10 POLICY CONSIDERATIONS

10.1 DECLARATION OF THE NATIONAL ASBESTOS SUMMIT

The National Asbestos Summit, held in November 1998 and attended by various stakeholders, including Government, affected communities, the labour industry, NGO's and an international delegation, concluded that "asbestos should be phased out as soon as practically possible, noting that there may be no suitable alternatives for certain applications"

10.2 CHALLENGES REMAINING SINCE THE 1998 PARLIAMENTARY ASBESTOS SUMMIT

A follow-up study, undertaken by a group of American Faculty Advisors and students in 2001, and involving eight weeks of research in South Africa and several months of study in the United States, made the following comments regarding the Asbestos Summit's Fourth Commission's conclusions[21]:

- "And while some of the recommendations, such as an Asbestos Substitution Working Group, have not yet been implemented, many of the concerns about workplace safety have been incorporated into the Amended Asbestos Regulations which were drafted by the Department of Labour Advisory Councilin August 1999"
- "While the emphasis in new regulations on preventative measures was a major improvement over the past rules, the omission of procedures for a phase-out of chrysotile asbestos remains disappointing. Such a phase-out had been negotiated at the 1998 Summit and the lack of resolution reveals the continued disagreement between manufacturers and labour on this question"
- "Even though no codified ban on amphibole asbestos exists, manufacturers now tend to avoid the material"

This study had the following comments to make regarding the implementation and policing of regulations governing the controlled, safe use of asbestos containing products:

- "Despite information on proper procedures provided by the asbestos cement manufacturers, dangerous practises like high-speed dry cutting and sanding occur. Inevitable sheet breakage, and abrasion between sheets during the manual unloading of trucks still results in exposure to asbestos fibres"
- "A related concern is the difficulty in ensuring that employees adhere to company policies on personal safety. Representatives from almost every company we interviewed voiced this concern, faulting both supervisors and workers for failing to enforce the health and safety standards"

In its conclusion, this report makes the following recommendations that are of significance to this current asbestos phasing-out study:

- ***"Ban the manufacture and importation of chrysotile-containing products***
- ***Further integration of the occupational health and safety regulation body is still needed to increase the efficiency of inter-departmental collaboration and expertise transfer***
- ***Maintain health and improved surveillance and industrial hygiene measures already in-place***
- ***Consider innovative ways of job protection by using the experience of asbestos-user companies to move into asbestos risk assessment, adequate***

control of asbestos-in-place and effective disposal of waste products

- ***Encourage continued openness between industry and labour and facilitate democratic involvement in issues of concern to workers"***

10.3 CONTROLLED-USE PROGRAMMES

The international chrysotile asbestos mining and asbestos using industries have proposed the principle of "Controlled-Use" as an appropriate response to the health hazards presented by this material[27].

Companies pursuing Controlled-Use programmes argue that they are acting responsibly by ensuring safe practices at the workplace and educating downstream customer and end-users. They believe that Controlled Use can be exercised throughout the product life cycle, including: installation, repair, maintenance and removal, and waste disposal.

However, the conclusions reached by the American Faculty Advisors and students in their study appears to suggest that Controlled-Use programmes may not be suitable in South Africa – see their comments regarding the implementation and policing of regulations governing the controlled, safe use of asbestos containing products.

10.4 REMOVING THE "INSTALLED BASE" OF ASBESTOS CONTAINING PRODUCTS

The alarming statistics on asbestos related diseases and the poor management of friable asbestos products in buildings have attracted widespread attention. Starting in the 1970s, countries gradually banned the use of amphibole and sprayed-on friable insulation because of the high risks to workers. However, the asbestos installed in buildings is still a potential hazard and can endanger the health of maintenance and repair workers if they do not follow appropriate work practices.

Asbestos removal is a very costly operation that must be conducted by specialised contractors. Hasty elimination of asbestos insulation considerably increases the probability that controls will not be adequately enforced, thus presenting a source of risk not only for the workers, but for building occupants as well.

Numerous studies of buildings containing asbestos materials demonstrate that air-borne dust levels within these buildings are not significantly different than in outside ambient air (0.1 to 1 fibres/litre).

