

A. Scope

These standards and procedures apply to pavements constructed of asphalt concrete to include base courses, leveling courses, and wearing surfaces.

B. Codes, Regulations and Standards

1. All work shall conform to the latest edition of the City of Seattle ***Standard Specifications for Road, Bridge and Municipal Construction and Standard Plans for Municipal Construction.***

C. Design Review and Submittals

1. Preliminary meetings shall cover anticipated vehicular and pedestrian routings, and emergency and maintenance access requirements.
2. The number of courses in the pavement cross section shall be shown on the plans or designated in the special provisions.

D. General Requirements

The finished surface of all asphalt concrete paving shall be dense, uniform in texture, smooth and free of hollows, depressions, roller marks, and surface cracks.

Anyone cutting into and removing an area of the roadway surface is responsible for permanent pavement restoration.

1. All asphalt sidewalks and walkways shall be constructed of 2" of asphalt concrete paving over a 2" compacted crushed rock base.
2. Some walkways that will double as service access ways for maintenance trucks, etc. shall be constructed of 3" of asphalt concrete paving over a 4" compacted crushed rock base.
3. All asphalt roads, streets and driveways shall be constructed of 3" of asphalt concrete paving over a 6" compacted mineral aggregate Type 2 with 6" compacted subgrade(Ref. STD Spec Sec 2-09, 4-04, 5-04, 5-05 & 8-04).
4. All asphalt parking areas shall be constructed of 3" of hot mix asphalt paving over 12" compacted mineral aggregate Type 2 (for top and base course)(Ref. STD Spec Sec 2-09, 4-04, 5-04, 5-05 & 8-04 and STD Plan No 404a).
5. All patching of existing asphalt paved surfaces shall be to match the existing pavement thickness (depth).
6. All overlays of existing asphalt paved surfaces shall be particularly specified for thickness (depth) and class of asphalt.
7. All asphalt to asphalt cold joints that are sealed must be sanded to prevent excess tracking.
8. Temporary cold mix patches must be installed within 3 days.
9. Final pavement restoration must be completed within 30 days of trench closure.

- 10. Concrete Pavement
 - a. Concrete roadways shall be restored to the nearest full panel.
 - b. Concrete shall be replaced or patched with concrete per City of Seattle Standard Specifications Section 5-05 and Section 6-02.3.
 - c. Any concrete pavement traffic lane affected by the trenching shall have all affected panels replaced.
 - d. Concrete pavement shall be connected to existing concrete pavement with dowels and epoxy and restored with a WSDOT approved mix.
 - e. Concrete pavement shall be restored consistent with City of Seattle Standard Plan 405A-D.

11. Asphalt Pavement

- a. Refer to City of Seattle Standard Plan for Trench-Pavement Restoration.
- b. Asphalt pavement removal shall be by full depth saw cut or drum grinder.
- c. Asphalt pavement cut widths, based on the final trench width, however, the SC PM shall extend cut limits to competent roadway pavement.
- d. Seattle Center PM shall approve the restoration limits before restoration begins.

Pavement Cut Dimensions

TRENCH DEPTH (FT)	MINMUM CUT BEYOND TRENCH (FT) ALL FOUR SIDES
Up to 4	1.0
More than 4 up to 6	1.5
More than 6 up to 8	2.0
10	2.5
12	3.0
14	3.5
16	4.5
20	5.0

Resource: Utility Cuts in Paved Roads, FHWA-SA-97-049

- e. Cuts in asphalt must be wide enough to accommodate compaction equipment.
- f. Cuts shall be expanded to include joints, panel edges, existing patches, or cracks within four feet of the opening.
- g. Cuts shall be expanded to ensure that new longitudinal joints are not located in a wheel path.
- h. The cut face shall be neat, straight, and vertical. The corners shall be square.
- i. When an existing asphalt paved street is to be widened, the edge of pavement shall be saw-cut to provide a clean, vertical edge for joining to the new asphalt at the time of the placement of the new asphalt. After placement of the new asphalt section, the joint shall be sealed.
- j. When a pavement cut extends beyond half the travel lane's width, the pavement repair shall be extended to include the full width of the travel lane.
- k. Tack coat shall be used on all vertical edges between concrete and asphalt or asphalt to asphalt and on all horizontal surfaces between asphalt layers.

E. Products

The material from which Asphalt and Mineral Aggregate for Asphalt Concrete is composed shall comply to these standards.

1. Pavement, HMA Class ½ Inch shall be specified in the special provisions or designated on the plans.
2. Performance Grade Pinder shall be PG 64-22.
3. Mineral aggregate for Asphalt Concrete shall be manufactured from material meeting the following test requirements: Los Angeles Wear (ASTM Designation C 131) 500 Rev. 30% 35 Max.

F. Execution

These standards shall be complied with in the installation and placement of Asphalt Concrete Paving.

