

# CLARIFICATION OF GUIDANCE FOR ALG in line with HSG248 AIR MONITORING AND SITE CLEARANCE CERTIFICATION

ISSUED 1ST DRAFT 04 AUGUST 2009

## SECTION 1 INTRODUCTION

Regulation 19 of CAWR 2002<sup>10</sup> requires that employers who use laboratories to undertake air sampling and analysis of air samples should assure themselves that the laboratory conforms with the competence standard ISO/IEC 17025.<sup>19</sup> Regulation 20 of CAWR 2002,<sup>10</sup> which came into effect on 21 November 2004, also requires that employers who engage laboratories to analyse asbestos materials assure themselves that the laboratory also conforms with ISO 17025. Conformation with ISO 17025 is demonstrated by obtaining accreditation from a recognised body. The United Kingdom Accreditation Service (UKAS) is currently the sole recognised accreditation body in Great Britain.

Methods for the conduct of asbestos air sampling and analysis, including site certification for reoccupation are outlined in HSE publication HSG248 Asbestos: The analysts' guide for sampling, analysis and clearance procedures.

Following the introduction of HSG248 in 2005 it has been apparent that there are many aspects of the document that are either ambiguous or open to interpretation allowing shortcuts and under-resourcing to take place to the detriment of the health and safety of all concerned, such as the duration of clearance procedures and the requirements for analysts to fully decontaminate or not.

UKAS accredited testing laboratories have the responsibility to independently validate the completeness of high risk works on ACMs and the fitness for reoccupation of those work areas.

Recent research conducted by HSE Asbestos Liaison Group (ALG) has revealed a significant majority of asbestos work areas where high risk asbestos containing materials have been removed or otherwise worked upon have not been left in a safe condition for the future occupants of the building.

The ALG have now agreed a plan and time frame to achieve objectives which does address all parties involvement within the group. ATaC's areas of responsibilities are:

### 7. Analysts

**This document is designed to remove ambiguities contained in current guidance to ensure a common approach, endorsed by HSE ALG, is adopted by UKAS accredited laboratories undertaking asbestos air sampling and analysis, including site certification for reoccupation.**

Actions	Who	How	Performance Measures
Improve the quality of analytical work, especially clearance certification	ATAC	Working with members & UKAS to improve standards and ensure higher standards are achieved and maintained	UKAS assessment each year
Mandatory refresher Training	UKATA / ATAC	Develop training modules on pre cleaning prior to removal work	Development of training modules
	RICS / BIFM	Ensure clients appoint independent analysis and contractors	Guidance and publications

The requirement to adopt this code will ensure that the same standards of certification are maintained by all appropriately accredited laboratories and to inform clients and contractors of their responsibilities to ensure those standards can be met.

# CLARIFICATION OF GUIDANCE FOR ALG in line with HSG248

## AIR MONITORING AND SITE CLEARANCE CERTIFICATION

ISSUED 1ST DRAFT 04 AUGUST 2009

### Guide to the allocation of resources to site clearance certification

This guidance, which is explained more fully in Section 3, serves to generate reasonable estimates of the required resources for site clearance certification, which is generally proportional to the resources employed by the licensed asbestos removal contractor. Any deviations from this guide must be fully justified in writing within the method of work and must not be to the detriment of the health and safety of any parties involved both during and after the clearance process.

ANALYTICAL RESOURCE GUIDE	
Number of contractor person-days for ASB5 DOC Issued to HSE	Required analytical person days ( see Note *)
2-4	0.75- 1.0 day
5-12	1.0- 2.0 day
12-18	1.5 – 3.0days
18-30	2.0 – 3.5 days
30-40	2.5 – 4 days
More than 41	To be assessed on a case by case basis.

**\* Note:**

One person day is taken to mean one person employed per 8 hour shift or two persons employed per 4 hour shift and so on.

The analyst must ensure that sufficient time is available for the visual inspection. A detailed visual inspection can be time consuming, and the length of time needed will depend on the size and complexity of the job. A thorough visual search of all areas of the enclosure is required to be confident that an area is clean and free from asbestos debris and fine settled dust. A single panel removed from behind a domestic boiler within a 2m<sup>2</sup> enclosure with smooth surface and nothing else within the enclosure is unlikely to take more than 10- minutes. A small boiler house should not take less than about 1.5 hours if inspected thoroughly. A large plant room, chemical plant or power station may take several days and may be undertaken by more than one analyst. During a large clearance, analysts should leave the enclosure, decontaminate and take a break every 2-3 hours. The time spent carrying out a visual inspection should be recorded.

# CLARIFICATION OF GUIDANCE FOR ALG in line with HSG248 AIR MONITORING AND SITE CLEARANCE CERTIFICATION

ISSUED 1ST DRAFT 04 AUGUST 2009

## SECTION 2 IMPROVED 4 STAGE CLEARANCE PROCESS CHART

### Stage 1: Preliminary check of site condition and job completeness;

Initially the analyst needs to establish with the contractor the scope of the work that has been carried out. This must be done by examining the plan of work (see Asbestos: The licensed contractors' guide, Chapter 2). Regulation 7(2) of CAWR10 states that the plan of work should be kept at the premises until the work is completed. Paragraph 38 of the CAWR ACOP (L28)12 states that the plan of work should be brought to the attention of anyone carrying out the four-stage certification procedure. It should be clear from the plan of work: The HSE's Asbestos Licensing Unit has provided guidance to contractors on what should be contained in the plan of work., **the inspection should either stop until such time as a plan of work is made available or a 'failed' certificate of reoccupation issued with the reason for the failure noted. See section XX**



### Stage 2: A thorough visual inspection inside the enclosure/work area (Guidance HSG248)

This is the stage at which the thorough visual inspection of the enclosure or work area takes place. It is the most significant part of the clearance procedure. The analyst must check:

- the completeness of the removal of the ACMs from the underlying surfaces;
- for the presence of any visible asbestos debris left inside the enclosure and airlocks or work area;
- for the presence of fine settled dust.

