

Supplementary Guidance on Decontamination Requirements for Analysts undertaking the 4-Stage Clearance Process

To ensure a safe, respectful, and compliant working environment, the Female Analysts Working Group have developed a suite of practical documents that provide essential guidance on workplace behaviours, risk assessment, and safety procedures within the asbestos analytical industry.

The **Risk Assessment** document provides a structured approach to identifying and mitigating risks on-site. The **Supplementary Guidance on Decontamination Requirements for Analysts' undertaking 4-Stage Clearance** outlines best practices for both decontamination and personal safety protocols. Complementing these technical guidelines, the **Workplace Behaviours** document sets expectations for professional conduct, addressing concerns such as bullying, harassment, and discrimination.

To reinforce our commitment to maintaining a positive work culture, we also introduce a **Respect Charter**, which all organisations are encouraged to sign, demonstrating their pledge to uphold these standards. Together, these documents create a comprehensive framework to protect both physical and mental well-being in the workplace.

The Female Analyst Working Group (FAWG) comprises of a cross-section of individuals with industry, accreditation and regulatory experience of clearance testing. This guidance document has been acknowledged and accepted by both HSE and UKAS as suitable for use as part of a risk assessment when establishing decontamination requirements as part of 4-stage clearance testing.

Introduction

Upon completion of licensed asbestos removal work, it is necessary to undertake 4-stage clearance procedure to allow a Certificate for Reoccupation to be issued. Guidance for undertaking this clearance testing is contained within the Health and Safety Executive (HSE) publication HSG248 Asbestos: The Analysts' Guide (2021).

All analysts who enter asbestos enclosures or designated work areas may become contaminated and need to decontaminate themselves. The purpose of decontamination is to make sure that PPE and RPE, as well as the individual, are cleaned to prevent further spread of asbestos. Decontamination should also be conducted safely to avoid secondary exposure for the analyst. Analysts should be instructed and trained on the conditions which will require full decontamination. The conditions should also be set out in company policy.

Guidance on decontamination procedures is set out in Chapter 9 of HSG248 which acknowledges that in most instances the analyst should not need to undergo full decontamination and that preliminary decontamination would be sufficient. The level of decontamination undertaken is to be determined each time the analyst exits an enclosure. However, HSG248 does require that the analyst is always prepared for full decontamination and as a result, the analyst is not permitted to wear domestic clothing beneath their PPE coveralls.

In recent times it has been identified that many analysts, particularly females have, and continue to suffer unacceptable physical/sexual abuse and unwanted behaviour. This is primarily as a result of not being able to wear domestic clothing beneath their coveralls. This type of abuse can occur at various points whilst on site but predominantly occurs whilst using the decontamination unit (DCU) either for changing into, or out of, coveralls or when undergoing full decontamination such as showering.

This FAWG supplementary guidance is intended to provide alternative options and supporting technical evidence that considers both the risk of asbestos contamination and risk of sexual harassment. There will of course be times when full decontamination is required and the need to undress in the DCU to shower. Additional FAWG guidance has been written on assessing risk and implementing measures to prevent sexual harassment including when the analyst does need to complete full decontamination.

Historical Context & Technical Evidence Review

A large amount of clearance testing data has been collected from United Kingdom Accreditation Service (UKAS) Accredited organisations. This data has been reviewed to consider the likelihood and potential for analysts to be exposed to asbestos fibres during stages 2 and 3 of the 4-stage clearance (i.e. the times when enclosure entry is required). It was found that the airborne fibre levels at 4SC are indicative of low airborne contamination. The evidence review is provided at Annex A.

Factors to Consider When Assessing the Risk of Contamination

HSG248 (2021) acknowledges that the physical nature of the inspection can [but not always] lead to coverall damage, exposing and contaminating underclothes. All enclosures will need to be judged on their own merits with a documented risk assessment to determine the potential for contamination and exposure.

The potential does exist that asbestos may have been missed by the LARC. This potential is most likely to occur in larger or more complex enclosures including those which require access and crawling through confined spaces and ducts. This is also supported by the

personal monitoring results (detailed in Annex 1) where, in a small number of situations, higher concentrations were found in these types of enclosures.

