

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

# Asbestos Related Products

## A - Z

### Presentation

## 5<sup>th</sup> Annual SHECASA Conference



UNIVERSITY of the  
WESTERN CAPE

6 – 7 September 2018

## Introduction

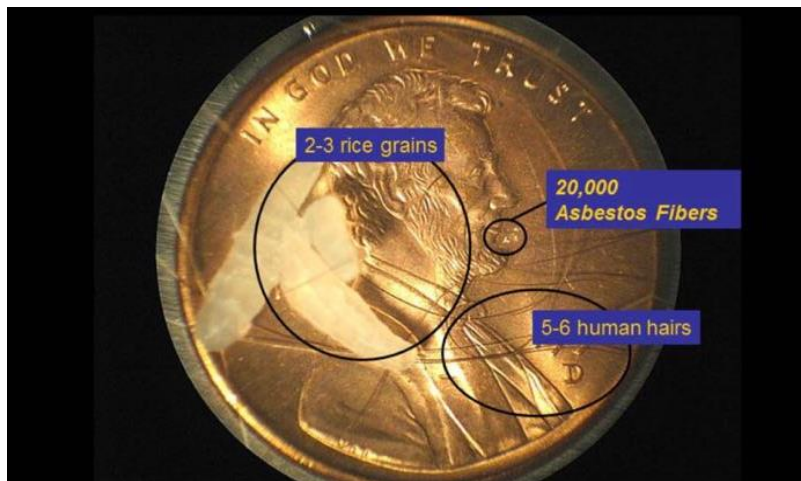
Asbestos is a Mineral Fibre that occurs in rocks and soil.

Asbestos is only a risk to health if Asbestos Fibres are released into the air and inhaled over a period.

There is usually a long delay between first exposure to Asbestos and the onset of any Asbestos related lung diseases.

Due to the fact that you cannot smell Asbestos containing material – it makes it more dangerous.

The asbestos fibres are microscopic and are released in the air where it can stay suspended for hours.



Asbestos fibres are indestructible, resistant to chemicals and heat and stable in the environment.

## Origin of Asbestos

Asbestos Mining and other activities have left a legacy of Environmental Contamination.

Asbestos was mined in three main areas in South Africa.

- I. Crocidolite (Blue Asbestos) was mined in the Southern Cape from Prieska in the South to Kuruman in the North.
- II. Amosite (Brown Asbestos) was mined at Panga near Burgerfort and was also found in the North of Limpopo Province.
- III. Chrysotile (White Asbestos) was extracted at Msquili in Mpumalanga.



All 3 types of Asbestos are dangerous but Blue Asbestos (Crocidolite) and brown Asbestos (Amosite) are more hazardous than White Asbestos (Chrysolite).

All types of Asbestos cannot be identified just by their color.

All three types were used extensively in the manufacture of Asbestos Cement Building Material. Asbestos Cement containing 05 to 20 % Asbestos was, at the time both durable and economic building material.

The challenge is that most buildings over 35 years might have asbestos related products as it was the norm at that time.

### **The following is a list of Asbestos Containing Material**

- Roof Sheets
- Down pipes
- Vinyl Floor and tiles
- Back boards
- Ceilings
- Window Sills
- Lab Gloves, hoods, tables
- Paint; coatings
- Gasket Material
- Cement pipes
- Filters
- Brake Linings
- Cooling tower cement pipes at Power Stations
- Insulation, to mention but a few.

### **Relevant Definitions and Abbreviations**

1. **Approved Inspection Authority – AIA**
2. **Registered Asbestos Contractor – RAC**
3. **Asbestos Cement Products – ACP**
4. **National Institute for Occupational Health – NIOH**
5. **Asbestos Containing Material – ACM** – Any material that consist of greater than 1% asbestos

### **Marketing and Labelling**

Where asbestos is already present in existing situations, it should be clearly marked “Asbestos”. The marking should be visible to contractors, workers or persons that may unknowingly disturb the ACM.



## **Air Monitoring**

Where air sampling is required to determine the level of exposure to asbestos dust, it should be conducted by an Approved Asbestos Inspection Authority, as approved 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 are 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.

