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, and reduced life-cycle costs.

The California Department of Transportation (Caltrans) has been a leader in promoting and advancing the pavement preservation technology. Considerable efforts have been devoted in this area. In 2001, Caltrans initiated an effort in developing a maintenance technical advisory guide (MTAG) for flexible pavement. The intention of the guide was to provide technical and uniform guidelines to Caltrans personnel in their pavement maintenance and preservation activities. The first edition of the MTAG for flexible pavements was developed in 2003 and the Federal Highway Administration is currently developing a web-site for sharing the knowledge contained in this guide.

To obtain the most current technology and technical expertise from various agencies and industry, Caltrans established the Pavement Preservation Task Group (PPTG), a partnership between Caltrans, industry, local agencies and academia to work on important pavement preservation issues that related to both the flexible and rigid pavements. Subtask groups focusing on specific areas of expertise were established and they have provided information in support of this document.

As the paving technologies and materials science advances, new innovations in pavement preservation have emerged. This second edition was developed to update the topics covered in the first edition with the most current information and to include the new innovations and new pavement preservation treatment technologies being used in the paving industry. Like the first edition, the second edition addresses maintenance strategies related to the flexible pavements and 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 may also find the information useful.

The second edition of the MTAG for flexible pavement preservation consists of thirteen chapters. Chapter 1 is introduction, presenting a brief overview and purpose of pavement preservation, a brief discussion of common distresses found in flexible pavements on California’s roadways. Chapter 2 describes the materials used in maintenance treatments. Chapter 3 presents a framework for strategy selection process for flexible pavement maintenance and preservation treatments. Chapters 4 through chapter 13 provide a detailed description of various treatments that Caltrans has been using to maintain and preserve the flexible pavements. These treatments include the following:

- Crack Sealing, Crack Filling, and Joint Sealing
- Patching and Edge Repair
- Fog and Rejuvenating Seals
- Chip Seals
- Slurry Seals
- Microsurfacing
- Thin Maintenance Overlays
- Bonded Wearing Courses
- Interlayers
- In-Place Recycling

This advisory guide is intended to serve as a comprehensive, useful reference. The document will be updated and revised as new information become available.
ACKNOWLEDGMENTS

The development of the MTAG has been 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:

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The PPTG reviewed the first edition of the MTAG and provided many technical comments. These comments set the stage for the second edition. The co-chairs of the PPTG for flexible pavements are Dr. Shakir Shatnawi from Caltrans and Gary Hildebrand from industry. The PPTG for flexible pavements consists of the following subtask groups:

<table>
<thead>
<tr>
<th>Subtask Group</th>
<th>Subtask Group</th>
<th>Subtask Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binders</td>
<td>Kee Foo</td>
<td>Edgard Hitti</td>
</tr>
<tr>
<td>Chip Seals</td>
<td>Shawn Rizzutto</td>
<td>Joe Platt</td>
</tr>
<tr>
<td>Crack Seal/Joint Re-Seal</td>
<td>Karen Bonnetti</td>
<td>Lowell Parkinson</td>
</tr>
<tr>
<td>Education</td>
<td>Larry Rouen</td>
<td>Brandon Milar and Larry Scofield</td>
</tr>
<tr>
<td>Fog seals/rejuvenators</td>
<td>John Fox</td>
<td>Bob McCrea</td>
</tr>
<tr>
<td>Innovation</td>
<td>Joe Holland</td>
<td>Scott Metcalf and John Roberts</td>
</tr>
<tr>
<td>Integrating Pavement Preservation with PMS</td>
<td>Susan Massey</td>
<td>David Peshkin</td>
</tr>
<tr>
<td>Pavement Management - Local Agencies</td>
<td>Sui Tan</td>
<td>Margot Yapp</td>
</tr>
<tr>
<td>Interlayers</td>
<td>Khalid Ghuzlan</td>
<td>Scott Dmytrow</td>
</tr>
<tr>
<td>Patching and Repair</td>
<td>John Poppe</td>
<td>Paul Noring</td>
</tr>
<tr>
<td>Recycling</td>
<td>Joe Peterson</td>
<td>Don Matthews</td>
</tr>
<tr>
<td>Research</td>
<td>Michael Samadian</td>
<td>Larry Santucci and Erwin Kohler</td>
</tr>
<tr>
<td>Slurry Seal/Microsurfacing</td>
<td>Hamid Saadatnejadi</td>
<td>Steve Olsen</td>
</tr>
<tr>
<td>Strategy Selection</td>
<td>Douglas Mason</td>
<td>Gary Hicks and John Roberts</td>
</tr>
<tr>
<td>Thin Overlays</td>
<td>Cathrina Barros</td>
<td>Skip Brown</td>
</tr>
<tr>
<td>Warranties</td>
<td>Jim Cotey</td>
<td>Jack Van Kirk</td>
</tr>
</tbody>
</table>

The pavement preservation task group co-chairs have provided technical assistance and review comments at various stages of the second edition. Their assistance is gratefully acknowledged.
# TABLE OF CONTENTS

