

CASE STUDY: Enhancing OCC Repulper Efficiency with SealRyt's SLR® (Structural Lantern Ring)

Background

A prominent paper plant was experiencing significant challenges with their OCC (Old Corrugated Containers) Repulper due to the limitations of their existing lantern ring. The original component was a one-piece PTFE lantern ring featuring a V-cut joint. Operators reported that installing this ring around the shaft was cumbersome, often resulting in deformation and improper seating, which compromised the system's efficiency.

Challenges

The primary issues with the PTFE lantern ring included:

- **Difficult Installation:** The V-cut design made it challenging to fit the ring around the shaft without distorting its shape.
- **Deformation Under Pressure:** Once installed, the PTFE material tended to collapse or lose its form under operational pressures, leading to inadequate sealing.
- **Maintenance Concerns:** The deformed rings were prone to clogging and required frequent replacements, increasing maintenance downtime and costs.

Solution

Based on the successful performance of with SealRyt's SLR® in other applications within the plant, the engineering team decided to implement this solution for the OCC repulper. The SLR® is a patented design known for its robustness and efficiency.

Key Advantages of the SLR®:

1. **Enhanced Flush Water Distribution:** The SLR® facilitates improved flow and pressure equalization, ensuring that flush water reaches the shaft surface more effectively. This results in a better pressure seal and reduces the likelihood of clogging.
2. **Structural Integrity:** Unlike traditional PTFE rings, the SLR® is non-collapsible in service, maintaining its shape and functionality even under high pressures.
3. **Ease of Installation:** The design of the SLR® simplifies the installation process, allowing for a more straightforward fit around the shaft without the risk of deformation.
4. **Reusability:** The durable construction of the SLR® means it can be removed, cleaned, and reinstalled, offering long-term cost savings and reduced environmental impact.

Implementation

The SealRyt engineering team collaborated closely with the plant's maintenance staff to ensure a seamless transition to the SLR®. The installation process was notably smoother compared to the previous PTFE rings, and the immediate benefits were evident.



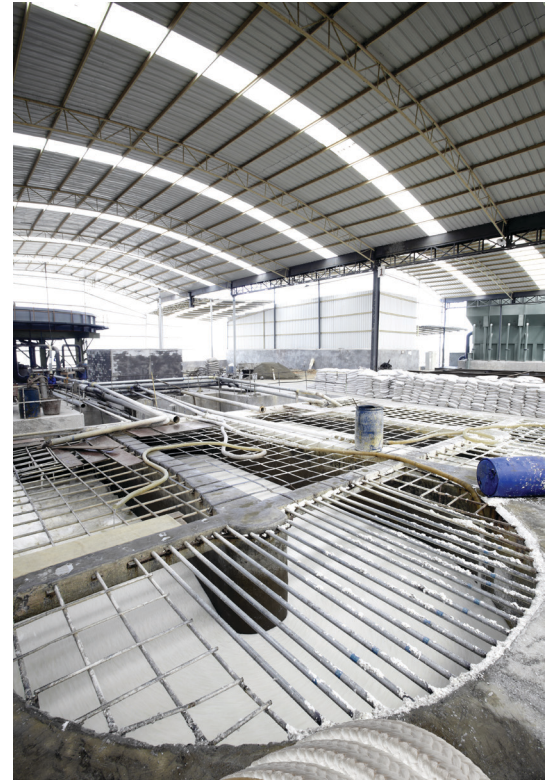
Photo: SLR® custom created for the OCC Repulper.

Results

- Post-installation observations highlighted several improvements:
- Operational Efficiency: The repulper operated with enhanced efficiency due to the superior sealing and reduced clogging.
- Reduced Maintenance: The robustness and reusability of the SLR® led to decreased maintenance interventions and associated costs.
- Positive Feedback: Plant operators expressed satisfaction with the new system, noting the ease of installation and improved performance.

Conclusion

The adoption of with SealRyt's SLR® (Structural Lantern Ring) in the OCC Repulper addressed the challenges posed by the previous PTFE component. This case underscores the importance of selecting advanced sealing solutions tailored to specific industrial applications to enhance performance and reduce operational challenges.



Ordinary PTFE Lantern Rings utilize small flush ports in order to maintain strength. This can lead to clogging that can cause pump failure from overheating.



SLR® - Structural Lantern Rings have drastically larger flush access without compromising strength.