with asbestos,

8. The guidance contained in this document is intended to explain, in specific and practical terms, how the legal requirements of the Regulations have been interpreted to apply to work with asbestos-contaminated soil and C&D materials.

9. Whilst the guidance contained herein is underpinned by the fundamental requirements expressed in the Directive and the Regulations, in relation to the protection of employees from risks related to exposure to asbestos, it is set within a carefully considered framework designed specifically for soil and C&D materials contaminated with asbestos.

10. Where required, in order to be more directly applicable to the risks associated from work on soil and C&D materials contaminated with asbestos, the Regulations have been interpreted in order to allow practical guidance to be produced that is fit for purpose whilst allowing compliance to be demonstrated with the overarching requirements set out in the Regulations.

11. In order to avoid duplication, e.g. where there is little opportunity to further interpret a particular regulation, the reader is referred in these instances to the original HSE ACoP and guidance L143, which remains the authoritative text and which has special legal status.

12. Certain other legal requirements (specifically those in Part 3 of the Regulations) offer little scope for interpretation, since they are largely administrative.

13. For the sake of clarity and completeness, this document reproduces the Regulations in an Appendix to the main text.

1.2 Competence

14. Any reference in this document to competence, competent persons or competent employees is a reference to a person or employee who has received adequate information, instruction and training for the task being done and can demonstrate an adequate and up-to-date understanding of the work, required control measures and appropriate law.

15. A competent person undertaking work on or with soil and C&D materials contaminated with asbestos ordinarily will be an employee, or a self-employed person, who has received adequate information, instruction and training relevant to the type of project being undertaken.

16. In addition, a competent person will also be able to demonstrate that they have sufficient practical experience to apply this knowledge effectively.

1.3 Environmental issues

17. The Regulations do not place any requirements on employers in respect of compliance with environmental legislation, for example to undertake asbestos-focussed environmental risk assessments under the requirements of other regulatory regimes, including the determination of contaminated land under part 2A of the Environmental Protection Act (EPA, 1990[4] as amended) and for planning/redevelopment of contaminated or brownfield land.

18. This document is intended, therefore, to be a companion document and supplementary to more detailed forthcoming practitioners' guidance which is being prepared by the JIWG, the 'JIWG Asbestos in Soil Code of Practice'[1], or 'AiSCoP'). This will set out in much more detail what constitutes good practice for assessing and managing risks from asbestos in soil and C&D materials, which if followed should facilitate compliance with the law. It is anticipated that this practitioners' guidance will be published by CL:AIRE on a free to download basis, in 2016.

[1] www.claire.co.uk/asbestos

Watch Point 1

The classification of waste soils and C&D materials contaminated with asbestos is outside the scope of the Regulations and is not addressed in this document. For advice on the classification of wastes containing asbestos, detailed information is available in Chapter 3 and Appendix A of Environment Agency document *Guidance on the classification and assessment of waste, Technical Guidance WM3* [5].

Further industry guidance on the classification of waste soils and C&D materials will be provided in the forthcoming JIWG AiSCoP.

1.4 Consulting employees and/or safety representatives

19. Proper consultation with those who do the work, including all those who may be affected by the presence of asbestos in their workplace, is crucial in helping to raise awareness of the importance of health and safety. It can make a significant contribution to creating and maintaining a safe and healthy working environment and an effective health and safety culture. In turn, this can benefit business in making it more efficient by reducing the number of accidents and incidents of work-related ill health.

20. Employers must consult safety representatives appointed by recognised trade unions under the Safety Representatives and Safety Committees Regulations 1977[6].

21. Employees who are not covered by such representatives must be consulted either directly or indirectly through elected representatives of employee safety under the Health and Safety (Consultation with Employees) Regulations 1996[6].

2. Regulation 2: Interpretation

This regulation provides definition and interpretation of the terms used in the Regulations.

2.1 Definition of 'asbestos'

22. 'Asbestos' is the general term used for the fibrous silicates listed in regulation 2(1) of CAR 2012. Guidance provided in ACoP L143 states, in respect of the determination of asbestos in bulk materials, that any mixture containing one or more of these fibrous silicates at more than “trace” amounts, as defined in Appendix 2 of the first edition of HSG248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures[7] (‘The Analysts’ Guide’), is within the definition.

23. For any work covered by the Regulations, 'asbestos' also includes asbestos-containing materials (ACMs), containing any of the listed fibrous silicates or mixtures of them. Three main types of asbestos were commonly used:

- crocidolite (asbestiform amphibole mineral, commonly known as blue asbestos);
- amosite (asbestiform amphibole mineral, commonly known as brown asbestos);
- chrysotile (asbestiform serpentine mineral, commonly known as white asbestos).

24. Though not common, contamination of materials by the other types of asbestos fibre, i.e. actinolite, anthophyllite and tremolite, may also be encountered from time to time.

2.1.1 Definition of 'trace asbestos' as applied to soil and C&D materials

25. Given that HSG248[7] provides a definition for 'trace' amounts of asbestos in **bulk** samples, below which the Regulations **do not** apply, it is important for the purpose of this guidance to define what an 'asbestos-containing material' is in the context of soil and/or C&D materials that may have been contaminated by asbestos and therefore the point at which the Regulations **will** apply.

26. For representative bulk samples of fragments of suspect materials thought to contain asbestos and submitted for asbestos identification analysis, HSG248[7, 8] recommends that 'asbestos not detected' is reported when no asbestos fibres are found after careful searching of the sample under the stereo microscope for 10 minutes and searching a minimum of two preparations mounted in suitable Refractive Index (RI) liquid at high magnification by Phase Light Microscopy (PLM)/Phase Contract Microscopy (PCM) for a further 5 minutes.

27. HSG248[7, 8] goes on to say that if during the search only one or two fibres are seen and identified as asbestos, the term "***asbestos [fibres] identified at the limit of detection***" may be used. This is taken to be the equivalent of 'trace' asbestos, for bulk materials[2].

28. The analysis of soils and C&D materials poses some unique issues and for this reason, the definition of trace used for bulk samples of fragments of suspect materials may be inappropriate in this context.

29. It is anticipated that the forthcoming second edition of HSG248[8] will contain an extended methodology for analysing soil and C&D material samples for the presence of asbestos and recording the number of fragments and fibres found. The methodology does not give a detailed method for measuring the mass concentration of asbestos fragments (as this is not required for the compliance with the Regulations) but uses procedures for respirable fibre analysis which are compatible with the mass quantification 'Blue Book' method which will be published in 2016 by the Standing Committee of Analysts and endorsed by the Environment Agency.

30. The quantification of asbestos in soil and associated materials[9] will be a booklet within the series "Methods for the Examination of Waters and Materials" and is currently being finalised by a Standing Committee of Analysts industry sub-committee comprising representatives of a number of environmental laboratories undertaking the quantification of asbestos in soils and C&D materials, as well as other industry representatives, including from the JIWG. This method is expected to be published in 2016 and will be included as an appendix to the JIWG AiSCoP[3].

31. This 'Blue Book' method describes the quantification of the mass of asbestos in soil, construction materials and products, or associated materials, using a gravimetric method for ACM and fibre bundles, plus dispersion and fibre counting for free fibres using Phase Contrast Microscopy, including calculations for the concentration of Total Fibres and Regulatory Fibres as counted using Annex 1 of HSG248, as appropriate. This so-called 'Blue Book' method is suitable for quantifying asbestos in these materials for the purpose of evaluating potential human health risk functions and to inform waste classification of discarded materials.

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[2] *NB - this definition may change in the final version of the forthcoming revised HSG 248*

[3] *www.claire.co.uk/asbestos*

Watch Point 2

Analysis of soil and/or C&D materials in accordance with the 'Blue Book' method requires prior identification analysis by the asbestos identification method described in HSG248[7, 8]. The Limit of Quantification of the 'Blue Book' method is given as 0.001% w/w, based on a practical Limit of Detection of 0.0001%.

For samples of soil and C&D materials where no fragments of ACMs are isolated and fewer than three asbestos fibres are identified during detailed and extended identification and gravimetric analysis procedures combined, the mass concentration of asbestos fibre is likely to be many orders of magnitude below the 0.0001% w/w Limit of Detection; this generally will be taken to mean 'trace' asbestos fibre contamination.

In such circumstances, therefore, on the basis that the potential risk from exposure to such trivial concentrations of asbestos in the external environment is likely to be very low to negligible, it is practical to conclude that such material, whilst containing very few isolated asbestos fibres, is not strictly an ACM that falls under the definition of asbestos in the Regulations.

32. It is practical to conclude, therefore, that whilst containing isolated or 'trace' asbestos fibres or isolated or random individual pieces of ACMs, work on sites affected by such soil and/or C&D materials might fall outside the scope of the Regulations, though this will be dependent on what is considered '*reasonably practicable*' in each case, assuming that a suitable and sufficient investigation and assessment of the site has been carried out.

Watch Point 3

The terms 'isolated' and 'random' are not specifically defined in draft HSG248, The Analysts' Guide 2016[8]. Accordingly, the general meanings as expressed in the Oxford English Dictionary shall be taken to apply:

Isolated – 'Exceptional'.
Random – 'Odd, unusual, or unexpected'.

Watch Point 4

The definition of 'reasonably practicable' which was set out by the Court of Appeal (in its judgment in Edwards v. National Coal Board, [1949] 1 All ER 743) is:

"'*Reasonably practicable' is a narrower term than 'physically possible' … a computation must be made by the owner in which the quantum of risk is placed on one scale and the sacrifice involved in the measures necessary for averting the risk (whether in money, time or trouble) is placed in the other, and that, if it be shown that there is a gross disproportion between them – the risk being insignificant in relation to the sacrifice – the defendants discharge the onus on them*."

33. In practice, however, samples of soil and C&D materials recovered from brownfield sites may exhibit a wide range of concentrations of asbestos contamination. Due consideration should be given, therefore, to the interpretation of any such 'trace' concentrations confirmed in samples in the wider context, where other samples are found to contain much higher concentrations of asbestos contamination. Judgements on the nature, degree and significance of contamination present should never be made on the basis of individual samples alone.

2.2 Asbestos-containing materials encountered on brownfield sites

34. Guidance is available on the types of industrial use where asbestos contamination of brownfield land may be possible[4].

35. Previously-developed land – so-called 'brownfield' sites – may be found to be contaminated by asbestos. Abandoned industrial premises, former waste disposal sites (including those reclaimed for agricultural or amenity use etc.) and other derelict or unused land may potentially be contaminated by buried asbestos to some degree. At some sites, asbestos may also be present on the surface, e.g. on sites where it was used for heat insulation (as lagging for pipes or tanks), for fire control, or in the construction of walls and roofs of buildings. In addition, asbestos waste may have been illegally dumped on derelict industrial land.

36. Asbestos may also become entrained in soil and C&D materials on a brownfield site due to demolition activities, where asbestos has not been fully removed from site structures prior to demolition. It is of note that CAR 2012 (regulation 7(3)) allows certain **well-bonded** asbestos products, usually with low asbestos content, to remain *in situ* in buildings that are being demolished (where removal is not reasonably practicable). As a consequence, demolition arisings (C&D materials) containing ACMs may have been crushed and used as infill or levelling (aggregate) materials on some development sites.

37. The major usage of asbestos in the UK was of chrysotile (white) asbestos, which was mainly used in asbestos cement products, jointings and packings, friction materials, floor tiles and coverings, and for fillers and reinforcement in felts, mastics, textured decorative coatings, etc..

38. Amosite (brown) asbestos was principally used for fire resistant board and some asbestos-cement pipes, although it was also widely used in sprayed coatings and in thermal insulation. Materials used to joint asbestos cement pipes and flues have been found to contain amosite asbestos mixed with cement.

39. Crocidolite (blue) asbestos was extensively used in insulation materials in chemical and gas works, in power stations, in thermal and sound proofing materials in railway rolling stock and in sprayed coatings.

40. ACoP L143 provides information on the definition of a number of ACMs. 'Asbestos: The Survey Guide', HSG264[10] provides further information and an extensive list of the commonly occurring ACMs used in construction of buildings and in the manufacture of certain products. It is noted, however, that these ACMs and products are listed in order of their intrinsic ability to release fibres when used in buildings; the ease of releasing asbestos fibres could be different if those materials and articles are encountered in soils and/or C&D materials. This list is reproduced below as Table 1.

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[4] *Department of Environment (DOE) industry profiles provide developers, local authorities and anyone else interested in land contamination with information on the processes, materials and wastes associated with individual industries. Although they were produced by the previous Department of the Environment (work now carried out by Defra and Environment Agency), they are still valid. They are not definitive studies but they introduce some of the technical considerations that need to be borne in mind at the start of an investigation for possible contamination. The original publications were not available electronically and have been scanned and created into PDF documents. As a result, the quality of the documents is poorer than normally provided by both Defra and the Environment Agency.*

https://www.gov.uk/government/publications/department-of-environment-industry-profiles

41. Soil and C&D materials may also be found to be contaminated with visible free, dispersed asbestos fibre bundles. It may also be the case that dispersed asbestos fibre contamination is only identifiable through laboratory analysis. Such asbestos contamination would not normally be described as being debris, although these materials are still covered by the Regulations.

42. It may not always be possible precisely to confirm the identity of the type of different ACMs present when mixed with soil and/or C&D materials, e.g. it may be difficult, or impossible, to positively confirm that debris is asbestos insulating board (AIB), or to differentiate between AIB and asbestos cement, based on appearance. The confirmation of ACM type by visual identification of small fragments of degraded ACMs in the ground on-site may not be at all straightforward, since degradation and coating by the host material may disguise them to the extent that they become very difficult, if not near impossible to spot. In such situations, a more accurate description of the material would be '**soil contaminated with asbestos sheeting/board debris**'.

43. This problem may be compounded in the case of free dispersed asbestos fibres and/or fibre bundles. In addition, if ACMs have been in the ground for many years, they may not be readily or 'clearly' identifiable due to weathering, degradation and mixing with soil and other, similar materials.

44. In many scenarios, when (what may have formerly been) asbestos coating material or asbestos insulation are encountered in the ground, where they are degraded, heavily wetted and mixed with soil, they no longer may easily be described as being asbestos coating or asbestos insulation. In such situations, a more accurate description of the material would be '**soil contaminated with loose fibrous asbestos debris**'.

45. On occasions, however, ACMs may be encountered in a clearly identifiable 'original form', as a result of on-site dumping of materials that have either been removed from buildings or that have otherwise been disposed of by burial.

46. Photographs of a range of not untypical examples of soil and C&D materials contaminated by ACMs are included in Appendix 2 as a reference.

2.2.1 Asbestos-containing materials encountered on 'greenfield' sites

47. Practitioners also should be aware of the possibility that asbestos contamination may be encountered on so-called 'greenfield' sites, or sites that do not appear to have been developed for potentially contaminating industrial uses.

48. Such contamination might only reasonably be expected, however, where there is evidence of or a strong suspicion that waste disposal activities have taken place, e.g. on farmland, where the removal of asbestos cement construction products may have been undertaken. It is known that this practice often resulted in ACMs being disposed of by burial 'on-site'.

49. In addition, in certain circumstances crushed ACMs may have been used as hardcore to improve tracks and paths on 'greenfield' land.

2.3 ACM 'debris'

50. 'Debris' containing asbestos is also covered by the Regulations. Generally-speaking, asbestos-containing debris in the context of ACMs in buildings is taken to mean material that was generated at the time of installation, e.g. offcuts, overspray etc., pieces of ACMs that have become detached from the parent material which remains in place, or residues left over from the poor or incomplete historical removal of ACMs.

51. Generally, though not always, ACM debris in the context of asbestos-contaminated soil and C&D materials may be encountered in a highly fragmented form. Materials may be weathered or degraded and bound up in the soil matrix; identification of original ACM type may prove problematic. Such debris may be present as visible, dispersed fragments and may be encountered both on the surface of a site and/or at depth. It may be homogenously dispersed throughout the ground, or it may occur as isolated occurrences or hotspots. Surface contamination may not necessarily be an indication of contamination at depth.

2.4 Asbestos in soil and C&D materials and the licensing regime

2.4.1 Work with asbestos

52. 'Work with asbestos' is defined in the Regulations and includes:

- work which removes, repairs or disturbs asbestos;
- work which is ancillary to such work (ancillary work);
- supervising the work referred to in the two bullet points above (supervisory work).

53. For soil and C&D materials that may be affected by asbestos contamination, work which removes or disturbs asbestos may include *inter alia*:

- demolition of above-ground and subsurface structures;
- land remediation work, including asbestos removal;
- excavations and earthworks;
- ground improvement operations;
- installation of foundations;
- production and use of recycled aggregate from demolition arisings;
- maintenance operations that could disturb asbestos, e.g. installation of underground utilities, erection of fencing, landscaping activities.
- ground investigations and surveys;
- monitoring activities, including air sampling.

Table 1. HSG264[10] Appendix 2: ACMs listed in order of relative ease of fibre release when encountered in buildings

Asbestos product	Location/use	Asbestos and type/date last used	Ease of fibre release and product names
Loose insulation			
Bulk loose fill, bulk fibre-filled mattresses, quilts and blankets. Also 'jiffy bag' type products used for sound insulation.	Bulk loose fill insulation is now rarely found but may be encountered unexpectedly, eg DIY loft insulation and fire-stop packing around cables between floors. Mattresses and quilts used for thermal insulation of industrial boilers were filled with loose asbestos. Paper bags/socks were also loose-filled and used for sound insulation under floors and in walls.	Usually pure asbestos except for lining/bag. Mattresses and quilts usually contain crocidolite or chrysotile. Acoustic insulation may contain crocidolite or chrysotile.	Loose asbestos may readily become airborne if disturbed. If dry, these materials can give rise to high exposures. Covers may deteriorate or be easily damaged by repair work or accidental contact.
Sprayed coatings			
Dry applied, wet applied and trowelled finish.	Thermal and anti-condensation insulation on underside of roofs and sometimes sides of industrial buildings and warehouses. Acoustic insulation in theatres, halls etc. Fire protection on steel and reinforced concrete beams/columns and on underside of floors. Overspray of target areas is common.	Sprayed coatings usually contain 55%–85% asbestos with a Portland cement binder. Crocidolite was the major type until 1962. Mixture of types including crocidolite until mid–1971. Asbestos spray applications were used up to 1974.	The surface hardness, texture and ease of fibre release will vary significantly depending on a number of factors. Sprays have a high potential for fibre release if unsealed, particularly if knocked or the surface is abraded or delaminates from the underlying surface. Dust released may then accumulate on false ceilings, wiring and ventilation systems. 'Limpet' (also used for non-asbestos sprays).
Thermal insulation			
Hand-applied thermal lagging, pipe and boiler lagging, pre-formed pipe sections, slabs, blocks. Also tape, rope, corrugated paper, quilts, felts, and blankets.	Thermal insulation of pipes, boilers, pressure vessels, calorifiers etc.	All types of asbestos have been used. Crocidolite used in lagging until 1970. Amosite was phased out by the manufacturers during the 1970s. Content varies 6-85%. Various ad hoc mixtures were hand-applied on joints and bends and pipe runs. Pre-formed sections were widely used, eg '85% magnesia' contained 15%	The ease of fibre release often depends on the type of lagging used and the surface treatment. Often it will be encapsulated with calico and painted (eg PVA, EVA, latex, bitumen or proprietary polymer emulsions or PVC, neoprene solutions), eg 'Decadex' finish is a proprietary polymer ▶

Asbestos product	Location/use	Asbestos and type/date last used	Ease of fibre release and product names
Thermal insulation (continued)			
		amosite. 'Caposil' calcium silicate slabs and blocks contained 8–30% amosite while 'Capoelite' sections contained ~ 85% amosite. Blankets, felts, papers, tapes and ropes were usually ~100% chrysotile.	emulsion. A harder chemical-/ weatherresistant finish is known as 'Bulldog'.
Asbestos boards			
'Millboard'.	'Millboard' was used for general heat insulation and fire protection. Also used for insulation of electrical equipment and plant.	Crocidolite was used in some millboard manufacture between 1896 and 1965; usually chrysotile. Millboards may contain 37–97% asbestos, with a matrix of clay and starch.	Asbestos 'Millboard' has a high asbestos content and low density so is quite easy to break and the surface is subject to abrasion and wear.
Insulating board.	Used for fire protection, thermal and acoustic insulation, resistance to moisture movement and general building board. Found in service ducts, firebreaks, infill panels, partitions and ceilings (including ceiling tiles), roof underlay, wall linings, soffits, external canopies and porch linings.	Crocidolite used for some boards up to 1965, amosite up to 1980, when manufacture ceased. Usually 15–25% amosite or a mixture of amosite and chrysotile in calcium silicate. Older boards and some marine boards contain up to 40% asbestos.	AIB can be readily broken, giving significant fibre release. Also significant surface release is possible by abrasion, but surface is usually painted or plastered. Sawing and drilling will also give significant releases. 'Asbestolux', 'Turnasbestos', 'LDR', 'asbestos wallboard', 'insulation board'. Marine boards known as 'Marinite' or 'Shipboard'.
Insulating board in cores and linings of composite products.	Found in fire doors, cladding infill panels, domestic boiler casings, partition and ceiling panels, oven linings and suspended floor systems. Used as thermal insulation and sometimes as acoustic attenuators.	Crocidolite used for some boards up to 1965, amosite up to 1980, when manufacture ceased. 16–40% amosite or a mixture of amosite and chrysotile.	Can be broken by impact; significant surface release possible by abrasion, but usually painted or plastered. Sawing and drilling will also give significant releases. 'Asbestolux'. Caposil.
Paper, felt and cardboard			
	Used for electrical/heat insulation of electrical equipment. Also used in some air conditioning systems as insulation and acoustic lining. Asbestos paper has also been used to reinforce bitumen and other products and as a facing/lining to flooring products.	Asbestos paper can contain ~100% chrysotile asbestos but may be incorporated as a lining, facing or reinforcement for other products, eg roofing felt and damp-proof courses, steel composite wall cladding and roofing (see asbestos	Paper materials, if not encapsulated/combined within vinyl, bitumen, or bonded in some way, can easily be damaged and release fibres when subject to abrasion or wear (eg worn flooring surface with paper backing). Asbestos paper, asbestos felt, 'Novilon'

Asbestos product	Location/use	Asbestos and type/date last used	Ease of fibre release and product names
Paper, felt and cardboard (continued)			
	combustible boards, flame-resistant laminate. Corrugated cardboard has been used for duct and pipe insulation.	bitumen products below), vinyl flooring. Asbestos paper is also sometimes found under MMMF insulation on steam pipes.	flooring, Durasteel laminates, vinyl asbestos tile, roofing felt and damp-proof course etc. Pax felt', 'Vioaroy' (foil-coated paper). 'Serval'.
Textiles			
Ropes and yarns.	Used as lagging on pipes (see above), jointing and packing materials and as heat/fire-resistant boiler, oven and flue sealing. Caulking in brickwork. Plaited asbestos tubing in electric cable.	Crocidolite and chrysotile were widely used due to length and flexibility of fibres. Other types of asbestos have occasionally been used in the past. Chrysotile alone since at least 1970. Asbestos content approaching 100% unless combined with other fibres.	Weaving reduces fibre release from products, but abrading or cutting the materials will release fibres, likely to degrade if exposed, becoming more friable with age. If used with caulking, fibres will be encapsulated and less likely to be released.
Cloth.	Thermal insulation and lagging (see above), including fire-resisting blankets, mattresses, protective curtains, gloves aprons and overalls. Curtains, gloves etc were sometimes aluminised to reflect heat.	All types of asbestos were used. Since the mid-1960s the vast majority have been chrysotile. Asbestos content approaching 100%.	Fibres may be released if material is abraded.
Gaskets and washers.	Used widely in domestic and industrial plant and pipe systems ranging from hot water boilers to industrial power and chemical plant.	Variable but usually around 90% asbestos, crocidolite used for acid resistance and chrysotile for chlor-alkali. Some gasket materials continued to be used after asbestos prohibition in 1999 (through exemption).	May be dry and damage easily when removed. Mainly a problem for maintenance workers. 'Klingerit', 'Lion jointing', 'Permanite', 'CAF' – compressed asbestos fibre or 'It' in German gaskets.
Strings.	Used for sealing hot water radiators.	Strings have asbestos content approaching 100%.	
Friction products			
Resin-based materials.	Transport, machinery and lifts, used for brakes and clutch plates.	30–70% chrysotile asbestos bound in phenolic resins. Used up to November 1999.	Normal handling will produce low emissions. Minor emissions when braking. Dust may build up with friction debris. Grinding brake and clutch components to fit and brushing or blowing clean can produce significant peak airborne levels.
Drive belts/conveyor belts.	Engines, conveyors.	Chrysotile textiles encapsulated in rubber.	Low friability, except when worn to expose textile.

Asbestos product	Location/use	Asbestos and type/date last used	Ease of fibre release and product names
Cement products			
Profiled sheets.	Roofing, wall cladding. Permanent shuttering, cooling tower elements.	10–15% asbestos (some flexible sheets contain a proportion of cellulose). Crocidolite (1950–1969) and amosite (1945–1980) have been used in the manufacture of asbestos cement, although chrysotile (used until November 1999) is by far the most common type found.	Likely to release increasing levels of fibres if abraded, hand sawn or worked on with power tools. Exposed surfaces and acid conditions will remove cement matrix and concentrate unbound fibres on surface and sheet laps. Cleaning asbestos-containing roofs may also release fibres.
			Asbestos cement, Trafford tile, 'Bigsix', 'Doublesix', 'Supersix', 'Twin twelve', 'Combined sheet', 'Glen six', '3' and 6' corrugated', 'Fort', 'Monad', 'Troughsec', 'Major tile and Canada tile', 'Panel sheet', 'Cavity decking'.
Semi-compressed flat sheet and partition board.	Partitioning in farm buildings and infill panels for housing, shuttering in industrial buildings, decorative panels for facings, bath panels, soffits, linings to walls and ceilings, portable buildings, propagation beds in horticulture, domestic structural uses, fire surrounds, composite panels for fire protection, weather boarding.	As for profiled sheets. Also 10–25% chrysotile and some amosite for asbestos wood used for fire doors etc. Composite panels contained – 4% chrysotile or crocidolite.	Release as for profiled sheets. Flat building sheets, partition board, 'Polite'.
Fully compressed flat sheet used for tiles, slates, board.	As above, but where stronger materials are required, and as slates, board cladding, decking and roof slates (eg roller-skating rinks, laboratory worktops). Higher asbestos content sheets produced for industrial applications as a high grade arc and heat-resistant material.	As for profiled sheets. Up to 50% chrysotile.	Release as for profiled sheets. Asbestos-containing roofing slate (eg 'Eternit', 'Turners', 'Speakers'), Everite', 'Turnall', 'Diamond AC', 'JM slate', 'Glasal AC', 'Emalie, Eflex', 'Colourglaze', 'Thrutone', 'Weatherall', 'Sindanyo'.
Pre-formed moulded products and extruded products.	Cable troughs and conduits. Cisterns and tanks. Drains and sewer pressure pipes. Fencing. Flue pipes. Rainwater goods. Roofing components (fascias, soffits etc). Ventilators and ducts. Weather boarding. Window sills and boxes, bath panels, draining boards, extraction hoods, copings, promenade tiles etc.	As for profiled sheets.	Release as for profiled sheets. 'Everite', 'Turnall', 'Promenade tiles'.
Other encapsulated materials			
Textured coatings.	Decorative/textile coatings on walls and ceilings.	3–5% chrysotile asbestos. Chrysotile added up to 1984 but old stock may have been used for several more years.	Generally fibres are well contained in the matrix but may be released when old coating is sanded down or scraped off. 'Artex', 'Wondertex',

Asbestos product	Location/use	Asbestos and type/date last used	Ease of fibre release and product names
Other encapsulated materials (continued)			
		Non-asbestos versions were available from the mid-1970s.	'Suretex', 'Newtex', 'Pebblecoat', 'Marblecoat'.
Bitumen products.	Roofing felts and shingles, semi-rigid asbestos bitumen roofing. Gutter linings and flashings. Bitumen damp-proof courses (DPC). Asbestos/bitumen coatings on metals (eg car body underseals). Bitumen mastics and adhesives (used for floor tiles and wall coverings).	Chrysotile fibre or asbestos paper (approximately 100% asbestos) in bitumen matrix, usually 8% chrysotile. Used up to 1992. Adhesives may contain up to a few per cent chrysotile asbestos. Used up to 1992.	Fibre release unlikely during normal use. Roofing felts, DPC and bitumen-based sealants must not be burnt after removal. See felts and papers.
Flooring.	Thermoplastic floor tiles. PVC vinyl floor tiles and unbacked PVC flooring. Asbestos paper-backed PVC floors. Magnesium oxychloride flooring used in WCs, staircases and industrial flooring.	Up to 25% asbestos. Normally 7% chrysotile. Paper backing approximately 100% chrysotile asbestos. Used up to 1992. About 2% asbestos.	Fibre release is unlikely to be a hazard under normal services conditions. Fibre may be released when material is cut, and there may be substantial release where flooring residue, particularly paper backing, is power-sanded. 'Novilon', 'Serval asbestos'. Very hard, fibre release unlikely.
Reinforced PVC.	Panels and cladding.	1–10% chrysotile asbestos.	Fibre release is unlikely.
Reinforced plastic and resin composites.	Used for toilet cisterns, seats, banisters, window seals, lab bench tops.	Plastics usually contain 1-10% chrysotile asbestos. Some amphiboles were used to give improved acid resistance, eg car batteries. Resins were reinforced with woven chrysotile cloth usually contain 20–50% asbestos.	Fibres unlikely to be released, limited emissions during cutting. 'Siluminite', 'Fercasbestos'.

