



MAINTENANCE TECHNICAL ADVISORY GUIDE

Volume II - Rigid Pavement Preservation

Second Edition



State of California Department of Transportation

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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.

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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:

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TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION	1-1
1.1 PURPOSE OF PAVEMENT PRESERVATION	1-1
1.1.1 Definition.....	1-1
1.1.2 Pavement Preservation Concept	1-1
1.1.3 Benefits of Pavement Preservation.....	1-2
1.1.4 Treatment Selection and the Optimum Timing for the Treatment.....	1-2
1.2 PCC PAVEMENT DESIGN AND PERFORMANCE IN CALIFORNIA	1-3
1.2.1 Design and Performance.....	1-3
1.2.2 Causes of Rigid Pavement Deterioration.....	1-5
1.2.3 Faulting Mechanism and Effort on Addressing Faulting.....	1-5
1.3 COMMON PCC PAVEMENT DISTRESS TYPES.....	1-6
1.3.1 Joint Deficiencies and Cracking	1-7
1.3.2 Surface Defects.....	1-11
1.3.3 Other Miscellaneous Distresses	1-12
1.3.4 Summary.....	1-15
1.4 MATERIALS CONSIDERATIONS	1-17
1.4.1 Concrete Constituent Materials	1-18
1.4.2 Cementitious Repair Materials.....	1-20
1.4.3 Specialty Repair Materials.....	1-20
1.4.4 Bituminous Materials	1-20
1.4.5 Joint Sealants.....	1-20
1.4.6 Dowel Bars and Tie Bars	1-21
1.5 DESIGN CONSIDERATIONS	1-21
1.5.1 Traffic	1-21
1.5.2 Environment	1-21
1.5.3 Windows of Opportunities.....	1-22
1.5.4 Traffic Control.....	1-23
1.5.5 Item Codes.....	1-23
1.6 KEY REFERENCES	1-23
CHAPTER 2 SURFACE CHARACTERISTICS	2-1
2.1 IMPORTANT SURFACE CHARACTERISTICS	2-1
2.2 RIDE QUALITY.....	2-1
2.2.1 Definitions	2-2
2.2.2 Measuring Smoothness.....	2-2
2.3 TEXTURE	2-7
2.3.1 Definitions of Surface Texture.....	2-8

2.3.2 Techniques to Create Texture.....	2-10
2.3.3 Measurement of Surface Texture.....	2-12
2.3.4 Summary.....	2-15
2.4 SURFACE FRICTION.....	2-15
2.4.1 Background.....	2-15
2.4.2 Factors that Affect Pavement Friction.....	2-16
2.4.3 Measurement of Pavement Friction.....	2-18
2.4.4 Current Surface Friction Criteria and Measurement Practices.....	2-24
2.4.5 Summary.....	2-25
2.5 NOISE.....	2-26
2.6 ACHIEVING DESIRED SURFACE CHARACTERISTICS.....	2-26
2.6.1 Ride.....	2-26
2.6.2 Texture and Friction.....	2-27
2.6.3 Noise.....	2-27
2.7 KEY REFERENCES.....	2-27
CHAPTER 3 FRAMEWORK FOR TREATMENT SELECTION.....	3-1
3.1 FACTORS TO CONSIDER.....	3-1
3.1.1 Ride.....	3-1
3.1.2 Skid.....	3-1
3.1.3 Noise.....	3-1
3.1.4 Distress Type.....	3-2
3.1.5 Durability/Longevity.....	3-2
3.2 SELECTION PROCESS.....	3-2
3.3 ASSESS THE EXISTING PAVEMENT CONDITIONS.....	3-2
3.3.1 Project Information Review.....	3-3
3.3.2 Field Distress Survey.....	3-4
3.3.3 Field Sampling and Testing of Existing Pavement.....	3-4
3.3.4 Performance Requirements.....	3-5
3.4 DETERMINE THE FEASIBLE TREATMENT OPTIONS.....	3-6
3.5 COMPARE THE FEASIBLE OPTIONS.....	3-9
3.5.1 Life Cycle Costing.....	3-9
3.5.2 Compare and Select Options.....	3-10
3.6 KEY REFERENCES.....	3-11
CHAPTER 4 JOINT RESEALING AND CRACK SEALING.....	4-1
4.1 PURPOSE AND DESCRIPTION OF TREATMENT.....	4-1
4.2 MATERIALS AND SPECIFICATIONS.....	4-2

