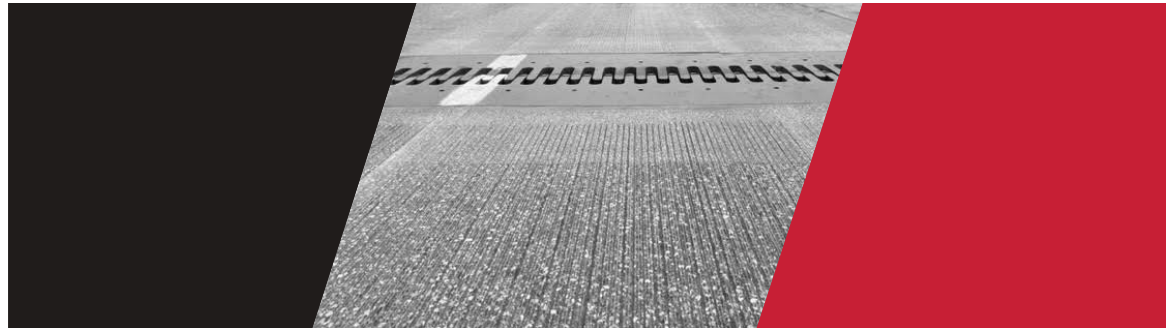


diamond grinding improves smoothness on illinois bridge deck by 76-79%

U.S. 30 Sees a New Application of Specification

Conditions on rough existing bridge deck are reversed with diamond grinding



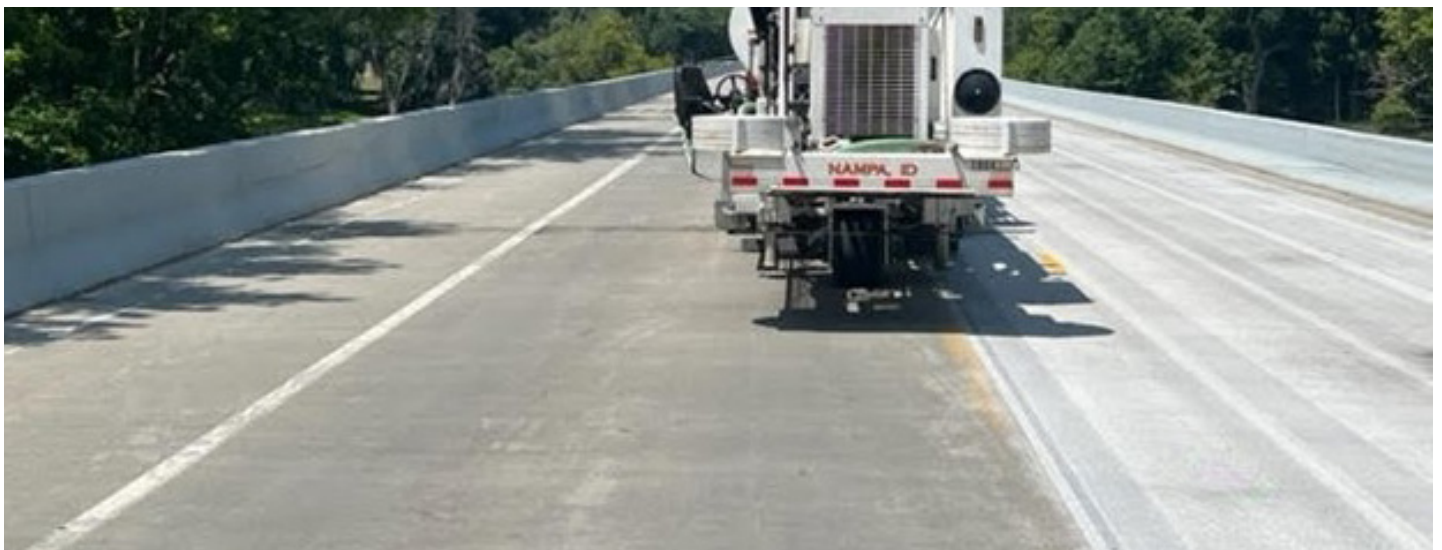
TO ENHANCE THE SMOOTHNESS AND OVERALL DRIVING EXPERIENCE on bridge decks, the Illinois Department of Transportation (IDOT) implemented a new policy on diamond grinding overlays in 2017. This policy was successfully employed during a project involving the U.S. 30 bridge over the Rock River, demonstrating the significant improvements in surface smoothness and noise reduction achieved through diamond grinding.

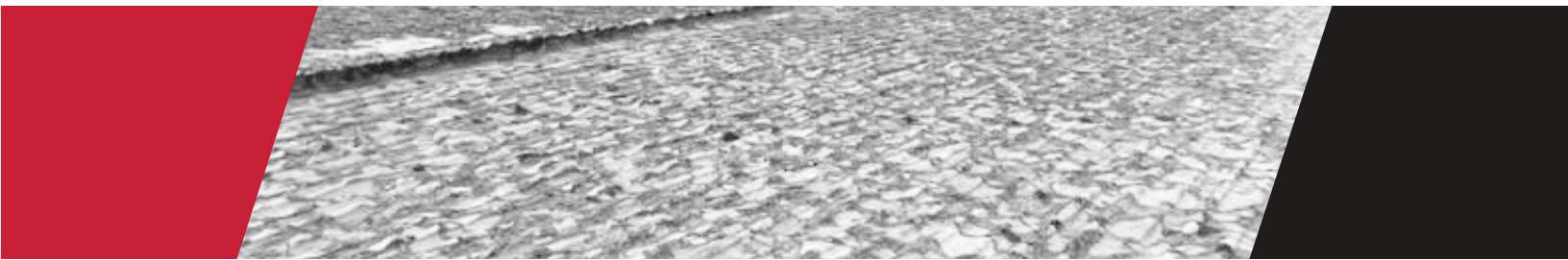
The U.S. 30 bridge, located in northern Illinois near the community of Como, last underwent rehabilitation in 2016. The 1,200-foot-long structure received a new finger joint and a latex-modified concrete overlay with transverse grooving. However, the final riding surface was less than ideal due to the absence of a policy for diamond grinding overlays at that time.

