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# Asbestos Related Products

Topic 6: Day 2

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# 1. Introduction

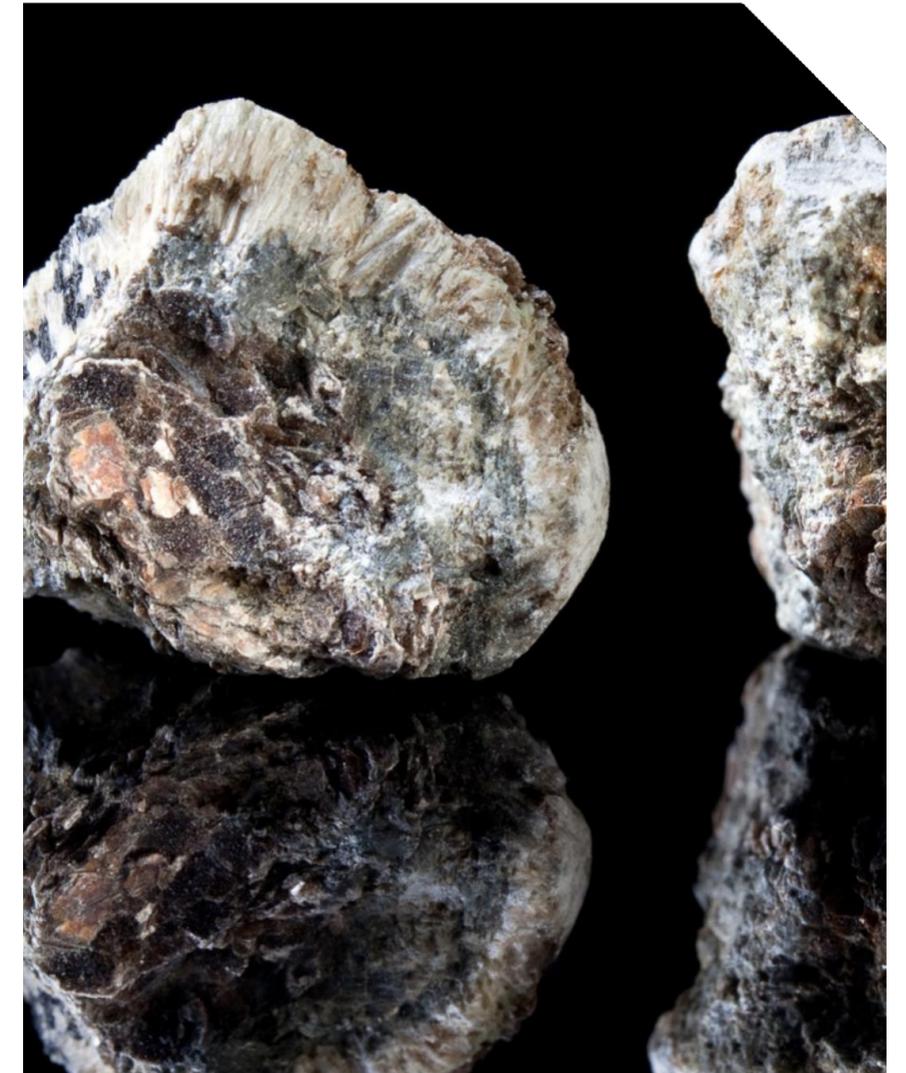
Asbestos is a mineral fibre that is prevalent in rocks and soil. It holds a risk to health only if the inherent fibers are released into the air and inhaled. It holds a particularly high risk to health if exposure occurs over a long period of time.

Commonly, the long delay between first exposure to Asbestos and the onset of any Asbestos-related lung diseases, presents a deception about its danger.

Additionally, while it is not completely inodorous, Asbestos is not easily detected through smell, creating a false sense of its true danger. Also, Asbestos fibers' microscopic nature adds to increased difficulty of detection and, once released into the air, can stay suspended and airborne for up to 72 hours.

Its resistance to chemicals and heat makes Asbestos near-indestructible.

**Asbestos and the onset of any Asbestos-related lung-diseases present a deception about its danger.**



Rough piece of anthophyllite asbestos, a mineral causing mesothelioma cancer

## 2. Origin of Asbestos

Asbestos mining and related industrial activities account for the bulk of environmental contamination. There are three (3) main areas in South Africa, where Asbestos have been mined.