4.2.1 Sealant Properties	4-2
4.2.2 Sealant Types and Specifications	4-3
4.3 PROJECT SELECTION	4-5
4.4 DESIGN CONSIDERATIONS	4-5
4.4.1 Material Selection	4-5
4.4.2 Joint Resealing	4-6
4.4.3 Filling	4-7
4.4.4 Special Considerations.....	4-7
4.4.5 Reservoir Design for Joint Resealing.....	4-8
4.4.6 Special Considerations for Cracks.....	4-11
4.4.7 Typical Item Codes	4-12
4.5 CONSTRUCTION PROCESS	4-12
4.5.1 Traffic Control and Safety.....	4-13
4.5.2 Equipment.....	4-13
4.5.3 Remove Old Sealant	4-14
4.5.4 Shape Reservoir / Reface Joint.....	4-14
4.5.5 Clean Joint Reservoir.....	4-14
4.5.6 Install Backer Rod.....	4-15
4.5.7 Install Sealant.....	4-15
4.5.8 Crack Sealing	4-17
4.5.9 Trafficking	4-17
4.5.10 Quality.....	4-18
4.6 SUMMARY	4-20
4.7 PROJECT CHECKLIST AND TROUBLESHOOTING GUIDE	4-20
4.7.1 Project Checklist	4-20
4.7.2 Troubleshooting Guide.....	4-23
4.8 KEY REFERENCES	4-25
CHAPTER 5 DIAMOND GRINDING AND GROOVING	5-1
5.1 DESCRIPTION OF TREATMENT	5-1
5.1.1 Overview.....	5-1
5.1.2 Purpose.....	5-2
5.1.3 Advantages	5-3
5.1.4 Limitations.....	5-4
5.2 DESIGN AND SPECIFICATION.....	5-4
5.2.1 Terminology.....	5-4
5.2.2 Design Parameters	5-5
5.2.3 Specifications.....	5-5

5.2.4 Typical Item Codes	5-6
5.3 PROJECT SELECTION	5-7
5.3.1 Applications	5-7
5.3.2 Project Evaluation	5-9
5.3.3 Expected Lives of Treatments	5-11
5.4 CONSTRUCTION PROCESS	5-12
5.4.1 Traffic Control and Safety	5-12
5.4.2 Equipment	5-13
5.4.3 Productivity	5-17
5.4.4 Slurry Removal	5-17
5.4.5 Sequencing Work	5-17
5.4.6 Job Review - Quality Issues	5-18
5.5 PROJECT CHECKLIST AND TROUBLESHOOTING GUIDE	5-19
5.5.1 Project Checklist	5-19
5.5.2 Troubleshooting Guide	5-21
5.6 KEY REFERENCES	5-23
CHAPTER 6 DOWEL BAR RETROFIT	6-1
6.1 BACKGROUND.....	6-1
6.1.1 Load Transfer Efficiency	6-1
6.1.2 Measuring Load Transfer Efficiency	6-2
6.2 PURPOSE AND DESCRIPTION OF TREATMENT	6-2
6.3 PROJECT SELECTION	6-3
6.3.1 Factors to Consider	6-3
6.3.2 Expected Performance	6-4
6.4 DESIGN AND MATERIAL CONSIDERATIONS.....	6-5
6.4.1 Load Transfer Devices	6-5
6.4.2 Dowel Bar Specification	6-5
6.4.3 Dowel Bar Layout	6-7
6.4.4 Backfill Material	6-8
6.4.5 Design of Slot-Dowel-Chair System	6-9
6.4.6 Typical Item Codes	6-10
6.5 CONSTRUCTION PROCESS	6-11
6.5.1 Traffic Control and Safety	6-11
6.5.2 Dowel Bar Retrofit Process	6-11
6.5.3 Cutting Sides of Slot	6-12
6.5.4 Remove Concrete from Slot	6-14
6.5.5 Seal Joint or Crack	6-15

