



CONSTRUCTION - CASE STUDY

## O'Hare Airport Modernization

### PROJECT BACKGROUND

In the stabilization industry, every project is unique and requires an understanding of the various soils types present on the job site, along with stabilization goals, in order to select the best chemical reagent for the application. Challenges don't get much bigger than construction of new runways at O'Hare International Airport. The O'Hare Modernization Program, one of the largest construction projects in the country, took place at one of the world's busiest airports, with a project budget estimated at \$8 Billion. Among the project objectives was to reconfigure O'Hare International Airport's intersecting runways into a more modern, parallel runway layout.

### THE CHALLENGE

Much of the on-site soils used to build the runways required soil modification and/or stabilization to meet the strength, compaction and optimum moisture necessary to ensure the long life of the finished pavement structure. The O'Hare Modernization Program's soil modification / stabilization requirements followed the ILDOT specification which requires lime products, such as Calciment® LKD, with total calcium and magnesium oxides >60% and available calcium hydroxide >30%.

### PROJECT OVERVIEW

#### O'HARE RUNWAYS WITH CALCIMENT® LKD

→ **Construction  
Dewatering & Stabilization  
Dose Rate: 4.5% to 6%**

- The O'Hare Airport Modernization Program required soil modification and stabilization for its new parallel runway layout per ILDOT spec.
- Geotechnical coordinator Thomas Kilbort, L.P.G. selected Calciment LKD as a chemical reagent.
- Despite unforeseen setbacks the runways were completed ahead of schedule and under budget.

## OUR SOLUTION

Thomas Kibort, L.P.G., the geotechnical coordinator for the Construction Manager for the O'Hare Modernization Program on the 10C-28C East and 10C-28C West Runways and a Licensed Professional Geologist with over 23 years of experience in civil and geotechnical engineering, was tasked with recommending the right chemical reagent for the job. Mr. Kibort selected Calciment LKD because of his prior success utilizing Calciment LKD on soil types similar to those present on the job site.

## IMPLEMENTATION

Modification of approximately 185,773 SY was performed on areas of the 10C-28C West Runway project to backfill undercuts ranging anywhere from 15 to 25 feet deep. Fills were performed in successive 8" to 12" lifts. Due to the varying soil conditions, several mix designs were necessary. Modified soil consisted of brown-gray lean clay with sand to gray lean clay. Mix designs were anywhere from 4.5% Calciment LKD at 13.3% optimum moisture and 50.9 lbs/SY spread rate to 6.0% Calciment LKD at 11.9 optimum moisture and 69.1 lbs/SY spread rate. Approximately 16,000 tons of Calciment LKD was placed at an average production rate of 10,000 SY and 275 ton of Calciment LKD per day.

Stabilization on the 10C-28C East Runway project covered approximately 418,960 SY and required over 24,100 ton of Calciment LKD, including multiple mix designs. Proctors were taken every 10,000 CY to ensure conformance to the specifications over these variable soil types. On site storage tanks and additional off-site facilities were utilized to ensure continuity of supply during the life of the project.

## RESULTS

Despite the many obstacles and unforeseeable hurdles, which included a three week operator's and labor strike, the runways were completed ahead of schedule and under budget!



**STABILIZE**



**ACCELERATE  
PRODUCTION**



**MINIMIZE  
SHRINK / SWELL**



**IMPROVE  
GEOTECHNICAL  
PROPERTIES**