The removal process will have given rise to the spread of asbestos dust inside the enclosure. Residual dust may still remain on any unprotected or inadequately cleaned surfaces. Such dust presents an ongoing risk to building occupants. Therefore a thorough visual examination of all surfaces should be performed. It should involve a close and detailed inspection across all parts of the enclosure

Analyst carrying out a visual inspection inside an enclosure The analyst should be accompanied during the thorough visual inspection by a representative of the contractor, who can rectify any minor problems found **the analyst should document these issues on the clearance certificate.**

The analyst will have to make judgements on the extent and significance of dust and debris found during the inspection: whether it is minor and can be cleaned up during the course of the inspection, or whether it is more substantial and is indicative that the final clean has not been undertaken thoroughly enough. It is important to remember that it is the duty of the contractor to undertake the final clean and carry out a thorough visual inspection before requesting a four-stage site certification for reoccupation. If it is clear that this has not been done, the analyst should withdraw and fail the enclosure, citing what needs to be done before another inspection is undertaken. They should withdraw and let the contractors clean and re-inspect before starting a new visual inspection. Improvements: The history of the departures must be included with the final report.



### Stage 3: Air monitoring (Guidance HSG248)

Air sampling takes place once a thorough visual inspection has been carried out and the analyst is satisfied that all the asbestos in the plan of work has been removed, and there is no visible debris or layers of settled dust.

Improvements: Photographic evidence must support the final report see section xx



### Stage 4: Final assessment post-enclosure/work area dismantling. (Guidance HSG248)

Once the enclosure (or work area) has passed the visual inspection (Stage 2) and air monitoring (Stage 3), the enclosure can be dismantled.

Improvements: The analyst will remain on site during dismantling. To undertake a further reassurance air test close to the dismantling work, appropriate PPE should be worn as trapped pockets of asbestos could be released during the physical disturbance. After the enclosure has been removed, the analyst should visually inspect the area to ensure it is clean. At this stage the analyst is looking for obvious asbestos debris such as from the sheeting of the enclosure as it was dismantled or from debris which has been missed during cleaning. The analyst should also re-inspect the waste route and transit route for asbestos debris. Full photographic evidence must support final report see section xx

# CLARIFICATION OF GUIDANCE FOR ALG in line with HSG248

## AIR MONITORING AND SITE CLEARANCE CERTIFICATION

ISSUED 1ST DRAFT 04 AUGUST 2009

### SECTION 2.1 - Mandatory Training Requirements

Regulation 10 of CAWR 200210 requires employers to ensure that adequate information, instruction and training are given to their employees who are liable to be exposed to asbestos. The aim of this regulation is to ensure that employees are equipped with the relevant skills and knowledge to enable them to work safely by minimising their exposure to asbestos.

Regulation 10, Para 137. Anyone who carries out any examination, testing (including clearance inspection, air monitoring and exposure monitoring) should have had sufficient training and experience in inspection methods and techniques to ensure that they are competent.

It should be given in addition to the asbestos awareness training outlined in paragraph 127, ACOP L143

Field staff training will also need to address topics such as:

- working in confined spaces;
- lone working;
- Decontamination procedures.
- working at heights;
- working in hot environments;

Field staff who have to enter enclosures will have to complete practical training on RPE and decontamination as detailed in modules 24 and 25 of Asbestos: The licensed contractors guide<sup>3</sup> (see also Chapter 9).

### Minimum Requirements;

The training organisation should be affiliated to UKATA or similar professional recognised Body i.e BHOS

Route 1	Route 2
Participant in the internal quality reviews and participant in RICE Scheme	Participant in the internal quality reviews and participant in RICE Scheme
BOHS Module P403 BOHS Module P404	UKATA Approved Centre Asbestos supervisors 3 Day course ATAC training in analysis 2 Day course Combined courses 5 Days including Practical

### Mandatory Annual Refresher training

Refresher training should be given at least every year together with ongoing successful internal quality reviews with including within the RICE scheme and should be appropriate to the role undertaken. Those persons who require only awareness training could have refresher training as part of other health and safety updates. Employers should identify the specific training needs of their employees so that the refresher training can be appropriately tailored. It should not be a repeat of the initial training. Where training needs dictate, refresher training should include an appropriate element of practical training, particularly covering decontamination procedures, use of RPE, and controlled removal techniques. Refresher training will be required more frequently than annually if:

- (a) work methods change;
- (b) the type of equipment used to control exposure changes; or
- (c) the type of work carried out changes significantly.

All training certificates issued by such people or organisations should be traceable and have a validity of no more than one year. The employer should carry out checks as may be necessary to establish the authenticity of training certificates.