## CHAPTER 1 INTRODUCTION

1.1 OVERVIEW

1.2 PURPOSE OF PAVEMENT PRESERVATION

  1.2.1 Definition
  1.2.2 Pavement Preservation Concept
  1.2.3 Benefits of Pavement Preservation
  1.2.4 Treatment Selection and the Optimum Timing for the Treatment

1.3 FUNDAMENTALS OF FLEXIBLE PAVEMENTS

  1.3.1 Function of Pavements
  1.3.2 Factors Affecting Pavement Performance

1.4 FLEXIBLE PAVEMENT DISTRESSES

  1.4.1 Cracking
  1.4.2 Deformation
  1.4.3 Deterioration
  1.4.4 Mat Problems
  1.4.5 Problems Associated with Seal Coats

1.5 DISTRESS TREATMENTS

1.6 REFERENCES

## CHAPTER 2 MATERIALS

2.1 OVERVIEW

2.2 ASPHALT BINDERS

  2.2.1 Paving Asphalt (Asphalt Cement) Constituent
  2.2.2 Paving Asphalt Manufacture
  2.2.3 Asphalt Specifications

2.3 ASPHALT EMULSIONS

  2.3.1 Emulsion Constituent
  2.3.2 Emulsions Manufacture
  2.3.3 Emulsifiers and Types of Emulsion
  2.3.4 Anionic Emulsions versus Cationic Emulsions
  2.3.5 Specifications and Testing

2.4 CUTBACK ASPHALTS

  2.4.1 Cutbacks Asphalts
  2.4.2 Manufacturing
  2.4.3 Specifications and Testing

2.5 POLYMER MODIFIED BINDERS
2.5.1 Polymers and Polymer Modified Binders.........................................................2-12
2.5.2 Polymer Modified Binder Manufacture............................................................2-12
2.5.3 Polymer Modified Asphalts ..............................................................................2-14
2.6 ASPHALT RUBBER .....................................................................................................2-14
2.6.1 Asphalt Rubber Constituent..............................................................................2-14
2.6.2 Asphalt Rubber Manufacture ...........................................................................2-16
2.6.3 Caltrans Specification Requirements for Asphalt Rubber................................2-16
2.7 AGGREGATES ............................................................................................................2-18
2.7.1 Aggregate Properties........................................................................................2-18
2.7.2 Aggregate Manufacture....................................................................................2-19
2.8 STORAGE AND HANDLING .........................................................................................2-19
2.8.1 Asphalt Binders ................................................................................................2-20
2.8.2 Asphalt Emulsions ............................................................................................2-21
2.8.3 Aggregates ........................................................................................................2-25
2.9 SAMPLING REQUIREMENTS ......................................................................................2-25
2.9.1 Sampling Guidelines.........................................................................................2-26
2.9.2 Sample Delivery................................................................................................2-26
2.10 REFERENCES ...........................................................................................................2-27

CHAPTER 3 FRAMEWORK FOR TREATMENT SELECTION ........... 3-1
3.1 GENERAL CONSIDERATIONS.......................................................................................3-1
3.2 SELECTION PROCESS ..................................................................................................3-2
  3.2.1 Assess the Existing Conditions ...........................................................................3-2
  3.2.2 Determine the Feasible Treatment Options .......................................................3-2
  3.2.3 Analyse and Compare the Feasible Treatment Options .....................................3-6
3.3 REFERENCES ...............................................................................................................3-9

CHAPTER 4 CRACK SEALING, CRACK FILLING, AND JOINT SEALING ................................................................. 4-1
4.1 OVERVIEW ...................................................................................................................4-1
4.2 PROJECT SELECTION ..................................................................................................4-4
  4.2.1 Project Planning..................................................................................................4-4
  4.2.2 Seal or Fill..........................................................................................................4-4
  4.2.3 Treatment Performance......................................................................................4-7
4.3 MATERIALS .................................................................................................................4-8
  4.3.1 Materials and Specifications ..............................................................................4-8
  4.3.2 Storage and Handling of Materials ....................................................................4-9
  4.3.3 Material Placement Methods ...........................................................................4-10
TABLE OF CONTENTS