Clearly it would be beneficial to determine in advance the likelihood of significant asbestos contamination during clearance as this would pinpoint/highlight the requirement of any additional measures e.g. additional analyst or chaperone. Factors to consider (list not exhaustive):

- The physical nature of the clearance inspection; does it involve crawling, kneeling, stretching and climbing, that could lead to coverall damage (e.g. ripping or tearing), exposing and contaminating underclothes?
- The size of the enclosure, any tight spaces where coveralls would be in direct contact with the walls etc.
- Presence of access equipment or anything else that could be a snagging point.
- Nature of removal work (likelihood of visible dust/debris contamination being present)

The table below provides examples of enclosure size and product type with suggested level of decontamination.

Asbestos Product	Enclosure Size	Level of Decontamination required (subject to site specific risk assessment)
AIB	Small (<10m ²)	Preliminary
AIB	Large (>10m ²)	Preliminary or Full
Thermal Insulation	Small (<10m ²)	Preliminary
Thermal Insulation	Large (>10m ²)	Full
Sprayed Coating	All sizes	Full

It is stressed that these are general scenarios and that the site conditions and decontamination requirements will still need to be assessed on an individual basis to justify the approach taken.

Procedural Controls to Minimise Likelihood of Significant Contamination

There are also some procedural controls that can be put in place to minimise the likelihood of significant contamination:

- Consideration needs to be given to any cleaning which may have been utilised prior to analyst entry. For example, if the LARC has undertaken significant amounts of cleaning using high disturbance techniques (e.g. wire brushing) particularly in small enclosures, time should be given for the enclosure to vent prior to the analyst entering.

- At the start of a thorough visual inspection, analysts should conduct a brief initial inspection, looking for gross or significant contamination in difficult to access/clean areas. The intention of this is to identify the extent of further cleaning at an early stage. This may result in an early suspension of the process, and recorded as a Stage 2 failure.
- In accordance with HSG248 where there is a Stage 2 failure, the analyst should leave the enclosure and undergo preliminary decontamination. Where full decontamination is deemed not to be necessary, RPE can be removed on exiting the airlock and the analyst can move around the site wearing the 'inner' coverall. However, RPE and a second coverall should be put on again to re-enter the enclosure. This can include the previously worn 'outer' coverall which was left in the airlock (providing it was not ripped etc. when last removed).

PPE and underclothing that ensures both protection from asbestos contamination and modesty in the enclosure and airlock.

HSG248 states that swimsuits or alternative washable or disposable items can be worn if desired and further acknowledges that there may be other options available to the analyst in terms of preparing to enter the enclosure. Some options are provided in the following section.

The term 'washable or disposable items' is not defined in guidance. However, in practical terms this could mean an **old or cheap t-shirt and leggings**. To **avoid the need to undress** in the DCU, **Analysts should arrive on site wearing clothing** that could be either washed or discarded if a full decontamination is required. As full decontamination could be necessary, It is advisable for the analyst to have a set of domestic clothing in the clean end of the DCU, and this should be placed in a **lockable container** (for security reasons). If only preliminary decontamination was deemed necessary then, they would simply just remove and discard the inner coverall and replace their footwear (or discard protective overboots).

Type 5/6 white coveralls made of SMS (a layer of meltblown polyethylene sandwiched between 2 outer layers of spunbonded polyethylene) are generally 'see through'. Type 5/6 coveralls made of polyethylene laminate are not 'see through'. **Where only SMS or 'see through' coveralls are available and the analyst chooses to wear swimwear only** (which may be the case if full decontamination is anticipated) – **a third set should be worn** so that they are not 'see through', i.e. two inner sets not removed following preliminary decontamination. **Alternatively, other colours such as blue may be less 'see through'**.

Type 5/6 SMS coveralls offer better thermal comfort properties in warm environments, so this should also be factored in when selecting PPE particularly when working in warm or strenuous enclosures e.g. with scaffolds to ascend, tunnels to crawl through. However, they are also more likely to rip, which could lead to contamination of underclothes. **Where there is a risk of ripping, either a polyethylene laminate option outer coverall should be selected or wearing a third SMS coverall.** Note: This may vary between manufacturers.