### Procedures for providing information, instruction and training

The procedures for providing information, instruction and training for work with asbestos should be clearly defined and set out in a written document. This should be reviewed regularly, particularly when work methods change. Records should be kept of the training undertaken by each individual.

# CLARIFICATION OF GUIDANCE FOR ALG in line with HSG248

## AIR MONITORING AND SITE CLEARANCE CERTIFICATION

ISSUED 1ST DRAFT 04 AUGUST 2009

### SECTION 3

Route 1	<b>SITE ASSESSMENT FOR REOCCUPATION</b>
See table re analysis resources guide on page 4	The following provides guidance on the procedures to be adopted by UKAS accredited laboratory's when undertaking an assessment for reoccupation following the removal of asbestos. The premises will be assessed to determine whether they are thoroughly clean and fit for reoccupation.
Reg 19 para 284. When work with asbestos comes to an end, the work area should be thoroughly cleaned before being handed over for reoccupation or for demolition. All visible traces of asbestos dust and debris should be removed and a thorough visual inspection carried out. Where the work is licensable then the 4-stage clearance procedure (which includes air sampling) should be carried out and a certificate of reoccupation issued. Where licensed work is performed out of doors (eg soffit removal), then clearance air sampling will not be required. In this situation, the certificate of reoccupation should still be completed but without stage 3 (air monitoring). Clearance air sampling will not be required for non licensed work.	The analyst and the contractor need to co-operate and support each other during this process. Each also needs to understand the respective roles and responsibilities. It is the responsibility of the contractor to thoroughly and diligently clean up the work area. The analyst's role is to provide independent verification that the area is clean and suitable for subsequent use. It is not the analyst's role to oversee the final clean of the area, nor to carry out any remedial works themselves. It is the analyst's role during clearance certification to direct the contractor to those matters which require attention to ensure successful completion of the process. The analyst should allow sufficient time for clearance certification to be performed.
	<p>There are usually four stages to the site certification for reoccupation procedure. Where works are:</p> <p><b>Stage 1:</b> Preliminary check of site condition and job completeness;</p> <p><b>Stage 2:</b> A thorough visual inspection inside the enclosure/work area;</p> <p><b>Stage 3:</b> Air monitoring;</p> <p><b>Stage 4:</b> Final assessment post-enclosure/work area dismantling.</p>
<b>STAGE 1</b>	<p><b>PRELIMINARY CHECK OF SITE CONDITIONS AND JOB COMPLETENESS</b></p> <p><b>Method Statement</b> Initially the analyst needs to establish with the contractor the scope of the work that has been carried out. This is achieved by examining the removal contractors plan of work. It should be clear from the plan of work/method statement:</p> <ul style="list-style-type: none"> <li>• Where the asbestos to be removed is;</li> <li>• If any asbestos materials are to remain in situ; and</li> <li>• What the asbestos materials removed were.</li> </ul> <p>If there is no plan of work on site or if the contractor refuses to make it available, the inspection should either stop until such time as a plan of work is made available or a 'failed' certificate of reoccupation issued with the reason for the failure noted. The work method should be in accordance with the job details notified on the method statement.</p>

# CLARIFICATION OF GUIDANCE FOR ALG in line with HSG248 AIR MONITORING AND SITE CLEARANCE CERTIFICATION

ISSUED 1ST DRAFT 04 AUGUST 2009

	Diagram to be inserted
<b>Note.</b>	<b>A diagram or photo must be appended to the site certificate for reoccupation so that the scope of the work is clear.</b> A copy of the diagram from the contractor's plan of work would meet this requirement. If there is no diagram on site, the analyst should prepare a diagram. The diagram should contain four main features.
	<ul style="list-style-type: none"> <li>• The enclosure (or work area), including airlock and baglocks</li> </ul>
	<ul style="list-style-type: none"> <li>• Transit and waste routes</li> </ul>
	<ul style="list-style-type: none"> <li>• Skip</li> </ul>
	<ul style="list-style-type: none"> <li>• Hygiene facilities.</li> </ul>
<b>Note.</b>	It should provide details of size and dimensions. The analyst and contractor should agree the content of the diagram and both should sign and date it. The analyst should ensure that the waste and transit routes actually used on site are as described in the plan of work, signs for these routes should also be posted.
<b>Note.</b>	Preliminary Inspections
	1. Decontamination unit
	When the scope of the work has been understood, verified and any deviations recorded the analyst should ensure that the hygiene facilities are still intact, operational and clean. The clean end of the unit should be checked for cleanliness, hot and cold water heating. The shower area and dirty end should be inspected either by external viewing (from the clean end in the case of the former) or by entering wearing the appropriate RPE and PPE. These areas should be clean and free from stored items and the negative pressure unit should be operating.
	2. Adjacent Areas
	The analyst should then check the surrounding areas to the enclosure including the transit and waste routes, and the areas immediately adjacent to the enclosure. The purpose of this inspection is to check for obvious signs of contamination arising from the work; either through leaks in the enclosure burst waste bags or debris from inadequate decontamination procedures. This inspection does not require the detailed visual examination which is necessary inside the enclosure or work area.
	Conditions should allow the identification of obvious asbestos debris along transit and waste routes. Under normal circumstances, rain or damp ground should not prevent a stage 1 inspection as the analyst is looking for visible debris, not fine settled dust. An inspection at night would not be a problem if the routes were well-lit. If, however, the analyst felt that conditions did not allow reasonable inspection, e.g. insufficient light, then it should be delayed until the conditions are suitable, e.g. the following day. In the very rare occurrences where a delay is likely to be significant, e.g. several days (e.g. due to snow covering), then the analyst should record the situation in the certificate of reoccupation and continue with the remaining clearance stages. The certificate of reoccupation should be issued as appropriate.
	If transit and waste routes are strewn with debris that could be mistaken for asbestos, or such that it is difficult to inspect for debris, the analyst should request that the routes be cleared to allow for adequate inspection.
	The inspection is for obvious asbestos contamination and debris, not any other kind of debris.
	3. Enclosure