1. The Asphalt Concrete mixture shall leave the Mixing Plant at a temperature between 250 °F and 350 °F and when deposited shall not be less than 250 °F. The mixture shall be transported in suitable dump trucks of sufficient size and shape to easily accommodate the load. When required by the engineer, each load shall be covered with a suitable tarpaulin while in transit to prevent unnecessary heat loss.
2. Preparation of Existing Surfaced Roads/Streets
 - a. Before construction of an asphalt concrete pavement on an existing surface, all fatty asphalt patches, grease drippings and other objectionable matter shall be entirely removed from the existing pavement. The existing pavement shall be thoroughly cleaned by sweeping to remove dust and other foreign matter.
 - b. A Tack Coat of emulsified asphalt applied at the rate of .02 to .08 gallon per square yard of retained asphalt shall be applied uniformly to all existing surfaces on which any course of asphalt concrete is to be placed, unless its omission is specified.
 - c. The existing pavement shall be removed when it has been determined that such pavement is in poor condition, and the crushed rock base shall be reconstructed. This shall be shown on the plans or designated in the special provisions.
3. Preparation of Asphalt Patches
 - a. Where existing asphalt concrete pavement upon a granular base is required to be removed due to deterioration and/or settlement, the area shall be uniformly defined in size and shape. The existing asphalt shall be removed by cutting pavement vertically at a sufficient distance of at least 6" over the undisturbed base surface, and then the affected pavement shall be broken up and removed.
 - b. The granular base under the removed pavement shall be restored so as to correct the condition that caused the deterioration and/or settlement, and this shall be shown on the plans or designated in special provisions.
 - c. Overlay
 - i. A street shall be overlaid as indicated when any of the following conditions exist:
 - a. Utility installation parallel to the pavement centerline requires half-street overlay from the centerline to the curb line (or edge of pavement) for the

entire length of the utility extension. If the utility trenching encroaches on both sides of the centerline, a full width street overlay will be required;

- b. Utility installation consisting of three or more perpendicular (transverse) trenches within 150 feet, measured along the pavement centerline, requires overlay from the curb line to the centerline for the full length plus 5 feet on each end. If a trench extends beyond the centerline, a full width street overlay will be required;
- c. Utility installation at an angle to the pavement centerline: requires an overlay from the centerline to the curb line for the entire length plus 5 feet on each end of the utility installation. If the utility trenching encroaches on both sides of the centerline, a full width street overlay will be required;
- d. Road cuts are made in a street that has been resurfaced or constructed within the last 5-years
- e. Plane existing road at ends of the overlay perpendicular to the roadway for at least 15 feet to provide a flush transition. For half-street or full-street overlays, planing (grinding) of the entire paving area is required (centerline to edge of pavement or edge (gutter or curb) to edge (gutter or curb). All asphalt joints and tapered transitions shall be sealed with AR4000 or equivalent. The joints shall then be sanded while the surface of the AR4000 is still wet to prevent track off from pedestrian or vehicular traffic.

4. Preparation of Asphalt Pavement on Existing or Constructed Unsurfaced Subgrades.

Prior to the first application of asphalt, the entire area to be paved shall be constructed of specified granular base material (crushed rock) which shall be stable and unyielding, be of medium damp condition, be free from irregularities and material segregation, and be true to line grade and cross section. All castings shall be covered and weighted for protection.

Where concrete curb or curb and gutter exist, they shall be protected with a splash board so as to prevent spraying thereon.

5. Miscellaneous Details of Construction

- a. Unless otherwise specified, construction of one course or lift upon another shall not proceed until the underlying course is completely cooled and set.
- b. Asphalt Concrete Mixture shall not be deposited on a road if the rolling cannot be completed before dark. The placing of asphalt concrete mixture at night shall not be permitted.
- c. Where the Asphalt Concrete is to be placed against a concrete or stone curb or gutter, or against a cold pavement joint or any metal surface, a thin tack coat of asphalt shall be applied in advance of the placing. The application shall be thin and uniform. Avoid accumulation of asphalt in depressions.

6. Asphalt for "prime coat" shall not be applied when the ground temperature is lower than 50 °F. or unless otherwise specified. Paving shall not commence unless the subsurface subgrade temperature is 50 degrees and rising.

Paving shall not be done if it is raining.
7. Asphalt walkways, including vacated streets, shall be paved with a 2% cross slope in the direction of travel with no surface to surface changes in level greater than 1/4" in height to meet 2010 ADA Standards to the maximum extent feasible.
8. Testing
 - a. Testing and inspection of paving shall be conducted in the presence of the contractor (or representative), and Seattle Center representatives.
 - b. The finished surface, when tested with a 10-foot straight edge, shall reveal no deviations in excess of 1/4".
 - c. Core samples, 4" in diameter, shall be taken at the owner's discretion to verify total asphalt thickness. When the results are approved, the contractor shall patch all the test holes to the satisfaction of the inspector.
 - d. Prior to placing any asphalt surface materials on the roadway, the Inspector shall review and approve density test reports, certified by a professional engineer, for the crushed surfacing base course and the crushed surfacing top course.
 - e. Testing shall be performed by a certified independent testing laboratory. The cost of testing is the responsibility of the franchise utility or contractor. The testing and approval by the SC PM does relieve the contractor from any liability for the trench restoration.
 - f. Material testing shall be required for trench backfill (native or imported), asphalt, and concrete.
 - g. All densities shall be determined by testing specified in City of Seattle Standard Specifications.
 - h. Compaction of all lifts of asphalt shall be 91 percent of maximum density as determined by City of Seattle Standard Specifications.
 - i. Testing of CDF shall be in accordance with City of Seattle Standard Specifications.
 - j. The compaction tests in back filled trenches shall be performed in maximum increments of two feet. The number of tests required shall be determined per square feet of compaction area as follows:
 - i. One test for less than 50 square feet;
 - ii. Two tests for 50 to 100 square feet;
 - iii. Three tests for 100-plus to 300 square feet;
 - iv. One test for every 200 square feet over 300 square feet or every 100 lineal feet of crushed rock.
 - v. Proof rolling shall be required by the inspector prior to asphalt installation.

END OF SECTION 32 10 00