**ATP Course Materials and Manual Inspection**

**P401 Asbestos Course Materials Review**

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| --- | --- |
| **Course Provider** |  |
| **Course Location** | Eg, Online, On site, Alternative venue (such as a hotel etc.) |
| **Provider Contact Name** |  |
| **Provider Contact Email** |  |
| **Qualification Code** | P401 |
| **Qualification Title** | Identification of Asbestos in Bulk Samples by PLM |
| **Submission Date** |  |

**When reviewing your course materials, BOHS will be looking at the following content to be adequately included in the structure of your course.**

This form has been designed to provide you with the structure you need in order to create, update and review your course materials to ensure they are of good quality and are fit for purpose.

* Please use the **comments boxes** to tell BOHS where you have referred to each area within your course materials. For example: Details of the course structure and timetable can be found in page/s xx of document XX of the course materials.
* Where you have made changes or updates to your course materials, BOHS will find it helpful if you also **highlight the areas of change**. This will speed up the checking and authorisation process.
* **Check/tick** boxes have been provided on each section to allow you to work through the form methodically and allow you to keep track as you work through each area.

BOHS takes a fair and consistent approach when reviewing your submitted course resources and will score you accordingly for the content of your course materials as well as the quality of the teaching materials. Please bear in mind the following scoring guide which BOHS will use when reviewing your submission of materials:

* **Score 0 = Subject matter not included/Missing**
* **Score 5 = Subject matter briefly covered**
* **Score 10 = Subject matter includes little detail**
* **Score 30 = Subject matter covered thoroughly/Included**

