

RSPH Level 3 Certificate for Asbestos Air Monitoring Analysts
(HSG 248 – Sampling, Analysis and Clearance Procedures)

February 2013

15 Guided Learning Hours
3 Prior Learning Hours

Description

The *Control of Asbestos Regulations* imposes duties relating to air testing and the cleanliness of asbestos enclosures and work areas. There is thus a need for analysts and similar specialists to have the knowledge to inspect and test asbestos works that have been carried out to ensure they meet the correct standards required by HSG 248. Possession of this qualification by staff will help organisations and companies meet the accreditation criteria for ISO17020 ISO17025 (inspection and testing bodies) and ISO17024 (certification bodies) of UKAS.

The qualification consists of four units:

Unit One: Asbestos Types, Uses, Health Effects and Legislation

Unit Two: Theory of air sampling, fibre counting and clearance procedures for asbestos analysts

Unit Three: Practical air sampling, fibre counting and clearance procedures for asbestos analysts

Unit Four: Use of Decontamination Units and H type vacuum cleaners

Unit One: Asbestos Types, Uses, Health Effects & Legislation

Summary of Outcomes:

To achieve this unit a candidate must:

1. **Know the health risks, uses and properties of asbestos, by being able to:**
 - 1.1 State the properties and characteristics of different types of asbestos.
 - 1.2 Review the types and uses of asbestos containing products.
 - 1.3 Review the risks to health from asbestos exposures
 - 1.4 Review the control limits for asbestos
2. **Review legislation relating to asbestos, by being able to:**
 - 2.1 Summarise appropriate legislation relating to the control and use of asbestos.

Content:

1. Know the health risks, uses and properties of asbestos

1.1 Asbestos types, properties and characteristics of the different types of asbestos: (crocidolite ((blue asbestos)), chrysotile ((white asbestos)) amosite ((brown asbestos)), actinolite, anthophyllite and tremolite), to include fibre size and shape, biopersistence, friability and solubility, effects on fibres due to fire damage.

1.2 Types, uses and products: asbestos contents, extent of use, reasons behind use, different fibre properties and resistances, materials asbestos was used with: sprayed coatings; lagging; insulating boards; ropes and yarns; cloth; millboard, paper and paper products; asbestos bitumen products; asbestos cement products; flooring; textured coatings and paints; mastics, sealants, putties and adhesives; reinforced plastics; plugging compounds; domestic appliances, plant and machinery, asbestos contamination in other products.

1.3 Risk to health: asbestos related diseases: mesothelioma; asbestosis; lung cancer; risk of developing disease, including risks from low level exposures; induction or latency periods; levels of exposure to asbestos fibres including the significance of control limits within the operation of CAR 2012.

1.4 Control limits for asbestos: purpose of, and reasons for, asbestos control limits and clearance indicator levels.

2.0 Review legislation relating to asbestos

2.1 Legislation: main points of the following Acts and Regulations that are relevant to asbestos **or any superseding legislation**; Health and Safety at Work etc. Act 1974, Control of Pollution Act 1974, Water Act 1989, Consumer Safety Act 1978, Management of Health and Safety at Work Regulations 1999, Control of Substances Hazardous to Health Regulations and amendments, Control of Asbestos Regulations 2006, Construction (Design and Management) Regulations, Waste Management Licensing Regulations 1994, Hazardous Waste (England & Wales) Regulations 2005, The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2004; duties of employers in control of workplaces; legal status of Approved Codes of Practice, HSE regulations and guidance notes.

Unit Two: Theory of air sampling, fibre counting and clearance procedures for asbestos analysts

Summary of Outcomes

To achieve this unit a candidate must:

1. Know procedures for the management of risk in relation to asbestos removal / abatement, *by being able to:*

- 1.1 Outline the purpose of method statements and risk assessments and the requirements of training and site information
- 1.2 Describe decontamination procedures
- 1.3 Describe asbestos removal and waste management procedures
- 1.4 Outline health and safety procedures for reducing the risk from asbestos

2. Understand the theory of asbestos fibre counting and air sampling, *by being able to:*

- 2.1 Outline procedures for asbestos fibre counting
- 2.2 Outline procedures for asbestos air sampling

3. Know procedures relating to asbestos clearance, *by being able to:*

- 3.1 State the requirements for clearances
- 3.2 Outline procedures for reoccupation of a site following asbestos removal

Content

1. Procedures for the management of risk in relation to asbestos removal /abatement

1.1 Method statements, risk assessments, training and site information: Role of method statements and risk assessments in managing risk during asbestos removal; method statements and risk assessments for different work such as full enclosure works, respirator zone works, primary decontamination and full decontamination; hierarchy of control measures for reducing exposure to and spread of asbestos; requirements for site information and appropriate signage such as general procedures manual, DCU and respirator zone signage; requirements for asbestos worker training such as medical and face-fit training; required documentation / certification.