PPE and underclothing that ensures modesty in the enclosure and airlock

Level of Decontamination	Clothing worn underneath PPE	PPE
Preliminary (inner enclosure and airlock)	Swimwear and/or washable or disposable items	Two or Three Type 5/6 coveralls one of which is removed at preliminary decontamination in airlock
Full (DCU entry following preliminary)	Swimwear and/or washable or disposable items	Two or Three Type 5/6 coverall one which is removed at preliminary decontamination in airlock

Relevant Legislation

The Control of Asbestos Regulations 2012

<https://www.legislation.gov.uk/uksi/2012/632/contents>

The Personal Protective Equipment at Work Regulations 1992

<https://www.legislation.gov.uk/uksi/1992/2966/contents>

Useful Links

Asbestos: The Analysts' Guide

<https://www.hse.gov.uk/pubns/priced/hsg248.pdf>

Asbestos: The Licensed Contractors' Guide

<https://www.hse.gov.uk/pubns/priced/hsg247.pdf>

Please send any feedback or comments about this document to the confidential email address: concerns@itsnotacceptable.co.uk

Annex 1 Evidence Paper: Contamination Risk of Analysts undertaking 4SC Process

Background

The requirement to undertake checks following the removal of asbestos containing materials (ACMs) has been in place for many decades. Many years ago this would have been undertaken by the Licensed Asbestos Removal Contractor (LARC) which then altered to being the role of the Independent Analyst working for a UKAS accredited organisation. One aspect which has never changed is with regards to who is responsible for the removal of the asbestos i.e., the LARC. The analyst is there to provide independent verification that the work has been completed to an agreed satisfactory standard.

As LARCs are the ones actively disturbing and removing ACMs they need to take appropriate precautions and be adequately protected to prevent or minimise contamination of themselves and others. This invariably requires the use of a variety of controls such as ventilated enclosures and dust suppression techniques. In addition, LARCs need to wear suitable personal protective equipment and also undergo decontamination and showering of themselves at the end of each work shift.

Over the years since the introduction of the licensing of high-risk ACM works (in 1983) the control and decontamination requirements for the LARC have remained fairly unchanged. However, over those years the types and associated risk of the ACMs being removed have arguably, on the whole, seen quite a change. In the 1980's and 1990's the vast majority of removal works involved original installations of thermal insulation and sprayed coatings with Asbestos Insulating Board (AIB) the latter being included towards the end of the 1980s. As we moved into the current century and more noticeably the more recent decade, we now tend to see licensed works being mainly involved with AIB removal and re-cleans of areas which had previously undergone removal of thermal insulation and sprayed coating. Indeed, current data from the Asbestos Licensing Unit shows a general trend of 75% of licensed jobs are AIB. In essence both the type of material worked on and the introduction of controlled wetting in the 1990s (Reference Figure 10 [Post Implementation Review of the Control of Asbestos Regulations 2012 \(publishing.service.gov.uk\)](#)) means that the exposure of LARCs nowadays should be significantly lower than the levels of the 1980's. Airborne concentrations seen within enclosures as part of personal monitoring regimes will now also support this.

The 4 Stage Clearance Analyst

Historical Context

In the 1980's and into the 1990's the guidance for the analyst comprised predominantly of the methods for air sampling and analysis. There was an operating code of practice produced by the Institute of Occupational Hygienists (IOH)¹ for clearance testing which provided information for the approach to be taken and what was required to certify an area as satisfactory. In the 1980's there

¹ Institute of Occupational Hygienists (1987) Operating Code of Practice for Asbestos Clearance Certification

was no prescriptive guidance with regards to the PPE to be used or decontamination methods. Those requirements were assessed based on risk, through company procedures and also staff training.

In order to establish the level of risk to analysts' a study² was undertaken in 1987/1988. This study recognised that at the time of enclosure entry the potential exposure of the analyst should be negligible. In addition, the analyst would be suitably trained to assess the risk and take the correct approach to protect themselves. An extract from the introduction section of the research report is shown below:

Consultants with adequate training will be knowledgeable about the purpose and methods of clearance certification. They will understand the risks involved and will know the protective measures required. Important elements of training are the recognition of asbestos materials and residue, and an awareness that contact with and disturbance of any asbestos residue observed should be minimized. Consultants should have the necessary experience to be able to make an initial assessment of the situation liable to be encountered within the work enclosure over the normal range of asbestos work activities.