# CLARIFICATION OF GUIDANCE FOR ALG in line with HSG248 AIR MONITORING AND SITE CLEARANCE CERTIFICATION

ISSUED 1ST DRAFT 04 AUGUST 2009

	<p>The integrity of the enclosure should also be checked. If any asbestos debris is found in the surrounding areas it should be cleared up immediately by the contractor. Any breach in the integrity of the enclosure should be repaired before stage 2 is started. The pre-filters on the air extraction equipment should be replaced with new ones before the final clean by the contractors. The analyst should make sure that the air extraction equipment is in situ and in operation. Air extraction equipment should be switched off just before starting the stage 3 air clearance monitoring and should not be removed until the third stage of the site certification procedure has been completed, before the enclosure can be dismantled. The pre-filters on the air extraction equipment should be replaced with new ones before the final clean by the contractors.</p>
	<p>The analyst should examine the enclosure through the viewing panels before entering in order to gain an initial impression of the job completeness. Items to look out for include:</p>
	<ul style="list-style-type: none"> <li>• Waste remaining in the enclosure;</li> </ul>
	<ul style="list-style-type: none"> <li>• Visible debris on the surface;</li> </ul>
	<ul style="list-style-type: none"> <li>• Inadequate lighting to conduct a visual inspection;</li> </ul>
	<ul style="list-style-type: none"> <li>• Essential equipment such as ladders or scaffolding are still present so it is possible to inspect all areas;</li> </ul>
	<ul style="list-style-type: none"> <li>• Puddles of water, wet patches and leaking pipes;</li> </ul>
	<ul style="list-style-type: none"> <li>• Evidence that sealant has been applied to exposed surface;</li> </ul>
4.	<p>Potential hazards inside the enclosure.</p>
	<p>If any of these items need to be actioned, they should be dealt with before the enclosure is entered. The analyst should direct the contractor to the matters needing to be rectified. The analyst should also discuss with the contractor if any of the items were identified in the plan of work as needing special attention (e.g. ingress of water). The analyst must make a formal record of the scenarios encountered and the discussions and actions that took place to rectify them. If viewing panels are either absent (e.g. have not been possible or have not been provided) or are insufficient (i.e. do not allow views of all of the work area), a note of this should be made in the analyst's site record and the above items considered when entering the enclosure in stage 2.</p>
	<p><b>There is no point entering the enclosure until these problems have been rectified.</b></p>
Guidance	<p>Findings at stage 1 should be recorded on the certificate of reoccupation and verified with the contractor before moving on to the second stage. There should be confirmation that the plan of work has been inspected and that the air extraction equipment, hygiene facilities and work areas are intact and operating. This stage should also contain a record of findings of the inspection of the skip/waste route, the transit route, hygiene facilities and the outside of the enclosure. A note should be made of any remaining asbestos that was outside the scope of work.</p>
	<p>Only when the analyst is satisfied with the stage 1 inspection, should he/she enter the enclosure to carry out the stage 2 inspection. The analyst should generally be entering an area that is free of all asbestos and should not normally be expected to have to undergo full decontamination on exiting the enclosure. However, if the site is found to have extensive debris and surface contamination remaining, it is important that the analyst terminates the stage 2 visual inspection and leaves the enclosure before any significant disturbance or clean-up takes place. Failure to do this will mean the analyst could be contaminated by the contractors' activity and will need to follow full decontamination procedures on leaving the enclosure.</p>

