

Latex Modified Concrete

Mix Design

- SUBMITTED BY LAFARGE ANNUALLY OR ON A PROJECT SPECIFIC BASIS IF OTHER SUPPLIER USED, REFER TO SPECIFICS.
- SUBMIT TO CENTRAL LAB FOR DESIGN APPROVAL

Latex

- 3-copies submitted of manufacturer test reports
- sample of admixture needs to be submitted to central lab, 20 days prior to use on project for acceptance testing.
- One sample is usually adequate for most projects.
- Storage
- Cement - type i or type ii, (from same supplier) only one type
- Water - mixing, cleaning or wetting decks

Aggregates - CA

- Gradation
- Stockpiles - check for moisture the day of pour, protect from moisture cover with plastic etc.
- if excessive moisture is present in fine aggregate it will reduce available mix water and may not be usable for placement.

Definition of excessive moisture: if aggregate moisture higher than available mix water

Proportioning And Mixing Equipment

Submitted by supplier
state personnel should verify calibration of trucks
(be present if possible)

Calibration Of Trucks

- Calibration of cement
- Calibration of aggregates
- Calibration of latex meter

Deck Preparation

- Must meet requirements of specifications
- Sound and mark deck for delamination
- Jackhammers of 30kg/60 lbs for initial removal operations
- Smaller chippers of 15kg/30lbs or smaller if the project manager feels that larger hammers are detrimental to bridge deck.
- Operation of jackhammers no more than 60% from horizontal.
- if less than 50% of deck thickness remains the deck should be taken full depth except in isolated random locations as determined by project manager.

Hydrodemolition

- Calibration of equipment is necessary
- Equipment must be operated by qualified personnel

Reinforcing Bars

- REPLACE AS NECESSARY, LAPPED A MINIMUM OF 0.30m/12" OR AS DIRECTED BY PROJECT MANAGER.
- NEW BARS AND EXISTING BARS MUST HAVE A MINIMUM OF 20mm OR ¾" CLEARANCE AROUND EXPOSED BARS.

Cleaning Deck

- SANDBLAST DECK AND REBAR TO GRAY METAL (REFER TO NEW SPECS FOR ADDITIONAL REQUIREMENTS).

Forms for Full Depth Repair

- FORM FOR AREAS LESS THAN 0.5 sq/m (4 sq/ft) CAN BE SUSPENDED FROM REBAR.

- ➔ LARGER AREAS MUST BE SUPPORTED FROM PRIMARY MEMBERS OF SUPERSTRUCTURE OR SHORED FROM BELOW.

Pre-Placement Conference

- ➔ Contractor, state and supplier should all be present and should be scheduled at least two days or more prior to placement
- ➔ Cover specifications, methods of placement, inspection and potential problems

Dry Run Of Bridge Deck

- ➔ Covered in detail in pre-placement section of training session.

Setting of Gradeline

- ➔ Surveyor should shoot existing gradeline, plot profile and project new gradeline.
- ➔ This must be submitted to project manager prior to approval.
- ➔ Adjustments should be made to grade to produce a smooth riding surface and shall result in at least the minimum concrete fill as shown in plans/contract.
- ➔ Bulk heads and deck joints should be installed to proper grade and longitudinal joints should avoid wheel paths as much as practical.

Placement/Application

Placement (Finishing Machine Must Meet Specification Requirements)

- ➔ Pre-wet deck: wet deck for 2 hours before pour - inspector should verify.
- ➔ cover with plastic to keep moisture in and protect deck from spills.
- ➔ check rate of evaporation at or near deck surface, no more than .73 kg/m²/h (.15 lbs/ft²)
- ➔ ambient temperature of not less than 7 c(45 f)

Mortar Bonding

- Starting out, pour a little latex modified concrete, then broom it over the deck and edges, spreading the mortar mixture.
- Aggregates need to be removed. Keep the mixture ahead of the pour, but not so far it dries out (2m or 6' +/-)

Note: complete application/coverage of mortar is critical to bonding of overlay to existing surface.

Concrete Placement

- Don't place more than 3 meters ahead of finishing machine, need to place continuously.
- A delay of 5 to 20 minutes cover ends of concrete with burlap.
- If stopped more than 20 minutes set a bulkhead in deck.
- Make sure fluids don't settle in low/removed areas - have air compressor available to blow out fluid

Concrete Placement

- Minimal hand finishing - wood floats & fresno only
- Vibrator should be used at all partial depth areas and against edges, bulkheads and expansion joints

Testing

- Air, temperature, unit weight; run as usual
- slump - wait 5 minutes set concrete aside and do not disturb
- If not in specs, adjust mix and retest
- Clean equipment immediately! Wear old clothing/shoes
- Do occasional checks of water/cement ratio and latex yield at least 3-4 per truck.

Curing

- PLACE DOUBLE LAYER OF CLEAN BURLAP (APPROVED EQUAL)
- TIMING IS EVERYTHING! (BETTER TOO SOON THAN TOO LATE) 15 -20 MIN.
- LIGHTLY FOG SPRAY IT, THEN PLACE WHITE PLASTIC
- KEEP BURLAP WET FOR 48 HOURS. VERIFY BURLAP IS WET ENTIRE 48 HOURS
- COLD WEATHER CURING (0 C/32 F)
- CONTINUE WET CURE UNTIL CYLINDERS BREAK AS PER SPECS

Post Inspection

- Straight edge deck. Follow criteria as in previous section (same tolerances)
- After curing, check for delamination/bonding
- If not acceptable, remove and replace (contractor expense)
- Groove it, apply hmwm to cracks if any