2.4.2 Ancillary work

54. 'Ancillary work' means any work that is directly connected with the performance of a primary asbestos operation which could foreseeably result in exposure to asbestos. Work that is carried out in an ancillary capacity to a primary licensed asbestos operation will require to be conducted by a Licensed Asbestos Removal Contractor (LARC) under an asbestos licence **unless** the primary asbestos operation (i.e. remediation, earthworks, etc. involving work with asbestos) does not meet the conditions in the definition of licensed work.

55. Work with asbestos that involves directly associated and connected activities, for example, the operation of heavy plant and/or vehicles for the collection, haulage or transportation of asbestos-contaminated materials on-site, e.g. in order to convey them to a remediation process or haulage vehicle, or for stockpiling material, generally will not be considered to be ancillary, but will be considered to be an integral part of the primary asbestos operation involving work with asbestos (licensed or otherwise).

56. CAR 2012 apply to such connected activities and, in particular, effective controls will be required to prevent or reduce the spread of asbestos in accordance with the requirements of regulation 16.

57. On asbestos-contaminated sites, which may be complex in terms of the operations being carried out and the various parties involved, it is recognised that the LARC may not actually carry out all of such connected activities themselves, especially where specialist training skills or other licenses are required for the operation of heavy plant and/or equipment.

58. In such circumstances, all work connected with a primary licensed asbestos operation being undertaken on the site should be considered in a single Plan of Work. It is the responsibility of the person who has overall responsibility for the site/project, to ensure that all activities, including the primary licensed asbestos operation(s) and those related to it/them are included and adequately addressed in the Plan of Work, and that every party involved is aware of their obligations and duties in respect of compliance with CAR 2012.

59. Note also that 'ancillary work' includes maintenance of equipment which is, or could be, contaminated with asbestos (e.g. class 'H' vacuum cleaners (BS 8520-3:2009)[11], even if carried out away from the site of the primary licensed asbestos operation.

Watch Point 5

If the primary asbestos operation is **licensed** activity, any work that is integral and ancillary to that operation must also be carried out by, or under the direct supervision of, a Licensed Asbestos Removal Contractor, under a single Plan of Work.

If the primary asbestos operation is **non-licensed** activity, any work that is integral and ancillary to that operation does not need to be carried out by, or under the direct supervision of, a Licensed Asbestos Removal Contractor, though the works must still be carried out by a competent contractor under a Plan of Work.

2.4.3 Supervisory work

60. 'Supervisory work' means work involving direct supervision over those removing or disturbing asbestos in asbestos-contaminated soil and C&D materials. This applies to supervisory work for both licensed and non-licensed activities. It does not apply to 'project management' type roles as may be carried out by asbestos analysts or environmental consultants.

61. This may include direct supervision of a LARC's operatives, non-licensed contractors, and any sub-contractors engaged in ancillary work. If supervisory work is carried out on licensed asbestos work, an asbestos licence for that work is required.

2.4.4 Licensed work with asbestos

62. Certain types of work with ACMs can only be done by those who have been issued with a licence by HSE. This is work which meets the definition of 'licensed work with asbestos' in regulation 2(1).

63. That is work:

- where worker exposure to asbestos is not sporadic and of low intensity (see section 2.4.6); or
- where the risk assessment cannot clearly demonstrate that the control limit (0.1 fibres per cubic centimetre (f/cm^3) airborne fibres averaged over a four-hour period) will not be exceeded; or
- on asbestos coating (surface coatings which contain asbestos for fire protection, heat insulation or sound insulation, but not including textured decorative coatings); or
- on asbestos insulation or AIB where the risk assessment demonstrates that the work is not sporadic and of low intensity, the control limit will be exceeded and it is not short duration work.

64. Licences are issued for a set period, during which the licence holder can carry out licensed work. A licence does not need to be issued for each individual work activity.

2.4.5 Short duration work

65. Short duration means the total time spent by all workers working with these materials does not exceed **two hours in a seven-day period**, including time spent setting up, cleaning and clearing up, and no one person works for more than one hour in a seven-day period. Under the Regulations it only applies to deciding if work with asbestos insulation and AIB is licensed or not.

2.4.6 Sporadic and low intensity exposure – 'SALI'

66. Firstly, it should be noted that there are no time-based criteria applied to any work on asbestos-contaminated soil and C&D materials being carried out under the definition of 'sporadic (and of low intensity)'. Rather, the definition expressly refers to **exposure**.

67. For the purposes of regulation 2(4), for **exposure** to be SALI, the concentration of asbestos in the atmosphere of the breathing zone of workers engaged on work with asbestos should not exceed or be liable to exceed 0.6 f/cm^3 in the air measured over a ten-minute period. Any exposure which exceeds or is liable to exceed this is not SALI.

68. The unit f/cm^3 is the same unit as f/ml. This ten-minute limit is sometimes called the short-term exposure limit or STEL. It refers to the highest level of concentration for any ten minute period of duration of the work. Note that this approved concentration for SALI exposure is not the same as the 'control limit' as defined in regulation 2.

2.4.7 Comparison of risks: asbestos in buildings and in soil

69. It is generally accepted, based on extensive industry experience, that the nature and degree of potential risks **from exposure** to asbestos fibres when working with asbestos-contaminated soil or C&D materials in the external environment is significantly lower than that which might be expected when working with ACMs internally within buildings.

70. According to the HSE[8], there is now significant monitoring evidence available within the ground investigation and remediation industry to suggest that significant visible quantities of bound ACMs will need to be present to give rise to exposures above 0.01 f/ml, equivalent to one tenth of the control limit, unless they are being subject to highly energetic processes (e.g. crushing, power screening and grading of demolition waste and made ground or soil).

71. Whilst it is relatively easy to release asbestos fibres when working with building materials and/or debris consisting of asbestos insulation, asbestos coatings and AIB, in most circumstances similar materials in the ground are unlikely to give rise to equivalent airborne fibre releases and, consequently, the potential risk to human health from exposure to and inhalation of asbestos fibres will be significantly lower.

72. In order to support this conclusion and as part of the development of industry guidance to support the assessment and management of risks during work on asbestos-contaminated land, CL:AIRE[5] will be publishing a database of the results of personal and static air sampling results obtained by industry practitioners during a variety of activities conducted on asbestos-contaminated land.

2.4.8 Deciding if work is licensed

73. First and foremost, employers need to consider whether the proposed work on soil or C&D materials contaminated by asbestos meets the criteria set out in the definition of licensed work in regulations 2(1)(a) and (b). If it does, a licence will be required in all cases.

74. The nature of the form of asbestos and ACMs encountered on a brownfield site will have implications for the application of the licensing regime set out in CAR 2012. The position regarding ACMs in soils is that work **will be licensed** if it involves material described as 'clearly identifiable' 'original form' asbestos coatings (excluding textured decorative coatings), and **almost certainly** licensed if it involves:

- material/debris described as asbestos insulation, or
- material/debris described as asbestos insulating board (AIB).

75. 'Original form' ACMs, can occur on brownfield sites as a result of illegal dumping of asbestos that has been removed from buildings during refurbishment or prior to demolition. Asbestos in this form may have been tipped on the surface of the site, or it may have been buried. It may be contained in UN-approved waste packaging, or not. Either way, the key factor is that the material is clearly identifiable as asbestos coatings (as defined in regulation 2), thermal insulation or insulating board products that were used in construction.

76. Guidance in ACoP L143 states that, debris containing asbestos is also covered by the Regulations. If the debris contains raw asbestos, asbestos coating, asbestos insulation or AIB, even where it is not fulfilling its original purpose, i.e. the asbestos materials may no longer be coating or insulating anything, a Licensed Asbestos Removal Contractor is required to carry out the work, **unless it does not meet the conditions in the definition of licensed work in regulation 2(1)**.

77. It is given fact that any ACMs that are encountered in the ground mixed in soil, or entrained in C&D materials, will not be fulfilling their original purpose.

[5] www.claire.co.uk/asbestos

Watch Point 6

'**Clearly identifiable original form**' is taken to mean that it is possible for a trained and competent person to identify the type of material presumed to be ACM from its appearance *in situ* on site.

It may be possible to state that a material is clearly identifiable as a coating if, for example, it is found to be attached to a substrate where it is possible to conclusively state that the material was likely to have served as a surface coating as may typically have been used for fire protection purposes or as heat and/or sound insulation.

Likewise, a material is clearly identifiable as insulation if, for example, it is found to be attached to a pipe or vessel where it is possible to conclusively state that the material was likely to have been used for thermal insulation.

For a material to be clearly identifiable as asbestos insulating board (AIB), consideration would have to be taken of the nature and form of the material as encountered. A large intact sheet of material that bore the typical characteristics of AIB would be more readily 'clearly identifiable 'original form' AIB than small broken fragments of asbestos sheet material.

It is unlikely that the determination of whether a material is clearly identifiable original form asbestos coating, asbestos insulation or AIB can be made solely on the basis of a laboratory analysis of a small sample, as the material will not be in context.

Whilst presumptions regarding the form of material may be made on site, the presence of asbestos in all suspected ACMs must be confirmed by laboratory identification.

Watch Point 7

The potential airborne fibre release from fragments of fibrous materials and/or dispersed debris that may originally have been asbestos insulation or AIB and which occur in soil and C&D materials, is likely to be lower, possibly even by several orders of magnitude than airborne fibre releases from equivalent ACMs encountered in buildings. It does not automatically follow, therefore, that work on soil and C&D materials contaminated by such fibrous debris will always be licensed work.

Justification for this position is provided on the basis that the materials may be intrinsically bound up in wetted host materials and work on the material would not meet the requirements of regulations 2(1)(a) and (b) regarding licensed work. Specifically, this is likely to be the case where the ACM is considered to be loose fibrous asbestos 'debris', where exposure to asbestos of employees is SALI and where the risk assessment can clearly demonstrate that the control limit will not be exceeded.

Conversely, such a position would not be expected to apply in the case of work on clearly identifiable insulation or AIB, where the potential risk is likely to be much greater and where the exposure to asbestos of employees is **unlikely** to be SALI and where the risk assessment cannot clearly demonstrate that the control limit **will not** be exceeded.

78. For materials contaminated with all other ACMs, the decision on whether the work on the material is licensed or not will be dependent, **in most circumstances**, on the potential degree of exposure to airborne fibres caused by the work activity. Again, where the exposure to asbestos of employees from working on these ACMs is **unlikely** to be SALI and where the risk assessment cannot clearly demonstrate that the control limit **will not** be exceeded, the work will be licensed work.

79. Table 2 gives some generic examples of licensed and non-licensed work on soil or C&D materials contaminated by asbestos. Figure 1 presents a decision flowchart to assist in determining when work on soil or C&D materials contaminated by asbestos is likely to be licensed work.

80. **It should be noted that the type of asbestos fibre present is not a factor for consideration when determining whether work is licensed or not**.

Watch Point 8

To support the flowchart, the JIWG has developed a user-friendly practical Excel spreadsheet-based two-part risk assessment Decision Support Tool that facilitates the assessment of licensing status of work as part of the risk assessment required under CAR 2012. This Work Category spreadsheet allows the input of real or assumed data at Stage 1 and 2 and outputs decisions on probable licensing status and appropriate respiratory protective equipment (RPE) and control measures to be used and implemented during work with asbestos-contaminated soil and C&D materials.

The spreadsheet is designed to lead the user through a series of options for each identified factor. These factors are grouped into stages with each stage providing a numerical and/or qualitative hazard or risk ranking phrase. The user is led sequentially through each stage with the stages ordered from left to right.

The hazard and risk ranking approaches take influences from the material and priority scoring systems set out in HSG264 and 'A comprehensive guide to managing asbestos in premises', HSG227[12] and identifies key hazard and risk factors that are relevant to the management of risk from exposure to asbestos-contaminated soils, made ground or C&D materials. This Decision Support Tool is available to download from the CL:AIRE JIWG asbestos in soil website, www.claire.co.uk/asbestos.

Table 2. Examples of licensed and non-licensed work on soil or C&D materials contaminated by asbestos

Work which requires a licence from HSE	Work which does not usually require a licence from HSE
• All 'removal' work where the risk assessment **cannot** demonstrate that the exposures anticipated during the work will not be sporadic and of low intensity (SALI) and the control limit will **not** be exceeded. • 'Removal' work liable to disturb, including hand-picking, excavation, conveying, loading, bagging, etc. of material containing raw asbestos and/or 'original form' asbestos coatings. • 'Removal' work liable to disturb, including hand-picking, excavation, conveying, loading, bagging, etc. of material containing 'original form' asbestos insulation or AIB, where the work **does not** meet the short duration exemption of <2 hours total in 7 days.	• Work associated with ground investigations and/or surveys for the on-site collection and inspection of samples for the purpose of analysis for the presence of asbestos, including mechanical excavation of trial pits, trenches, boreholes etc., where the risk assessment **can** demonstrate that the exposures anticipated during the work will be SALI and the control limit **will not** be exceeded. • All 'removal' work on asbestos materials, other than asbestos coatings, where the risk assessment **can** demonstrate that the exposures anticipated during the work will be SALI and the control limit **will not** be exceeded; this includes work on materials containing 'original form' asbestos insulation or AIB which **does** meet the short duration exemption of <2 hours work carried out in total over a 7 day period.

Table 2. (Continued) Examples of licensed and non-licensed work on soil or C&D materials contaminated by asbestos

Work which requires a licence from HSE	Work which does not usually require a licence from HSE
• 'Removal' work liable to disturb, including hand-picking, excavation, conveying, loading, bagging, etc. of material in the form of 'debris containing asbestos coating, or containing asbestos insulation/AIB where the exposures will not be SALI and/or the control limit is likely to be exceeded.	• Maintenance work on/in material contaminated with non-friable ACMs, including AIB, where the work is considered short duration and non-continuous.

3. Regulation 3: Application of these Regulations

This regulation states how the Regulations apply to dutyholders (including the self-employed).

Regulation 3(2) also provides for an exemption from the application of some of the Regulations. To benefit from the exemption, the work with asbestos must meet certain criteria.

3.1 Exemption from regulations 9, 18(1)(a) and 22

81. Work with asbestos includes any work that is liable to disturb asbestos on or in the land, or in C&D materials, including the excavation, conveying, loading, processing, etc. soil or C&D materials contaminated with asbestos fibres or ACMs, as well as any ancillary work and any supervision of such work.

82. Working with asbestos should comply with the requirements of the Regulations which help prevent and control exposure to asbestos, including:

- carrying out a risk assessment;
- planning the work;
- providing appropriate information, instruction and training to workers; and
- taking measures to prevent exposure and prevent the spread of asbestos.

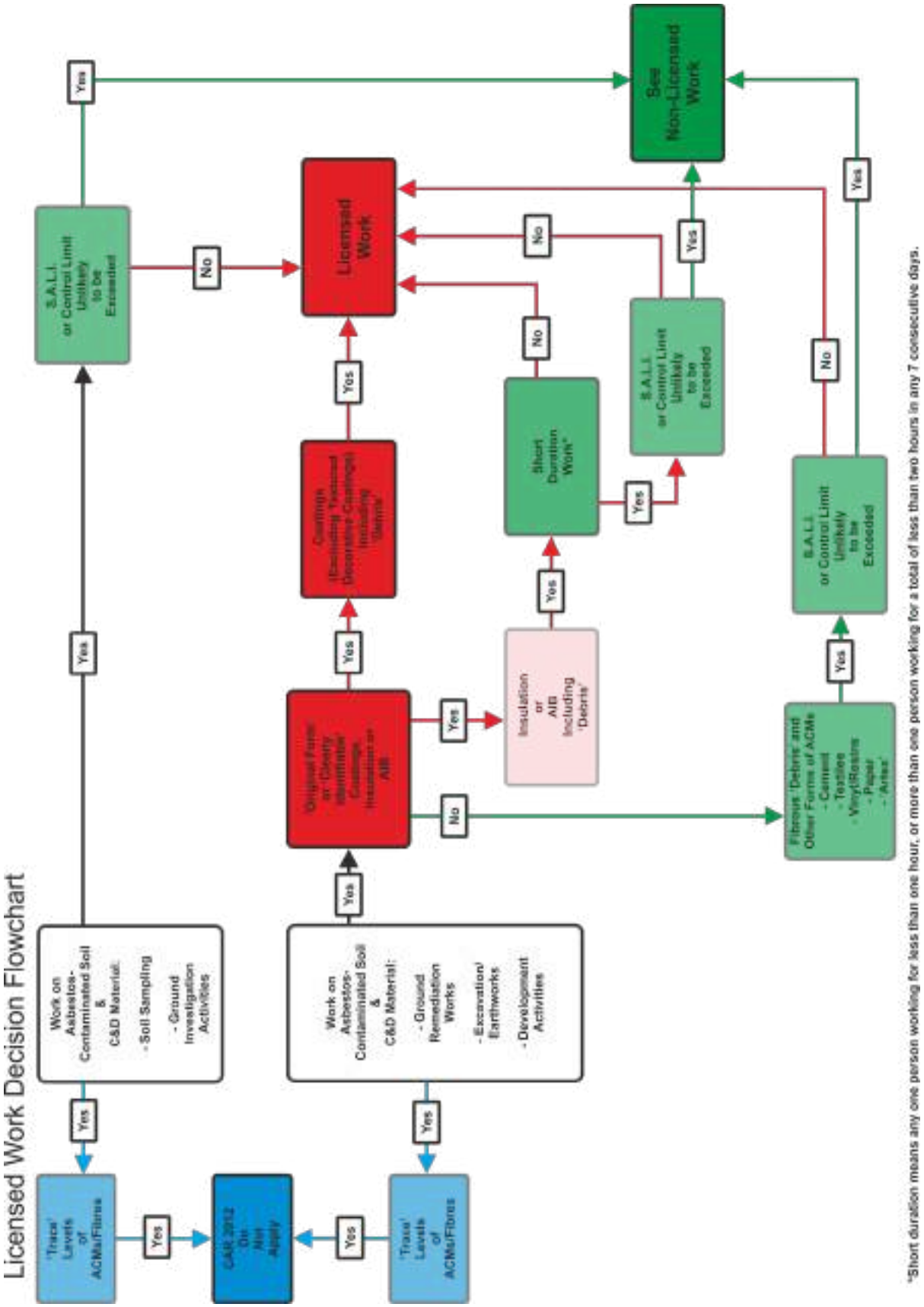
83. However, regulation 3(2) exempts certain types of work with asbestos from the requirements of:

- regulation 9, on notifying work with asbestos;
- regulation 18(1)(a) on designating and segregating areas where work is being carried out; and
- regulation 22, on requirements for medical surveillance and keeping health records (the requirement for medical examinations came into force in April 2015).

84. Whether the exemption applies will be decided by identifying the type of work being done, the nature of the host material in which the asbestos is present, the condition and type of asbestos or ACM involved, and comparing this with the exemption conditions set out in regulation 3(2)(a), (b) and (c).

85. This should be considered as part of the risk assessment which is required before work starts (under regulation 6).

Figure 1. Licensed work decision flowchart



86. The exemption will not apply to:

- licensed work with asbestos; and
- certain types of non-licensed work with asbestos (known as notifiable non-licensed work or NNLW).

87. Licensed work does not meet the exemption conditions set out in regulations 3(2)(a) and 3(2)(b) because, by definition, anticipated exposure to asbestos will not be SALI and/or the risk assessment cannot clearly demonstrate that exposure will be below the control limit. As a result, the requirements of regulation 9, regulation 18(1)(a) and regulation 22 apply to **all** licensed work.

88. See paragraphs 74 to 79 and Table 2 in the guidance on regulation 2(1) for further information on identifying if work is licensed or not.

89. See paragraphs 91 to 96 below for further information on whether non-licensed work meets the requirements of the exemption.

3.2 Deciding if non-licensed work is exempt from regulations 9, 18(1)(a) and 22

90. Although some work with asbestos does not require a license, the work must still be done in compliance with the other requirements of the Regulations; **all** non-licensed work with asbestos must be carried out in accordance with the other relevant requirements contained in the Regulations.

91. In particular, work must be carried out by **trained and competent workers** in accordance with a **Plan of Work** and using appropriate **control measures to prevent exposure** and the spread of asbestos.

92. To decide if the exemption from the requirements in regulations 9, 18(1)(a) and 22 applies, that is to decide if the work is non-licensed work, the employer will need to make an assessment of the work to be done and decide if it meets **both** of the first two conditions below and one of the categories from Condition 3 (taken from regulation 3(2)):

- Condition 1 - the exposure to asbestos of employees is sporadic and of low intensity (SALI); and

- Condition 2 - it is clear from the risk assessment that the exposure to asbestos of any employee will not exceed the control limit; and

- Condition 3 - the work falls into one of the following categories:

  - **Short duration, non-continuous maintenance** activities in which only **non-friable** materials are handled;
  - **removal without deterioration** of **non-degraded materials** in which the asbestos fibres are **firmly linked in a matrix**;
  - **encapsulation or sealing** of ACMs in good condition;
  - **air monitoring** and control, and **collecting and analysing samples** to establish whether a specific material contains asbestos.

93. Paragraph 107 sets out a step-by-step process to assist in deciding whether the work falls under one of the first two of the Condition 3 categories.

94. Non-licensed work should automatically meet both Conditions 1 and 2 in paragraph 92 above (otherwise, it would be licensed work - see paragraph 88). In addition, for the exemption to apply, the non-licensed work should fall into at least one of the categories listed under Condition 3 in paragraph 92.

95. If the work has been identified as non-licensed work by reference to Conditions 1 and 2, but cannot be shown to fall within one of the categories listed under Condition 3, then it does not qualify for an exemption and is NNLW. The employer will need to follow the requirements of regulations 9, 18(1)(a) and 22.

96. This means that, in addition to the other requirements for non-licensed work, the employer will need to:

- **notify** the work with asbestos to the relevant enforcing authority;
- **designate the area** where work with asbestos is being done;
- ensure **medical examinations** are carried out for workers doing NNLW;
- maintain **health records** for employees doing NNLW.

97. Further information on how to notify is provided in paragraphs 224 to 237.

98. Further information on the duties relating to designated areas is provided in ACoP L143.

99. Further information on the duties relating to medical examinations for workers is provided in ACoP L143.

3.3 Non-licensed work – general conditions

100. Apart from clearly identifiable asbestos coatings, insulation and AIB, work on all other asbestos materials including asbestos cement products, textured decorative coatings, textiles, paper, gaskets and many others generally does not require a licence, **but the workers must be trained and competent, and appropriate measures must be used to eliminate asbestos exposure or reduce it to as low as is reasonably practicable**.

101. Short duration work on clearly identifiable insulation and AIB does not require a licence, although there are certain conditions attached to this work. The duration criteria are strictly limited and limiting. For work to be considered to be “short duration” and therefore not licensed work then no one person is permitted to carry out the work for more than one hour (in any seven day period on this type of work). Collectively, the task must not exceed two hours in total, including any preparatory works and clearing up at the end.

3.3.1 Non-licensed work and determination of requirement to notify

102. Whether the work is not notifiable or notifiable (i.e. NNLW) depends on whether it meets the exemption criteria set out in regulation 3(2) of CAR 2012. To be exempt from the requirements to notify etc., the work must meet the following criteria.

103. The work must be either:

- short, non-continuous maintenance activities in which only non-friable materials are handled, or

- removal without deterioration of non-degraded materials in which the asbestos fibres are firmly linked in a matrix.

104. The wording of the exemptions is very important. One type of exemption applies to **maintenance** activities and the other applies to **removal** activities. All non-licensed work (with the exception of sampling and encapsulation of ACMs) will fall into one of these two categories.

105. 'Encapsulation' normally refers to the treatment of damaged ACMs in buildings to reduce the potential for fibre release, for example by painting over, or by the application of proprietary sealants impregnated in cloth. In the context of soil and C&D materials, 'encapsulation' may be taken to mean covering over with a protective layer, again to reduce the potential for fibre release, of soil or e.g. an impervious geotextile membrane.

106. It is important to note that the criteria involved in each category are quite different. The condition of the material (i.e. in poor state or damaged) is only a criterion for **removal** work.

107. In order to determine if the work is NNLW, the following step process should be followed:

Step A

A. Consider first of all whether the work activity is maintenance:

The definition of **maintenance** work on soil and C&D materials might include a range of routine, small-scale common tasks and activities that will involve little actual disturbance of ACMs, including e.g. the repair or installation of underground utilities, borehole drilling, the erection of fencing, landscaping activities (or other similar maintenance tasks).

The maintenance "task" also refers to the overall activity being carried out and not the asbestos work in isolation.

Step B

B. If it is maintenance work, consider next if the work is "short non-continuous": (If it is not maintenance, go to step D):

The term "**short non-continuous**" is not defined in CAR 2012 so there are no specified limits on the maintenance work duration or frequency. Short non-continuous work can include small routine maintenance tasks, or a series of similar small tasks, or work that is carried out as part of a larger maintenance activity (Reference Paragraph 61, L143).

Most maintenance work, therefore, will be "short non-continuous".

Step C

C. Next consider if the material is "non-friable":

The term "**friable**" is not defined. Some "non-friable" materials, however, are listed as follows: asbestos cement, bitumen, resins and rubber (Reference: paragraph 64, L143). In addition, materials which are "firmly linked" in a matrix (i.e. asbestos cement, textured decorative coatings, felts, textiles, gaskets, paper linings, washers and rope (Reference: paragraphs 71-73, L143)) are also considered to be non-friable. AIB is also regarded as non-friable in this instance as it has a certain level of integrity to retain fibres. Note that being non-friable does not mean that the material will **not** release fibres under all circumstances. Non-friable materials may release fibres if damaged or subjected to high intensity processes.

Most non-licensed maintenance work on "non-friable" materials will be non-notifiable. The exception will be any work on soil and C&D materials that contain 'clearly identifiable original form' asbestos coatings and/or insulation, loose fibrous asbestos debris and materials containing free dispersed fibres/fibre bundles.

Step D

D.	**<u>If the work is not maintenance, then it will be "removal". Removal work will generally mean "removal" as part of land remediation work.</u>**

Step E

E.	**<u>First consider if the material is "degraded" at the outset:</u>** **"Degraded"** at the outset means materials which are not generally intact. It applies to the current condition of the material (and not the original state) e.g. fragments of asbestos cement would be regarded as intact units. Also "weathered" asbestos cement is not regarded as degraded as it still retains its basic inherent integrity. If the material is degraded at the outset, then the work will be NNLW. If it is not, go to Step F.

Step F

F.	**<u>Consider next if the method of removal will cause "deterioration":</u>** Work methods where the material is broken up during removal will cause **"deterioration"** e.g. power screening, grading or crushing asbestos-contaminated material. Work methods where the material is essentially removed intact, even using mechanical plant such as excavators, are not considered to cause "deterioration". The over-riding factor to consider is that if the removal method will cause deterioration of the ACMs, then the work will be NNLW. If it is not, go to Step G.

Step G

G.	**<u>Then consider if the material is firmly linked in a matrix:</u>** Materials which are **"firmly linked"** in a matrix are listed in Step C. In addition, "non-friable" materials (listed in Step C.) are also considered to be firmly linked. If the material is firmly linked (which includes non-friable), then the work is non-licensed (i.e. non-notifiable).

3.4 Low intensity work with friable and non-friable ACMs

3.4.1 Low intensity work

108. To meet the requirements of the exemption in regulation 3(2) low intensity work may be considered to be work involving processes that will not cause further deterioration of the asbestos materials and where there is a reduced likelihood of fibres being released by the activity.

109. This will be determined by the nature of the work. A common sense approach to decide whether work can be low intensity work should be taken. For example, this type of work could include mechanical excavation of soils, but would almost certainly not include mechanical crushing and/or screening of C&D materials.

Watch Point 9

As anticipated fibre releases from low intensity work on materials containing ACMs may also be considered to be a function of the type and quantity of ACMs present, this should also be factored in to the assessment of whether or not the exemption in regulation 3(2) will apply.

In particular, due consideration should be made of the nature of the type of asbestos or ACM involved, e.g. will the work involve lots of highly friable ACMs in dry soil, or small amounts of isolated and random fragments of bonded materials in wet ground.

3.5 Removal without deterioration

3.5.1 Non-degraded asbestos material

110. Non-degraded asbestos material means ACMs, including fragments of ACMs, which despite being in or in the ground are in relatively good condition and capable of retaining most of the asbestos fibres.

111. ACMs that have been significantly damaged, such as by crushing or breaking and, especially such ACMs found in C&D materials, will be more likely to release fibres and should be considered to be at risk of being further degraded and therefore would be NNLW (or in extreme cases possibly licensed).

Watch Point 10

For the purposes of the definition of non-degraded and degraded, reference is made to the following degrees of degradation descriptors in the JIWG Work Category Assessment Decision Support Tool:

- Intact (Very good condition ACM/ACM fragments)
- Weathered (Slight degradation in ACM; material still retains its basic integrity)
- Degraded (Significant degradation in ACM; material has lost its basic integrity)
- Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)

3.5.2 Working with ACMs without deterioration

112. Whether soil or C&D material containing fragments of ACMs can be worked on without the ACMs becoming further deteriorated will need to be assessed on a case-by-case basis. If there is a reasonable expectation from the risk assessment before work starts that, given its condition on site, working on or handling the materials containing the ACMs would not cause significant further deterioration of the ACMs, then the work will fall within the exemption in regulation 3(2) and would not be NNLW.

113. It is recognised that there is a certain degree of subjectivity associated with describing potential degrees of deterioration and that this should be carefully considered and assessed on a case-by-case basis based on individual circumstances.

