

# The Chartered Society for Worker Health Protection

P404 Proficiency Qualification:

Air Sampling of Asbestos and MMMF and Requirements for a Certificate of Reoccupation Following Clearance of Asbestos

**Qualification Specification** 

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#### **About BOHS**

### BOHS - The Chartered Society for Worker Health Protection

BOHS is the Chartered Society for Worker Health Protection. Our vision is to create a healthy working environment for everyone by preventing exposure to hazardous substances in the workplace.

Founded in 1953, we have developed over the last 65 years into a highly respected and influential body on workplace health issues, working closely with organisations in the UK and overseas to promote our vision. We are a registered charity, professional society and a member of the International Occupational Hygiene Association which is recognised as a non-government organisation by the International Labour Organisation (ILO) and the World Health Organization (WHO).

We were awarded a Royal Charter in 2013 in recognition of our pre-eminent role in protecting worker health.

BOHS is a membership organisation, open to anyone who has an interest in workplace health issues, and we have over 1800 members in 57 countries.

### BOHS courses and qualifications - the quality choice

We are the leading awarding body in our field. Our UK courses and qualifications are recognised and respected by independent agencies such as the Health and Safety Executive (HSE) and the United Kingdom Accreditation Service (UKAS), and further afield by industry and employers worldwide. Over 60,000 people have taken one of our qualifications through our network of training providers which offer engaging, challenging and practical courses.

Our courses and qualifications are overseen by a team of highly experienced professionals who are dedicated to developing the competence and career opportunities for the many thousands of people who play a key role in protecting worker health, in diverse fields such as asbestos, legionella and control technologies.

Information about all our courses and qualifications is available on our website: <a href="https://www.bohs.org/qualifications-training/bohs-qualifications/">www.bohs.org/qualifications-training/bohs-qualifications/</a>



### P404 at a glance

### What is the objective?

To provide candidates with all the necessary theoretical and practical knowledge in the techniques of air sampling and clearance testing, and the provisions for issuing certificates for reoccupation following removal or remediation works involving asbestos products.

### Who is it for?

### Anyone who:

- Undertakes clearance testing as part of their work (e.g. asbestos site analyst),
- Undertakes asbestos fibre counting and requires an understanding of the external processes used in air sampling (or as supplementary learning to P403).
- Manages asbestos analysts.

### What are the entry requirements?

- Awareness of the contents of HSG248 Asbestos: The Analysts' Guide for sampling, analysis and clearance procedures
- Prior experience of undertaking clearance testing (including air sampling and issuing certificates of reoccupation).

### What are the main subject areas?

- The health effects of asbestos and legislative requirements.
- Method Statements/Plans of Work.
- Air sampling for asbestos.
- Enclosures, clearance air monitoring and reporting.

### How long does it take?

Normally 2 days as a set course.

#### What level is it?

Level 4 in the BOHS qualifications framework.

### How do candidates pass it?

Candidates must pass three parts within 12 months:

- Formative practical assessment.
- Written theory examination.
- Written practical examination.

### Who supports it?

Health and Safety Executive (HSE) and United Kingdom Accreditation Service (UKAS).



### Background to the qualification

BOHS has provided asbestos Proficiency qualifications in the UK for over 15 years, working closely with globally recognised bodies such as the Health and Safety Executive to set educational standards and to spread best practice. In that time, over 45,000 candidates have taken a BOHS asbestos examination.

Asbestos is still a big problem in the UK and is present in most buildings constructed before the year 2000. If asbestos is disturbed by refurbishment, demolition or remediation projects, it breaks down into small fibres, which can be inhaled deep into the lungs and cause life-threatening illnesses such as lung cancer and mesothelioma. According to the HSE, around 4,000 people die from an asbestos-related disease in the UK each year.

For asbestos removal and remediation projects, an independent asbestos analyst should be employed to conduct a thorough clearance inspection of the site, to check that control measures are effective, asbestos materials have been managed accordingly (removed/encapsulated/repaired) and method statements have been followed. There is also a legal requirement for asbestos analysts to undertake formal training in their role, as outlined in CAR 2012 Regulation 10, and HSG248: Asbestos: The Analysts' Guide for Surveying, Sampling and Analysis.