CHAPTER 5 PATCHING AND EDGE REPAIR

5.1 OVERVIEW

5.1.1 Patching

5.1.2 Dig Outs

5.1.3 Edge Repairs

5.1.4 Surface Reinstatement

5.2 PROJECT SELECTION

5.2.1 Potholes

5.2.2 Edge Failure

5.2.3 Costs and Performance

5.2.4 Design and Specifications

5.3 CONSTRUCTION

5.3.1 Patching

5.3.2 Dig Outs

5.3.3 Edge Repairs

5.3.4 Surface Reinstatement

5.4 TROUBLESHOOTING AND FIELD CONSIDERATIONS

5.4.1 Troubleshooting Guide

5.4.2 Field Considerations

5.5 REFERENCES

CHAPTER 6 FOG AND REJUVENATING SEALS

6.1 OVERVIEW

6.1.1 Fog Seal
<table>
<thead>
<tr>
<th>6.1.2 Rejuvenating Seal</th>
<th>6-1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>6.2 PROJECT SELECTION</strong></td>
<td>6-2</td>
</tr>
<tr>
<td>6.2.1 Fog Seal</td>
<td>6-2</td>
</tr>
<tr>
<td>6.2.2 Rejuvenating Seal</td>
<td>6-4</td>
</tr>
<tr>
<td><strong>6.3 MATERIALS</strong></td>
<td>6-5</td>
</tr>
<tr>
<td>6.3.1 General Terminology</td>
<td>6-5</td>
</tr>
<tr>
<td>6.3.2 Materials and Specifications</td>
<td>6-6</td>
</tr>
<tr>
<td>6.3.3 Design Considerations</td>
<td>6-6</td>
</tr>
<tr>
<td><strong>6.4 CONSTRUCTION</strong></td>
<td>6-6</td>
</tr>
<tr>
<td>6.4.1 General Description</td>
<td>6-6</td>
</tr>
<tr>
<td>6.4.2 Site Conditions</td>
<td>6-7</td>
</tr>
<tr>
<td>6.4.3 Surface Preparation</td>
<td>6-7</td>
</tr>
<tr>
<td>6.4.4 Materials Preparation</td>
<td>6-8</td>
</tr>
<tr>
<td>6.4.5 Application Rates and Spraying</td>
<td>6-9</td>
</tr>
<tr>
<td>6.4.6 Estimating Application Rates</td>
<td>6-10</td>
</tr>
<tr>
<td>6.4.7 Traffic Control</td>
<td>6-10</td>
</tr>
<tr>
<td>6.4.8 Safety (Personal Protection Equipment)</td>
<td>6-10</td>
</tr>
<tr>
<td>6.4.9 Quality control</td>
<td>6-10</td>
</tr>
<tr>
<td>6.4.10 Post Treatment</td>
<td>6-11</td>
</tr>
<tr>
<td><strong>6.5 TROUBLESHOOTING AND FIELD CONSIDERATIONS</strong></td>
<td>6-12</td>
</tr>
<tr>
<td>6.5.1 Troubleshooting Guide</td>
<td>6-12</td>
</tr>
<tr>
<td>6.5.2 Dos and Don’ts</td>
<td>6-13</td>
</tr>
<tr>
<td>6.5.3 Field Considerations</td>
<td>6-13</td>
</tr>
<tr>
<td><strong>6.6 REFERENCES</strong></td>
<td>6-21</td>
</tr>
</tbody>
</table>

**CHAPTER 7 CHIP SEALS**

<table>
<thead>
<tr>
<th>7.1 OverOverview</th>
<th>7-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1.1 Types of Chip Seals</td>
<td>7-1</td>
</tr>
<tr>
<td>7.1.2 Binder Types</td>
<td>7-2</td>
</tr>
<tr>
<td><strong>7.2 PROJECT SELECTION</strong></td>
<td>7-3</td>
</tr>
<tr>
<td><strong>7.3 DESIGN AND SPECIFICATIONS</strong></td>
<td>7-5</td>
</tr>
<tr>
<td>7.3.1 Material Specifications</td>
<td>7-5</td>
</tr>
<tr>
<td>7.3.2 Chip Seal Design</td>
<td>7-5</td>
</tr>
<tr>
<td><strong>7.4 CONSTRUCTION</strong></td>
<td>7-11</td>
</tr>
<tr>
<td>7.4.1 Construction Process</td>
<td>7-11</td>
</tr>
<tr>
<td>7.4.2 Preparation</td>
<td>7-11</td>
</tr>
<tr>
<td>7.4.3 Joints</td>
<td>7-13</td>
</tr>
<tr>
<td>7.4.4 Spraying Equipment</td>
<td>7-13</td>
</tr>
</tbody>
</table>
### TABLE OF CONTENTS

- **7.4.5 Haul Trucks** .......................................................... 7-17
- **7.4.6 Rolling** .................................................................. 7-17
- **7.4.7 Brooming** ............................................................. 7-18

- **7.5 Field Testing** .............................................................. 7-19

- **7.6 Troubleshooting and Field Considerations** .................. 7-20
  - **7.6.1 Troubleshooting Guide** .......................................... 7-20
  - **7.6.2 Field Considerations** ............................................. 7-22

- **7.7 References** ................................................................. 7-29

---

### CHAPTER 8 SLURRY SEALS ................................................. 8-1

- **8.1 Overview** ................................................................. 8-1
  - **8.1.1 General Description** .............................................. 8-1
  - **8.1.2 Purpose of a Slurry Seal** ....................................... 8-2

- **8.2 Materials** ................................................................. 8-2
  - **8.2.1 Asphalt Emulsion** .................................................. 8-3
  - **8.2.2 Aggregates** ........................................................... 8-4
  - **8.2.3 Mineral Filler and Additives** ................................. 8-6

- **8.3 Mix Design** ............................................................. 8-6
  - **8.3.1 Prescreening** ....................................................... 8-7
  - **8.3.2 Job Mix Design** .................................................... 8-7
  - **8.3.3 Final Testing** ....................................................... 8-9
  - **8.3.4 A Modern, Rational Mix Design for Slurry Surfacing Systems** 8-10