Watch Point 11

For the purposes of the definition of 'without deterioration', reference is made to the following degrees of deterioration descriptors in the JIWG Work Category Assessment Decision Support Tool:

- Sampling, manual or mechanical (no or minimal deterioration expected)
- Sampling, manual or mechanical (significant deterioration expected)
- Low intensity, no or minimal deterioration expected
- Maintenance tasks, no deterioration expected
- Maintenance tasks, significant deterioration expected
- Not low intensity, significant deterioration expected

3.5.3 Asbestos fibres firmly linked in a matrix

114. Where asbestos fibres are firmly linked in a matrix they do not **normally** break down easily and do not tend to release significant levels of fibres. These types of materials will only usually release fibres if work is carried out to damage the matrix, such as breaking asbestos cement sheets.

115. In certain types of ACM, the asbestos fibres will usually be firmly linked in a matrix and will not be released easily. This includes:

- asbestos cement, (unless it is substantially fragmented, crushed, or otherwise significantly damaged);
- textured decorative coatings;
- paints with asbestos, any article of bitumen, plastic, resin or rubber which contains asbestos where its thermal or acoustic properties are incidental to its main purpose such as vinyl floor tiles, electric cables and roofing felt.

116. Work with these materials will generally not be NNLW, provided they are in good condition and the work to be done on them will not result in significant break up or deterioration of the material.

117. There may be other materials which can be classified as firmly linked in a matrix, depending on their condition and make-up such as paper linings, cardboards, felt, textiles, gaskets, washers, and rope where the products have no insulation purposes.

3.5.4 Large, moderate, low and very low quantities

118. If the work involves large or moderate quantities of loose dispersed fibrous asbestos 'debris' and/or asbestos sheeting/board 'debris', it is likely that the work would be NNLW, provided that the Control Limit/STEL will not be exceeded. This would apply to debris comprising material of uncertain/original use that may not be positively described as being asbestos coating, insulation or AIB.

119. If the work involves low or very low quantities of loose dispersed fibrous asbestos 'debris' and/or asbestos sheeting/board 'debris', it is likely that the work would be Non-Licensed. This would apply to debris comprising material of uncertain /original use that may not be positively described as being asbestos coating, insulation or AIB, as well as asbestos cement.

Watch Point 12

For the purposes of definition of quantities, reference is made to the following mass concentration descriptors in the Work Category Assessment Decision Support Tool:

- Large - ≥ 0.1% wt/wt
- Moderate - ≥0.05% wt/wt to <0.1% wt/wt
- Low - ≥0.01% wt/wt to <0.05% wt/wt
- Very Low - 0.001% wt/wt to <0.01% wt/wt

These mass concentrations relate to the amount of asbestos fibre estimated to be present in selected ACM/fibre type as a mass percentage of the host matrix material, detected in samples submitted for quantification analysis.

120. Note that it is imperative to consider the extent of contamination found to be present in individual samples in the context of that which may be found to be present and distributed over the wider site in assessing the overall degree of contamination present.

Watch Point 13

For the purposes of the assessment of the degree of distribution of asbestos contamination over the wider site, reference is made to the following descriptors in the JIWG Work Category Assessment Decision Support Tool:

- No visible contamination by ACMs
- Occasional/random occurrences of visible contamination by ACMs
- Sporadic/random occurrences of visible contamination by ACMs
- Moderate levels of visible contamination by ACMs
- Moderate/frequent occurrences of visible contamination by ACMs
- Gross/very frequent occurrences of visible contamination by ACMs

3.5.5 Friable and non-friable materials

121. ACMs found in buildings vary in how easily they are broken up and how readily they release asbestos fibres into the air. Generally speaking, the more friable a material is, the more likely it will release fibres when worked on or disturbed and the greater the risk of exposure.

122. In soil, most, if not all friable ACMs may be shown to have a significantly reduced tendency to release asbestos fibres as they are generally wetted and are less friable due to being coated with soil. This might be expected with friable ACMs such as asbestos coatings or insulation and, to a degree, AIB. Although broken up, wetted AIB fragments in the soil may also be considered to be significantly less friable than AIB in its original state.

123. In processed, loose granular C&D materials, this may not be the case. Fragments of otherwise friable ACMs which in soil might show a significantly reduced tendency to release asbestos fibres, may give rise to significantly greater fibre releases as such material is generally drier and largely comprises very coarse grained materials that may readily abrade ACMs.

124. Other ACMs have an ability to retain most fibres and are non-friable (or less easily crumbled), for example if they are bound into a bonding material or matrix such as cement, bitumen, resins, rubber, etc. Such ACMs are likely to remain non-friable in soil and C&D materials.

3.5.6 Encapsulation or covering ACMs in good condition

125. Work which involves the temporary encapsulation or covering of ACMs that are in relatively good condition encountered on the surface of a site, or in the ground, e.g. to temporarily contain the materials and minimise the potential spread of asbestos, where the activity will not cause deterioration in the condition of the materials and the work will not lead to substantial fibre release, is likely to meet the conditions of the exemption in regulation 3(2) and not be NNLW.

3.5.7 Air monitoring and control and collection of samples

126. Work involving the collection and analysis of samples to determine the presence of asbestos in soil and C&D materials meets the conditions of the exemption in regulation 3(2) and will not be NNLW.

127. The same is true for activities involving air monitoring to determine the presence of asbestos, even when work that is being carried out on soil or C&D materials contaminated by asbestos is licensed work. These activities, however should be carried out in such a way that disturbance to ACMs is minimal.

3.6 Decision Flowchart for Non-licensed work and NNLW

128. Figure 2 presents a decision flowchart to assist in determining when work on soil or C&D materials contaminated by asbestos is likely to be non-licensed work or notifiable work (NNLW).

129. The steps outlined in Figure 2 offer means by which work on non-licensed materials contaminated with 'low' levels of degraded ACMs, and/or material that comprises disaggregated asbestos fibres, which are degraded at the outset of works may be classed as 'non-notifiable (NLW). This is of course subject to the overriding test that the work will be SALI and the control limit will not be exceeded.

130. To support the flowchart, the JIWG Work Category Assessment Decision Support Tool described in Watch Point 8 may be used to make structured decisions on whether work with asbestos-contaminated soil and C&D materials is NLW or NNLW.

3.7 Examples of non-licensed work and NNLW

131. It is not possible to provide definitive lists of non-licensed work and NNLW in relation to soil and C&D materials, as this will depend on the circumstances of the individual work activity.

132. Tables 3 and 4, however, provide some examples of the typical kinds of work that will and will not normally be considered to be NNLW. These tables are not intended to be exhaustive and an assessment of the exposure risks will be needed in cases of doubt.

133. Note that where a number of individual activities are being carried out on asbestos or ACMs as part of a larger work activity (e.g. the redevelopment of a large site), all asbestos work activities should be considered collectively rather than individually when deciding if they are NNLW or not.

134. To decide if work which is not listed in Tables 3 and 4 is NNLW or not, an assessment will be needed using the criteria set out in regulation 3(2), and the JIWG Work Category Assessment Decision Support Tool may be of assistance with this process.

Figure 2. Non-licensed work decision flowchart

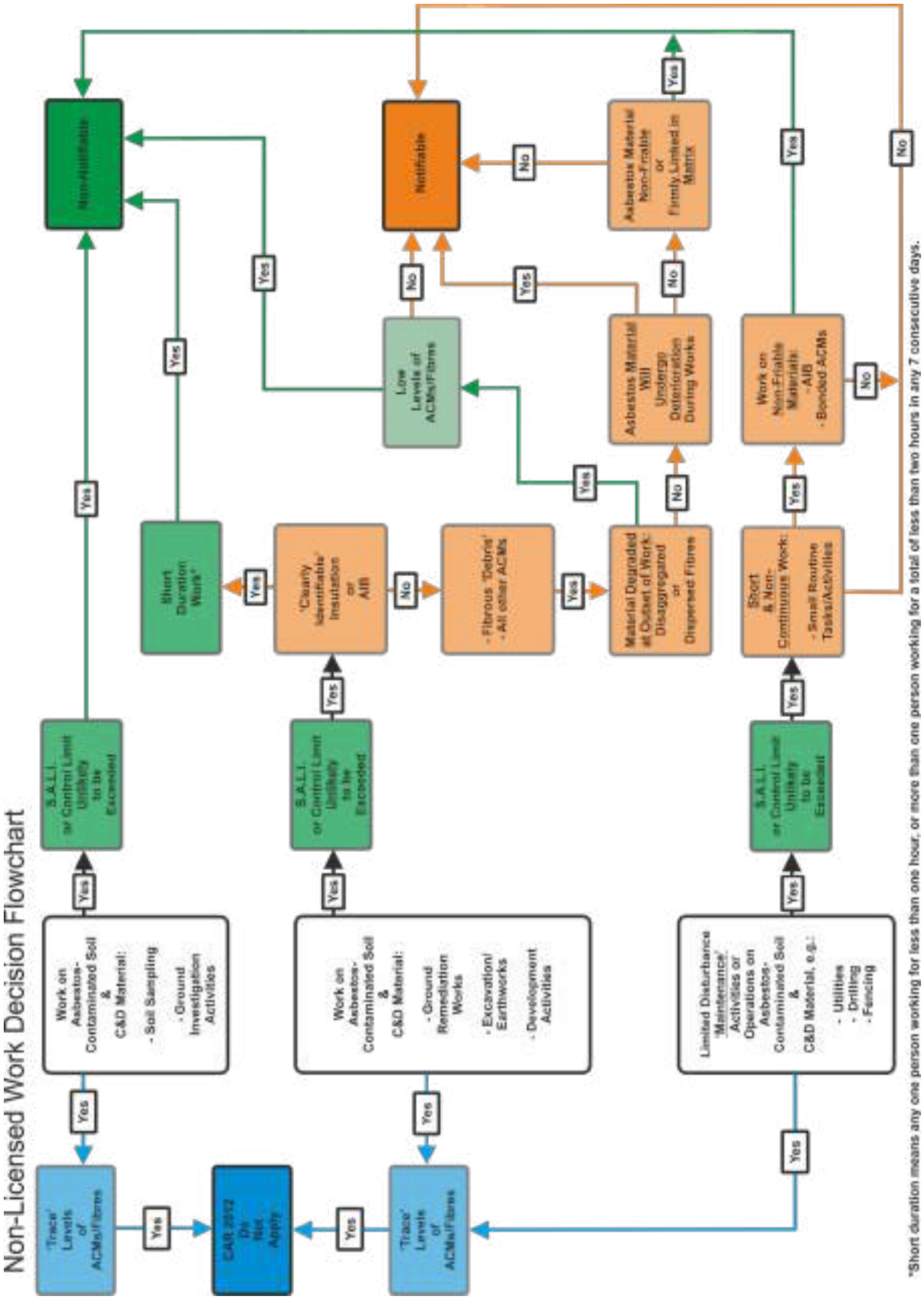


Table 3. Examples of non-licensed work that will not normally be NNLW

The following work activities will not normally be NNLW:
• Work associated with ground investigations and/or surveys for the on-site collection and inspection of samples for the purpose of analysis for the presence of asbestos, including mechanical excavation of trial pits, trenches, boreholes etc., where the risk assessment **can** demonstrate that the exposures anticipated during the work will be SALI and the control limit **will not** be exceeded. • Small-scale routine maintenance tasks and activities carried out on/in material contaminated with non-friable and/or bonded ACMs, including AIB, where the work is considered short and non-continuous. Non-friable/bonded ACMs include: o paper, felt and cardboard o ropes, yarns, string and textiles o gaskets and washers o resin-based materials o cement-bonded products o textured coatings o bitumen-based products o thermoplastic and vinyl-based products Small-scale routine maintenance tasks and activities might include, e.g.: o working on or installing underground utilities o installation of fencing o ground drilling, manual excavations and/or working on the ground • All work on soil and C&D materials contaminated with any asbestos materials, **other than 'clearly identifiable' 'original form' asbestos coating products**, where the work is considered to be '**removal**', i.e. remediation activities to remove asbestos, where the risk assessment **can** demonstrate that the exposures anticipated during the work will be SALI **and** the control limit will not be exceeded, including work on material containing 'clearly identifiable' 'original form' asbestos insulation or AIB which **does** meet the short duration working criteria of <2 hours total or no one person >1 hour in 7 consecutive days. Applicable materials include the following, which should not consist of disaggregated or dispersed fibres or be significantly degraded at the outset of the work, unless the amount of ACMs and/or disaggregated/dispersed fibres present and being removed is considered 'low' and the material will not undergo deterioration during works: o AIB (subject to the short duration criteria) o fibrous debris (subject to the 'low' amounts threshold) o paper, felt and cardboard o ropes, yarns, string and textiles o gaskets and washers o resin-based materials o cement-bonded products o textured decorative coatings, e.g. 'Artex' (excludes asbestos coatings applied for non-decorative purposes) o bitumen-based products o thermoplastic and vinyl-based products • Temporary remediation of soil and C&D materials contaminated by the above ACMs which are in good condition by encapsulation involving covering and/or burial.

Table 4. Examples of non-licensed work that will normally be NNLW

The following work activities will normally be NNLW:
• Larger-scale routine maintenance tasks and activities carried out on/in material contaminated with non-friable and/or bonded ACMs, including AIB, where the work is **not** considered short and non-continuous. Non-friable/bonded ACMs include: o Asbestos insulating board (AIB) (if not licensed work) o paper, felt and cardboard o ropes, yarns, string and textiles o gaskets and washers o resin-based materials o cement-bonded products o textured decorative coatings, e.g. 'Artex' (excludes asbestos coatings applied for non-decorative purposes) o bitumen-based products o thermoplastic and vinyl-based products
• All work on soil and C&D materials contaminated with '**clearly identifiable' 'original form' asbestos insulation and AIB** where the work is considered to be '**removal**'. i.e. remediation activities to remove asbestos, where the risk assessment **can** demonstrate that the exposures anticipated during the work will be SALI **and** the control limit will not be exceeded, for which the work **does** meet the short duration working criteria of <2 hours total or no one person >1 hour in 7 consecutive days.
• All work on soil and C&D materials contaminated with fibrous asbestos 'debris' above 'low' levels', or other ACMs, where the work is considered to be 'removal', i.e. remediation activities to remove asbestos, where the risk assessment **can** demonstrate that the exposures anticipated during the work will be SALI and the control limit will not be exceeded, including work on materials which are contaminated largely by disaggregated/dispersed fibres or materials that are significantly degraded at the outset of the work, and/or those materials are considered likely to undergo deterioration during works. Applicable materials include the following: o fibrous debris o paper, felt and cardboard o ropes, yarns, string and textiles o gaskets and washers o resin-based materials o cement-bonded products o textured coatings o bitumen-based products o thermoplastic and vinyl-based products

3.8 Employers' duties to others

135. Employers must take into account people other than their own employees in the risk assessment required by regulation 6 and in the action taken to prevent or control exposure required by regulation 11.

136. Whenever two or more employers work with asbestos in soil or C&D materials or are likely to come into contact with asbestos in such materials at the same time at the same workplace they should co-operate to meet their separate responsibilities towards their own and each other's employees as well as other people who may be affected by the work, including; other people occupying or using the premises, or adjacent premises; members of the public and other visitors, etc.

Watch Point 14

Co-operation between contractors on site is essential to ensure that legal duties and responsibilities are met.

This is highlighted by the need for all employers, including developers, main contractors, sub-contractors and LARCs, all of whom will have individual and collective responsibilities for health and safety during works on a site, which may be varied and complex, with asbestos works potentially forming only a small part of the works overall, to interact and co-operate.

137. Employers should also consult relevant safety representatives and employee representatives.

Table 5. Summary of employers' (and self-employed people's) duties under the Control of Asbestos Regulations 2012 in respect of employees and others

Duty of employer relating to:		**Duty for the protection of:**	
	Employees	**Other people on the premises**	**Other people likely to be affected by the work**
Regulations 5-9, 11, 13-15, 17-19 and 23	Yes	So far as is reasonably practicable	So far as is reasonably practicable
Regulation 10 – provision of information, instruction and training	Yes	So far as is reasonably practicable	No
Regulation 22 – health records and medical surveillance	Yes	No	No

138. As set out in Table 5, some employers' duties to other people, not employed by them, extend so far as is reasonable practicable. This will generally focus on ensuring that those who may be affected by work on asbestos are:

- prevented from entering contaminated areas;
- not exposed to asbestos as a result of the work being done;
- provided with enough information to avoid risks from the work area.

139. In particular, the risk assessment (regulation 6) and Plan of Work (regulation 7) and the control measures used should take account of people not directly employed by the employer but who could be affected by work being done on asbestos-contaminated soil and C&D materials. This includes contractors and other employees working on the premises for other employers; other people occupying or using the premises, or adjacent premises; members of the public and other visitors, etc.

3.9 Duties under other Regulations

140. There are other people associated with the work covered by this Guidance who may not have direct duties under the Regulations but may well have duties under other legislation.

141. This may include geoenvironmental consultants, asbestos surveyors, asbestos analysts, Principal Designers, clients, and principal contractors as defined by the Construction (Design and Management) Regulations 2015 (CDM)[13].

142. People carrying out ground investigations, asbestos surveys or air monitoring (e.g. analysts) will also have general duties under sections 3, 7, 8, 36 or 37 of the Health and Safety at Work etc. Act 1974[14].

4. Regulation 4: Duty to manage asbestos in non-domestic premises

This regulation covers the duty to manage asbestos in non-domestic premises. It requires dutyholders to identify the location and condition of asbestos in non-domestic premises and to manage the risk to prevent harm to anyone who works on the building or to building occupants. It also explains what is required of people who have a duty to co-operate with the main dutyholder to enable them to comply with the regulation. Non-domestic premises include the common parts of domestic premises.

143. The reader is referred to the ACoP L143 for detailed guidance on the application of this regulation to buildings and, in certain respects, what should be done insofar as the duty to manage applies to land.

4.1 Definition of non-domestic premises

144. The definition of premises in the Health and Safety at Work Act is taken to include “any place”. This is taken for practical reasons to include any building, **together with any land within the curtilage**, including any outbuildings, occupied by a business or public undertaking.

145. Furthermore, HSE document INDG244[15], Workplace health, safety, and welfare: A short guide for managers, states that “‘**Premises’ - means any place including an outdoor place**.”

4.2 Application to asbestos in buildings

146. This regulation covers the duty to manage asbestos in non-domestic premises. It requires, amongst other things, 'dutyholders' to identify the location and condition of asbestos in non-domestic premises (by means of a building survey) and to manage the risk to prevent harm to anyone who works on the building or to building occupants.

147. Generally-speaking, sampling and analysis of soils and/or C&D materials for asbestos should normally only be undertaken where, before any ground disturbance work, e.g. during the planned redevelopment of a site, there is a reasonable expectation that asbestos could be present and could present a risk to workers. If a site owner has information relating to the presence of asbestos on or under the land this should be passed on to contractors who may disturb it.

148. Asbestos-containing products and materials were systematically used in the construction of buildings prior to the year 2000. Consequently, its presence is more than a possibility in structures erected prior to that year.

149. The previous use of a site or land as industrial premises, or with a building constructed prior to the year 2000, does not automatically mean that asbestos will be present in, on or under the land or that it should trigger an asbestos risk assessment as required by regulation 5 of CAR 2012.

150. Consequently, a site investigation for asbestos is only usually required where there is a reasonable expectation that asbestos could be present from past industrial use (i.e. brownfield sites) or where there is specific evidence that demolition waste containing asbestos has been tipped or brought onto the site.

151. It is anticipated that the forthcoming revision of HSG248[8] will advise that surveys to identify the presence of asbestos in soils and made ground are only required where there is a reasonable expectation that asbestos could be present and could present a risk to workers (i.e. only where there is existing knowledge to suggest that asbestos may be present in areas to be developed or redeveloped).

152. Should any such investigations determine that asbestos is present the risks to workers should be controlled in accordance with the provisions of the Regulations relating to work with asbestos.

4.3 Triggering the duty to manage asbestos in, on or under the land

Watch Point 15

At the time of writing it is understood that the EU Commission will be undertaking a review of occupational health Directives, including the one covering work with asbestos.

It is intended that the consequence of any changes, and the impact they may have on management of asbestos in, on or under the land, will be addressed in a subsequent revision to this guidance document.

5. Regulation 5: Identification of the presence of asbestos

This regulation requires employers to identify the presence of asbestos and its type and condition before any building, maintenance, demolition or other work, liable to disturb asbestos, begins. It also sets out the requirement to arrange a survey, if existing information on the presence of asbestos in the premises is incomplete or appears unreliable.

5.1 Preliminary risk assessment

153. Before carrying out any work on land involving the potential disturbance of asbestos in soil or C&D material, an employer should first undertake a preliminary assessment of relevant information to find out if the area of land likely to be disturbed by that work is likely to contain asbestos and, if so, the location, distribution, type and condition of the asbestos. This should also include any buildings on site which are to be demolished as part of the work activity that will take place on the site.

154. Such an assessment is likely to be required in any event as part of wider-scope investigations into ground conditions and the potential presence of a wide range of contaminants in, on or under the land, as is routinely required by Local Authorities as part of the planning and development process.

155. This should include a review and assessment of relevant information such as that normally consulted in the assessment of potentially contaminated land. This could also include information contained in construction plans of buildings erected on the land, or information provided by dutyholders responsible for the maintenance and repair of premises under regulation 4 of these Regulations (e.g. asbestos surveys or registers).

156. If such an assessment suggests that asbestos is, on balance, likely to be present in, on or under the land, the employer will need to arrange an investigation and analysis of representative samples of the land to determine the presence, distribution, type and condition of asbestos.

157. For old, derelict and abandoned sites, or sites with no obvious development history, however, such information may not be readily available. Where the buildings have been demolished, this information may be available in the form of pre-demolition asbestos survey reports which may have been lodged with a Local Planning Authority as part of the planning and development process.

158. Information on the potential presence of asbestos, and indeed other potential contaminants, in, on or under the land may be gleaned from a variety of alternative sources. In the context of the investigation and assessment of potentially contaminated land, a preliminary geoenvironmental review, or desk study, routinely examines as much existing information about a site from a wide variety of sources. The objective of the desk study is to make an initial assessment of the likely ground conditions on the site and to review its past history and current use.

159. This desk study information is then used to create an initial conceptual ground model (CGM - geotechnical) or a conceptual site model (CSM) for potentially contaminated sites.

160. Typically, the following information would normally be expected to be collated, reviewed and assessed as a means of informing the development of an initial CSM with respect to potentially contaminative uses of the land and or possible contaminants that might be expected to be present on or in the land:

- Previous site/ground contamination investigation reports.
- Drawings and information about past and current uses.
- Layout of underground site services.
- Previous development history of the site, by reference to historical maps and aerial photographs, local historical records, environmental reports and anecdotal information.
- Mineral extraction and landfilling records.

161. Due to the complexities involved, a desk study should be undertaken and evaluated by someone competent to do the work (e.g. suitably experienced geoenvironmental specialists). The desk study should in normal circumstances be followed by a site walk-over survey of the site and its immediate surroundings. This would normally be expected to be a reasonably comprehensive and methodical examination of the site's surface. Amongst other things, site walk-over surveys should normally be able to identify areas disturbed ground, areas of fill and spoil heaps, as well as structures where the use of asbestos may be confirmed.

162. When conducted by suitably trained and experienced personnel, site walk-over surveys may also reveal the presence of suspected ACMs on the surface of a site.

163. Desk studies and site walk-over surveys are normally followed by a targeted investigation to investigate the ground contamination conditions at depth across the site. Such investigations, which may be iterative, may extend in scope to a large range of potential contaminants, asbestos being just one of these.

5.2 Asbestos investigations

164. If the desk study and site walk-over survey reveal the suspected presence of asbestos at the surface, and/or a likelihood that it may be present at depth, then consideration should be given to undertaking a specific ground investigation to address asbestos risks alone as this approach is likely to increase the success of the investigation.

Watch Point 16

Due to the complexities involved, ground investigations for asbestos contamination which may be present in, on or under the land, as may be required as part of the planning and development process, should be designed, undertaken and evaluated by suitably competent specialists, or teams of specialists, with an appropriate combination of geoenvironmental **and** asbestos qualifications, skills and experience.

Employers will need to assess the accuracy of information provided to them as a result of desk studies, site walk-over surveys and ground investigations and also their relevance to the location and type of work to be undertaken on the land; assessments must be capable of being deemed "***suitable and sufficient***".

165. For construction projects within scope of the CDM Regulations 2015, clients have to provide pre-construction information to designers and contractors. This will include information held by the client (e.g. in an existing health and safety file), or reasonably obtained, on the presence of asbestos and its distribution, type and condition.

166. It is important that employers coming onto site after construction work has started co-operate with others engaged on that project over any existing construction phase plan.

6 Regulation 6: Assessment of work which exposes employees to asbestos

This regulation requires employers to carry out a risk assessment to identify the risks of exposure to asbestos. It sets out the requirement to record any significant findings and put in place steps to prevent, or reduce, exposure to employees.

6.1 General requirements for risk assessments

167. Regulation 6 should be read with regulation 11(1), which places a duty on employers to entirely **prevent** the exposure of their employees to asbestos, ***so far as is reasonably practicable***, and this should be the first consideration.

168. If this is not possible, the exposure must be **reduced** to the **lowest level reasonably practicable**. The risk assessment must identify how to achieve this and if there are any other risks in complying with this duty.

169. It is important that the risk assessment considers general (i.e. non-asbestos-related) risks too, as required by regulation 3 of the Management of Health and Safety at Work Regulations 1999[16].

170. If work liable to expose employees, and others affected by the work, to asbestos is unavoidable, then, before starting work, employers must make a suitable and sufficient assessment of the risks created by the likely exposure. Employers must then identify the steps required to comply with the Regulations.

171. Whoever carries out the risk assessment must:

- carry it out in time to comply with the Regulations and enable appropriate precautions to be taken before work begins;
- make sure the assessment is job-specific and considers the full scope of the work;
- establish the extent of potential risks and who could be affected;
- identify the steps taken to remove the risk or, if that is not possible, to reduce the risk;
- record significant findings in writing (electronic or paper);
- communicate significant findings to employees and anyone else who could be affected in an understandable way, as appropriate, to minimise risks to them or to take appropriate precautions to reduce/remove the risk before work begins;
- review the assessment regularly and update it as required.

172. Note that 'work' is taken to include, amongst other things, investigating soil and/or C&D materials for the presence of asbestos, prior to construction works being undertaken on the land. Such investigations may occur, therefore, prior to all the circumstances regarding the location, distribution, type and condition of the asbestos being known. In these cases, the risk assessment may have to make certain critical assumptions regarding the potential risks involved to employees and others.

173. The assessment of potential risks prior to undertaking a preliminary site survey may, for example, be inferred from desk study data. The assessment may well need to be updated on site depending on what is encountered. Likewise, once laboratory analytical results are obtained, this may cause the assessment to be modified.

174. Crucially, the risk assessment must also be capable of being responsive and adapted in the light of changing circumstances as more information comes to light as a result of such investigations being performed, or if unexpected ACMs are discovered after work starts.

175. Subsequent to the investigations and assessment, further risk assessments will be required prior to any ground works taking place, e.g. land remediation, or indeed prior to any construction work commencing on development land affected by asbestos contamination.

Watch Point 17

The JIWG has developed a user-friendly practical Excel spreadsheet-based three-part risk assessment Decision Support Tool that facilitates the qualitative risk ranking of work activities and receptors involved in or exposed to asbestos in soil or C&D materials.

This Decision Support Tool allows the input of real or assumed data on hazard and exposure factors at Stages 1 and 2, as well as pathway and receptor sensitivity factors at Stage 3. The tool outputs decisions on anticipated risks to sensitive human receptors, both on and off site during work with asbestos-contaminated soil and C&D materials.

This risk assessment algorithm tool is available to download from the CL:AIRE JIWG asbestos in soil website**,** www.claire.co.uk/asbestos

6.2 Involving employees

176. Employers have duties under the Safety Representatives and Safety Committees Regulations 1977[6] and the Health and Safety (Consultation with Employees) Regulations 1996[6] (as amended) to consult their employees.

177. It can be helpful for employers to involve employees during the risk assessment, to help determine the real nature and degree of their exposure. Appropriate consultation can also make a significant contribution to creating and maintaining a safe and healthy working environment and an effective health and safety culture.

6.3 Competency to carry out a risk assessment

178. Employers should make sure that whoever carries out the risk assessment and provides advice on the prevention and control of exposure is competent to do this. Whoever carries out the risk assessment should:

- have adequate knowledge, training and expertise in understanding the risks from asbestos **in the ground** and be able to make informed and appropriate decisions about the risks and precautions needed;
- know how the work activity may disturb asbestos;
- be familiar with and understand the requirements of the Regulations;
- have the ability and authority to collate all the necessary and relevant information;
- be able to assess other non-asbestos risks on site; and
- be able to estimate the expected level of exposure to decide whether or not the control limit is likely to be exceeded.

179. The JIWG Decision Support Tool for Receptor Risk Ranking spreadsheet may assist competent persons with this process.

6.4 Suitable and sufficient risk assessment

180. To be suitable and sufficient, the risk assessment should include:

- for non-licensed work, a statement of why the work meets the criteria for non-licensed rather than licensed work, and whether it is NNLW;
- a description of the work being carried out and the expected scale and duration;
- a description of the type(s) of asbestos and results of any survey, investigation or analysis or a statement that the assumption is that the asbestos is not chrysotile alone;
- a description of the nature of the asbestos and its distribution, type and condition.