**Crocidolite  
(Blue Asbestos)**

Crocidolite was mined in the Southern Cape from Prieska in the South to Kuruman in the North.



**Amosite  
(Brown Asbestos)**

Amosite was mined in Manga near Burgfort and was also found in the North of the Limpopo Province.



**Chrysotile  
(White Asbestos)**

Chrysotile was extracted at Msquili in the Mpumalanga province.

All three of these types of Asbestos are dangerous. Blue Asbestos (Crocidolite) and brown Asbestos (Amosite) are decidedly more hazardous than White Asbestos (Chrysolite).

Although distinct in colour, as a general fact, it is so that all these three types of Asbestos cannot be identified just by their colour.

All three types were used extensively in the manufacture of Asbestos Cement Building Material. Asbestos Cement, containing between 5% and 20 % of Asbestos was, in past times considered to be both a durable and, of course, low-cost economic building material.

Most of the buildings constructed over the last the 35 years have a potentially high prevalence of asbestos-related products, largely the consequence of it being the norm within construction.

### List of products containing asbestos

- Roof Sheets
- Downpipes
- Blackboards
- Ceilings
- Filters
- Paint, Coatings
- Brake Linings
- Vinyl floor tiles
- Window sills
- Gasket material
- Cement pipes
- Insulation
- Cooling tower cement pipes
- Lab gloves, hoods & tables

### 3. Relevant Definitions and Abbreviations

**Approved Inspection Authority** - AIA

**Asbestos Cement Products** - ACP

**Asbestos Containing Material** - ACM – Any material that consists of greater than 1% asbestos

**Registered Asbestos Contractor** - RAC

**National Institute for Occupational Health** – NIOH

**Asbestos** – Defined as any of the following minerals (Amosite, Chrysotile, Crocidolite, Fibrous Actinolite, Fibrous Anthophyllite, Fibrous Tremolite – or any mixture containing any of these minerals)

**Asbestos Dust** – Refers to airborne or settled dust, containing or is likely to contain regulated asbestos fibers.

**Asbestos Waste** – Means an undesirable or superfluous asbestos – containing by-product, emission or residue of any process or activity that has been discarded by any person, accumulated and stored by any person for the purpose of eventually discarding it.

**Asbestos Work** – Refers to the work that exposes or is likely to expose any person to asbestos dust.

**Demolition Work** – Includes demolition, alteration, stripping, removing, repairing, high-pressure water jetting of any structure containing asbestos, lagging or insulating but not including work performed on asbestos cement sheeting and related products and asbestos cement products which form part of the structure of a workplace, building, plant or premises.

**Marketing and Labelling** - Clear marking of “Asbestos” should be visible where asbestos is already present in existing situations. The marking should be visible to contractors, workers or persons that may unknowingly disturb the ACM.



**ASBESTOS  
HAZARD**

**Warning: Inhalation of Asbestos fibres is Dangerous**

## **Air Monitoring**

In the event that an air sampling is required to determine the level of exposure to asbestos dust, such assessment must be conducted by an Approved Asbestos Inspection Authority, as verified by the Chief Inspector, Occupational Health and Safety in terms of the provisions of the OHSAct (Refer to Regulation 7 of the Asbestos Regulations).

## **MDHS 39/4**

Method for the Determination of Hazardous Substances 39/4.

## **Occupational Exposure Limits**

The time-weighted average occupational exposure limit for asbestos as required by the Asbestos Regulations, OHSAct (85 of 1993) is **0.2** regulated asbestos fibres per milliliter of air averaged over any continuous period of four hours, measured in accordance with MDHS 39/4. A short-term exposure limit of **0.6** regulated asbestos fibres per milliliter of air averaged over any 10-minute period is also prescribed by the Act. This limit shall apply where tasks involving the cutting or processing of ACMs, which are normally of short duration, are performed.

## **Medical Surveillance**

Persons engaged in work that may give rise to exposure to fibrous asbestos dust should be considered for medical surveillance at the discretion of the company's occupational medical practitioner.

## **Asbestos Exposure Register**

A register should be kept of all persons currently, or previously involved in work with asbestos. This register should contain the names of such persons, jobs held and dates, length of exposure and details of protective equipment used. It should be kept up to date and be available for inspection by a Department of Labour Inspection.