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| --- | --- | --- | --- | --- |
| **1** | **Course Introduction** | | | |
|  | | | | |
| **1a** | Has a timetable of course been included? | | |  |
| **1b** | Has information about how the sessions have been organised been included? | | |  |
| **1c** | Has a subject coverage guide been included? | | |  |
|  | **Comments:** | | | |
|  | | | |
|  | | | | |
| **2** | **Pre-Course Documentation** | | | |
|  | | | | |
| **2a** | Has pre-course documentation been provided for each candidate? | | |  |
| **2b** | Does this contain suitable pre-reading material or references? | | |  |
| **2c** | Has advice been included regarding pre-course entry requirements? | | |  |
|  | **Comments:** | | | |
|  | | | |
|  | | | | |
| **3** | **Reference Documentation, Manual and Contents** | | | |
|  | | | | |
| **3a** | Does the course manual/lecture notes have referencing to all relevant documents including their availability as either or both electronic and printed versions? | | |  |
|  | **Comments:** | | | |
|  | | | |
| **3b** | Does the course manual, teaching materials documentation include the course syllabus? | | |  |
|  | **Comments:** | | | |
|  | | | |
| **3c** | Are the manual and course materials available in both hard copy and electronic formats? | |  | |
|  | **Comments:** | | | |
|  | | | |
| **3d** | Is the manual suitable as a reference document? |  | | |
|  | **Comments:** | | | |
|  | | | |
| **3e** | Is manual purely a sequence of slides or does it contain supporting text? |  | | |
|  | **Comments:** | | | |
|  | | | |
| **3f** | Is the relevant section of HSG 264 (2012) Asbestos: The Survey Guide provided? |  | | |
|  | **Comments:** | | | |
|  | | | |
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| **The Syllabus Structure** | | | | |
| **You must ensure that syllabus content is adequately covered within your course. P401 syllabus content is as follows:** | | | | |
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| **4** | **Asbestos Fibre Types and Asbestos Containing Materials (15%)** | | | |
| This section will provide suitable training and review of relevant documentation to ensure that the candidate understands the legal framework, legislation, and guidance pertinent to bulk analysis. Training should ensure that candidates understand the purpose of their role and the importance of accurate identification.  This section will also provide suitable theoretical knowledge and practical training to ensure that the candidate understands the fundamental differences between different asbestos types and the properties associated with them.  Candidates must be aware of how these properties have influenced the usage and application of asbestos products.  In order to achieve this the candidate must be able to learn and then demonstrate their ability in the following: | | | | |
| **4a** | Understanding the specific requirements of HSG248, CAR 2012, L143 ACOP with emphasis on the responsibilities and legal duties of all roles involved.  Understand their individual duties under Health and Safety at Work Act 1974 to carry out their work diligently so as not to create danger to themselves or to others. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **4b** | Sufficient knowledge of the relevant parts of other key pieces of legislation including COSHH 2002 & HWR2005 and understand how these legal requirements influence working practices within bulk analysis laboratories. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **4c** | Suitable understanding of why correct and accurate analysis of asbestos is essential; this should include the implications for getting this wrong. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **4d** | Understanding the 6 named types of asbestos and the differences between the regulated asbestiform (fibrous) and non-fibrous mineral formations. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **4e** | Understanding the key characteristic properties of all the asbestos types. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **4f** | Identifying the specific properties of different asbestos types including differences between amphibole and serpentine asbestos. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **4g** | Understanding how the key characteristics and properties have influenced the use of asbestos. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **4h** | Suitable knowledge of the range of asbestos products and the likely asbestos types and quantities that were included within their manufacture. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **4i** | Suitable knowledge of instances where asbestos contamination of other minerals / products can be encountered. | | |  |
|  | **Comments:** | | | |
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| **5** | **Sample Preparation & Preliminary Assessment (30%)** | | | |
| This section will provide suitable theoretical knowledge and practical training to ensure that the candidate is capable of undertaking the safe preparation and preliminary assessment of bulk samples and for them to accurately interpret any observations made.  In order to achieve this the candidate must be able to demonstrate both their knowledge and practical ability in the following: | | | | |
| **5a** | Undertaking preliminary analysis of samples by low power stereo microscope. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **5b** | A full and detailed understanding of the safety precautions required when working with asbestos to control the spread and to prevent exposure, this should include:   * Pre and post-work checks * Handling of samples * Use of fume / re-circulating ventilated cabinets * Cleaning regimes | | |  |
|  | **Comments:** | | | |
|  | | | |
| **5c** | Understanding the potential for cross contamination issues to arise and how to control this risk. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **5d** | Understanding the safety measures and procedural requirements required to ensure compliance with the COSHH regulations. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **5e** | Understanding the basic morphological properties of the different asbestos types and the importance of initial observations for selecting appropriate RI liquids. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **5f** | To be able to identify and segregate fibres from a range of different sample types. To understand the range of mechanical and chemical sample preparation options available as detailed within HSG248. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **5g** | To be able to prepare slides for PLM analysis. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **5h** | To be able to undertake the water absorption test and interpret the findings and to understand the importance and implications for the results of this test. | | |  |
|  | **Comments:** | | | |
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| **5i** | Understanding what information should be recorded during sample preparation including the use of timings / durations where appropriate. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **5j** | Understanding the additional information that should be recorded such as insufficient sample size, layered or composite samples including the criteria for reporting trace asbestos content. | | |  |
|  | **Comments:** | | | |