- **8.4 Project Selection** ..................................................... 8-10
  - **8.4.1 Distress and Application Considerations** ............... 8-10
  - **8.4.2 Performance of Slurry Seals** ................................. 8-11

- **8.5 Construction** .......................................................... 8-11
  - **8.5.1 Safety and Traffic Control** ...................................... 8-12
  - **8.5.2 Equipment Requirements** ...................................... 8-12
  - **8.5.3 Stockpile / Project Staging Area Requirements** ....... 8-13
  - **8.5.4 Surface Preparation** ............................................. 8-14
  - **8.5.5 Application Conditions** ........................................ 8-15
  - **8.5.6 Quality Issues** .................................................... 8-16
  - **8.5.7 Post Construction Conditions** ................................. 8-19
  - **8.5.8 Post-Treatments** .................................................. 8-20

- **8.6 Troubleshooting and Field Considerations** ................. 8-21
  - **8.6.1 Troubleshooting Guide** .......................................... 8-21
  - **8.6.2 Field Considerations** ............................................. 8-23

- **8.7 References** ............................................................. 8-28
CHAPTER 9 MICROsurfacing.............................................................. 9-1
9.1 OVERVIEW.........................................................................................9-1
   9.1.1 General Description ................................................................. 9-1
   9.1.2 Types of Slurry Surfacing ....................................................... 9-2
9.2 MATERIALS ....................................................................................9-2
   9.2.1 Asphalt Emulsion ................................................................. 9-3
   9.2.2 Aggregates .............................................................................9-5
   9.2.3 Mineral Filler and Additives ................................................ 9-6
9.3 MIX DESIGN ..................................................................................9-6
   9.3.1 Prescreening .........................................................................9-7
   9.3.2 Job Mix Design ................................................................. 9-7
   9.3.3 Final Testing .........................................................................9-10
9.4 PROJECT SELECTION ................................................................. 9-10
   9.4.1 Distress and Application Considerations ................................ 9-10
   9.4.2 Performance of Microsurfacing ............................................ 9-11
9.5 CONSTRUCTION .........................................................................9-11
   9.5.1 Safety and Traffic Control ..................................................... 9-12
   9.5.2 Equipment Requirements .................................................... 9-12
   9.5.3 Stockpile / Project Staging Area Requirements .................. 9-14
   9.5.4 Surface Preparation ............................................................ 9-14
   9.5.5 Application Conditions ...................................................... 9-16
   9.5.6 Types of Applications ........................................................ 9-16
   9.5.7 Quality Issues ......................................................................9-18
   9.5.8 Post Construction Conditions ........................................... 9-21
   9.5.9 Post-Treatments ................................................................. 9-22
9.6 TROUBLESHOOTING AND FIELD CONSIDERATIONS .......... 9-24
   9.6.1 Troubleshooting Guide ......................................................... 9-24
   9.6.2 Field Considerations ........................................................ 9-26
9.7 REFERENCES .............................................................................9-32

CHAPTER 10 THIN MAINTENANCE OVERLAYS.............................10-1
10.1 OVERVIEW .............................................................................. 10-1
10.2 DENSE-GRADED OVERLAYS ................................................ 10-1
   10.2.1 Dense-Graded Mixes ......................................................... 10-1
   10.2.2 Dense-Graded Overlays Performance ................................ 10-2
   10.2.3 Dense-Graded Overlays Design and Specifications ............ 10-4
   10.2.4 Dense-Graded Overlays Material Requirements ............... 10-5
### TABLE OF CONTENTS