The P404 qualification is the industry standard for asbestos site analysts, and gives candidates the skills and knowledge required to thoroughly and safely undertake air monitoring and the four stages of the clearance process. It also teaches candidates how to identify any outstanding asbestos risk on the site, and how to issue a certificate for reoccupation when they are satisfied the site is safe to re-occupy.



### Key features of the qualification

### Objective

The qualification is designed to improve the knowledge and skills required by asbestos site analysts, to achieve a standard that is recognised as reducing ill health by minimising the risk of exposure to asbestos in buildings.

### Target audience

The qualification is suitable for anyone who:

- Undertakes clearance inspections and air monitoring of asbestos as part of their work (e.g. asbestos site analyst).
- Issues clearance certificates following asbestos clearance procedures.
- Undertakes asbestos fibre counting and requires an understanding of the external processes used in air sampling.
- Manages asbestos site analysts.

### Entry requirements

Before taking the qualification, candidates are expected to be familiar with the contents of *HSG248 Asbestos: the analysts' guide for sampling, analysis and clearance procedures* (in particular Section 6: Site assessment for reoccupation). Candidates will also be expected to have prior experience of undertaking clearance testing including air sampling, fibre counting and issuing certificates of reoccupation. Candidates also need good literacy and numeracy skills to complete the examinations.

### Age range

There is no age restriction on candidates taking the qualification. However, there are requirements within the *Management of Health at Safety at Work Regulations 1999 (Regulation 19)* which specifies that people less than 18 years old should not be employed in work which exposes them to carcinogens.

### Level

The level of a qualification indicates the relative complexity and depth of knowledge and skills required to attain the qualification. This qualification is set at Level 4 in the BOHS Qualifications Framework, equivalent to NVQ Level 4 and HNC.

### Fees

The examination fee for each candidate is published on the BOHS website.



### Delivering the qualification

### Teaching and learning time

The P404 course will normally run over two consecutive days and include 11 hours of study time. This includes nine hours taught (teaching and formative practical assessment) and two hours of independent study (in the candidate's own time).

The course can be delivered more flexibly, such as on one day per week for two weeks, but should still include 11 hours of study time.

#### **Tutors**

The course should be taught by tutors who are experienced and qualified/certified asbestos practitioners or occupational hygienists. As a guide, tutors will typically have:

- At least three years' current experience in asbestos clearance procedural work;
- A recognised asbestos qualification or a professional occupational hygiene qualification/certification such as:
  - BOHS Certificate of Competence (Asbestos);
  - BOHS Certificate of Operational Competence;
  - BOHS Diploma of Professional Competence;

This list is not necessarily exhaustive or definitive.

### Teaching resources

Training providers should have the following facilities and equipment:

- Asbestos remediation enclosure with at least one 3-stage airlock.
- Decontamination unit or model.
- Air sampling equipment including calibration and relevant flow set up equipment.
- Appropriate photographs and other items for educational purposes (and to be used in the formative practical assessment) including examples of four stage clearance and method statements.

### Support for teaching and learning

BOHS provides sample examination questions for tutors.

### Language

The examinations are provided in English only.



### **Syllabus**

The qualification is structured into five sections, each with an indicative time allocation:

Section		Time allocation
1	Health effects and regulations	10%
2	Method Statement/Plan of Work	15%
3	Air sampling for asbestos	15%
4	Enclosures, clearance air monitoring and reporting	20%
5	Practical work	40%

The reference numbers in brackets within the syllabus relate to the references and further reading list (Section 7).

### **1.** Health effects and regulations (5%)

### **Educational objectives**

Candidates should have a clear understanding of the ill health effects relating to asbestos exposure, and the current UK legislative requirements for working with asbestos.

### **1.1** Health effects

- 1.1.1 Outline the full range of health effects of asbestos ranging from the benign (pleural plaques) to the terminal (mesothelioma) in the light of results from epidemiological studies carried out on asbestos workers.
- 1.1.2 Review influential publications.
- 1.1.3 Cover dose-response relationships, the effects of smoking whilst working with asbestos and the risks to health from low level exposure.