6.5.6 Placing Dowel Bars.....	6-16
6.5.7 Backfilling.....	6-17
6.5.8 Opening to Traffic	6-19
6.5.9 Diamond Grinding.....	6-19
6.5.10 Joint Sealing	6-19
6.5.11 Job Review-Quality Control.....	6-19
6.6 PROJECT CHECKLIST AND TROUBLESHOOTING GUIDE	6-22
6.6.1 Factors to Consider.....	6-22
6.6.2 Project Checklist	6-22
6.6.3 Troubleshooting Guide.....	6-25
6.7 KEY REFERENCES	6-27
CHAPTER 7 ISOLATED PARTIAL DEPTH CONCRETE REPAIR.....	7-1
7.1 PURPOSE AND DESCRIPTION OF TREATMENT	7-1
7.1.1 Partial Depth Repair	7-1
7.2 MATERIALS AND SPECIFICATIONS.....	7-1
7.2.1 Materials Selection.....	7-2
7.2.2 Cementitious Materials	7-2
7.2.3 Specialty Materials.....	7-4
7.2.4 Bituminous Materials	7-5
7.2.5 Bonding Agents.....	7-5
7.3 ENGINEERING CONSIDERATIONS.....	7-6
7.3.1 Project Selection.....	7-6
7.3.2 Concurrent Work.....	7-6
7.3.3 Repair Locations and Boundaries.....	7-6
7.3.4 Typical Item Codes	7-7
7.4 CONSTRUCTION PROCESS	7-8
7.4.1 Traffic Control and Safety	7-8
7.4.2 Equipment.....	7-8
7.4.3 Repair Locations	7-8
7.4.4 Concrete Sawing and Removal.....	7-9
7.4.5 Cleaning and Repair Area Preparation	7-11
7.4.6 Joint Preparation.....	7-12
7.4.7 Materials Placement.....	7-13
7.4.8 Finishing.....	7-13
7.4.9 Curing.....	7-13
7.4.10 Joint Sealing	7-14
7.4.11 Opening to Traffic	7-14

7.4.12 Job Review-Quality Issues.....	7-14
7.5 PROJECT CHECKLIST AND TROUBLESHOOTING GUIDE	7-15
7.5.1 Project Checklist	7-15
7.5.2 Troubleshooting Guides	7-18
7.6 KEY REFERENCES	7-18
CHAPTER 8 FULL DEPTH CONCRETE REPAIR	8-1
8.1 PURPOSE AND DESCRIPTION OF TREATMENT	8-1
8.1.1 Full Depth Repair.....	8-1
8.2 MATERIALS AND SPECIFICATIONS.....	8-1
8.2.1 Materials Selection.....	8-1
8.2.2 Cementitious Materials	8-2
8.2.3 Bituminous Materials	8-3
8.3 ENGINEERING CONSIDERATIONS.....	8-3
8.3.1 Project Selection.....	8-3
8.3.2 Concurrent Work.....	8-4
8.3.3 Repair Locations and Boundaries	8-4
8.3.4 Load Transfer Devices	8-5
8.3.5 Typical Item Codes	8-6
8.4 CONSTRUCTION PROCESS	8-7
8.4.1 Traffic Control and Safety	8-7
8.4.2 Equipment.....	8-7
8.4.3 Repair Locations	8-7
8.4.4 Concrete Sawing and Removal.....	8-8
8.4.5 Cleaning and Repair Area Preparation	8-9
8.4.6 Provision of Load Transfer	8-10
8.4.7 Joint Preparation.....	8-11
8.4.8 Bond Breaker.....	8-12
8.4.9 Materials Placement.....	8-12
8.4.10 Finishing.....	8-12
8.4.11 Curing.....	8-13
8.4.12 Joint Sealing	8-13
8.4.13 Opening to Traffic	8-13
8.4.14 Job Review-Quality Issues.....	8-14
8.5 PROJECT CHECKLIST AND TROUBLESHOOTING GUIDE	8-14
8.5.1 Project Checklist	8-14
8.5.2 Troubleshooting Guides	8-17
8.6 KEY REFERENCES	8-19