As a result, the government authorities of several countries have concluded that, if in good condition, these materials do not pose a health problem to the occupants. However, management programmes, which would include inspections and corrective measures whenever necessary, are recommended for buildings containing asbestos materials.

Moreover, all maintenance workers must have access to adequate safety equipment and benefit from training and information programs to ensure correct work practices are followed when handling these materials. Removal of asbestos materials should only be considered as a measure of last resort, and should be undertaken only when the material is beyond repair or at the time of major renovation work or building demolition.

10.5 THE CURRENT SITUATION IN SOUTH AFRICA

There has already been a significant "phasing-out" of asbestos usage in South Africa, driven mainly by negative market perceptions and the resultant decline in demand for and, in some instances, rejection of asbestos containing materials by international and local customers and consumers.

Figure 26 summarises the impact of the phasing out of asbestos in South Africa. The key areas of impact include:

- The availability of alternative fibres and/or substitute products
- The additional economic costs to the industry sectors that will arise from the replacement of asbestos with the alternative fibres and/or substitute products
- Capital equipment costs that will be necessitated by the replacement of asbestos. These costs include:
    - The write-off of redundant equipment that is specific to the use of asbestos as a raw material, and that will no longer be required once asbestos has been replaced
    - The acquisition of new equipment that will be required as a result of a switch to an alternative fibre and/or substitute product
- Job losses that will arise as a result of a switch to alternative fibres and/or substitute products

In addition to these socio-economic impacts, Figure 26 also reflects an assessment of the magnitude of the installed base of asbestos containing materials within each industry sector, and the complexity/difficulty of replacing this installed base with products manufactured from alternative fibres or substitute materials. Finally, figure 1 presents an assessment of the risk of exposure to asbestos fibres that could occur from either the continued manufacturing of new asbestos containing materials, or the removal of the installed base of asbestos containing materials.

In evaluating the various impacts, a three-point scale has been used:

- **Low impact**
- **Moderate impact**, and
- **High impact**

Each impact area has been evaluated separately, plus an overall evaluation has been made for each industry sector.

FIGURE 26: SUMMARY OF THE SOCIO-ECONOMIC IMPACT OF PHASING OUT ASBESTOS

APPLICATION AREAS	AVAILABILITY OF ALTERNATIVE FIBRES	ADDITIONAL ECONOMIC COSTS	CAPITAL EQUIPMENT COSTS	JOB LOSSES	INSTALLED BASE OF ASBESTOS CONTAINING MATERIALS	RISK OF EXPOSURE TO ASBESTOS FIBRES	OVERALL IMPACT ASSESSMENT
Asbestos Cement Building and Construction Products	Many alternatives readily available LOW	Most alternatives are either marginally more expensive or are less expensive LOW	• Redundant equipment write-offs: Zero • New investment: R27 million MODERATE	45 MODERATE	• Volume: very large • Ease of Replacement: moderately complex • Cost: very large (R20 billion +) HIGH	• New product manufacturing: no longer applicable • Replacing the Installed Base: very high HIGH	• New product manufacturing: LOW • Replacing the Installed Base: HIGH
Friction Materials	Many alternatives readily available LOW	Most alternative formulas 20% to 50% more expensive MODERATE	Zero LOW	Zero LOW	• Volume: large • Ease of Replacement: simple • Cost: normal course of business LOW	• New Product Manufacturing: moderate • Replacing the Installed Base: moderate MODERATE	• New product manufacturing: LOW • Replacing the Installed Base: LOW
Gaskets and Seals	Alternatives readily available Some products currently irreplaceable MODERATE	Most alternative products are 200% to 400% more expensive HIGH	• Redundant equipment write-offs: R28 million • New investment: Zero HIGH	120 HIGH	• Volume: large • Ease of Replacement: simple • Cost: normal course of business LOW	• New Product Manufacturing: moderate • Replacing the Installed Base: low LOW	• New product manufacturing: MODERATE/HIGH • Exceptions must be addressed • Replacing the Installed Base: LOW
Insulation Materials	Alternatives readily available LOW	Most alternative products are 50% to 300% more expensive MODERATE	• Redundant equipment write-offs: R1 million • New investment: Zero LOW	71 HIGH	• Volume: medium • Ease of Replacement: very difficult & dangerous . Cost: large (R1 billion +) HIGH	• New Product Manufacturing: moderate • Replacing the Installed Base: high MODERATE/HIGH	• New product manufacturing: MODERATE • Replacing the Installed Base: HIGH
Asbestos Cement Arc Chutes	No acceptable alternative product available HIGH	Entire circuit breaker must be replaced (R200,000 each) HIGH	• Redundant equipment write-offs: R100,000 • New investment: Zero LOW	18 LOW	• Volume: medium • Ease of Replacement: difficult & dangerous • Cost: moderate (R400 million) HIGH	• New Product Manufacturing: moderate • Replacing the Installed Base: high MODERATE/HIGH	• New product manufacturing: MODERATE • Replacing the Installed Base: HIGH

