

#### APPLICATION SOLUTION JUNE 2025

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# DEZURIK KUL URETHANE LINED KNIFE GATE VALVES EXCEL IN ABRASIVE IRON ORE SLURRY AT FLOTATION PLANT

## Application

A mining customer sourced knife gate valves from multiple manufacturers based on cost and lead time. While initially effective in reducing capital expense and meeting delivery schedules, this approach soon led to operational issues. The valves became mechanically bound in both the fully open and fully closed positions, resulting in their inability to cycle as required for proper process control. These malfunctions led to slurry overflows, unplanned shutdowns and increased maintenance costs.



DeZURIK KUL Urethane Lined Knife Gate Valves installed in a South American gold mine flotation plant are engineered to handle highly abrasive iron ore slurry with superior wear resistance and long service life in demanding mineral processing conditions.

#### Solution

To overcome persistent reliability and maintenance challenges, the mine collaborated with DeZURIK's technical team to implement a standardized valve solution specifically engineered for abrasive slurry applications. The KUL Urethane Lined Knife Gate Valve was selected for its heavy-duty construction and proven performance in severe service environments.

In operation, the KUL valve effectively handled the 35% solids iron ore slurry, showcasing its superior wear resistance and robust design. This application highlights the long-term value of selecting valves tailored to the service conditions. By standardizing on a reliable, application-specific solution, the mine significantly improved equipment uptime and reduced total cost of ownership.



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### **Rugged Performance for Abrasive Slurries**

KUL valves feature a one-piece, cast-in-place bonded liner that provides bi-directional, leak tight/zero leakage shutoff. Urethane Lined Knife Gate Valves provide bi-directional dead-end service to the full pressure rating of the valve.

The bonding process enhances the mechanical and abrasion resistance properties of the urethane, which creates a robust seat seal in harsh slurry services. All wetted surfaces are lined with urethane.



#### Features

- Time tested proven design
- Excellent performance in slurry applications
- Thousands of valves in mining applications
- Non-discharging design lessens impact on environment
- Full flange for multiple drilling options
- · No gaskets required
- Vacuum service
- 100% round port area (ASME B36.10) - reduces turbulence

## **Bonded Urethane Proven Superior**

DeZURIK engaged an independent third-party consulting firm to evaluate the performance characteristics of bonded versus non-bonded urethane liners. The test results clearly demonstrated that the bonded urethane liner delivered superior performance compared to the non-bonded alternative. For detailed results and analysis, refer to the industry paper available under <u>Articles & White Papers \</u> <u>Material Selection</u> at DeZURIK.com.

## **Multiple Body Configurations for Any Pipeline**

DeZURIK Urethane Lined Knife Gate Valves are available in three body configurations: Extended Flange, Standard, and Mechanical Joint. The extended flange matches the long-pattern pushthrough style slurry valves.



See YouTube video: <u>Which DeZURIK KUL Knife Gate Valve is right for</u> your pipeline?

For additional information on KUL Urethane Lined Knife Gate Valves or any of DeZURIK's other products, visit DeZURIK.com or contact your local DeZURIK representative.

## SALES AND SERVICE

For more information, contact DeZURIK

DeZURIK.com

info@dezurik.com

250 Riverside Ave. N. Sartell, Minnesota 56377

Phone: 320-259-2000



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