### 1.2 Regulations

- 1.2.1 Outline the relevant HSE regulations for asbestos removal and for the licensing of asbestos work, with reference to the Control of Asbestos Regulations 2012. Highlight the duties of the asbestos removal contractor, employer, building owner and laboratory analytical service.
- 1.2.2 Refer to good practice for asbestos removal as laid out in the Approved Codes of Practice supporting these regulations.
- 1.2.3 Refer to other relevant HSE guidance.
- 1.2.4 Describe control limits and the clearance indicator together with the underlying philosophy of setting such limits. (1) (2) (5)



### 2. Method Statement/Plan of Work (15%)

### **Educational objectives**

Candidates should be thoroughly familiar with current best practice in the set-up of enclosures for asbestos remediation works, and must be able to identify examples of poor working procedures in a practical situation. They should also be able to apply their practical, theoretical and technical understanding of what information needs to be included within the Plan of Works document.

- 2.0.1 Discuss the importance of the role of the method statement/plan of work and the use of control measures to reduce airborne asbestos emissions and to limit the spread of debris.
- 2.0.2 Look in detail at the design, construction, testing and maintenance of enclosures and negative pressure air management systems.
- 2.0.3 Discuss the role and use of personal protective equipment, transit and hygiene facilities. Cover the importance of cleaning the area and the safe removal and disposal of debris. (2) (5)
- 2.0.4 Describe the 1st stage of reoccupation and its certification and the requirements of the method statement. This includes work areas, enclosures, hygiene facilities, transit routes and waste disposal.

### **3.** Air sampling for asbestos (15%)

### Educational objectives

Candidates should have a practical, theoretical and technical understanding of the approved methods for sampling of airborne asbestos and man-made mineral fibres (MMMF).

- **3.1** Types of air sampling
- 3.1.1 Detail the types of air sampling that can be carried out.
- 3.1.2 Review sampling strategies and their relevance for identification of sources of contamination, assessment of personal exposure and the checking of efficiency and effectiveness of control measures. (2)
- **3.2** Air sampling equipment and procedures
- 3.2.1 Discuss the requirements of the counting method in HSG248 (in relation to sampling of airborne asbestos) and in MDHS59 (in relation to sampling of MMMF).
- 3.2.2 Discuss the requirements for recording calibration and site sampling information to ISO 17025 standards. (2) (3) (Note: The detailed set up and use of air sampling



equipment is covered in Proficiency Module P403)

### **3.3** Clearance sampling

- 3.3.1 Describe when and how visual inspection and clearance sampling is carried out, what must be looked for and the types and frequency of dust disturbance which must take place prior to clearance sampling. (2)
- 3.3.2 Discuss the inspection process and clearance sampling required for a decontamination unit.
  - **4.** Enclosures, clearance air monitoring and reporting (20%)

### **Educational objectives**

Candidates should be able to analyse, interpret and evaluate the methods used to inspect and test an asbestos removal enclosure, and to apply all aspects of the four stage process for issuing the site certificate of reoccupation.

The course must contain all the elements of the four-stage clearance procedure with the exception of sample mounting and counting which are covered in Proficiency Module P403.

### 4.1 Safety aspects

- 4.1.1 Discuss face fit testing, the selection and use of PPE and RPE, its place in the control hierarchy and the likely protection it affords.
- 4.1.2 Describe transit and decontamination procedures that may need to be followed.
- 4.1.3 Discuss the medical records that may need to be kept, together with other risk assessments that may be necessary.

### **4.2** Enclosure evaluation

- 4.2.1 Describe inspection procedures to detect any deficiencies in enclosures including smoke testing, leak testing, and identification of faults in enclosure design.
- 4.2.2 Emphasise the need to include the decontamination unit and any other equipment in the evaluation of the enclosure.
- **4.3** Thorough visual inspections (Stage 2)
- 4.3.1 Describe clearance inspections of enclosures and decontamination units and give advice as to where asbestos may be found after contractors have completed stripping operations.
- 4.3.2 Examine HSE Guidance Documents HSG248 and HSG247 in relation to clearance sampling and the meaning of thoroughly visually clean and how this is assessed (2).
- **4.4** The clearance indicator threshold and the role of the clearance sampling (Stage 3)
- 4.4.1 Discuss the significance of the clearance indicator threshold and its application to clearance sampling (2).
- 4.4.2 Discuss the requirements imposed by ISO 17025 (4) accreditation and the role of HSE and UKAS in ensuring that certification is carried out with integrity.