FIGURE 26: SUMMARY OF THE SOCIO-ECONOMIC IMPACT OF PHASING OUT ASBESTOS (CONTINUED)

APPLICATION AREAS	AVAILABILITY OF ALTERNATIVE FIBRES	ADDITIONAL ECONOMIC COSTS	CAPITAL EQUIPMENT COSTS	JOB LOSSES	INSTALLED BASE OF ASBESTOS CONTAINING MATERIALS	RISK OF EXPOSURE TO ASBESTOS FIBRES	OVERALL IMPACT ASSESSMENT
Lining of Acetylene Gas Cylinders	An alternative is readily available LOW	Alternative lining approximately 2% more expensive LOW	• Redundant equipment write-offs: R500,000 • New investment: R2 million – depending on the length of the phase out period allowed MODERATE	Zero LOW	• Volume: medium • Ease of Replacement: simple – normal course of business • Cost: moderate (R200 million) MODERATE	• New Product Manufacturing: moderate . Replacing the Installed Base: moderate MODERATE	• New product manufacturing: MODERATE • Replacing the Installed Base: MODERATE
Zimbabwe • Asbestos Cement Building & Construction Products exports to RSA • Transport of Asbestos Fibre Through RSA	• RSA manufactured fibre cement products • Not Applicable LOW	• Zimbabwe imports significantly less expensive – a major threat to locally manufactured products HIGH	• Redundant equipment write-offs: low (most equip leased) • New investment: not applicable LOW	• Asbestos Cement Building & Construction Products exports to RSA: 25 RSA citizens • Transport of Asbestos Fibre through RSA: 75 RSA citizens HIGH	Not Applicable	• Asbestos Cement Building & Construction Products exports to RSA: low • Transport of Asbestos Fibre Through RSA: high MODERATE	HIGH
Swaziland	Not Applicable	Loss of R1.5 million per year LOW	Not Applicable	Not Applicable	Not Applicable	• Asbestos fibre transported in closed rail trucks LOW	LOW

Figure 26 highlights the following critical issues that will need to be addressed as part of the phasing out of asbestos in South Africa:

1. Replacing the installed base of asbestos containing materials in the building and construction industry

There are at least two categories of asbestos containing materials involved in this issue:

- Asbestos cement products used as part of the construction of a wide variety and large number of buildings and construction projects. These include: roofing products (i.e. roof sheeting/tiles, roof caps, barge boards, and facia boards), rain water gutters and down pipes, window sills, ceiling and internal partioning boards, external cladding boards, and water storage and water/sewage reticulation piping.
- Asbestos containing insulation materials. These were mainly used as coverings to provide temperature insulation for heaters, geysers and hot water piping, and, in a limited number of cases, acoustic sound proofing.

There are no reliable statistics that would indicate the magnitude of this installed base. As an indicator, however, there are thought to be more than one million low cost houses in South Africa with asbestos cement roofs. An unsubstantiated guestimate by the authors suggests that the cost of removing and replacing the entire installed base of all asbestos containing materials would be between R10-billion and R30-billion. Obtaining more reliable statistics would require a separate research study

With regard to exposure to asbestos fibres, the replacement of asbestos containing materials in buildings – both asbestos cement products and asbestos containing insulation materials – will definitely be a very high-risk exercise. All of the asbestos containing materials used in buildings will give off asbestos fibre containing dust as it is disturbed and removed – particularly if it is cut, broken or damaged during removal operations.