**10.2.5 Dense-Graded Asphalt Concrete (DGAC) Overlays Construction** ............. 10-6

### 10.3 OPEN-GRADED OVERLAYS ...................................................................... 10-11

10.3.1 Open-Graded Mixes .............................................................................. 10-11

10.3.2 Open-Graded Overlays Performance ...................................................... 10-12

10.3.3 Open-Graded Overlays Job Selection ...................................................... 10-13

10.3.4 Open-Graded Overlays Design and Specifications .................................... 10-15

10.3.5 Open-Graded Overlays Construction ...................................................... 10-18

### 10.4 GAP-GRADED OVERLAYS ..................................................................... 10-20

10.4.1 Gap-Graded Mixes .................................................................................. 10-20

10.4.2 Gap-Graded Overlays Performance ........................................................ 10-21

10.4.3 Gap-Graded Overlays Job Selection ........................................................ 10-22

10.4.4 Open-Graded Overlays Design and Specifications .................................... 10-22

10.4.5 Gap-Graded Overlays Construction ........................................................ 10-23

### 10.5 TROUBLESHOOTING AND FIELD CONSIDERATIONS ......................... 10-25

10.5.1 Troubleshooting Guide ............................................................................ 10-25

10.5.2 Field Considerations ............................................................................... 10-31

### 10.6 REFERENCES ............................................................................................ 10-40

**CHAPTER 11 BONDED WEARING COURSE .............................................. 11-1**

### 11.1 OVERVIEW ............................................................................................... 11-1

### 11.2 DESIGN AND SPECIFICATIONS .............................................................. 11-2

11.2.1 Hot Mix Asphalt ..................................................................................... 11-2

11.2.2 BWC Gap Graded ................................................................................... 11-4

11.2.3 BWC Open Graded ................................................................................ 11-4

11.2.4 RBWC Gap Graded ................................................................................ 11-5

11.2.5 RBWC Open Grade ............................................................................... 11-5

11.2.6 Polymer-Modified Asphalt Emulsion Membrane .................................... 11-5

### 11.3 PROJECT SELECTION .............................................................................. 11-5

11.3.1 Distress and Application Considerations ................................................. 11-5

11.3.2 Performance ............................................................................................ 11-6

### 11.4 CONSTRUCTION ....................................................................................... 11-11

11.4.1 Safety and Traffic Control ...................................................................... 11-11

11.4.2 Equipment Requirements ....................................................................... 11-11

11.4.3 Materials Transfer Vehicle ...................................................................... 11-13

11.4.4 Mix Production and Handling ................................................................. 11-14

11.4.5 Surface Preparation ................................................................................ 11-14

11.4.6 Application ............................................................................................. 11-14

11.4.7 Opening to Traffic .................................................................................. 11-17
11.5 Troubleshooting and Field Considerations ............................................. 11-17
  11.5.1 Troubleshooting Guide ................................................................. 11-17
  11.5.2 Field Considerations ................................................................. 11-19
11.6 References ......................................................................................... 11-23

CHAPTER 12 INTERLAYERS ....................................................................... 12-1

CHAPTER 13 IN-PLACE RECYCLING ...................................................... 13-1

  13.1 Overview ............................................................................................ 13-1
    13.1.1 Cold In-Place Recycling .............................................................. 13-1
    13.1.2 Hot In-Place Recycling ............................................................... 13-2
  13.2 Materials ............................................................................................ 13-2
    13.2.1 Project and Materials Selection ................................................ 13-2
    13.2.2 CIR Materials .............................................................................. 13-3
    13.2.3 HIR Materials .............................................................................. 13-5
  13.3 Mix Design .......................................................................................... 13-8
    13.3.1 Philosophy of Mix Design .......................................................... 13-8
    13.3.2 Cold In-Place Recycling Mix Design ......................................... 13-8
    13.3.3 Hot In-Place Recycling Mix Design ......................................... 13-9
  13.4 Construction ...................................................................................... 13-11
    13.4.1 Cold In-Place Construction ....................................................... 13-11
    13.4.2 Hot In-Place Construction ........................................................ 13-17
  13.5 Quality Control .................................................................................. 13-21
    13.5.1 Quality Control of CIR ............................................................... 13-21
    13.5.2 Quality Control of HIR ............................................................... 13-23
  13.6 Troubleshooting The Field ................................................................. 13-26
    13.6.1 Troubleshooting Guide for Cold In-Place Recycling ............... 13-27
    13.6.2 Troubleshooting Guide for Hot In-Place Recycling .......... 13-28
  13.7 References ......................................................................................... 13-28
LIST OF TABLES

Table 1-1 Distress Type and Mechanism ................................................................. 1-16
Table 1-2 General Treatment Guidelines for HMA Distress .................................. 1-19

Table 2-1 Superpave Asphalt Binder Testing Equipment and Purposes ................. 2-3
Table 2-2 Performance Graded (PG) Asphalt Grade Specifications ....................... 2-4
Table 2-3 Performance Graded Modified Asphalt Binder ....................................... 2-15
Table 2-4 Performance Based Asphalt Binder ....................................................... 2-17
Table 2-5 Mixing, Spraying and Storage Temperatures of Emulsions ..................... 2-25
Table 2-6 Acceptable Switch Load Combinations ................................................. 2-26

Table 4-1 FHWA Criteria for Crack Sealing or Filling ........................................... 4-6
Table 4-2 Crack Sealer and Filler Specifications .................................................. 4-10
Table 4-3 Placement Method Considerations ....................................................... 4-13
Table 4-4 Trouble Shooting Crack Sealing and Filling Projects ............................. 4-19
Table 4-5 Common Problems and Related Solutions ............................................. 4-20

Table 5-1 Approaches for Surface Reinstatement ................................................. 5-11
Table 5-2 Common Patching Problems and Related Solutions ............................. 5-12

Table 6-1 Typical Application Rates ................................................................. 6-9
Table 6-2 Trouble Shooting Fog Seal Problems ................................................. 6-11
Table 6-3 Common Problems and Related Solutions ........................................... 6-12

Table 7-1 AEMA Recommendations for Application Rates ............................... 7-3
Table 7-2 Binder/Chip Seal Combinations for Addressing Specific Distress Mechanisms 7-4
Table 7-3 Common Problems and Related Solutions ........................................... 7-9
Table 7-4 Road Type and Associated Aggregate Loss (Whip-Off) Factor ............... 7-9
Table 7-5 Correction Factors Associated with Existing Road Conditions .............. 7-9
Table 7-6 Binder Content Correction Based on Surface Hardness and Related Traffic Volume 7-10
Table 7-7 Troubleshooting Chip Seal Problems (Hot/Emulsion/Asphalt Rubber) .... 7-21
Table 7-8 Common Problems and Related Solutions ........................................... 7-22