APPENDIX A – PAVEMENT PRESERVATION DEFINITIONS

APPENDIX B – GLOSSARY OF TERMS

APPENDIX C – LIST OF ACRONYMS

APPENDIX D – USEFUL WEBSITES

**APPENDIX E – CALTRANS SURFACE TREATMENT REVIEW
CHECKLIST AND EVALUATION**

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 (Galehouse et al, 2003).....	1-3
Figure 1-3 Slab drop-off caused by base erosion (Stahl, 2006)	1-6
Figure 1-4 Spalling at the joint (Caltrans, 2004a)	1-7
Figure 1-5 Faulting (FHWA, 2003)	1-8
Figure 1-6 Example of joint seal damage (FHWA, 2003)	1-8
Figure 1-7 Examples of longitudinal joint crack (FHWA, 2003).....	1-9
Figure 1-8 Transverse cracking (FHWA, 2003).....	1-9
Figure 1-9 Examples of cracks at different stages (Caltrans, 2004a).....	1-10
Figure 1-10 Corner break/cracking (Caltrans, 2004a).....	1-10
Figure 1-11 D-Cracking (Caltrans, 2004b)	1-11
Figure 1-12 Map-cracking (FHWA, 2003)	1-11
Figure 1-13 Example of scaling (FHWA, 2003)	1-11
Figure 1-14 Example of surface polish/polished aggregate (FHWA, 2003).....	1-12
Figure 1-15 Severe surface abrasion with third stage cracking (Caltrans, 2004b).....	1-12
Figure 1-16 Example of popouts (FHWA, 2003).....	1-12
Figure 1-17 Example of blow-ups (FHWA, 2003)	1-13
Figure 1-18 Examples of pumping and water bleeding (Caltrans, 2004a).....	1-13
Figure 1-19 Lane/shoulder drop-off (FHWA, 2003).....	1-14
Figure 1-20 Settlement (Caltrans, 2004b).....	1-14
Figure 2-1 Profilographs for measuring roughness (Budras, 2001)	2-3
Figure 2-2 Response-Type Road Roughness Measuring System - Mays Meter (Budras, 2001)	2-4
Figure 2-3 Road Roughness Profiling Devices (Budras, 2001)	2-5
Figure 2-4 Non-Contact Lightweight Profiling Devices (Budras, 2001)	2-6
Figure 2-5 Multi-laser Profiler Vehicle (Budras, 2001).....	2-7
Figure 2-6 ROSAN System (Budras, 2001).....	2-7
Figure 2-7 Illustration of PIARC pavement surface characteristic classifications and their impact on pavement performance measures (ACPA, 2006a)	2-8
Figure 2-8 Differences between Macrotexture and Microtexture (Shahin, 1994).....	2-9
Figure 2-9 Photo of original “sand patch” test using Ottawa sand and spreading tool	2-12
Figure 2-10 Photo of volumetric texture depth (“sand patch”) test equipment with glass beads and hockey puck (Wambold and Henry, 2002).....	2-13
Figure 2-11 Photo of Circular Texture Meter (CTMeter) (Abe et. al, 2001)	2-14
Figure 2-12 Photo of outflow meter in use (Wambold and Henry, 2002).....	2-14
Figure 2-13 Pennsylvania DOT E-274 locked-wheel friction tester (Wambold and Henry, 2002) ...	2-18
Figure 2-14 Photo of Mu Meter (Wambold and Henry, 2002)	2-20
Figure 2-15 Photo of SCRIM (Wambold and Henry, 2002).....	2-20
Figure 2-16 Photo of GRIPTESTER-towed mode (Wambold and Henry, 2002).....	2-21
Figure 2-17 Photo of SAAB Surface Friction Tester (Wambold and Henry, 2002)	2-21
Figure 2-18 Photo of Norsometer ROAR-Variable Friction Tester (Wambold and Henry, 2002)	2-22
Figure 2-19 Photo of British Pendulum Tester (Wambold and Henry, 2002)	2-23
Figure 2-20 Photo of Dynamic Friction Tester (courtesy of Nippou Sango Co, Ltd)	2-23
Figure 4-1 Illustration of sealant shape factor (FHWA, 2004).....	4-9
Figure 4-2 Joint sealant configurations (FHWA, 2004)	4-10
Figure 4-3 A typical five cell seal cross-section (ACPA, 1993)	4-11