181. Details of expected exposures should be recorded and include:

- data on the concentration of asbestos fibres likely to be present, including the source for this information;
- whether they are liable to exceed the control limit and the number of people likely to be affected;
- the level of expected exposure, so that suitable personal protective equipment (PPE) and respiratory protective equipment (RPE) can be selected;
- whether anyone other than employees may be exposed, and their expected exposures;
- whether intermittent higher exposures may arise and their expected frequency and duration;
- any results already available from air monitoring carried out in similar circumstances and/or during similar types of work activity.

182. The steps to take to control exposure to the lowest level reasonably practicable should also be recorded, e.g.:

- the type of controlled wetting and method of application;
- the use of low intensity work methods;
- using local exhaust ventilation (LEV).

183. The risk assessment should also include:

- the steps taken to control asbestos releases into the environment, e.g. the use of controlled demarcation zones, or external reinforced enclosures with negative pressure; together with entry and exit procedures (if special circumstances require this);
- where it is not considered practicable to use enclosures, which may be in the majority of cases on open land, the risk assessment should set out in detail why this is justified, as well as provide clear advice on what action to take if there is an accidental release;
- details of the personal decontamination procedures for personnel, including using personal hygiene units where appropriate;
- details of the procedures for transferring and removing waste from site, including contaminated tools and equipment;
- details of the decontamination procedures for any plant and vehicles involved in the works and which are at risk of becoming contaminated by asbestos;
- procedures for the selection, provision, use and decontamination or disposal of PPE/RPE;
- procedures for dealing with emergencies;
- any other information relevant to safe working practices, such as other significant non-asbestos hazards like working around heavy plant, machinery and vehicles or working in excavations;
- measures to keep the other (non-asbestos) workers and the general public away from the asbestos work area(s);
- management arrangements for ensuring that risks are adequately controlled during work.

184. The findings of the risk assessment as detailed above are all deemed to be significant and must be recorded, as required by regulation 6(1)(b), and available on site at all times.

6.5 Identifying the type of ACM

185. In the context of soil and/or C&D materials contaminated with asbestos, knowing the type of ACM or ACM debris (e.g. asbestos coating, asbestos insulation, AIB, asbestos cement, asbestos textiles, etc.) and the work method proposed is necessary to;

- determine whether the work is licensed (or NNLW);
- estimate the potential fibre release for assessment purposes; and
- select the most appropriate handling and work techniques, or combinations of techniques.

186. Wherever feasible, efforts should be made to distinguish between asbestos cement and AIB. This may be possible during laboratory analysis, but maybe not. Likewise, if it is possible to distinguish between asbestos coatings and asbestos insulation, this should be done. In practice, however, it may be very difficult to identify what the asbestos containing materials are. In such circumstances, the material may be described as fibrous asbestos sheeting/board debris or loose fibrous asbestos debris respectively.

187. In addition to the identification of the type of ACM, importance should be placed on the identification of the type of asbestos fibre (amphibole/chrysotile) present in the ACM or ACM debris and/or soil or C&D matrix material and the assessment of the likelihood of inhalable fibres being released.

6.6 Identifying the type and condition of material in which ACM is found

188. In the context of soil and/or C&D materials contaminated with asbestos, knowing the type of material in which the ACM is found (e.g. wetted, fine and cohesive 'soil', dry, granular and loose processed C&D material etc.) will also have a bearing on the above.

189. It is essential that the host material is adequately characterised in order that the potential risks from disturbance of the material can be assessed.

190. Fibre release from ACM entrained in wetted, fine and cohesive 'soil' is likely to be much less than from similar ACM in dry, granular and loose processed C&D material.

6.7 Additional risk assessment requirements for licensed work

191. ACoP L143 sets out in detail the requirements for risk assessments for licensed work with asbestos. Specific comment is made here for the benefit of interested stakeholders, who may include licensed contractors, as well as those who may commission them.

192. For the risk assessment for licensed work on soil and C&D materials to be suitable and sufficient it should, in addition to those elements outlined in paragraph 180 to 183, record the reasons for the chosen work method and the arrangements required to ensure that the areas where work on asbestos-contaminated soil and/or C&D material has taken place are left in a condition that does not pose a direct and immediate risk to human health arising from airborne fibre release.

193. This will apply at the end of each daily working shift as much as at the end of the works.

194. These points are significant and must be recorded as required by regulation 6(1)(b) and available on site at all times.

6.7.1 Work in elevated temperatures and hot conditions

195. ACoP L143 sets out in detail the requirements for work in elevated temperatures and hot conditions. Specific comment is made here for the benefit of interested stakeholders, who may include licensed contractors, as well as those who may commission them.

196. Work with asbestos in hot and humid conditions should be avoided as far as possible as it creates significant additional risks for asbestos workers working in enclosures and/or wearing PPE/RPE. Even outdoors, such work may require additional precautions, as identified in the risk assessment, which may be needed in order to prevent heat stress and other risks. Such precautions might include:

- restricting when heavy manual work is to be carried out to times with cooler ambient temperatures;
- reducing work periods;
- having measures in place to prevent dehydration when operators have left the work area, e.g. providing cool drinks free of charge in the rest facility;
- monitoring of the temperature/humidity to ensure that precautions are effective.

197. Asbestos removal and work in elevated temperatures are a difficult combination to manage and control effectively. Working in high temperatures can also lead to deterioration in asbestos controls. In particular, the various precautions needed to protect workers from exposure to asbestos dust and prevent its spread can cause a greatly increased temperature/thermal health risk.

198. Where elevated temperatures are caused by environmental conditions only (e.g. direct sunlight), the risk assessment should identify the measures that can be taken to reduce or eliminate the thermal risk. For example, scheduling the work to take place at other, cooler times, putting in place arrangements to shade the work area from sunlight; and/or additional air-cooling provisions.

199. The conditions should be monitored and where elevated temperatures occur while work is being done because of sudden changes in the weather (e.g. hot/sunny periods), or planned precautions are not effective, then the risk assessment should be reviewed and appropriate actions taken to control the risk.

200. Further information is available in the Licensed Contractors' Guide, HSG247[17].

201. It should also be noted that during very hot conditions, especially with a drying wind, wetted soil and C&D materials containing asbestos may dry out very quickly, potentially increasing the risk of exposure. This should be factored in to the risk assessment.

6.7.2 Reviewing assessments

202. Employers should review risk assessments as part of the ongoing management of their health and safety systems to make sure they are still relevant and reflect any lessons learned from what has gone well and what has not. A competent person should conduct the review. A specific review should take place if:

- methods used to control fibre release change;
- there is doubt about the efficiency of control measures;
- there is a significant change in the type of work, amount of asbestos or method of work;
- the results of air monitoring indicate the exposure levels to be higher than previously assessed.

203. Where monitoring of exposure levels, or other information gathered during the course of work indicates that the initial assessment was wrong about either the duration of the task or nature of the materials:

- immediately review the assessment and control measures and whether the nature and extent of the exposure means that the work should be done using different methods and equipment;
- review whether the work needs to be done by a licensed contractor;
- record any changes made to the risk assessment (the revised assessment must be available on site at all times).

7 Regulation 7: Plans of work

This regulation requires employers to prepare a written plan before work on asbestos is carried out, including details of the work, and the appropriate actions to control risk and prevent harm.

204. For any work involving soil and C&D materials contaminated by asbestos, including maintenance and survey or investigation work that may disturb it, the employer must draw up a written plan of how the work is to be carried out before it starts.

205. Where unacceptable risks to health and/or safety are discovered while work is in progress, e.g. disturbing hidden, missed or incorrectly identified asbestos, the employer should stop any work affecting the asbestos, except to put suitable controls in place and prevent further spread.

206. Where circumstances arise that have not been addressed in the Plan of Work, e.g. when the work being carried out is NLW or NNLW and licensed materials are encountered, work should not restart until a new Plan of Work is drawn up or until the existing plan is amended. This may mean that the work may have to continue to be carried out by a different (licensed) contractor, if a LARC has not already been engaged to undertake the work.

7.1 Contents

207. The Plan of Work must include the following information:

- the nature and probable duration of the work;
- the number of people involved in the work;
- the address and location where the work is to be carried out;
- the methods to be used to prevent or reduce exposure to asbestos, e.g. prevention and control measures and arrangements for the handling and disposal of asbestos waste;
- the type of equipment, including PPE and RPE, used for:
  - protecting and decontaminating those carrying out the work;
  - protecting other people present at or near the worksite.

208. It should also include the site layout with a description of the location and nature of the asbestos and ACMs.

209. Arrangements should be made to ensure that work is carried out in accordance with the Plan of Work, and any subsequent changes made to it.

210. The plan must clearly describe how disturbance and spread of asbestos will be minimised or prevented.

211. A suitable and sufficient plan must be in a style and format that is easy for employees to use. Diagrams, flow charts, photographs and similar are very useful. The information about work methods, controls and containment needs to be specified, so that it can act as a quick reference guide for those on site.

212. Generic information about frequently used company procedures will not need to be in the site-specific plan. Such information may form part of general procedures or health and safety policy documents and should be available on site for reference.

213. The Plan of Work should be suitable for the scale and type of work to be carried out.

7.2 Licensed work

214. Suitable and sufficient plans of work are a licence condition for any licensed work with asbestos and a legal requirement.

215. It is a condition of the licence for licensed contractors to notify the appropriate enforcing authority at least 14 days before each job. Those responsible for overall management of work on a site should take this into account as part of their overall planning.

7.3 Purpose of the Plan of Work

216. The suitable and sufficient Plan of Work will be a practical and useful document, describing safe working methods in a practical way for employees to follow.

7.4 Who creates the plan?

217. The plan should be drawn up by a suitably competent person, following a site visit and a full appraisal of the site conditions and the asbestos and ancillary works required. Thorough discussions should be held with others, including stakeholders such as the site owner, the client and their professional advisers and the developer/main contractor.

218. Where an asbestos contamination investigation is being carried out in order to fulfil a planning condition, or e.g. asbestos remediation work is being performed within an overarching remediation strategy, which is itself the subject of a relevant planning condition which must be discharged prior to the commencement of redevelopment, the Local Authority may wish to be consulted on the Plan of Work as it applies to the nature and scope of asbestos works prior to the commencement of those works on site.

219. The most effective planning will involve input from employees, i.e. the operational staff who carry out/directly supervise the asbestos work.

7.5 How the Plan of Work is used

220. The plan is the record of how senior managers/directors want the job to be done. Its main purpose is to guide site work and an up-to-date copy must always be on site. It also demonstrates that they have considered the significant risks and how to address them.

7.6 Communicating the Plan of Work

221. Work must not take place unless a copy of the Plan of Work is readily available on site. Employees must be informed of the contents of the plan and be instructed on the work methods and controls to use. A copy should also be kept at the head office, so management can effectively monitor performance. Access to general procedures should also be available at site level, either as paper copies or electronically. The plan should be kept updated to reflect any subsequent changes to the work.

222. The Plan of Work must also be shown to anyone who needs to see it, including those carrying out inspections of the works and/or air monitoring. It should also be available on request to employees, safety representatives and other elected representatives of employee health and safety, as well as others who may be affected by the work.

8 Regulation 8: Licensing of work with asbestos

This regulation requires employers to obtain a licence from HSE before they can carry out any licensed work with asbestos.

223. Information on applying for a licence from HSE is available from the HSE website at:

http://www.hse.gov.uk/asbestos/licensing/application.htm

9 Regulation 9: Notification of work with asbestos

This regulation requires employers to notify the appropriate enforcing authority of proposed work which is either licensed (always notifiable) or NNLW (applies to some non-licensed work). It also outlines the requirements to notify any material change which might affect the particulars of the original notification, this is particularly important for licensed work. The way work is notified differs depending if it is licensed or NNLW. For NNLW the process is simpler.

9.1 Notification of licensed work

224. When undertaking licensed work, the appropriate enforcing authority must be notified with details of the proposed work at least 14 days before work starts. This enables the enforcing authority to assess the proposals for carrying out work with asbestos and, if appropriate, to inspect the site either before or during the work.

225. Although the requirement is to notify the relevant enforcing authority office in writing at least 14 days before any licensed work begins, the enforcing authority may allow a shorter period, e.g. in an emergency where there is a serious risk to the health and safety of any person. This shorter period is known as a 'waiver' or ‘dispensation’.

226. It is highly unlikely, however, that waivers would be granted for most types of activities on soil and C&D materials contaminated with asbestos covered by this guidance. Such activities are usually longer-term, well-planned activities. Waivers would probably only be considered by the enforcing authority in exceptional circumstances, e.g. for emergency clear up after a flood, clear up of unintended releases of ACMs, etc.

227. Normally each individual licensed job should be notified to the enforcing authority.

228. However, a single notification of licensed asbestos work may be submitted to the enforcing authority for work likely to be regularly repeated on the same site. If there are several distinct sites, a separate notification is required for each of them. Any other subsequent work not covered in the original notification will need to be separately notified.

229. Since most, if not all, of the types of activities on soil and C&D materials contaminated with asbestos covered by this guidance would be classed under the category 'construction' which includes remediation, the relevant enforcing authority will be the Health and Safety Executive.

230. The enforcing authority should be informed in writing if there are changes to the work that might affect the particulars of the notification.

231. Notification can be made using the online notification form ASB5 at:

https://extranet.hse.gov.uk/lfserver/external/asb5

232. HSE have published an online notification FAQs page, available at:

http://webcommunities.hse.gov.uk/connect.ti/asbestos.licensing

9.2 Notification of NNLW

233. Employers who plan to carry out NNLW should notify the work using the online notification form for notifying all the relevant authorities. Notification must be made **before** the work begins.

234. Notifications can only be made using the online notification form ASB NNLW1 at:

https://extranet.hse.gov.uk/lfserver/external/asbnnlw1

235. Dutyholders should be aware that:

- there is no stipulated minimum prior notice period, but they should notify before work starts;
- work may proceed once notification has been submitted, no permission for work to proceed is required;
- an acknowledgment PDF copy of your notification will be provided electronically and should be kept with other documentation (such as the Plan of Work) relating to the activity;
- for a long-term project of work involving multiple jobs in one localised area (e.g. a housing estate or large commercial site) the whole project should be notified once;
- licensed asbestos contractors are required to notify both licensed and NNLW work.

236. There is further guidance on the online notification form itself.

237. The decision as to whether to notify particular NNLW or not may in certain cases depend entirely on the condition of the ACM on site and will be a matter of judgement and opinion. A person with sufficient experience and knowledge, who has been trained according to regulation 10, and who will be able to show their decision was reasonable, should make the decision.

10 Regulation 10: Information, instruction and training

This regulation requires employers to make sure that anyone liable to disturb asbestos during their work, or who supervises such employees, receives the correct level of information, instruction and training to enable them to carry out their work safely and competently and without risk to themselves or others.

10.1 Information, instruction and training for all work with asbestos

238. Employers have a duty to ensure that the information, instruction and training given to their employees are adequate to allow them to safeguard themselves and other employees and to carry out their work with asbestos effectively. Employers may choose how best to provide information, instruction and training; this may be done in-house, or by use of an external training provider. In either case, those delivering the information, instruction and training must be competent to do so. It is the responsibility of the Employer to determine the suitability of training providers.

10.2 Competence - investigation, assessment and remediation of land contaminated by asbestos

239. Competence in the field of the investigation, assessment, management and remediation of land contaminated by asbestos is strictly outside the training requirements of regulation 10 of CAR 2012. Regulation 10 deals solely with safeguarding the workers themselves and others from the risks to their health/safety. Any additional information, instruction and training are outside the scope of the regulation.

Watch Point 18

It is understood, however, the competence requirements relating to the investigation, assessment and remediation of land are required by other (e.g. environmental) regimes.

It is recognised, therefore, that in addition to being competent in relation to working with asbestos, the investigation and assessment of the potential risks posed by soil and/or C&D materials on land contaminated by asbestos requires that such investigations and assessments are also carried out in accordance with applicable current environmental regulations, standards and guidelines under the direction of a suitably qualified and competent person.

It is also recognised that contamination of land by a potentially wide range of other substances in addition to asbestos may be an important consideration on any particular site. Asbestos risks, therefore, cannot be considered in isolation and appropriate levels of training, skills and practical experience may have to be available to cover such additional contamination risks.

240. A competent person for these purposes normally shall be taken to mean a person who has not only received the appropriate degree of relevant information, instruction and training, but who can demonstrate that they have and maintain the correct combination of relevant practical experience and professional qualification(s).

Watch Point 19

Although not a requirement of CAR 2012, special reference should be made to competence requirements that are specified in respect of the planning regime, in order to satisfy a Local Planning Authority that risks from contamination, including asbestos contamination, will be appropriately addressed through remediation.

Developers of land affected by asbestos contamination should ensure that they carry out adequate investigations and risk assessments to inform any required strategy for remediation. These should all be prepared by competent persons as defined in Annex 2 of the National Planning Policy Framework[18]:

> "*Competent Person (to prepare site investigation information): A person with a recognised relevant qualification, sufficient experience in dealing with the type(s) of pollution or land instability, and membership of a relevant professional organisation*."

241. A relevant professional organisation could include, *inter alia*:

- a chartered member of an appropriate professional body, e.g.:
  - the Institution of Civil Engineers,
  - the Geological Society of London, or
  - the Royal Institution of Chartered Surveyors) with relevant experience of investigating contaminated sites; or
  - the Chartered Institution of Water and Environmental Management
  - the Institution of Environmental Sciences;
  - the Society for the Environment; or
  - any other relevant learned and professional body.
- a Specialist in Land Condition (SiLC) with appropriate geo-environmental experience.
- a Registered Ground Engineering Professional (RoGEP).

242. With respect to the management of the remediation of land affected by asbestos contamination, competence may be measured by different means. Typically, this will be taken to mean having at least three years demonstrated practical experience in the specific relevant land remediation field.

243. It is essential that the right mix of asbestos and contaminated land training, skills and practical experience are available on any particular project. Whilst this guidance focusses on the issue of competence in working with asbestos, it is assumed that the relevant degree of training, skills and practical experience in the field of contaminated land are also available.

10.2.1 Competence – compliance with regulation 10, CAR 2012

244. A training course on its own, either run in-house or by an external training provider, will not make an employee competent in the field of investigation, remediation and/or work in, on, or with asbestos in soil and C&D materials. Competence is developed over time by implementing and consolidating skills learnt during training, on-the-job learning, instruction and assessment.

245. It is essential for recently trained employees, particularly those new to asbestos-related work, to consolidate their newly acquired skills and knowledge by putting them to use on the job as soon as possible.

246. Employers, supervisors and managers will play an important role in coaching new employees by reinforcing good work practices and correcting bad ones. Where persistent problems occur, retraining may be required. Further training can then be tailored to deal with performance weakness and gaps in relevant skills.

247. Similarly, longstanding employees may benefit from reassessment and a skills update.

248. There are three main types of information, instruction and training specifically required with respect to working with asbestos in compliance with regulation 10. These relate to:

- asbestos awareness;
- non-licensed work with asbestos, including NNLW;
- licensed work with asbestos.

249. It is acknowledged that, as of the time of publication of this guidance, although there are commercial training courses available from external asbestos training providers which meet the requirements for compliance with regulation 10, none of these specifically address soil and C&D materials contaminated by asbestos. Where employees may potentially disturb asbestos in the ground, or be required to work in or with soil and C&D materials contaminated by asbestos, additional, specific information, instruction and training, which is specific and relevant to the activities being undertaken, will be required.

250. All such information, instruction and training given should include an appropriate level of detail, be suitable to the work being done, and use a combination of **written materials, oral presentation and practical demonstration** as necessary.

10.3 Asbestos awareness

251. The purpose of asbestos awareness training is to help employees avoid exposing themselves and others to asbestos. If employees know how to identify potential ACMs in the ground, they are able to stop work so they do not disturb them further.

252. Asbestos awareness will not prepare employees or self-employed contractors to carry out work with soil and C&D materials contaminated by asbestos.

253. **Awareness training is only intended to help employees avoid carrying out work that will disturb asbestos**.

254. Asbestos awareness training should be given to all employees whose work could foreseeably disturb materials contaminated by asbestos in the ground and expose them to asbestos, or who supervise or influence the work.

255. In particular, it should be given to those workers in the construction and allied trades who, as a result of working on soil and C&D materials that could potentially be contaminated by asbestos, may become exposed during their work. This includes, but is not limited to:

- geoenvironmental consultants, land surveyors and other such professionals.
- ground investigation workers;
- construction workers;
- groundworkers;
- construction plant operators;
- land remediation contractors; and
- waste processing and recycling plant operators.

256. This requirement does not apply where the employer can demonstrate that work will only be carried out in or on sites that are likely to be free of asbestos. This information should be available as a result of the assessment made under regulation 5; the duty on the employer to identify the presence of asbestos.

257. Asbestos awareness training should cover the following topics:

- the properties of asbestos and its effects on health, including the increased risk of lung cancer for asbestos workers who smoke;
- the types, uses and likely occurrence of asbestos and ACMs in buildings and plant;
- the likely types and condition of ACMs that may be encountered in soil and C&D materials;
- the general procedures to be followed to deal with an emergency, e.g. an uncontrolled release of asbestos dust into the workplace;
- how to avoid the risks from asbestos, e.g. for ground work, no employee should carry out work which disturbs soil and C&D materials contaminated by asbestos unless the employer has confirmed that asbestos is not present; or
- the employer has carried out an assessment made under regulation 6, the duty on the employer to assess work which exposes employees to asbestos, of any minor contamination found to be present and that assessment demonstrates that the risk to employees is negligible.

258. **If work is planned that will disturb asbestos-contaminated soil and C&D materials, further information, instruction and training appropriate to the work will be needed**.

10.4 Non-licensed work including NNLW

259. In addition to the 'asbestos awareness' in paragraph 257, all of those employees whose work will reasonably foreseeably or knowingly disturb soil and C&D materials contaminated by asbestos, and which is defined as non-licensed work (NLW) or NNLW, **should receive additional task-specific information, instruction and training.**

260. The procedures for providing information, instruction and training for NLW with asbestos should be clearly defined and referred to in a written health and safety policy document. This should be reviewed regularly, particularly when work methods change. Records should be kept of each individual's training.

10.4.1 Provision of information

261. For those employees doing non-licensed work on materials contaminated by asbestos, employers should make the following information available for the current work being done:

- a copy of the risk assessment for that work;
- a copy of the Plan of Work;
- where applicable, details of any air monitoring and results.

262. In addition, the following information should be made available to workers, on request:

- maintenance records for control measures;
- personal information from health records (i.e. relating to NNLW and only to the individual employee concerned);
- the results of any face-fit test (FFT) for RPE provided for work with asbestos;
- a copy of the individual's training record.

263. Training needs analysis (TNA) will help identify which of the topics listed below should be covered to ensure the level of competency needed to avoid workers putting themselves or others at risk in the course of their duties.

10.4.2 Training for non-licensed work

264. Training for non-licensed work on soil and C&D materials contaminated by asbestos should include information on:

- the differences in potential exposures from asbestos in soil and C&D materials as compared to ACMs in buildings;
- the operations which could result in asbestos exposure and the importance of preventive controls to minimise exposure;
- how to make suitable and sufficient assessments of the risk of exposure to asbestos;
- the control limit, and the purpose of air monitoring;
- safe work practices, control measures, and protective equipment. This should include an explanation of how the correct use and maintenance of control measures, protective equipment and work methods can reduce the risks from asbestos, limit exposure to workers and limit the spread of asbestos fibres outside the immediate work area including, where relevant, the maintenance of external enclosures;
- procedures for recording, reporting and correcting defects;
- the purpose, appropriate choice and correct selection from a range of suitable RPE, including any limitations;
- the correct use, and where relevant, cleaning, maintenance and safe storage of RPE and PPE, in accordance with the manufacturer's instructions and information;
- the importance of achieving and maintaining a good seal between face and RPE, the relevance of pre-use tests and FFT, and the importance of being clean-shaven;
- hygiene requirements;
- requirements and procedures for medical examination, for NNLW;
- decontamination procedures;
- waste handling procedures;
- emergency procedures, including how to deal with an emergency release;
- which work requires notification as NNLW and which work requires an HSE licence;
- an introduction to the relevant regulations, Approved Codes of Practice (ACoPs) and guidance that apply to asbestos work and other regulations that deal with the carriage and disposal of asbestos;
- personal sampling and leak and clearance sampling techniques, for analysts;
- other work hazards, including working at height, electrical, slips, trips and falls, working around heavy plant, machinery and vehicles or working in excavations, where this is applicable to the work being done.

265. TNA may reveal that additional, specific information, instruction and training, relevant to the activities being undertaken, is required. This should be reviewed on a job-specific basis.

10.4.3 Practical training for non-licensed work including NNLW

266. Where any employees are required to use plant and equipment or carry out the following work activities, practical training should be given (i.e. the opportunity to try and practice for themselves, in addition to having it explained or demonstrated to them):

- use of decontamination facilities;
- use of PPE, particularly RPE;
- construction of mini-enclosures (where necessary);
- use of control techniques, such as Class ‘H’ vacuum cleaners.

267. There may be other, complementary equipment specifically used in work with soil and C&D materials where practical training may need to be given.

10.4.4 Record keeping for employees carrying out non-licensed work, including NNLW

268. A record of the information, instruction and training received by each individual for non-licensed work should be kept to:

- help employers carry out ongoing TNA;
- support individual workers in demonstrating their knowledge, skills and experience when they move from one employer to another.

10.5 Training requirements for licensed work

269. In addition to the 'asbestos awareness' in paragraph 256 those employees carrying out work defined as 'licensed work' should receive additional task-specific information, instruction and training.

270. ACoP L143 and Asbestos: The Licensed Contractors' Guide, HSG247, provide further information on the current training requirements for licensed work for operatives, supervisors, managers, etc.

271. Note that the asbestos management industry is increasingly focussing on competency based training and TNA. The Asbestos Removal Management Institute (ARMI) will shortly be issuing further guidance on this. Future editions of ACoP L143 and the Licensed Contractors' Guide, HSG247, will reflect this.

272. Any licensed work involving soils and C&D materials will require specific information, instruction and training relating to the specialised activities that the employees will be doing.

10.5.1 Supervisors, managers and directors

273. To help employers comply with their legal duties under the Regulations, additional training, at an appropriate level, should be given to supervisors, managers and directors, so that they can effectively carry out their role on site. This should include:

- their responsibilities for directing, supervising and monitoring all aspects of work on site, including health and safety, particularly the importance of making sure employees and others follow the procedures, controls and preventative measures set out in the Plan of Work and risk assessment;
- the importance of the supervisor being on site at all key stages of the work (witnessing the smoke test, if applicable, ensuring that the personal hygiene facilities are fully operational before work starts, ensuring signs and barriers are correctly erected, carrying out daily checks) to ensure that it is done safely;
- how to produce and implement plans of work that set out the appropriate procedures, controls and preventative measures based on the assessment, including how and when to update plans of work;
- how and when to notify the appropriate enforcing authorities that work is taking place and about situations where re-notification is necessary;
- how to deal with situations where the methods set out in the Plan of Work cannot be followed, due to a change in circumstances and a revision to the plan is needed;
- the application of suitable emergency procedures if controls fail;

- the importance of monitoring and auditing the work activities;
- the importance of having effective arrangements in place to communicate with and monitor workers inside the enclosure and personal hygiene unit;
- the need to provide additional training, information and instruction to workers as necessary, such as in the use of a particular piece of equipment or work method, which they have not previously trained in;
- how to assess the competence of employees and identify their training needs;
- when and how to do air monitoring, how the results are interpreted and who needs to see them;
- how the results and records of personal air sampling, fit tests and medicals should be kept and maintained and who needs to see them;
- how to apply the procedures for dealing with accidents, incidents and emergencies;
- the importance of keeping the immediate work area clean and free of asbestos;
- the importance of making sure the correct procedures are followed to ensure that the areas where work on asbestos-contaminated soil and/or C&D material has taken place are left in a condition that does not pose a direct and immediate risk to human health arising from airborne fibre release.

274. Although not strictly a requirement of regulation 10, an understanding of what the laboratory analyst will require before doing personal, reassurance or background sampling and issuing air test certificates, may also be of significant benefit. This requirement relates specifically to supervisors, directors and managers of licensed contractors, and so the licensed contractor will be expected to address this.

275. There is a need, however, for those supervisors, managers and those with a wider management and supervisory role on sites where asbestos may be present and is being investigated and/or remediated, to have received a similar level of appropriate and specific training.

10.5.2 Practical training for licensed work on soil and C&D materials

276. Practical training requirements for the use of plant and equipment and carrying out certain work activities or procedures for those entering asbestos work areas and/or enclosures, including employees and supervisors, are provided in the Licensed Contractors Guide, HSG247.

277. It should be noted that there may be other, complementary equipment specifically used in work with soil and C&D materials where practical training may need to be given. In addition, due consideration shall need to be taken into account of variations in standard work activities or procedures that may be required in relation to working on asbestos-contaminated soil and C&D materials.

10.5.3 Record-keeping for employees carrying out licensed work

278. The record-keeping requirements for employees carrying out licensed work are set out in the ACoP L143. These should be extended to cover specific issues in relation to an employees work on soil and C&D materials.

279. The procedures for providing specific information, instruction and training in respect of licensed work with soil and C&D materials contaminated by asbestos should also be clearly defined and set out, and referred to in a written document. Employers should review this regularly. This may be when work methods change, or when the circumstances on a specific site or project are significantly different to those normally encountered.

10.5.4 Competence in respirator zones

280. Employers carrying out licensed work with asbestos in a respirator zone must make sure that only competent employees enter that respirator zone, or supervise such employees. To comply with the requirements in regulation 18(4)(a) and (b), employers must be able to demonstrate that operatives and supervisors have been given adequate information, instruction and training.

