PROJECT SPOTLIGHT:
GRAVEL RUNWAY FINES PRESERVATION

Multi-Year EK35® Program Delivers Lasting Runway Strength and Dust Control for Remote Airport

76%	Up to 95%	100%
Initial Increase in CBR value	Reduction in Potential Dust Emissions	Reduction in Routine Maintenance Activities

CHALLENGES

- Reduce high dust emissions and loose aggregate generated from aircraft movements.
- Deliver a stable runway surface that holds up to repeated aircraft loads and cold climate weather.
- Reduce ongoing maintenance requirements and associated costs.
- Preserve the runway and reduce surface material loss.

SOLUTION

- Developed a four year plan where an initial, heavier application of EK35® was applied in the first year followed by light annual maintenance applications in the subsequent years.
- Performed routine testing and monitoring to assess and documents the condition of the runway over the course of the program.
- Implemented rubber tired compaction following each application of EK35® to maintain a tightly bound, FOD-free surface.
- Used annual runway evaluations and gained insights to refine and implement an effective maintenance application strategy.

RESULTS

- **Runway CBR Increased Initially by 76%:** EK35® increased the average CBR strength of the surface aggregate from 17 to 30 in the upper 2" - indicating a 76% improvement after 60 days, compared to the untreated aggregate.
- **Maintained Improved CBR Over Time:** The average CBR in the upper 2" of the runway was maintained in the mid 20's to 30's three years after the initial application – demonstrating a sustainable improvement in surface strength.
- **Significantly Reduced Potential Airborne Particulate:** Silt load test results indicate that the potential airborne particulate was reduced from 95% on the left side of runway, 51% along the centerline, and 88% on the right side of the runway, compared to pre-application testing.
- **Confirmed that EK35® Remained Where Applied:** Solvent extraction testing confirmed that the EK35® remained in the runway as applied 60 days after application.
- **Completely Eliminated Routine Maintenance:** 100% reduction in grading, watering and aggregate replacement was achieved during the program.

PROJECT BACKGROUND

Product: EK35®
Location: Manitoba
Industry: Aviation Infrastructure

This airport is a public-use gravel runway serving a remote northern Canadian community where aviation is essential for transportation, logistics, and emergency services. The airport serves a First Nation community with no permanent road access. The airport engaged with Midwest seeking a solution that would improve the reliability and safety of the runway through dust reduction and surface improvements. Midwest developed a multi-year EK35® program to deliver an improved runway surface. The program consisted of a full EK35® application in the first year (2019) followed by light annual rejuvenating applications of EK35® in the subsequent years. Over the next four years, the runway was evaluated and monitored through field observations, DCP testing, silt load testing and photo documentation to confirm EK35®'s performance.

LOOKING FORWARD

This multi-year study demonstrates that EK35® provides a durable, long-term solution for improving the performance of gravel runways in remote and challenging environments. By significantly enhancing surface strength, reducing dust emissions, and minimizing maintenance requirements, EK35® enables operators to maintain safe, reliable runway conditions while lowering life-cycle costs. The sustained performance validates EK35® as an effective solution for long-term runway stabilization, particularly in similar environments with limited resources and demanding operational conditions.