Figure 5-1 Concrete pavement surface after diamond grinding	5-1
Figure 5-2 Concrete pavement surface after diamond grooving.	5-2
Figure 5-3 Faulting at a joint (FHWA, 2006).....	5-2
Figure 5-4 Diamond grinding and grooving terminology (FHWA, 2005).....	5-4
Figure 5-5 Faulting mechanism.....	5-8
Figure 5-6 Reliability levels for the expected survivability of California diamond ground pavements (Caltrans, 2005).....	5-12
Figure 5-7 Schematic of grinding machine (MnDOT, 2005).....	5-13
Figure 5-8 Typical grinding machine, front view (Courtesy of Caltrans).....	5-14
Figure 5-9 Grinding process (Courtesy of Caltrans).....	5-14
Figure 5-10 Diamond blades (Courtesy of Caltrans)	5-15
Figure 5-11 Typical cutting head (Courtesy of Caltrans).....	5-15
Figure 5-12 Pavement surface after diamond grinding (Courtesy of IGGA).....	5-16
Figure 5-13 Pavement surface texture behind grinding head (Courtesy of Caltrans)	5-16
Figure 5-14 Sequence of repairs in the concrete pavement restoration process (FHWA, 2005)	5-18
Figure 6-1 Load transfer (Caltrans, 2006a)	6-2
Figure 6-2 Photo of dowels with chair, end caps, and foam core insert in place (Caltrans, 2006a).....	6-6
Figure 6-3 Dowel layout figure (Caltrans, 2005)	6-7
Figure 6-4 Dowel/Slot layout (Caltrans, 2005)	6-10
Figure 6-5 Schematics of the construction process (FHWA/ACPA, 1997).....	6-12
Figure 6-6 Slot cutting machine with close-up of ganged cutter heads (Caltrans, 2006a).....	6-13
Figure 6-7 Three pairs of slots cut in a single pass by a ganged slot cutting machine.....	6-13
Figure 6-8 Details of chair-dowel system in slot.....	6-14
Figure 6-9 Jack hammering (Caltrans, 2006a)	6-14
Figure 6-10 Sandblasting (Caltrans, 2006a).....	6-15
Figure 6-11 Sealing joint/crack (Caltrans, 2006a)	6-16
Figure 6-12 Placing dowel-chair assembly (Caltrans, 2006a).....	6-17
Figure 6-13 Placing backfill (Caltrans, 2006a)	6-18
Figure 6-14 Consolidating backfill (Caltrans, 2006a).....	6-18
Figure 7-1 Marking damage area for removal (FHWA, 2006)	7-9
Figure 7-2 Concrete removal using the saw and patch methodology (FHWA, 2006)	7-10
Figure 7-3 Concrete removal using the mill and patch methodology (FHWA, 2006).....	7-11
Figure 7-4 Cleaning the repair area with sandblasting equipment (FHWA, 2006).....	7-11
Figure 7-5 Placement of bond breaker at joint (FHWA, 1999).....	7-12
Figure 8-1 Caltrans dowel bar design (Caltrans Standard Plan P8, 2006)	8-6
Figure 8-2 Concrete removal using lift out method (Caltrans, 2004)	8-9
Figure 8-3 Dowel bar anchoring in slab face (FHWA, 2001).....	8-11

LIST OF TABLES

Table 1-1 Examples of effectiveness of preventive maintenance (PM).....	1-3
Table 1-2 Summary of factors affecting JPCP pavement distress.....	1-15
Table 1-3 Structural distress and possible contributing factors.....	1-16
Table 1-4 Functional distress and possible contributing factors	1-17
Table 1-5 Most commonly used types of portland cement	1-18
Table 3-1 Suggested data item needs for treatment strategies for rigid pavements (FHWA, 2001)	3-3
Table 3-2 Proposed trigger values and expected life for various PCC maintenance treatments	3-6
Table 3-3 Rigid pavement distress and related repair / preventive maintenance methods.....	3-7
Table 3-4 Trigger and limit values for jointed plain concrete pavements (ACPA, 1998).....	3-8
Table 3-5 Trigger and limit values for jointed reinforced concrete pavements (ACPA, 1998)	3-9
Table 3-6 Example worksheet of a selection process incorporating multiple selected decision factors and assigned weightings.....	3-12
Table 4-1 Sealant descriptions and related specifications	4-3
Table 4-2 Typical item codes for a joint resealing and crack sealing project	4-12
Table 5-1 Typical values for diamond grinding design in California	5-5
Table 5-2 Recommended dimensions for diamond grooving design in California (FHWA, 2004)	5-5
Table 5-3 Typical item codes for a diamond grinding project	5-6
Table 5-4 Trigger values for diamond grinding (FHWA, 2006).....	5-10
Table 5-5 Limit values for diamond grinding (FHWA, 2006).....	5-10
Table 6-1 Summary of project selection criteria	6-4
Table 6-2 Recommended backfill material properties (Jerzak, 1994).....	6-8
Table 6-3 Typical item codes for a dowel bar retrofit project.....	6-10
Table 7-1 Distresses addressed by partial depth repairs for jointed concrete pavements	7-1
Table 7-2 Properties of normal concrete mixtures used as partial depth repair materials.....	7-3
Table 7-3 Properties of specialty cement mixtures used as partial depth repair materials	7-4
Table 7-4 Properties of specialty materials used as partial depth repair materials.....	7-5
Table 7-5 Minimum dimensions of repair area for partial depth repairs.....	7-7
Table 7-6 Typical item codes for an isolated partial depth concrete repair project	7-7
Table 8-1 Distresses addressed by full depth repairs for jointed concrete pavements (FHWA, 2001)	8-2
Table 8-2. High Early-strength mix design and approximate opening times (FHWA, 2001).....	8-3
Table 8-3 Typical item codes for an isolated full depth concrete repair project	8-6
Table 8-4 Anchoring materials and dowel hole recommendations	8-10