

# Screen media wear life aligned with Sag Mill maintenance schedule

With a plan in place to extend the regular shutdown schedule of their SAG Mill from a seven-week cycle to 16 weeks, one FLS customer knew in order to achieve their goal they also had to extend the wear life of their screen media. They turned to us for help.

## Background and objective

With a resource base of 7.5 million ounces of gold and 67 million ounces of silver, Martabe Mine is one of the largest gold mines in the world. Located in North Sumatra, Indonesia and managed by PT Agincourt Resources, the mine commenced operations in July 2012. It has an annual operating capacity of 4.5 Mt of processed ore, 260,000 ounces of gold and 2.1 million ounces of silver.

The SAG Mill shutdown at Martabe Mine was scheduled to occur every seven weeks. The shutdown allows for the steel mill liners and screen media to be assessed and maintained. However, with the mine's ultimate goal for the SAG Mill shutdown to be extended to 16 weeks, changes needed to be made.



**The mine managers knew if they were to achieve their ultimate goal of a 16-week SAG Mill shutdown cycle, the screen media feed-end liner had to deliver a minimum 16-week life”**

**Noel Eather**  
Technical advisor, Screen Media



## Defining the project

The mine managers knew if they were to achieve their ultimate goal of a 16-week SAG Mill shutdown cycle, the screen media feed-end liner had to deliver a minimum 16-week life.

At the Martabe Mine, the mill discharge is fed onto an FLS BRU 3.0 x 7.3 Horizontal Screen. The screen media installed was the FLS LUDODECK P2 modular system and the feed-end had three rows of blank panels for the mill discharge chute to feed onto.

The metallurgy team at the mine observed that the feed-end blank panel's mean time between failure was a maximum of four weeks. Depending on the mill discharge grate wear, sometimes only three weeks wear-life was achieved. This meant, even with the original seven-week shutdown frequency, the SAG Mill faced unplanned downtime and production loss to allow the feed-end blank panels to be changed.

The performance of the aperture panels did not need attention. There was no pegging of apertures and wear on the panels meant the feed-end screen decks only required changing twice a year and the discharge screen decks just once a year.

With a screen media panel wear life of just three to four weeks, even with a seven-week shutdown schedule the panels fell well short. The FLS solution was not only easy to install and cost effective, it is expected to deliver 16-plus weeks of wear.

## Wear measurements at seven weeks

Position	Nail	Measurement	Thickness
1	120.6	97.4	23.2
2	120.6	97.7	22.9
3	120.6	97.4	23.2
4	120.6	95.6	25
5	120.6	97	23.6
6	120.6	98.5	22.1





Screen deck installation

## The solution

The Martabe Mine’s metallurgical team monitored the wear issues and determined the main impact area. FLS provided a solution that optimised performance and minimised costs for the main wear zone. The solution was delivered in two stages and involved trials and discussions that spanned a number of months.

The screen media’s wear was reduced by combining a section of already installed LUDODECK P2 modular screen panels with removable rubber wear plates.

This process firstly involved increasing the panel’s thickness from 46 mm to 60 mm. Then, steel-backed rubber wear pads were bolted to the screen panels. This increased the overall thickness to 86 mm and meant the blank screen panel did not see any wear, allowing for reuse after every shutdown.

The solution did not change the original fixing method, therefore the panels were fitted by the mine crew on time and without any reported injuries. In addition, future replacements can be assembled offline and fitted quickly when required.

## The results

The metallurgy team inspected the feed-end blank panels after two weeks of use and found the panels in very good condition. The panels were inspected again at seven weeks of use and the wear was considered very satisfactory.

**FLSmidth A/S**  
2500 Valby  
Denmark  
Tel. +45 36 18 10 00  
info@flsmidth.com

**FLSmidth Inc**  
Salt Lake City Operations  
Midvale, UT 84047-5559  
USA  
Tel. +1 801 871 7000  
Info.sl.c@flsmidth.com

www.flsmidth.com

Copyright © 2024 FLSmidth A/S. All Rights Reserved. FLSmidth and FLS are (registered) trademarks of FLSmidth A/S. This study makes no offers, representations or warranties of any kind (express or implied), and information and data contained in this study are for general reference only and may change at any time. FLSmidth does not guarantee or make any representation regarding the use or the results of the information or the data provided in the study in terms of its correctness, accuracy, reliability or otherwise, and shall not be liable for any loss or damage of any kind incurred as a result of the use of the information or data provided.

## Feed end panel wear prediction

	Installed	Measurement	End of 16 weeks
Date	28/1/2018	17/3/2018	20/5/2018
Days in use	0	48	112
Thickness	35 mm	22.1 mm	5 mm*

\*With a measured wear rate of 0.27 mm per day as at March, 17 2018 the metallurgy team is confident the panels will last beyond the 16-week campaign.