# CLARIFICATION OF GUIDANCE FOR ALG in line with HSG248 AIR MONITORING AND SITE CLEARANCE CERTIFICATION

ISSUED 1ST DRAFT 04 AUGUST 2009

	<p>Only when the analyst is satisfied with the stage 1 inspection, should he/she enter the enclosure to carry out the stage 2 inspection. The analyst should generally be entering an area that is free of all asbestos and should not normally be expected to have to undergo full decontamination on exiting the enclosure. However, if the site is found to have extensive debris and surface contamination remaining, it is important that the analyst terminates the stage 2 visual inspection and leaves the enclosure before any significant disturbance or clean-up takes place. Failure to do this will mean the analyst could be contaminated by the contractors' activity and will need to follow full decontamination procedures on leaving the enclosure.</p>
	Multi-job Sites
	<p>Where there are several jobs ongoing at the same site, using, for example, the same waste skip, it will not be possible for a stage 1 inspection to be carried out in that area, as it is still being used, in this case the stage 1 certificate should state why that area has not been inspected and clearly identify the area that has been inspected. This principle would apply wherever there are common areas still in use on another job. The important thing is to be transparent; record the issue/problem and the steps taken by you to accommodate the situation on the certificate of reoccupation.</p>
<b>STAGE 2</b>	<b>THOROUGH VISUAL INSPECTION</b>
	<p>Inspection Procedure This is the stage at which the thorough visual inspection of the enclosure or work area takes place. It is the most significant part of the clearance procedure. The analyst must check:</p>
	<ul style="list-style-type: none"> <li>• The completeness of the removal of the ACMs from the underlying surfaces;</li> </ul>
	<ul style="list-style-type: none"> <li>• For the presence of any visible asbestos debris left inside the enclosure and airlock or work area;</li> </ul>
	<ul style="list-style-type: none"> <li>• For the presence of fine settled dust.</li> </ul>
	<p>The removal process will have given rise to the spread of asbestos dust inside the enclosure. Residual dust may still remain on any unprotected or inadequately cleaned surfaces. Such dust presents an ongoing risk to building occupants. Therefore a thorough visual examination of all surfaces should be performed. It should involve a close and detailed inspection across all parts of the enclosure kneeling down or using ladders where appropriate. All items should be checked. The inspection can be assisted by using a torch and by running a fingertip across the surface to check for presence of fine dust. Awkward or difficult locations must not be excluded. Baglocks and airlocks should be included.</p>
	<p>The analyst should be accompanied during the thorough visual inspection by a representative of the contractor, who can rectify any minor problems found, such as:</p>
•	<ul style="list-style-type: none"> <li>• Holes in the enclosure not visible from the outside;</li> </ul>
•	<ul style="list-style-type: none"> <li>• Small amounts of dust or debris found during the course of the inspection.</li> </ul>
	<p>The analyst will have to make judgements on the extent and significance of dust and debris found during the inspection: whether it is minor and can be cleaned up during the course of the inspection, or whether it is more substantial and is indicative that the final clean has not been undertaken thoroughly enough. While all surfaces must be checked, particular attention must be paid to areas where asbestos materials were fixed or penetrated other materials. It may be necessary to drill-out screw holes, remove contaminated battening etc. It is important to remember that it is only duty of the contractor to undertake the final clean and carry out a thorough visual inspection before requesting a four-stage site certification for reoccupation. If it is clear that this has not been done, the analyst should withdraw and fail the enclosure, citing what needs to be done before another inspection is undertaken, the risk that the analyst undertaking an inspection will miss some contamination is increased if he/she has to stop and get cleaning done every few minutes. They should withdraw and let the contractors clean and re-inspect before starting a new visual inspection.</p>

# CLARIFICATION OF GUIDANCE FOR ALG in line with HSG248 AIR MONITORING AND SITE CLEARANCE CERTIFICATION

ISSUED 1ST DRAFT 04 AUGUST 2009

	Equipment for Inspection
	Equipment that should be taken into an enclosure by the analyst to aid inspection should typically be:
	<ul style="list-style-type: none"> <li>• A torch – the torch beam when shone along a surface at a shallow angle is useful in identifying fine settled dust on surface; it can also augment the lighting in the enclosure;</li> </ul>
	<ul style="list-style-type: none"> <li>• A screwdriver – this is useful for poking behind pipes and into services to help inspect these difficult-to-see areas;</li> </ul>
	<ul style="list-style-type: none"> <li>• A mirror – this can be useful in inspecting difficult-to-see areas.</li> </ul>
	Equipment that must remain in the enclosure to help inspection includes:
	<ul style="list-style-type: none"> <li>• Stepladders/scaffolding – depending on the height of the enclosure one of other will be needed to allow safe access and to inspect the ledged, pipe work etc above head height;</li> </ul>
	<ul style="list-style-type: none"> <li>• Lighting – a thorough inspection needs lighting; a torch alone is not enough. The torch should be used to supplement the background lighting, not replace it;</li> </ul>
	<ul style="list-style-type: none"> <li>• Vacuum cleaner and other materials – this will allow the contractor to clean any minor amounts of debris identified by the analyst immediately; a vacuum cleaner must also be available for preliminary decontamination on leaving the enclosure;</li> </ul>
	<ul style="list-style-type: none"> <li>• Buckets of water and sponges and brushes or wipes in the airlock to aid preliminary decontamination, following the visual inspection.</li> </ul>
	<b>Duration of Inspection</b>
	<p>The analyst must ensure that sufficient time is available for the visual inspection. A detailed visual inspection can be time consuming, and the length of time needed will depend on the size and complexity of the job. A thorough visual search of all areas of the enclosure is required to be confident that an area is clean and free from asbestos debris and fine settled dust. A single panel removed from behind a domestic boiler within a 2m<sup>2</sup> enclosure with smooth surface and nothing else within the enclosure is unlikely to take more than 10- minutes. A small boiler house should not take less than about 1.5 hours if inspected thoroughly. A large plant room, chemical plant or power station may take several days and may be undertaken by more than one analyst. During a large clearance, analysts should leave the enclosure, decontaminate and take a break every 2-3 hours. The time spent carrying out a visual inspection should be recorded.</p>
	Visual Inspections – Common Problems
	<p><b>Wet enclosures</b> - this is a problem commonly cited by analysts when undertaking clearances. The ACOP L28 12 states that an enclosure, where practical, should be clean and dry. However, the enclosure is sometimes wet. There are a variety of reasons for this: there may be a leaking pipe; sealant may have been sprayed in the enclosure; or there may be groundwater seeping through. If groundwater is present there may be little that can be done to render the enclosure completely dry, but it may be necessary for the contract to use a pump to prevent the area flooding. An enclosure will fail a visual examination if it is wet and the cause is remediable.</p>