1.2 *Decontamination procedures:* Enclosure design, location, construction and maintenance; checks for correct operation of DCU; decontamination procedures for primary decontamination, transit, full decontamination and in the event of an emergency.

1.3 *Asbestos removal and waste management:* Asbestos removal in different situations such as respirator zone and full enclosure; use of CCTV and vision panels; plant and equipment required for asbestos removal; use of NPUs, smoke machines and type H vacuum cleaners; testing and maintenance of equipment, to include HEPA filters; waste management procedures and documentation; requirements of vehicles and containers for asbestos waste; licensing requirements for carriers; waste stations and landfill sites.

1.4 *Health and safety procedures:* use of RPE and PPE when inspecting for or sampling asbestos; different types of RPE and PPE; face-fit tests for use of RPE; inspection of RPE and PPE; methods for decontamination and disposal of used RPE and PPE.

2. **Asbestos fibre counting and air sampling**

2.1 *Asbestos fibre counting:* Phase contrast microscopy of slides with Koehler illumination; operation and theory of phase contrast microscopes / microscopy; calibration of stage micrometer; use of Walton Beckett graticule and test slides; filter preparation; fibre counting to WHO standards; use of count results for calculating fibre concentration, flow rate correction, clearance pump indicator and NPU capability; limits of detection of asbestos fibres; UKAS QC and RICE schemes.

2.2 *Asbestos air sampling:* Equipment used for air sampling, to include pumps, flow meters, rotameters, cowls and filters; reasons for air sampling such as background levels, leakage, clearance, reassurance, personal and compliance; different sampling strategies such as for respirator zones, enclosure monitoring, clearance and reassurance.

3. **Procedures for asbestos clearance**

3.1 *Requirements for clearance:* Site safety aspects; good and bad practice in the use of enclosures; enclosure inspection; indicator thresholds.

3.2 *Procedures for reoccupation of a site:* 4-stage procedure; observations and procedures for each stage; procedures in the event of a stage failing; certification requirements.

Unit Three: Practical, fibre counting, air sampling and clearance procedures for asbestos analysts

Summary of Outcomes

To achieve this unit a candidate must:

1. **Carry out asbestos fibre counting and air sampling, by being able to:**
 - 1.1 Set up asbestos fibre slides and count fibres using phase contrast microscopy to RICE category B performance
 - 1.2 Use asbestos air sampling equipment appropriately

2. **Carry out clearance procedures, by being able to:**
 - 2.1 Inspect asbestos sites and enclosures
 - 2.2 Assess an asbestos removal site prior to reoccupation

Content

1. **Asbestos fibre counting and air sampling**
 - 1.1 *Set up slides and count fibres:* Set up and use phase contrast microscopes with Koehler illumination; calibrate stage micrometer; prepare and mount filters; count fibres on RICE scheme slides to WHO standards; determine fibre concentrations from count results.

 - 1.2 *Air sampling:* Set up and use air sampling pump with correct cowl and filter; set and adjust pump flow rates.

- 2 **Clearance procedures**
 - 2.1 *Inspect asbestos sites and enclosures:* Identify safety aspects on site not covered by risk assessments and/or method statements; identify good and bad practice; inspect enclosures; explain reasoning for passing or failing an enclosure; determine indicator thresholds.

 - 2.2 *Assess asbestos removal sites:* Assess a site for reoccupation according to the 4-stage procedure; justify judgements made.

Unit Four: Use of Decontamination Units and H type vacuum cleaners during Asbestos Surveys

Summary of Outcomes

To achieve this unit a candidate must:

- 1. Understand decontamination requirements and use of related equipment, *by being able to:***
 - 1.1 Set up, use and maintain decontamination units.
 - 1.2 Set up, use and maintain H type vacuum cleaners.

Content:

1. Decontamination Units and Equipment

1.1 Set up, maintenance and use of decontamination units: occasions when a decontamination unit (DCU) must be utilised as part of a survey; procedures for setting up DCUs; tests for ensuring correct use of DCU (including DOP, gas test, previous 4 stage clearance, PAT Test, earthing rods); procedures for use of DCU and correct decontamination to include primary, transit and full decontamination and disposal of contaminated RPE & PPE.