- 4.4.3 Discuss the areas of potential conflict of interest and what to do if undue pressure or threats are made.
- **4.5** Final assessment post-enclosure/work area dismantling (Stage 4)
- 4.5.1 Describe areas for inspection outside the enclosure and the overall removal of ACMs in compliance with the method statement.
- **4.6** Certificates of reoccupation
- 4.6.1 Identify who must issue and who must receive the certificate of reoccupation and what it must contain.
- 4.6.2 Clarify the status of any conditions specified in the certificate.
- **4.7** Communications and reporting
- 4.7.1 Explain the need for clear communications with colleagues and clients.
- 4.7.2 Describe the requirements for formal reporting of analytical results and the four stage clearance.

### 5. Practical work (40%)

Practical work must be carried out to provide the student with all practical knowledge in carrying out the following:

- 5.1 Method statement (30%)
- 5.1.1 Reviewing the method statement and comparison with site details.
- 5.2 Air sampling (10%)
- 5.2.1 Confirmation of the candidate's ability to do all relevant calculations relating to the number of samples to be taken for clearance and the air volume for each sample etc. (General sampling strategies covered in P403)
- 5.3 Clearance testing (45%)
- 5.3.1 Confirmation of the candidate's full knowledge of all of the elements of the four- stage clearance procedure.
- 5.3.2 Enclosure inspection prior to work and to detect deficiencies, smoke testing, leak testing and enclosure design.
- 5.3.3 Visual clearance of enclosure post remediation.
- 5.3.4 Use of PPE/RPE and personal decontamination procedures.
- 5.3.5 Issuing a certificate of reoccupation.
- 5.4 Role plays (15%)
- 5.4.1 Dealing with awkward and pressured situations.



### References and further reading

- 1 HSG247 (2006), Asbestos: The licensed contractors' guide, HSE
- 2 HSG248 (2005), Asbestos: The analyst's guide for sampling, analysis and clearance procedures, HSE
- 3 HSG53 (2013), Respiratory protective equipment at work: A practical guide, HSE
- 4 ISO 17025 (2005) General requirements for the competence of testing and calibration laboratories
- 5 L143 (2013), Managing and working with asbestos. Control of Asbestos Regulations 2012. Approved Code of Practice and guidance, HSE
- 6 MDHS59/2 (2014) Machine-made fibres: Airborne number concentration and classification by phase contrast light microscopy

HSE guidance is reviewed and revised periodically. Training providers should check that the publications listed above are the current versions.

#### Useful websites

All the Health and Safety Executive (HSE) publications listed above are available as free downloads from the HSE website: <a href="https://www.hse.gov.uk/asbestos">www.hse.gov.uk/asbestos</a>.



### Achieving the qualification

Candidates are required to pass three mandatory components to be awarded the qualification: one assessment and two written examinations.

### Assessment

Formative Practical assessment (FP).

#### Written examinations

- Written Theory examination (WT).
- Written Practical examination (WP).

#### Assessment

Formative practical assessment

Candidates taking the P404 module must have the requisite skills to carry out the full procedure for taking air samples and determining site clearance following asbestos remediation works. Candidates must demonstrate proficiency in all of the following areas:

- The complete procedure for taking air samples for clearance purposes (the actual set up of the sampler itself and the conversion of filters is included in the P403 module).
- Selection, checking and wearing relevant PPE and RPE, including appropriate decontamination and removal procedures.
- A full understanding of all four stages of the process for site certification for reoccupation purposes, including issuing of a certificate of reoccupation.

The formative practical assessment requires candidates to complete a number of practical tasks in line with BOHS guidelines. All candidates must undertake the tasks at an appropriate time during the course under the supervision of the course tutor. The tutor may be assisted by other appropriately qualified and experienced people if necessary.

The assessment is open-book and candidates are permitted to access written reference materials and written procedures during the tasks but not electronic databases.

The course tutor is permitted to support candidates who are experiencing difficulties in carrying out one or more of the tasks, for example by providing verbal feedback or by demonstrating correct techniques. However, to complete the assessment, candidates must demonstrate a satisfactory level of proficiency in all tasks independently and without support.



