



PRECAST CONCRETE PAVEMENT IMPLEMENTAION IN CALIFORNIA

ACI Concrete Convention, Milwaukee, WI, April 2016

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Pavement Program

California Department of Transportation

Outline

- Introduction
- Implementation Update
- Sample Operation



Precast Construction

General

- Fast
- Durable
- Less space
- Weather Friendly

Pavement

- Less user delay & worker exposure
- Less maintenance
- Less lane closure , lower safety risk
- More construction window

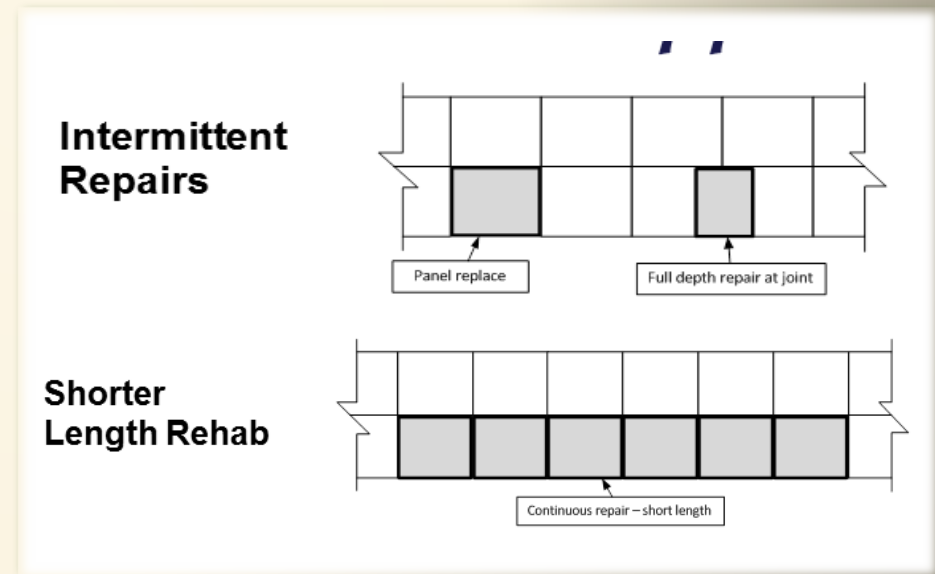


Application

Rapid rehabilitation and re-construction of existing rigid pavements

- Slab Replacement
- Lane Replacement

New Construction ?



Systems

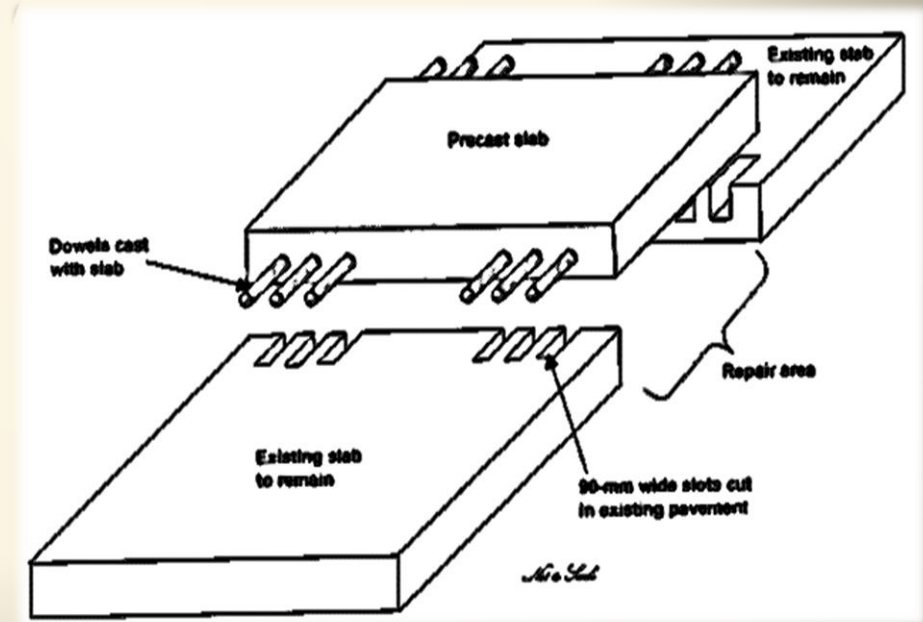
- Jointed
 - Reinforced
 - pre-tensioned
- Continuous
 - post-tensioned