1.2 Set up, maintenance and use of H type vacuums cleaners: occasions when H type vacuum cleaners must be utilised as part of a survey; procedures for setting up and checking use of vacuum cleaners, to include checks for DOP, PAT Test and service requirements; procedures and requirements for bag changes.

Assessment:

Attainment of the Learning Outcomes for Units 1 and 2 will be assessed by an examination consisting of 30 short-answer questions to be answered in one hour. The examination paper will be divided into two sections, one section for each unit. A candidate who is able (deemed) to satisfy the learning outcomes must achieve a score of at least 60% for **EACH** unit in the examination.

Attainment of the Learning Outcomes for Units 3 and 4 will be assessed by a practical examination which will include tasks for each of the assessment criteria for these units.

In order to be awarded the certificate candidates must achieve the learning outcomes for all units.

Guidance:

Recommended Reading & Additional Reading	Qualification				
	Analyst	Surveyor	Project Manager	Dutyholder	Bulk Analysis
Asbestos - The Analyst's Guide for Sampling, Analysis and Clearance Procedures (HSG248) HSE 2005	✓	✓	✓	✓	✓
HSG 247 Asbestos: The Licensed Contractors Guide HSE 2006	✓		✓	✓	
Asbestos and Man-Made Mineral Fibres In Buildings. Practical Guidance Thomas Telford 1999		✓			
Asbestos Essentials - Task Manual Task guidance sheets for the building, maintenance and allied trades. (HSG 210) HSE 2012	✓		✓	✓	
Introduction to Asbestos Essentials comprehensive guidance on working with asbestos in the building maintenance and allied trades. (HSG 213) HSE 2001	✓		✓	✓	
HSG 264 Asbestos: The Survey Guide HSE 2012		✓		✓	
HSG 189/2 Working with asbestos cement HSE 1999	✓		✓	✓	
Work with Materials containing Asbestos, Approved Code of Practice (L143) HSE 2006	✓	✓	✓	✓	✓
HSG 53 The selection use and maintenance of respiratory protective equipment HSE 1998	✓	✓	✓		
MDHS 59 Man made mineral fibre by phase contrast light microscopy HSE 1988	✓				
Lab 30 – Application of ISO/IEC 17025 for Asbestos Sampling and Testing Edition 2 2008			✓		
RG8 - Accreditation of Bodies Surveying for Asbestos in Premises Edition 2 2008	✓				
Asbestos for Surveyors (W. Sanderson) Estate Gazettes 2 nd edition (2007)		✓			
A Comprehensive Guide to Managing Asbestos in remises (HSG 227) HSE 2002		✓		✓	
Asbestos: RICS Guidance Note: Implications for members and their clients. RICS Books 2003				✓	
The Management of Asbestos in Non-Domestic Premises (L127) HSE 2006		✓		✓	
Managing health and safety in construction; Construction (Design and Management) Regulations 2007; ACOP & Guidance, (L144) HSE 2007			✓	✓	
How Are You Managing? - Dealing with the Risks of Asbestos in Buildings (DVD)		✓		✓	
Managing Asbestos in Buildings: A Brief Guide. INDG223 HSE 2012		✓		✓	
Hazardous waste regulations	✓		✓	✓	

Note that many of the HSE publications are available as free downloads from the HSE web-site at <http://www.hse.gov.uk/pubns/books/index-catalogue.htm>

The following web-sites also have useful information:

Asbestos Testing and Consultancy Association www.atac.org.uk

Asbestos Removal Contractors Association www.arca.org.uk

Health and Safety Executive www.hse.gov.uk

Royal Institution of Chartered Surveyors www.rics.org.uk

Special Needs:

Centres that have candidates with special needs should consult The Society's *Regulations and Guidance for Candidates with Special Assessment Needs*, this is available from The Society and The Society's web site (www.rsph.org).

Recommended Qualifications and Experience of Tutors:

The Society would expect that tutors have teaching experience and a qualification in a relevant subject area, but recognises that experienced teachers can often compensate for a lack of initial subject knowledge, or experienced practitioners for a lack of teaching experience.

The Society recommends that centres utilise a team of tutors in the delivery of this qualification, and that at least one tutor has suitable practical experience in the conduct of asbestos surveys and/or building surveys within the previous five years.

Centres should be registered with The Society.

Any enquiries about this qualification should be made to:

The Qualifications Department
Royal Society for Public Health
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