

**1.0 GENERAL**

This Special Provision shall govern the testing, longitudinal planing, transverse grooving and all other related work associated with obtaining satisfactory rideability of the bridge deck surface. Provide a surface finish in accordance with Article 420-14(B) of the Standard Specifications.

**2.0 RIDEABILITY REQUIREMENTS**

Test all traffic lanes on the bridge deck surface with a Rainhart Profilograph (Model 1, No. 860) in accordance with the criteria herein. It is the Contractor's responsibility to submit a proposed plan of action and to schedule and perform the profilograph testing. Use an independent provider, approved by the Engineer, to perform the profilograph test. Use equipment calibrated for both height and distance in accordance with ASTM E1274. Submit the calibration results to the Engineer for approval prior to testing of the bridge deck.

Prior to initial profilograph testing, complete placement of the bridge deck and barrier rail within the section to be tested, with the exception of blockouts required for the installation of joints. Do not install joints until the Engineer determines that the rideability requirements herein have been met. Temporarily bridge joint locations to facilitate operation of the profilograph and corrective equipment across the joint. Remove all obstructions from the bridge deck and sweep the surface clean of debris prior to testing. Do not allow any radio transmissions or other activities that might disrupt the automated profilograph equipment during the testing.

Check the wheels of the profilograph to ensure proper tire pressure as per manufacturer's recommendations. Maintain tires free of debris and buildup during each test run. Operate the profilograph at a maximum speed of 2 miles per hour (3.2 kph). Take profiles with the recording wheel parallel to and approximately 3.5 feet (1.1 m) inside the two outer edges of each travel lane.

Plot each profilogram at a horizontal scale of 25 feet per inch (0.3 m per mm) with the vertical scale plotted at a true scale. Record station numbers on the profilogram at distances not to exceed 200 feet (61.0 m). Note joint locations on the profilogram. Determine the Profile Index for each wheel path in accordance with the procedure entitled "Determination of Profile Index" available through the Engineer.

Determine a Profile Index per lane by averaging the index for the right and left wheel paths for each test section. A test section is defined as a 600 foot (182.9 m) length of each travel lane. Submit the profilogram and Profile Index calculations for all test sections to the Engineer for review. The maximum allowable Profile Index per lane shall not exceed 6" per mile (95 mm per km) as determined with a 0.2" (5.1 mm) blanking band over any 600 foot (182.9 m) test section. Correct individual high points or depressions having deviations in excess of 0.3" in 25 feet (7.6 mm in 7.6 m) on the profilogram by planing. Additionally,

the entire deck surface shall meet a 0.125" in 10 feet (3 mm in 3 m) straightedge check made atop the deck either transversely or longitudinally as deemed necessary by the Engineer.

### **3.0 PLANING**

If a test section does not meet the rideability requirements above, plane the full width of all lanes and shoulders in that direction of travel beginning 150 feet (45.7 m) before and ending 150 feet (45.7 m) beyond the limits of the unacceptable test section. Additional planing beyond these limits may be required as deemed necessary by the Engineer.

When planing, use a Boart Longyear PC 5000, a Target 3804 or approved equal. Submit grinding equipment specifications to the Engineer for approval before any planing is performed. Use a grinding machine capable of removing a minimum of 3 feet of width with each pass. Multiple passes may be required to achieve the required depth of removal. In addition, hand grinding may be required to remove vertical steps between passes.

The ground surface shall consist of between 50 and 60 grooves per foot (305 mm) of width. The grooves shall be between 0.09" (2.3 mm) and 0.15" (3.8 mm) in width and 0.0625" (1.6 mm) in depth. The area between the grooves shall be between 0.06" (1.5 mm) and 0.13" (3.3 mm) in width. The final concrete texture shall be uniform.

Construct and operate the grinding machine such that it will not cause strain or damage to the deck surface, excessive ravels, aggregate fractures, spalls, or disturbance of transverse joints. Longitudinally plane the deck parallel to the roadway centerline.

Continuously remove all slurry or other debris resulting from the grinding operations from the surfaces by vacuum pick-up or other approved methods. Prevent the slurry from flowing into floor drains or onto the ground or body of water under the bridge. Dispose of all residues off the project.

In completing all corrective work on the deck surface to satisfy the rideability criteria stated herein, limit planing such that the final reinforcement cover is not less than the plan cover minus 1/2" (12mm). In cases where this cannot be achieved, other corrective work may be required as directed by the Engineer.

Provide additional profilograph testing as necessary following planing and any other corrective actions, until the rideability requirements above are satisfied.

### **4.0 GROOVING BRIDGE FLOORS**

After the concrete surface profile has been accepted by the Engineer, the joints have been installed, and the concrete blockouts poured, groove the bridge deck in accordance with Subarticle 420-14(B) of the Standard Specifications. If a substantial amount of bridge deck surface has been planed and/or the concrete cover over the slab reinforcement has been reduced to the minimum, the Engineer may delete all or a portion of the requirement of grooving in that area. In this instance, no additional compensation shall be made for underruns in grooving.

## **5.0 BASIS OF PAYMENT**

No separate payment will be made for profilograph testing or planing of the bridge deck. The cost of the testing procedure, equipment, planing operation, and removal and disposal of slurry resulting from the planing operation is considered incidental to the contract bid price for “Reinforced Concrete Deck Slab”.