Matt Hardt, Acting Construction Engineer for IDOT District 2, observed the rough ride quality of the bridge firsthand and advocated for the application of diamond grinding to improve its smoothness, leading to the implementation of the new grinding policy.

“In District 2, we had not historically done a lot of bridge deck grinding after the fact. To go back and grind an existing overlay on a bridge deck was new to the district,” said Hardt.

In July 2023, a diamond grinding project was initiated for the U.S. 30 bridge, and Quality Saw and Seal performed the grinding and longitudinal grooving on the bridge deck. This marked the first time District 2 had conducted such work on an existing overlay, making it a pioneering effort for the region.

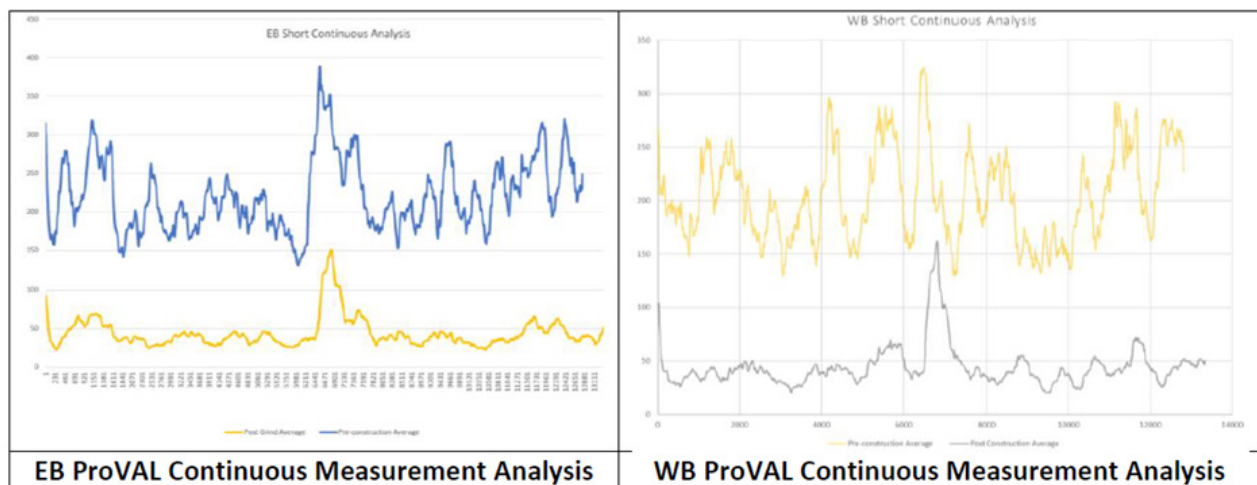




» GRINDING IMPROVES SMOOTHNESS 76-79% OVERALL, UP TO 90% ON LOCALIZED AREAS

The results of the diamond grinding were impressive:

- **Eastbound Roughness:** Reduced from 185 in/mi to 44 in/mi (76% improvement)
- **Westbound Roughness:** Reduced from 223 in/mi to 46 in/mi (79% improvement)
- **Localized Areas:** Improvements ranged from 5% to 90% in specific sections
- **Overall Smoothness:** Nearly all sections achieved a 50% or greater reduction in roughness



» **Legend:** ■ Blue = Original roughness ■ Gold = Post-grind roughness

In addition to improving smoothness, the project also resulted in a quieter deck due to the transition from transverse to longitudinal grooving and the overall reduction in surface roughness.

This project demonstrates the effectiveness of diamond grinding as a cost-effective solution for improving the smoothness of bridge decks. The success of the U.S. 30 bridge project highlights the potential for similar applications on other existing bridge decks with smoothness issues, reinforcing the value of this technique in the concrete industry.

“On U.S. 30, we were able to reverse conditions on a very rough existing bridge deck surface that had definite smoothness issues, achieving an improvement of 76-to-79 percent. The motoring public will recognize and be very pleased with such a difference,” said Scott Eilken, Quality Saw and Seal.

» TEAM MEMBERS

- **Owner:** Illinois DOT
- **Grinding Contractor:** Quality Saw and Seal



ABOUT IGGA

The International Grooving & Grinding Association (IGGA) is a non-profit trade association founded in 1972 by a group of dedicated industry professionals committed to the development of the diamond grinding and grooving process for surfaces constructed with Portland cement concrete and asphalt. In 1995, the IGGA joined in affiliation with the American Concrete Pavement Association (ACPA) to form what is now referred to as the Concrete Pavement Preservation Partnership (IGGA/ACPA CP3). The IGGA/ACPA CP3 now serves as the lead industry representative and technical resource in the development and marketing of optimized pavement surfaces, concrete pavement restoration and pavement preservation around the world.