Table 8-1 Typical Emulsion Properties for Quick Setting Asphalt Emulsions .......... 8-4
Table 8-2 Caltrans Slurry Surfacing Aggregate Gradings ....................................... 8-5
Table 8-3 General Aggregate Properties and Aggregate Requirements ............... 8-6
Table 8-4 Typical Mix Requirements ................................................................... 8-8
Table 8-5 Job Selection Criteria ........................................................................... 8-11
Table 8-6 Trouble Shooting Slurry Seal Job Problems ......................................... 8-22
Table 8-7 Common Problems and Related Solutions ........................................... 8-23

Table 9-1 Typical Emulsion Properties for Microsurfacing & Polymer Modified Slurry Quick Set 9-4
Table 9-2 Caltrans Slurry Surfacing Aggregate Gradings ....................................... 9-5
Table 9-3 General Aggregate Properties and Aggregate Requirements ............... 9-6
Table 9-4 Typical Mix Requirements ................................................................... 9-8
Table 9-5 Job Selection Criteria ........................................................................... 9-10
Table 9-6 Trouble Shooting Microsurfacing Seal Job Problems ........................... 9-25
Table 9-7 Common Problems and Related Solutions ........................................... 9-26
Table 10-1  Aggregate Requirements for Asphalt Concrete Mixes ................................................. 10-2
Table 10-2  Mix Properties ......................................................................................................... 10-5
Table 10-3  Recommended Application Temperatures ............................................................. 10-8
Table 10-4  Acceptance - Method ............................................................................................. 10-10
Table 10-5  Aggregate Quality Requirements .......................................................................... 10-11
Table 10-6  Aggregate Gradation Requirements ...................................................................... 10-17
Table 10-7  Asphalt Binder Selection ...................................................................................... 10-17
Table 10-8  Laydown Guidelines ............................................................................................... 10-19
Table 10-9  Application Temperatures .................................................................................... 10-20
Table 10-10 Rubberized Hot Mix Asphalt - Gap Graded .......................................................... 10-21
Table 10-11 Recommended Application Temperatures ............................................................. 10-24
Table 10-12 Troubleshooting Guide ........................................................................................ 10-26
Table 10-13 Common Problems and Related Solutions ............................................................ 10-28

Table 11-1 Binder Grades used in Pavement Climatic Regions for BWC Gap Graded .............. 11-2
Table 11-2 Based Stock used in Rubberized Asphalt ................................................................. 11-3
Table 11-3 BWC and RBWC Gradation Selection Characteristics ......................................... 11-3
Table 11-4 Distress Severity or Extent That Can Be Treated With a BWC ................................ 11-6
Table 11-5 Summary of PCR and IRI Results for BWC over JCP Sections ............................ 11-8
Table 11-6 Hydraulic Conductivity as an Indication of Spray Reduction Characteristics ........ 11-9
Table 11-7 Common Problems and Related Solutions .............................................................. 11-18

Table 13-1 Troubleshooting guidelines for partial-depth cold in-place recycling operations .... 13-27
Table 13-2 Troubleshooting guidelines for hot in-place recycling operations ......................... 13-28
LIST OF FIGURES

Figure 1-1 Typical pavement performance curve and maintenance/rehabilitation time ...................... 1-2
Figure 1-2 Concept of optimal timing for pavement preservation .......................................................... 1-3
Figure 1-3 The Cost of NOT carrying out maintenance in a timely way ................................................. 1-3
Figure 1-4 Typical flexible pavement structure and stress distribution .................................................. 1-4
Figure 1-5 Longitudinal Cracks ............................................................................................................. 1-7
Figure 1-6 Fatigue Cracks ..................................................................................................................... 1-8
Figure 1-7 Transverse Cracks ............................................................................................................... 1-8
Figure 1-8 Reflective Cracks .................................................................................................................. 1-8
Figure 1-9 Block Cracks ......................................................................................................................... 1-9
Figure 1-10 Edge Cracks ......................................................................................................................... 1-9
Figure 1-11 Rutting ................................................................................................................................. 1-9
Figure 1-12 Corrugations ....................................................................................................................... 1-10
Figure 1-13 Shoving ............................................................................................................................... 1-10
Figure 1-14 Depression ......................................................................................................................... 1-10
Figure 1-15 Overlay Bumps .................................................................................................................. 1-11
Figure 1-16 Delamination ...................................................................................................................... 1-11
Figure 1-17 Potholes .............................................................................................................................. 1-11
Figure 1-18 Patching ............................................................................................................................. 1-12
Figure 1-19 Raveling .............................................................................................................................. 1-12
Figure 1-20 Stripping ............................................................................................................................. 1-12
Figure 1-21 Polished Aggregate .......................................................................................................... 1-13
Figure 1-22 Pumping ............................................................................................................................ 1-13
Figure 1-23 Segregation (HMA) .......................................................................................................... 1-13
Figure 1-24 Checking ............................................................................................................................ 1-14
Figure 1-25 Bleeding ............................................................................................................................. 1-14
Figure 1-26 Rock Loss .......................................................................................................................... 1-14
Figure 1-27 Segregation (seal coats) ................................................................................................... 1-15
Figure 1-28 Bleeding/fat spot (seal coats) ............................................................................................ 1-15
Figure 1-29 Delamination (seal coats) .................................................................................................. 1-15