### The practical tasks

The following three tasks must be included in the formative practical assessment:

### Task 1: Procedure for taking samples

Candidates should demonstrate the following:

- Calculation of the number of samples required in an area.
- Positioning of samplers and sampling procedure.
- Post-sampling recovery of samplers.

# Task 2: The four-stage site clearance for reoccupation procedure Candidates should demonstrate the following:

- The requirements of the four stages.
- Dust disturbance procedures.
- Examples of failures and corrective actions.

### Task 3: Selection and use of RPE/PPE

Candidates should demonstrate the following:

- Inspection and fit checking of a suitable respirator.
- Demonstration of correct donning and removal of RPE, including decontamination.
- Description/demonstration of correct donning and removal of other PPE.

### Marking and reporting

The course tutor that assesses the candidates must complete a Formative Practical Assessment Report Form for each candidate (see Appendix 1). The report must clearly show if each candidate has achieved a satisfactory or unsatisfactory level of proficiency for each assessment element and should include other comments about the candidate's performance, such as weaknesses that were corrected and key points to take into asbestos practice.

Candidates are required to achieve a satisfactory level of proficiency for each element to complete the assessment. A copy of the relevant report should be given to the candidate.

### Results

The results for each candidate must be sent to BOHS within five working days of the end of the course.

### Re-sits

The formative practical assessment is not time-constrained, and it is expected that candidates who meet the entry requirements for the qualification will pass the assessment during the course. However, candidates are permitted to re-sit the assessment at a later date if required.

Candidates who do not complete the tasks are permitted to take the written and practical examinations, but will not be awarded the qualification module until they successfully complete the formative practical assessment.



#### Written examinations

The two written examinations usually take place immediately after the course.

### Written Theory examination

The written theory examination enables candidates to demonstrate that they have attained the required breadth and depth of knowledge in the techniques of air sampling and clearance inspections, and the provisions for issuing certificates of reoccupation.

The examination comprises 40 short-answer questions to be answered in two hours. Short- answer questions require candidates to give brief answers, sometimes as bullet points or calculations. All questions are worth a maximum of 4 marks. Candidates should attempt all questions as no marks are deducted for incorrect answers.

The pass mark is 50%. The examination covers sections 1 to 4 of the syllabus in proportion to the time allocation given for each section. This gives a question allocation as follows:

Sectio n		Number of questions	
1	Health effects and regulations	7	
2	Method Statement/Plan of Work	10	
3	Air sampling for asbestos	10	
4	Enclosures, clearance air monitoring and reporting	13	

The sections are clearly marked in the examination paper.

The written theory examination is a closed-book examination, which means that candidates are not permitted to have access to any material.

### Written Practical examination

The written practical examination enables candidates to show that they understand how to apply their knowledge and skills to real life situations.

The examination comprises up to 35 questions to be answered in two hours. Many of the questions are based on photographs, diagrams or extracts from documents and can be answered as bullet points. The questions do not require candidates to write large quantities of text. Candidates should attempt all questions as no marks are deducted for incorrect answers.

The questions are worth different numbers of marks, up to a maximum of 10 marks. The number of marks is clearly shown after each question to help candidates understand the expected length of a full answer to the question. The pass mark is 60%.



The examination covers section 5 of the syllabus in proportion to the percentages shown in the sub-sections. This gives a mark allocation as follows:

Section 5		% of marks
5.1	Method Statement	30%
5.2	Air sampling	10%
5.3	Clearance testing	45%
5.4	Role plays	15%

The sub-sections (5.1, 5.2, 5.3 and 5.4) are clearly marked in the examination paper. The written practical examination is an open-book examination, which means that candidates are permitted to have access to relevant reference material but not electronic devices.

#### General examination information

### Invigilation

The written examinations are carried out in controlled conditions, to help ensure that all candidates demonstrate their true level of attainment. BOHS appoints an invigilator to ensure that the examination is conducted properly and fairly.

### Marking and results

All examination papers are marked by BOHS. Borderline fail results are automatically re- marked by a second marker. Candidates receive their results in writing from BOHS. The results are reported as pass or fail plus a percentage. Training providers are sent a list of results for all candidates on a course.

