

# PREFACE

Pavement preservation is becoming more and more important in preserving the conditions of the national highway system. More than 1.75 trillion dollars have been invested in the highway system. Managing and preserving this investment is increasingly the goal of highway agencies around the country. More and more agencies are realizing the benefits of having a sound pavement preservation program. These benefits include improved pavement performance, increased mobility and roadway safety, overall improved customer satisfaction, increased pavement life, and reduced life-cycle costs.

The California Department of Transportation (Caltrans) has been a leader in promoting and advancing pavement preservation technology. Considerable effort has been devoted towards this goal. In 2001, Caltrans developed a maintenance technical advisory guide (MTAG) for flexible pavements. The Federal Highway Administration is currently developing a website for sharing the knowledge contained in MTAG. Because of the latest advances in pavement preservation technologies, Caltrans Division of Maintenance decided to update MTAG by incorporating the most current information and innovation results into the document. The 2nd edition of the MTAG for flexible pavement preservation has recently been completed and reviewed.

Caltrans has also established the Pavement Preservation Task Group (PPTG), a partnership between Caltrans, industry, local agencies and academia to work on important pavement preservation issues. This group decided to expand MTAG to include maintenance strategies for rigid pavements. The first edition of MTAG for rigid pavements was completed in 2006. Caltrans and the PPTG have reviewed the guide and provided extensive comments and recommendations to the present edition.

This 2nd edition consists of eight chapters. Chapter 1 is introduction, presenting a brief overview and purpose of pavement preservation, a discussion of common distresses found in California's concrete roadways, the materials used in maintenance treatments, and important design considerations. Chapter 2 presents a discussion on surface characteristics while Chapter 3 presents a framework for selection of rigid pavement maintenance treatments. Chapters 4 through 8 provide detailed descriptions of five treatments that Caltrans has been successfully using to maintain and preserve their rigid pavements infrastructure. These five treatments include the following:

- Joint Resealing and Crack Sealing;
- Diamond Grinding;
- Dowel Bar Retrofit;
- Isolated Partial and Full Depth Repair; and
- Full Depth Concrete Repair.

This Guide is designed for several levels of use, ranging from general instruction to specific work practice descriptions. It should be of use to District Maintenance Engineers, Maintenance Supervisors, Superintendents, and Field Personnel. Construction personnel and designers will also find the information helpful.

This advisory guide is intended to serve as a comprehensive, useful reference. It will be updated and revised as new information becomes available.

## ACKNOWLEDGMENTS

This document was prepared under the technical direction of Dr. Shakir Shatnawi, Chief of the Office of Pavement Preservation. The document was reviewed by Caltrans Maintenance Personnel, the Pavement Preservation Task Group (PPTG), and the Pavement Standards Team (PST). For questions on the guide, please contact:

Shakir Shatnawi, Chief  
Office of Pavement Preservation  
Division of Maintenance  
Sacramento, CA 95819-4612  
(916) 227-5706

The PPTG was instrumental in the development and review of this Guide. The co-chairs of the PPTG for rigid pavements are Dr. Shakir Shatnawi from Caltrans and Casey Holloway from industry. The PPTG for rigid pavements consists of the following subtask groups:

Subtask Group	Subtask Group Caltrans Co-Chairs/Champions	Subtask Group Industry Co-Chairs/Champions
Diamond Grinding	Richard Stubstad	Casey Holloway
Dowel Bar Retrofit	Kirsten Stahl	Casey Holloway
Joint Re-Seal	Karen Bonnetti	Lowell Parkison
Surface Characteristics	James Lee	Larry Scofield
Research	Michael Samadian	Larry Santucci and Erwin Kohler
Warranties	Jim Cotey	Jack Van Kirk
Quiet Pavements	Bill Farnbach	Larry Scofield
Innovation	Joe Holland	Scott Metcalf and John Roberts
Strategy Selection	Doug Mason	Gary Hicks and John Roberts
Education	Larry Rouen	Brandon Milar and Larry Scofield
Partial/Full Depth Repair	Kirsten Stahl	Vincent Perez

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