As such, replacement will have to be conducted under VERY CAREFULLY CONTROLLED CONDITIONS, with the strictest possible observance of the current regulations regarding the removal and disposal of asbestos containing materials as specified in the Occupational Health and Safety Act (No. 85 of 1993) and the revised Asbestos Regulations 2001 that came into effect in March 2002.

It should be noted that International best practice is to leave asbestos containing products that are in good condition in place until the end of their operational life.

Decisions will have to be made as to whether this installed base should be pro-actively replaced, or allowed to remain in place until it has reached the end of its natural life which, in some cases could be as long as 50 to 70 years – this applies to both asbestos cement products and asbestos containing insulation materials.

2. Permitting the continued usage of a limited number of asbestos containing gaskets and seals

There are a limited number of instances where it is currently not technically feasible to replace certain asbestos containing gaskets and seals with products manufactured from alternative, non-asbestos materials. These relate mostly to the use of gaskets and seals in very high temperature and high-pressure environments, where the currently available non-asbestos alternatives cannot deliver an acceptable level of performance.

Evidence indicates that these are exceptional circumstances and will be very few in number – possible less than one hundred separate occurrences across the entire South African economy. This research study has not been able to "pin point" exactly where these occurrences are.

Provision will have to be made to allow the end-using customers to continue using asbestos containing materials until such time as technological developments have advanced to the point where non-asbestos materials can provide adequate technical performance.

Decisions will have to be made as to whether South Africa will permit the continued use of certain specified asbestos containing gaskets and seals on an "exceptions" basis or not. And, if so, how will these exceptions be controlled?

3. Replacing the installed base of asbestos containing Arc Chutes

There are approximately 2,000 asbestos containing arc chutes currently installed as an element of the 3 KV DC circuit breakers that are used by Spoornet in the electrified portion of its rail network.

It is technically not possible to manufacture an arc chute from alternative fibre based products that will perform adequately with these specific circuit breakers. The only viable solution is to replace the entire circuit breaker with a new one, based on a different technology that uses an arc chute made from ceramic fibres.

The total cost of replacing a circuit breaker with the new technology is R200,000 per circuit breaker, which computes to a cost of R400 million (at current prices) to replace all 2,000 3 KV DC circuit breakers that are currently using asbestos containing arc chutes.

At the current "normal course of business" rate of replacement, it will take somewhere between 60 and 70 years for all 2,000 asbestos containing arc chute circuit breakers to be replaced with the new technology ceramic arc chute circuit breakers.

A decision will have to be made regarding the length of time that Spoornet will be allowed for the replacement of the circuit breakers that use asbestos containing arc chutes.

4. Replacing the installed base of asbestos containing acetylene gas cylinders

There are approximately 185,000 acetylene gas cylinders in circulation in the South African economy, plus a further 65,000 in other African countries (i.e. Botswana, Kenya, Malawi, Namibia, Tanzania, Zambia and Zimbabwe), giving a total of 250,000 cylinders in circulation. All of these cylinders belong to one company. Currently, all of these gas cylinders are lined with an asbestos containing mass that stabilises the acetylene gas and prevents cylinder explosions.

It is technically feasible to replace the asbestos containing lining with a glass fibre based lining. The cost of replacing the asbestos lining with a glass fibre lining is R825 per cylinder, which computes to a total replacement cost of approximately R200 million.

At the current "normal course of business" rate of replacement, it will take somewhere between 15 and 18 years to replace all 250,000 asbestos lined cylinders with fibreglass lined replacements.

A decision will have to be made regarding the length of time that will be allowed for the replacement of the asbestos lined gas cylinders with cylinders lined with glass fibre.

5. Dealing with the import of asbestos containing materials into South Africa

Currently, it is permissible to import asbestos containing materials into South Africa without any restrictions. This applies to all of the different categories of asbestos containing materials and products investigated as part of this study.

The industry sectors that are most affected by imports are:

- **Asbestos Cement Building and Construction Products.**

  Over the past five years, the Botswana, Mozambique and Zimbabwean manufacturers of these asbestos containing materials have built up their exports to South Africa.

