

CPR – REBUILT TO LAST



Diamond Grinding Test and Trial Project in Winnipeg, Manitoba

>>> DIAMOND GRINDING

THE CITY OF WINNIPEG in Manitoba, Canada completed the area's first diamond grinding project in the summer of 2008. Since then, the City has completed a total of 119,500 square meters of diamond grinding on three major streets within the city limits. According to Ken Boyd, Support Services Engineer for the Winnipeg Public Works Department, the project was undertaken to assess diamond grinding as a preservation treatment for concrete pavement of various ages. Though the original contract had called for grinding only on the Brookside Project, the city decided to add the Plessis Road and Kenaston Boulevard sections due to the vast improvement diamond grinding made to the pavement surface. The streets completed were Kenaston Boulevard, a 250 millimeter plain doweled concrete pavement constructed in 1995, Brookside Boulevard, a 250 millimeter plain doweled concrete pavement constructed in 1997 and Plessis Road, a 230 millimeter plain doweled concrete pavement constructed in 2007.

Prior to diamond grinding, the streets were generally in good condition and had received full depth and partial depth repairs. The initial average IRI smoothness was 2.31 m/km on Kenaston Boulevard, 1.59 m/km on Brookside Boulevard and 2.93 m/km on Plessis Road. The project specifications required that only the main lanes be addressed and that the final

surface be uniform with 95 percent of the surface textured and ground in a longitudinal direction. Grinding was completed within 125mm of the curb face, where applicable, and auxiliary lanes were feathered where the vertical lip was greater than 6mm. The grinding depth was not to exceed 20mm.

The final IRI was an average of 1.09 m/km on Kenaston Boulevard, 0.74 m/km on Brookside Boulevard, and 1.45 m/km on Plessis Road. The total cost of the project was \$566,250 (Canadian) and was completed in 22 working days. The diamond grinding treatment process is expected to extend the service life of these pavements by at least 15 years. The excellent results of this project will lead the way to acceptance of CPP and diamond grinding techniques not only in Winnipeg, but throughout Canada.

"In our city, more than 90 percent of the street infrastructure is concrete pavement, so we are looking for a means to restore and maintain our concrete pavement surfaces," said Boyd. "I was very satisfied with the results as taxpayers are receiving smoother pavements that will last longer. Additionally, the experience gained from the project will be used to develop future projects. In fact, we are already planning preservation treatments on some streets for 2010."

TEAM MEMBERS

- City of Winnipeg, Public Works Department (Owner)
- Geniver Consulting (Onsite inspection)
- Kupskey Consulting (Technical assistance)
- Penhall Company (Contractor)
- Diamond Surface, Inc. (Contractor)