## **Legislation: on Asbestos**

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 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 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

## 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.

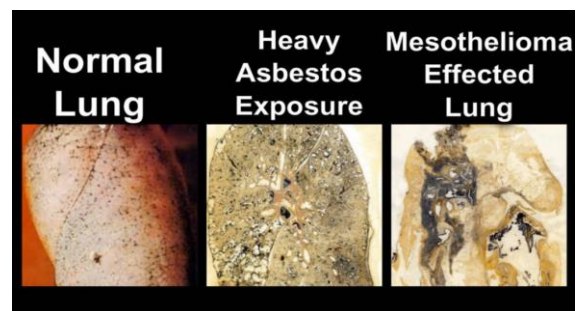
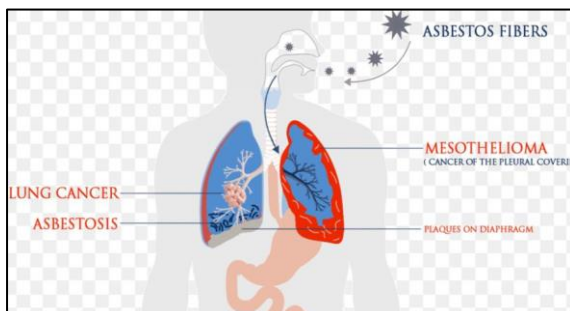
Although it is now illegal to use any Asbestos related products the fact is many thousands of tons of it is still in our old buildings and joint effort is needed to prevent damage to these products.

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

The EOL exposed 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.

## Primary Diseases Associated with Asbestos Exposure

1. Asbestos related Lung Diseases are not easy to be identified as the disease in most case is dormant from the initial first exposure.
2. It is impossible for the body to destroy or remove the Asbestos Fibres once they are lodged in the lungs or body tissues.



3. There are three Primary diseases associated with Asbestos, nl:

**Asbestosis** – This is a serious, chronic, non-cancerous respiratory disease. Inhaled asbestos fibres aggravate lung tissues, which cause them to scar. 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.



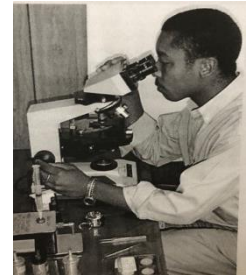
Steve McQueen contracted Mesothelioma believed to be during his time in the Marines while removing asbestos lagging from a troop ship.

### **Manage Asbestos during Construction**

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

### **The following is a step by step process:**

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 and include all asbestos relevant requirements.
2. Client to appoint an Approved Inspection Authority (AIA) to conduct an 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 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 to 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 H&S Agent.
6. The Contractors to ensure that all asbestos waste is dumped at Vissershok and obtain a delivery note from COCT, marked special/asbestos waste.
7. The appointed H&S Agent shall provide a closeout report at the end of the project.
8. The AIA will provide an Asbestos Clearance Certificate.
9. Cognisance must be taken of the Government Notice issued on the 25<sup>th</sup> of November 2009. 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 regarded as **Demolition Work**.

### **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 the 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 do the diagnosis. The Occupational History of the employee, exposed information, job process will all be considered to determine relationships between work and the relevant lung disease.
3. Conduct Screening program, chest X Rays are a crucial part of screening for ARD (Asbestos Related Disease) as the diagnosis cannot be made on Lung Function which is 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 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 is the Doctor's report, Exposure History and a form that is 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.

### **Conclusion**

1. Employers to ensure their Asbestos Written Inventory is up to date and staff and possible affected persons are informed of the Asbestos Risk, as per Section 8, 9 and 13 of the Occupational Health and Safety Act and Asbestos Regulations (2002).
2. All effort to be made prevent disturbance, breakage or removal of any Asbestos Related Products. If it is not possible compliance to Department of Labour Notice and Asbestos Regulation (2002) is key.
3. Material identified of which uncertainty about the true nature exist, is regarded for all practical reasons to be asbestos, until such time the contrary can be proven with a suitable scientific method.
4. Employees who were previously unknowingly exposed to asbestos and have retired, must be kept on the relevant company Medical Surveillance Programme.
5. 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.