  The most active of these is the Zimbabwean manufacturer. This organisation has established a nationwide sales and distribution infrastructure, leasing warehouses and equipment in Gauteng, KwaZulu Natal, and the Eastern and Western Capes, and employing 25 South African citizens.

  The Zimbabwean organisation is aggressively capturing market share as a result of its weak currency, and is now a serious threat to the survival of the sole South African manufacturer of fibre cement building and construction products. This South African business has almost completed a fifteen-year long conversion process that involved replacing asbestos with alternative fibres in the manufacturing of its products.

  A decision will have to be made regarding the length of time that these foreign businesses will be allowed for "winding down" and closing their export operations in South Africa

- **Friction Materials.**

  Currently, all of the local manufacturers and importers of brake products (i.e. disc brake pads and drum brake shoe linings) are working in conjunction with the South African Bureau of Standards (SABS) to introduce the SABS ECE R90 Specifications that specify that "no friction material containing asbestos will be imported or manufactured locally after January 2004".

  However, the SABS regulations do not apply to friction materials associated with clutch plate linings. Currently, all of the clutch plate linings used in South Africa are imported. Approximately 45% of these imports contain asbestos.

  There is a concern amongst both local manufacturers and importers of friction materials that, were asbestos to be completely phased out in South Africa, a "black market" may develop for imported asbestos containing disc brake pads, brake shoe linings and clutch plate linings. This could happen as a result of the price differential between asbestos containing and non-asbestos containing products, which could be as much as 50% in some instances.

  Decisions will have to be made regarding the prohibition of imported asbestos containing clutch plates, and the prevention of the development of a black market for imported asbestos containing friction materials.

- **Gaskets and Seals.**

  Similarly, in this industry sector, there is a concern that a black market may develop for imported asbestos containing gaskets and seals, which, in some instances, could be significantly less expensive than non-asbestos alternatives.

  A decision will have to be made regarding the prevention of the development of a black market for imported asbestos containing gaskets and seals

6. Dealing with the impact on SADC countries

A complete phasing out of asbestos in South Africa will have some "knock on" effects on other SADC countries. The most significant of these include:

- The transport of Zimbabwean asbestos fibre exports through South Africa

  Zimbabwe transports 100% of its asbestos fibre exports through South Africa, using a network of rail and road transport services, and warehouses. A portion of these exports (less than 5%) is destined for South African customers, whilst the remainder is exported to overseas markets.

  Asbestos fibre is mined, milled, bagged and palletised in Zimbabwe. Pallets are either loaded onto road trucks and covered with tarpaulins, or loaded into closed rail trucks and transported through South Africa. Part of the shipment goes via rail to Durban, passing through Swaziland on the way. The other part travels to Durban via Johannesburg, where it stops of in Gauteng.

  The palletised bags of asbestos fibre are repalletised and containerised, either in the Johannesburg or Durban warehouses, before being transported to the Durban Harbour Container Depot, from where they are loaded onto ships and exported to foreign markets.

  Some of the facilities that make up this network (i.e. trucks, forklift vehicles, warehouses, etc.) are directly leased by Zimbabwean businesses. The remainder (i.e. rail trucks, etc.) is rented from third party service providers. 75 South African citizens are directly employed in this network.

  A decision will have to be regarding the future of this transport network, i.e. will it be allowed to continue or not? And, if so, under what conditions?

- Swaziland's income from Zimbabwe asbestos fibre exports

  Swaziland derives approximately R1.5 million per year in freight charges for allowing a portion of Zimbabwe's asbestos fibre exports to pass through its territory. A decision will have to be made regarding this issue

In addition to these critical issues that will require definite, proactive responses, there are a number of secondary issues that may require some form of reactive response. These include:

1. Managing the impact of capital equipment costs (i.e. writing-off of redundant equipment, and the purchase of new equipment)

Some form of Government support may be required by some of the affected businessesin dealing with the financial implications of these impacts

2. Staff retrenchments

There are already a number of provisions in place that will assist affected businesses in dealing with this issue. However, given the sensitivities associated with the phasing out asbestos, some form of additional support may be required.

More detailed information regarding this topic can be found in appendix 14 of the accompanying ***Appendices to the Final Report*** document.