HAVER & BOECKER

NIAGARA

MINERAL PROCESSING INDUSTRY

POLYURETHANE LINERS IMPROVE WEAR LIFE AND EFFICIENCY IN IRON ORE PROCESSING



IRON ORE CRUSHING

Case Study: Rhino Hyde Liners Improve Durability and Reduce Downtime in Iron Ore Crushing

TECHNICAL DETAILS

Industry:
Mining

Application:
Primary Crusher Feed Hopper

Material Handled:
Iron Ore - top size: 3 1/2" (90mm)

Challenge

A client operating in the iron ore sector, was encountering critical wear and operational issues in their primary crusher feed hopper:

- The previously used UHMW liners (22 mm thick) had a short service life of only 30 days.
- Major issues included rapid liner wear, iron ore sticking to surfaces, and high noise levels.
- These problems led to frequent maintenance shutdowns, safety risks, and reduced operational efficiency.

Solution

To address these concerns, the client installed Rhino Hyde® polyurethane liners (22 mm thick with fabric backing).

- Verification Period: 60 days





WEAR PERFORMANCE TRIALS REALIZED

Results

After two months of operation:

- Rhino Hyde doubled the lifespan compared to UHMW, lasting at least 60 days.
- Significantly reduced material accumulation due to lower surface friction.
- Decreased maintenance shutdowns and associated downtime.
- Lower noise levels during crusher operation.

Customer Action

Following the successful trial, the client approved Rhino Hyde for broader use. It is now utilized in:

- All under and over chutes of the sieves
- Transfer chutes throughout the facility

Conclusion

Rhino Hyde® polyurethane liners provided a substantial upgrade over UHMW in iron ore handling. With double the wear life, reduced material buildup, and lower maintenance frequency, Rhino Hyde helped the client enhance operational efficiency and safety in one of their most demanding applications.

Advantages of PU over UMHW

- Easy to cut and install
- Less material adhesion
- greater resistance to impact and abrasion
- less noise
- best cost benefit considering the useful life
- Less equipment downtime



IRON ORE CRUSHING

Case Study: Rhino Hyde Slyde Black Increases Wear Life and Reduces Material Accumulation in Nobium Ore Processing

TECHNICAL DETAILS

Industry:
Mining

Application:
Vibrating Feeder in Crushing Plant
Goiás, Brazil

Material Handled:
Iron Ore - top size: 3 1/2" (90mm)

Challenge

A client in niobium mining, was experiencing rapid wear and operational inefficiencies in the vibrating feeder of its crushing plant:

- The existing PEAD (High Density Polyethylene) liners were failing within 54 days.
- The surface promoted material accumulation, leading to frequent shutdowns for cleaning.

Solution

To overcome these issues, the company implemented Rhino Hyde® Slyde Black (with nanographite) polyurethane liners in varying thicknesses (25 mm, 19 mm, and 12 mm) with fabric backing to ensure secure installation and enhanced durability.

- Verification Period: 144 days



WEAR PERFORMANCE TRIALS REALIZED

Results

Post-installation observations showed:

- Rhino Hyde Slyde Black had more than twice the wear life compared to PEAD.
- Significant reduction in material accumulation, minimizing the need for manual intervention.
- Improved process continuity, resulting in less equipment downtime.

Conclusion

The application of Rhino Hyde® Slyde Black polyurethane liners at client's crushing plant resulted in a durable, low-maintenance solution for handling niobium ore. With over double the lifespan and reduced shutdowns for material buildup, the upgrade marks a significant improvement in efficiency and operational safety.

Advantages of PU over PEAD

- Easy to cut and install
- Less material adhesion
- greater resistance to impact and abrasion
- less noise
- best cost benefit
- Less equipment downtime

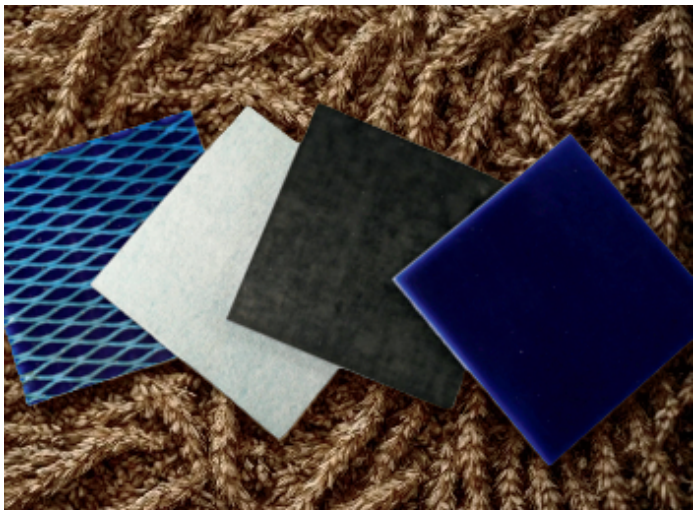


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Key Benefits of Polyurethane

- ✓ Easy to install
- ✓ Easy to cut
- ✓ Less noise during material flow
- ✓ Less material adhesion
- ✓ Lower equipment downtime
- ✓ Higher impact and abrasion resistance
- ✓ Superior cost-benefit ratio over lifetime
- ✓ FDA certified for food contact



Rhino Hyde® polyurethane liners offer a vastly improved service life, reduced maintenance, and greater reliability in abrasive and high-throughput applications. The switch to polyurethane has delivered both performance and economic advantages in each case study example and is an excellent choice in wear prevention while optimizing production.

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