Figure 2-1 Asphalt Emulsion Illustrations .............................................................................................. 2-5
Figure 2-2 Colloid Mill Cross Section .................................................................................................... 2-6
Figure 2-3 Emulsion Plant Operations Schematic .................................................................................. 2-6
Figure 2-4 Material Compatibility and Reactivity of Emulsions ............................................................... 2-8
Figure 2-5 Relative Viscosity vs Binder Content ..................................................................................... 2-10
Figure 2-6 Settlement and Storage Stability Test ................................................................................... 2-10
Figure 2-7 Sieve Test ............................................................................................................................. 2-11
Figure 2-8 Torsional Recovery Test ..................................................................................................... 2-11
Figure 2-9 Typical Polymer Blending Plant .......................................................................................... 2-13
Figure 2-10 Micrographs of Polymer Systems ....................................................................................... 2-13
Figure 2-11 Asphalt Rubber “Reaction” ............................................................................................... 2-18
Figure 2-12 Micrographs: Asphalt Rubber Extender Oil Effects ............................................................ 2-18

Figure 3-1 Treatment Strategy Based on Pavement Condition ............................................................... 3-1
Figure 3-2 Typical Pavement Rating Form – Visual ........................................................................... 3-3
Figure 3-3 Caltrans Maintenance Treatment Matrix .............................................................................. 3-4
Figure 3-4 Caltrans General Guidelines for Effective Maintenance Treatments on Cracks .................. 3-5
Figure 3-5 Treatment Timing versus Costs ........................................................................................... 3-6
Figure 7-1  Single Chip Seal ........................................................................................................ 7-1
Figure 7-2  Multiple Chip Seal.................................................................................................... 7-2
Figure 7-3  Illustration of ALD .................................................................................................. 7-7
Figure 7-4  Illustration of Flakiness of Aggregates .................................................................. 7-7
Figure 7-5  Effects of Compaction on Voids in Cubical Aggregate ............................................. 7-7
Figure 7-6  Aggregate Shape Characteristics ............................................................................. 7-8
Figure 7-7  Construction Process for Chip Seals ......................................................................... 7-12
Figure 7-8  Start and Stop Passes on Roofing Felt ..................................................................... 7-14
Figure 7-9  Spray Distributor ..................................................................................................... 7-14
Figure 7-10 Spray Bar with Nozzle Arrangement ................................................................. 7-14
Figure 7-11 Spray Bar Height Arrangements ............................................................................. 7-15
Figure 7-12 Scrub Seal Application ......................................................................................... 7-15
Figure 7-13 Chip Spreader ........................................................................................................ 7-16
Figure 7-14 Lever and Wedge Effect ......................................................................................... 7-16
Figure 7-15 Pneumatic (Rubber Tired) Roller .......................................................................... 7-18
Figure 7-16 Brooming Process, Shown on a Shoulder Seal .................................................................. 7-19
Figure 7-17 Kick Broom ........................................................................................................... 7-19
Figure 7-18 Field Test Methods ................................................................................................ 7-19
Figure 8-1  Schematic of a Slurry Surfacing Machine ............................................................... 8-1
Figure 8-2  Micrograph of a Latex/Asphalt Cured Film .............................................................. 8-4
Figure 8-3  Good Mixture Consistency ..................................................................................... 8-7
Figure 8-4  Wet Track Abrasion Test Apparatus and Test in Progress ......................................... 8-8
Figure 8-5  Loaded Wheel Test and Excess Asphalt Test Apparatus and Test Samples ............... 8-9
Figure 8-6 Determining Optimum Binder Content ..................................................................... 8-10
Figure 8-7 Slurry Surfacing Machine ....................................................................................... 8-13
Figure 8-8 Slurry Seal Box with Augers ................................................................................. 8-13
Figure 8-9 A Typical Stockpile and Project Staging Area .............................................................. 8-13
Figure 8-10 Surface Preparation Methods ................................................................................ 8-14
Figure 8-11 Effect of Temperature on Break Rate ....................................................................... 8-15
Figure 8-12 Longitudinal Joints ............................................................................................... 8-16
Figure 8-13 Transverse Joints ................................................................................................... 8-17
Figure 8-14 Edges and Shoulders ............................................................................................. 8-17
Figure 8-15 Poor Mixes .............................................................................................................. 8-18
Figure 8-16 Wash Boarding Effect ............................................................................................ 8-18
Figure 8-17 Traffic Damage Caused by Early Trafficking ........................................................... 8-19
Figure 8-18 Damage Due to Post Application Heavy Rain with Shear ....................................... 8-19
Figure 8-19 Rolling a Slurry Surfacing ....................................................................................... 8-20
Figure 8-20 Sweeping with a Suction Broom ............................................................................. 8-20
Figure 8-21 Sanding at Cross Street ......................................................................................... 8-21
Figure 9-1  Schematic of a Slurry Surfacing Machine ............................................................... 9-1
Figure 9-2  Micrograph of a Latex/Asphalt Cured Film .............................................................. 9-5
Figure 9-3  Good Mixture Consistency ..................................................................................... 9-7
Figure 9-4 Wet Track Abrasion Test Apparatus and Test in Progress .......................................... 9-8
Figure 9-5 Loaded Wheel Test and Excess Asphalt Test Apparatus and Test Samples ............... 9-9
Figure 9-6 Determining Optimum Binder Content ..........................
Figure 9-7  Slurry Surfacing Machine................................................................. 9-13
Figure 9-8  Slurry Seal Box with Augers............................................................. 9-13
Figure 9-9  Microsurfacing Equipment and Application ....................................... 9-13
Figure 9-10  Rut Box (11)................................................................................... 9-14
Figure 9-11  Adjustable Edge Box (11)............................................................... 9-14
Figure 9-12  A Typical Stockpile and Project Staging Area................................ 9-14
Figure 9-13  Surface Preparation Methods......................................................... 9-15
Figure 9-14  Effect of Temperature on Break Rate............................................. 9-16
Figure 9-15  Scratch Coat Principles and Treatment........................................... 9-17
Figure 9-16  Rut Filling Principle and Sectional Diagram.................................... 9-17
Figure 9-17  Suitable and Unsuitable Surfaces to Use Microsurfacing as a Rut Filler 9-18
Figure 9-18  Longitudinal Joints....................................................................... 9-18
Figure 9-19  Transverse Joints .......................................................................... 9-19
Figure 9-20  Edges and Shoulders..................................................................... 9-19
Figure 9-21  Poor Mixes.................................................................................... 9-20
Figure 9-22  Wash Boarding Effect ................................................................... 9-20
Figure 9-23  Traffic Damage Caused by Early Trafficking............................... 9-21
Figure 9-24  Damage Due to Post Application Heavy Rain with Shear............... 9-22
Figure 9-25  Rolling a Slurry Surfacing............................................................. 9-22
Figure 9-26  Rolling of an Airport Taxiways..................................................... 9-23
Figure 9-27  Sweeping with a Suction Broom.................................................. 9-23
Figure 9-28  Sanding at a Cross Street............................................................... 9-24

