

## Concrete Bridge Deck Inspection Checklist

The following are items that need to be inspected.

Note that some specifications described in the following content may not be the same as the specifications followed by your agency. Always check with your State agency's standards and specifications when using these guidelines.

### Checklist

- Check plywood and stay-in-place form condition prior to pour**
- Check expansion device installation, grade, and elevation**
- Assure the railing anchor bolts, bolt holes, or reinforcing steel are in proper position**
- Inspection During Dry Run**
  - Grade – check by survey, also by sighting along screed rails or rail saddles by eye, stringline, or straightedge to locate local bumps or depressions
  - Check grade along edge of deck by same means to avoid edge waviness in the finished deck
  - Crown – check at both ends of placement
  - Finishing machine adjustment – refer to owner's operating and maintenance manual
  - Check minimum rebar cover
  - Verify adequate slab thickness
  - Check deflection of supports under weight of machine
  - Inspect all forming, with extra attention to forming of overhangs and deck corners for strength
  - Check expansion joint openings and blockout depths
  - No welding permitted to reinforcing bars or barrier anchor bars
  - Check for proper support of deck reinforcing bars

### ❑ Finishing Machine Operation

- Verify routine maintenance has been performed on the machine
- Have machine operator demonstrate all control movements
  - Are all movements functioning?
  - Are movements smooth and of proper speed?
- Verify rollers turn in proper direction for skewed deck
- Check the travel limits of the carriage
- Check the time for the carriage to travel side to side across the deck and return. Is it reasonable?
- Visually check machine for hydraulic leaks

### ❑ Environment

- Check weather forecasts the day before, and early on the day of placement for anticipated problems, i.e., heat, wind, rain, snow, cold
- Verify evaporation rate is less than 0.20 lb/sf/hr

### ❑ Inspection Ahead of Finishing Machine

- Assure cleanliness of reinforcing steel and forms
- Check pre-wetting of forms and reinforcing steel. However, guard against ponding or excess water on horizontal forms
- Visually monitor the condition of every load of concrete arriving on deck; call for additional testing if questionable
- Verify water is not added at pump entrance
- Maintain a record of forward progress of placement; compare with required placement rate
- Monitor deposition of concrete
  - Place close to final position
  - Place full thickness, not layered
  - Assure complete consolidation and filling of forms

- Check for minimal segregation
- Check that concrete is evenly and uniformly distributed in front of augers
- Check that concrete is not moved horizontally by vibrators
- Verify that the concrete is placed at the proper elevation near forms or rails to avoid filling large areas with mortar from rollers
- Verify that the rails ahead of the machine are clean

#### **Monitor Machine Finish**

- Verify the concrete is feathering to zero at rear of cylinders; it should not be leaving windrows behind rollers
- Verify the finished surface is flat without waviness, steps, or windrows
- Verify the float pan and wet burlap drag are adjusted properly
- Verify that the edges of the deck are smooth without waviness

#### **Monitor straightedging at bulkheads, expansion joints, edges of deck, and deck surface. Watch for errors in crown and grade which might cause “bird baths”.**

#### **Final Finish**

- Monitor machine and hand float finish of surface
- Is the finish smooth?
- In windy conditions or when rate of evaporation is questionable, watch for tearing of concrete surface beneath finishing rollers and plastic shrinkage cracks behind finishing operations
- Monitor broom finish; check for even textured surface with no tearing of concrete surface
- Verify water is not added to assist finishing

#### **Spot check concrete cover over reinforcement**

#### **Spot check slab thickness as required by plans**

#### **Inspect longitudinal and transverse construction joints**

### ❑ Curing

- Check type of membrane forming curing compound used against approved products list
- Verify containers do not exhibit separation, segregation, or skimming
- Verify curing compounds have not been frozen in storage
- Verify curing compound is well mixed prior to placement
- Verify minimum application rate is being attained (1 liter/4.3 sq m) (1 gal/175sf)
- Check temperature of compound. Do not apply if less than 40 F° or more than 95 F°
- Check that curing compound is uniformly applied both in the transverse and longitudinal direction
- Verify that curing compound is applied to entire deck area
- Verify the working condition of sprayers prior to pour
- Verify that backup sprayers are available
- Verify that the contractor has sufficient personnel to perform curing operation
- Place wet burlap mats on the surface as soon as possible following application of the curing compound
- Verify that white plastic sheeting is properly secured to prevent displacement due to wind
- Check mats daily to ensure they stay wet for 7 days after placement