# CLARIFICATION OF GUIDANCE FOR ALG in line with HSG248 AIR MONITORING AND SITE CLEARANCE CERTIFICATION

ISSUED 1ST DRAFT 04 AUGUST 2009

	<p><b>Sprayed Sealant</b> - sealants should not be sprayed before a visual inspection or disturbed air test. The only exception to this is where there is sufficient non-asbestos dust (e.g. from concrete) to cause a failure in the air test. The analyst has discretionary powers and, after due consideration and air testing, can allow sealant to be used in these circumstances. The circumstances should be recorded on the certificate of reoccupation and the air test should proceed. If an analyst arrives on site to carry out a visual inspection and the enclosure is still wet due to sealant being sprayed, the analyst must fail the area and inform the contractor that the stage 2 inspection can only be carried out when the sealant has been washed off and the enclosure is dry. If the sealant has already dried the analyst will have to fail the site and consider the way forward. If the sealant is protecting a significant amount of asbestos dust which will cause risk to subsequent occupants, then the sealant will have to be removed and the area re-cleaned. The client should be informed.</p>
	<p><b>Enclosures with loose rubble flooring</b> - The assessment should identify work areas where the flooring is loose rubble, e.g. in an undercroft. In these circumstances the rubble should be removed (to a specified depth) as part of a pre-clean of the site. The loose flooring would then be sealed with an impervious layer, eg metal or hardboard sheeting, before the asbestos work begins. If it was not possible to remove the rubble due to the condition of the remaining ACM or space limitations, then the matter should be addressed in the assessment. The plan of work should identify the procedure to remove the rubble and loose soil after the ACM removal has been carried out. In these circumstances, it would be prudent for the contractor to consult with the analyst before starting the work.</p>
	<p>If an analyst arrives on site to carry out the four-stage clearance certification, without prior discussion and agreement of the procedures for clearance, it will be impossible to pass such an area according to the standard required in Stage 2 inspection. The analyst will have to fail the site and liaise with the contractor and/or client to organise the removal of a specified depth of the rubble/loose flooring before the formal inspection begins. The depth of rubble to be removed will depend on the level of contamination. The analyst can then check the remaining flooring for signs of asbestos contamination. If the analyst is satisfied that the contamination has been removed, the flooring can then be sealed and Stage 2 visual can formally start.</p>
	<p><b>Asbestos remaining in enclosures (by design)</b> - There may be occasions when some asbestos is to remain in situ in the enclosure. It may be that only damaged asbestos lagging is being removed from pipe work, and that undamaged material is to remain; or it could be that asbestos cement panel is being left in place. In these circumstances the ACM should be labelled that it is asbestos and that it is to remain. The item can be checked by the analyst against the work plan and recorded on the certificate of reoccupation.</p>
	<p><b>Asbestos waste remaining in enclosure</b> - On occasions, it may be necessary to retain asbestos waste (bagged or wrapped) within the enclosure until Stage 4 of clearance certification starts and the enclosure can be removed. This situation may arise when oversized waste (such as lengths of pipe work or large AIB panels) cannot be removed through the baglock system.</p>
	<p>The items should remain in the enclosure and be subject to inspection along with other items to make sure they are free of asbestos debris on the outside of the wrapping. The items will also need to be moved to allow the analyst to inspect the underlying surfaces.</p>
	<p><b>Inaccessible asbestos</b> - Where asbestos has been spray applied, there are often crevices or holes through walls where pipe work or girders run. These may contain asbestos but are impossible to clean so that all asbestos is removed. In these cases, the analyst may permit the use of non-flammable sealant such as foams or plaster to fill the hole and seal the asbestos within it. However, the analyst should be satisfied that as far as reasonably practicable, the asbestos has been removed before the sealant is applied. The client for the contract (eg building occupier) should be informed that this is the proposed course of action before the encapsulation takes place. It should be in the plan of work. The location of the sealant and remaining asbestos should be noted on the certificate of reoccupation, so that the client can record the presence of the asbestos in the management plan.</p>

