

# **M504**

## **Asbestos and Other Fibres**

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### **TEACHING GUIDE**

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# **TEACHING GUIDE – DAY 1**

## **ASBESTOS TYPES AND PROPERTIES**

### **- STUDENT LEARNING OUTCOMES:**

1. Able to describe the different forms of asbestos in terms of composition, nature and properties and the main historical uses of asbestos.
2. Able to describe the main types of machine made mineral fibres and other fibres.

## **HEALTH HAZARDS AND EXPOSURE LIMITS**

### **- STUDENT LEARNING OUTCOMES:**

3. Able to describe the main types of health effects that may occur from exposure to asbestos and other fibres.
4. Understand and apply appropriate exposure limits.

## **ASBESTOS – PERSONAL PROTECTIVE EQUIPMENT**

### **- STUDENT LEARNING OUTCOMES:**

5. Able to describe the main types of personal protective equipment for use when working with asbestos.

## **ASBESTOS PRODUCT TYPES AND USES IN BUILDINGS**

### **- STUDENT LEARNING OUTCOMES:**

6. Able to describe the uses of asbestos in buildings and the typical composition of the main product types.

Time	Topic	Contents	Learning Processes	Learning Resources	Assessment & Learning Outcomes
0-30 minutes	Course Opening	Welcome	Welcome participants to course		
		Emergency Procedures	Indicate the Site Emergency Procedures to participants	PowerPoint	Understanding of Emergency Procedures
		Introductions	Introduce the lecturers and ask participants to introduce themselves and indicate their experience with asbestos issues	PowerPoint	
30-60 minutes	Course Overview	Course Aims	Indicate the course aims	PowerPoint	
		Overall Learning Outcomes	Indicate the overall course learning outcomes	PowerPoint	
		Topics to be Covered	Discuss the topics to be covered in the course	PowerPoint	
		Format of course	Explain overall format of course	PowerPoint	
	Course Overview (Cont'd)	Today's Learning Outcomes	Indicate the learning outcomes for Day 1		

Time	Topic	Contents	Learning Processes	Learning Resources	Assessment & Learning Outcomes
		Assignment of Groups	Assign individuals to a work group. Ensure persons with some experience are distributed evenly amongst groups.		
60-120 minutes	Asbestos types and properties	Asbestos types, properties and main uses.	Describe the different forms of asbestos in terms of composition, nature and properties and the main historical uses of asbestos.	PowerPoint	Learning Outcome 1
		MMMF and other fibres	Describe common types of MMMF and other fibres.	PowerPoint	Learning Outcome 2
120-150 minutes	Coffee Break				
150-210 minutes	Health hazards and exposure limits	Health effects and exposure limits	Describe main types of health effects and different exposure limits.	PowerPoint	Learning Outcomes 3 and 4
210-240 minutes		Group discussion	Facilitated group discussion on actual and perceived risk from exposure to asbestos. Also discuss what a 'safe level' is.		Reinforce Learning Outcomes 3 and 4

Time	Topic	Contents	Learning Processes	Learning Resources	Assessment & Learning Outcomes
240-300 minutes	Lunch Break				
300-330 minutes		Approaches to eliminating asbestos related diseases	Describe the approaches to eliminating asbestos related diseases. Group discussion on the situation in their particular country.	PowerPoint	
330-390 minutes	Personal protective equipment	Respiratory protection and protective clothing	Describe typical personal protective equipment emphasising its limitations.	PowerPoint and description of process	Learning outcome 5
390-420 minutes	Coffee Break				
420-480 minutes	Asbestos product types, uses in buildings and surveys	Asbestos product types, uses in buildings	Describe the uses and composition of the main asbestos product types found in buildings.	PowerPoint	Learning Outcome 6
480-510 minutes	Learning Outcomes	Review of today's Learning Outcomes	Review and discuss.		Agreement that learning outcomes for today have been achieved

## **TEACHING GUIDE – DAY 2**

### **REVIEW OF OVERNIGHT QUESTIONS**

#### **- STUDENT LEARNING OUTCOMES:**

1. Receive guidance in understanding the reasons for any incorrect answers to the overnight questions from Day 1.

### **ASBESTOS SURVEYS AND BULK SAMPLING**

#### **- STUDENT LEARNING OUTCOMES:**

2. Can describe the main types of asbestos surveys, their uses and limitations.
3. Understand the reasons for collecting bulk samples and the techniques used and precautions required when collecting bulk samples.

