

十三、 Slab Stabilization, Diamond Grinding, Grooving, Cold Milling

參考資料：

1. Darter, M. I. “Techniques for Pavement Rehabilitation,” Training Course, FHWA, 1987. (Block 3 Restoration, Module E, F)

Module 3E - Slab Stabilization and Slab Jacking

Introduction

1. Loss of Support
2. “Slab Stabilization” = insertion by pressure of a material beneath the slab and/or subbase to both fill voids and to provide a thin layer that should reduce deflection and resist pumping action.
3. “Slab Jacking” = lifting of the slab at a depression to its original smooth profile.

Materials

1. Cement Grouts (used more extensively)
2. Asphalt Cement
3. Silicone Rubber Foam Material

Cement Grout Mixtures

Asphalt Cement

Equipment for Cement Grouts

Equipment for Asphalt Cement

Cement Grout Slab Stabilization Procedures

1. Location of Areas Needing Slab Stabilization
2. Slab Stabilization Procedures

JCP and CRCP (Figure 7)

3. Effectiveness of Slab Stabilization

4. Estimation of Slab Stabilization Quantities

Asphalt Cement Slab Stabilization Procedures

1. Location of Areas Needing Slab
Stabilization

2. Hole Patterns

3. Stabilization Operations

4. Typical Quantities of Asphalt Pumped

Concurrent Work with Slab Stabilization

Slab Jacking

1. Location of Holes

2. Slab Jacking Procedures

Module 3F - Diamond Grinding, Grooving, and Cold Milling

Introduction

1. Removal of incompressibles and prevention of further intrusion
2. Reduction of water infiltration and chemical intrusion
3. Types of damage
4. Types of Sealants:
 - a. Field-Poured Self-Leveling Sealants (Hot or Cold Poured)
 - b. Preformed Compression Seals
 - c. Field-Poured Non-Self-Leveling Sealants

Factors Affecting Sealant Performance

1. Movement
2. Field-Poured Liquid Sealants
 - Shape factor = $0.67 \sim 1.0$ (Figure 3 and Figure 4)
3. Preformed Compression Seals (Fig. 6)
4. Sealant Properties

Sealing Joints

1. Sealant Removal
2. Refacing for Shape Factor
3. Cleaning
4. Sealant Installation
5. Special Considerations
 - a. Compression Seals
 - b. Low-Modulus Silicone Sealants
 - c. Polymer Sealants
6. Construction, Longitudinal, and Expansion

Joints

7. Sealant Specifications

Crack Sealing

1. Concrete Pavements

- a. Sealant Removal
- b. Routing or Sawing
- c. Crack Reservoir Design
- d. Crack Repair
- e. Cleaning
- f. Sealant Types

2. Flexible Pavements

- a. Sealant Removal
- b. Crack Repair
- c. Cleaning
- d. Sealant Types