## **Asbestos Register / Written Inventory**

Asbestos Regulation 14(1) (b) requires that the employer shall make and maintain a written inventory of the location of asbestos in workplaces, buildings, plant or premises.

## 4. Legislation on Asbestos

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1. Occupational Health and Safety Act 85/1993
  2. Asbestos Regulations GNR 155 (2002).
  3. Department of Labour's Explanatory Note on the Interpretation of the Definition of Demolition Work on 25 November 2009.
  4. Regulations for the Prohibition of the use, manufacturing import, export of Asbestos in terms of the Environmental Construction Act (73)/1989.
  5. Compensation for **Occupational** Injuries and Diseases Act 130/93.
  6. Occupational Diseases in Mines and Works Amended Act (208)/1993 (ODMWA).
  7. National Environmental Management Waste Act 2008

## 5. National **Institute** for Occupational Health

The National Institute for Occupational Health (NIOH) have been involved in Occupational Health since the early 1900s.

The first South African Survey of the Industrial and Environmental Hazards of Asbestos conducted by Scientists from NIOH during the late 1950's and early 1960's emphasized the urgency of improving dust control and disposal methods in the Asbestos Mining industry.



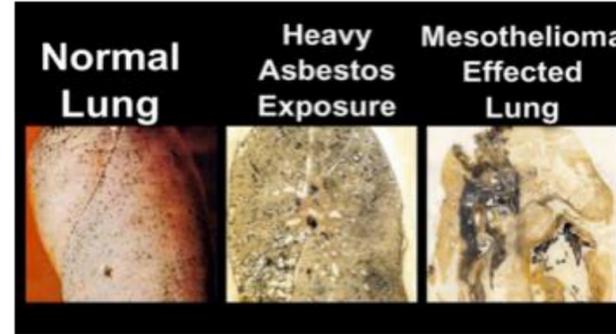
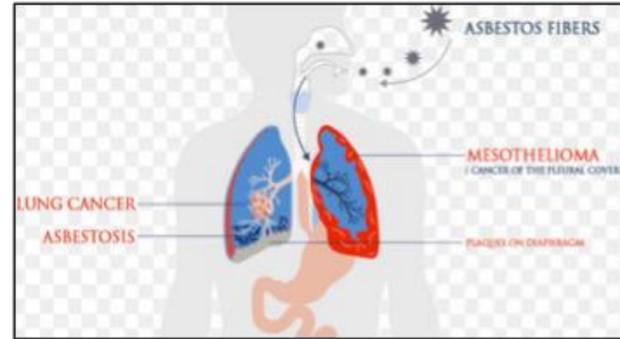
Although it is now illegal to use any Asbestos related products, the reality is that many thousands of tons of it is still in our old buildings and a joint-effort is needed to prevent damage to these products.

Damage or distribution of these products can become detrimental to health as Asbestos Fibre is released into the air and people can get exposed.

The EOL exposure level in a work place is 0.2 regulated asbestos fibres per milliliter of air averaged over any continuous period of four hours measured in accordance with MDHS 39/4.

# 6. Primary Diseases Associated with Asbestos Exposure

Asbestos related Lung Diseases are not easily detected because the disease, in most cases, is dormant during the initial and first exposure. It is impossible for the body to destroy or remove the Asbestos Fibres once they are lodged in the lungs or body tissues.



There are three (3) Primary Diseases associated with Asbestos

**Asbestosis** – This is a serious, chronic, non-cancerous respiratory disease. Inhaled asbestos fibres aggravate lung tissues, causing them to be scarred. In advanced stages, the disease may cause cardiac failure.

**Lung Cancer** – This causes the largest number of deaths related to asbestos exposure. The incidence of lung cancer in people who are directly involved in the mining, manufacture and use of asbestos is much higher than in the general population.

**Mesothelioma** – This is a rare form of cancer that most often occurs in the thin lining of the lungs, chest, abdomen and heart. Almost all cases of mesothelioma are linked to asbestos exposure. Approximately 2 percent of all miners and textile workers who worked with asbestos, and 10 percent of all workers that was involved in the manufacture of asbestos-containing gas masks, contracted mesothelioma.