### **RISK ASSESSMENT OF ASBESTOS CONTAINING MATERIALS**

#### **- STUDENT LEARNING OUTCOMES:**

4. Can describe the factors that influence the risk that asbestos containing materials pose to building users.
5. Can undertake basic risk assessment of asbestos containing materials.

### **MANAGEMENT OF ASBESTOS CONTAINING MATERIALS**

#### **- STUDENT LEARNING OUTCOMES:**

6. Can describe the main options for safely managing asbestos containing materials and the types of information that should be include in an asbestos management plan.

Time	Topic	Contents	Learning Processes	Learning Resources	Assessment & Learning Outcomes
0-30 minutes	Learning Outcomes	Learning outcomes for today	Indicate the learning outcomes for Day 2.		
	Overnight Questions	Student Guidance	Discuss answers to questions and provide guidance where required.	Answer sheet	Satisfactory understanding and successful completion of questions Learning Outcome 1
30-90 minutes	Asbestos surveys and bulk sampling	Asbestos surveys and bulk sampling	Describe the different types of asbestos surveys and their application. Describe sampling strategies and techniques.	PowerPoint and bulk sampling equipment	Learning Outcome 2 and 3
90-120 minutes		Asbestos surveys	Working in groups identify problems likely to be encountered during survey (use venue as example) and report back to whole group.		Reinforce Learning Outcome 2
120–150 minutes	Coffee Break				
150-240 minutes		Bulk sampling	In groups practice sampling techniques for a range of products (non-asbestos materials used).	Bulk sampling equipment, personal protective equipment, equipment to minimise fibre release etc	Reinforce learning outcomes 3

Time	Topic	Contents	Learning Processes	Learning Resources	Assessment & Learning Outcomes
240-300 minutes	Lunch Break				
300-360 minutes	Risk assessment of asbestos containing materials	Risk assessment of asbestos containing materials	Describe the factors that influence the risk that asbestos containing materials pose to building users. Discuss various risk assessment systems.	PowerPoint	Learning outcomes 4 and 5
360-390 minutes		Material risk assessment.	Using a range of examples (from powerpoint slides) work in groups to generate material risk assessments using HSG 264 (or other system of choice).	PowerPoint	Reinforce learning outcomes 4 and 5
390-420 minutes	Coffee Break				
420-480 minutes	Management of asbestos containing materials	Management of asbestos containing materials	Describe the options for managing asbestos and the information that should be included in a management plan.	PowerPoint	Learning Outcome 6
480-510 minutes	Learning Outcomes	Review of Learning Outcomes	Discuss what topics have been covered today.		Agreement that learning outcomes have been achieved



## **TEACHING GUIDE – DAY 3**

### **REVIEW OF OVERNIGHT QUESTIONS**

#### **- STUDENT LEARNING OUTCOMES:**

1. Receive guidance in understanding the reasons for any incorrect answers to the overnight questions from Day 2.

### **ASBESTOS REMOVAL**

#### **- STUDENT LEARNING OUTCOMES:**

2. Understand the importance of work planning and specification and appropriate documentation.
3. Able to describe the techniques used to control asbestos fibre release (e.g. enclosures, removal techniques, decontamination procedures etc) in accordance with good practice.

### **AIR SAMPLING**

#### **- STUDENT LEARNING OUTCOMES:**

- 4 Understand the different reasons for undertaking air monitoring.
5. Able to set up a sampling train for asbestos in air monitoring including correct procedures for setting and calibrating flow rates.
6. Able to describe the procedure for assessing the suitability of an area for re-occupation (clearance certification)

Time	Topic	Contents	Learning Processes	Learning Resources	Assessment & Learning Outcomes
0-30 minutes	Learning Outcomes	Learning outcomes for today	Indicate the learning outcomes for Day 3.		
	Overnight Questions	Student Guidance	Discuss answers to questions and provide guidance where required.	Answer sheet	Satisfactory understanding and successful completion of questions Learning Outcome 1
30-60 minutes	Asbestos removal	Work specification and plan of work	Describe the planning and documentation required for asbestos removal work.	PowerPoint	Learning Outcome 2
60-120 minutes		Enclosures and decontamination procedures	Describe the techniques used to control asbestos fibre release.	PowerPoint	
120-150 minutes	Coffee Break				
150-180 minutes		Removal techniques	Describe the techniques used to control asbestos fibre release.	PowerPoint	Learning Outcome 3
180-240 minutes		Asbestos removal scenario	Groups prepare outline plan including required controls on how removal work should be undertaken in selected area of venue.	Flip charts	Learning outcome 3