10.5.5 Competence of those providing training

281. All training should be given by someone who is competent to do so, who has personal practical experience and a theoretical knowledge of all relevant aspects of the work being carried out by the employer. For work with soil and C&D materials contaminated by asbestos, this will include demonstrable competence in the relevant field of contaminated land, which may include *inter alia* site investigation and assessment and remediation, as well as general construction and development activities on brownfield and/or contaminated sites.

10.5.6 Duration of training

282. The duration of training should be appropriate to:

- the type of training (whether initial training or refresher training);
- the role for which the person is being trained;
- the nature of the work (non-licensed work, NNLW and licensed work with soil and C&D materials contaminated by asbestos).

10.5.7 Training for examination and test methods and techniques

283. Anyone who carries out any examination, testing, air monitoring and exposure monitoring) or maintenance of plant or equipment (e.g. LEV systems and RPE) should have sufficient training and experience in examination and test methods and techniques to ensure that they are competent.

10.5.8 Provision of information and training for safety representatives

284. Training for safety representatives and elected representatives of employee safety needs to be appropriate to their role. Employers should consult safety representatives and elected representatives of employee safety in good time about the information, instruction and training they intend to provide.

285. Where the results of air monitoring show that the relevant control limit has been unexpectedly exceeded, employers should tell employees, safety representatives and elected representatives of employee health and safety about this as quickly as possible and give details of the reasons for what happened and the action taken or proposed.

10.6 Refresher training

286. Employers should identify the specific training needs of their employees so that the refresher training can be appropriately tailored to the licensed or non-licensed work being done. It should reflect the level of competence and specific training needs of the individual involved and should not be a repeat of the initial information, instruction and training.

10.6.1 Refresher training for licensed and non-licensed work

287. Refresher training for licensed and non-licensed work with soil and C&D materials contaminated by asbestos should be appropriate to the work the individual is doing. It should be based on a TNA which will inform the type of training needed.

288. For example, for those with extensive training needs, refresher training may involve classroom teaching or practical training but for others, could be given as part of other health and safety updates or, for example, as part of a short toolbox talk or e-learning to refresh experienced workers on the main principles and expectations.

289. Refresher training for licensed and non-licensed work should be given every year, or more frequently if:

- work methods change;
- the type of equipment used to control exposure changes;
- the type of work carried out changes significantly; or
- gaps in competency are identified.

290. It should include reviewing where things have gone wrong and sharing good practice.

291. Where training needs dictate, refresher training should include an appropriate element of practical training, particularly covering decontamination procedures, use of RPE, FFT and controlled removal techniques.

10.6.2 Refresher asbestos awareness training

292. Awareness training is only intended to help employees avoid carrying out work that will disturb asbestos.

293. There is no need for employees who receive training for licensed or non-licensed work to do asbestos awareness refresher training.

294. Refresher awareness should be given, as necessary, to help prevent those workers listed in paragraph 255 putting themselves or others at risk in the course of their work.

295. Refresher awareness could be given as e-learning or as part of other health and safety updates, rather than through a formal training course. For example, an employer, manager or supervisor who has attended an awareness course and is competent to do so, as defined in paragraph 281, could deliver an update or safety talk to employees in house. A realistic, common-sense approach to refreshing knowledge and skills, based on judgement of individual abilities and training needs, is all that is usually required.

10.7 Information and instruction for non-employees

296. Employers who are working with asbestos on contaminated sites have a duty to make sure, so far as is reasonably practicable, that adequate information and instruction is given to those

persons not employed by them, who may be working on site and could be affected by the work. The information provided should include details of:

- the location(s) where work is taking place, so people can avoid it/them;
- possible risks from rearranging thoroughfares and fire exits as a result of the work;
- any other information to help people avoid risks from the disturbance of ACMs caused by the work being done.

10.8 Certificates of training

297. There is no legal requirement for employees to be issued with or possess a certificate of training before they can work with asbestos. Many external training providers, however, issue trainees with certificates to indicate completion of a training course. A certificate is not proof of competency to do the job, but where issued, a certificate is an indication that training has been received and may be kept as part of an individual's training record.

11 Regulation 11: Prevention or reduction of exposure to asbestos

This regulation requires employers to prevent employees being exposed to asbestos or, if this is not possible, to put in place the measures and controls necessary to reduce exposure to as low as is reasonably practicable.

298. Employers must first decide whether they can prevent the exposure to asbestos so far as is reasonably practicable. If this is not possible then exposure must be reduced to as low as reasonably practicable.

299. Work which disturbs, or is liable to disturb asbestos, should only be carried out when it is unavoidable.

300. Where it is not reasonably practicable to prevent exposure to asbestos, it must first be reduced to the lowest level reasonably practicable, by means other than the use of RPE.

301. It may be that the work which would disturb soil and/or C&D material contaminated by asbestos is not necessary, or that it can be carried out in an alternative way which would not involve disturbing the asbestos, or would minimise such disturbance (e.g. re-routing underground services away from areas of asbestos-contaminated material, or covering up materials, rather than working on them).

11.1 Work which necessarily will disturb asbestos

302. Inevitably, there will be a number of work activities which, by their very nature, will have to disturb soil and C&D materials contaminated with asbestos. Where it is not reasonably practicable to prevent exposure to asbestos, employers must choose the most effective method or combination of methods to minimise fibre release and reduce exposure to the lowest levels reasonably practicable. This must be documented in the written risk assessment and/or Plan of Work.

303. Such work methods might include, as appropriate, e.g.:

- safe removal of asbestos-contaminated materials before any other major work (such as construction) begins, using the most effective methods to minimise fibre release (e.g. controlled wetting, minimum disturbance techniques);
- avoiding working on dry materials or high intensity techniques that could involve degrading ACMs;
- choosing work methods with the least overall risk;
- where necessary, carrying out a preliminary clean of the immediate work area before further work takes place, for example prior to undertaking ground investigations at depth;
- not allowing waste to be kept on site for longer than necessary;
- re-routing underground services through uncontaminated ground, away from contaminated areas.

304. When considering work methods, employers should be aware of other risks, not just those relating to asbestos exposure. A safe system of work must be devised and used.

11.2 Ground investigations and sampling soil and C&D materials

305. Disturbance of the ground is necessary in order to investigate contamination by asbestos at depth. It is acknowledged that there is a hierarchy of methods which are suitable for determining the depth and spatial variation of contamination.

306. It is also acknowledged that there is a greater likelihood of encountering asbestos contamination at depth, at any given location, the greater the amount of soil that is removed for inspection and sampling.

307. Consequently, it is recognised that trial trenches and trial pits are better at uncovering asbestos than boreholes, which in turn are better than window sampling.

Watch Point 20

Selection of methods of ground investigation, therefore, cannot be used as a primary means of minimising fibre release and reducing exposure to the lowest levels reasonably practicable, since to do so might significantly compromise the objectives of the investigation. The method used needs to be the one considered most appropriate for investigating contamination. The way that method is applied and put into practice must meet the requirements of Regulation 11.

Trial pitting in asbestos-contaminated land.

Note barrier segregation to provide a safe thoroughfare.

Note also use of PPE and RPE, as well as close-source air monitoring as reassurance that asbestos fibres are not being spread during excavations.

Photo Courtesy of VertaseFLI

11.2.1 Remediation of soil and C&D materials

308. Likewise, disturbance of the ground is necessary in order to remediate contamination of soil by asbestos. Wholesale excavation of parts of a site may in fact be the only feasible option available for remediation.

309. In such cases, attention should be focussed on the manner in which excavations are carried out, such that fibre release is minimised and exposures are reduced to the lowest levels reasonably practicable. Care should be taken, for example, to ensure that the excavation of material and subsequent loading of vehicles does not generate dust. In addition, other means of mechanical handling of material, e.g. conveyors, should ensure as far as possible that materials are not agitated to the extent that dust is generated.

Watch Point 21

With respect to the remediation of soil and C&D materials contaminated by asbestos, there is a regulatory relationship between waste and permitting legislation.

Materials excavated for remediation (whether for disposal or treatment) will normally be waste. The act of remediation by some form of treatment will often be a permitted waste activity. Movement of wastes will also involve compliance with the Environmental Protection Act 1990 Waste Duty of Care: Code of Practice[19], the Hazardous Waste Regulations[20, 21], the Special Waste Regulations, as amended[22, 23] and the Classification Labelling and Packaging (CLP) Regulation[24].

310. Note that the Waste Duty of Care: Code of Practice was revised and reissued in March 2016.

311. Employers should keep the number of both employees and others who might be exposed to asbestos at any one time as low as reasonably practicable.

312. Employers should reduce airborne levels of asbestos to as low a level as reasonably practicable and control exposure, so that any peak exposure is less than 0.6 fibres per cm^3 averaged over a maximum continuous period of 10 minutes. This should be done by using appropriate RPE, if exposure cannot be reduced sufficiently by other means.

11.3 Use of enclosures outdoors

313. There may be some situations where the use of reinforced enclosures outdoors is necessary during the remediation of soil and C&D materials contaminated by asbestos. Generally speaking, this requirement is more likely when ‘original form’ friable ACMs such as AIB are encountered, for example below a floor slab, than when similar material is encountered dispersed throughout the soil.

11.3.1 Viewing panels and CCTV for enclosures

314. Where enclosures erected outdoors, all areas of the enclosures should be capable of being monitored during work activities, e.g. through the use of viewing panels or CCTV.

11.4 Non-licensed work with asbestos

315. The duty to avoid, or if that is not reasonably practicable, adequately control, exposure applies equally to all work with asbestos, irrespective of whether a licence is required or not.

316. Employers should have in place a policy to always check whether asbestos is present in soil and/or C&D materials on sites where it is likely that asbestos could be present, before carrying out work that disturbs the ground. The policy should also ensure that work which does disturb soil and/or C&D materials contaminated, or potentially likely to be contaminated, by asbestos is restricted to authorised people who have been given the necessary level of relevant information, instruction and training.

317. Non-licensed work should be carried out using the most effective low intensity method or combination of low intensity methods which minimises fibre release and so reduces exposure to the lowest levels reasonably practicable. Low intensity methods may be coupled with the use of controlled wetting using atomiser sprays as appropriate, in order to further reduce exposure levels and to prevent the potential spread of asbestos.

11.5 Licensed work with asbestos

318. Employers must choose work methods which are most effective at reducing fibre release at source.

11.5.1 Licensed work on soil and C&D materials contaminated with asbestos insulation and asbestos coating

319. For all licensed work on soil and C&D materials contaminated with asbestos insulation and coating, the LARC should use low intensity work methods and consider the need for and extent of controlled wetting in the area of the work using atomiser sprays, as may be appropriate on a case-by-case basis, in order to prevent the potential spread of asbestos.

320. When controlled wetting is used, the asbestos and host material ideally should be uniformly wet before its disturbance. The wetting agent will need time to penetrate the host material/soil and asbestos contamination on/entrained within it. Wetting should be an ongoing process during asbestos removal involving excavations and earthwork activities, especially in warm, drying weather.

Watch Point 22

Soil and C&D materials contaminated with asbestos insulation and coatings are unlikely to present the same degree of risk as the equivalent materials in buildings, especially when naturally wetted. Care should be taken, however, to avoid over-wetting materials which could cause asbestos-contaminated surface water run-off or ponding of asbestos-contaminated water.

Wetted, fine and cohesive soils may dry out at the surface, especially in warm weather and these may require additional wetting in order to reduce fibre levels. Loose, granular material that is dry, or which has a tendency to dry out rapidly at the surface, may require ongoing and repeated wetting in order to ensure a satisfactory degree of fibre suppression.

321. Where bulk, ‘original form’ ACMs are being removed, employers should not use dry methods. Employers should make sure that effective measures are used to control fibre release in the work area. Controlled misting outside of the main area of the work may also be used, if considered appropriate, in order to provide an additional degree of comfort in minimising the potential spread of asbestos to adjacent sensitive receptors.

11.6 Maintaining and decontaminating equipment and plant contaminated with asbestos

322. Where there is a risk of asbestos fibre release or spread of asbestos, all decontamination and maintenance of equipment contaminated with asbestos must be done under **controlled conditions**. This should be done by a trained, competent person, in accordance with a written risk assessment and the Plan of Work.

323. When an item of asbestos control plant (such as air extraction equipment, class 'H' vacuum cleaner (BS 8520-3:2009)) that has been used in relation to any work on asbestos-contaminated soil and/or C&D materials, e.g. for controlling fibre levels in enclosures or for personal decontamination, or other decontamination or control tasks on site), needs to be stripped down, it should be carried out within an asbestos work area, permanently set aside, which is under negative pressure and which is connected to a dedicated personal hygiene facility by an airlock system. Where this work is done on site, it must be done inside an enclosure.

324. There may also be an issue regarding large non-asbestos control plant and vehicles used for handling contaminated soils in bulk – these should be cleaned and maintained in such a way that those carrying out the work are not exposed to asbestos.

325. To establish how contaminated equipment and plant is may require the help of an accredited asbestos analyst, especially if there has been an excessive amount of disturbance of the ACM or disturbance of asbestos coatings, insulation and/or AIB, as well as significantly damaged asbestos cement.

326. The release of asbestos fibres during decontamination of plant and vehicles may be effectively controlled by carrying out an initial visual inspection to ensure that wheels, tracks etc. are free from visible fragments which should be manually picked and double-bagged. The person carrying out the visual inspection should be competent and have appropriate training, PPE and face-fitted RPE.

327. Further decontamination may be achieved by the use of a class 'H' vacuum cleaner (BS 8520-3:2009), or by washing down. This will be dependent on the type of equipment used. When wet methods are employed for decontamination of plant and equipment contaminated with asbestos, due consideration should be made of the possibility that asbestos contamination may be spread from plant and equipment to the surrounding environment.

328. Robust measures should be designed and implemented to reduce the potential for the spread of asbestos and to ensure that compliance is maintained with respect to any conditions imposed on the work site designed to avoid pollution of any watercourses and/or the public surface water sewage system.

329. Likewise, when wet methods are employed for decontamination of vehicles that may be contaminated with asbestos prior to them leaving site onto the public road network, appropriate systems should be put in place to ensure that washings are contained and dealt with appropriately in order to reduce the potential for the spread of asbestos.

330. Practical guidance on the decontamination of asbestos-contaminated vehicles and plant[25] has been produced by the Health and Safety Executive for Northern Ireland (HSENI).

11.7 Respiratory protective equipment

331. ACoP L143, to which the reader is referred, provides detailed guidance on RPE.

332. Employers should take particular care to ensure that RPE is matched to:

- the specific task, or range of tasks, being undertaken, and how these may vary;
- the external environment;
- the anticipated maximum exposure;
- the wearer (and take into account such issues as facial hair and glasses).

333. Employers should take into consideration the external environment where the work on soil and C&D materials will take place and, in particular the activity that is being done. For example if the work is particularly strenuous then it might require specially selected RPE to avoid 'stress' on the wearer.

334. Note also that it is not just 'work on asbestos' that should be considered; the full range of tasks will need to be assessed, e.g. a worker may be engaged on a construction activity being carried out in asbestos-contaminated soil, which may pose particular or unique constraints on the use of RPE.

335. External works which are undertaken on asbestos-contaminated soil and C&D materials may, in normal circumstances, be expected to generate lower potential exposures when compared to working on equivalent ACMs in buildings. Nevertheless, weather conditions may affect the efficiency of RPE, e.g. if it rains, filters may become wet dramatically reducing filter performance.

12 Regulation 12: Use of control measures etc.

This regulation requires employers to put procedures in place to make sure employees use and apply control measures. It also requires the employees to make full and proper use of those measures.

336. ACoP L143, to which the reader is referred, provides detailed information on the use of control measures, which offers little scope for additional interpretation, and is not duplicated here.

13 Regulation 13: Maintenance of control measures etc.

This regulation requires employers to carry out regular inspection and maintenance of control measures to make sure they are kept in good efficient working order. It also requires a competent person to test and examine exhaust ventilation and RPE at suitable intervals and for records of examinations and tests to be kept for at least five years.

337. ACoP L143, to which the reader is referred, provides detailed information on the maintenance of control measures.

338. Employers must draw up maintenance procedures for all control measures and PPE. These should also cover the equipment used for cleaning, washing and changing facilities and the controls used to prevent the spread of contamination. The procedures should make it clear which control measures require maintenance, when and how to carry this out and who is responsible for doing it.

339. In particular, maintenance is required for:

- enclosures (if required), including any reinforcing/protection measures, e.g. scaffolding, close-boarding;
- air extraction equipment, e.g. Negative Pressure Units;
- dust suppression equipment, e.g. low pressure sprays, airless sprays, high-efficiency diffusers;
- personal decontamination/hygiene facilities; fixed and/or mobile;
- equipment and systems used for decontamination of plant and equipment, including vehicles;
- class 'H' vacuum cleaner (BS 8520-3:2009);
- disposable and non-disposable RPE, including storage.

14 Regulation 14: Provision and cleaning of protective clothing

This regulation requires employers to carry out regular inspection and maintenance of control measures to make sure they are kept in good efficient working order. It also requires a competent person to test and examine exhaust ventilation and RPE at suitable intervals and for records of examinations and tests to be kept for at least five years.

340. ACoP L143, to which the reader is referred, provides detailed information on the Provision and cleaning of protective clothing, which offers little scope for additional interpretation, and is not duplicated here.

15 Regulation 15: Arrangements to deal with accidents, incidents and emergencies

This regulation requires employers to prepare procedures on what to do if there is an accidental, unplanned, uncontrolled release of asbestos fibre. Also, for licensed work, procedures must be planned, implemented and tested and warning systems should be in place. Details of this information must be given to the emergency services.

15.1 Uncontrolled release of asbestos

341. Employers must deal with all uncontrolled releases of asbestos in the workplace, quickly and appropriately. This applies to circumstances where asbestos is accidentally disturbed as a result of work on soil and/or C&D materials or where asbestos is unintentionally released as a result of a failure of control measures during such work.

342. Uncontrolled releases of asbestos as a result of work on soil and/or C&D materials may be considered foreseeable and therefore contingency plans provided for in the Plan of Work. The steps required to clean up such releases should be appropriate for the scale of the release and the potential for further release and spread of fibres.

343. The clean-up of any release that leads to potential exposures at or above the control limit or that are not sporadic and low intensity, e.g. releases of asbestos lagging, loose fill, asbestos coatings (not textured coatings) or large-scale releases of AIB must be done by a licensed contractor.

344. Uncontrolled releases of asbestos in contaminated soil and C&D materials may potentially arise in a variety of circumstances. Such an uncontrolled release might be construed to be a situation where the controlled collection of samples, or a controlled earthworks or remediation operation, leads to asbestos-contaminated material being spilled in an area not subject to asbestos controls and where it is highly desirable to undertake immediate clean-up in order to minimise the spread of asbestos fibres and reduce the potential for employees and members of the public to be exposed.

345. The clean-up of asbestos materials where the fibres are firmly linked in a matrix and that are essentially in good condition (i.e. mostly intact), e.g. asbestos cement, bitumen products, papers, textiles etc. will probably not require a LARC. Similarly, clean-up of small-scale release of AIB where it is in relatively discrete pieces and undamaged will probably not require a LARC.

346. The Asbestos Essentials[26] guidance contains details of suitable methods to follow when carrying out remedial clean-up and decontamination for a number of different asbestos materials found in/on buildings. Although Asbestos Essentials specifically does not describe methods specific to soil and/or C&D materials, other than on fly tipped waste, it may serve as a useful basis for the development of appropriate and case-material-specific procedures to be followed in external settings.

347. Asbestos Essentials task sheet "A38: How to deal with fly tipped asbestos waste" provides an outline of safe working methods which might be applied to deal with an uncontrolled release in the external environment, subject to the risk assessment determining that such work is Non-Licensed Work.

348. Task sheet A38 also points to additional guidance that should be followed in such circumstances, including:

- a0: advice on non-licensed work with asbestos, Introduction to 'Asbestos essentials' task sheets;
- em6: personal protective equipment (PPE);
- em8: personal decontamination; and
- em9: disposal of asbestos waste.

15.2 What to do if there is a release

349. In all cases, where there has been an uncontrolled release of asbestos materials into the workplace, employers should take steps to:

- warn people who may be affected;
- exclude people from the area, who are not needed to deal with the release;
- identify the cause of the uncontrolled release;
- regain adequate control as soon as possible.

350. In particular employers must make sure that:

- anyone in the work area affected who is not wearing PPE, including RPE, leaves that area immediately;
- arrangements are made to decontaminate anyone who is contaminated;
- any clothing or PPE is decontaminated or disposed of as contaminated waste;
- measures are taken to contain and reduce fibre release.

351. For any employee who was not wearing adequate RPE or has been potentially exposed to asbestos fibres in an incident, a note that the exposure has occurred must be made on that employee's health record. If the employee does not have a health record, the note must be made on that employee's personal record.

15.3 How to clean up after a release

352. If contamination is severe, the work is most likely going to be licensed work. Consequently, a LARC and an accredited asbestos analyst should be employed to thoroughly clean and check the area respectively. When cleaning up after a release, the employer must make sure that:

- the contaminated area is thoroughly cleaned of visible debris or ground that may have become contaminated by asbestos fibres;
- employees doing this work wear appropriate PPE, including RPE;
- employees use equipment and procedures appropriate for the task and have appropriate training and expertise;
- supervisors or managers make a careful check to make sure the work has been properly carried out;
- checks are made to make sure the area is thoroughly cleaned and safe for normal work operations to recommence.
- only those people essential for carrying the work are allowed into the affected area (other than emergency services).

353. For non-licensed work, detailed guidance on the general principles to be followed in order to prevent/minimise exposure while working with asbestos is available in Asbestos Essentials and for licensed work in the licensed contractors' guide, HSG247.

15.4 Accidents, incidents or emergencies involving licensed work

354. Most of the information below is primarily aimed at LARCs working on e.g. soil remediation projects on sites where other construction-related activities are being undertaken. In order to ensure consistency, LARCs would be expected to integrate their own asbestos control measures etc. with general emergency procedures in place on the wider site.

355. When carrying out any licensed work on e.g. soil remediation projects, employers must have prepared procedures to put into effect if there is an accident, incident or emergency, which could put people at risk, because asbestos is present.

356. Employers must also make sure information about emergency procedures is given to anyone who may be affected, including employees, others and the emergency services. Employers should give employees enough information and instruction to properly protect themselves. This should include procedures for:

- raising the alarm;
- evacuation of enclosures and asbestos areas – and these drills should be tested and practised at regular intervals;
- communicating within and between asbestos work areas;
- contacting the emergency services;
- personal decontamination;
- clean-up of unintended asbestos releases.

357. There needs to be sufficient resources and equipment on or near the site to enable swift, safe and effective clean-up of unintended asbestos releases.

358. Employers need to take account of the need to integrate procedures with general emergency precautions for the wider work site and plan for any additional risks, e.g. not hearing alarms because of RPE and the siting of enclosures. Employers must ensure employees are given enough information and instruction about the prepared procedures and arrangements if there is an emergency or a fire.

This should include:

- details of the nature of the emergency alarms and/or systems;
- details of the communications systems, including how to raise the alarm;
- the location and means of escape to and from the area of the emergency.

359. Knowing the location and safe means of escape from an asbestos enclosure or work area on a complex remediation/construction site will be particularly important if the work area (or personal decontamination/hygiene facility) is located in a part of the site where other significant hazards may be present, e.g. large excavations, water bodies, heavy plant and equipment, dangerous structures, etc..

15.5 Contacting the emergency services

360. For licensed work, there should be arrangements in place for contacting the emergency services if they are needed, e.g. in the event of a fire affecting the asbestos enclosure/work area, a collapse of earthworks, employees being overcome by noxious gases, the discovery of unexploded ordnance, etc..

361. If there is an incident, accident or other emergency, employers must ensure sufficient information is available to the relevant accident and emergency services so they can prepare their own response procedures and precautionary measures. This includes:

- communication arrangements on site;
- the type, condition and location of the asbestos;
- details of relevant hazards;
- arrangements for evacuation;
- decontamination procedures;
- the asbestos clean-up procedure.

362. For licensed work, pre-planned procedures, hazard information, drills, and special warning or communication systems will not be required if the quantity or the condition of the asbestos in the workplace presents only a slight risk to the health of employees.

16 Regulation 16: Duty to prevent or reduce the spread of asbestos

This regulation requires employers to prevent or reduce the spread of asbestos anywhere work is being carried out under their control.

16.1 Preventing/reducing the spread of asbestos

363. Employers should select and use work methods that will reduce the disturbance and release of asbestos fibres to minimise the risk of spread of asbestos from the controlled work area to other areas, e.g. by using low intensity methods, wherever possible, and by using appropriate dust suppression and decontamination techniques.

364. If ACMs are collected from the surface of a site, all asbestos waste should be bagged or wrapped promptly after removal and the waste should be removed from the work area regularly.

Mechanical excavator breaking out a floor slab overlying made ground potentially contaminated with asbestos, requiring the use of a hydraulic breaker.

Note the use of a fine water mist spray, to keep the levels of dust and potential asbestos fibres down to a minimum level.

Photo Courtesy of VertaseFLI

16.2 Enclosures

365. For most licensed work with soil and C&D material contaminated with asbestos, it is likely that an enclosure will not be required as this is usually considered impractical.

366. Where an enclosure is not used:

- the work area should be marked by suitable warning notices and physical barriers appropriately placed;
- employers must assess the risks to workers and others nearby and if necessary, and as far as is reasonably practicable, the work should be done when other workers or members of the public are not nearby.

367. Where it is not reasonably practicable to build a full enclosure, other containment and dust-suppression techniques should be used to prevent the spread of asbestos.

368. Where an enclosure is not used, the risk assessment should establish what will be required to ensure that, as far as is reasonably practicable, the spread of asbestos is prevented and the work area thoroughly cleaned.

Example of an external asbestos enclosure for licensed asbestos removal works.

Note the rigid scaffold protection over and around the working enclosure, with additional reinforced sheeting to protect polythene enclosure from wind damage.

Photo Courtesy of VertaseFLI

16.2.1 Enclosures for non-licensed work (including NNLW)

369. Enclosures will not normally be required for non-licensed work with soil and C&D materials contaminated by asbestos cement or other bonded materials when conducted outside in the open. Where enclosures are not used, the employer's risk assessment should establish what will be required to make sure that, as far as is reasonably practicable:

- the spread of asbestos is prevented;
- people not involved in the work are excluded from the area; and
- the work area is totally cleaned and asbestos is not left exposed after work is completed.

16.2.2 Enclosures for licensed work

370. Where an enclosure is deemed to be required for work on soil and C&D materials contaminated by asbestos outdoors, employers should make sure that, as far as is reasonably practicable, the work area is completely enclosed, to contain any asbestos debris and airborne asbestos fibres, by erecting a purpose-made enclosure.

371. Where circumstances demand that an enclosure is required, it should have:

- a three-stage airlock with openings to allow entry and exit, designed to prevent or reduce spread of fibres out of the enclosure and that allows progressive personal decontamination on exit;
- a three-stage bag lock, with separate openings for removal of waste fitted with their own airlocks to reduce the spread of fibres out of the enclosure during removal of waste;
- airlocks of sufficient size (1 m x 1 m x 2 m minimum where space permits) to allow siting of decontamination equipment (e.g. footbath and bucket) and effective preliminary decontamination. Each of the airlocks should have weighted flaps on the enclosure side;
- air extraction with high efficiency particulate arrest (HEPA) filtration and sufficient capacity to maintain a reduced air pressure in the enclosure, to a level that is below that outside the enclosure (negative pressure).
- an airflow of at least 8 air changes per hour for enclosures greater than 120 m^3 in size or an airflow of at least 1000 m^3 per hour for enclosures less than 120 m^3 in size. The enclosure size should include the airlock and bag lock and additional areas introduced during the asbestos removal, e.g. ceiling voids;
- viewing panels. The panels should allow as much of the work area as possible to be viewed and should be kept clean/unobscured.

Watch Point 23

Enclosures occasionally may be required, however, e.g. in situations where original form friable ACMs are uncovered *in situ* outdoors and this is considered reasonably practicable given the assessed risk. Such situations might include, for example, asbestos insulation uncovered in underground ducts that are exposed following excavations, or AIB shuttering under a floor slab that has been broken out.

Enclosures used outdoors may need to be reinforced by means of scaffolding and/or close-boarding to protect against adverse weather conditions.

Due consideration should be taken in such circumstances to the potentially adverse effect that wind may have on pressure differentials inside and outside the enclosure and the performance of negative pressure units in achieving the required number of air changes per hour.

372. When it is foreseeable that the asbestos may be disturbed during scaffolding erection, and/or when the scaffold forms part of an enclosure, this will be considered to be licensed work. The ends of any scaffold tubes used in the enclosure must be sealed.

373. Where the structure of a building forms part of the enclosure, e.g. when asbestos contamination in soil is being remediated immediately adjacent to a building, the employer should make sure of the effective sealing of areas of the adjacent building such as:

- windows, doors, vents, grilles and apertures through which pipes and other services/facilities may allow air to pass through;
- surfaces which may not be easy to access or clean.

374. Enclosures should normally be designed and constructed so that any asbestos materials which are required to be removed under controlled conditions are disturbed as little as possible until the enclosure is complete and under negative pressure. Where it is not possible to avoid disturbance due to the nature of additional asbestos contamination or debris present on the ground surface:

- the asbestos debris on the ground surface must be cleaned up using methods to minimise fibre release before the enclosure is built;
- suitable PPE and RPE should be worn during pre-cleaning and any work likely to disturb asbestos on the ground surface during the building of enclosures.