The study utilised personal sampling of analysts from 4 different consultancies. This sampling was undertaken for the duration of the visual inspection up to and including removal of overalls upon completion. The results were assessed using a 4-hour time weighted average (TWA) on the basis that it was unlikely that an analyst would undertake more than one clearance in that time period. The highest 4-hour TWA exposure was 0.1 f/ml with the mean of the entire data set being less than 0.01 f/ml. The conclusions² found that the analyst was not exposed to high levels and recorded "87% of the TWA₄ personal results, were insignificantly low (i.e. at or below 0.01 fibre/ml)"

It is also important to note that at the time of the study more than two thirds of the clearances included were of the removal of thermal insulation and sprayed coating. The products most likely to result in high airborne concentrations.

It is clear from the results of this investigation that properly conducted clearance certification, in accordance with the Operating Code mentioned above, is not associated with high personal exposure to airborne asbestos dust, relative to the Control Limits, and that long-term exposure would tend to be less than one-tenth of the Action Levels. Therefore, the statutory precautions triggered by the Action Levels are not applicable to clearance certification.

In theory it would not be necessary to designate the asbestos working enclosure as a respirator zone at this stage, since control limits are not liable to be exceeded during clearance certification. However, exposure to all forms of airborne asbestos dust should be reduced to the minimum reasonably practicable. Precautions should be taken, having regard to the level of risk involved and the disadvantage of wearing an unnecessary amount of safety equipment.

² Annals of Occupational Hygiene Vol 32 No.3 pp. 423-426 1988

Current (2005 onwards)

The types of ACMs being removed have altered over the years, with the risk presented currently, arguably being reduced when compared to the majority of ACMs being removed in the 1980/90s. Considering this it would follow that exposure risk to the analyst would also be further reduced.

The table below identifies the changes in guidance since 1987 for analysts with regards to the use of PPE. Although the 1987 IOH study found that the analyst was not being unduly exposed the requirement for analysts to be prepared for full decontamination was introduced in 1992. This requirement was introduced on the basis that the possibility of becoming contaminated is always present if the enclosure is not clean.

The introduction of HSG248 (The Analysts' Guide) in 2005 continued to increase the PPE and decontamination requirements for analysts by removing the ability to wear domestic clothing beneath coveralls. This was further updated in 2021 to permit the wearing of swimsuits and other disposable clothing beneath coveralls. This update was to acknowledge a potential modesty issue, particularly for female analysts.

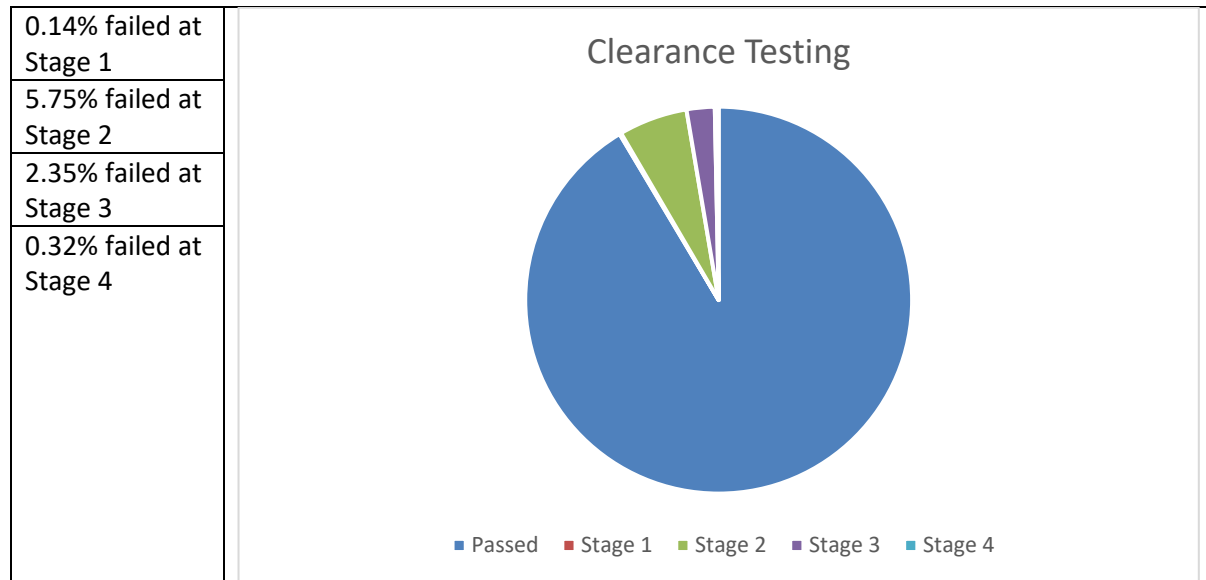
Guidance	PPE (minimum)	Domestic Clothing permitted?	Full Decon in DCU
IOH Code of Practice for Asbestos Clearance Certification (1987)	FFP2	Yes	No
CAR 1987 amended in 1992 (2 nd Edition ACOP)	FFP3 2 coveralls	Yes	In situations where analyst may have become significantly contaminated
HSG248 (2005)	FFP3 2 coveralls	No	In situations where analyst may have become significantly contaminated
HSG248 (2021)	FFP3 2 coveralls An extra (i.e. third) coverall can be worn	No – disposable undergarments or, swimsuits (or alternative washable or disposable items).	In situations where analyst may have become significantly contaminated