Time	Topic	Contents	Learning Processes	Learning Resources	Assessment & Learning Outcomes
240-300 minutes	Lunch Break				
300-390 minutes	Air sampling	Types of air monitoring, sampling procedures, clearance certification	Describe the types of air monitoring, sampling procedures and clearance certification. Where possible involve the students by using examples from their experience.	PowerPoint	Learning outcomes 4, 5 and 6
390-420 minutes	Coffee break				
420-480 minutes	Air sampling	Setting up sampling train, setting and calibration of flow rates, recording information and mounting filters for microscopical examination	Demonstrate correct procedures for air sampling. Allow students in groups to undertake 'mock' air sampling.	Air sampling and filter mounting equipment	Reinforce learning outcome 5
480-510 minutes	Learning Outcomes	Review of Learning Outcomes	Discuss what topics have been covered today.		Agreement that learning outcomes have been achieved

## **TEACHING GUIDE – DAY 4**

### **REVISION OF OVERNIGHT QUESTIONS**

- **STUDENT LEARNING OUTCOMES:**

1. Receive guidance in understanding the reasons for any incorrect answers to the overnight questions from Day 3.

### **ASBESTOS BULK ANALYSIS**

- **STUDENT LEARNING OUTCOMES:**

2. Understand the principles and procedures used to identify bulk asbestos types including relevant safety precautions.

### **FIBRE COUNTING**

- **STUDENT LEARNING OUTCOMES:**

3. Understand the principles and procedures used to determine asbestos in air concentrations.

### **CASE STUDIES AND SYNDICATE WORK**

- **STUDENT LEARNING OUTCOMES:**

4. Be able to develop outline plans for asbestos remediation works.

Time	Topic	Contents	Learning Processes	Learning Resources	Assessment & Learning Outcomes
0-30 minutes	Learning Outcomes	Learning outcomes for today	Indicate the learning outcomes for Day 4.		
	Overnight Questions	Student Guidance	Discuss answers to questions and provide guidance where required.	Answer sheet	Satisfactory understanding and successful completion of questions Learning Outcome 1
30-120 minutes	Asbestos bulk analysis	All section	Describe the procedures for analysis of bulk samples, emphasising the need for a step-wise approach.  Outline safety precautions and importance of using competent (accredited) organisations.	PowerPoint and bulk analysis video clips	Learning outcome 2
120-150 minutes	Coffee break				
150-240 minutes	Fibre counting	All section	Describe procedures for fibre counting.  Indicate importance of using validated methods and competent (accredited) organisations.	PowerPoint	Learning outcome 3
240-300 minutes	Lunch Break				

Time	Topic	Contents	Learning Processes	Learning Resources	Assessment & Learning Outcomes
300-390 minutes	Case studies		Describe the scenarios shown on the PowerPoint slides.  Students break into groups and complete the required tasks and report back to whole group.	PowerPoint	Learning outcome 4
390-420 minutes	Coffee break				
420-480 minutes	Case studies continued		Describe the scenarios shown on the PowerPoint slides.  Students break into groups and complete the required tasks and report back to whole group.	PowerPoint	Reinforce learning outcome 4
480-510 minutes	Learning Outcomes	Review of Learning Outcomes	Discuss what topics have been covered today.		Agreement that learning outcomes have been achieved

## **TEACHING GUIDE – DAY 5**

### **REVISION OF OVERNIGHT QUESTIONS**

#### **- STUDENT LEARNING OUTCOMES:**

1. Receive guidance in understanding the reasons for any incorrect answers to the overnight questions from Day 4.

### **WRITTEN EXAMINATION**

### **ASSESSED PRACTICAL EXAMINATION**

Time	Topic	Contents	Learning Processes	Learning Resources	Assessment & Learning Outcomes
0-30 minutes	Overnight Questions	Student Guidance	Discuss answers to questions and provide guidance where required.	Answer sheet	Satisfactory understanding and successful completion of questions Learning Outcome 1
30–130 minutes	Written examination			BOHS examination papers	
130-end (timing dependent on numbers)	Assessed practical examination			Equipment appropriate to the chosen practicals – see syllabus for practical options	