# CLARIFICATION OF GUIDANCE FOR ALG in line with HSG248 AIR MONITORING AND SITE CLEARANCE CERTIFICATION

ISSUED 1ST DRAFT 04 AUGUST 2009

	<p>If an analyst arrives on site to find that holes around the area where the sprayed asbestos was applied have been plugged with foam or other sealant, the contractor should be instructed to remove the sealant before Stage 2 inspection begins.</p>
	<p>Use of encapsulant and sealant - Where asbestos has been sprayed onto porous surfaces (e.g. breeze blocks) or into tar it is almost impossible to remove all the asbestos, sufficient to pass a visual inspection. In these cases the analysts, having satisfied themselves that further removal is not reasonably practicable, should advise the contractor and/or client to seal the residual asbestos with a permanent proprietary sealant. The visual inspection can then begin again once the sealant has been applied and dried. Encapsulation of asbestos</p>
	<p>The findings of Stage 2 of the inspection should be recorded on the certificate of reoccupation. There should be confirmation that the airlocks and enclosure are free from visible debris and contamination, that all ACMs have been removed and that the interior surfaces of the enclosure are free from visible debris and settled dust. See Appendix 3. As for Stage 1, <b>if problems are encountered during Stage 2 inspection, the analyst must make a formal record of the scenarios encountered and the discussions and actions that took place to rectify them. The analyst should also make specific comments on the certificate of reoccupation if any asbestos is to remain (see inaccessible asbestos) and clearly identify the locations of these areas with a recommendation that this information should be entered into the management plan/asbestos register.</b></p>
STAGE 3	<b>CLEARANCE INDICATOR AIR SAMPLING FOR THE CERTIFICATE OF REOCCUPATION</b>
	<p>Air sampling takes place once a thorough visual inspection has been carried out and the analyst is satisfied that all the asbestos in the plan of work has been removed, and there is no visible debris or layers of settled dust. Clearance indicator air sampling should be carried out as described in Section 3.7</p>
	Dusty enclosures
	<p>There may be occasions when the surface in the work area is a source of non-asbestos dust that would generate unreadable filters. The presence of non-asbestos dust would be noted at the thorough visual inspection. The analyst has to be satisfied that the dust is non-asbestos. However, the analyst should proceed with air sampling as normal. If this produces unreadable filters, the analyst should consider sampling for shorter periods with paired samplers, so that the dust loading on each filter is reduced. If the samples fail again because of the dust loading, then the spraying of surfaces with a sealant should be considered. If a sealant is used, the air test should not be carried out until the sealant is dry.</p>
	Leaks in enclosures
	<p>Under normal circumstances, the air extraction equipment should be turned off and capped during the air test. The analyst should check that the pre-filter was changed before the final clean. However, if, in the opinion of the analyst, switching the air extraction system off would compromise the integrity of the enclosure, and there are people near the enclosure who may be exposed to airborne asbestos fibres above the clearance indicator as a consequence, the analyst can direct the contractors to leave the system switched on during the air test. Any decision to leave the air extraction system switched on should be recorded, with reasons why, on the certificate of reoccupation.</p>

# CLARIFICATION OF GUIDANCE FOR ALG in line with HSG248 AIR MONITORING AND SITE CLEARANCE CERTIFICATION

ISSUED 1ST DRAFT 04 AUGUST 2009

STAGE 4	FINAL ASSESSMENT POST-ENCLOSURE/ WORK AREA DISMANTLING
	<p>Once the enclosure (or work areas) has passed the visual inspection (Stage 2) and air monitoring clearance (Stage 3), the enclosure can be dismantled. Under normal circumstances the analyst will probably remain on site during dismantling (unless the deconstruction is not to take place for some time). If the analyst is close to the dismantling work, appropriate PPE should be worn as trapped pockets of asbestos could be released during the physical disturbance. Reassurance sampling must be carried out during the dismantling procedure to check for any release of airborne asbestos. After the enclosure has been removed, the analyst should visually inspect the area to ensure it is clean. Photographic guidance should be undertaken to improve reporting. At this stage the analyst is looking for obvious asbestos debris such as from the sheeting of the enclosure as it was dismantled or from debris which has been missed during cleaning. The analyst should also re-inspect the waste route and transit route for visible asbestos debris.</p>
	<p>Where there is some debris, this can be cleaned by the contractor's employees, wearing appropriate PPE including RPE, immediately using a type H vacuum and wiped with a wet disposable cloth. If the area is too contaminated to allow immediate cleaning without the prospect of spreading contamination, the site should be failed, re-enclosed, re-cleaned, and the visual inspection and disturbed air test repeated.</p>
	<p>If there are fuse boxes or switches within the area and the analyst suspects they may be contaminated, a qualified electrician should be made available to isolate the boxes, so they can be inspected.</p>
	<p>The analyst should record what has been inspected, what was found and the outcome on the certificate of reoccupation.</p>
	<p><b>Certificate of reoccupation</b></p>
	<p>Once all four stages of the clearance procedure have been completed satisfactorily, the analyst should issue a certificate of reoccupation. Each stage of the certification should have been completed in sequence, to ensure that the information included is as complete as possible. The information should be clear and unambiguous so all parties know the scope and extent of clearance and any particular matters which have been dealt with.</p>
	<p>If one of the stages fails, the reasons for the failure should be entered on the report. A signed acknowledgement of the failure should be obtained from the contractor's site representative (usually the site supervisor).</p>
	<p>If the failure occurs at either Stage 1 or 2 of the process, the inspections (both Stage 1 and Stage 2) will need to be repeated. If a new analyst carries out the work, the whole procedure should start again.</p>
	<p>If the site fails at Stage 3 or 4, it is only necessary to repeat these stages until both have passed. The analyst will then need to cross-refer to, and append the certificate where the Stages 1 and 2 were passed. It is very important that the contractor's representative acknowledges the outcome on each certificate issued, whether for a pass or a failure, as this provides evidence of when the outcome was communicated. The certificate will provide documentary evidence of the work undertaken by the analyst and should be retained by the analyst. Copies of each certificate must be issued to the contractor and, as necessary, to the client employing the analyst. This may be done after the analyst has left the site, provided the contractor's representative has acknowledged the outcome. Each certificate should bear a unique number.</p>