Figure 10-1  Stone Matrices Created by Different Gradings.............................. 10-1
Figure 10-2  SAM Seal and SAMI..................................................................... 10-7
Figure 10-3  Transverse Joint Formation ........................................................... 10-8
Figure 10-4  Formation of Longitudinal Joints................................................... 10-9
Figure 10-5  Rolling Regimes............................................................................ 10-10
Figure 10-6  Typical Texture............................................................................ 10-13

Figure 11-1  Change in Skid Resistance Over Time............................................ 11-7
Figure 11-2  Change in Skid Resistance with Speed.......................................... 11-7
Figure 11-3  The cracks remained the same width through-out the core, except at the membrane... 11-9
Figure 11-4  Emulsion Membrane and Mix Spreading....................................... 11-9
Figure 11-5  District 7 Rt. 103, BWC Gap Graded, Constructed in 2005................. 11-10
Figure 11-6  District 6 Rt. 99 Projects................................................................. 11-10
Figure 11-7  District 3 US 50, BWC Gap Graded Alpine mix, Constructed in 2002...... 11-10
Figure 11-8  District 10 I-5, RBWC Open Graded, Constructed 2005................ 11-10
Figure 11-9  Roadtec Spray Paver.................................................................... 11-12
Figure 11-10  Vögele Spray Paver................................................................. 11-12
Figure 11-11  Emulsion Membrane and Mix Spreading.................................... 11-13
Figure 11-12  Freshly Laid BWC................................................................. 11-13
Figure 11-13  Paving the Shoulder of Rt. 84 with BWC Type O.......................... 11-16
Figure 11-14  Making Transverse Butt Joints.................................................. 11-16
Figure 11-15  Roller Position During Application.............................................. 11-17

Figure 13-1  Summary of Process to Arrive at the Best Option for Pavement Rehabilitation 13-3
Figure 13-2  CIR Construction Flow Chart....................................................... 13-12
Figure 13-3  Schematic of Single Unit CIR Train................................................. 13-13
Figure 13-4  A Variation of a Single Unit CIR Train............................................ 13-14
Figure 13-5  A Single Unit Train that Allows for Addition of Virgin Aggregate........ 13-14
Figure 13-6 Two-Unit CIR Train in Operation ................................................................. 13-15
Figure 13-7 Schematic of Multi-Unit CIR Equipment Train ............................................... 13-15
Figure 13-8 Surface Recycling Process (Heater-Scarification) ........................................... 13-18
Figure 13-9 Single-Pass HIR Repaving Train ..................................................................... 13-19
Figure 13-10 Example of a Remixing Process HIR Train .................................................. 13-20
Figure 13-11 Example of a Remixing HIR Train in Action ................................................. 13-20
Figure 13-12 Example of Remixing HIR (Virgin HMA) ..................................................... 13-21