00756.53 Curing Concrete - Immediately after the final floating, surface finishing and edging have been completed, and while the concrete surface is still moist, cure the entire exposed surface of the newly placed concrete for at least 72 hours. If the Specifications require opening to traffic in less than 72 hours, curing may be removed just prior to opening. Use one of the following:

(a) Liquid Membrane-Forming Compounds - Apply liquid membrane-forming compound uniformly to the concrete by pressure-spray methods at a rate of at least 0.25 L/m^2 (1 gallon per 150 square feet). Mix the liquid membrane-forming compound thoroughly before and during use.

(b) Other Coverings - Apply clear or white polyethylene film to damp concrete as soon as it can be placed without marring the surface. Place the membrane in contact with the surface, extend beyond the sides or edges of the slabs or forms, and weight down as required to hold it in position as a waterproof and moistureproof covering. Laps shall be sufficient to maintain tightness.

00756.54 Pavement Cracks - Within 28 days after concrete placement and before opening the pavement to public traffic, the Engineer will perform a pavement crack survey. Clean the pavement before the crack survey. Pavement with uncontrolled longitudinal or transverse cracks which are visible without magnification will be considered unacceptable and be repaired or removed as determined by the Engineer. All remedial work shall be at the Contractor's expense.

00756.55 Surface Tolerance, Testing, and Correction - Perform straightedge testing according to 00756.55(a). Except as specified, when the Project exceeds 1 km (0.6 mile) of continuous pavement construction or when specified in the Special Provisions, conduct graphic profile testing according to 00756.55(b). Furnish and operate the equipment as soon as the hardness of the concrete permits.

(a) Straightedge Testing and Tolerance - Perform longitudinal and transverse smoothness testing of the pavement surface with a 3.6 m (12 foot) straightedge. The extent of the testing will be as the engineer determines necessary or expedient. The pavement surface shall not deviate from the straightedge at any point by more than 3 mm (1/8 inch) for all areas that are constructed by the prescribed machine methods and for all traffic lanes and ramps. Other areas shall not deviate by more than 6 mm (1/4 inch). Longitudinal 3.6 m (12 foot) straightedge testing will not be required for pavement accepted under 00756.55(b).

(b) Graphic Profile Testing (GPT) and Tolerance:

(1) General - Test the longitudinal surface of all traffic lanes, ramps shoulders and bridges for smoothness by the graphic profile method according to ODOT TM 770. Before paving commences on the Project, demonstrate the profilograph operation by conducting a calibration test according to ODOT TM 770 and running the machine twice over a 200 m (0.1 mile) section of pavement with repeating results.

a. Graphic Profile Tolerance - The pavement shall have a profile index of 110 mm/km (7.0 inches per mile) or less for each wheel path in each 200 m (0.1 mile) segment or partial segment, and shall have no individual deviation of 7 mm (0.3 inch) or more. On ramps, shoulders and auxiliary lanes the profile index shall be 190 mm/km (12.0 inches per mile) subject to the above criteria. Bonus payment for smoothness will be made according to 756.95.

b. Daily GPT - If the average profile index exceeds 110 mm/km (7.0 inches per mile) for all segments and partial segments of pavement constructed in any day's production, discontinue paving operations and construct one or more test strips as described in 00756.47. The test strip may be comprised of pavement placed during the shift that the shutdown is ordered, but in no case shall it be less than 200 m (0.1 mile) in length.

(2) Surface Test - Run the profilograph over the full length of the Project and 15 m (50 feet) beyond the Project ends to provide a complete graphic profile. This includes all concrete traffic lanes and auxiliary lanes.

Obtain profiles on the pavement surface along lines parallel to and approximately 1 m (3 feet) from each edge and longitudinal joint(s) for 3.6 m (12 foot) wide lanes and 1.2 m (4 feet) from each edge and longitudinal joint(s) for 4.2 m (14 foot) wide lanes. The intent is to provide a profile in each vehicle wheel path. Take profile(s) on transition areas of entrance and exit ramps as close to the wheel path as practical.

Start the profiles that represent a day's production 15 m (50 feet) before the beginning of that day's production and stop 15 m (50 feet) before the end of that day's production.

Run the profiles for each day's production as soon as possible without damaging the surface. Analyze the daily GPT profiles according to 00756.55 (b-3), and give the profiles and results to the Engineer within 24 hours of the conclusion of the day's production.