Jointed System

Generic or patented systems:

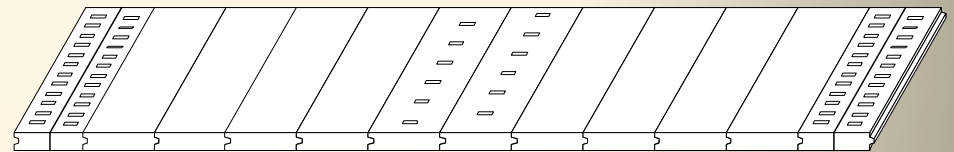
- Connection
- Grading
- Support



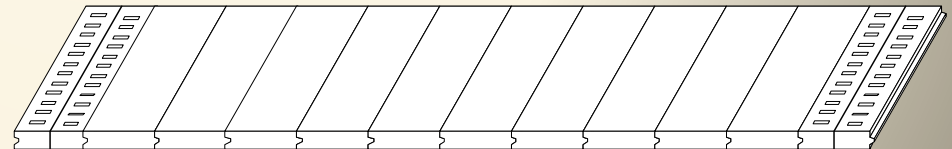
Continuous System

Alterations depending on:

- Post-tensioning location
- Joint configuration



PPCP Central Stressing



PPCP End Stressing @ Surface

Production Rate

Typical production rates/nighttime closure

- Repairs: 15 to 20
- Continuous: 30 to 40

- Record is 60 panels
(about 1000 ft)



Precast Pavement Projects



Location	System	Phase
I-10 El Monte, Los Angeles	PPCP	Completed 2004
San Bernardino, Research Center	PJCP	2005
I-15 Ontario, San Bernardino	PJCP	Completed 2010
I-5/14 Sylmar, Los Angeles	PPCP	Completed 2010
I-680 San Ramon	PPCP & IPSR	Completed 2012
I-710 Los Angeles	PPCP	Construction
I-80 Dixon, Solano	PPCP	Completed 2014
I-580 Alameda	PPCP & IPSR	Completed 2014
I-5 Los Angeles	PPCP & IPSR	Completed 2014
I-405 Los Angeles	PPCP	Completed 2015
I-210 Los Angeles	PJCP, IPSR	Construction
101 (Section 1) Los Angeles	PJCP, IPSR	Construction
101 (Section 2) Los Angeles	PJCP, IPSR	Construction
I-605 Los Angeles	PJCP, IPSR	Construction
I-15 Cajon Pass, San Bernardino	PPCP, IPSR	Construction
I-710 (Phase II) Los Angeles	PPCP	Design
210, 134, 101, 15 Los Angeles, San Bernardino	IPSR	Maintenance Projects
101 Santa Barbara	IPSR	Completed 2015
I-15/215 San Bernardino	IPSR	Construction
57 Los Angeles	IPSR	Design
I-80 Emeryville, Alameda	PJCP	Design

Construction Challenges

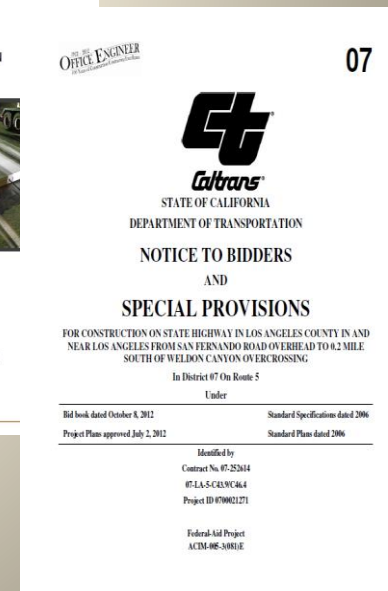
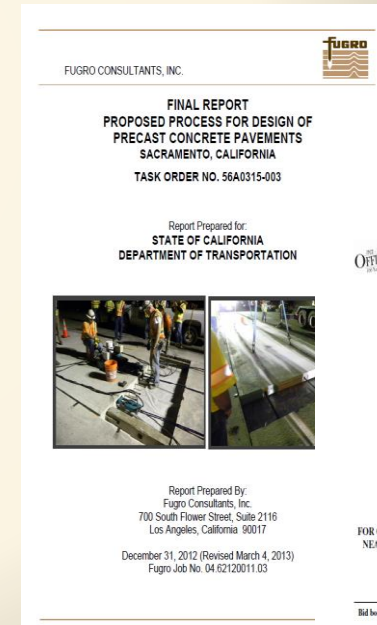
A change of culture in pavement world