### Feedback

Candidates receive feedback on their examination performance for both examinations. For example, the feedback for a written theory examination in which a candidate scored 63% would be shown as follows:

Syllabus Area		Resul t	
1	Health effects and regulations	14/28	(50%)
2	Method Statement/Plan of Work	30/40	(75%)
3	Air sampling for asbestos	30/40	(75%)
4	Enclosures, clearance air monitoring and reporting	26/52	(50%)
Total		100/160	(63%)



Training providers receive feedback on the performance of all candidates. For example, the feedback for a course with six candidates would be as follows:

Written Exam Performance against syllabus		Number of candidates in each scoring band		
		Da	nu	
		0-	50-	76-
		49%	75%	100%
Written Theory	1. Health effects and regulations	1	4	1
Written Theory	2. Method Statement/Plan of Work	0	3	3
Written Theory	3. Air sampling for asbestos	2	4	0
Written Theory	4. Enclosures, clearance air monitoring and reporting	4	2	0
		0-	60-	76-
		59%	75%	100%
Written Practical	5.1 Method Statement	1	4	1
Written Practical	5.2 Air sampling	1	4	1
Written Practical	5.3 Clearance testing	0	6	0
Written Practical	5.4 Role plays	2	3	1

### Resits

Candidates may re-sit one or both of the examinations; but both examinations must be passed within 12 months of the original sitting.

### Certification

Candidates who pass the formative practical assessment and written examinations within 12 months will be awarded a *Proficiency Certificate in Air Sampling of Asbestos and MMMF and Requirements for a Certificate of Reoccupation Following Clearance of Asbestos.* 

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### Quality assurance

### Internal quality assurance

Training providers must operate an internal quality assurance system which evaluates and improves the delivery of the qualification.

The system should include an internal verification process which ensures that the formative practical assessments are conducted in line with requirements and that fair and consistent decisions are made about the attainment of candidates.

### External quality assurance

BOHS undertakes desk-based reviews of documents, including teaching materials and formative practical assessment records, and conducts surveys of candidates. We also may inspect training providers.

BOHS conducts quality assurance evaluation on all its examinations on a regular basis to ensure the maintenance of standards.

This qualification is included in the mandatory asbestos training provider inspection scheme



### Offering the qualification

### Approved training providers

Please complete and return the 'Application Form for Additional Qualifications' to <a href="mailto:qualifications@bohs.org">qualifications@bohs.org</a>. The form is available on the BOHS website.

### New training providers

Please send an email to <a href="mailto:qualifications@bohs.org">qualifications@bohs.org</a> expressing your interest in offering the qualification and we will advise you about the approvals process.



### Other qualifications

Candidates who achieve this qualification may wish to take one of the following qualifications:

### P403 - Asbestos Fibre Counting (PCM)

#### Objective

To provide candidates with theoretical and practical knowledge in the techniques of fibre counting of asbestos air samples using phase contrast microscopy (PCM).

### Target audience

The qualification is suitable for anyone who:

- Carries out the approved methods of fibre count sampling as part of their work.
- Is considering a career as an asbestos analyst.
- Is responsible for managing asbestos analysts.

### P405 Management of Asbestos in Buildings

### Objective

Where asbestos services are procured for removal, surveying or analytical, the client needs to have an understanding of the work and processes that are required.

### Target audience

This qualification is suitable for:

- Duty holders, building managers and those providing assistance to them in the discharge of their responsibilities.
- Those involved with the management of asbestos within buildings.
- Those involved with the procurement of asbestos-related services.



# Appendix 1 – Formative Practical Assessment Report Form

Tr	aining provider		
Course start date		Course end date	
Lo	cation of course		
Na	ame of candidate	Date of Birth	
Da	ite of assessment		
Assessment element		Tutor comment of level of proficiency (Tutor must enter 'Satisfactory' or 'Unsatisfactory' for each element, with additional comments if necessary relating to the candidate's ability and expertise in that element.)	
1	Procedure for taking samples	3	
2	Four-stage site clearance		
3	Selection and use o	f	
I certify that the above candidate has been assessed in accordance with BOHS requirements and has achieved the level of proficiency for each element as shown.			
	ame of tor	Signature of tutor	