(3) Determining Profile Index:

a. General - Determine the profile index of pavement in 200 m (0.1 mile) segments and partial segments. Segments shall begin 4 m (13 feet) into the Project and run consecutively in either the direction of travel or the concrete placement, as determined by the Engineer. A segment will end as a partial segment and a new segment will begin when the segment sequence is interrupted by stage construction or by profiled areas excluded from the GPT smoothness requirements.

The following profiled areas of pavement are excluded from the GPT smoothness requirements:

- Profiles extending beyond the Project ends
- Bridge decks and bridge panels
- First and last 4 m (13 feet) at the Project ends and bridge end panels
- Pavement on horizontal curves with radii less than 300 m (1,000 feet)

Include and analyze separately those areas in the profile charts that are not subject to the GPT smoothness profile index requirements.

b. Method of Analysis - Determine the profile index and individual deviations of 7 mm (0.3 inch) or more by analyzing the profile charts according to ODOT TM 770 and provide the profile charts and results to the Engineer for review.

c. Profile Index - The profile index is the mm/km (inches per mile) in excess of the 5 mm (0.2 inch) blanking band. The formula for converting counts to profile index is:

METRIC

$$\text{Profile Index} = \frac{\text{Total Count (mm)} \times 1000 \text{ m/km}}{\text{Length (m) of Full 200 m Segment or of Partial } \_\_*\_\_ \text{ m Segment}}$$

* Report to the nearest 20 m

ENGLISH

$$\text{Profile Index} = \frac{\text{Total Count x 0.10}}{\text{Length of Full 0.10 Mile Segment or of Partial \_\_*\_\_ Mile Segment}}$$

* Report to the nearest 0.01 mile

(c) Correcting Deficiencies - Should testing described in 00756.49, 00756.51, and 00756.55 show the pavement does not conform to the prescribed limits of deviation, the following shall apply:

(1) Failure To Meet Straightedge Requirements:

a. Plastic Concrete - If the requirements of 00756.49 or 00756.51 are not met, stop the paving operations until revised methods, changes in equipment, or correction of procedures are made or proposed for trial, and are approved by the Engineer for trial. Also stop those revisions, changes and corrections if they do not produce a specified surface.

b. Hardened Concrete - If the requirements of 00756.51 or 00756.55(a) are not met, correct according to 00756.55(c-2-a) or 00756.55(c-2-b) and retest.

(2) Failure To Meet Graphic Profile Requirements - Correct any segment or partial segment that exceeds the requirements of 00756.55(b) in either wheel path by one of the methods listed below to the specified limits except correct deviations of 7 mm (0.3 inch) or more at least to the edge of the blanking band:

a. Remove the nonspecification concrete pavement as determined by the Engineer and replace with specification concrete pavement.

b. Profile with abrasive grinder(s), equipped with a cutting head comprised of multiple diamond blades. The Engineer will determine and mark the areas to be profiled. For all areas corrected by grinding, restore the required surface texture as specified in 00756.49(b) by transverse sawing with diamond blade saws.

Retest their entire length, according to 00756.55(b), all segments requiring corrective work with the profilograph under the supervision of the Engineer. Perform all corrective work and graphic profiling at the Contractor's expense, including traffic control.

00756.56 Pavement Thickness - Construct the pavement to the thickness shown. Pavement not so constructed will be subject to replacement according to 00756.57, or to payment at adjusted prices according to 00756.93.

(a) Survey Method - Determine conformance with minimum thickness requirements by random survey measurements of the concrete under the Engineer’s observation.

Divide the panel into units and partial units equivalent to a maximum of 60 lane meters (200 lane feet). Normally, unit lengths will be 60 m (200 feet) for one lane, 30 m (100 feet) for two lanes, 20 m (70 feet) for three lanes and as appropriate for transition areas. Take survey measurements within 3 m (10 feet) longitudinally and 0.3 m (1 foot) transversely from the calculated random location as determined by the Engineer in each unit and partial unit. Establish the horizontal location in such manner that it can be re-established in the same location to within 25 mm (1 inch) of the original location. Record vertical elevations to the nearest 2 mm (0.1 inch). Take the measurements as follows:

- On the finished base course before paving and at the same location on the finished PCC pavement
- No closer than 0.6 m (2 feet) from the panel edges