- Contractor
- Agency



What is Done

- Design Methodology
- Standards (Specifications and plans)
- Guidelines
- Workshops
- Pilot Projects (lessons learned)



What needs to be done

- Monitoring and Evaluation
- Policy Improvement (design, standards, guides)
- Construction Quality
 - Contractor Qualification
 - Guides & Manuals
 - Training



Future Products

- Final Standards and Guides
- Approved Materials and Systems
- Performance Curves
- Cost & Maintenance Schedule (LCCA)



Sample Operation



Cut Existing



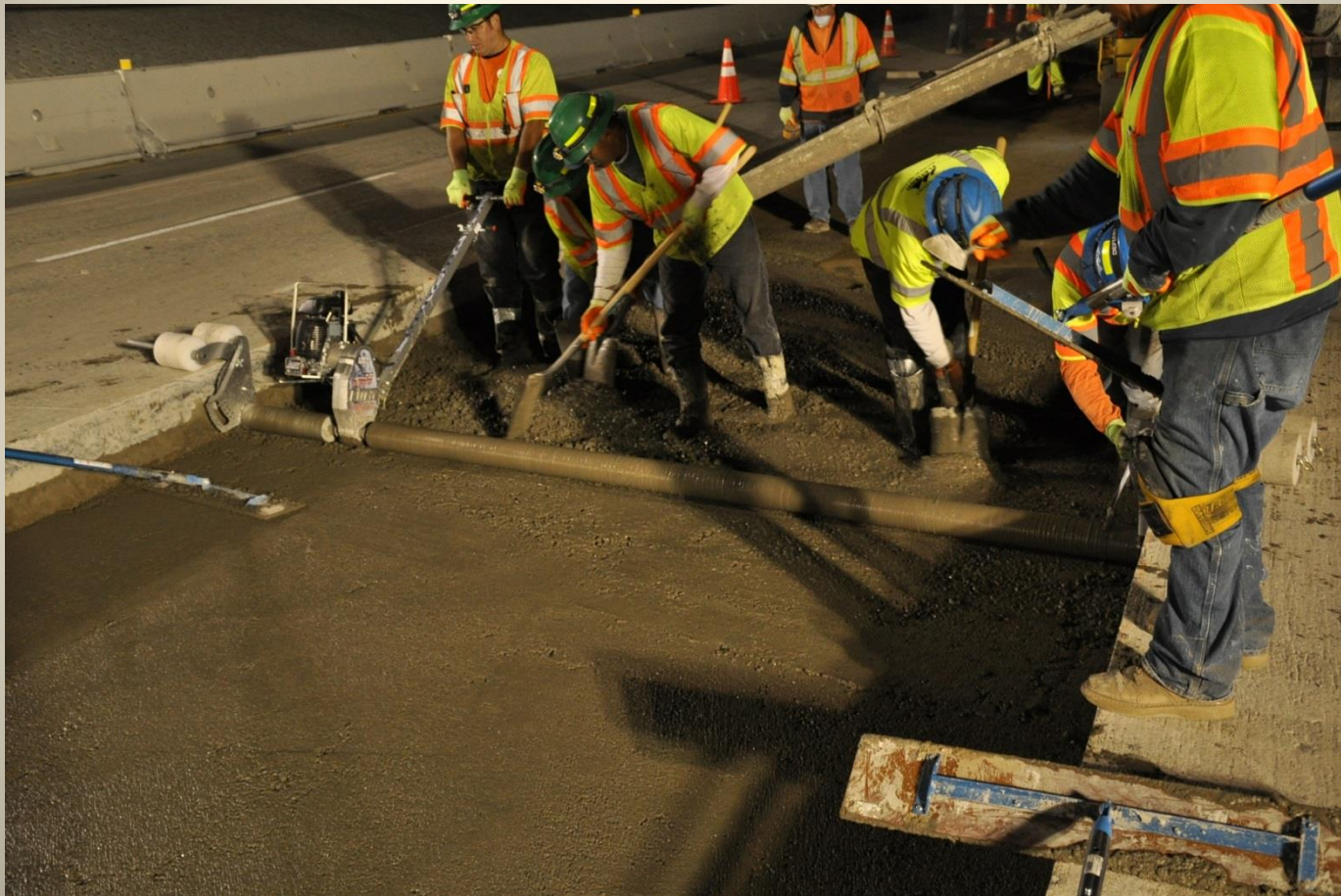
Remove Existing



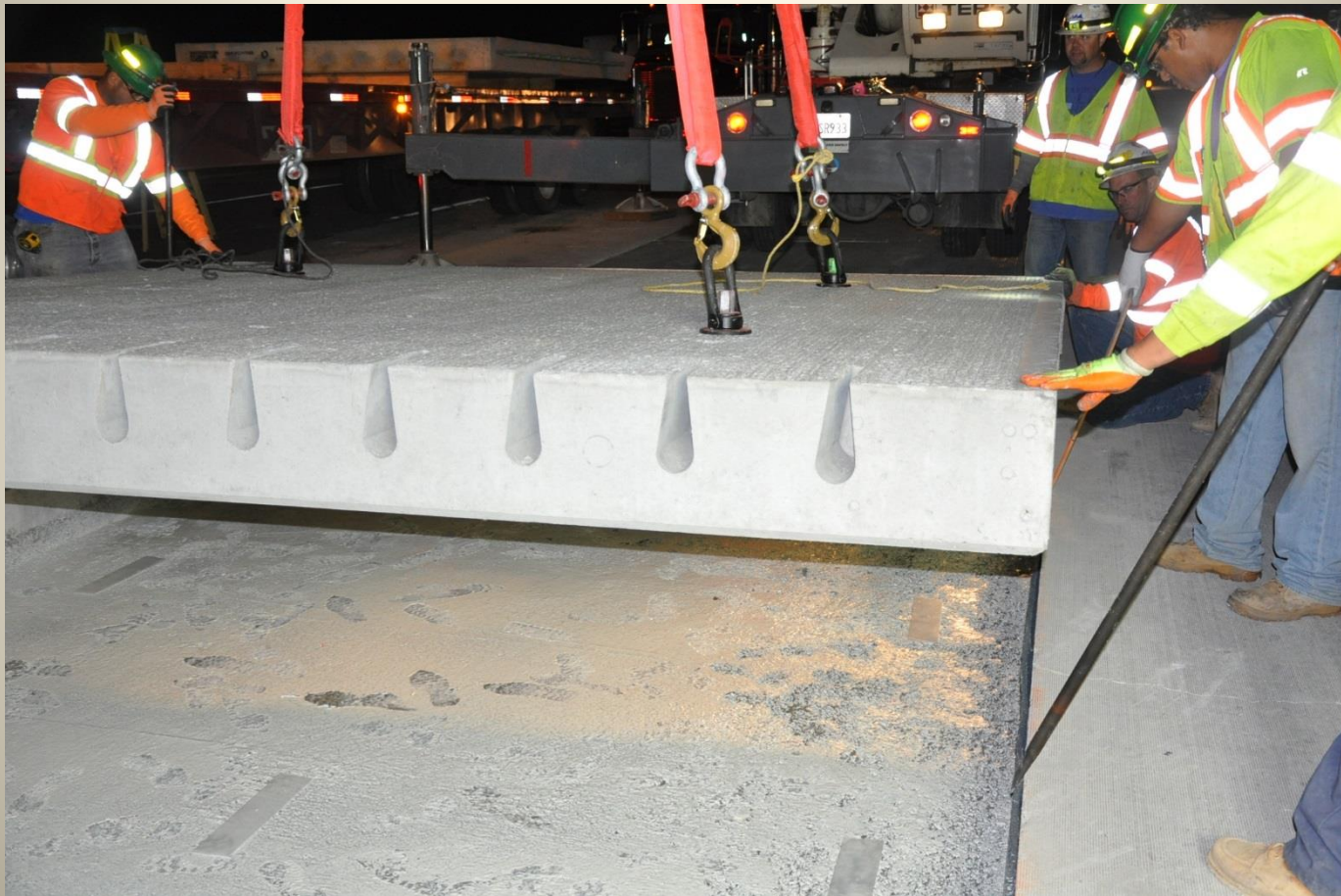
Compact Subgrade



Place Base



Place Panels



Slide Panel



Operation Overview



Bedding Grout



Fill Dowel Slots



Finished Product



Challenges





Questions?

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