The increased PPE/decontamination requirements from 2005 did not consider the behaviours and actions of others which are additional risks that an analyst may be faced with on site. These arguably present a greater issue for the safety and wellbeing of all analysts and in particular female analysts.

In order to establish the current position regarding clearance testing of enclosures and potential exposure of analysts a request for information was sent out to members of NORAC (National Organisation of Asbestos Consultants) and ATaC (Asbestos Testing and Consultancy Association).

Information relating to over 32,000 clearance tests was provided and collated. This data found of the 32,000+ tests just over 8.5% (1883) failed.

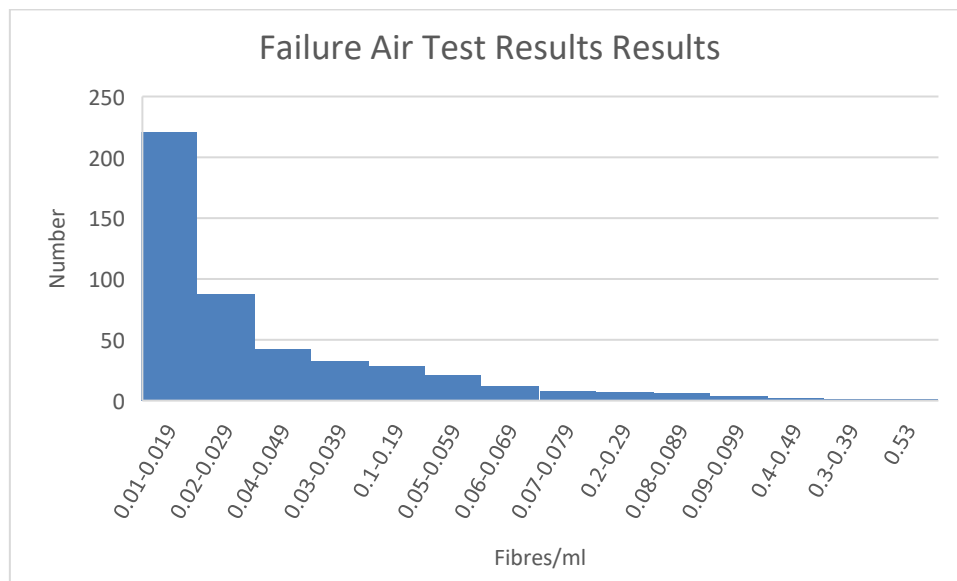
Of the failures:



Of the data provided 476 clearance tests also included the air test results where a failure occurred at Stage 3. An evaluation of that data found that almost half (46.4%) recorded results between 0.01 f/ml and 0.019 f/ml with just under a fifth (18.5%) then lying between 0.02 and 0.029 f/ml. The percentages decreased significantly above 0.029 f/ml. The highest reported result of 0.53 f/ml was said to be in relation to large scale removal of thermal insulation.

The table and chart below provide the specific details of the air test failure results and the values obtained.