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| **6** | **Setting up of the polarised light microscope and analysis of samples (40%)** | | | |
| This section will provide suitable theoretical knowledge and practical training to ensure that the candidate is capable of, understanding the optical microscopy techniques involving polarised light, applying this theory to the identification of asbestos, and setting up and using a polarised light microscope.  Candidates must be aware of a range of other fibre types and materials which can pose difficulties during bulk analysis.  In order to achieve this the candidate must be able to demonstrate both their knowledge and practical ability in the following: | | | | |
| **6a** | Understanding the minimum equipment specifications necessary for polarised light microscopy and the additional components required for analysis of asbestos. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **6b** | To be able to correctly set-up the microscope and alignment of its component parts including the process for Koehler illumination. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **6c** | Understanding the theory of polarised light and the effects on crystalline and amorphous materials. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **6d** | To be able to explain the differences between isotropic and anisotropic materials. | | |  |
|  | **Comments:** | | | |
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| **6e** | To have a basic understanding of the physics behind refractive indices, colour and pleochroism, extinction, birefringence, and sign of elongation. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **6f** | To be able to demonstrate how the theory above can be applied to analysing asbestos samples and how the observed visual differences between fibre types can be interpreted. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **6g** | To be able to demonstrate the use and effects of refractive index liquids, the use of the Becke line, observed relief and dispersion observations. | | |  |
|  | **Comments:** | | | |
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| **6h** | To be able to demonstrate appropriate recording of observations during analysis. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **6i** | Understand and be able to demonstrate the processes and combination of observations that lead to both negative and positive identification of all types of asbestos. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **6j** | Understanding the strengths and weaknesses of the PLM method (including limit of detection) for identifying asbestos and difficulties that can occur during analysis. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **6k** | Understanding the factors that can lead to unexpected and indeterminable results and the effects of the following on accurate analysis:   * Sample / fibre sizes * Asbestos content of samples * Interfering matrices * Heat / fire / chemical damage * Similar asbestos types * Mineral variations | | |  |
|  | **Comments:** | | | |
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| **6l** | To obtain sufficient knowledge of other types of fibres and mineral formations that may interfere with asbestos identification and to understand how these can be differentiated from asbestos. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **6m** | To have a basic understanding of alternative methods that are available for analysis. | | |  |
|  | **Comments:** | | | |
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| **6n** | To understand the requirements outlined in this qualification are not appropriate (on their own) to determine the asbestos content of soil samples. | | |  |
|  | **Comments:** | | | |
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| **7** | **Certificates and reporting results (5%)** | | | |
| This section will provide suitable theoretical knowledge and practical training to ensure that the candidate is capable of producing a certificate of bulk analysis and communication of the results.  In order to achieve this the candidate must be able to demonstrate both their knowledge and practical ability in the following: | | | | |
| **7a** | The requirements of ISO 17025 and HSG 248 for the production of test reports to ensure that all required information is included. | | |  |
|  | **Comments:** | | | |
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| **7b** | Understanding the importance and significance of producing accurate and adequate information within certificates. | | |  |
|  | **Comments:** | | | |
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| **7c** | To be able to complete a bulk certificate of analysis based on information available and analysis undertaken. | | |  |
|  | **Comments:** | | | |
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| **8** | **Quality Control (10%)** | | | |
| This section will provide suitable theoretical knowledge and practical training to ensure that the candidate has suitable knowledge and understanding of quality control requirements.  In order to achieve this the candidate must be able to demonstrate both their knowledge and practical ability in the following: | | | | |
| **8a** | Understanding the importance and frequency of air monitoring, including background testing and personal testing for bulk analysts. | | |  |
|  | **Comments:** | | | |
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| **8b** | Understanding the importance and operation of both internal sample libraries and the external proficiency scheme AIMS. | | |  |
|  | **Comments:** | | | |
|  | | | |
| **8c** | Understanding the requirements governing minimum durations for sample analysis. | | |  |
|  | **Comments:** | | | |
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| **8d** | Understanding the factors associated with fatigue and eye strain and the measures taken to control these risks. | | |  |
|  | **Comments:** | | | |
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| **8e** | To understand, and be able to calculate, daily limits for individual analysts and the requirements for quality checks on work exceeding these limits. | | |  |
|  | **Comments:** | | | |
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| **8f** | Understanding the need for internal working systems procedures and the processes to determine initial and ongoing competence of individual analysts. | | |  |
|  | **Comments:** | | | |
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| **8g** | Understanding the checking and maintenance regimes for essential equipment and materials used for bulk analysis. | | |  |
|  | **Comments:** | | | |
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| **8h** | To understand where feedback should be provided to those who provide samples for analysis. | | |  |
|  | **Comments:** | | | |
|  | | | |
|  | | | | |
| **Recommended References and Reading** | | | | |
| 1. HSG248 Asbestos: The Analyst’s Guide 2. Control of Asbestos Regulations (CAR) 2012 3. L143 (2013) Managing and working with asbestos. Control of Asbestos Regulations 2012, Approved Code of Practice and Guidance 4. ISO 17025 (2017) General requirements for the competence of testing and calibration laboratories 5. Asbestos and man-made mineral fibres in buildings: Practical Guidance, Thomas Telford DETR (1999) | | | | |