

To: Anglogold Tau Lekoa
Attention: Kobus Dekker
From: Paul Taylor
Date: 03 September 2003

SUBJECT: ANGLOGOLD – TAU LEKOA MINE TIVAR® LINING OF
ROLLERMATIC HOPPER BY POLY HI SOLIDUR SA (PTY) LTD

Dear Kobus,

INTRODUCTION

Poly Hi Solidur SA (Pty) Ltd (PHS-SA) is part of the world-wide Poly Hi Solidur Group of Companies, the worlds leading converter of Ultra High Molecular Weight Polyethylene (UHMW-PE) and supplier of low friction liners. With 17 operations in 10 industrialised countries, we offer a wealth of experience in the low friction lining market.

PHS-SA is a SABS listed company and our manufacturing and quality assurance systems conform to ISO 9002.

Poly Hi Solidur's UHMW-PE Tivar® (Tough, Inert & Very Abrasive Resistant) with exceptionally high molecular weight, in addition to polyethylene's inherent characteristics, gives rise to a unique combination of properties which include:

- extremely low coefficient of friction second only to PTFE of all engineering polymers;
- high abrasion resistance;
- self lubrication;
- non stick qualities;
- tough & impact absorption
- water repellant;
- high corrosion resistance;
- sound absorbing;
- light weight, easy to install;
- non toxic.

The UHMW-PE Tivar® lining of the inside of a Rollermatic Hopper for Tau Lekoa Mine was motivated to reduce dust levels in the shaft caused by material carry-back in the hoppers. This would lead to a reduction in Silicosis and improvement in haulage efficiency while leading to safer working conditions as "carry-back" cleaning will become unnecessary.



(a) Inside of Hopper before liners were installed



(b) Rollermatic Hopper

PHS-SA decided on the lowest cost commitment and as such decided to take a staged trial & error approach.

Four Prototypes were tested, which are discussed in more detail as follows.

PROTOTYPE 1

We were initially given the go-ahead by AngloGold to do the installation of Tivar[®] linings to 10 Rollermatic hoppers. Standard linings were fitted in four hoppers, which were sent down to 1650 level. The carry-back of mining ore remained the same as before. The lining of the remaining hoppers were subsequently stopped to allow for further design.

PROTOTYPE 2

The second prototype in the project entailed installing radius corners to the existing material already cut for installation. One (1) hopper was lined and sent down to 1650 level. It operated without any improvement in the carry back problem.

It was thereupon decided that we would bring the hopper back to PHS for service and further development work.



Prototype 2

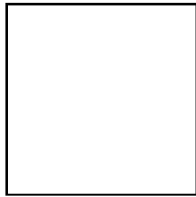


(c) Combined Radius corners in

PROTOTYPE 3

The third prototype in the project consists of changing the material specifications to TIVAR[®] 88-2 which has a lower coefficient of friction than the material previously used. All corners were then also welded to minimize areas where the material could compact into.

The hopper was then sent back to Tau Lekoa gold mine where it worked for ± 2 weeks with a degree of success, but due to the harsh cleaning processes, extensive damage was done to the liners and the build up started to occur again. It was noted that once the bulk material compacted, there was no change in the carry back.



(d) Tivar[®] 88-2 with welded joints



(e) Discharging of Rollermatic Hopper Prototype 3

The hopper was then brought to surface again and cleaned out and a loose sheet was fitted to the hopper. The thinking with the loose sheet was that it would move with the material and thus discharge the compacted material.

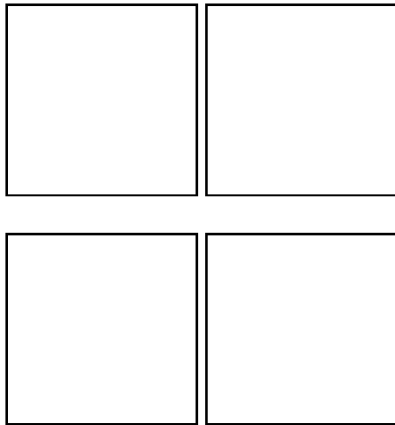
Once again this design only worked for ± 2 weeks before starting to build up again.

Overall, we can say that there has been a 50 to 55% improvement in the carry back, but there are many factors contributing to the unsuccessfulness of the hopper.

PROTOTYPE 4

Changes were made to the discharge angle of the hopper by inserting a false bottom plate and installing Tivar[®] linings on top of this insert and to the side faces of the hopper. Stainless steel capping strips were welded all around the liner's leading edges.

We are very pleased with the latest result of the lining of the Rollermatic Hopper. The hopper has been working underground since the 1st of July 2003. The hopper was inspected by Casper of Tau Lekoa and Paul Taylor of Poly Hi Solidur SA after it had been operating for 24 shifts. The feed-back is that the hopper now discharges 100% of its load with no special cleaning required.



(f) Prototype 4 lining with sloped false bottom during installation
Last slide - after operating 24 shifts

We are presently working on further improvements to our design to allow for ease of installation and replacement. We also hope to improve commercial feasibility of our design in due course.

We look forward to the opportunity to discuss the next step of this project and taking of order with the Mine Management.

Best Regards,

Paul Taylor
Lining Sales Representative
Poly Hi Solidur SA (Pty) Ltd