

11 ACETYLENE GAS CYLINDER STABILISATION

There is only one manufacturer/supplier of acetylene gas cylinders in South Africa. This manufacturer uses an asbestos cement mixture to form a porous mass that is poured into acetylene gas cylinders in order to stabilise the gas and prevent explosions of the gas cylinders.

11.1 MARKET SIZE

The "installed base" of gas cylinders is approximately 250,000, of which approximately 185,000 are in circulation in South Africa, with the remaining 65,000 being in other African countries (i.e. Botswana, Kenya, Malawi, Namibia, Tanzania, Zambia and Zimbabwe).

Each metal cylinder has a lifespan of approximately 10 years. Cylinders are inspected on a regular basis. Approximately 6,000 redundant metal cylinders are scrapped each year and replaced with new ones. In addition, a further 9,000 to 10,000 cylinders are "re-massed" with new asbestos cement linings each year.

Customers lease returnable gas cylinders when purchasing acetylene gas. Generally, each gas cylinder is rented to a customer for a period of about 3 months. Currently, the average price for a cylinder of acetylene gas is R750 for the gas, plus R75 per month rental for the cylinder. This implies that the "average" customer is paying approximately R975 for each cylinder of acetylene gas used.

11.2 ASBESTOS FIBRE PURCHASES

Table 47 reflects the volume and value of asbestos fibre purchases.

TABLE 47: ACETYLENE GAS ASBESTOS FIBRE PURCHASERS

	2001	2002	2003
Asbestos Fibre (kilograms)	20,000	20,000	24,000

Asbestos fibre usage has remained fairly constant over the past few years. However, usage is projected to increase in the coming years, based on an assessment that the overall economy will grow by at least 2% to 3% per annum.

11.3 EMPLOYMENT

Table 48 reflects the number of people employed in the gas cylinder-manufacturing business. These figures confirm the stability of this business.

TABLE 48: GAS CYLINDER EMPLOYMENT

	2000	2001	2002
Management	2	2	2
Professional (Acc/Leg/R&D/IT)			
Administration			
Technical/Artisans	1	1	1
Workers	12	12	12
TOTAL	15	15	15

11.4 ALTERNATIVE FIBRES

It is technically possible to replace asbestos with glass fibre in producing the porous mass required for this application. This glass fibre mass will deliver the same level of performance and safety as the asbestos cement mix.

The total cost of producing an asbestos-containing porous mass is R750 per cylinder. This cost will increase to approximately R825 per cylinder when a glass fibre porous mass is used. When calculated over the life span of a cylinder (approximately 10 years) and the number of times it will be rented to customers (approximately 40 times), the cost of the porous mass contributes about R1.00 to the cost of each rental. As such, a switch from an asbestos cement mass to a glass fibre mass will not add significantly to the overall cost of a cylinder.

11.5 THE IMPACT OF PHASING OUT ASBESTOS

11.5.1 Investment

Converting the manufacturing facility to accommodate a glass fibre porous mass will involve the following expenditure:

- Approximately R2 million investment in new equipment associated with producing the glass fibre mass
- Approximately R0.5 million disinvestments of existing equipment that is specific to producing asbestos cement masses
- Approximately R300,000 for retraining of staff to manage glass fibre

It is estimated that re-massing all of the existing 250,000 cylinders currently in the marketplace will cost approximately R200 million and would take approximately 12 to 17 years if the re-massing were to be done as part of the normal course of business.

However, if the process were to be accelerated as part of an asbestos phasing out strategy, it would require further investment in production capacity to manage the increased volume of cylinders that an accelerated conversion programme would generate. Management have calculated that reducing the conversion process time by 50% (i.e. to approximately 7 years) will require a further R5 million investment in production capacity. Reducing the process time by 75% will require a further R15 million investment.

Cylinders containing a non-asbestos porous mass cannot be re-massed, i.e. damaged cylinders would have to be scrapped and replaced. The cost of scrapping a cylinder is estimated at R850, which includes the capital investment write off, plus the cost of disposing of the cylinder.

The cost of a new replacement cylinder is approximately R2,000, which at the current rate of 15,000 to 20,000 re-massed/re-placed cylinders per annum, represents an additional cost of approximately R30 to R40 million per annum.

In total, the cost of converting from asbestos cement to glass fibre cylinder linings will cost this business approximately R350 million over the next 20 years. This computes to an average cost per cylinder of R1,400 per cylinder, or about R35 per rental. This final rental amount is equivalent to about 2% of the revenue generated from each cylinder rental. As such, this conversion is unlikely to result in a significant price increase at an end user level.

11.5.2 Employment

Management are of the opinion that a conversion to glass fibre will not have any impact on the number and skill levels of the people employed in the production and distribution/servicing functions. However, they do anticipate that they will need to institute an intensive re-training programme to teach people how to produce, handle and inspect cylinders that have glass fibre linings. The estimated cost of this re-training programme is R300,000.

11.5.3 Rehabilitation

A conversion to glass fibre will necessitate a complete and comprehensive "clean up" of the production facilities. However, management is of the opinion that this will not be an expensive exercise.

11.6 BUSINESS VIABILITY

Converting to glass fibre will have very little impact on the viability of this business. It will result in a change to business processes i.e. glass fibre lined cylinders cannot be re-massed and, therefore, damaged cylinders will have to be replaced. Also, overall production and maintenance costs will increase and, therefore, so will end user prices. However, this price increase is likely to be significantly less than 5%.

11.7 TRANSITION MEASURES

The only potential complication that could arise as part of a conversion process relates to the length of time allowed for this exercise. If the process is allowed to follow the normal course of business, it will not have any impact on the business.

However, if Government were to require that the conversion process be shortened, this business would have to increase its production capacity. Doing so will require a significant investment in new equipment and facilities – approximately R5 million to reduce the "normal course of business" conversion time of 12 to 17 years by 50%.

Under these circumstances, this business will need some form of support that will enable it to manage this capital investment programme.