375. Before starting work in the enclosure, a thorough visual inspection and smoke test must be conducted to check the enclosure's integrity. The filtered air extraction equipment must be tested to ensure it is achieving negative pressure and the required air change rate.

376. Where reasonably practicable, connect personal decontamination/hygiene facilities for final personal decontamination directly to an enclosure airlock system or, if this cannot be done, they should be as close as is practicable to the enclosure or work area and procedures for preliminary decontamination and transiting should be drawn up and followed.

377. Where reasonably practicable, the 'transit' and 'waste' routes should avoid areas where other, non-asbestos work is being undertaken or, if that is not possible, the asbestos work should be carried out when the required transit areas are not occupied or in use. If this cannot be done, conduct more rigorous preliminary decontamination and carry out more frequent inspection, checking and cleaning of the routes.

378. Partial enclosures may be used for external removal of some ACMs where full enclosures are not reasonably practicable and the risk assessment can demonstrate that the risk of doing so is low.

379. Where enclosures are not used, additional controls, monitoring and inspection will be required to make sure that, so far as is reasonable practicable, the spread of asbestos is prevented and the work area is thoroughly cleaned.

16.3 Decontamination procedures for licensed work

380. ACoP L143, to which the reader is referred, provides detailed information on decontamination procedures for licensed work, which offers little scope for additional interpretation, and is not duplicated here.

16.4 Removal of waste from full enclosures

381. ACoP L143, to which the reader is referred, provides detailed information on removal of waste from full enclosures, which offers little scope for additional interpretation, and is not duplicated here.

16.5 Static sampling/air monitoring

382. Air monitoring to reduce risks from spread of asbestos is required to:

- measure the prevailing concentration of asbestos fibres in the work area prior to work on asbestos commencing, to provide a baseline against which subsequent monitoring results may be compared, this is called background sampling;
- measure background fibre levels inside any enclosure when the asbestos work is complete, to ensure that it has been thoroughly cleaned and decontaminated before dismantling; when the asbestos work is licensed, this will be clearance sampling;
- measure background fibre levels outside any enclosure, particularly when the enclosure is adjacent to other, non-asbestos work areas or close to occupied premises or areas where the public may be in close proximity; this is called leak testing;
- ensure that the residual fibre concentrations are below the limit of quantification or the background after work on asbestos has been completed; this is often termed reassurance sampling;
- near-source static sampling, to assess the release and spread of asbestos fibre concentrations near sources (e.g. work without an enclosure, near activities which involve disturbance of asbestos in soil or C&D materials);
- far-source / perimeter sampling conducted around the perimeter of the site where there may be other workers, public access or residential and commercial buildings.

383. Further guidance on air sampling/monitoring during work with asbestos is provided in HSG248[7],[8].

17 Regulation 17: Cleanliness of premises and plant

This regulation requires employers to make sure that work areas, plant and equipment used for asbestos work are kept clean. It also requires the employer to make sure the area is thoroughly cleaned after work is finished.

17.1 General good-practice work methods

384. To help prevent the further spread of asbestos on the surface of the ground, employers must choose work methods and equipment to prevent or reduce release of fibres and the build-up of excavated or exposed asbestos waste on the ground and surfaces in enclosures and asbestos working areas.

385. Where ACMs are being removed from the surface of a site, e.g. by hand-picking, asbestos waste should be wetted, if deemed necessary, and transferred directly into approved and suitable asbestos waste bulk bags as workers remove asbestos materials.

386. Where soil and C&D materials contaminated with asbestos are being removed from site, they should be handled as little as possible. Wherever practicable, they should be excavated and placed directly into the appropriate waste receptacle, such as a polythene-lined skip or approved asbestos waste bulk bags.

Watch Point 24

ACM debris entrained in excavated materials should be cleaned up and removed regularly to prevent it accumulating on the surface where it may be liable to drying out, and at least at the end of each working shift.

Where soil and C&D materials contaminated with asbestos are being stockpiled on site temporarily pending testing or being removed from site, they should be covered over and the covering weighted down.

Following excavations on soil potentially contaminated with asbestos, samples requiring laboratory confirmatory analysis were taken.

Whilst the analytical results were awaited, the suspected stockpiled material was covered with 1000 gauge polythene and weighted down, and the area quarantined.

Photo Courtesy of VertaseFLI

387. Procedures for cleaning will need to take account of the need for cleaning following an accidental and uncontrolled release of asbestos.

17.2 Further measures

388. Procedures will need to be set up for cleaning:

- working areas, including transit and waste routes;
- plant and equipment;
- personal decontamination/hygiene facilities.

389. Dustless methods of cleaning should be always be used. This includes, wherever practicable, providing dedicated Class 'H' (BS 8520-3:2009) vacuum cleaning equipment fitted with suitable tools.

390. Procedures for cleaning should make clear:

- the items and areas to be cleaned;
- how often they need to be cleaned;
- the cleaning methods, which should not create dust;
- any special precautions which need to be taken during cleaning, including the low-dust technique to be used, and the measures to take to reduce the spread of dust.

391. Dry manual brushing, sweeping or compressed air **must not be used** to remove asbestos dust.

392. Care should be taken if wet methods are used for the decontamination of plant and equipment, such that the spread of asbestos is minimised.

17.3 Clean-up when work finishes

393. When work with soil and C&D materials contaminated with asbestos comes to an end, the surface of the work area should be thoroughly cleaned to remove all visible traces of ACMs and asbestos debris and a thorough visual inspection carried out.

Watch Point 25

Work with soil and C&D materials contaminated with asbestos may take a variety of forms. The definition of 'clean-up' when work finishes needs to be addressed based on site and task specific circumstances.

The investigation of land contaminated by asbestos should not result in the surface of the site becoming and remaining contaminated by asbestos following the investigation. As a general rule, all visible traces of ACMs and asbestos debris should be removed from the area around each investigation location as work progresses.

Where the work involves the remediation of material contaminated by asbestos, by excavation and disposal, the remediation strategy should require that the area being remediated shall be decontaminated to the extent that no visible traces of ACMs or asbestos debris will remain at the end of the remediation. On a practical level, it should be the objective that excavations into material contaminated with asbestos are not left unfinished for any significant length of time with asbestos contamination exposed.

394. Where the work is licensed and has been conducted inside an **external** enclosure, then the four-stage clearance procedure (as set out in L143) will not normally have to be carried out prior to the enclosure being dismantled.

395. In such circumstances, **a certificate for reoccupation will not need to be issued**, although checks will still have to be made to ensure that the work has been completed satisfactorily (this may include reassurance sampling). A Statement of Cleanliness will need to be issued.

396. Where licensed work is done outdoors and not inside an enclosure, then clearance air sampling will not be needed, although it may be desirable to undertake reassurance sampling. In such situations, a Statement of Cleanliness should be issued.

397. Clearance air sampling is not required for non-licensed work, although it may be desirable to undertake reassurance sampling. A written Statement of Cleanliness will be required for the asbestos work area.

398. Surveyors and others taking samples of soil and C&D materials contaminated with asbestos are responsible for cleaning up any material that they may have exposed during sampling, but are not responsible for cleaning up pre-existing ACM debris.

17.4 Statement of Cleanliness for licensed work in external enclosures

399. For work done inside external enclosures, once asbestos removal is complete, the area must be assessed to determine whether it is thoroughly clean and so fit for the enclosure to be dismantled. It is important that this includes any plant or equipment where work with asbestos has taken place and the surrounding areas, which may have been contaminated.

400. The areas requiring assessment for cleanliness include the:

- enclosed area, including airlocks or the delineated asbestos work area where an enclosure has not been used;
- immediate surrounding area (for enclosures this will include the outside of walls and underneath polythene floors; for delineated areas this will include surfaces nearby either where asbestos may have been spread or where the pre-cleaning was not done properly);
- transit route if one has been used;
- waste route and area around the waste skip.

17.5 Independent certification/validation of satisfactory completion of work and cleanliness

401. Although not a legal requirement under CAR 2012, it is highly desirable that an organisation/analyst independent of the company undertaking the work with asbestos is employed to carry out certification/validation of the satisfactory completion of work and cleanliness.

402. This arrangement helps avoid any conflict of interest (perceived or real) there may be if the organisation/analyst is employed by the asbestos contractor. It also enables an independent party to be involved in resolving any problems during the certification/validation process. Also, it has a practical advantage that all certificates can also be issued directly to the person who has responsibility for the site, as well as the contractor.

17.5.1 Duties and roles

403. Employers have duties to:

- make sure other people are not exposed to asbestos;
- prevent the spread of asbestos;
- ensure that the site or areas where asbestos decontamination/remediation work has taken place are cleaned thoroughly.

404. Compliance with these duties is helped by:

- choosing methods which reduce the amount of airborne asbestos and asbestos fragments to the lowest level reasonably practicable;
- controlling the waste produced;
- using external enclosures, where required, to prevent spread of asbestos;
- thorough cleaning of the work of asbestos contamination;
- visual inspection of the work area which was cleaned/remediated;
- obtaining a Statement of Cleanliness prior to dismantling any enclosure;
- obtaining a separate clearance certificate for the personal decontamination/hygiene facility used.

435. Any inspection to produce a Statement of Cleanliness should only be done when the asbestos remediation work has been completed in accordance with the Plan of Work and the area requiring inspection has been thoroughly cleaned and, in the case of external enclosures, allowed to dry after the enclosure sheeting has been sprayed with PVA sealant solution.

17.5.2 Preliminary checks

405. The scope of work should be established. The Plan of Work kept at the work site should be checked and the extent of the inspection agreed between the organisation/analyst and the asbestos contractor. The scope of the inspection should be recorded (e.g. on a diagram). A note should be made of any remaining asbestos outside the scope of the work.

17.5.3 Thorough visual inspection

406. The work area, any enclosure, personal decontamination/hygiene facilities, and controls should be intact, operating and clean, with all ACMs included in the scope of the work and non-essential equipment decontaminated and removed. The personal decontamination/hygiene facilities should remain operable until the Statement of Cleanliness has been issued.

407. The work area, surrounding area, transit route, waste route, together with the area around the waste disposal storage and all sections of the personal decontamination/hygiene facility must be free of obvious asbestos-containing waste and debris of any kind. If a viewing panel is fitted to an external enclosure, this should be looked through so that a preliminary check can be made of the inside of the enclosure to see whether it contains any waste and debris. The result of these pre-inspections should be recorded.

408. A thorough visual inspection should then be carried out to make sure that all visible traces of asbestos and other dust and debris have been removed in accordance with the Plan of Work, **so far as is reasonably practicable**, from the work area/enclosure (including airlocks). It is important to refer to the Plan of Work to check that all the asbestos due to be removed has been removed.

409. The thorough visual inspection is the most important part of the Statement of Cleanliness certification process. Take enough time, care and attention to ensure all areas in the work area are thoroughly inspected.

17.5.4 Enclosure/work area dismantling

410. Once any external enclosure has passed an inspection and a Statement of Cleanliness issued, the enclosure can be dismantled.

411. Once the enclosure has been dismantled, a competent person should visually inspect the area again, to make sure all asbestos contamination/debris has been removed.

17.5.5 Clearance testing of hygiene facilities

412. Once the Statement of Cleanliness has been issued for the asbestos work area, a clearance test should be carried out on the personal decontamination/hygiene facility, if used, before it is removed from the site. The facility should be visually inspected and air tested. There should be a thorough visual inspection of all sections (i.e. clean end, showers and dirty end). The unit, including the shower, should be dry before the inspection takes place.

413. On successful completion of the visual examination, a disturbed air test should be performed in the shower and dirty end. Clearance testing should be performed by a competent person. A clearance certificate should be issued for the personal decontamination/hygiene facility. A copy of the most recent clearance certificate should be kept with the facility.

17.6 Cleanliness and clearance of maintenance areas

414. For facilities specially provided for the testing and maintenance of plant and equipment contaminated with asbestos, appropriate procedures should be followed to keep the area clean. There should be a periodic, thorough visual inspection and disturbed air test to confirm the level of cleanliness.

17.7 Duties of those issuing clearance certificates

415. The person who issues the clearance certificate for the personal decontamination/hygiene facility does not have direct duties under the Regulations. However, people issuing these certificates should follow this guidance to comply with their duty under Section 3 of the Health and Safety at Work (HSW) Act to protect the health of people other than their employees. They should also consider the provision in Section 36 of the HSW Act, which may apply if the work they do leads to others who do have duties under the Regulations to fail in those duties.

18 Regulation 18: Designated areas

This regulation requires employers to make sure that areas where asbestos work is being carried out are separated, clearly marked, and restricted to those required to work in the area. It also requires the employer to provide suitable facilities for employees to eat and drink.

416. ACoP L143, to which the reader is referred, provides detailed information on designated areas, which offers little scope for additional interpretation, and is not duplicated here.

19 Regulation 19: Air monitoring

This regulation requires employers to arrange regular monitoring of airborne asbestos fibres and keep records of the results. It sets out how long the records should be kept and that they should be made available to employees or the regulator as required.

417. ACoP L143, to which the reader is referred, provides detailed information on air monitoring, which offers little scope for additional interpretation, and is not duplicated here.

20 Regulation 20: Standards for air testing and site clearance certification

This regulation requires employers performing their own air testing to do it in a way that meets the criteria as set out in ISO 17025. It also requires employers to make sure that any person they engage to perform asbestos air testing and site clearance is competent and accredited by the appropriate accreditation body.

418. ACoP L143, to which the reader is referred, provides detailed information on standards for air testing and site clearance certification, which offers little scope for additional interpretation, and is not duplicated here.

21 Regulation 21: Standards for analysis

This regulation requires employers performing their own analysis of material to check for asbestos in a way that meets the criteria set out in ISO 17025. It also requires employers to make sure any person they engage to perform analysis is accredited to ISO standard by the appropriate body.

21.1 Accreditation requirements for samples of soil and C&D materials

21.1.1 Identification analysis

419. Employers engaging external organisations to analyse a sample of soil or C&D material potentially contaminated by asbestos, to determine whether or not any part of that sample contains asbestos for CAR 2012 compliance purposes, must take reasonable steps to establish that they have a valid accreditation to ISO 17025 from a recognised accreditation body.

420. Employers performing their own analysis of a sample of soil or C&D material, to determine whether or not any part of that sample contains asbestos, should make sure that the work is performed, recorded and assessed by people equipped with suitable training, supervision and quality control systems, so that the results are equivalent in accuracy to those achieved under ISO 17025.

421. In the UK, all laboratories undertaking the identification of asbestos in soil and similar matrices must be accredited by the United Kingdom Accreditation Service (UKAS) to ISO 17025.

422. The analysis of samples of soil and C&D materials potentially contaminated by asbestos to determine whether they contain asbestos is a more complex and rigorous process than the standard analysis of conventional bulk samples of ACMs. It involves the identification of asbestos fibres in both fragments of ACMs **and** free fibres dispersed throughout the soil or C&D material matrix.

423. Any laboratory that is accredited to the ISO 17025 standard for the identification of asbestos in samples of soil or C&D materials is required by UKAS to participate in an appropriate Proficiency Testing Scheme.

424. The Asbestos in Soils Scheme (AISS)[6] is a Proficiency Testing Scheme designed to assess the proficiency of laboratories undertaking qualitative (identification) and quantitative analysis of asbestos in soils (contaminated land). The scheme is operated by HSL.

21.1.2 Quantification Analysis

425. Quantification analysis is achieved by a multi-stage process which involves the identification and mass quantification of asbestos fibres in both fragments of ACMs **and** free fibres dispersed throughout the soil or C&D material matrix. Note that the initial stage of quantification analysis involves the identification of asbestos as described by the analytical method set out in HSG248[7, 8].

426. The assessment of such samples will normally involve an assessment of the relative contribution of the amount of asbestos present in each type of ACM and the relative contribution of asbestos fibre type in those ACMs. Asbestos identification may be performed at all stages of the analysis. The result of this analysis will normally result in a mass quantification result and may also generate a result in respirable fibres per gram of soil.

427. Determining the mass concentration of asbestos in soil and C&D materials is not required to decide if the requirements of CAR 2012 apply, but may be required in respect of other, environmental, compliance considerations. All work with asbestos is covered by CAR 2012 **regardless** of the percentage (or mass) of asbestos that may be present. Nevertheless, the amount of asbestos present could be relevant when considering risk functions and what control measures may be required.

428. Although not specifically required by CAR 2012, for environmental risk assessment purposes full and proper analysis will also require a thorough analysis of samples of soil and C&D materials in order to determine the relative contribution of each free dispersed asbestos fibre type and the mass contribution that these fibres may make to the overall asbestos load in the sample.

429. Where a method of sedimentation of suspended particulates onto filters and subsequent analysis using Phase Contrast Microscopy is used, fibre discrimination will also need to be performed.

430. Any laboratory that is accredited to the ISO 17025 standard for the quantification of asbestos in samples of soil or C&D materials is required by UKAS to participate in an appropriate Proficiency Testing Scheme, such as the HSLs AISS described above for the mass quantification of asbestos.

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[6] http://www.hsl.gov.uk/proficiency-testing-schemes/aiss

21.2 Environmental considerations

431. Although not required for compliance with CAR 2012, there may be other requirements for the assessment of land contaminated by asbestos, imposed by regulators such as the Environment Agency (in England), Natural Resources Wales, the Scottish Environmental Protection Agency, the Northern Ireland Environment Agency or Local Authorities with respect to the accreditation of laboratories for quantification analysis of soil and/or C&D materials.

432. The chemical testing of soil (for contaminants) can be undertaken for a wide range of parameters using a wide range of methods. The methods that a laboratory uses to generate data that are submitted to the Environment Agency in England for regulatory purposes are expected to have been accredited to ISO/IEC 17025 for the MCERTS performance standard[7].

433. Accreditation to MCERTS is supplementary to UKAS accreditation for the analytical method. Where MCERTS is not available for a particular contaminant parameter, it is assumed that UKAS accreditation for the analytical method is held by the laboratory.

434. It is noted that, at the time of publication of this guidance, MCERTS for asbestos testing in soils is not available and that there are no plans for its introduction.

435. The Environment Agency (in England), Natural Resources Wales, the Scottish Environmental Protection Agency, the Northern Ireland Environment Agency, however, all have policies of requiring that laboratories conducting analysis for regulatory purposes should have their methodologies UKAS accredited, including quantification of asbestos in soil and C&D materials (accreditation for identification of asbestos is already mandatory).

Watch Point 26

The United Kingdom Accreditation Service (UKAS) is currently the sole recognised accreditation body in Great Britain.

Note that Regulation 21 of CAR 2012 only requires accreditation to ISO 17025 for analysis of samples to determine the presence of asbestos. It does not require accreditation for mass quantification analysis. UKAS accreditation to ISO 17025 for quantification of asbestos in soil and C&D materials is available, however, and is held by a number of UK laboratories.

In order to comply with established Good Practice and industry guidance for contaminated land assessments in England, Wales, Scotland and Northern Ireland, that may be required under environmental and planning legislation, it is strongly recommended that employers who contract analysts to undertake quantification analysis of samples of soil and C&D materials potentially contaminated by asbestos should actively search the UKAS website to identify organisations with the appropriate full-scope accreditation to safeguard their interests. This will give an assurance of accreditation for all of the steps involved in this complex analysis and an element of independence.

[7] *Performance Standard for Laboratories Undertaking Chemical Testing of Soil. Environment Agency, March 2012, Version 4.*

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/301489/performance_standard_for_laboratories_undertaking_chemical_testing_of_soil.pdf

436. The National Quality Mark Scheme for Land Contamination Management (NQMS)[8] is a voluntary scheme that is being designed by the Land Forum[9] to ensure that land contamination management work meets the necessary technical[10] and regulatory standards.

437. It has been designed to operate alongside and within existing quality management systems and has the support in principle of both the Department for Communities and Local Government (DCLG) and the Department for Environment, Food and Rural Affairs (DEFRA).

438. When introduced in 2016, the NQMS will apply in particular to the presentation of environmental information to the regulator in the form of reports setting out both factual and interpretative information. In the context of the Town and Country Planning Regime, the NQMS will cover reports submitted in support of planning applications or to assist the discharge of one or more specific planning conditions relating to land contamination management.

439. If the NQMS is followed, land contamination reports will be required to be prepared in line with good practice and signed off by a suitably qualified and experienced person registered under the NQMS who ensures, in respect of laboratory analytical data, that underlying data has been collected in line with established good practice procedures and its collection has been subject to control via established quality management systems.

440. It is likely, therefore, that full-scope UKAS accreditation for the quantification of asbestos in soil and C&D materials will be a requirement of national environmental and Local Authority regulators alike in the preparation and submission of land quality assessment reports in accordance with BS10175[11] and CLR11 and supporting technical guidance documentation when used for regulatory purposes.

22 Regulation 22: Health records and medical surveillance

This regulation requires employers to arrange appropriate medical examinations for any employees who carry out licensed work or NNLW. It also sets out what health records employers must keep and for how long.

441. ACoP L143, to which the reader is referred, provides detailed information on health records and medical surveillance, which offers little scope for additional interpretation, and is not duplicated here.

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[8] www.claire.co.uk/nqms

[9] www.claire.co.uk/landforum

[10] *CLR11: Model Procedures for the Management of Land Contamination. Environment Agency, September 2004, and supporting technical guidance.*

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/297401/scho0804bibr-e-e.pdf

http://www.claire.co.uk/wall

[11] *BS 10175:2011+A1:2013, Investigation of potentially contaminated sites. Code of practice. British Standards Institution. March 2011.*

23 Regulation 23: Washing and changing facilities

This regulation requires employers to provide suitable and sufficient washing, changing and storage facilities for employees, and sets out the specific requirements for hygiene facilities for licensed work.

442. ACoP L143, to which the reader is referred, provides detailed information on washing and changing facilities, which offers little scope for additional interpretation, and is not duplicated here.

24 Regulation 24: Storage, distribution and labelling of raw asbestos and asbestos waste

This regulation requires employers to make sure that raw asbestos and asbestos waste is properly packaged, labelled, stored and transported.

24.1 Management of asbestos waste

443. Asbestos waste describes asbestos products or materials that are classed as waste and that are required to be disposed of and/or are awaiting disposal, including soil, C&D materials, building materials, dust, rubble, disposable PPE, rags used for cleaning and used tools that cannot be properly decontaminated.

444. In certain circumstances, soil and C&D materials contaminated by asbestos may not be classed as waste, for example when the tests set within the CL:AIRE Definition of Waste: Development Industry Code of Practice[27] are met for the beneficial reuse of contaminated materials on the site where they are produced.

445. Note that the CL:AIRE Definition of Waste: Development Industry Code of Practice is being updated at the time of writing and is expected to be published in the near future[12].

24.2 Packaging of asbestos waste

446. When packing asbestos waste which comprises ACMs, for example material collected from the surface of a site:

- it should be securely sealed in suitable, labelled bags, wrapping or packaging as it is produced;
- any bags, wrapping or packaging used must be designed, constructed and maintained to make sure that no asbestos fibres can be released during handling or transport;
- for most waste, double plastic sacks are suitable, provided they will not split during normal use;

[12] www.claire.co.uk/cop

- stronger packages must be used if the waste contains sharp metal fragments or other materials that could puncture plastic sacks;

- any waste where the escape of hazardous quantities of respirable asbestos fibres can occur during carriage should be placed in UN-approved packaging. This is available in up to 2 tonnes capacity. (This does not apply to asbestos cement or textured decorated coatings).

Examples of a UN-approved sealable Flexible Intermediate Bulk Container (FIBC), pre-lined with sift-proof polythene sheeting, being used for the packaging of asbestos waste and/or asbestos-contaminated soil.

Photos Courtesy of Hydrock

447. When filling plastic sacks:

- make sure that the inner bag is not overfilled, especially when the debris is wet, and each bag can be securely tied or sealed;

- exclude air from the bag as far as possible before sealing. Precautions will need to be taken as the exhaust air may be contaminated;

- where practicable, the sealed packaging should be cleaned before it is removed from the asbestos work area or enclosure.

448. If the asbestos waste is not to be disposed of immediately, the sealed bags and packages should be locked in a suitable and clearly marked storage area, i.e. a lockable skip.

24.3 Asbestos-contaminated soil and C&D materials in bulk

449. When managing large volumes of excavated waste soil and/or C&D material contaminated by asbestos, it may not be practicable to place material into UN-approved plastic bags or bulk packaging. Consideration may be given to the placement of material directly into an appropriate pre-lined bulk container such as a haulage vehicle or a roll-on, roll-off skip; UN-approved FIBC liners are available for large bulk containers.

450. Procedures should be in place to minimise the spread of asbestos during the loading operation and to prevent spread from the load while it is being transported on the road.

451. The strategy for the contained transport of waste material to landfill should considered on a project-by-project basis and agreed with relevant stakeholders, including the client, the regulator (for waste) and the landfill operator.

452. Consideration should also be given to how unlined bulk containers are cleaned to ensure that the spread of asbestos is minimised.

Example of a roll-on-roll-off bulk container pre-lined with minimum 1000 gauge polythene sheeting, being used for the packaging of asbestos-contaminated soil.

The skip will be hermetically sealed prior to consignment off-site for disposal.

Photo Courtesy of Hydrock

24.3.1 Large asbestos waste items

453. Wherever practicable, large items of rigid ACM such as sheets of asbestos cement should not be broken up or cut down for disposal in plastic bags or sacks.

454. The intact rigid waste should be double wrapped in suitable polythene sheeting (1000 gauge) or other suitable material and labelled accordingly.

455. If the asbestos waste is not to be disposed of immediately, the wrapped package should be placed in a suitable and clearly labelled sealed receptacle, such as a lockable skip or freight container.

24.4 Transporting asbestos waste

456. Bags, wrapping or packaging containing asbestos waste should be appropriately labelled and transported to a licensed disposal site. A list of disposal sites is available from the Environment Agency (in England), the Scottish Environmental Protection Agency, Natural Resources Wales, the Northern Ireland Environment Agency and/or local authorities.

457. Wherever possible and practical, asbestos-contaminated waste should be transported in an enclosed vehicle, skip or freight container.

458. In all circumstances, a suitable receptacle should be used to transport bagged or wrapped asbestos waste to make sure that the bags, wrapping and packaging cannot become damaged or open up and release asbestos material or asbestos fibres during transit.

459. Likewise, bulk containers into which bulk excavated waste materials are loaded should be capable of being transported in a manner that eliminates the spread of asbestos.

460. Asbestos waste classed as Hazardous or Special must be transported in accordance with the specific requirements of the Hazardous Waste (England and Wales) Regulations 2005, the Hazardous Waste (Northern Ireland) Regulations 2005 **or** the Special Waste Regulations 1996 in Scotland, as amended**.**

24.5 Labelling asbestos waste

461. Asbestos waste must be labelled:

- in accordance with the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009[28] where those Regulations apply; or
- where those Regulations do not apply, in accordance with Schedule 2 of CAR 2012.

24.6 Sorting waste

462. Although not a requirement of CAR 2012 an Environmental Permit or a licence may be required from the Environment Agency (in England), the Scottish Environmental Protection Agency, Natural Resources Wales, the Northern Ireland Environment Agency for some waste management activities such as remediation of soil and C&D materials by mechanical sorting of ACMs from other material.

25 Regulation 25: Interpretation of prohibitions

25.1 Recycled aggregate products containing minor amounts of asbestos

463. Prohibitions on the manufacture, supply and use of asbestos and asbestos-containing articles and materials are not contained in CAR 2012. They can be found in direct-acting EU legislation, the Registration, Evaluation, Authorisation & Restriction of Chemicals Regulations (REACH[29]), which applies in the UK and other EU Member States. For the convenience of the reader some information on REACH and its application to asbestos-containing aggregate materials is presented below.

464. REACH prohibits the manufacture, placing on the market and use of any article or product to which asbestos has been ***intentionally added***.

465. Recycled aggregates, which fall under the definition of 'articles' under REACH, where asbestos is found to be present are deemed to have had asbestos intentionally added, "*subject to evidence to the contrary being adduced in any proceedings*".

466. Caution must be exercised therefore, to ensure that the mixing of asbestos and inert demolition wastes does not occur as a result of asbestos and/or ACMs not first having been removed from a building prior to its demolition.

Watch Point 27

Guidance on how to ensure that asbestos and ACMs are kept out of the recycled aggregate and secondary materials production cycle will be set out in the JIWG AiSCoP.

25.2 Excavated soils containing asbestos

467. In circumstances where the nature and degree of contamination by asbestos so permits, excavated materials may be reused only on the site of production under the CL:AIRE Definition of Waste: Development Industry Code of Practice. The potential for reuse of such materials must be considered on a case-by-case basis and be strictly in accordance with the requirements of the Code of Practice.

Watch Point 28

Guidance on the reuse of excavated soils and made ground contaminated by asbestos, on the site of production, will be set out in the JIWG AiSCoP.

26 Regulation 26: Prohibitions of exposure to asbestos

468. CAR 2012 'Administrative' requirement - no guidance needed.

27 Regulation 27: Labelling of products containing asbestos

469. CAR 2012 'Administrative' requirement - no guidance needed.

28 Regulation 28: Additional provisions in the case of exceptions and exemptions

470. CAR 2012 'Administrative' requirement - no guidance needed.

29 Regulation 29: Exemption certifications

471. CAR 2012 'Administrative' requirement - no guidance needed.

30 Regulation 30: Exemptions relating to the Ministry of Defence

472. CAR 2012 'Administrative' requirement - no guidance needed.

31 Regulation 31: Extension outside Great Britain

473. CAR 2012 'Administrative' requirement - no guidance needed.

32 Regulation 32: Existing licences and exemption certificates

474. CAR 2012 'Administrative' requirement - no guidance needed.

33 Regulation 33: Revocations and savings

475. CAR 2012 'Administrative' requirement - no guidance needed.

34 Regulation 34: Defence

476. CAR 2012 'Administrative' requirement - no guidance needed.

35 Regulation 35: Review

477. CAR 2012 'Administrative' requirement - no guidance needed.

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23. The Special Waste Amendment (Scotland) Regulations 2004. Scottish SI 2004/112. The Stationery Office 2004. ISBN 978 0 11 069030 8.

24. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006, as amended. Official Journal of the European Union.

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http://www.hseni.gov.uk/decontamination_of_asbestos_contaminated_plant.pdf

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28. The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 SI 2009/1348 The Stationery Office 2009 ISBN 978 0 11 148012 0.

29. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency. Official Journal of the European Union.

Further sources of advice

Joint Industry Working Group.
http://www.claire.co.uk/asbestos

Health and Safety Executive (England and Wales).
http://www.hse.gov.uk/contact/contact.htm

Health and Safety Executive (Scotland).
http://www.hse.gov.uk/scotland/contact.htm

Health and Safety Executive (Northern Ireland).
http://www.hseni.gov.uk/contact-us.htm

The Environment Agency (EA), National Customer Contact Centre, PO Box 544, Rotherham S60 1BY.
https://www.gov.uk/government/organisations/environment-agency

The Scottish Environment Protection Agency (SEPA), SEPA Corporate Office, Erskine Court, Castle Business Park, Stirling FK9 4TR.
http://www.sepa.org.uk/

Natural Resources Wales (NRW)/Cyfoeth Naturiol Cymru, Tŷ Cambria, 29 Newport Road, Cardiff CF24 0TP.
http://naturalresources.wales/splash?orig=/

Northern Ireland Environment Agency (NIEA), Klondyke Building, Cromac Avenue, Gasworks Business Park, Lower Ormeau Road, Belfast BT7 2JA.
http://www.nidirect.gov.uk/northern-ireland-environment-agency

United Kingdom Accreditation Service (UKAS), 2 Pine Trees, Chertsey Lane, Staines-upon-Thames TW18 3HR.
http://www.ukas.com/

Appendix 1 Control of Asbestos Regulations 2012

Regulation 1 Citation and commencement

These Regulations may be cited as the Control of Asbestos Regulations 2012 and come into force on 6th April 2012.

Regulation 2 Interpretation

Summary

This regulation provides definition and interpretation of the terms used in the Regulations.

(1) In these Regulations—

"adequate" means adequate having regard only to the nature and degree of exposure to asbestos, and "adequately" must be construed accordingly;

"appointed doctor" means a registered medical practitioner appointed for the time being in writing by the Executive for the purpose of these Regulations;

"approved" means approved for the time being in writing by the Executive;

"asbestos" means the following fibrous silicates—

(a) asbestos actinolite, CAS No 77536-66-4;

(b) asbestos grunerite (amosite), CAS No 12172-73-5;

(c) asbestos anthophyllite, CAS No 77536-67-5;

(d) chrysotile, CAS No 12001-29-5 or CAS No 132207-32-0;

(e) crocidolite, CAS No 12001-28-4; and

(f) asbestos tremolite, CAS No 77536-68-6,

and reference to "CAS" followed by a numerical sequence are references to CAS Registry Numbers assigned to chemicals by the Chemical Abstracts Service, a division of the American Chemical Society;

"asbestos cement" means a material which is predominantly a mixture of cement and chrysotile and which when in a dry state absorbs less than 30% water by weight;

"asbestos coating" means a surface coating which contains asbestos for fire protection, heat insulation or sound insulation but does not include textured decorative coatings;

"asbestos insulating board" (AIB) means any flat sheet, tile or building board consisting of a mixture of asbestos and other material except—

(a) asbestos cement; or

(b) any article of bitumen, plastic, resin or rubber which contains asbestos, and the thermal or acoustic properties of the article are incidental to its main purpose;

"asbestos insulation" means any material containing asbestos which is used for thermal, acoustic or other insulation purposes (including fire protection) except—

(a) asbestos cement, asbestos coating or asbestos insulating board; or

(b) any article of bitumen, plastic, resin or rubber which contains asbestos and the thermal and acoustic properties of that article are incidental to its main purpose;

"the control limit" means a concentration of asbestos in the atmosphere when measured in accordance with the 1997 WHO recommended method, or by a method giving equivalent results to that method approved by the Executive, of 0.1 fibres per cubic centimetre of air averaged over a continuous period of 4 hours;

"control measure" means a measure taken to prevent or reduce exposure to asbestos (including the provision of systems of work and supervision, the cleaning of workplaces, premises, plant and equipment, and the provision and use of engineering controls and personal protective equipment);

"emergency services" include—

(a) police, fire, rescue and ambulance services;

(b) Her Majesty's Coastguard;

"employment medical adviser" means an employment medical adviser appointed under section 56 of the 1974 Act;

"enforcing authority" means the Executive, local authority or Office of Rail Regulation, determined in accordance with the provisions of the Health and Safety (Enforcing Authority) Regulations 1998 and the provisions of the Health and Safety (Enforcing Authority for Railways and Other Guided Transport Systems) Regulations 2006;

"ISO 17020" means European Standard EN ISO/IEC 17020, "General criteria for the operation of various types of bodies performing inspection" as revised or reissued from time to time and accepted by the Comité Européen de Normalisation Électrotechnique (CEN/CENELEC);

"ISO 17025" means European Standard EN ISO/IEC 17025, "General requirements for the competence of testing and calibration laboratories" as revised or reissued from time to time and accepted by the Comité Européen de Normalisation Électrotechnique (CEN/CENELEC);

"licensable work with asbestos" is work—

(a) where the exposure to asbestos of employees is not sporadic and of low intensity; or

(b) in relation to which the risk assessment cannot clearly demonstrate that the control limit will not be exceeded; or

(c) on asbestos coating; or

(d) on asbestos insulating board or asbestos insulation for which the risk assessment—

(i) demonstrates that the work is not sporadic and of low intensity, or

(ii) cannot clearly demonstrate that the control limit will not be exceeded, or

(iii) demonstrates that the work is not short duration work;

"medical examination" includes any laboratory tests and X-rays that a relevant doctor may require;

"personal protective equipment" means all equipment (including clothing) which is intended to be worn or held by a person at work and which protects that person against one or more risks to that person's health, and any addition or accessory designed to meet that objective;

"relevant doctor" means an appointed doctor or an employment medical adviser. In relation to work with asbestos which is not licensable work with asbestos and is not exempted by regulation 3(2) "relevant doctor" also includes an appropriate fully registered medical practitioner who holds a licence to practice;

"risk assessment" means the assessment of risk required by regulation 6(1)(a);

"textured decorative coatings" means decorative and textured finishes, such as paints and ceiling and wall plasters which are used to produce visual effects and which contain asbestos. These coatings are designed to be decorative and any thermal or acoustic properties are incidental to their purpose, and

"the 1997 WHO recommended method" means the publication "Determination of airborne fibre concentrations. A recommended method, by phase-contrast optical microscopy (membrane filter method)", WHO (World Health Organisation), Geneva 1997.

(2) A reference to work with asbestos in these Regulations includes—

(a) work which consists of the removal, repair or disturbance of asbestos or materials containing asbestos;

(b) work which is ancillary to such work; and

(c) supervision of such work and such ancillary work.

(3) For the purposes of these Regulations, work with asbestos is not "short duration work" if, in any seven day period—

(a) that work, including any ancillary work liable to disturb asbestos, takes more than two hours; or

(b) any person carries out that work for more than one hour.

(4) For the purpose of these Regulations, no exposure to asbestos will be sporadic and of low intensity if the concentration of asbestos in the atmosphere, when measured in accordance with the 1997 WHO recommended method or by a method giving equivalent results to that method and approved by the Executive, exceeds or is liable to exceed the concentration approved in relation to a specified reference period for the purposes of this paragraph by the Executive.

(5) For the purposes of these Regulations, except in accordance with regulation 11(3) and (5), in determining whether an employee is exposed to asbestos or whether the extent of such exposure exceeds the control limit, no account must be taken of respiratory protective equipment which, for the time being, is being worn by that employee.

(6) In these Regulations the provisions of Appendix 7 to Annex XVII of the REACH Regulations, which determine the labelling requirements of articles containing asbestos, are reproduced in Schedule 2 (with minor changes reflecting the practical implementation of the requirements).

Regulation 3 Application of these Regulations

Summary

This regulation states how the Regulations apply.

Regulation 3(2) also provides for an exemption from the application of some of the Regulations. To benefit from the exemption, the work with asbestos must meet certain criteria.

(1) These Regulations apply to a self-employed person as they apply to an employer and an employee and as if that self-employed person were both an employer and an employee.

(2) Regulations 9 (notification of work with asbestos), 18(1)(a) (designated areas) and 22 (health records and medical surveillance) do not apply where—

(a) the exposure to asbestos of employees is sporadic and of low intensity; and

(b) it is clear from the risk assessment that the exposure to asbestos of any employee will not exceed the control limit; and

(c) the work involves—

(i) short, non-continuous maintenance activities in which only non-friable materials are handled, or

(ii) removal without deterioration of non-degraded 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 and analysis of samples to ascertain whether a specific material contains asbestos.

(3) Where a duty is placed by these Regulations on an employer in respect of employees of that employer, the employer is, so far as is reasonably practicable, under a like duty in respect of any other person, whether at work or not, who may be affected by the work activity carried out by that employer except that the duties of the employer—

(a) under regulation 10 (information, instruction and training) do not extend to persons who are not employees of that employer unless those persons are on the premises where the work is being carried out; and

(b) under regulation 22 (health records and medical surveillance) do not extend to persons who are not employees of that employer.

(4) Regulation 17 (cleanliness of premises and plant), to the extent that it requires an employer to ensure that premises are thoroughly cleaned, does not apply—

(a) in England and Wales, to a fire and rescue authority within the meaning of section 1 of the Fire and Rescue Services Act 2004 or, in Scotland, the Scottish Fire and Rescue Service,[1] in respect of premises attended by its employees for the purpose of fighting a fire or in an emergency; or

(b) to the employer of persons who attend a ship in dock premises for the purpose of fighting a fire or in an emergency, in respect of any ship so attended,

and for the purposes of this paragraph "ship" includes all vessels and hovercraft which operate on water or land and water, and "dock premises" means a dock, wharf, quay, jetty or other place at which ships load or unload goods or embark or disembark passengers, together with neighbouring land or water which is used or occupied, or intended to be used or occupied, for those or incidental activities, and any part of a ship when used for those or incidental activities.

(5) These Regulations shall 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, and for the purposes of this paragraph "ship" includes every description of vessel used in navigation, other than a ship forming part of Her Majesty's Navy.

[1] Words substituted by Police and Fire Reform (Scotland) Act 2012 (Consequential Modifications and Savings) Order 2013/119 (Scottish SI) Sch.2 para.27 (April 1, 2013)

Regulation 4 Duty to manage asbestos in non-domestic premises

Summary

This regulation covers the duty to manage asbestos on or in the land. It requires dutyholders to identify asbestos on or in the land where evidence comes to light that asbestos exists, or is suspected, and to manage the risk from that asbestos to prevent harm to anyone who works on or in the land on the premises. It explains what is required of those who have a duty to co-operate with the dutyholder to enable them to comply with the regulation.

(1) In this regulation "the dutyholder" means—

(a) every person who has, by virtue of a contract or tenancy, an obligation of any extent in relation to the maintenance or repair of non-domestic premises or any means of access or egress to or from those premises; or

(b) in relation to any part of non-domestic premises where there is no such contract or tenancy, every person who has, to any extent, control of that part of those non-domestic premises or any means of access or egress to or from those premises,

and where there is more than one such dutyholder, the relative contribution to be made by each such person in complying with the requirements of this regulation will be determined by the nature and extent of the maintenance and repair obligation owed by that person.

(2) Every person must cooperate with the dutyholder so far as is necessary to enable the dutyholder to comply with the duties set out under this regulation

(3) In order to manage the risk from asbestos in non-domestic premises, the dutyholder must ensure that a suitable and sufficient assessment is carried out as to whether asbestos is or is liable to be present in the premises.

(4) In making the assessment—

(a) such steps as are reasonable in the circumstances must be taken; and

(b) the condition of any asbestos which is, or has been assumed to be, present in the premises must be considered.

(5) Without prejudice to the generality of paragraph (4), the dutyholder must ensure that—

(a) account is taken of building plans or other relevant information and of the age of the premises; and

(b) an inspection is made of those parts of the premises which are reasonably accessible.

(6) The dutyholder must ensure that the assessment is reviewed without delay if—

(a) there is reason to suspect that the assessment is no longer valid; or

(b) there has been a significant change in the premises to which the assessment relates.

(7) The dutyholder must ensure that the conclusions of the assessment and every review are recorded.

(8) Where the assessment shows that asbestos is or is liable to be present in any part of the premises the dutyholder must ensure that—

(a) a determination of the risk from that asbestos is made;

(b) a written plan identifying those parts of the premises concerned is prepared; and

(c) the measures which are to be taken for managing the risk are specified in the written plan.

(9) The measures to be specified in the plan for managing the risk must include adequate measures for—

(a) monitoring the condition of any asbestos or any substance containing or suspected of containing asbestos;

(b) ensuring any asbestos or any such substance is properly maintained or where necessary safely removed; and

(c) ensuring that information about the location and condition of any asbestos or any such substance is—

(i) provided to every person liable to disturb it, and

(ii) made available to the emergency services.

(10) The dutyholder must ensure that—

(a) the plan is reviewed and revised at regular intervals, and without delay if—

(i) there is reason to suspect that the plan is no longer valid, or

(ii) there has been a significant change in the premises to which the plan relates;

(b) the measures specified in the plan are implemented; and

(c) the measures taken to implement the plan are recorded.

(11) In this regulation—

(a) "the assessment" is a reference to the assessment required by paragraph (3);

(b) "the plan" is a reference to the plan required by paragraph (8); and

(c) "the premises" is a reference to the non-domestic premises referred to in paragraph (1).

Regulation 5 Identification of the presence of asbestos

Summary

This regulation requires employers to identify the presence of asbestos and its type and condition before any construction or maintenance work, liable to disturb asbestos in the ground, begins. It also sets out the requirement to arrange an investigation to determine the extent of asbestos in the ground if a review of relevant information suggests that asbestos is likely to be present on the premises.

(1) An employer must not undertake work in demolition, maintenance, or any other work which exposes or is liable to expose employees of that employer to asbestos in respect of any premises unless either—

(a) that employer has carried out a suitable and sufficient assessment as to whether asbestos, what type of asbestos, contained in what material and in what condition is present or is liable to be present in those premises; or

(b) if there is doubt as to whether asbestos is present in those premises that employer—

(i) assumes that asbestos is present, and that it is not chrysotile alone, and

(ii) observes the applicable provisions of these Regulations.

Regulation 6 Assessment of work which exposes employees to asbestos

Summary

This regulation requires employers to carry out a risk assessment to identify the risks of exposure to asbestos. It sets out the requirement to record any significant findings and put in place steps to prevent, or reduce, exposure to employees.

(1) An employer must not carry out work which is liable to expose employees of that employer to asbestos unless that employer has—

(a) made a suitable and sufficient assessment of the risk created by that exposure to the health of those employees and of the steps that need to be taken to meet the requirements of these Regulations;

(b) recorded the significant findings of that risk assessment as soon as is practicable after the risk assessment is made; and

(c) implemented the steps referred to in sub-paragraph (a).

(2) Without prejudice to the generality of paragraph (1), the risk assessment must—

(a) subject to regulation 5, identify the type of asbestos to which employees are liable to be exposed;

(b) determine the nature and degree of exposure which may occur in the course of the work;

(c) consider the effects of control measures which have been or will be taken in accordance with regulation 11;

(d) consider the results of monitoring of exposure in accordance with regulation 19;

(e) set out the steps to be taken to prevent that exposure or reduce it to the lowest level reasonably practicable;

(f) consider the results of any medical surveillance that is relevant; and

(g) include such additional information as the employer may need in order to complete the risk assessment.

(3) The risk assessment must be reviewed regularly, and immediately if—

(a) there is reason to suspect that the existing risk assessment is no longer valid;

(b) there is a significant change in the work to which the risk assessment relates; or

(c) the results of any monitoring carried out pursuant to regulation 19 show it to be necessary,

and where, as a result of the review, changes to the risk assessment are required, those changes must be made and, where they relate to the significant findings of the risk assessment or are themselves significant, recorded.

(4) Where, in accordance with the requirement in paragraph (2)(b), the risk assessment has determined that the exposure to asbestos of employees of that employer may exceed the control limit, the employer must keep a copy of the significant findings of the risk assessment at those premises at which, and for such time as, the work to which that risk assessment relates is being carried out.

Regulation 7 Plans of work

Summary

This regulation requires employers to prepare a written plan before work on asbestos is carried out, including details of the work, and the appropriate actions to control risk and prevent harm.

(1) An employer must not undertake any work with asbestos without having prepared a suitable written Plan of Work detailing how that work is to be carried out.

(2) The employer shall keep a copy of the Plan of Work at those premises at which the work to which the plan relates is being carried out for such time as that work continues.

(3) In cases of final demolition or major refurbishment of premises, the Plan of Work must, so far as is reasonably practicable, specify that asbestos must be removed before any other major works begin, unless removal would cause a greater risk to employees than if the asbestos had been left in place.

(4) The Plan of Work must include in particular details of—

(a) the nature and probable duration of the work;

(b) the location of the place where the work is to be carried out;

(c) the methods to be applied where the work involves the handling of asbestos or materials containing asbestos;

(d) the characteristics of the equipment to be used for—

(i) protection and decontamination of those carrying out the work, and

(ii) protection of other persons on or near the worksite;

(e) the measures which the employer intends to take in order to comply with the requirements of regulation 11; and

(f) the measures which the employer intends to take in order to comply with the requirements of regulation 17.

(5) The employer must ensure, so far as is reasonably practicable, that the work to which the Plan of Work relates is carried out in accordance with that plan and any subsequent written changes to it.

Regulation 8 Licensing of work with asbestos

Summary

This regulation requires employers to obtain a licence from HSE before they can carry out any licensable work with asbestos. Licensable work is work that meets the definition of 'licensable work with asbestos' as set out in regulation 2 of the Regulations and as expanded upon in this guidance.

(1) An employer must hold a licence granted under paragraph (2) before undertaking any licensable work with asbestos.

(2) The Executive may grant a licence for licensable work with asbestos if it considers it appropriate to do so and:

(a) the person who wishes to be granted the licence has made an application for it on a form approved for the purposes of this regulation by the Executive; and

(b) the application was made at least 28 days before the date from which the licence is to run, or such shorter period as the Executive may allow.

(3) A licence under this regulation—

(a) comes into operation on the date specified in the licence, and is valid for any period up to a maximum of three years that the Executive may specify in it; and

(b) may be granted subject to such conditions as the Executive may consider appropriate.

(4) The Executive may vary the terms of a licence under this regulation if it considers it appropriate to do so and in particular may—

(a) add further conditions and vary or omit existing ones; and

(b) reduce the period for which the licence is valid or extend that period up to a maximum of three years from the date on which the licence first came into operation.

(5) The Executive may revoke a licence if it considers it appropriate to do so.

(6) The holder of a licence under this regulation must return the licence to the Executive—

(a) when required by the Executive for any amendment; or

(b) following its revocation.

Regulation 9 Notification of work with asbestos

Summary

This regulation requires employers to notify the appropriate enforcing authority of proposed work which is either licensable (always notifiable) or NNLW (applies to some non-licensable work). It also outlines the requirements to notify any material change which might affect the particulars of the original notification, this is particularly important for licensed work.

(1) For licensable work with asbestos, an employer must notify the appropriate enforcing authority of—

(a) the particulars specified in Schedule 1 in writing at least 14 days (or such shorter time before as the appropriate enforcing authority may agree) before undertaking any licensable work with asbestos: and

(b) any material change, which might affect the particulars notified in accordance with (1)(a) (including the cessation of the work), in writing and without delay.

(2) For work with asbestos which is not licensable work with asbestos and is not exempted by regulation 3(2), an employer must notify the appropriate enforcing authority of—

(a) the particulars specified in Schedule 1, before work is commenced: and

(b) any material change, which might affect the particulars notified in accordance with (2)(a), without delay.

Regulation 10 Information, instruction and training

Summary

This regulation requires employers to make sure that anyone liable to disturb asbestos during their work, or who supervises such employees, receives the correct level of information, instruction and training to enable them to carry out their work safely and competently and without risk to themselves or others.

(1) Every employer must ensure that any employee employed by that employer is given adequate information, instruction and training where that employee—

(a) is or is liable to be exposed to asbestos, or if that employee supervises such employees, so that those employees are aware of—

(i) the properties of asbestos and its effects on health, including its interaction with smoking,

(ii) the types of products or materials likely to contain asbestos,

(iii) the operations which could result in asbestos exposure and the importance of preventive controls to minimise exposure,

(iv) safe work practices, control measures, and protective equipment,

(v) the purpose, choice, limitations, proper use and maintenance of respiratory protective equipment,

(vi) emergency procedures,

(vii) hygiene requirements,

(viii) decontamination procedures,

(ix) waste handling procedures,

(x) medical examination requirements, and

(xi) the control limit and the need for air monitoring,

in order to safeguard themselves and other employees; and

(b) carries out work in connection with the employer's duties under these Regulations, so that the employee can carry out that work effectively.

(2) The information, instruction and training required by paragraph (1) must be—

(a) given at regular intervals;

(b) adapted to take account of significant changes in the type of work carried out or methods of work used by the employer; and

(c) provided in a manner appropriate to the nature and degree of exposure identified by the risk assessment, and so that the employees are aware of—

(i) the significant findings of the risk assessment, and

(ii) the results of any air monitoring carried out with an explanation of the findings.

Regulation 11 Prevention or reduction of exposure to asbestos

Summary

This regulation requires employers to prevent employees being exposed to asbestos or, if this is not possible, to put in place the measures and controls necessary to reduce exposure to as low as is reasonably practicable.

(1) Every employer must—

(a) prevent the exposure to asbestos of any employee employed by that employer so far as is reasonably practicable;

(b) where it is not reasonably practicable to prevent such exposure—

(i) take the measures necessary to reduce exposure to asbestos of any such employee to the lowest level reasonably practicable by measures other than the use of respiratory protective equipment, and

(ii) ensure that the number of any such employees exposed to asbestos at any one time is as low as is reasonably practicable.

(2) Where it is not reasonably practicable for the employer to prevent the exposure to asbestos of any such employee employed by that employer in accordance with paragraph (1)(a), the measures referred to in paragraph (1)(b)(i) must include, in order of priority—

(a) the design and use of appropriate work processes, systems and engineering controls and the provision and use of suitable work equipment and materials in order to avoid or minimise the release of asbestos; and

(b) the control of exposure at source, including adequate ventilation systems and appropriate organisational measures,

and the employer must so far as is reasonably practicable provide any employee concerned with suitable respiratory protective equipment in addition to the measures required by sub-paragraphs(a) and (b).

(3) Where it is not reasonably practicable for the employer to reduce the exposure to asbestos of any such employee to below the control limit by the measures referred to in paragraph (1)(b)(i), then, in addition to taking those measures, the employer must provide that employee with suitable respiratory protective equipment which will reduce the concentration of asbestos in the air inhaled by that employee (after taking account of the effect of that respiratory protective equipment) to a concentration which is—

(a) below the control limit; and

(b) as low as is reasonably practicable.

(4) Personal protective equipment provided by an employer in accordance with this regulation or with regulation 14(1) must be suitable for its purpose and—

(a) comply with any provision of the Personal Protective Equipment Regulations 2002 which is applicable to that item of personal protective equipment; or

(b) in the case of respiratory protective equipment, where no provision referred to in sub-paragraph (a) applies, be of a type approved or must conform to a standard approved, in either case, by the Executive.

(5) The employer must—

(a) ensure that no employee is exposed to asbestos in a concentration in the air inhaled by that worker which exceeds the control limit; or

(b) if the control limit is exceeded—

(i) immediately inform any employees concerned and their representatives and ensure that work does not continue in the affected area until adequate measures have been taken to reduce employees' exposure to asbestos below the control limit,

(ii) as soon as is reasonably practicable identify the reasons for the control limit being exceeded and take the appropriate measures to prevent it being exceeded again, and

(iii) check the effectiveness of the measures taken pursuant to sub-paragraph (ii) by carrying out immediate air monitoring.

Regulation 12 Use of control measures etc.

Summary

This regulation requires employers to put procedures in place to make sure employees use and apply control measures. It also requires the employees to make full and proper use of those measures.

(1) Every employer who provides any control measure, other thing or facility pursuant to these Regulations must take all reasonable steps to ensure that it is properly used or applied as the case may be.

(2) Every employee must make full and proper use of any control measure, other thing or facility provided pursuant to these Regulations and—

(a) where relevant take all reasonable steps to ensure that it is returned after use to any accommodation provided for it; and

(b) report any defect discovered without delay to that employee's employer.

Regulation 13 Maintenance of control measures etc.

Summary

This regulation requires employers to carry out regular inspection and maintenance of control measures to make sure they are kept in good efficient working order. It also requires a competent person to test and examine exhaust ventilation and RPE at suitable intervals and for records of examinations and tests to be kept for at least five years.

(1) Every employer who provides any control measure to meet the requirements of these Regulations must ensure that—

(a) in the case of plant and equipment, including engineering controls and personal protective equipment, it is maintained in an efficient state, in efficient working order, in good repair and in a clean condition; and

(b) in the case of provision of systems of work and supervision and of any other measure, any such measures are reviewed at suitable intervals and revised if necessary.

(2) Where exhaust ventilation equipment or respiratory protective equipment (except disposable respiratory protective equipment) is provided to meet the requirements of these Regulations, the employer must ensure that thorough examinations and tests of that equipment are carried out at suitable intervals by a competent person.

(3) Every employer must keep a suitable record of the examinations and tests carried out in accordance with paragraph (2) and of repairs carried out as a result of those examinations and tests, and that record or a suitable summary of it must be kept available for at least 5 years from the date on which it was made.

Regulation 14 Provision and cleaning of protective clothing

Summary

This regulation requires employers to provide employees with adequate personal protective clothing appropriate for the work they will be doing. It also sets out the requirement for proper cleaning, maintenance and storage of the clothing.

(1) Every employer must provide adequate and suitable protective clothing for any employee employed by that employer who is exposed or is liable to be exposed to asbestos, unless no significant quantity of asbestos is liable to be deposited on the clothes of the employee while at work.

(2) The employer must ensure that protective clothing provided in pursuance of paragraph (1) is either disposed of as asbestos waste or adequately cleaned at suitable intervals.

(3) The cleaning required by paragraph (2) must be carried out either on the premises where the exposure to asbestos has occurred, where those premises are suitably equipped for such cleaning, or in a suitably equipped laundry.

(4) The employer must ensure that protective clothing which has been used and is to be removed from the premises referred to in paragraph (3) (whether for cleaning, further use or disposal)

is packed, before being removed, in a suitable receptacle which must be labelled in accordance with the provisions of Schedule 2, as if it were a product containing asbestos or, in the case of protective clothing intended for disposal as waste, in accordance with regulation 24(3).

(5) Where, as a result of the failure or improper use of the protective clothing provided in pursuance of paragraph (1), a significant quantity of asbestos is deposited on the personal clothing of an employee, then for the purposes of paragraphs (2), (3) and (4) that personal clothing must be treated as if it were protective clothing provided in pursuance of paragraph (1).

Regulation 15 Arrangements to deal with accidents, incidents and emergencies

Summary

This regulation requires employers to prepare procedures on what to do if there is an accidental, unplanned, uncontrolled release of asbestos fibre. Also, for licensable work, procedures must be planned, implemented and tested and warning systems should be in place. Details of this information must be given to the emergency services.

(1) In the event of an accident, incident or emergency related to the unplanned release of asbestos at the workplace, the employer must ensure that—

(a) immediate steps are taken to—

(i) mitigate the effects of the event,

(ii) restore the situation to normal, and

(iii) inform any person who may be affected; and

(b) only those persons who are responsible for the carrying out of repairs and other necessary work are permitted in the affected area and that such persons are provided with—

(i) appropriate respiratory protective equipment and protective clothing, and

(ii) any necessary specialised safety equipment and plant,

which must be used until the situation is restored to normal.

(2) The remainder of this regulation applies only to licensable work with asbestos, and is without prejudice to the relevant provisions of the Management of Health and Safety at Work Regulations 1999.

(3) Subject to paragraph (5), in order to protect the health of an employer's employees from an accident, incident or emergency related to the use of asbestos in a work process or to the removal or repair of asbestos-containing materials at the workplace, the employer must ensure that—

(a) procedures, including the provision of relevant safety drills (which must be tested at regular intervals), have been prepared which can be put into effect when such an event occurs;

(b) information on emergency arrangements is available, including—

(i) details of relevant work hazards and hazard identification arrangements, and

(ii) specific hazards likely to arise at the time of an accident, incident or emergency, and

(c) suitable warning and other communication systems are established to enable an appropriate response, including remedial actions and rescue operations, to be made immediately when such an event occurs.

(4) The employer must ensure that information on the procedures, emergency arrangements and systems required by paragraph (3)(a) and (c) and the information required by paragraph (3)(b) is—

(a) made available to the relevant accident and emergency services to enable those services, whether internal or external to the workplace, to prepare their own response procedures and precautionary measures; and

(b) displayed at the workplace, if this is appropriate.

