

Section 6

Syllabus

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

Section		Time allocation
1	Introduction and setting up of microscope	10%
2	Filter preparation, fibre counting and outline of air sampling equipment	25%
3	Calculation of results, quality control, reporting and communication	15%
4	Practical work	50%

1 Introduction and setting up of microscope (10%)

1.1 Introduction

1.1.1 Outline of asbestos types and their health effects.

1.2 Setting up of microscope

1.2.1 Describe the theory of phase contrast microscopy.

1.2.2 Use of light microscopy, setting up of Koehler or Koehler type illumination, calibration of stage micrometer and use of test slides.

1.2.3 Demonstrate and use of the Walton-Beckett graticule, stage micrometer and NPL test slide (or equivalent).

1.2.4 Candidates must be given the opportunity to set up various makes of microscope used in this work, as well as to count slides of known quality such as those used in the UK Regular Inter-laboratory Counting Exchange (RICE) scheme (or equivalent for country).

2 Filter preparation, fibre counting and outline of sampling equipment (25%)

2.0.1 Outline of air sampling trains and their application for monitoring of airborne fibre concentrations.

2.0.2 Handling and preparation of filters, and counting of fibres in accordance with the recognised counting rules (i.e. the World Health Organisation [WHO] method).

2.0.3 Discussion of the limitations of the methods together with understanding of accuracy, precision and systematic differences.

3 Calculation of results, quality control, reporting and communication (15%)

- 3.0.1 Calculation of airborne fibre concentrations from fibre count data and comparison of results with appropriate standards.
 - 3.0.2 Examination of the reliability of results in relation to quality control schemes such as UKAS, RICE, PAT, NAP, ISO, European and other standards for Good Laboratory Practice (GLP).
 - 3.0.3 Necessity for internal quality schemes (i.e. counting of blank filters and counting audits).
 - 3.0.4 Describe the requirements for formal reporting of and communication of analytical results.
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4 Practical work (50%)

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

- Preparation of microscope slides following sampling.
- Microscope set-up and an understanding of the counting rules.
- Fibre counting for a range of fibre densities and types.