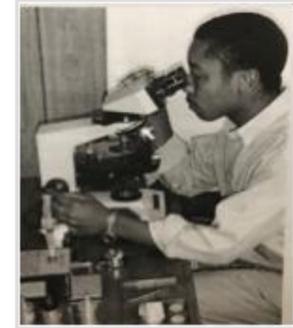
**Steve McQueen**, the American actor, contracted Mesothelioma believed to have occurred during his time in the Marines while removing asbestos lagging from a troop ship.

# 7. Managing Asbestos during Construction

Client's/Campuses must ensure that buildings containing asbestos need to comply to the asbestos Regulations (2002) and specifically the relevant regulations under the Department of Labour Notice during Construction Work on a building that contains asbestos.

## The following steps are paramount:

- 1. The Client shall appoint a registered Construction Health and Safety Agent to compile a site-specific Health and Safety Specification and shall include a Baseline Risk Assessment, stipulating all asbestos relevant requirements.
- 2. Client to appoint an Approved Inspection Authority (AIA) to conduct Asbestos Assessment/Identification.
  - Identification is vital because if the product doesn't contain asbestos this means the building material can go to a normal waste facility. If it is asbestos this will guide the AIA on how to compile the Asbestos Work Plan.
- 3. Client to appoint a Registered Asbestos Contractor.
- 4. AIA to compile an Asbestos Work Plan and forward the same to the Department of Labour. This will serve as both the Notification and Approval that Asbestos work can start.
- 5. During the Demolition or removal of Asbestos phase, monitoring must be done by both the AIA and HEALTH AND SAFETY Agent.
- 6. The Contractors shall ensure that all asbestos waste is dumped at Vissershok and obtain a delivery note from COCT, marked special/asbestos waste.
- 7. The appointed HEALTH AND SAFETY Agent shall provide a close-out report at the end of the project.
- 8. The AIA will provide an Asbestos Clearance Certificate.
- 9. Cognisance must be given to the Department of Labour's Explanatory Note on the Interpretation of the Definition of Demolition Work on the prescribed date. However, where work is done on an asbestos cement product and that area is not removed, stripped or repaired and continues to form part of the structure of a workplace, building, plant or premises and at any stage that work does not cause the asbestos fibres to be airborne, **that work** is not deemed as Demolition Work.



## 8. Reporting and Diagnosing of Asbestos-related Lung Diseases

1. The Relevant Employer must in terms of the Compensation for Injuries and Diseases Act 130/1993 (COIDA) Act and Section 25 report a case to the Compensation Commissioner and Department of Labour.
2. The entire Medical Surveillance Program needs to be administered by an Occupational Health Practitioner (OHP) and only he / she can conduct the diagnosis. The Occupational History of the employee, exposure information and job process will all be considered to determine relationships between work and the relevant lung disease.
3. Conduct Screening program and chest X Rays are crucial parts of screening for ARD (Asbestos Related Disease) as the diagnosis cannot be made on Lung Function based on a non-specific test.
4. Asbestos can affect the lungs in a number of ways: Benign Pleural Plaques; Pleural Thickening; Mesothelioma (Malignancy of the pleura); Lung Cancer; Asbestosis (diffuse interstitial pulmonary fibrosis).
5. Once diagnosis is confirmed by an OHP, the Employer must, within 14 days, report this Occupational Disease case to the Compensation Commissioner on the Employer's Report of an Occupational Disease. Additional information required includes the Doctor's report, Exposure History and a form that is duly signed by the employee.

**Note:** Calculation for Compensation in case of an Occupational Disease listed under Schedule (3) of the COIDA Act 130/1993 is based on the time of diagnosis and not the time of first exposure.



## 9. Conclusion

1. Asbestos Regulation 14 (1) B requires that the Employer shall make and maintain a written inventory of the location of Asbestos in the workplace, buildings, plant or premises.
2. Material identified of which uncertainty about the true nature exists, is regarded for all practical reasons to be asbestos, until such time that the contrary can be proven based on a suitable scientific method.
3. Asbestos Regulation (7) requires that the employer shall assess (Asbestos Survey by AIA) the risk of exposure to Asbestos where fibers are likely to become airborne.
4. The Employer shall update their Medical Surveillance Program at least every second year after the findings of the Asbestos Survey Report.
5. Employees who were previously unknowingly exposed to asbestos and have retired, must be kept on the relevant company Medical Surveillance Programme.
6. I believe that strict compliance to the current Asbestos Regulation and the Proposed Draft Asbestos Abatement Regulations (2018) will eventually wipe out this deadly disease.

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