Result (f/ml)	No of Results	% of Results
0.01-0.019	221	46.4
0.02-0.029	88	18.5
0.03-0.039	33	6.9
0.04-0.049	43	9.0
0.05-0.059	21	4.4
0.06-0.069	12	2.5
0.07-0.079	8	1.7
0.08-0.089	6	1.3
0.09-0.099	4	0.8
0.1 - 0.19	29	6.1
0.2 - 0.29	7	1.5
0.3 - 0.39	1	0.2
0.4 - 0.49	2	0.4
0.53	1	0.2

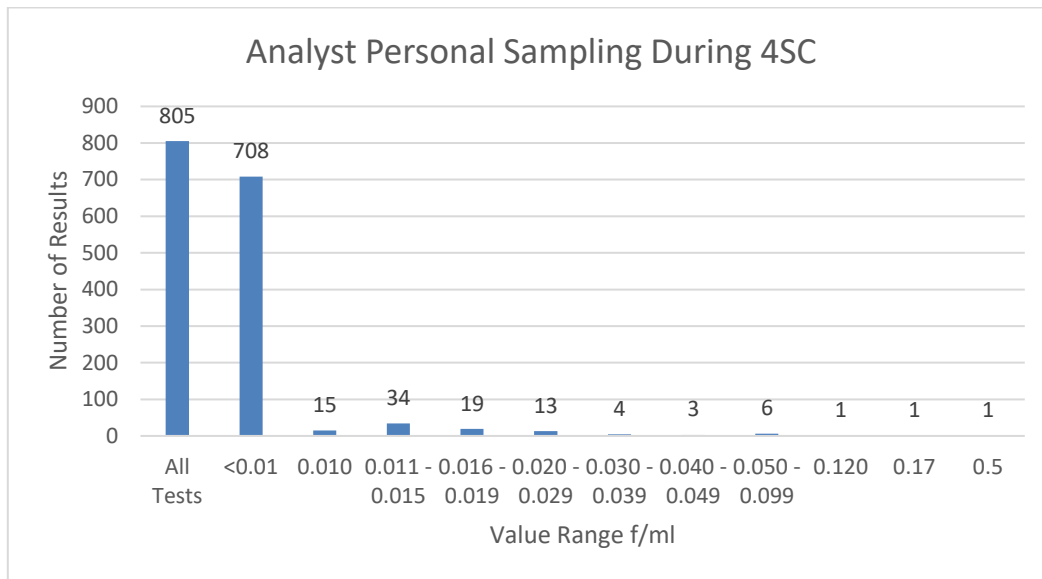


Personal Monitoring

In addition to the data on 4SC testing a further request was sent out to obtain information from the personal monitoring which analysts undertake on themselves. This monitoring related to entry into enclosures as part of the clearance testing process, typically at stage 2, the visual inspection. 805 results were reviewed of which 708 all produced results below 0.01 f/ml, i.e. less than a tenth of the current Control Limit. This equates to 88% of the tests carried out. The remaining 97 or 12% of the results have been split to demonstrate the range of concentrations obtained. These can be seen in the table below. The specific time spent within the enclosure is not known for all results however it is likely to be well below 4 hours. A 4-hour TWA is therefore likely to produce results below those seen within the table.

4SC Analyst Personal Sampling Results (data voluntarily provided from NORAC/ATAC member organisations)

Value f/ml	No results	% of results
All Tests	805	100
<0.01	708	88
0.010	15	1.9
0.011 - 0.015	34	4.2
0.016 - 0.019	19	2.4
0.020 - 0.029	13	1.6
0.030 - 0.039	4	0.5
0.040 - 0.049	3	0.4
0.050 - 0.099	6	0.7
0.12	1	0.1
0.17	1	0.1
0.50	1	0.1



The most likely risk of analyst contamination due to visible dust and debris which may be present is at Stage 2. The personal sampling results provide a true representation of the airborne exposure risk and a good indicator of potential contamination of analysts. These results support the previously obtained data and conclusions from earlier studies in that the potential exposure of analysts is negligible during clearance testing. The vast majority of results being more than 10 times lower than the current Control Limit of 0.1 f/ml.

In the circumstances where readings in excess of 0.05 f/ml were observed the type of removal was confirmed as large-scale removal of AIB, thermal insulation and sprayed coatings. Large scale being taken as enclosures greater than 10m².