(5) Paragraph (3) does not apply where—

(a) the results of the risk assessment show that, because of the quantity of asbestos present at the workplace, there is only a slight risk to the health of employees; and

(b) the measures taken by the employer to comply with the duty under regulation 11(1) are sufficient to control that risk.

Regulation 16 Duty to prevent or reduce the spread of asbestos

Summary

This regulation requires employers to prevent or reduce the spread of asbestos anywhere work is being carried out under employers' control.

Every employer must prevent or, where this is not reasonably practicable, reduce to the lowest level reasonably practicable the spread of asbestos from any place where work under the employer's control is carried out.

Regulation 17 Cleanliness of premises and plant

Summary

This regulation requires employers to make sure that work areas, plant and equipment used for asbestos work are kept clean. It also requires the employer to make sure the area is thoroughly cleaned after work is finished.

Every employer who undertakes work which exposes or is liable to expose any employees of that employer to asbestos must ensure that—

(a) the premises, or those parts of the premises where that work is carried out, and the plant used in connection with that work are kept in a clean state; and

(b) where such work has been completed, the premises, or those parts of the premises where the work was carried out, are thoroughly cleaned.

Regulation 18 Designated areas

Summary

This regulation requires employers to make sure that areas where asbestos work is being carried out are separated, clearly marked, and restricted to those required to work in the area. It also requires the employer to provide suitable facilities for employees to eat and drink.

(1) Every employer must ensure that any area in which work under the control of that employer is carried out is designated as—

(a) an asbestos area, subject to regulation 3(2), where any employee would be liable to be exposed to asbestos in that area; and

(b) a respirator zone where the risk assessment cannot clearly demonstrate that the control limit will not be exceeded.

(2) Asbestos areas and respirator zones must be clearly and separately demarcated and identified by notices indicating—

(a) that the area is an asbestos area or a respirator zone or both, as the case may be; and

(b) in the case of a respirator zone, that the exposure of an employee who enters it is liable to exceed the control limit and that respiratory protective equipment must be worn.

(3) The employer must not permit any employee, other than an employee who is required for work purposes to be in an area designated as an asbestos area or a respirator zone, to enter or remain in any such area and only employees who are so permitted shall enter or remain in such an area.

(4) Every employer must ensure that only competent employees—

(a) enter a respirator zone; and

(b) supervise any employees who enter a respirator zone,

and for the purposes of this paragraph, a competent employee means an employee who has received adequate information, instruction and training.

(5) Every employer must ensure that—

(a) the employer's employees do not eat, drink or smoke in an area designated as an asbestos area or a respirator zone; and

(b) arrangements are made for such employees to eat or drink in some other place.

Regulation 19 Air monitoring

Summary

This regulation requires employers to arrange regular monitoring of airborne asbestos fibres and keep records of the results. It sets out how long the records should be kept and that they should be made available to employees or the regulator as required.

(1) Subject to paragraph (2), every employer must monitor the exposure to asbestos of any employees employed by that employer by measurement of asbestos fibres present in the air—

(a) at regular intervals; and

(b) when a change occurs which may affect that exposure.

(2) Paragraph (1) does not apply where—

(a) the exposure of an employee is not liable to exceed the control limit; or

(b) the employer is able to demonstrate by another method of evaluation that the requirements of regulation 11 (1) and (5) have been complied with.

(3) The employer must keep a suitable record of—

(a) monitoring carried out in accordance with paragraph (1); or

(b) where it is decided that monitoring is not required because paragraph 2(b) applies, the reason for that decision.

(4) The record required by paragraph (3), or a suitable summary thereof, must be kept—

(a) in a case where exposure is such that a health record is required to be kept under regulation 22 for at least 40 years; or

(b) in any other case, for at least 5 years,

from the date of the last entry made in it.

(5) In relation to the record required by paragraph (3), the employer must-

(a) on reasonable notice being given, allow an employee access to the personal monitoring record for that employee;;

(b) provide the Executive with copies of such monitoring records as the Executive may require; and

(c) if that employer ceases to trade, notify the Executive without delay in writing and make available to the Executive all monitoring records kept by that employer.

Regulation 20 Standards for air testing and site clearance certification

Summary

This regulation requires employers performing their own air testing to do it in a way that meets the criteria as set out in ISO 17025. It also requires employers to make sure that any person they engage to perform asbestos air testing and site clearance is competent and accredited by the appropriate accreditation body.

(1) In paragraph (4), "site clearance certificate for reoccupation" means a certificate issued to confirm that premises or parts of premises where work with asbestos has been carried out have been thoroughly cleaned upon completion of that work in accordance with regulation 17(b).

(2) Every employer who carries out any measurement of the concentration of asbestos fibres present in the air must ensure that criteria are met which are equivalent to those set out in the paragraphs of ISO 17025 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.

(3) Every employer who requests a person to carry out any measurement of the concentration of asbestos fibres present in the air must ensure that that person is accredited by an appropriate body as competent to perform work in compliance with ISO 17025.

(4) Every employer who requests a person to assess whether premises or parts of premises where work with asbestos has been carried out have been thoroughly cleaned upon completion of that work and are suitable for reoccupation such that a site clearance certificate for reoccupation can be issued must ensure that that person is accredited by an appropriate body as competent to perform work in compliance with the paragraphs of ISO 17020 and ISO 17025 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.

(5) Paragraphs (2) and (3) do not apply to work carried out in a laboratory for the purposes only of research.

Regulation 21 Standards for analysis

Summary

This regulation requires employers performing their own analysis of material to check for asbestos in a way that meets the criteria set out in ISO 17025. It also requires employers to make sure any person they engage to perform analysis is accredited to ISO standard by the appropriate body.

(1) Every employer who analyses a sample of any material to determine whether it contains asbestos must ensure that criteria equivalent to those set out in the paragraphs of ISO 17025 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 are met.

(2) Every employer who requests a person to analyse a sample of any material taken to determine whether it contains asbestos must ensure that that person is accredited by an appropriate body as competent to perform work in compliance with ISO 17025.

(3) Paragraphs (1) and (2) do not apply to work carried out in a laboratory for the purposes only of research.

Regulation 22 Health records and medical surveillance

Summary

This regulation requires employers to arrange appropriate medical examinations for any employees who carry out licensable work or NNLW. It also sets out what health records employers must keep and for how long.

(1) For licensable work with asbestos every employer must ensure that—

(a) a health record is maintained and contains particulars approved by the Executive for all of that employer's employees who are exposed to asbestos; and

(b) that record, or a copy of that record is kept available in a suitable form for at least 40 years from the date of the last entry made in it; and

(c) each employee who is exposed to asbestos is under adequate medical surveillance by a relevant doctor.

(2) The medical surveillance required by paragraph (1)(c) must include—

(a) a medical examination not more than 2 years before the beginning of such exposure; and

(b) periodic medical examinations at intervals of at least once every 2 years or such shorter time as the relevant doctor may require while such exposure continues,

and each such medical examination must include a specific examination of the chest.

(3) For work with asbestos, which is not licensable work with asbestos, and is not exempted by regulation 3(2), the requirements in paragraphs (1)(a) to (c) apply and—

(a) a medical examination in accordance with paragraph (1)(c) and (2)(a) must take place on or before 30 April 2015;

(b) on or after 1 May 2015, a medical examination in accordance with paragraph (1)(c) and (2)(a) must take place not more than 3 years before the beginning of such exposure; and

(c) a periodic medical examination in accordance with paragraph (1)(c) and (2)(b) must take place at intervals of at least once every 3 years, or such shorter time as the relevant doctor may require while such exposure continues.

(4) Where an employee has been examined in accordance with paragraph (1)(c), the relevant doctor must issue a certificate to the employer and employee stating—

(a) that the employee has been so examined; and

(b) the date of the examination,

and the employer must keep that certificate, or a copy of that certificate for at least 4 years from the date on which it was issued.

(5) An employee to whom this regulation applies must, when required by that employee's employer and at the cost of that employer, attend during the employee's working hours such examination and undertake such tests as may be required for the purposes of paragraph (1)(c) and must furnish the relevant doctor with such information concerning that employee's health as the relevant doctor may reasonably require.

(6) Where, for the purpose of carrying out functions under these Regulations, a relevant doctor requires to inspect any record kept for the purposes of these Regulations, the employer must permit that doctor to do so.

(7) Where medical surveillance is carried out on the premises of the employer, the employer must ensure that suitable facilities are made available for the purpose.

(8) The employer must—

(a) on reasonable notice being given, allow an employee access to that employee's personal health record;

(b) provide the Executive with copies of such personal health records as the Executive may require; and

(c) if the employer ceases to trade notify the Executive without delay in writing and make available to the Executive all personal health records kept by that employer.

(9) Where, as a result of medical surveillance, an employee is found to have an identifiable disease or adverse health effect which is considered by a relevant doctor to be the result of exposure to asbestos at work, the employer of that employee must—

(a) ensure that a suitable person informs the employee accordingly and provides the employee with information and advice regarding further medical surveillance;

(b) review the risk assessment;

(c) review any measure taken to comply with regulation 11 taking into account any advice given by a relevant doctor or by the Executive;

(d) consider assigning the employee to alternative work where there is no risk of further exposure to asbestos, taking into account any advice given by a relevant doctor; and

(e) provide for a review of the health of every other employee who has been similarly exposed, including a medical examination (which must include a specific examination of the chest) where such an examination is recommended by a relevant doctor or by the Executive.

Regulation 23 Washing and changing facilities

Summary

This regulation requires employers to provide suitable and sufficient washing, changing and storage facilities for employees, and sets out the specific requirements for hygiene facilities for licensable work.

(1) Every employer must ensure that the following are provided to any of that employer's employees who is exposed to asbestos—

(a) adequate washing and changing facilities;

(b) where an employer is required to provide protective clothing, adequate facilities for the storage of—

(i) that protective clothing, and

(ii) personal clothing not worn during working hours; and

(c) where an employer is required to provide respiratory protective equipment, adequate facilities for the storage of that equipment.

(2) The facilities provided under paragraph (1) for the storage of—

(a) personal protective clothing;

(b) personal clothing not worn during working hours; and

(c) respiratory protective equipment,

must be separate from each other.

Regulation 24 Storage, distribution and labelling of raw asbestos and asbestos waste

Summary

This regulation requires employers to make sure that raw asbestos and asbestos waste is properly packaged, labelled, stored and transported.

(1) Every employer who undertakes work with asbestos must ensure that raw asbestos or waste which contains asbestos is not—

(a) stored;

(b) received into or despatched from any place of work; or

(c) distributed within any place of work, except in a totally enclosed distribution system,

unless it is in a sealed receptacle or, where more appropriate, sealed wrapping, clearly marked in accordance with paragraphs (2) and (3) showing that it contains asbestos.

(2) Raw asbestos must be labelled in accordance with the provisions of Schedule 2.

(3) Waste containing asbestos must be labelled—

(a) where the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 apply, in accordance with those Regulations; and

(b) in any other case in accordance with the provisions of Schedule 2.

Regulation 25 Interpretation of prohibitions

(1) In this Part—

"asbestos spraying" means the application by spraying of any material containing asbestos to form a continuous surface coating;

"extraction of asbestos" means the extraction by mining or otherwise of asbestos as the primary product of such extraction, but does not include extraction which produces asbestos as a by-product of the primary activity of extraction; and

"supply" means supply by way of sale, lease, hire, hire-purchase, loan, gift or exchange for a consideration other than money, whether (in all cases) as principal or as agent for another.

(2) Any prohibition imposed on any person by this Part applies only to acts done in the course of a trade, business or other undertaking (whether for profit or not) carried on by that person.

(3) Where in this Part it is stated that asbestos has intentionally been added to a product or is intentionally added, it will be presumed where—

(a) asbestos is present in any product; and

(b) asbestos is not a naturally occurring impurity of that product, or of any component or constituent of that product,

that the asbestos has intentionally been added or is intentionally added, as the case may be, subject to evidence to the contrary being adduced in any proceedings.

Regulation 26 Prohibitions of exposure to asbestos

(1) A person must not undertake asbestos spraying or working procedures that involve using low-density (less than 1g/cm³) insulating or soundproofing materials which contain asbestos.

(2) Every employer must ensure that no employees are exposed to asbestos during the extraction of asbestos.

(3) Every employer must ensure that no employees are exposed to asbestos during the manufacture of asbestos products or of products containing intentionally added asbestos.

Regulation 27 Labelling of products containing asbestos

(1) Subject to paragraph (2), a person must not supply under an exemption granted pursuant to regulation 29 or regulation 30 a product which contains asbestos unless that product is labelled in accordance with the provisions of Schedule 2.

(2) Where a component of a product contains asbestos, in order to comply with this regulation that component must be labelled in accordance with the provisions of Schedule 2 except that where the size of that component makes it impossible for a label to be fixed to it, neither that component nor the product need be labelled.

Regulation 28 Additional provisions in the case of exceptions and exemptions

(1) Where under an exemption granted pursuant to regulation 29 or regulation 30 asbestos is used in a work process or is produced by a work process, the employer must ensure that the quantity of asbestos and materials containing asbestos at the premises where the work is carried out is reduced to as low a level as is reasonably practicable.

(2) Subject to paragraph (3), where under an exemption granted pursuant to regulation 29 or regulation 30 a manufacturing process which gives rise to asbestos dust is carried out in a building, the employer must ensure that any part of the building in which the process is carried out is—

(a) so designed and constructed as to facilitate cleaning; and

(b) is equipped with an adequate and suitable vacuum cleaning system which must, where reasonably practicable, be a fixed system.

(3) Paragraph (2)(a) does not apply to a building in which, prior to 1st March 1988, there was carried out a process to which either—

(a) as then in force, regulation 13 of the Asbestos Regulations 1969 applied and the process was carried out in compliance with that regulation; or

(b) that regulation did not apply.

Regulation 29 Exemption certifications

(1) Subject to paragraph (3), the Executive may, by a certificate in writing, exempt any person or class of persons or any product containing asbestos or class of such products from all or any of the requirements or prohibitions imposed by regulations 4, 8, 12, 13, 21 and 22(5) and (7) and any such exemption may be granted subject to conditions and to a limit of time and may be varied or revoked by a further certificate in writing at any time.

(2) Subject to paragraph (3), the Executive may exempt emergency services from all or any of the requirements or prohibitions imposed by regulations 7 and 9; and any such exemption may be granted subject to conditions and to a limit of time and may be varied or revoked by a further certificate in writing at any time.

(3) The Executive must not grant any exemption under paragraph (1) or (2) unless having regard to the circumstances of the case and in particular to—

(a) the conditions, if any, which it proposes to attach to the exemption; and

(b) any other requirements imposed by or under any enactments which apply to the case,

it is satisfied that the health or safety of persons who are likely to be affected by the exemption will not be prejudiced in consequence of it.

Regulation 30 Exemptions relating to the Ministry of Defence

The Secretary of State for Defence may, in the interests of national security, exempt any person or class of persons from the prohibition imposed by Part 3 of these Regulations by a certificate in writing, and any such exemption may be granted subject to conditions and to a limit of time and may be varied or revoked by a further certificate in writing at any time.

Regulation 31 Extension outside Great Britain

These Regulations apply to any work outside Great Britain to which sections 1 to 59 and 80 to 82 of the 1974 Act apply by virtue of the Health and Safety at Work etc. Act 1974 (Application Outside Great Britain) Order 2001 as they apply to work in Great Britain.

Regulation 32 Existing licences and exemption certificates

(1) An existing licence granted by the Executive under regulation 8(2) of the Control of Asbestos Regulations 2006) shall—

(a) continue to have effect as if it had been granted under regulation 8(2) of these Regulations;

(b) be of the duration and subject to the conditions specified in it as if that duration and those conditions had been specified under regulation 8(3); and

(c) be liable to variation and revocation under regulation 8(4) and (5),

and any requirement in such a licence concerning notification or any exception to such a requirement has effect as a requirement for notification under regulation 9, or as an exception to such a requirement under regulation 3(2) of these Regulations.

(2) An existing exemption granted by the Executive under regulation 7(1) of the Asbestos (Licensing) Regulations 1983), regulation 8(1) of the Asbestos (Prohibitions) Regulations 1992, regulation 25(1) of the Control of Asbestos at Work Regulations 2002 or regulation 32 of the Control of Asbestos Regulations 2006 continues to have effect and be subject to any limitation of time or any conditions specified in it and liable to revocation as if it had been granted under regulation 29(1) or (2) of these Regulations.

(3) An existing exemption granted by the Secretary of State for Defence under regulation 8(3) of the Asbestos (Prohibitions) Regulations 1992 or regulation 33 of the Control of Asbestos Regulations 2006 continues to have effect and be subject to any limitation of time or any conditions specified in it and liable to revocation as if it had been granted under regulation 30 of these Regulations.

Regulation 33 Revocations and savings

(1) The Control of Asbestos Regulations 2006 are revoked.

(2) The amendments listed in Schedule 3 will have effect.

(3) Any record or register required to be kept under the Regulations revoked either by paragraph (1), or by any of the Regulations revoked by regulation 36(1) of the Control of Asbestos Regulations 2006 or by regulation 27(1) of the Control of Asbestos at Work Regulations 2002 shall, notwithstanding that revocation, be kept in the same manner and for the same period as specified in those Regulations as if these Regulations had not been made, except that the Executive may approve the keeping of records at a place or in a form other than at the place where, or in the form in which, records were required to be kept under the Regulations so revoked.

Regulation 34 Defence

(1) Subject to regulation 21 of the Management of Health and Safety at Work Regulations 1999, in any proceedings for an offence consisting of a contravention of Part 2 of these Regulations, it is a defence for any person to prove that all reasonable precautions were taken and all due diligence was exercised by that person to avoid the commission of that offence.

Regulation 35 Review

(1) The Secretary of State must from time to time—

(a) carry out a review of regulations 1 to 34;

(b) set out the conclusions of the review in a report; and

(c) publish the report.

(2) In carrying out the review the Secretary of State must, so far as is reasonable, have regard to how Council Directive 2009/148/EC which repealed and replaced Council Directive 83/477/EEC as amended by Council Directive 91/382/EEC and Directive 2003/18/EC of the European

Parliament and of the Council, on the protection of workers from the risks of exposure to asbestos at work (which is implemented by means of regulations 1 to 34), is implemented in other Member States.

(3) The report must in particular—

(a) set out the objectives intended to be achieved by the regulatory system established by those regulations;

(b) assess the extent to which those objectives are achieved; and

(c) assess whether those objectives remain appropriate and, if so, the extent to which they could be achieved with a system that imposes less regulation.

(4) The first report under this regulation must be published before the end of the period of five years beginning with the day on which regulations 1 to 34 come into force.

(5) Reports under this regulation are afterwards to be published at intervals not exceeding five years.

Schedule 1 Particulars to be included in a notification

Schedule 1 *The following particulars are to be included in a notification made in accordance with regulation 9, namely—*

(a) the name of the notifier and the address and telephone number of that notifier's usual place of business;

(b) a brief description of—

(i) the location of the work site,

(ii) the type and quantities of asbestos to be used or handled,

(iii) the activities and processes involved,

(iv) the number of workers involved, and

(v) the measures taken to limit the exposure of employees to asbestos, and

(c) the date of the commencement of the work and its expected duration.

Schedule 2 Appendix 7 to Annex XVII of the REACH Regulation – special provisions on the labelling of articles containing asbestos. Regulations 14(4), 24(2) and (3) and 27

Schedule 2

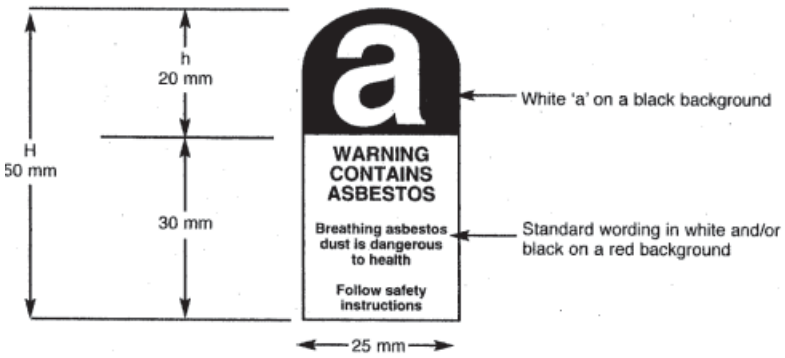
1.—(1) Subject to sub-paragraphs (2) and (3), the label to be used on—

(a) raw asbestos (together with the labelling required under the Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 and the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009;

(b) asbestos waste, when required to be so labelled by regulation 24(3); and

(c) products containing asbestos, including used protective clothing to which regulation 14(4) applies,

must be in the form and in the colours of the following diagram and must comply with the specifications set out in paragraphs 2 and 3.



(2) In the case of a product containing crocidolite, the words "contains asbestos" shown in the diagram must be replaced by the words "contains crocidolite/blue asbestos".

(3) Where the label is printed directly onto a product, a single colour contrasting with the background colour may be used.

2. The dimensions in millimetres of the label referred to in paragraph 1 must be those shown on the diagram in that paragraph, except that larger measurements may be used, but in that case the dimension indicated as h on the diagram must be 40% of the dimension indicated as H.

3. The label must be clearly and indelibly printed so that the words in the lower half of the label can be easily read, and those words must be printed in black or white.

4.—(1) Where a product containing asbestos may undergo processing or finishing it must bear a label containing safety instructions appropriate to the

particular product and in particular the following instructions—

"operate if possible out of doors in a well-ventilated place";

"preferably use hand tools or low speed tools equipped, if necessary, with an appropriate dust extraction facility. If high speed tools are used, they should always be so equipped";

"if possible, dampen before cutting or drilling"; and

"dampen dust, place it in a properly closed receptacle and dispose of it safely".

(2) Additional safety information given on a label must not detract from or contradict the safety information given in accordance with sub-paragraph (1).

5.—(1) Labelling of packaged and unpackaged products containing asbestos in accordance with the foregoing paragraphs must be effected by means of—

(a) an adhesive label firmly affixed to the product or its packaging;

(b) a tie-on label firmly attached to the product or its packaging; or

(c) direct printing onto the product or its packaging.

(2) Where, in the case of an unpackaged product containing asbestos, it is not reasonably practicable to comply with the provisions of sub-paragraph (1), the label must be printed on a suitable sheet accompanying the product.

(3) Labelling of raw asbestos and asbestos waste must be effected in accordance with sub-paragraph (1)(a) or (c).

(4) For the purposes of this Schedule but subject to sub-paragraph (5), a product supplied in loose plastic or other similar wrapping (including plastic and paper bags) but no other packaging must be treated as being supplied in a package whether the product is placed in such wrapping at the time of its supply or was already so wrapped previously.

(5) No wrapping in which a product is placed at the time of its supply shall be regarded as packaging if any product contained in it is labelled in accordance with the requirements of this Schedule or any other packaging in which that product is contained is so labelled.

Schedule 3 Amendments. Regulation 33(2)

Schedule 3

Instruments amended	*References*	*Amendments to have effect*
The Personal Protective Equipment at Work Regulations 1992	*SI 1992/2966*	*In regulation 3(3)(c) for the words "the Control of Asbestos Regulations 2006" substitute "the Control of Asbestos Regulations 2012"*
The Health and Safety (Enforcing Authority) Regulations 1998	*SI 1998/494*	*In Schedule 2 paragraph 4A substitute the reference in paragraph 4(a)(iii) to "a physically segregated area does not include an area segregated only in order to prevent the escape of asbestos; and in this paragraph "asbestos" has the meaning assigned to it by regulation 2(1) of the Control of Asbestos Regulations 2012"*
The Provision and Use of Work Equipment Regulations 1998	*SI 1998/2306*	*In regulation 12(5)(b) for the words "the Control of Asbestos Regulations 2006" substitute "the Control of Asbestos Regulations 2012"*
The Control of Substances Hazardous to Health Regulations 2002	*SI 2002/2677*	*In regulation 5(1)(a)(iii) for the words "the Control of Asbestos Regulations 2006" substitute "the Control of Asbestos Regulations 2012"*
The Fur Farming (Compensation Scheme)(England) Order 2004	*SI 2004/1964*	*In Schedule 6 Part 6 paragraph 14(a)(i) and (ii) after the Control of Asbestos Regulations 2006" insert in each case from 6th April 2012, "the Control of Asbestos Regulations 2012"*
The Health and Safety (Enforcing Authority for Railways and Other Guided Transport Systems) Regulations 2006	*SI 2006/557*	*In regulation 4(5) for the words "the Control of Asbestos Regulations 2006" substitute "the Control of Asbestos Regulations 2012"*

The Construction (Design and Management) Regulations 2007	*SI 2007/320*	*In regulation 17(1) for the words "the Control of Asbestos Regulations 2006" substitute "the Control of Asbestos Regulations 2012"*
The REACH Enforcement Regulations 2008	*SI 2008/2852*	*In Schedule 3 paragraph 2(b) for the words "the Control of Asbestos Regulations 2006" substitute "the Control of Asbestos Regulations 2012"*
The Merchant Shipping and Fishing Vessels (Health and Safety at Work)(Asbestos) Regulations 2010	*SI 2010/2984*	*In regulation 4(4) for the words "the Control of Asbestos Regulations 2006" substitute "the Control of Asbestos Regulations 2012"*

Appendix 2 Photographs of a range of not untypical examples of soil and C&D materials contaminated by ACMs

Photo courtesy of VertaseFLI.
Plate 1. Extreme example of intact asbestos cement containing chrysotile in excavated made ground.

Photo courtesy of VertaseFLI.
Plate 2. Pit containing degraded asbestos cement fragments and free fibres.

Photo courtesy of VertaseFLI.
Plate 3.Typical example of intact asbestos cement fragments containing chrysotile in made ground.

Photo courtesy of VertaseFLI.
Plate 4. Made ground with degraded ACM debris and free fibres of chrysotile, amosite & crocidolite.

Photo courtesy of VertaseFLI.
Plate 5.Collecting fly-tipped broken-up but intact fragments of asbestos cement sheeting waste.

Photo courtesy of VertaseFLI.
Plate 6.Close-up shot of degraded asbestos insulating board (AIB) fragment collected from excavation.

Photo courtesy of Soilfix Limited.
Plate 7. Example of asbestos cement shuttering to underside of concrete slab.

Photo courtesy of Soilfix Limited.
Plate 8. Extreme example of intact asbestos cement debris to underside of concrete slab.

Photo courtesy of Soilfix Limited.
Plate 9. Example of weathered asbestos cement debris in excavated made ground.

Photo courtesy of Soilfix Limited.
Plate 10. Example of weathered asbestos cement debris in excavated made ground.

Photo courtesy of Hydrock.
Plate 11. Close-up of degraded asbestos cement fragments in made ground.

Photo courtesy of Hydrock.
Plate 12. Close-up of weathered asbestos cement fragments in made ground.

Photo courtesy of Soilfix Limited.
Plate 13. Close-up of compressed asbestos fibre (CAF) gasket in excavated made ground.

Photo courtesy of Hydrock.
Plate 14. Close-up of weathered CAF gasket in excavated made ground.

Photo courtesy of Hydrock.
Plate 15. Weathered asbestos textile blankets in excavated made ground.

Photo courtesy of Hydrock.
Plate 16. Weathered asbestos textile on surface of made ground.

Photo courtesy of Hydrock.
Plate 17. Weathered asbestos textile exposed on surface of made ground.

Photo courtesy of Hydrock.
Plate 18. Weathered asbestos textile blanket in excavated made ground.

Photo courtesy of Hydrock.
Plate 19. Degraded asbestos insulating board (AIB) on surface of made ground.

Photo courtesy of Hydrock.
Plate 20. Close-up of degraded AIB on surface of made ground.

Photo courtesy of Hydrock.
Plate 21. Degraded AIB/fibrous board on surface of made ground.

Photo courtesy of Hydrock.
Plate 22. Close-up of degraded AIB/fibrous board on surface of made ground.

Photo courtesy of Hydrock.
Plate 23. Highly degraded/disaggregated AIB/fibrous board in excavated made ground.

Photo courtesy of Hydrock.
Plate 24. Close-up of degraded AIB/fibrous board in excavated made ground.

Photo courtesy of Soilfix Limited.
Plate 25. Close-up of red-coated fibrous asbestos insulation debris.

Photo courtesy of Soilfix Limited.
Plate 26. Close-up of residual 'original form' asbestos thermal insulation on pipe.

Photo courtesy of Soilfix Limited.
Plate 27. Close-up of residual 'original form' asbestos thermal insulation on pipes in underground duct.

Photo courtesy of Soilfix Limited.
Plate 28. Gross contamination of made ground by asbestos thermal insulation debris in 'chicken wire'.

Photo courtesy of Soilfix Limited.
Plate 29. Contamination of made ground by asbestos thermal insulation/fibrous debris.

Photo courtesy of Soilfix Limited.
Plate 30. Close-up of various ACMs in fly-tipped waste.

Photo courtesy of Hydrock.
Plate 31. Highly degraded/disaggregated asbestos insulation/fibrous debris on surface of made ground.

Photo courtesy of Hydrock.
Plate 32. Highly degraded/disaggregated asbestos insulation on pipe in underground duct.

Photo courtesy of Hydrock.
Plate 33. Highly degraded/disaggregated asbestos insulation/fibrous debris in excavated made ground.

Photo courtesy of Hydrock.
Plate 34. Highly degraded/disaggregated asbestos insulation/fibrous debris in excavated made ground.

Photo courtesy of Hydrock.
Plate 35. Highly degraded/disaggregated asbestos insulation/fibrous debris in excavated made ground.

Photo courtesy of Hydrock.
Plate 36. Highly degraded/disaggregated asbestos insulation/fibrous debris in excavated made ground.