

2009 Bridge Construction Forum

HM3 – Bridge Maintenance



Jeff Abercrombie
California Department of Transportation



General Theme

- What Caltrans concerns are the specifications attempting to address?



HMW Methacrylate

- Quality, consistency and longevity
 - Humidity, moisture & temperature
- Repair of deck delaminations
- Full penetration of the cracks
 - Spread rates
- Adequate surface friction (CTM 342)
 - Broadcast sand
 - No Oily residue



Polyester Concrete Overlays

- Resurface deteriorating decks
- Abrasion resistance on new decks
- Crown corrections on widenings



Polyester Concrete Overlays

- Quality, consistency and longevity
 - Humidity, moisture & temperature
- Repair of deck delaminations
- Grade control
 - Smooth Ride and Quantity
- Density and bond strength
- Adequate surface friction (CTM 342)



Developing Specifications

- Increase Working Plans
 - Address and promote discussion
 - Schedule of CTM 342 (Skid)
- Air Monitoring
 - Response to public complaints
- Limits on Temperature & Moisture
 - Consistency
 - Set time concerns
 - Longevity concerns



Developing Specifications

- Mixing requirements
 - Address change to larger quantities
 - Need to record “what” is placed
 - Consistency
- Set times and Lane Openings
 - Generally politically driven – low risk
- Grade Control
 - Attempt to establish a minimum base line
 - Larger production requires more control



Bid Packaging

- Larger groupings of structures
 - Lower project development costs
- FHWA has constraints
 - Limit use of supplemental funds
- Limited resources for site investigations
 - Identify deck repair and profile issues



2009 Bridge Construction Forum

Shall we start the discussion?



Engaging Contract partnering

- What are the issues?
 - Methacrylate
 - Polyester Concrete
- What is needed without specification changes?
 - i.e. What can we agree to for all current spec issues on going contracts?



Engaging Contract partnering

- What the Forum planning group said
 - Quantities for deck repair
 - frequently wrong and adjusting at EWFA
 - Absorption rate of methacrylate
 - varies greatly from specified
 - “Unquantified” lane closure for testing
 - Inefficient traffic charts.
 - Sometimes unconstructible and CT changes after bidding



Engaging Contract partnering

- What are the issues?
- What is needed without specification changes?
 - i.e. What can we agree to for all current spec issues on going contracts?



The Future – Performance Based...

- What are the issues?
 - Are there anything in addition?
- Are performance based specifications achievable?
 - How to define an “End Product”
 - What tests are available?
 - Addressing owner risk and contractor competency (lowest bidder)



The Future – Performance Based...

- What the Forum planning group said
 - Lower the maximum temp to 90°
 - Lower the minimum temp to 45°
 - Raise the maximum humidity to 95%
 - Specify traffic opening time to Schmidt Hammer test
 - Test cores could be done same night
 - Skid test prior to opening



The Future – Performance Based...

- What are the issues?
- Are performance based specifications achievable?
 - How to define an “End Product”
 - What tests are available?
 - Addressing owner risk and contractor competency (lowest bidder)



Bid Packages

- What are the issues?
 - What is difficult (impossible) to bid?
 - What might make it easier?
 - What will keep it a level environment?
- What are the impacts of:
 - Limited traffic windows in % cost?
 - Multiple geographic locations?
 - Unknown quantities?



Bid Packages

- What the Forum planning group said
 - CT-109 is not written for polyester mobile-mixers
 - Air Monitoring requirements lack detail
 - What is grade control?
 - Unclear or inaccurate quantities encourage bid “playing games”
 - May not be getting “good value” when part of larger roadway projects



Bid Packages

- What are the issues?
- What are the impacts of:
 - Limited traffic windows in % cost?
 - Multiple geographic locations?
 - Unknown quantities?



HM3 – Bridge Maintenance

- Summing it all up
 - What are the priorities?
 - How will commit to sheepparding the issue?
 - When will they next meet?