# CLARIFICATION OF GUIDANCE FOR ALG in line with HSG248 AIR MONITORING AND SITE CLEARANCE CERTIFICATION

ISSUED 1ST DRAFT 04 AUGUST 2009

	<p><b>Inspection certificate for the hygiene facilities</b></p>
	<p>Once the certificate of reoccupation has been issued, the analyst can begin the clearance of the hygiene facility. This should be inspected and air tested. The air test should be accompanied by disturbance of surfaces in the dirty and shower areas. Obviously there is no requirement for a four-stage certification procedure here, as Stages 1 and 4 are carried out as part of the main certification for reoccupation. Only Stages 2 and 3 of the procedure are required.</p> <p>The hygiene facility should be clean and dry before the inspection takes place and any potentially asbestos-contaminated materials removed (e.g. bags containing used coveralls, used/ discarded respirator filters, transit clothing). It is recommended that the unit is entered through the clean end to check that this area is clean and free of bagged materials, before carrying out a detailed clearance in the shower area and dirty end.</p>
	<p>The clearance should be carried out using the same criteria as for enclosures. If the inspection shows that no dust and debris are present, clearance air sampling should be carried out in the shower area and dirty end. For very small units where the combined floor area of the shower and dirty areas is &lt;10 m<sup>2</sup>, one air test is sufficient if the door between the shower and dirty areas is propped open and the sample head is positioned in the doorway. Where the combined floor area of the shower and dirty end exceeds 10 m<sup>2</sup>, a sample in each of the shower and dirty areas should be taken.</p>
	<p>A minimum air volume of 480 litres should be sampled for each sample. During air sampling, the extraction in the hygiene facility should be switched off and capped and surface disturbance should be carried out using a brush for 1.5 minutes for each sample. A separate inspection certificate should be issued for the hygiene facility. The hygiene facility should normally be subjected to the inspection and air sampling before it is moved off-site.</p>
	<p>The analyst should review with the contractor whether or not the hygiene facility is to remain on site following the issue of the inspection certificate and a note of this made on the certificate.</p>
	<p>The analyst should review with the contractor whether or not the hygiene facility is to remain on site following the issue of the inspection certificate and a note of this made on the certificate.</p>
	<p>Where, for security reasons, hygiene facilities are not left overnight, inspection certification is not required until the end of the contract. In these situations, information on where the hygiene facility is to be stored overnight and other arrangements should be included in the plan of work</p>
<b>Information</b>	PPE and RPE
	RPE SELECTION
	<p>It is generally unlikely that the analyst will be exposed to airborne asbestos fibres at concentrations above the control limits unless they enter a 'live' enclosure. Despite this, exposure levels can not be known at this stage and therefore analysts should presume a significant exposure will occur.</p>
	<p>Entry into enclosures for 4-stage clearance carries the potential for asbestos exposure and contamination of clothing. Therefore analysts should not wear domestic clothing under coveralls as these are likely to become contaminated. Analysts should wear overshoes or Wellingtons.</p>
	<p>Entry into live enclosures must always be followed by full decontamination</p>

# CLARIFICATION OF GUIDANCE FOR ALG in line with HSG248 AIR MONITORING AND SITE CLEARANCE CERTIFICATION

ISSUED 1ST DRAFT 04 AUGUST 2009

	<b>CERTIFICATE OF REOCCUPATION</b>	
	<p>This report will only be completed when undertaking a four-stage clearance / certificate of re-occupation. The document is clearly split into the four stages and self-explanatory in its completion. Stage 3 of 4 refers to the completion of clearance air monitoring, the associated airborne fibre sampling and analysis report should be referenced in this section.</p> <p>The certificate of re-occupation should be signed by both the analyst and the contractors representative.</p>	
	<b>CLEARANCE TEST REPORT FOR HYGIENE UNIT</b>	
	<p>This report will only be completed when undertaking a clearance test on a hygiene facility.</p>	
	<b>FILING OF REPORTS</b>	
	<p>All analysis reports, regardless of type, will be completed by hand on a pad printed in triplicate. The white copy will be left on site, the other two copies, yellow and pink will be returned to the office for filing and distribution to the client respectively. The pink copies will be filed in chronological order in a folder set up for each authorised analyst.</p>	
	<b>ANALYTICAL RESOURCES</b>	
	<p>In order to effectively complete site clearance certification procedures it is of the utmost importance that this work is correctly resourced.</p> <p>HSE has been critical of poor the performance of analytical clearances in the vast majority of clearance tests. Pressure has been put on analysts in the past to complete a number of clearances in one day; often these work areas have taken several shifts to arrive at the point they are ready for clearance.</p>	
	<p>atac members shall adopt the following procedure for resourcing clearances which have been designed so as to allow sufficient time for the works to be completed as competently as reasonably practicable.</p>	
	<b>Analytical resource guide</b>	
	<b>Number of contractor person-days</b>	<b>Required analytical person days</b>
	2-4	0.75
	5-8	1.0 day
	6	1.0 day
	9-12	1.5 days
	13-15	2.0 days
	16-20	2.5 days
	20-30	3.0 days
	31-40	4.0 days
	More than 40	To be assessed case by case