

Section 400—Hot Mix Asphaltic Concrete Construction

- All value changes must still be within specification limits

If the Office of Materials and Research is satisfied that the contractor has exerted the maximum compactive effort and is not able to maintain Pavement Mean Air Voids at no more than 7.8%, the Engineer may establish a maximum target for Pavement Mean Air Voids.

Mixture placed during the adjustment period for density shall meet the requirements for a 0.90 pay factor in Table 12 of [Subsection 400.5.01.C, “Calculate Mean Pavement Air Voids.”](#) Mixture which does not meet these density requirements shall be paid for using the applicable pay factor.

If the mean air voids of the pavement placed within a lot exceeds 7.8% (or 100% of the maximum target air voids, if established) and the Engineer determines that the material need not be removed and replaced, the lot may be accepted at an adjusted unit price as determined by the Engineer.

2. Obtain Uniform Compaction

For a lot to receive a pay factor of 1.00 for compaction acceptance, the air void range cannot exceed 4 percent for new construction or 5 percent for resurfacing projects. The range is the difference between the highest and lowest acceptance test results within the affected lot. If the air void range exceeds these tolerances, apply a Pay Factor of 95%.

The 5% reduced pay factor for the compaction range does not apply in these instances:

- The mixture is placed during the adjustment period as defined in [Subsection 400.5.01.A, “Materials Produced and Placed During the Adjustment Period.”](#)
- All air void results within a given lot are less than 7.8%.

C. Surface Tolerance

In this Specification, pavement courses to be overlaid with a friction course are considered surface courses. Other asphalt paving is subject to straightedge and visual inspection and irregularity correction as shown below:

1. Visual and Straightedge Inspection

Paving is subject to visual and straightedge inspection during and after construction operations until Final Acceptance. Locate surface irregularities as follows:

- a. Keep a 10 ft (3 m) straightedge near the paving operation to measure surface irregularities on courses. Provide the straightedge and the labor for its use.
- b. Inspect the base, intermediate, and surface course surfaces with the straightedge to detect irregularities.
- c. Correct irregularities that exceed 3/16 in. in 10 ft (5 mm in 3 m) for base and intermediate courses, and 1/8 in. in 10 ft (3 mm in 3 m) for surface courses.

Mixture or operating techniques will be stopped if irregularities such as rippling, tearing, or pulling occur and the Engineer suspects a continuing equipment problem. Stop the paving operation and correct the problem. Correct surface course evaluations on individual Laser Road Profiler test sections, normally 1 mile (1 km) long.

2. Target Surface Smoothness

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The Department will use the Laser Road Profiler method to conduct acceptance testing for surface course tolerance according to [GDT 126](#). This testing will be performed only on:

- Surface courses
- Mainline traveled way
- Ramps more than 0.5 mile (800 m) long

Achieve the smoothest possible ride during construction. Do not exceed the target Laser Road Profiler smoothness index as shown below:

Table 7—Pavement Smoothness Requirements—New Construction

Construction Description	Smoothness Index
Asphaltic concrete OGFC and PEM on interstates and asphaltic concrete OGFC and PEM on new construction	750
Other resurfacing on interstates, asphaltic concrete OGFC and PEM resurfacing on state routes, and new construction	825
All other resurfacing on state routes (excluding LARP, PR, airports, etc.)	900

If the target values are not achieved, immediately adjust the operations to meet the target values.

Corrective work is required if the surface smoothness exceeds the Laser Road Profiler smoothness index shown below:

Table 8—Pavement Smoothness Requirements—Corrective Work

Construction Description	Smoothness Index
Asphaltic concrete OGFC and PEM on interstates and asphaltic concrete OGFC and PEM on new construction	825
Other resurfacing on interstates, asphaltic concrete OGFC and PEM resurfacing on state routes, and new construction	900
All other resurfacing on state routes (excluding LARP, PR, airports, etc.)	1025

If surface tolerance deficiencies need correction, obtain the Engineer’s approval of the methods and type mix used.

3. Bridge Approach Ride Quality

The following are subject to a ride quality test by the Department for 100 ft. (30 m) of roadway approaching each end of a bridge using the Rainhart Profilograph:

- A state road with 4 lanes or more
- A 2-lane state road with a current traffic count of 2,000 vpd or more
- Locations designated on the Plans

All other bridge approaches shall meet the 1/8 in. in 10 ft (3 mm in 3 m) straightedge requirement. Test ride quality as follows:

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- a. The Department will determine a profile index value according to test method [GDT 78](#).
- b. The Department will average the profile index value from the right and left wheelpath for each 100 ft (30 m) section for each lane. Keep the profile index value under 30.
- c. Meet the profile index value for the 100 ft (30 m) section of roadway up to the joint with the approach slab.
- d. Schedule the profilograph testing 5 days before needed. Clean and clear obstructions from the test area.
- e. Correct the sections that do not meet the ride quality criteria of this Specification. After correction, these sections are subject to retesting with the Rainhart Profilograph. The Engineer shall direct the type of correction method, which may include:
 - Milling
 - Grinding
 - Removing and replacing the roadway

No additional compensation will be made.

The Department will perform Profilograph testing up to two times on the bridge approaches at no cost to the Contractor. Additional profilograph testing will cost the Contractor \$500 per test.

D. Reevaluation of Lots

When lots are reevaluated as shown in [Subsection 106.03, “Samples, Tests, Cited Specifications.”](#) sampling and testing is according to [GDT 73](#). Request shall be made for reevaluation immediately upon notification of the lot results. The following procedures apply:

1. Mixture Acceptance

The Department will take the same number of new tests on cores taken at a location where the load sampled was placed and will use only those core results for acceptance.

The Department will use the mean of the deviations from the job mix formula for these tests to determine acceptance based on the appropriate column in the Asphalt Cement Content and Aggregate Gradation of Asphalt Concrete [Mixture Acceptance Schedule—Table 9 or 10](#).

2. Compaction Acceptance

The Department will reevaluate the lot through additional testing by cutting 5 cores and averaging these results with the results of the original 5 compaction tests. The Department will use the average to determine acceptance according to the Compaction Acceptance Schedule in [Subsection 400.5.01.C, “Calculate Pavement Mean Air Voids”](#).